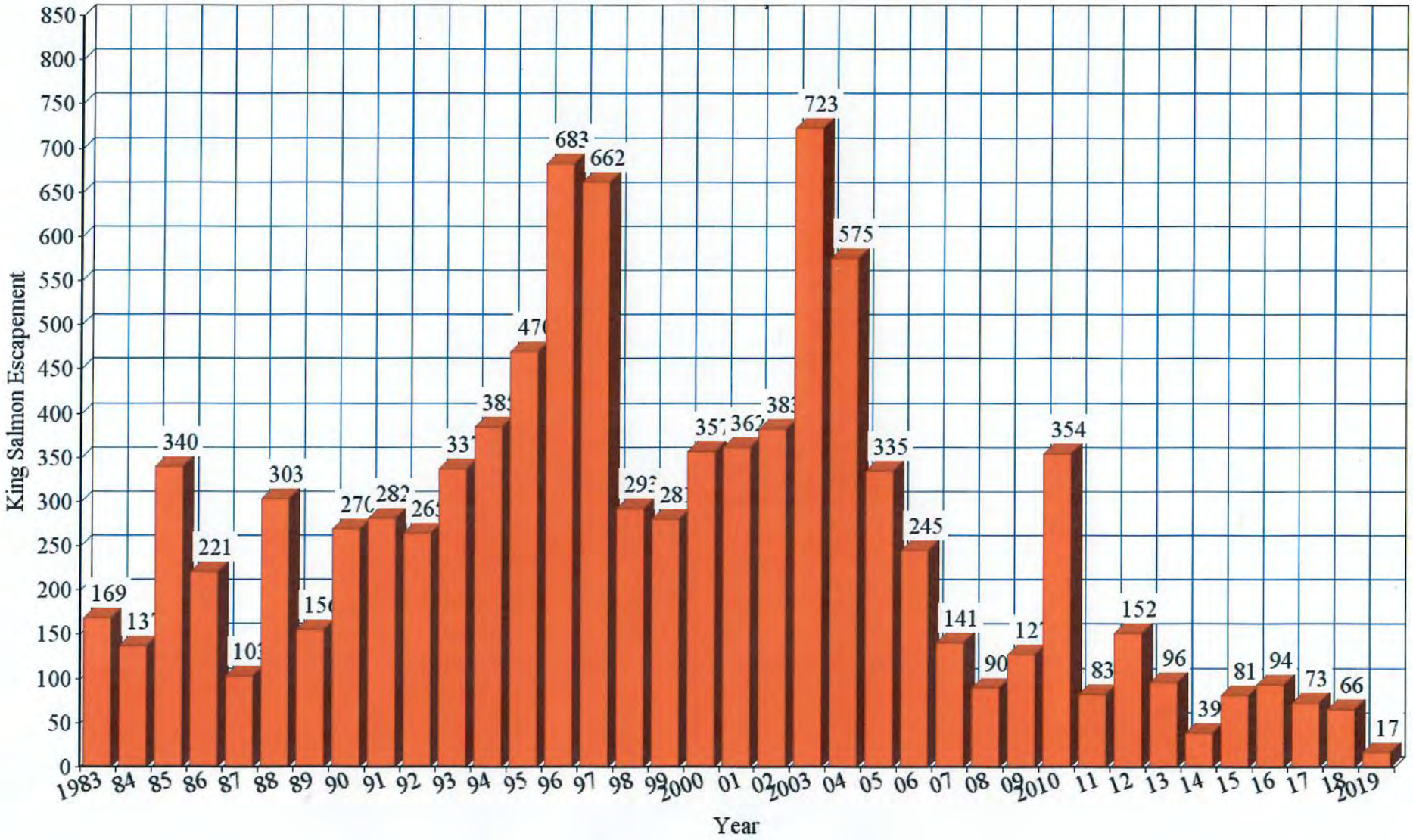
Glen Eaton

12/10/2019 01:29 PM AKST

RE: PROPOSAL 46 Establish a sport fishing season for king salmon in the Dog Salmon River

See attachments: Bar Graph, Line Graph and data from historical ADF&G Dog Salmon River Weir counts. Looking at the historical weir counts from Dog Salmon River for King Salmon, 2019 is a historical low of ONLY 17. The historical average over the past 37 year period is 263 of which ONLY 6% of the average returned to spawn in 2019. The proposal to open the Dog Salmon River to a King Salmon sport fishery with these current low numbers is premature. The run is at a very high risk of not being able to recover from these low escapement numbers unless conservation efforts are enacted quickly. In the summer of 2019 ADF&G had an emergency sockeye fishery opening in the Dog Salmon River which made salmon migration upstream completely impassable. The result of this decision was the by catch of King Salmon destined for spawning in the Dog Salmon River. This is a possible reason the King Salmon Escapement was only 17 for the past summer of 2019. In conclusion, opening a sport fishery for King Salmon and a continued commercial salmon fishery allowed in the Dog Salmon River with recent historical low returns will eventually cause this Wild King Salmon run to go extinct. Until escapement numbers return to the historical average I oppose Proposal 46 allowing a King Salmon Sport Fishery in the Dog Salmon River.

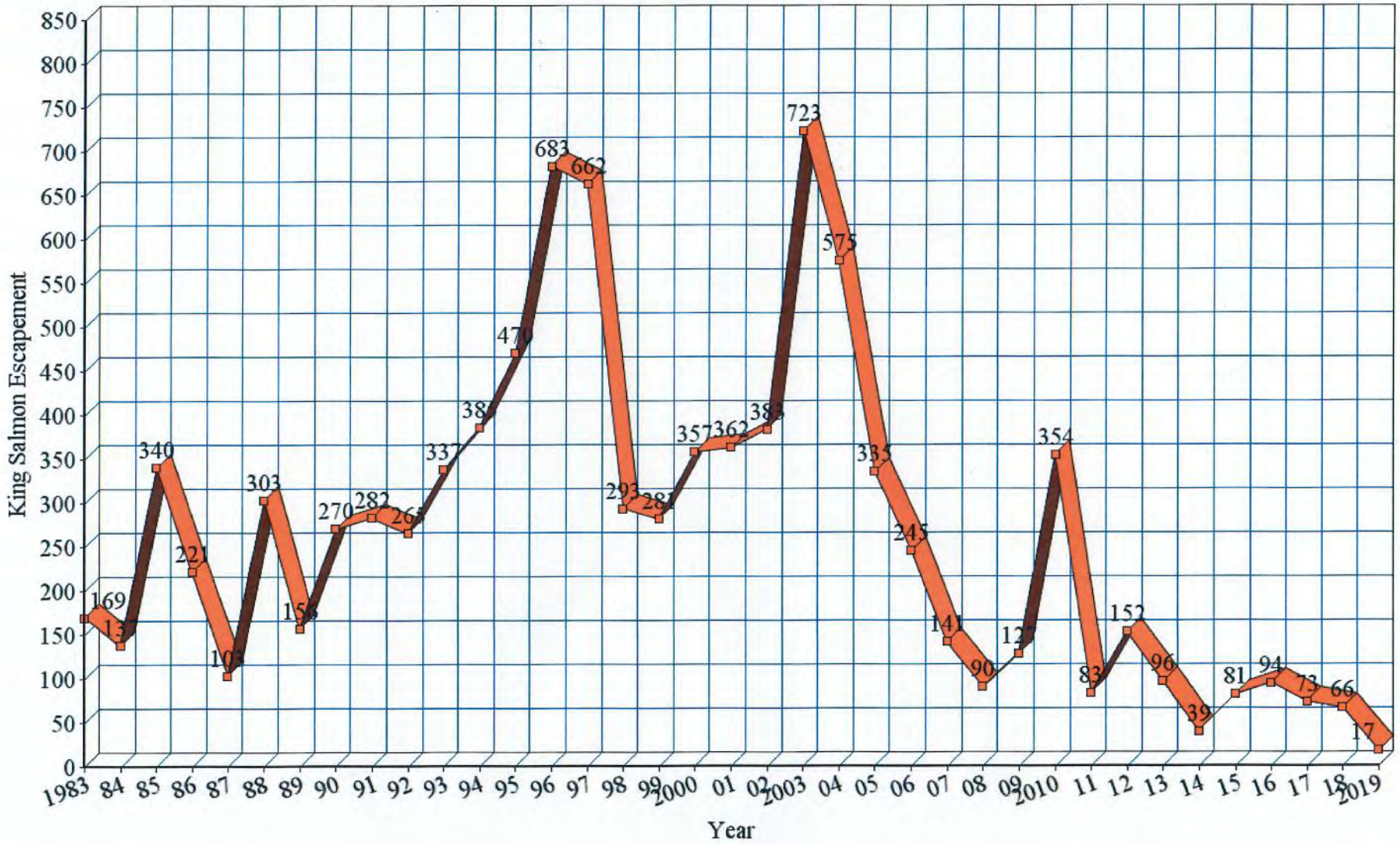
Dog Salmon River King Escapement 1983-2019



Dog Salmon Creek Total Escapement by Year and Species.

Year	Sockeye	Late Run Sockeye	Sockeye Jacks	Sockeye Adults	Chinook	Pink	Coho	Chum	Steelhead Down	Steelhead Up	All Species
1963	359	0	0	0	0	387	2	41	0	0	789
1983	166,655	0	0	0	169	54,943	5,033	18,124	275	39	245,238
1984	48,844	0	0	0	137	55,964	1,340	18,121	80	2	124,488
1985	506,336	0	0	0	340	141,869	4,000	11,768	239	30	664,582
1986	136,553	0	0	0	221	149,194	5,394	9,134	270	23	300,789
1987	48,956	0	0	0	103	55,993	6,223	29,041	385	16	140,717
1988	241,970	0	0	0	303	59,489	3,543	30,680	180	13	336,178
1989	362,007	0	0	0	156	315,559	5,668	4,690	103	23	688,206
1990	254,540	0	0	0	270	4,718	6,484	6,520	457	2	272,991
1991	288,013	0	0	0	282	114,158	5,158	3,277	124	1	411,013
1992	206,406	0	0	0	265	19,306	7,940	8,419	110	0	242,446
1993	198,412	0	0	0	337	161,255	4,985	4,158	184	17	369,348
1994	240,913	0	0	0	385	82,903	4,944	4,274	221	8	333,648
1995	222,170	0	0	0	470	204,231	4,172	2,180	205	2	433,430
1996	208,638	0	0	0	683	212,978	4,382	5,630	104	9	432,424
1997	268,328	0	0	0	662	136,608	3,733	5,336	191	0	414,858
1998	245,393	0	0	0	293	525,944	5,042	3,222	69	34	779,997
1999	222,970	0	0	0	281	161,109	4,139	3,659	217	13	392,388
2000	173,343	0	0	0	357	119,740	3,168	8,063	237	55	304,963
2001	163,309	0	0	0	362	72,370	1,505	6,086	335	12	243,979
2002	105,988	0	0	0	383	561,450	6,552	6,096	180	53	680,702
2003	262,731	0	0	0	723	76,493	29	2,261	185	0	342,422
2004	226,266	0	0	0	575	296,929	20	2,387	242	0	526,419
2005	152,959	0	0	0	335	30,314	36	3,185	166	0	186,995
2006	108,343	0	0	0	245	171,811	885	14,527	447	0	296,258
2007	139,808	0	0	0	141	59,032	30	4,233	444	0	203,688
2008	153,276	0	0	0	90	106,331	22	1,748	605	0	262,072
2009	147,798	0	0	0	127	26,705	46	1,212	104	0	175,992
2010	135,100	0	0	0	354	170,645	86	3,696	50	0	309,931
2011	180,603	0	0	0	83	21,343	115	2,607	34	0	204,785
2012	154,416	0	0	0	152	398,687	127	1,634	28	1	555,045
2013	129,369	0	0	0	96	28,840	215	1,594	104	0	160,218
2014	217,461	0	20,897	196,564	39	119,352	863	1,403	98	0	556,677
2015	235,813	0	44,463	191,350	81	218,054	2	2,203	195	1	692,162
2016	150,469	0	5,294	145,175	94	125,318	26	2,963	171	0	429,510
2017	141,912	0	29,624	112,288	73	325,629	6	8,455	144	0	618,131
2018	232,526	0	62,052	170,474	66	250,509	58	2,440	219	10	718,354
2019	162,697	0	44,978	117,719	17	372,414	4	181	621	0	698,631

Dog Salmon River King Escapement 1983-2019



Kevin Fisher
Alitak District Setnet Fisherman
12/27/2019 09:26 PM AKST

RE: PROPOSAL 46 Establish a sport fishing season for king salmon in the Dog Salmon River

I don't see any reason to open sport fishing for kings on the Dog Salmon River, or Frazer Lake. I think if the Chinook make it into the River or lake they should be free to spawn unmolested. This new and developing fishery will have negative impacts on the subsistence and commercial fishing in the Alitak District. If this proposal were to be adopted it will undoubtedly cause gear conflicts in the future. Sport fishers will lobby to restrict commercial and substance use to further increase the kings available to sport fishers. This is exactly what they have done in every other system they have been allowed access. And exactly what they are doing in other proposals this board cycle.

Darius Kasprzak
Alaska Jig Association
12/26/2019 08:45 PM AKST

RE: PROPOSAL 48 Establish a management plan for the Kodiak Area rockfish sport fishery and a guideline harvest range for the Kodiak Area commercial rockfish fishery

Chairman Morisky and BOF members, The Alaska Jig Association (AJA) supports proposal 48. We appreciate the importance of both the sport/ charter, and commercial jig black rockfish fisheries to Kodiak's economy and well being. We believe that a proactive and long term approach to managing the increasing sport/ charter harvest is warranted, and is in the best interest of all user harvester groups. The additional potential restrictions listed in this proposal are management tools, that may enable the Department, to effectively and sustainably control the sport/charter black rockfish harvest. Sincerely, Darius Kasprzak
President, AJA

Arthur Schultz
FV Lindsey Marie
12/27/2019 02:28 PM AKST

RE: PROPOSAL 48 Establish a management plan for the Kodiak Area rockfish sport fishery and a guideline harvest range for the Kodiak Area commercial rockfish fishery

Rockfish are slow growing and easily overharvested. Due to their slow growth, limited movement, and relatively small biomass it is not difficult for sport and charter boats to have an outsized impact on their populations. Since the non-pelagic species don't move it is quite easy for any boat, recreational, charter or commercial to repeatedly visit their well defined home ranges. This ease of harvest, and subsequent evidence of overharvest, demands tighter restrictions to protect the stock. ADF&G should be given the tools it deems necessary to manage this fragile stock.

Charles and Theresa Peterson
1850 Three Sisters Way
Kodiak, AK 99615

December 27, 2019

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE**: Support for Proposal 48**

Dear Chairman Morisky and Board of Fish members:

We moved to Kodiak in the 1980's to pursue the opportunity for a livelihood in commercial fishing. We found what we were looking for, a chance to make a living off the sea and stayed, raising three children and developing deep relationships in our island home. Kodiak is a community built on fish and the size of the fleet, the processing infrastructure, the support services and the overall health of our coastal community is dependent on sustainable fisheries.

We appreciate the forwarding thinking management process found in proposal 48 which would create a new management plan for rockfish in the sport fishery. It would be in the best interest for all user groups and the long-term management of the rockfish fishery to manage these long-lived species in a comprehensive manner. As structured, the proposal provides a series of 5 restrictions to control growth in the sport fishery which has increased 5-fold in the last 5 years. Rather than let the growth continue unabated, resulting in local depletion and allocative issues between the sport and commercial rockfish fishermen, the proposal provides an equitable solution with a suite of tools.

We encourage the board to support proposal 48.

Sincerely,

Charles and Theresa Peterson

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Support for Proposal 48

Dear Chairman Morisky and Board of Fisheries Members,

My name is Chris Johnson and I am a second-generation fisherman in Kodiak, Alaska. I grew up fishing on my dad's boat and got my first crew job working for someone else two weeks after I graduated high school. I haven't missed a salmon season since. I bought into the fishing industry in 2011 with the purchase of a 25-foot jig boat that I worked for two years in the winter and spring months while I still crewed for salmon in the summer. Access to the jig fisheries focusing on cod and rockfish was the only way that I could afford to move into the salmon fleet with a 38-footer in 2013. After the recent cod collapse, I now primarily rely on salmon seining and jigging rockfish and live here year-round with my wife.

I appreciate this proactive action proposal to manage the recent growth of the sport fishery focusing on rockfish for the long-term management and health of the stocks and am happy to support the proposal put forward by hardworking ADF&G staff. The proposal provides the tools for the Department to maintain current harvest levels in sport and commercial black rockfish fisheries in the Kodiak Area and curtail further growth in the sport fishery by establishing guideline harvest ranges (GHRs). I also support this because it shows how dedicated our ADF&G staff in Kodiak is as they are working to maintaining the health of our rockfish fisheries.

I'm proud to call Kodiak home and am working to protect our fishing way of life.

Sincerely,
Chris Johnson
F/V North Star

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Support for Proposal 48

Dear Chairman Morisky and Board of Fisheries Members,

My name is Danielle Ringer and I appreciate the opportunity to comment on proposals before the Board in writing and in person for the Kodiak finfish meeting. I live in Kodiak with my husband and we own and operate the 38-foot F/V North Star. We chiefly rely on salmon seining and cod and rockfish jigging to maintain our fishing way of life and ability to live on Kodiak Island. I grew up in Homer learning to harvest and process fish from my parents in Kachemak Bay and dipnetting on the Kenai River. I hold a Master's degree from the University of Alaska Fairbanks in Political Ecology of Fisheries and was one of the researchers on the *Graying of the Fleet in Alaska's Fisheries: Defining the Problem and Assessing Alternatives* study in the Kodiak region.

I appreciate this proactive action proposal to manage the recent growth of the sport fishery focusing on rockfish for the long-term management and health of the stocks and am happy to support the proposal put forward by hardworking ADF&G staff. The proposal provides the tools for the Department to maintain current harvest levels in sport and commercial black rockfish fisheries in the Kodiak Area and curtail further growth in the sport fishery by establishing guideline harvest ranges (GHRs). I also support this because it shows how dedicated our ADF&G staff in Kodiak is as they are working to maintaining the health of our rockfish fisheries.

Thank you for your consideration of my comments and I look forward to Board of Fisheries members spending time in our fishing community during the Kodiak meeting.

Respectfully,
Danielle Ringer, M.A.
F/V North Star

Eric Taber
owner/operator F/V Kanerva
12/22/2019 10:42 AM AKST

RE: PROPOSAL 48 Establish a management plan for the Kodiak Area rockfish sport fishery and a guideline harvest range for the Kodiak Area commercial rockfish fishery

As a jig fisherman who commercial harvests black rockfish throughout the kodiak archipelago and westward regions, Ive noticed the rockfish populations around the city of kodiak are decreasing in both size and numbers. this proposal will give fish and game a better mechanism for conserving this resource.

Leonard Carpenter

12/28/2019 12:38 AM AKST

RE: PROPOSAL 48 Establish a management plan for the Kodiak Area rockfish sport fishery and a guideline harvest range for the Kodiak Area commercial rockfish fishery

I support ADF&G's efforts to control sport and guided sport rockfish removals in Chiniak and Marmot bays. I feel the sport fish division has failed to control growth in the sport fishery for far to long at the expense of the commercial sector and most importantly the resource. I have seen a profound decrease in the CPUE in these areas for many years now, particularly northern Marmot bay, from Hog Island to King Cove . The GHL for the commercial sector has also decreased for the Afognak district by 5,000 lbs. during this same period while the sport harvest continues to increase. The commercial sector works very closely with ADF&G staff to ensure we stay within the our GHL's for black rockfish. Often times closures are announced with little notice and in the event two or more vessels want to cleanup an area (with less than a trip limit available per vessel) we will work closely with each other and ADFG to ensure we do not exceed the GHL in that district. As a result our removals rarely exceed the GHL for the areas we fish. We are also required to submit logbooks after each trip. This requirement should also apply to charter operators to allow better inseason management and allow for bag limit reductions inseason if catch rates indicate the sport removals will exceed the guideline harvest range. Thank you for your consideration.
Leonard Carpenter

Oliver Holm
self
12/27/2019 02:46 PM AKST

RE: PROPOSAL 49 Create a Kodiak Area commercial sablefish season

I have longline for halibut around Kodiak Island for 38 years. I also bought a small amount of Central Gulf black cod quota for by catch. In the fall there are black cod nearer shore but mostly outside the state's three mile zone. I occasionally have caught a few black cod in state waters but the catch of halibut would far exceed the black cod caught. People fishing without halibut quota would be handling far too many halibut to catch a few black cod.

December 22, 2019
Darren Platt (FV Agnes Sabine)
10708 Birch Cir
Kodiak, AK 99615

Alaska Board of Fisheries
Board Support Section
PO Box 115526
Juneau, AK 99811-5526

RE: **Support Proposal 49**

The members of the Alaska Board of Fisheries,

I'm writing in **support of proposal 49**, which is intended to establish a state waters sablefish fishery. Kodiak fishermen desperately need new fishing opportunities. The rationalization of halibut and sablefish deprived subsequent generations of reasonable opportunities to harvest these fish in state waters. Additionally, the recent crash of cod stocks and the unreliability of the salmon industry leaves Kodiak fishermen in a particularly vulnerable position. Establishing a new fishery on strong stocks with an abundance-based quota could be very helpful to struggling fishermen.

I'm a resident of Kodiak and the owner/operator of a 42-foot commercial fishing vessel. I participate in the local salmon, tanner crab, and herring fisheries.

Thank you,
Darren Platt

Eric Taber
owner/operator F/V Kanerva
12/22/2019 12:59 PM AKST

RE: PROPOSAL 49 Create a Kodiak Area commercial sablefish season

The opportunity that this proposal would create is necessary for attract new participants to fishing and keep current ones healthy. This is supportive of small boat fishing, and we need more of that in kodiak. Thank you

Gregory R. Gabriel, Jr.
F/V Miss Michelle
12/23/2019 01:02 PM AKST

RE: PROPOSAL 49 Create a Kodiak Area commercial sablefish season

I support Proposal 49 provided it includes jig gear as a legal gear type and does not impose exclusive or super-exclusive area registration. It is important to provide as many entry level opportunities as possible in the commercial fishing industry. IFQ and Limited Entry created barriers to entry that can be overcome through access to jig opportunity.

Submitted By
Adam Lalich
Submitted On
11/3/2019 7:06:04 AM
Affiliation
f/v YORJIM

Phone
907 359 1332
Email
fishyorjim@gmail.com
Address
box 2583
Homer, Alaska 99603

5AAC 28.005 Propasal 39

I fish in the Western Gulf, Sand point area in the spring, Are quotas are very small and if pot boats go over even smaller, Its a local fleet and a influx of boats, that would be free to move anywhere in the state would shorten are already short state water cod season more so. Every one is a local boat there , except a couple of us but I been there 12 yrs, The jig fleet there needs this and counts on these fish to get thru till salmon.

If anything make it as Kodiak is now, On june 10 drop the exclusive and super exclusive registrations for jig vessels, and a jig vessel will be able to go to different areas and fish freely on uncaught state water quota

Adam Lalich f/v yorjim

Darius Kasprzak
Alaska Jig Association
11/25/2019 12:36 PM AKST

RE: PROPOSAL 39 Exempt vessels using jig gear from exclusive and superexclusive groundfish registration restrictions

Chairman Morisky, and Alaska Board of Fisheries Members: The Alaska Jig Association membership unanimously supports Proposal 39 regarding area registration exemptions for vessels utilizing jig gear in the State waters Pacific cod fisheries. The jig fishery is an entry level fishery, particularly conducive to participation by small boats and single operators. The current registration requirements have resulted in stranded GHL and have also limited the ability of jig fishermen to move seasonally with other fisheries. It is the Alaska Jig Association's position that exempting the jig fleet from exclusive and super-exclusive area registration requirements will be beneficial to the fleet overall, and therefore strongly support Proposal 39. It is expected that more in depth comments will be provided at the Kodiak meeting. Thank you for considering our position on Proposal 39. Darius Kasprzak President, Alaska Jig Association

Darius Kasprzak
Alaska Jig Association
12/26/2019 09:13 PM AKST

RE: PROPOSAL 39 Exempt vessels using jig gear from exclusive and superexclusive groundfish registration restrictions

Chairman Morisky and BOF Members, The Alaska Jig Association (AJA) membership unanimously supports Proposal 39 regarding area registration exemptions for vessels utilizing jig gear in the State waters Pacific cod fisheries. The jig fishery is an entry level fishery, particularly conducive to participation by small boats and single operators. The current registration requirements have contributed to stranded GHL and have also limited the ability of jig fishermen to move seasonally with other fisheries. The Alaskan jig fleet is currently diminished in numbers and beleaguered- due to current cod scarcity in the Gulf of AK. This proposal would allow Jig harvesters to move unencumbered between areas on the Mainland and Kodiak Archipelago. It is the Alaska Jig Association's position that exempting the jig fleet from exclusive and super-exclusive area registration requirements will be beneficial to the jig fleet overall, and therefore strongly support Proposal 39. Thank you for considering our position on Proposal 39. Darius Kasprzak President, AJA

Arthur Schultz
FV Lindsey Marie
12/27/2019 02:09 PM AKST

RE: PROPOSAL 39 Exempt vessels using jig gear from exclusive and superexclusive groundfish registration restrictions

I have authored similar proposals over several BOF cycles and wholeheartedly support this proposal. If you are looking for an explanation for the large amount of unharvested jig quota, here is the main culprit. The jig fishery is supposed to be an entry level fishery, but exclusive registrations have only served to block entry level participation. While the majority of jig boats fish during a brief period before the salmon season, I'm among a small group of jig vessels who have been fishing over an extended season ending in September. Again and again we've seen effort decline in one area as boats switch to salmon before the quota is reached, despite good fishing, while those of us without other opportunities and willing to travel between areas have been blocked. While numbers on a spreadsheet show untouched quota, they do not show all the boats like mine that have been blocked from harvesting that quota. Cod are fickle and highly mobile creatures. When they have shown up in great abundance in certain areas, willing jig harvesters have repeatedly been blocked from harvesting them. Exclusive and super exclusive registration for jig fishing boats has been a cause of intense frustration. It has done nothing except to strand quota. Somewhat perversely, in a previous BOF cycle I even saw a pot boat owner argue to maintain exclusivity because unharvested jig quota worked to his advantage. Affordable entry level opportunities have almost completely disappeared from Alaska, and exclusive registration has only hurt entry level participation.

December 26th 2019

Dear Chairman Morisky and Board of Fish members:

My name is Bob Bowhay and I own and operate the fishing vessel Moondance a 38 ft. combination seiner/crabber. I currently seine for salmon, have fished halibut and tanner crab and have jigged for cod in both Sand Point and Kodiak. I support proposal 39 - exempting vessels using jig gear from exclusive and superexclusive groundfish registration restrictions
. As one of the very few entry level fisheries I feel that the jig fleet shouldn't be restricted to an exclusive and super exclusive groundfish registration requirement. Like all fisheries, the jig fleet has been struggling for the past few years and has lacked the opportunity to follow the cod. The current exclusive and super exclusive groundfish registration requirements are just another gate put in front of one of the few fisheries that offer entry level opportunities.

Thank you for your consideration of my comments regarding my support of Proposal 39.

Sincerely,
Bob Bowhay
M/V Moondance
P.O. Box 192
Kodiak Alaska 99615

Bob Martin

12/27/2019 09:57 PM AKST

RE: PROPOSAL 39 Exempt vessels using jig gear from exclusive and superexclusive groundfish registration restrictions

I support this proposal to exempt jig vessels from exclusive registrations. Cod populations fluctuate from year to year and from area to area. If a vessel registers in an area they may find the stocks have moved, are of low abundance or there is not enough quota to support the fleet. Exclusive registrations restrict vessels from making the area changes necessary to make the fishery viable. They also contribute to "stranded" quota that might otherwise be harvested if the vessels were allowed to change areas. The jig fishery provides an opportunity for young fishermen to enter the commercial industry with the relatively low start up costs. It is important to give them the options and the tools neccessary to be successful. Eliminating the exclusive registration requirements will be an important step in keeping the jig fleet on the water and contributing to the local economies.

Charles and Theresa Peterson
1850 Three Sisters Way
Kodiak, AK 99615

December 27, 2019

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE**: Support for Proposal 39**

Dear Chairman Morisky and Board of Fish members:

We moved to Kodiak in the 1980's to pursue the opportunity for a livelihood in commercial fishing. We found what we were looking for, a chance to make a living off the sea and stayed, raising three children and developing deep relationships in our island home. Kodiak is a community built on fish and the size of the fleet, the processing infrastructure, the support services and the overall health of our coastal community is dependent on sustainable fisheries.

A key aspect of the health of a dedicated fishing community is access to the fishery resource by those looking for a path in. The jig fishery represents one of the few entry level opportunities in commercial fishing around Kodiak Island and beyond. Jig fishing is a suitable fishery for a variety of vessels, from skiffs to larger vessels, and the capital investments for the equipment is relatively low. A vessel can outfit with jig gear for under 5,000 and the permit cost is 75. The jig fishery is labor intensive, with each fish coming over the rail one at a time and often handled in a careful manner to promote quality and increased value.

Proposal 39 seeks to provide increased opportunity for the jig sector with additional flexibility to prosecute the Pacific cod fishery in different areas. The exclusive registration was implemented to limit participation in regions and was responsive to local input to curtail effort. It is now evident that exclusive registration is constraining the diminished entry level jig fishery and every effort should be made to support a viable jig fishery. Proposal 39 would allow a jig vessel to explore different areas and use CPUE and processing options to determine where to fish rather. **We encourage the Board to Support Proposal 39.**

Sincerely,

Charles and Theresa Peterson

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Support for Proposal 39

Dear Chairman Morisky and Board of Fisheries Members,

My name is Chris Johnson and I am a second-generation fisherman in Kodiak, Alaska. I grew up fishing on my dad's boat and got my first crew job working for someone else two weeks after I graduated high school. I haven't missed a salmon season since. I bought into the fishing industry in 2011 with the purchase of a 25-foot jig boat that I worked for two years in the winter and spring months while I still crewed for salmon in the summer. Access to the jig fisheries focusing on cod and rockfish was the only way that I could afford to move into the salmon fleet with a 38-footer in 2013. After the recent cod collapse, I now primarily rely on salmon seining and live here year-round with my wife.

I support this proposal because it would give the jig fleet the tools they need to effectively harvest the jig cod GHL throughout the state. The jig fleet and allocation to the jig sector represents one of the few entry level opportunities in the State of Alaska, and it is critical to maintain this opportunity and support management changes that can lead to increased harvest.

I'm proud to call Kodiak home and am working to protect our fishing way of life.

Sincerely,
Chris Johnson
F/V North Star

Eric Taber
owner/operater F/V Kanerva
12/22/2019 09:31 AM AKST

RE: PROPOSAL 39 Exempt vessels using jig gear from exclusive and superexclusive groundfish registration restrictions

allowing jig vessels such as myself, fish in multiple areas will help catch stranded quotas, and promote a healthier jig fishing fleet. I do travel through multiple cod management areas and have not been allowed to harvest because of the current exclusive registration rules. Removing these rules, will benefit all.

Gregory R. Gabriel, Jr.

11/25/2019 11:11 AM AKST

RE: PROPOSAL 39 Exempt vessels using jig gear from exclusive and superexclusive groundfish registration restrictions

Dear Board Members: Thank you for considering my proposal. I appreciate the BOF adding this proposal to the LCI meeting schedule and I respectfully request this proposal be considered at the Statewide meeting and amended to include the Alaska Peninsula and Chignik management areas. I am submitting a placeholder comment at this time for the LCI meeting and will submit in depth comments for the Kodiak meeting. In a nutshell, the exclusive and super-exclusive registration areas are a solution looking for a problem. There simply is not enough jig gear in the water to warrant these restrictions and the unintended consequences are detrimental to the jig fleet. For example, the quota in Chignik has literally zero participants most years and the quota is given to the pot fleet. The jig fishery is really the only entry level, small boat fishery in the state. I used my jig operation to finance additional halibut quota in IPHC Area 3B. Area 3B encompasses the south end of Kodiak Island, Chignik, and the South Alaska Peninsula. I retain halibut as a bycatch to my jig fishery for Pacific cod. If the federal cod season is closed, I'm unable to fish most of the 3B area in state waters for cod and retain halibut if I've made landings in other areas. If I were to simply jig halibut, I cannot retain Pacific cod above the bycatch limits in place, even though the cod jig season is open. These sort of "handcuffing" regulations on the jig fleet are stifling and detrimental to economic viability. At the same time we are not seeing any benefit. The Chignik quota for example, is routinely rolled over to the pot fleet, removing the GHL from participants from Sand Point and Kodiak who would harvest at least some of the quota if there was not a super-exclusive registration requirement. In light of the potential GOA Pacific cod closure in federal waters, exempting the jig fleet from exclusive and super-exclusive area registration could make the difference between failure and success for some of the participants in the jig fishery. If in the future it appears that a particular area requires regulation to reduce participation, at that time exclusivity may be an option, whether through area registration or limited entry. Thank you for considering my proposal. Gregory R. Gabriel, Jr. F/V Miss Michelle

Gregory R. Gabriel, Jr.
F/V Miss Michelle
12/23/2019 01:44 PM AKST

RE: PROPOSAL 39 Exempt vessels using jig gear from exclusive and superexclusive groundfish registration restrictions

I strongly support this proposal and will be submitting an emergency petition to the Board to not only exempt jig vessels from exclusive and super-exclusive area registration, but to direct the Department to move jig GHL from areas likely to leave stranded GHL to areas that will achieve the jig GHL or to roll the unused jig GHL to the 2021 season. These measures are necessary in light of NMFS Information Bulletin 20-02 which closes the GOA in federal waters to directed fishing for Pacific cod and the seasonal closure of the Trident Seafoods plant in Sand Point in 2020. The jig fleet is an entry level fishery and also an opportunity for diversity to those already participating in other near shore small boat fisheries. In 2019 the South Peninsula jig fleet caught their quota after it was reduced due to pot fishermen over-harvesting the pot quota. After the jig quota was caught, the jig fishery was closed. Meanwhile, the Kodiak jig fleet saw reduced participation and most of the jig GHL rolled over to the pot fleet. There is a strong possibility that the GOA season will again be closed and there will be a reduced or non-existent GHL available for harvest in 2021. Additional opportunity for Black rockfish harvest by the jig fleet could also be made available by removing exclusive and super-exclusive area registration as it pertains to rockfish. The rockfish fishery is only prosecuted with jig gear and does not impact the pot fleet. The bottom line is that the small boat jig fleet in the South Peninsula was forced to stand down when there could have been additional opportunity provided. It is important to point out that subject to vessel length limitations (which should remain unchanged), pot boats can easily convert to jig gear, but jig vessels may not necessarily be able to convert to pot fishing. For example, deck configurations on gillnetters or seiners may not be conducive to stacking or hauling pots. Smaller hydraulic systems and lack of rigging or the cost of investment into pots are all barriers to jig boats participating in the pot fishery. A pot boat merely has to mount jig machines and go fishing to participate in the jig fishery. While the jig fishery provides entry level opportunity and diversification for the local small boat fleets, the economic viability of the jig fleet is stifled by regulations that handcuff jig vessels to particular areas. Cod are migratory and the jig fleet does best on aggregations of fish. When cod are aggregated, the jig fleet is capable of doing quite well as shown by harvests prior to the collapse of the cod stocks. During the 2011-2012 Kodiak GHL jig fishery, harvests approached 1.5 million pounds a week and the GHL was caught in a few weeks. Since then, the jig fleet has been the canary in the coal mine as an indicator of stock decline. The current stock crash began affecting the jig fleet several years before it was noticed by managers and participants in other gear sectors. It is necessary to take strong proactive steps to ensure the economic viability of the jig fleet through this cycle of low cod abundance. Exempting the jig fleet from exclusive and super-exclusive area registration requirements is one step.

My Name is Josh Wisniewski I live in Seldovia Village, my mailing address is PO Box 20 Seldovia, Alaska, 99663.

I support of Lower Cook Inlet subsistence fishing proposals 18, 19, 20

I support Lower Cook Inlet Commercial s salmon hatchery proposals 22, 23, 24, 25, 26, 27

I support other Lower Cook Inlet Commercial Fishing Proposals 29, 31, 34, 39

I am a commercial fishing permit holder. I own a Cook Inlet set net permit and I fish set-net sites in the Barabara subdistrict in Kachemak Bay in the Lower Cook Inlet District. I also commercially fish halibut in Kachemak Bay which is part of Area 3A here in Lower Cook Inlet. Additionally, I participate in Lower Cook Inlet subsistence, fisheries for salmon, halibut rock fish and tanner crab and other shellfish subsistence fisheries.

I am also a cultural anthropologist and completed all of my education here in Alaska, including my Ph.D. in anthropology at the University of Alaska, Fairbanks. I been studying issues related to subsistence and commercial marine harvesting as well as traditional and local ecological knowledge in Alaska and Washington State for over 15 years. I put myself through school in part by commercial fishing here in Lower Cook Inlet and participating in the maritime trades in this area.

I first started participating in Lower Cook Inlet fisheries in 1994 seining for salmon during the summer and set netting after the seining season slowed down as well as halibut fishing. I knew I wanted to be a Kachemak Bay commercial skiff fisherman the first time I walked through homer Harbor, and I knew Seldovia was home the first time I crossed Kachemak Bay. In addition to fishing here I spent two seasons tendering to set net as well as for Lower Cook Inlet seiners operating in Kachemak Bay. I have also participated in commercial and subsistence fisheries in other parts of the state including owning and operating my own salmon troller and participating in herring egg subsistence harvests in Sitka Sound.

Set netting is the oldest continuously operated commercial fishery in Kachemak Bay. It is the lowest impacts and most sustainable fishery in the Lower Cook Inlet fishing district, and contributes directly to the mixed cash/subsistence economy for many Seldovia, Port Graham and Nanwalek families. Our low impact skiff fishery is perfect scaled for Kachemak Bay and is a true artesian wild-salmon fishery with uniquely hung nets, hooks and jiggers for how they are configured when set.

We predominantly harvest wild sockeye that circulate through Kachemak Bay en-route to spawning streams. Additionally, we harvest all other pacific salmon species as well. Our season begins the first of June and following Copper River we harvest some of the first sockeye to be available for fresh markets. Over all the Kachemak Bay set net fishery is fairly small. Typically, the collective Lower Cook Inlet set net harvest is under 30,000 sockeyes annually based on the 10-year average. Despite it's relatively small take our fishery is a true community fishery and is a critical economic contributor for Seldovia, Nanwalek and Port Graham, the three communities that participate in subsistence fisheries in Kachemak Bay. Our commercial set net fishery directly supports local subsistence fisheries, and the economic and socio-cultural well-being of many area families. As a small fishery I believe ADF&G commercial fisheries management here places managerial priority on the larger boat salmon fisheries. In doing so it does not adequately address how management decisions in support of the seine fishery impact the set net fishery.

including habitat for salmon at the head of Tutka Bay and helps maintain the ecological functionality of Tutka Bay without limiting commercial purse seine fishing opportunities in Tutka Bay

In addition to the proposals identified above I also support commercial fishing proposals 27, 29 31 34, 39. **Proposal 27** identifies Halibut cove as critical habitat that is not conducive to commercial hatchery production. This is based on several factors. Itis geographic location in Kachemak Bay State Park, the shallow depth of the lagoon and narrow mouth allowing limited flushing and access, and its role as critical habitat**. Proposal 29** seeks to adjust the boundary for seining in the Rocky Bay subdistrict outward to allow boats to more effectively fish in the subdistrict. I have fished in the Rocky Bay subdistrict I believe this boundary adjustment would support the operations of commercial seine gear targeting Lower Cook Inlet salmon stocks and does not present a conservation issue**. Proposal 31** seeks to adjust boundary to allow for commercial seining on the beach outside of Ursus Cove Lagoon. This would allow for additional fishing opportunities for the Lower Cook Inlet purse seine fleet to target chum salmon returning to a Lower Cook Inlet stream system in the Ursus Cove subdistrict. This boundary adjustment would provide fishing opportunity and present a conservation issue **Proposal 34** seeks to limit the size of purse seines to 150 fathoms in order to limit the harvest of Upper Inlet salmon by the Lower Inlet purse seine fleet and manage the Lower Cook Inlet commercial seine fishery to target Lower Inlet salmon stocks.

Lastly, I wish to emphasize to the Board of Fisheries that as both a small boat commercial fisherman and subsistence harvester I believe that despite the propensity of us fisherman to retreat into our respective gear type camps that all fishermen want the same thing which is a health ecosystem supporting vibrant healthily stocks, the opportunity to fish on them and the assurances these fisheries will be managed to ensure there will be equal opportunities for subsequent generations. All of our fisheries, both wild and hatchery based including, commercial, subsistence, personal use and sport are ultimately dependent upon the health and the integrity of our marine ecosystem. You are all aware that this system is currently undergoing stress and adjustment due to the impacts of climate change and ocean acidification. These realities further mandate that the Board look beyond the politics of fisheries and consider that all fisheries must be appropriately scaled to unique environment and carrying capacity of the setting wherein they take place, and the unique and challenging environmental adjustments our marine environment is experiencing. This I believe should a guiding principle and provide the empirical foundation for management decisions. Marine conservation to support the long-term viability of our fisheries is our collective responsibility as Alaskans.

Thank you for review and consideration of these comments and thank for your service on behalf of all Alaskans.

Darius Kasprzak
Alaska Jig Association
12/27/2019 08:26 PM AKST

RE: PROPOSAL 50 Allow six lines per mechanical jigging machine and six machines per vessel to be operated in the Kodiak Area Pacific cod fishery

Chairman Morisky and BOF members, The Alaska Jig Association (AJA) membership unanimously supports Proposal 50. Adding a 6th jigging machine to the deck of a mid size or large jig vessel, would make this jigging operation more efficient, as a captain and his two crew members could each equally work two machines. Status quo dictates that one fisher in this scenario, is often partially idled, by only having one jig machine with which to work. Increasing efficiency through an additional jigging machine will lead to greater jig sector proficiency, and help to reduce stranded jig GHL quota. Also, many jig machines contain stress- prone mechanical components and complex computer circuitry. It follows that jigging machines are subject to breakdowns, which often require in shop repair after return to port. The option of having an extra legal jigging machine on deck, would help in alleviating jig fishing disruption, due to the often inevitable jigging machine failure. Sincerely, Darius Kasprzak President, AJA

December 26th 2019

Dear Chairman Morisky and Board of Fish members:

My name is Bob Bowhay and I own and operate the fishing vessel Moondance a 38 ft. combination seiner/crabber. I currently seine for salmon, have fished halibut and tanner crab and have jigged for cod in both Sand Point and Kodiak.

I support Proposal 50 (proposal to allow six machines per vessel in the Pacific Cod Fishery) for the following reason. I currently work 4 machines on deck with myself and one crewman (two on deck), adding a 5th machine does not give me that ability to justify a second crewman, but the ability to have six machines would give my operation the opportunity to keep myself and two crewmen busy, working two machines each.

Thank you for the opportunity to provide comment and hope you will understand how supporting this proposal will enhance the productivity of our small jig vessels.

Sincerely,

Bob Bowhay
M/V Moondance
P.O. Box 187
Kodiak Alaska 99615
907-539-6389

Charles and Theresa Peterson
1850 Three Sisters Way
Kodiak, AK 99615

December 26, 2019

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE**: Support for Proposal 50**

Dear Chairman Morisky and Board of Fish members:

We moved to Kodiak in the 1980's to pursue the opportunity for a livelihood in commercial fishing. We found what we were looking for, a chance to make a living off the sea and stayed, raising three children and developing deep relationships in our island home. Kodiak is a community built on fish and the size of the fleet, the processing infrastructure, the support services and the overall health of our coastal community is dependent on sustainable fisheries.

A key aspect of the health of a dedicated fishing community is access to the fishery resource by those looking for a path in. The jig fishery represents one of the few entry level opportunities in commercial fishing around Kodiak Island and beyond. Jig fishing is a suitable fishery for a variety of vessels, from skiffs to larger vessels, and the capital investments for the equipment is relatively low. A vessel can outfit with jig gear for under 5,000 and the permit cost is 75. The jig fishery is labor intensive, with each fish coming over the rail one at a time and often handled in a careful manner to promote quality and increased value.

Proposal 50 seeks to provide increased opportunity for the jig sector with a 6th machine for vessels interested in employing 2 crew. This proposal would provide increased efficiencies, increased employment opportunity and may help alleviate stranded cod in the jig sector.

We encourage the Board to Support Proposal 50.

Sincerely,

Charles and Theresa Peterson

Eric Taber
owner/operator F/V Kanerva
12/22/2019 10:58 AM AKST

RE: PROPOSAL 50 Allow six lines per mechanical jigging machine and six machines per vessel to be operated in the Kodiak Area Pacific cod fishery

As a jig fisherman, having more jig machines on deck and ready to fish, are an advantage, as machines break sometimes and time spent fixing or replacing them is lost fishing time, and during the hot fishing times, a jig boat can carry more crew and stay productive.

Gregory R. Gabriel, Jr.
F/V Miss Michelle
12/23/2019 01:53 PM AKST

RE: PROPOSAL 50 Allow six lines per mechanical jigging machine and six machines per vessel to be operated in the Kodiak Area Pacific cod fishery

I support this proposal as a way to make the jig fleet more efficient and economically viable. Often a jig boat has to travel long distances in order to find an aggregation of fish. Once a boat puts fish on board, there are about two to three days of harvesting before the fish must be delivered to market. Adding an additional jig machine can mean the difference between covering the bait, fuel, food and crew costs and making money, or losing money on the trip. Usually, there are not tenders assisting the jig fleet, and each trip adds or detracts from the bottom line. Allowing harvest of cod and black rockfish on the same trip would also help create economic viability to the jig fleet. As it stands now, a boat jigging cod is limited to bycatch for rockfish, and the same boat jigging rockfish is limited to bycatch on cod, even though both seasons are open.

Darius Kasprzak
Alaska Jig Association
12/27/2019 02:26 PM AKST

RE: PROPOSAL 51 Amend Kodiak Area Pacific cod state-waters guideline harvest level allocation to 40 percent jig gear and 60 percent pot gear, and amend the allocation annually based on harvest levels the previous year

Chairman Morisky and BOF members, The Alaska Jig Association (AJA) membership is adamantly, and unanimously opposed to Proposal 51. The jig fishery is one of the only entry level commercial fisheries left in the state of Alaska. This low capital intensive, low bottom impact, clean and sustainable, entry level fishery utilizing hand tended hook and line- should and must not be negated by reallocation of quota, or other related policy or management actions. As structured, this proposal indicates that the Kodiak State Water jig fleet would immediately suffer loss of quota, and then continue to step down in terms of quota loss during years of poor harvest. The inevitable result is that when the good harvest years resume, the beleaguered jig fleet will then be hamstrung by accumulated quota loss. The jig fleet will unable to capitalize fully on the opportunity of good fishing, and will most likely be marginalized into perpetuity. The pot fleet already, and currently has access to jig quota through fall rollover provisions. Other options exist to address sharing jig quota during poor seasons, other than by penalizing the jig fleet with draconian and crippling permanent reallocation measures. The jig fleet is serious about compromising and finding a middle ground with the pot fleet, and has submitted proposal 54 in order to explore a much fairer option. Sincerely, Darius Kasprzak President, AJA

Arthur Schultz
FV Llindsey Marie
12/27/2019 03:27 PM AKST

RE: PROPOSAL 51 Amend Kodiak Area Pacific cod state-waters guideline harvest level allocation to 40 percent jig gear and 60 percent pot gear, and amend the allocation annually based on harvest levels the previous year

This proposal is based on an artificial premise, that jig vessels were continually unwilling or unable to harvest the Kodiak jig quota. As I look back at previous years' catch reports, I see that many years with unharvested jig quota were also years in which I wanted to move among registration areas. I was blocked by exclusivity rules. The mix of potential state and federal quota meant that I was forced to make an early guess at the best area for me each year. I was wrong about those early season guesses in some years, only to watch in frustration as jig quota sat stranded in other areas. The jig fishery was meant to be an open entry level fishery, but entry level fishermen have been locked out of full participation. There has always been a group of jig fishermen without other opportunities who were perfectly willing to move among areas but blocked from doing so. Note that Proposal 39 is a solution to this problem, and similar proposals have been made to BOF since 2013. Cod stocks have plummeted since 2015, so we are now operating under different conditions. You should note that reallocating quota to pot boats wouldn't have affected the harvest in 2017, since pot boats only harvested half of their initial allocation. In 2019 we see a jig rollover to pot boats. That rollover allowed for the full GHL to be reached. Proposal 39 and the existing rollover provision, when combined, will preserve the entry level opportunity of the jig fishery while eliminating the quota stranding problem of previous years. Proposal 51, a re-allocation of quota to pot boats, is yet another barrier to entry level fishermen in an industry that has already become prohibitively burdensome for new participants. As the 2019 harvest has shown, pot boats can already harvest any jig quota without harming the potential for entry level fishermen.

December 26th 2019

Dear Chairman Morisky and Board of Fish members:

I oppose Proposal 51 because:

1. As a small vessel entry level fishery, weather and the ability to harvest jig quota varies from year to year. To be penalized for the inability to harvest allocated harvest in a given year and to have that number dictate the jig harvest for the following year is unfair.
2. As with any fishery, new entrants into the fishery experience a steep learning curve, and to be penalized with regards to quota for the following year does not make sense. The jig fishery is an important financial step for new entrants, giving them the ability to buy into other fisheries.
3. Leaving cod in the ocean is a long-term win/win for both gear types in future years. Cod are not 'stranded' if not harvested and continue to reproduce.
4. There are other mechanisms in place to harvest stranded cod in the fall season without a permanent reallocation.

Please keep in mind during your deliberations that we have consistently witnessed the demise of our small vessel fleets/fisheries due the lobby of larger vessels and more efficient gear types. Efficiency does not necessarily promote strong fish stocks and fisheries, quite the contrary – efficiency usually promotes the whittling down of our fleets to a few catchers that have been able to manipulate management.

Sincerely,

Bob Bowhay
F/V Moondance
P.O. Box 187
Kodiak Alaska 99615
907-539-6388

Charles and Theresa Peterson
1850 Three Sisters Way
Kodiak, AK 99615

December 26, 2019

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE**: Oppose Proposal 51**

Dear Chairman Morisky and Board of Fish members:

We moved to Kodiak in the 1980's to pursue the opportunity for a livelihood in commercial fishing. We found what we were looking for, a chance to make a living off the sea and stayed, raising three children and developing deep relationships in our island home. Kodiak is a community built on fish and the size of the fleet, the processing infrastructure, the support services and the overall health of our coastal community is dependent on sustainable fisheries.

A key aspect of the health of a dedicated fishing community is access to the fishery resource by those looking for a path in. The jig fishery represents one of the few entry level opportunities in commercial fishing around Kodiak Island and beyond. Jig fishing is a suitable fishery for a variety of vessels, from skiffs to larger vessels, and the capital investments for the equipment is relatively low. A vessel can outfit with jig gear for under 5,000 and the permit cost is 75. The jig fishery is labor intensive, with each fish coming over the rail one at a time and often handled in a careful manner to promote quality and increased value.

Proposal 51 seeks to reduce entry level opportunity in one of the few entry level opportunities left, jigging. The proposal would permanently reallocate a portion of the potential jig harvest and continue to erode the opportunity in the years when the jig sector is unable to harvest the allocation. The resulting scenario would be a diminished harvest opportunity when the conditions were favorable for jig harvest and it would take years to build the jig allocation back. We recognize the need to provide increased harvest for the pot sector when the jig fleet is unable to harvest the jig allocation but believe this can be better accomplished through proposal 54. We are adamantly opposed to proposal 51 as written but willing to work together with the pot sector with hopes of finding common ground.

Sincerely,

Charles and Theresa Peterson

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition for Proposal 51

Dear Chairman Morisky and Board of Fisheries Members,

My name is Chris Johnson and I am a second-generation fisherman in Kodiak, Alaska. I grew up fishing on my dad's boat and got my first crew job working for someone else two weeks after I graduated high school. I haven't missed a salmon season since. I bought into the fishing industry in 2011 with the purchase of a 25-foot jig boat that I worked for two years in the winter and spring months while I still crewed for salmon in the summer. Access to the jig fisheries focusing on cod and rockfish was the only way that I could afford to move into the salmon fleet with a 38-footer in 2013. After the recent cod collapse, I now primarily rely on salmon seining and jigging rockfish and live here year-round with my wife.

I strongly oppose this proposal for several reasons. The jig fishery represents critical entry-level opportunity and no management or policy decisions should diminish this. Rollovers from the jig fleet already exist and currently provide a mechanism to harvest "stranded cod" in the fall season for pot fishermen. There should be absolutely no changes to allocation structures during crisis points such that we are experiencing with cod. Please do not accept proposals from the pot cod sector to take away from the jig fleet in the Kodiak region, or elsewhere.

Taking away any fishing opportunity from Kodiak fishermen, particularly from the small boat fleet, would have a direct negative impact on new entrants trying to gain a foothold in this industry, fishing families trying to get by, and fishing support businesses in our region. I'm proud to call Kodiak home and am working to protect our fishing way of life. I'm proud to call Kodiak home and am working to protect our fishing way of life.

Sincerely,
Chris Johnson
F/V North Star

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 51

Dear Chairman Morisky and Board of Fisheries Members,

My name is Danielle Ringer and I appreciate the opportunity to comment on proposals before the Board in writing and in person for the Kodiak finfish meeting. I live in Kodiak with my husband and we own and operate the 38-foot F/V North Star. We chiefly rely on salmon seining and cod and rockfish jigging to maintain our fishing way of life and ability to live on Kodiak Island. I grew up in Homer learning to harvest and process fish from my parents in Kachemak Bay and dipnetting on the Kenai River. I hold a Master's degree from the University of Alaska Fairbanks in Political Ecology of Fisheries and was one of the researchers on the *Graying of the Fleet in Alaska's Fisheries: Defining the Problem and Assessing Alternatives* study in the Kodiak region.

I strongly oppose this proposal for several reasons. The jig fishery represents critical entry-level opportunity and no management or policy decisions should diminish this. Rollovers from the jig fleet already exist and currently provide a mechanism to harvest "stranded cod" in the fall season for pot fishermen. There should be absolutely no changes to allocation structures during crisis points such that we are experiencing with cod. Please do not accept proposals from the pot cod sector to take away from the jig fleet in the Kodiak region, or elsewhere.

I see no biological, scientific, historical, economic, nor sociocultural reasons that could justify the Board slicing away at what is held up as a critically important entry point into the fishing industry for young people. Thank you for your consideration of my comments and I look forward Board of Fisheries members spending time in our fishing community during the Kodiak meeting.

I humbly and strongly request the Board to reject this proposal.

Respectfully,
Danielle Ringer, M.A.
F/V North Star

Eric Taber
owner/operator F/V Kanerva
12/22/2019 12:43 PM AKST

RE: PROPOSAL 51 Amend Kodiak Area Pacific cod state-waters guideline harvest level allocation to 40 percent jig gear and 60 percent pot gear, and amend the allocation annually based on harvest levels the previous year

I am jig fisherman, I was able to go into debt and buy a boat based on the 50% cod allocation to the jig sector. I had some very productive jig seasons and needed every bit of the current allocation to pay off my boat, buy halibut quota and convert my boat to salmon tender, none of this could have been possible if the jig allocation was at 20% as this proposal could make it to be. There already exists a mechanism for fish and game to fairly manage the fishery, so cod is not stranded. I support the current process of management. A small boat fishery is essential to attract new entrants to fishing, and the cod jig fishery is the only one left that can give people like me the opportunity to progress in the fishing world. Keep the hope alive and support the kodiak community and healthy fishing opportunity. Thank you

Eric Taber
owner/operator F/V Kanerva
12/22/2019 02:25 PM AKST

RE: PROPOSAL 51 Amend Kodiak Area Pacific cod state-waters guideline harvest level allocation to 40 percent jig gear and 60 percent pot gear, and amend the allocation annually based on harvest levels the previous year

I oppose proposal 51. I am a jig fisherman, I was able to get a boat, pay for it and buy halibut quota, and convert my boat to a salmon tender, because of the 50% cod allocation to the jig sector. I needed every bit of that quota on the good years, when we harvested that quota. if that quota was at 20% like this proposal could set it at, I and many others would not have gotten as far as we did. It is the last entry level fishery left, it attracts new participants into the fishery, and keeps Kodiak a healthy fishing community. A mechanism already exists for the cod to be harvested, fish and game has been fair to both gear types and no change is necessary. this small boat fishery is good for all, it provides a better way to manage cod, pot fishing stops during the cod spawn, and those fish set aside for the jig fleet can reproduce, before getting caught. That maybe the reason why the pot fleet enjoys success every year. We don't need to make changes in the fishery, especially with the cod disaster we are having. Thank you

Gregory R. Gabriel, Jr.
F/V Miss Michelle
12/23/2019 01:58 PM AKST

RE: PROPOSAL 51 Amend Kodiak Area Pacific cod state-waters guideline harvest level allocation to 40 percent jig gear and 60 percent pot gear, and amend the allocation annually based on harvest levels the previous year

In light of NMFS Information Bulletin 20-02 closing the GOA to directed fishing for Pacific cod the Board should take no action on this proposal. The future of the jig fishery is uncertain at this time looking towards 2021 and beyond due to low cod abundance and reallocation to the pot fleet is not justified. A pot boat can easily convert to jig fishing by adding jig machines. However, a jig boat for a variety of reasons, including cost and deck configurations cannot easily convert to pot fishing.

has cautioned jig vessels to get as much cod fishing in as possible before the pot fishery opens, due to the likelihood of exceeding the pot GHL and closing the fishery for the year.

Reallocation also sets the stage for limited entry by the pot fleet. Any jig allocation lost to the pot sector through reallocation and step down provisions will be locked up, and any chance for the jig gear allocation to step back up would be lost if the pot gear fishery were to become limited entry.

Seiners, longliners, gillnetters, and pot fishermen have all participated in the Kodiak jig fishery throughout the years. Jigging cod has been a great opportunity for many local fishermen to fire up their vessels, shake the winter cobwebs off, and make some money before the salmon season starts. For others, a way to make some extra money or keep their crews busy until the next fishery. And for many of us it was the beginning of vessel ownership and a career running our own vessels.

This is what makes the jig fishery so unique and why protecting it and the current allocation is so important. I hope the Board will continue to provide open access opportunities for future entrants into Alaska's commercial fisheries by protecting the current Kodiak Area Pacific cod jig gear allocation.

I respectfully request the Board to **reject proposal 51,** and thank you for the opportunity to comment.

Sincerely,

Leonard Carpenter

Leonard Carpenter
Box 1970
Kodiak, Ak. 99615

12/25/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Proposal 51

Dear Chairman Morisky and Board of Fish members:

My name is Leonard Carpenter. My family and I own the F/V Fish Tale and have participated in the Kodiak Area cod jig fishery for two decades. I am submitting written comment today on behalf of myself and my family.

We feel very strongly about the importance of the Kodiak Area jig fishery and the opportunities it provides to new entrants coming into Alaska's fisheries. **We do not support Proposal 51,** or any other form of reallocation between the pot and jig sectors.

Proposal 51 fails to solve the problem of any unharvested jig gear GHL being **harvested during the year it is allocated**. Even with a 10% reallocation and step down provisions, that year's unharvested GHL still remains lost to the community year after year.

Given the uncertain future of cod it is premature to consider any changes to gear allocations. Current inseason roll-over provisions afford pot vessel the opportunity to fish on unharvested jig GHL, but have been preempted by the federal 'B' season since the Stellar sea lion protection measures were implemented in 2003. Prior to that unharvested jig GHL was reopened to pot gear on September 1. With the likelihood of no federal fishery in the foreseeable future, unharvested jig GHL will once again be available for pot gear in the fall. Also, with the environmental changes we have experienced over the last few years, no gear type in the federal or state cod fisheries have been immune to stranded fish. Even the pot sector failed to harvest their Kodiak Area state waters GHL in 2017.

Of particular concern is that small pot GHL's are extremely hard for ADFG staff to manage, and as the pot fishery historically closes before the jig gear GHL is taken, any harvest exceeding the pot GHL is taken out of the jig GHL. This has occurred in Kodiak in the past and the South Alaska Peninsula this year, costing jig fishermen hundreds of thousands of dollars in lost revenue. Timing of closure announcements are critical and the difference of a few hours could wipe out the entire jig GHL for the year, effectively closing our season before it even opens. ADFG staff has even expressed that concern for the 2020 season in South Alaska Peninsula, and

Eric Taber
owner/operator F/V Kanerva
12/22/2019 01:29 PM AKST

RE: PROPOSAL 52 Increase the guideline harvest level (GHL) for Pacific cod in the Kodiak Area to 17.5 percent of the estimated total allowable harvest of Pacific cod in the Central Gulf of Alaska Area and increase the pot gear allocation of the GHL to 65 percent

I am a cod jig fisherman, this proposal is going down the road to overfishing. We are currently experiencing a cod disaster, and the need to conserve is paramount. This is not the time to increase harvest percentages. Perhaps the reason why the pot fleet enjoys a quick, productive cod harvest is because of the current harvest levels, that and the 50% cod allocation set aside for the jig fleet, stops the pot fleet from fishing during the entire spawn season, allowing more cod to enter the environment. The 50% cod allocation is a great strategy to conserve the resource. this is not the time to make any changes in the cod fishery. no need to find the boundary on the over harvest levels. Thank you.

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition for Proposal 53

Dear Chairman Morisky and Board of Fisheries Members,

My name is Chris Johnson and I am a second-generation fisherman in Kodiak, Alaska. I grew up fishing on my dad's boat and got my first crew job working for someone else two weeks after I graduated high school. I haven't missed a salmon season since. I bought into the fishing industry in 2011 with the purchase of a 25-foot jig boat that I worked for two years in the winter and spring months while I still crewed for salmon in the summer. Access to the jig fisheries focusing on cod and rockfish was the only way that I could afford to move into the salmon fleet with a 38-footer in 2013. After the recent cod collapse, I now primarily rely on salmon seining and jigging rockfish and live here year-round with my wife.

The way I read this proposal the thesis does not seem ecologically sustainable – that the pot fleet would be able to go after any unharvested Kodiak area state waters Pacific cod jig quota the *following calendar year.* This does not seem plausible as it would not be additive the following season and would have to be taken from somewhere, from jig fishermen, to make sure GHL sustainability limits are met. Fish stocks naturally fluctuate and an inter-annual rollover on a low abundance year would make overfishing inevitable. It just doesn't make sense. Furthermore, during a time of cod collapse and the closure of the federal fishery for 2020 it means that every single propagating cod left in the water helps to rebuild and sustain the stock. Therefore, I do not accept the argument that "stranded quota" in this time of crisis and uncertainty is a credible reason to make this kind of change. If this proposal were to be successful, I believe it could actually cause long-term negative impacts to the community of Kodiak and industry as a whole that has a strong reliance on cod.

Taking away any fishing opportunity from Kodiak fishermen, particularly from the small boat fleet, would have a direct negative impact on new entrants trying to gain a foothold in this industry, fishing families trying to get by, and fishing support businesses in our region. I'm proud to call Kodiak home and am working to protect our fishing way of life. I'm proud to call Kodiak home and am working to protect our fishing way of life.

Sincerely,
Chris Johnson
F/V North Star

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 53

Dear Chairman Morisky and Board of Fisheries Members,

My name is Danielle Ringer and I appreciate the opportunity to comment on proposals before the Board in writing and in person for the Kodiak finfish meeting. I live in Kodiak with my husband and we own and operate the 38-foot F/V North Star. We chiefly rely on salmon seining and cod and rockfish jigging to maintain our fishing way of life and ability to live on Kodiak Island. I grew up in Homer learning to harvest and process fish from my parents in Kachemak Bay and dipnetting on the Kenai River. I hold a Master's degree from the University of Alaska Fairbanks in Political Ecology of Fisheries and was one of the researchers on the *Graying of the Fleet in Alaska's Fisheries: Defining the Problem and Assessing Alternatives* study in the Kodiak region.

The way I read this proposal the thesis does not seem ecologically sustainable – that the pot fleet would be able to go after any unharvested Kodiak area state waters Pacific cod jig quota the *following calendar year.* This does not seem plausible as it would not be additive the following season and would have to be taken from somewhere, from jig fishermen, to make sure GHL sustainability limits are met. Fish stocks naturally fluctuate and an inter-annual rollover on a low abundance year would make overfishing inevitable. It just doesn't make sense. Furthermore, during a time of cod collapse and the closure of the federal fishery for 2020 it means that every single propagating cod left in the water helps to rebuild and sustain the stock. Therefore I do not accept the argument that "stranded quota" in this time of crisis and uncertainty is a credible reason to make this kind of change. If this proposal were to be successful, I believe it could actually cause long-term negative impacts to the community of Kodiak and industry as a whole that has a strong reliance on cod.

I see no biological, scientific, historical, economic, nor sociocultural reasons that could justify the Board making any changes between Kodiak Area state waters Pacific cod jig and pot gear quota. Thank you for your consideration of my comments and I look forward Board of Fisheries members spending time in our fishing community during the Kodiak meeting.

I humbly and strongly request the Board to reject this proposal.

Respectfully,
Danielle Ringer, M.A.
F/V North Star

Eric Taber
owner/operator F/V Kanerva
12/22/2019 01:11 PM AKST

RE: PROPOSAL 53 Add unharvested Kodiak Area state-waters Pacific cod jig gear quota to the pot gear allocation the following calendar year

As a commercial fisherman that relies on a healthy cod resource for survival, cannot agree with this pattern of overfishing. Its fine to leave cod in the water, as a conservation effort. Cod, like a lot of other species cod are overfished. Especially, with dramatic changes from year to year, we cannot apply previous years science to establish a current harvest level, this is irresponsible management. Its ok to more fish in the water, once they get overfished, its too late and everyone suffers for years. Thank you

Gregory R. Gabriel, Jr.
F/V Miss Michelle
12/23/2019 02:03 PM AKST

RE: PROPOSAL 53 Add unharvested Kodiak Area state-waters Pacific cod jig gear quota to the pot gear allocation the following calendar year

The current status of cod stocks and the closure of the GOA to directed fishing for cod indicate a fishery on the verge of collapse. The jig fishery is a small boat, entry level fishery and any unharvested GHL should roll over to the JIG fleet for 2021 and NOT the pot fleet. Pot boats can participate in the jig fishery, but not vice versa.

Gregory R. Gabriel, Jr.
F/V Miss Michelle
12/23/2019 02:07 PM AKST

RE: PROPOSAL 54 Open a Kodiak Area commercial pot gear Pacific cod fishery on May 8 for half of the remaining jig gear allocation

Although well meaning, this proposal was generated prior to NMFS IB 20-02 which closes the GOA to directed cod fishing. Jig GHL should be held by the jig fleet and rolled over to 2021 in the event of another federal closure or reduced GHL.

Tollef Monson

12/25/2019 06:33 PM AKST

RE: PROPOSAL 54 Open a Kodiak Area commercial pot gear Pacific cod fishery on May 8 for half of the remaining jig gear allocation

This would take away the very smallest boats opportunity to make money and give it to larger pot fishing boats. I was a crewman on a jig boat that caught 20k lbs on May 20th and it saved the season. Thank you,

Darius Kasprzak
Alaska Jig Association
12/27/2019 07:50 PM AKST

RE: PROPOSAL 54 Open a Kodiak Area commercial pot gear Pacific cod fishery on May 8 for half of the remaining jig gear allocation

Chairman Morisky and BOF members, The Alaska Jig Association (AJA) has authored Proposal 54 in order to address stranded Pacific cod GHL in the jig sector during lean seasons of low inshore biomass, while providing additional harvesting ability to the pot sector. Our membership stands unanimously opposed to any kind of permanent reallocation of GHL, as the jig sector represents low capital and entry level opportunity, for the next generation and beyond. This action would not result in permanent reallocation. It would instead provide an immediate trigger, on an annual basis, to provide substantial additional harvest opportunity to the pot sector. The department would have the flexibility and ability, to determine whether an early inseason rollover to the pot fleet is warranted, based on the current year's level of Jig effort and harvest. This proposal represents a good faith effort to share jig GHL with the pot sector; without crippling the jig fleet through draconian and permanent reallocation. This proposal specifies a May 8 GHL rollover date to the pot fleet, depending on the department's judgement call and direction. May 8 is a starting place for discussion about a best compromise rollover date consisting of half of the jig GHL quota, and it may be possible to further compromise with the pot fleet by adjusting this inseason rollover date through the BOF meeting committee procedures. Thank you sincerely for your consideration of our proposal, Darius Kasprzak President, AJA

Arthur Schultz
FV Lindsey Marie
12/27/2019 04:05 PM AKST

RE: PROPOSAL 54 Open a Kodiak Area commercial pot gear Pacific cod fishery on May 8 for half of the remaining jig gear allocation

I support the Alaska Jig Association's proposal to allow a partial rollover of jig quota to pot boats in May. As a long time jig fisherman I'm acutely aware of the various problems that have led to jig quota being stranded in previous years. Many of the problems have been entirely artificial regulatory issues. Please note that Proposal 39 (if adopted) and the recently enacted rollover provision to allow pot harvest of jig quota after a certain date serve to remove the artificial barriers that have prevented the full harvest of jig quota. Regardless of the regulatory hurdles, all jig fishermen understand that there are certain times when fish have not been available to the jig fishery. They may be too widely dispersed, absent, or simply not in a mood to bite a hook. Proposal 54 seeks to address this potential for stranded quota by releasing it to other gear types (pots) at an earlier date than the current rollover provision, while preserving the benefits of an open entry level fishery. This flexibility has a history in the jig fishery, though sadly not at the state level. Oddly, our one "state entry level" fishery has actually been sustained through the flexibility of federal quota managers. While fishing with a group of small jig boats in the western gulf, once the exclusive state fishery closed, we could take advantage of excellent fishing conditions and the flexibility of federal managers who simply moved stranded quota from one federal fishery to another. There have been proposals since 2013 to drop exclusivity in state jig registrations. Exclusivity strands jig quota. The lack of adequate rollover provisions has also stranded quota. I have seen that federal managers can reduce stranded quota when given the flexibility to use their discretion in small re-allocations, and I support giving the same flexibility to ADF&G.

December 26th 2019

Dear Chairman Morisky and Board of Fish members:

My name is Bob Bowhay and I own and operate the fishing vessel Moondance a 38 ft. combination seiner/crabber. I currently seine for salmon, have fished halibut and tanner crab and have jigged for cod in both Sand Point and Kodiak.

I support Proposal 54 for the following reasons:

1. In contrast to Proposal 51 which I oppose, Proposal 54 would NOT create a permanent reallocation scheme for the Jig sector, but would provide for an immediate method to reallocate cod to the Pot sector on an annual basis, and not penalizing the jig fleet for future cod harvests.
2. The jig sector in good faith wants to work with the pot sector and understands their concern of leaving cod 'stranded' in the ocean that should be available to them for harvest. This proposal would provide a compromise allowing for additional cod harvest by the pot sector if warranted as well as a starting point for further discussion regarding the equitable harvest by both gear types.

Thank you for your consideration of my comments.

Sincerely,

Bob Bowhay

Charles and Theresa Peterson
1850 Three Sisters Way
Kodiak, AK 99615

December 26, 2019

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE**: Support Proposal 54**

Dear Chairman Morisky and Board of Fish members:

We moved to Kodiak in the 1980's to pursue the opportunity for a livelihood in commercial fishing. We found what we were looking for, a chance to make a living off the sea and stayed, raising three children and developing deep relationships in our island home. Kodiak is a community built on fish and the size of the fleet, the processing infrastructure, the support services and the overall health of our coastal community is dependent on sustainable fisheries.

A key aspect of the health of a dedicated fishing community is access to the fishery resource by those looking for a path in. The jig fishery represents one of the few entry level opportunities in commercial fishing around Kodiak Island and beyond. Jig fishing is a suitable fishery for a variety of vessels, from skiffs to larger vessels, and the capital investments for the equipment is relatively low. A vessel can outfit with jig gear for under 5,000 and the permit cost is 75. The jig fishery is labor intensive, with each fish coming over the rail one at a time and often handled in a careful manner to promote quality and increased value.

Proposal 54 was submitted by the members of the jig sector to provide access to the jig allocation to the pot sector on an annual basis when it is determined the jig fleet will not be able to catch the fish. The action seeks to provide harvest opportunity on an immediate basis to the pot sector but does not result in a permanent reallocation and diminished entry level opportunity to the jig fleet. Pacific cod is a valuable species to our coastal communities, and it is important to provide harvest opportunity between sectors when needed. This proposal is structured to use the expertise of area managers to consider the level of participation and CPUE in the jig fleet and roll quota to the pot cod sector in the Spring. There has been quite a lot of discussion in the Kodiak community in regards to the date identified in the proposal, May 8th, as being too late to realistically provide harvest opportunity to the pot sector. We are willing to talk about a date that works and hope the jig and pot sector can work together on the cod proposals. Given the current status of Pacific cod stocks in the Gulf of Alaska, if a compromise position cannot be reached at this meeting there will be time to work it out.

Sincerely,

Charles and Theresa Peterson

Eric Taber
owner/operator F/V kanerva
12/22/2019 10:51 AM AKST

RE: PROPOSAL 54 Open a Kodiak Area commercial pot gear Pacific cod fishery on May 8 for half of the remaining jig gear allocation

I am a jig fisherman, and sometimes conditions make difficult for the jig fleet to harvest all of the jig quota. currently, fish and game rolls the remaining unharvested jig quota to the pot fishing fleet after federal B season is harvested, that season begins in september. under this proposal, potentially stranded cod can be harvested earlier than the fall fishery.

Leonard Carpenter
Box 1970
Kodiak, Ak. 99615

12/25/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Support Proposal 54

Dear Chairman Morisky and Board of Fish members:

My name is Leonard Carpenter. My family and I own the F/V Fish Tale and have participated in the Kodiak Area cod jig fishery for two decades. I am submitting written comment today on behalf of myself and my family.

When we bought our vessel over twenty years ago, it was on a wing and a prayer. Formerly a Cook Inlet gillnetter and ill equipped for most of Kodiak's fisheries, it represented a huge opportunity for us, and harvesting cod with jig gear was the first fishery we participated in as new vessel owners.

It allowed us the opportunity to access a fishery, where very little capital investment is required, and diversify our operations from there. It has been the springboard that has allowed us to rig our vessel to seine, fish crab, longline cod and halibut. It has allowed us to buy a home and raise our family in Kodiak. We owe everything to the Kodiak cod jig fishery, for it was our start, and it is the very reason I am writing this today.

So as I think of the Kodiak fishing fleet, and the men and women that work the water, I see the faces of many that started their fishing careers on the back deck. Men and women that gained experience and confidence as deckhands, and later went on to buy their own fishing vessels. Many of them also started out as jig fishermen, some plotting this course well before us, while others have followed in our wake, often times a decade or more later.

It truly is a powerful testament to the importance of the jig fishery, that for over two decades it has provided entry level access to Alaska's fisheries, and has been a vital stepping stone from the back deck to vessel ownership and the wheelhouse.

That is why we feel this fishery is so important and worth protecting. This is why we **support Proposal 54** as an alternative to any reallocation.

Proposal 54 allows management the ability to make remaining jig GHL available to pot gear **inseason**, if catch rates and effort indicate the jig GHL will not be fully harvested. It also gives

Kodiak fishermen the opportunity to harvest the fish **during the current year**, opportunity and revenue that would otherwise be lost forever.

Give Fish and Game the tools they need to manage this fishery in-season again, for the maximum benefit of all gear types and our community.

Protect our jig gear GHL allocation from erosion by reallocation and step down provisions, and continue to provide entry level opportunities to new entrants into Alaska's fisheries.

I respectfully request the Board to **approve proposal 54,** and thank you for the opportunity to comment.

Sincerely,

Leonard Carpenter

Robert Fellows

266 E Bayview Ave.

Homer, AK. 99603

Alaska Board of Fisheries

Board Support Section

PO Box 115526

Juneau, Ak. 99811-5526

RE: Support proposal 55

Dear Chairman Morisky and Board of Fisheries members,

I have been commercial fishing for sac roe herring in the Kodiak area for over 20 years. In the past this fishery was an important part of my yearly fishing operation. Recently, I have not participated in this fishery because the marketable size fish have been spawning prior to the opening date. Over time a greater part of the spawning biomass of herring in the Kodiak area have been arriving to spawn prior to the April 15 opening date. By giving the department the ability to move the opening date forward or emergency order authority to open the fishery, these marketable, older age class fish could be harvested. I respectfully request that the Board support proposal #55.

Sincerely,

Robert Fellows

Chris Perry

11/25/2019 10:22 PM AKST

RE: PROPOSAL 44 Amend the Kamishak Bay District Herring Management Plan to remove restrictions to the Shelikof Strait food and bait herring fishery

Please oppose the proposal. This would allow a fishery on a stock that is in recovery and with little regard for a potentially different biomass.

Excerpted for proposal 44

J6: PROPOSAL 44 Amend the Kamishak Bay District Herring Management Plan to remove restrictions to the Shelikof Strait food and bait herring fishery

Name Cook Inlet Seiners Association

P.O. Box 130

Homer, Ak 99603

Organization - Cook Inlet Seiners Association

Email Address - cookinletseiners@gmail.com

Position - Oppose

Comment

The herring in Kamishak bay have been known to spend winters in upper Shelikof strait. The Kamishak bay herring fishery has not been opened recently due to low abundance. Allowing fishing on these stocks could hamper the recovery of this already diminished stock.

Sincerely

Cook Inlet Seiners Association

Steve Beard
Golden Pisces, Inc.
12/26/2019 09:12 AM AKST

RE: PROPOSAL 283 Modify the Aleutian Islands Subdistrict Pacific cod state-waters season dates to open the fishery west of 170° W long for Pacific cod

Mr. Chairman, Members of the board,My name is Steve Beard and I operate the Golden Pisces, a 98 foot trawler that has participated in the BSAI state cod fishery since its inception in 2006 excluding a few years when there was no available market. This fishery is part of our winter fishing plan and we've invested heavily in the necessary gear and become quite dependent on it. Regardless of our length we are bound to the 150,000 lb. daily limit like all participants. It's very important to understand that we cannot compete with pot vessels in February, we don't use bait and the fish don't school up inside three miles until the first week of March. I've spent several partial February's in the aleutians with little or no production and now we don't even attempt it till March first. RC-050 states that 20 trawlers have participated in the fishery over the years and that's probably correct, in 2019 there were 4 trawlers, only 2 over sixty foot. There really isn't that much interest in this hit and miss fishery as most trawlers are harvesting there pollack in February and March. I strongly oppose proposal 283 and ask you to consider as history as you study this proposal that would remove us from the fishery as more than likely the season will be closed by mid March. I see no benefit to the community of Adak by changing our start date to March 15th and I would think Golden Harvest Seafoods would welcome trawl caught cod for a steadier offload flow. A March first start date would be more reasonable, thank you, Steve Beard, Captain, F//V Golden Pisces, 12/26/2019

Dear Mr Chairman and Board Members,

My Name is Abby Duffy and I am writing as a representative of the F/V Miss Leona, a vessel on which I am also a crew member. The Miss Leona is an 86 foot trawler which is only 22 foot wide with a very low profile. She is dwarfed by some of the Super8 fishing vessels, making her a relatively small vessel caught in the bureaucratic category of large vessels. The Miss Leona is an owner/operator vessel which has, at times, up to 3 generations of family working side by side on the vessel: Omar Allinson, owner and semi-retired captain; son, Chris Allinson, Captain; and grandson Kameron Allinson, who at 20 years old, and deckhand since the age of 15, is eager to follow in the family traditions. The vessel has fished in Alaska since 1974, has a year round slip in Kodiak, and does most maintenance and repair work in Kodiak and Dutch Harbor.

The Miss Leona is a fishing vessel that is dependent on cod and supportive of the shoreside community of Adak. Since the inception of the fishery in 2006, the vessel has fished in the Aleutian Islands whenever a land based cannery has been available to which to deliver fish. The only exception to this was in 2019, when the vessel missed the winter and spring cod fishing due to repair work needed as a result of a rogue wave (repair work which was done in Dutch Harbor). The Miss Leona, by way of fishing in the Aleutian Islands and delivering only to shoreside canneries in Adak, has been supporting the community of Adak. The vessel has further committed to supporting both itself and the Adak community by investing heavily in gear specific to Aleutian Islands fishing.

Early March is a very important time in the Aleutian Islands cod fishery for trawlers to be on the grounds. It is well known by those fishing in the Aleutian Islands that the cod do not aggregate until the first weeks in March. As a fishing plan and a conservation tactic, trawlers also know that fishing prior to aggregation is not desirable as it causes unnecessary expenses, wear and tear on gear, and perhaps most importantly, can result in unnecessary bycatch. Setting the start date of the fishery to March 15th will cause the Miss Leona to miss those important early weeks in March and has the potential to cause the fleet to miss the entire season if all quota is caught by the under 60 foot fleet prior to March 15th. Since fixed gear can draw the fish using bait and are not dependent on timing their fishery with the natural cycles of the fish. As such, the under 60 foot fleet has ample time to fish, prior to aggregation, without the perceived competition of the over 60 foot trawl fleet.

Important to note, the vessels targeted to be delayed in their fishing activities by this motion, i.e. the over 60 foot trawl fleet, are not anymore of a competition to the under 60 foot fleet than the under 60 foot boats are to each other. All vessels, regardless of length are limited to a 150,000 lb trip catch limit. Given that the state waters are open access, in effect, there is no difference between adding in the few over 60 foot vessels or adding in a few more under 60 foot vessels. Important to note, also, is that trawlers under 60 foot are included in the regulations pertaining to the under 60 foot fleet. Taken together, this shows that the motion is neither addressing issues of catch capacity nor gear type, but rather simply of boat size.

The Miss Leona is sympathetic to aims of the Board of Fish in attempting to support the self made fishermen by supporting the under 60 foot fleet. Being a family run, owner operated vessel, which supports local communities, the Miss Leona exhibits exactly those characteristics that the Board of Fish is trying to support in the under 60 foot fleet. By opting for this motion, the Board will have a direct negative impact on the fishing plan of the Miss Leona, and thus will have a direct negative impact on the survivability of the three generation, family-run, owner operator vessel, on the family that works the vessel, and on the dedicated crew employed by the vessel.

Thank you for considering these points and for considering the wellbeing of all crews and captains of the Aleutian Islands cod fishery in making your final decision.

Sincerely,

Abigail Duffy

RC0050

Submitted by Adak Community Development Corporation 12/12/2019

Request for a Board Generated Proposal for consideration at the January Kodiak meeting

The Problem

The AI GHL fishery opens January 1st in the Adak Section (175 to 178 – "the box") to vessels <60'. The GHL fishery in all AI state waters has begun either on March 15th or four days following the closure of the BSAI trawl fishery (which has generally occurred in the month of March).

In 2019 all AI statewaters opened March 15th. Upon the date of the all AI statewaters opening, the 60' size limit expires and is replaced by a <125' pot vessel limit and <100' trawl vessel limit in all AI statewaters.

It is projected that the BSAI A season closure will likely occur by sometime in the 1st week of February. This will result in the loss of approximately one month of priority access for <60' cod vessels.

There are at least 20 CV trawl vessels >60' and <100' that have participated in the AI cod GHL fishery at some point in the past and many more that could. There are at least 100 pot vessels >60' and <125' that could participate.

As a result the <60' vessels will be forced to race against vessels up to twice their size, creating safety concerns. Early entry by >60' vessels will compress the season into a dangerous, wasteful derby which undermines the ability to maximize product value, while contributing to the destabilization of AI communities.

The solution(s)

Our preferred solution would be for the Board of Fish to recommend to the ADFG Commissioner to use the authority in 5 AAC 28.647.(e) to set a fixed start date in 5 AAC 28.647.(c) of no earlier than March 15th for the GHL cod fishery in all AI statewaters.

> (e) The commissioner may open and close, by emergency order, fishing seasons at times other than those specified in this section if the commissioner determines it is necessary to
> (1) adapt to unanticipated openings and closures of federal seasons;
> (2) provide for maximum fishing opportunity;
> (3) maintain sustained yield management; or
> (4) provide for orderly fisheries.

An alternate process for achieving our preferred solution in a timely manner for the 2020 A season, would be for the Board to generate a proposal, scheduled for action at the January meeting in Kodiak, to set a fixed start date in 5 AAC 28.647.(c) of no earlier than March 15th for the GHL cod fishery in all AI statewaters.

Motion Language for Board Generated Proposal to modify 5 AAC 28.647.(c) start date.

(Based on RC 52 Submitted by Adak Community Development Corporation 12/12/2019)

"Move that the Board generate a proposal for consideration at the Kodiak meeting (January 11-14, 2020). The proposal is to modify the start date of the AIS state-water cod fishery in paragraph (c)(2) of 5 AAC 28.647, by striking the bracketed text and inserting the underlined bold text, as shown below:"

(c) The commissioner shall open and close, by emergency order, a state-waters season in the Aleutian Islands Subdistrict as follows:

(1) the Adak Section shall open January 1;

(2) all waters of the Aleutian Islands Subdistrict shall open as follows:

~~[(A) four days after the Bering Sea and Aleutian Islands parallel "A" season for the catcher-vessel trawl fishery is closed or four days after the federal Aleutian Islands Subarea non-CDQ season is closed, whichever is earlier; or~~
~~(B) if the state-waters season has not opened under (A) of this paragraph by~~]
on or before March 14, the commissioner will close, by emergency order, the parallel "A" season for the catcher-vessel trawl fishery [~~at 12:00 noon March 14~~] and open, by emergency order, the state-waters season at 12:00 noon March 15;

(3) the commissioner shall close, by emergency order, the state-waters season when the guideline harvest level is taken or on December 31, whichever occurs first; except as otherwise specified in this chapter, all parallel Pacific cod seasons are closed during the state-waters season.

Adak Community Development Corporation

December 26th, 2019

ADF&G Board of Fisheries
P.O. Box 115526
Juneau, AK 99811-5526

Re: Proposal 283

Dear Chairman Morisky,

ACDC requests that the Board approve Proposal 283. We also request the Board to make a finding that the change in the regulation needs to be implemented by emergency action.

The AI GHL fishery opens January 1st only in the Adak Section (175 to 178 – "the box") and only to vessels <60'. The GHL fishery in all AI state waters has begun either on March 15th or four days following the closure of the BSAI trawl fishery (which has generally occurred in the month of March).

In 2019 all AI state-waters opened March 15th. Upon the date of the all AI state-waters opening, the 60' size limit in the 175-178 "box" expires and is replaced by a <125' pot vessel limit and a <100' trawl vessel limit, which then applies in all AI state-waters for the remainder of the AI GHL fishery

The Problem:

It is projected that the BSAI A season closure will likely occur by sometime in the 1st week of February. Without a change in the regulations to a fixed trigger date of March 15 or later, this will result in the loss of approximately one month of priority access for <60' cod vessels in the AI state-water cod fishery.

There are 67 trawl vessels between 60' and 124' that have a federal pot cod endorsement in at least one federal management area that could participate once the size limit is lifted

There are 72 vessels between 60' and 99' that have a federal trawl permits in at least one federal management area that could participate once the size limit is lifted. Of these, 28 are AFA derived permits.

(Data sorted from: https://www.fisheries.noaa.gov/alaska/commercial-fishing/permits-and-licenses-issued-alaska#license-limitation-program-(llp) and cross referenced for Length Overall at https://www.cfec.state.ak.us/plook/#downloads)

Combined, that is a potential of 139 additional federally permitted over 60' vessels that would be eligible to enter the AI GHL fishery when the size limit is lifted. These larger vessels are not allowed in any other GHL cod fishery (and so they won't be constrained by the exclusive registration provision.)

The AI has a 150,000 lb trip limit. In 2019 the AI GHL fishery had 14 pot boats (6 of which also fished the Dutch Harbor GHL) and 4 trawlers for 155 landings for an average of 8.6 trips per boat of about 100,000 lbs.

The 15,000,000 lb AI GHL divided by the trip limit equates to 100 trips, or 150 trips at the 100,000 lb average delivery. If 10% of the 139 eligible larger vessels entered the fishery in early February it would likely cut the trips per boat by over a third. If 20% entered in early February it could cut the average to 4 trips.

In 2008 22 trawlers entered the AI GHL fishery (tables 278.1&2 –RC2, Dec. 2019). The GHL 7.5 million lb A season fishery lasted just one week. With the projected early closures of the federal BSAI CV trawl and >60 pot cod fisheries, we are likely to see a similar influx in 2020.

As a result the <60' will be forced to race against vessels up to twice their size, creating safety concerns. Early entry by >60' vessels will compress the season into a dangerous, wasteful derby, which undermines the ability to maximize product value, while contributing to the destabilization of AI communities.

The proposed action will ease the continued erosion of opportunity for Aleutian Islands fishermen and Aleutian communities dependent on shorebased processing. An influx of larger boats early in the season creates a race for fish which results in an overcapitalized, inefficient, and unsafe fishery which reduces the value that can be obtained from the GHL. Without stability, the only active shorebased processor in the region, and the community which is dependent upon it, are in jeopardy.

Thank you for considering our comments.

Sincerely,

Rick Koso, President
ACDC
PO Box 1943, Adak, AK 99546

garrett kavanaugh

12/27/2019 04:47 PM AKST

RE: PROPOSAL 283 Modify the Aleutian Islands Subdistrict Pacific cod state-waters season dates to open the fishery west of 170° W long for Pacific cod

Dear Chairmen Morisky and members of the Board, As a participant of the AI GHL I support the board making a set trigger date for the AI state waters to open for larger vessels. In the past we have started fishing when the AI state waters opens January 1st for under 60' vessels in the 175 to 178 box. It opens March 15th or four days after the closure of the BSAI trawl fishery. With the projected closing date for the BSAI A season being as earlier as the first week of February we would roughly lose a month of fishing time for the <60 sector. Without having a set date for the AI state waters to open and eliminate the <60 length limit we will be racing against vessels much larger than us and creating a unnecessary derby for fish. Also creating this set date will help the Aleutian communities stability, and the stability of fishermen who have committed to the AI state waters fishery. Thank you for considering my comments. Garrett Kavanaugh

Gregory R. Gabriel, Jr.
F/V Miss Michelle
12/23/2019 02:10 PM AKST

RE: PROPOSAL 283 Modify the Aleutian Islands Subdistrict Pacific cod state-waters season dates to open the fishery west of 170° W long for Pacific cod

I support this Board generated proposal as a means to protect the small boat fleets.

Ron Kavanaugh
Self
12/27/2019 09:33 PM AKST

RE: PROPOSAL 283 Modify the Aleutian Islands Subdistrict Pacific cod state-waters season dates to open the fishery west of 170° W long for Pacific cod

My name is Ron Kavanaugh, Kodiak Resident since 1966. Engaged in Alaskan Fisheries since 1975, our family is 100% dependent on commercial fisheries in the State of Alaska. I own & operate the 58 ft FV Insatiable and 58ft FV Sylvia Star. I started working on my granddad's boat at the age of 12, then crewed at a setnet site on Kodiak's westside. I moved on to working the deck on salmon boats until I was able to lease a small seiner for the '82 salmon season. Two crucial state-wide events happened that lead me to participating in the federal grey cod fishery in the Gulf of Alaska and BSAI. The Exxon Valdez oil spill-which created an economic down turn for wild salmon and implementation of halibut and black cod IFQs- this took away a critical tool for diversification and were the main systemic changes that lead to this move. We were one of the first boats to fish in the Bering Sea under 60ft federal cod fishery and have pot fished since the inception of the state managed P-Cod fishery. This fishery enabled our local family run business to remain economically sound and provide year round jobs for our crewmembers. Our vessel, family, and crew are dependent on a well-managed and fully executed state water P-cod fishery. I am a proponent of low impact state water fisheries that provide access to the resource and believe the State of Alaska has an obligation to manage it's resources within the 3 mile boundary. Today, I want to address the critical over sight that proposal 283 seeks to address. In December 2019, the NPFMC took no action that would provide relief from the vacation of Amendment 113. Amendment 113 insured that 5000 mt of cod would be caught and processed on shore in the Aleutian Islands. With that rule gone, the 5,000 mt tons can now be caught and processed anywhere in the BSAI. We anticipate that the federal season will be prosecuted quickly and end in the first few weeks of February. In statute the trigger for boats over 60 pot AND trawl fleets is 4 days after the federal closure or March 15th. Due to the loss of A113's 5,000 mt tons and an early federal closure, the state waters under 60 fleet would see sever loss of harvest opportunity and a extremely compressed season. Last year the season closed less than two days after the over 60 fleet entering the fishery. If applied to the anticipated timing this year the AI state waters fishery would close 30-40 days sooner. This leads to quality, safety, and economic difficulties for the communities and harvesters. Because of the timeliness of this issue, implementation needs to be immediate and we understand may need Emergency Order authority to be provided to the Commissioner. Ron Kavanaugh 1533 Sawmill Circle Kodiak Alaska 99615

Aaron Nevin

12/27/2019 07:45 PM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

I appose this proposition because i believe that the current management plan is strong and the reasons for this proposal are not based on the reality of what is going on. My name is Aaron Nevin. Being born in Kodiak to a commercial fisherman father I grew up fishing salmon on his seiner. I have continued on in my currently twenty year long career to buy a permit and run his boat after retirement. The seining season usually accounts for the majority of my annual income and is incredibly important to my family.

Adam Barker
Kashvik Fisheries LLC
12/26/2019 09:45 PM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

Adam Barker 41584 Manson Dr. Homer AK 99603 December 26th 2019 Chairman Reed Morisky Alaska Board of Fisheries Board Support Section P.O. Box 115526 Juneau, AK 99811-5526 Re: Prop 58 Dear Chairman Morisky and Board of Fish members: My name is Adam Barker, I'm a third generation fisherman who has been fishing in Kodiak waters with my father starting in 1988, I now support my family by salmon seining, and tanner crabbing. My children are learning how to fish with me now too, this is very important to me. I have been an owner operator participating in the salmon fishery since 1999. I respectfully request the board reject proposal # 58. Prior to this fishery area opening Chignik must have received their escapement, the fishery has been managed carefully for 40 years. In the past 10 years we have only fished the Cape Igvak section prior to July 8th a couple times. Why now should the management rules be changed? Who is actually benefiting? The current management plan is already set up to protect Chignik when they have a poor salmon showing. Please reject prop # 58 as it is a redundant and biased proposal, thank you for the opportunity to comment. I hope the Board continues to apply consistency in its application of the guiding policies such as the mixed stock fisheries policy, and the sustainable fisheries policy. Sincerely, Adam Barker

Adelia Myrick

12/25/2019 06:32 PM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

Dear Board of Fish Members, I am a second-generation Kodiak fisherman. My father started salmon fishing here in 1967, and I have setnetted since I was a toddler with my family, for my whole life. I took over the permit from my dad several years ago, and in 2016 finally bought the setnet operation from my parents outright. You may be wondering why a setnetter who has no ability to fish the Igvak area is even commenting on this proposal. This is because we are drastically affected by the mobile seine fleet. If they are limited in where they can fish, we find our central section of the Northwest Kodiak district becoming more and more crowded with fewer opportunities for all to harvest in the traditional manner. So it behooves me to pay attention and understand what's going on. And what study brings up on this issue is that it is actually not based on parity but trying to change allocation. We feel very badly for our Chignik neighbors who have had such complete disastrous seasons, but it must be understood cape Igvak never even opens at all in the bad years, so Kodiak fishermen can't be blamed for taking all their fish. As a lifelong fisherman with a previous generation of history in my consciousness, I have to add that climate change and the warming of the oceans and ocean acidification is something we are coming up against. Changes are happening and I feel like they are going to keep happening. For this reason I urge you to be very cautious and careful about changing management plans in response to fisheries "disasters." Who knows what disasters will happen next and if you build management plans in response to these rather than based on deep analysis of science and the history and all other elements of the proposal, you'll be setting dangerous precedents for your future decisions. Thank you for your consideration, Adelia Myrick

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 58

Dear Chairman Morisky and Board of Fisheries Members,

I am Alex Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Wandering Star. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

This proposal seeks to further limit Kodiak's traditional Cape Igvak fishery. Kodiak's salmon fishery has not changed since management plans were adopted starting with the Cape Igvak plan in 1978 and continuing through the early 1990s. Kodiak's salmon fishery is not a "new and expanding" fishery. This proposal is a familiar effort to limit the small portion of sockeye take that Kodiak fishermen are allowed in the Cape Igvak plan only after significant safety thresholds are reached by Chignik fishermen.

The Cape Igvak management plan was created because fishing there was part of Kodiak's historic fishing patterns prior to limited entry in 1973. The plan was put in place in 1978 to allow Kodiak fishermen access to their historic allocation of fish harvested during June and July. Kodiak's fishing opportunities at Cape Igvak are based off of existing built-in conservation measures designed to protect Chignik's second run with a safety net of 300,000 early run sockeye and 600,000 total sockeye for Chignik fishermen before *any fishing at Igvak occurs*. This purpose of this threshold is to prevent conservation issues during weak Chignik runs. This plan has been repeatedly evaluated by the Alaska Board of Fisheries through time, making it one of the most long-standing and intensely scrutinized management plans in the state.

If there are poor returns in Chignik, the current plan ensures that Kodiak fishermen won't fish at Igvak.

The 2019 Chignik Salmon Season Summary shows total values and average value per active permit in the Chignik Management Area in recent years, except for 2018, seem on track for what appears to be a normal range for the CMA within the last ten years. The 2019 season saw 51 active permits with a value per permit of $157,072, which is very close to a decade ago with a 2009 season of 55 permits and a value per permit of $156,926, much greater value than Kodiak permits.

I ask that the Board reject this proposal and not make any changes to the Cape Igvak Management Plan.

Thank you for your careful consideration,
Alex and Jaime Roth
F/V Wandering Star
Homer, Alaska

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

Bo Calhoun 57177 Zulu Ct. Homer, AK 99603 12/26/19 RE: Opposition to Proposal #58 Dear Chairman Morisky and Board of Fish members: I'm a third generation Kodiak salmon seiner. I was born and raised in Homer, AK and continue to live here. My wife and I hope to raise our two sons on our family seine boat in a healthy Kodiak salmon fishery. I respectfully request the Board reject Proposal #58. The purpose of the Cape Igvak Management Plan is to limit the traditional Cape Igvak fishery by Kodiak fishers. It has successfully functioned to restrict our fishing there by not allowing an early run opener in four of the last six seasons. Kodiak fishers are only allowed to fish when the Chignik run is strong, and have on average caught significantly less than the 15% catch the Management Plan allocates. If the Chignik sockeye run is weak, Kodiak fishers do not get time in Igvak. If the Chignik sockeye run is strong, Kodiak fishers should be allowed to access this traditional fishery. The current management plan is working as intended. This proposal simply seeks to shift traditional allocation from Kodiak to Chignik. Please reject Proposal 58. Thank you for taking the time to read all public comments. Sincerely, Bo Calhoun

December 26th 2019

Dear Chairman Morisky and Board of Fish members:

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My Grandfather fished a salmon trap in the 1920s. In the 1950s my family started salmon seining out of Kodiak, Alaska. Prior to statehood they fished the mainland all the way down to Chignik. In 1973 there was four Bowhay boats fishing and in 1978 I was the first of my family to have to pay for the right to fish. In 1983 I had the opportunity to fish a medical transfer permit in Chignik so I am familiar with the fishery. I have 47 years on the water and commercial fishing has been my only livelihood for those 47 years. My father was a biologist who worked for the Washington State Game department, my younger brother received a master's degree in fisheries management from University of Washington and my older brother earned a degree in Environmental Science at Washington State University. After a brief time college I decided to make commercial fishing my vocation.

I am a strong believer that the dedicated people at the Alaska Department Fish and Game in all regions, keep the health of the resource at the forefront, without bias. It seems to me, as new fishermen become involved in the salmon fisheries along with the advancement of technology (bigger boats, larger seine blocks, jet/power skiffs, etc) and the ability to make more sets a day, that the cyclical nature of salmon stocks do not, on a yearly basis support financially these larger operations. Being a small boat operator, there is always someone setting in front of me and this is just the nature of the 'beast'. But is has nothing to do with the management plan put into place for the Kodiak and Chignik salmon fisheries. It was a tool supported by science to maintain sustainable salmon stocks for both areas for the long run. I have addressed this similar allocation issue for years and certainly believe that we come back to it because of profit distribution, not stock health.

I strongly urge the Alaska Board of Fish to reject Proposal 58 for the reasons restated below:

1. Kodiak fishermen have a long history fishing Cape Igvak prior July 8th.
2. The science isn't biased towards one district or another.
3. The proposal supports economic gain for a few and not sustainable salmon runs for all.

Sincerely,

Bob Bowhay
F/V Moondance
P.O. Box 187
Kodiak Alaska 99615
907-486-4594

Brad Marden
PO Box 2856
Homer, AK 99603

December 23, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: **opposition to Proposal 58**

Dear Chairman Morisky and Board of Fish members:

I first participated in the Kodiak seine fishery for salmon in 2004. Since then, I've worked as a deckhand in various salmon, halibut, and herring fisheries throughout the state, before buying my own boat in 2012, followed by a Kodiak seine permit in 2013. Since then I have exclusively fished in Kodiak waters. I respectfully request the Board **reject Proposal 58**.

Proposals to reduce the Cape Igvak allocation are a perennial request at the Kodiak and Chignik finfish meetings, and have been consistently rejected by the board in the past, for good reason. The allocation of 15% of overall Chignik bound fish is based on a historical use of the regional salmon resource from before limited entry, and the most important part of this allocation can come in June during Chignik's early run. When Chignik salmon escapement is weak, Kodiak fishermen do not get any fishing opportunity at Cape Igvak- this is fair; it also seems fair that in years of Chignik salmon abundance Kodiak fishermen should get a chance to catch the historical allocation. The Cape Igvak fishery helps spread out our fleet and can be a critical part of making any money in June as a Kodiak seiner.

I am sure that the Board tires of endless testimony claiming that the fish of concern are "our fish being stolen by those guys over there". It seems that in my 15 years of commercial fishing in Alaskan waters, Kodiak salmon fishermen are often on the defensive. Rather than retaliate with countering proposals (ie, asking for mandatory June openers for Cape Igvak district), I ask that we maintain status quo and keep historical allocations and fishing opportunity at Cape Igvak. For this reason, I ask that you **reject Proposal 58**. I want to thank you for your service and I hope the Board continues to apply consistency in upholding Mixed Stock Fisheries Policy, and the Sustainable Fisheries Policy.

Sincerely,

Brad Marden

Brian mcwethy
KSA
12/23/2019 08:40 AM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

My name is Brian Mcwethy. I was born and raised in kodiak. I live in kodiak with my family and we all depend on my income. I fished with my father on his seiner growing up and now I own and operate a seiner. Salmon seining and tanner crab fishing in kodiak are currently our only sources of income. I plan to try and continue to fish the kodiak waters and possible my children will have the opportunity to. I hope the current and historical areas we fish aren't taken from us and the future generations of kodiak. I strongly oppose any change to our historical fishing areas!

Charlie johnson

12/27/2019 07:21 PM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

I'm opposed to this because it has been a traditional fishery in June for kodiak seiners. Sockeye catches in June have been dwindling and kodiak seiners need the opportunity to fish there to maintain a viable fishery in June.

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 58

Dear Chairman Morisky and Board of Fisheries Members,

My name is Chris Johnson and I am a second-generation fisherman in Kodiak, Alaska. I grew up fishing on my dad's boat and got my first crew job working for someone else two weeks after I graduated high school. I haven't missed a salmon season since. I bought into the fishing industry in 2011 with the purchase of a 25-foot jig boat that I worked for two years in the winter and spring months while I still crewed for salmon in the summer. Access to the jig fisheries focusing on cod and rockfish was the only way that I could afford to move into the salmon fleet with a 38-footer in 2013. After the recent cod collapse, I now primarily rely on salmon seining and live here year-round with my wife.

The Cape Igvak management plan was created because fishing there was part of Kodiak's historic fishing patterns prior to the limited entry program in 1973. The plan was put in place in 1978 to allow Kodiak fishermen access to their historic allocation of fish harvested during June and July. Kodiak's fishing opportunities at Cape Igvak are based off the existing built-in conservation measures designed to protect Chignik's second run with a safety net of 300,000 early run sockeye and 600,000 total sockeye for Chignik fishermen before any fishing at Igvak occurs. This threshold was put in place to prevent Kodiak fishermen from ever creating conservation issues during weak runs to Chignik. This is contrary to what Chignik fishermen appear to think - that they were being nice by "letting" Kodiak fishermen fish there during a time of weak Kodiak runs. This is not about Kodiak being greedy or cruel to Chignik fishermen. It is about protecting and maintaining our regional fishery, which includes Cape Igvak. This plan has been repeatedly evaluated by the Alaska Board of Fisheries through time, making it one of the most long-standing and intensely scrutinized management plans in the state.

The takeaway that deflates the proposal's arguments is that if it's a bad Chignik year, the plan in place means that Kodiak fishermen won't fish at Igvak.

Taking away any fishing opportunity from Kodiak fishermen, particularly from the small boat fleet, would have a direct negative impact on new entrants trying to gain a foothold in this industry, fishing families trying to get by, and fishing support businesses in our region. I'm proud to call Kodiak home and am working to protect our fishing way of life.

Sincerely,
Chris Johnson
F/V North Star

Cole C Christiansen
F/V Mary Ann
12/22/2019 06:40 PM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

The current management plan stipulates that 300,000 sockeye must be harvested in Chignik before Igvak is opened. That plan provides that Chignik must be getting a strong run of sockeye before Kodiak fishermen have an opportunity to try fish the Igvak area. Sometimes fish arrive early and sometimes fish arrive late, but the plan provides for Chignik first and if Chignik has 300,000 sockeye harvested then the Kodiak management plan should not depend on whether the date is pre- or post- July 8th.

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 58

Dear Chairman Morisky and Board of Fisheries Members,

My name is Danielle Ringer and I appreciate the opportunity to comment on proposals before the Board in writing and in person for the Kodiak finfish meeting. I live in Kodiak with my husband and we own and operate the 38-foot F/V North Star. We chiefly rely on salmon seining and cod and rockfish jigging to maintain our fishing way of life and ability to live on Kodiak Island. I grew up in Homer learning to harvest and process fish from my parents in Kachemak Bay and dipnetting on the Kenai River. I hold a Master's degree from the University of Alaska Fairbanks in Political Ecology of Fisheries and was one of the researchers on the *Graying of the Fleet in Alaska's Fisheries: Defining the Problem and Assessing Alternatives* study in the Kodiak region.

This proposal aiming to change the start date for Kodiak's Cape Igvak fishery is a reallocation of a traditional fishery without justification. Kodiak's salmon fishery has not changed since management plans were adopted starting with the Cape Igvak plan in 1978 and continuing through the early 1990s. Kodiak's salmon fishery can in no way be described as a "new and expanding" fishery. This proposal is simply a grab at fish and an effort that Chignik fishermen repeatedly put forward as an attack on Kodiak. Our salmon fishermen continually have to defend against outside attacks to maintain our way of life and the energy spent each cycle to address extremely similar, if not identical proposals, is frustrating at best and a waste of the Board's time at worst.

The Cape Igvak management plan was created because fishing there was part of Kodiak's historic fishing patterns prior to the limited entry program in 1973. The plan was put in place in 1978 to allow Kodiak fishermen access to their historic allocation of fish harvested during June and July. Kodiak's fishing opportunities at Cape Igvak are based off the existing built-in conservation measures designed to protect Chignik's second run with a safety net of 300,000 early run sockeye and 600,000 total sockeye for Chignik fishermen before any fishing at Igvak occurs. This threshold was put in place to prevent Kodiak fishermen from ever creating conservation issues during weak runs to Chignik. This is contrary to what Chignik fishermen appear to think - that they were being nice by letting Kodiak fishermen fish there during a time of weak Kodiak runs. This is not about Kodiak being greedy or cruel to Chignik fishermen. It is about protecting and maintaining our regional fishery, which includes Cape Igvak. This plan has been repeatedly evaluated by the Alaska Board of Fisheries through time, making it one of the most long-standing and intensely scrutinized management plans in the state.

The takeaway that deflates the proposal's arguments is that if it's a bad Chignik year, the plan in place means that Kodiak fishermen won't fish at Igvak.

The 2019 Chignik Salmon Season Summary shows total values and average value per active permit in the Chignik Management Area in recent years, except for 2018, seem relatively on track for what appears to be a normal range for the CMA within the last ten years. The 2019 season saw 51 active permits with a value per permit of $157,072, which is very close to a decade ago with a 2009 season of 55 permits and a value per permit of $156,926. Chignik fishermen also enjoy shorter seasons compared to Kodiak fishermen in addition to substantially higher average permit values. I hear Chignik fishermen who are vocal about stressed seasons and difficulties remaining living in their communities, and I truly sympathize with those concerns because Kodiak fishermen feel very similar. I would prefer to seek Chignik and Kodiak fishermen as allies and friends because we seem to share the same cultural values around teaching kids to fish, learning work ethic on boats, and enjoying the camaraderie and tight-knit community ties that form within the fishing lifestyle. I wish that they would stop submitting proposals seeking to harm Kodiak fishermen; we're just trying to maintain our regional fishing heritage.

Rural villages in the Kodiak Archipelago are struggling and protecting our region's traditional and historic salmon fishery is of utmost importance to prevent further negative impacts on these communities. Small boat harbors are emptying. Communities are depopulating and facing social problems. Schools are closing. For the Alutiiq peoples whose culture and economy has been built around fishing for 7,500 years this recent fisheries dispossession is especially egregious. Within one generation, there's been a:

- 75% decrease in families fishing
- 70% decrease in individual halibut IFQ holdings
- 100% decrease in individual sablefish IFQ holdings
- 85% decrease in the number of young people owning state fishing permits
- 70% decrease in the number of state fishing permits overall

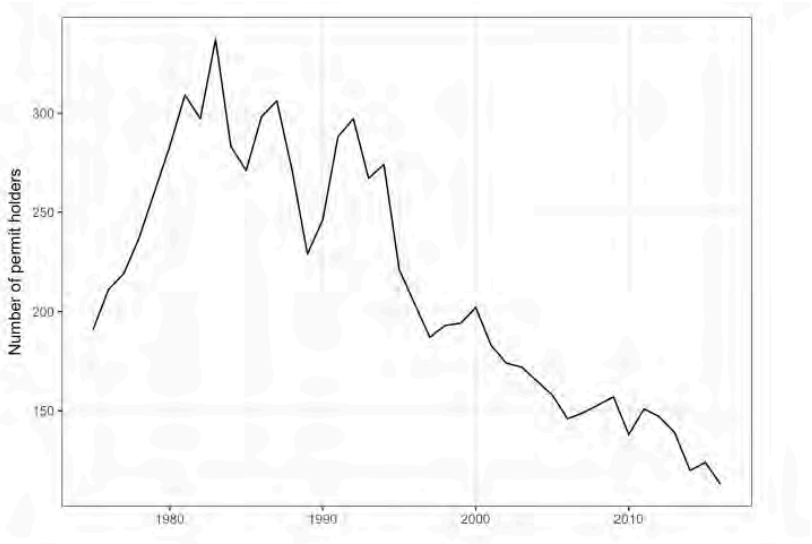


Fig.1 Alaska limited entry permit holders in Kodiak Archipelago communities, 1975-2016. Communities include Akhiok, Karluk, Larsen Bay, Old Harbor, Ouzinkie, and Port Lions. Data: CFEC.

Please do not accept proposals from Chignik seeking to hack away at Kodiak's salmon fishery. I see no biological, scientific, historical, economic, nor sociocultural reasons that could justify the Board making any changes to the Cape Igvak management plan and thus create ripple effects negatively impacting Kodiak fishermen, processing workers, and community businesses. Thank you for your consideration of my comments and I look forward Board of Fisheries members spending time in our fishing community during the Kodiak meeting.

I humbly request the Board to reject this proposal.

Respectfully,
Danielle Ringer, M.A.
F/V North Star

Dave Kubiak
F/V Lara Lee
12/21/2019 01:09 PM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

While it is unfortunate that Chignik runs are at low cycle, this proposal is does nothing to alleviate shortages of Chignik sockeye. Igvak does not open to fishing until 300,000 sockeye have been harvested in Chignik. Conservation concerns are already addressed by the current Cape Igvak management Plan. This is a knee jerk reaction to shortages that are not caused or exacerbated by Cape Igvak openings. Such a change would however be unnecessarily punitive to Kodiak seiners.

Donald Lawhead

12/26/2019 10:45 PM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

The management plan already in place has worked since 1978. During years with surplus salmon Kodiak fisherman get openings. During years of low production the area doesn't open.

Fred Stager

F/V Lady Lu

December 12, 2019

Alaska Board of Fisheries Board Support Section

P.O. Box 115526 Juneau, AK 99811-5526

RE: Opposition to Proposal 58

Dear Chairman Morisky and Board of Fish Members,

I am writing to oppose Proposal 58: The proposal intends to entirely eliminate the Cape Igvak fishery in June while sustaining the 15% allocation of Chignik bound sockeye in the Cape Igvak area along with other sustainability and allocation thresholds that are currently in place. The outcome of the proposal would be to focus the harvest of Chignik bound fish entirely on the second run in July while discontinuing the longstanding traditional harvest of early run Chignik bound sockeye in June.

Not only is this proposal an allocation grab purporting to solve a problem that doesn't exist. But it has tremendous potential to increase the Kodiak interception of sockeye salmon bound for Cook Inlet.

The Cape Igvak management plan was first adopted in 1978 and has been repeatedly evaluated by the Alaska Board of Fisheries, making it one of the most long-standing and intensely scrutinized management plans in the state. This plan has stood the test of time and provided a reasonable allocation and harvest strategy for a fishery that stretches back well beyond the beginning of limited entry.

In years of abundance, Kodiak seiners are allowed to share in the harvest of Chignik bound sockeye, while in poor years the harvests are decreased or eliminated altogether. It is a sound plan that has stood the test of time and has provided the Kodiak fleet with a much needed source of June revenue.

I'm also frustrated in the unfairness in the how the shared resource is currently managed. Chignik fishermen are prosecuting an expanding mixed stock fishery on non-local stocks (see WASSIP), yet their fishing efforts have no restrictions that account for the impact that their harvest has on Kodiak's fishery. Meanwhile, Kodiak fishermen have endured 2 consecutive years of closures in the Cape Igvak for conservation.

I ask the board to **reject proposal 58,** it is an allocative grab without merit.

Thank You- Fred Stager

Garrett Kavanaugh

12/27/2019 05:10 PM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

Dear Chairman and Members of the Board, As a young fishermen who is working their way into the Kodiak Salmon fishery this proposal will cause Kodiak fishermen to lose a substantial amount of their catch. I have been investing into the Kodiak salmon fishery as much as possible, in 2019 I purchased a Kodiak salmon permit. I ran a seiner for the month of august. I plan on running the same boat for the entire 2020 salmon season in Kodiak. When I was younger I remember testifying against proposals similar to these. These proposals are re-allocations of Kodiak historical catch. Kodiak has always had intercept fisheries and we already have management plans in place that have been effective for the Kodiak salmon fishery. Please help ensure the future for young fishermen entering into the Kodiak Salmon fishery, and the people who have been investing and are established in the fishery. Thank you for considering these comments, Garrett Kavanaugh

Iver Holm

12/27/2019 11:08 PM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

Dear Chairman Morisky and Board of Fish members: I am 31 years old and a life long resident of Kodiak. I grew up set netting in Uganik on the west side of the island with my mother until i was 14. I then started seining with my father until I was able to buy my own Kodiak seine operational the age of 27. I request that you oppose proposal 58. this proposal is a grab for fish under the guise of conservation. we don't even get to fish the Igvak section until after chignik catches 300,000 sockeye. please allow us to continue our historic fishery. thank you for your time. sincerely Iver Holm

James C Calhoun

12/26/2019 12:36 PM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

I have been intimately involved in the Kodiak seine fishery since 1968 to present. Presently my son is fishing the Kodiak area and it is my desire to have my grandsons be able to participate in a healthy Kodiak fishery if they so desire. Throughout my career I have come to the conclusion that the ADF&G management for Kodiak has been stellar and has kept the stocks in Kodiak healthy overall with the current management plan. The current management plan disallows fishing time in the Cape Igvak section when chignik runs are weak, but still allows kodiak fishers access to their traditional fishery when runs are more robust. C. Igvak has been closed 4 out the last 6 years. Alaska boats and permits asking value is $40,000 for Kodiak permits and Chignik permits are $100,000. I believe Kodiak fishers deserve acess to their traditional fishery under the present management plan. I oppose proposal 58.

Jamin Hall

12/27/2019 11:08 PM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

My name is Jamin Hall, my wife and I have a set net site in Uganik Bay. I am writing in opposition to proposal 58.

Ken Christiansen
F/V Mary Ann
12/26/2019 02:14 PM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

My name is Ken Christiansen. I have seined in Kodiak for more than fifty years, beginning with my father at the age of 6 and now with both my son and daughter. As a captain, for the past 40 years, I have fished the whole Kodiak Management Area. Any change to a management plan should be based on scientific reason. Outcry from one user group to take from another is simply a knee-jerk reaction with a sense of immediate gratification but not necessarily improved results. The recent run failures in the Chignik area may be related to climate change, past overfishing, poor spawning conditions, poor brood stock survival conditions, or other as of yet unknown reasons. Cape Igvak is a traditional fishery for Kodiak Fisherman, Thorvold Olsen, Billie Berestoff, Alfred Torsen, Marius Olsen, and Antril Suydam, to name a few, dating back to the 1960's, when boats were constructed of wood and were much smaller than the 58" limit seiners of today; and prior to the Cape Igvak Management plan. Further, the Management Plans in place already restrict Kodiak Fishermen until the escapement goals in Chignik have been met. Additional restriction of Kodiak fisherman does not guarantee that weather, currents, tides, and ocean conditions will cooperate to provide the ideal returns for Chignik fishermen

Kodiak Salmon Work Group
c/o Kodiak Regional Aquaculture Association
104 Center Ave., Suite 205
Kodiak, Alaska 99615

December 27, 2019

Chairman Morisky
Alaska Board of Fisheries
Boards Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: CAPE IGVAK MANAGEMENT PLAN
Chignik Proposals 58, 59, 60, 61, 62

Dear Chairman Morisky and Board Members:

The Kodiak Salmon Work Group (KSWG) is an ad hoc committee created to address the issues of Cook Inlet bound sockeye captured in the Kodiak Management Area and the continuation of the Cape Igvak Management Plan. Membership is open and encompasses seiners from both Kodiak seine organizations, setnetters from both Kodiak setnet organizations, beach seine permit holders and processors. In other words, all of Kodiak's salmon fishing community. The group is supported by voluntary stakeholder contributions including those from the City of Kodiak and the Kodiak Island Borough.

KSWG is herewith submitting several documents for the Board's review: 1. Structure and Function of the Kodiak Management Area Salmon Fisheries; 2. Review of Cape Igvak Salmon Management Plan and Proposals to the Alaska Board of Fisheries; and 3. Economic Analysis of Proposals 58, 60,61 and 64. An informational map is attached as well.

Cape Igvak Management Plan (Proposals 58-62)

Chignik's four substantive proposals regarding the Cape Igvak management plan don't outright request that the Board set aside the plan. Instead they focus on provisional changes that would

gut Kodiak's Cape Igvak fishery. Proposal 58 with the date change would reduce, on average, Kodiak's fishery by 79%. Proposal 59 is an accounting change that would reduce the Cape Igvak fishery by about 20%. Proposal 60, like proposal 58, would reduce Kodiak's revenues by about 67% and proposal 61 comes in with a 69% reduction. The fifth proposal (Proposal 62) is a record-keeping proposal that is untenable.

The Cape Igvak Management Plan is embedded in the Mixed Stock Fisheries Policy: "Most mixed stock fisheries are long standing and have been scrutinized many times by past Boards. Consequently, existing regulatory management plans are understood to incorporate conservation burden and allocation" (Allocation Criterion 2). Chignik's guaranteed catch allocation of 300,000 fish (early run) and 300,000 (late run) was a clear balancing in the original plan, favoring Chignik by providing an economic safety net. In addition, Kodiak would share the conservation burden in that the escapement would be assured before Kodiak would go fishing. On the other hand, if Chignik gets its escapement and minimum guaranteed catch, then Kodiak is allowed to harvest up to approximately what was historically caught in the fishery. This is a fairly balanced plan, if not already overbalanced to Chignik's advantage!

Also, the Board states in Allocation Criterion 3, "The policy should recognize that salmon resources are generally fully utilized and that stability is an important aspect of the fisheries." Why is stability important? Many salmon stakeholders make investments and commitments based on regulatory stability. If salmon management plans are subject to change with every Board cycle, fishery values (ex-vessel, permit and gear) will decrease as uncertainty increases, conservation may be compromised, and stakeholders will be encouraged to try to "get a better deal" at each successive Board meeting.

The history of the Cape Igvak Management Plan (Allocation Criterion 1) is of critical importance to understanding why it was developed and how it was balanced between stakeholders. Prior to the plan Kodiak could fish at Cape Igvak any day that the Chignik fleet fished. The "day for day" fishing caused area managers concern that Kodiak's fishing could impact a weaker "second run" to Chignik. Consequently, the catalyst for the Cape Igvak Management Plan was conservation of Chignik's runs. The plan balanced the conservation burden between the two

areas. The plan has been in place for 42 years and has had constant review over multiple Board cycles. Its durability establishes it as one of the marque fishery management plans in the State of Alaska. Changing a plan of such long duration without significant "new information" or "new fishing patterns" or "stock of concern" assessments or anything other than a proposer's feeling that something should be changed, compromises and undermines the Board's standing as a fair and impartial deliberative body.

The functionality of the Cape Igvak Management Plan as a conservation plan is seen in the plan's application over the past five years. Because of low Chignik escapements there was no Cape Igvak fishery during 3 seasons. Period! Kodiak cannot be held responsible for any of the current biological or economic issues in Chignik due to low Chignik sockeye returns. Kodiak did not fish at Cape Igvak.

The proposer's assertion, under Allocation Criterion 4, that Kodiak's salmon fishermen have more "alternative resources" is a false assertion. If this means that Kodiak has more salmon numerically or by species, then the Board must also recognize that Kodiak's salmon are divided between approximately 180 active seine fishermen and approximately 150 setnet fishermen ---in contrast to about 75 active Chignik permits. Resource availability is reflected in individual gross earnings. Chignik permits, on average over time, continue to earn more than Kodiak fishermen and, consequently, their permits are worth more in the market. "Alternative resources" in this sense would mean that Kodiak had less "alternative resources" per active permit holder than Chignik.

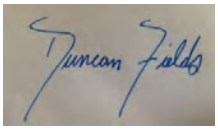
If the "alternative resources" idea means that Kodiak has more "species" available than Chignik salmon fishermen, this too is false. Both Kodiak and Chignik fishermen have access to halibut and cod in their areas although the Federal cod season is now closed in both areas. Only two or three Kodiak salmon fishermen are involved in the Gulf of Alaska trawl fisheries --- a fishery that limits participation with high costs of entry. Both Chignik and Kodiak have historically had a Tanner crab season. While Kodiak currently has a very small Tanner crab quota, only a subset of the Kodiak salmon fleet (like the Chignik fleet) have limited entry permits for the Tanner crab fishery. The Kodiak herring fishery is essentially gone. Kodiak fishermen, especially those from

Old Harbor, Akhiok, Ouzinkie, Port Lions and Larsen Bay just don't see what "alternative resources" are available in Kodiak that Chignik doesn't have. All rural communities in the Gulf of Alaska under about 1,500 people are struggling to survive on their fisheries economy--- which is now almost exclusively salmon.

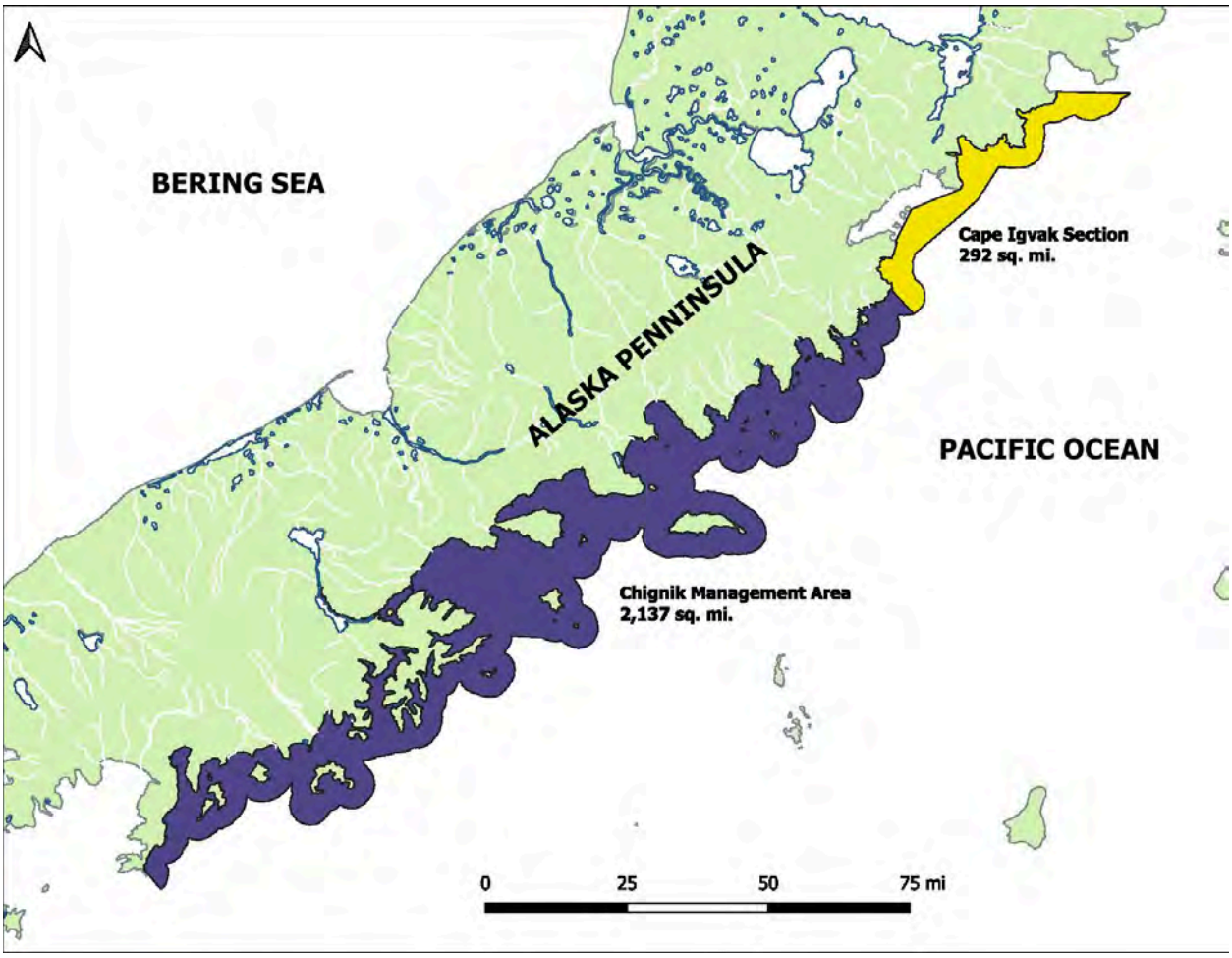
Finally, "The importance of the fishery to the economy of the region and the local area" (Allocation Criterion 7) favors Kodiak. The loss of the Cape Igvak fishery would cost Kodiak fishermen, on average, almost 4 million dollars. At best, the Igvak fishery would increase earnings by a subset of fishermen that actually live in Chignik or the Chignik region by less than an average of 12.0%. While not insignificant, the Igvak fishery is of reduced "importance to the economy of the Chignik region" when compared with the decline of active vessels and the number of Chignik fishermen that are now fishing in Kodiak and Prince William Sound. See further: Review of the Cape Igvak Management Plan and Proposals to the Alaska Board of Fisheries, Proposal 58 Economic Analysis, Proposal 60 Economic Analysis and Proposal 61 Economic Analysis.

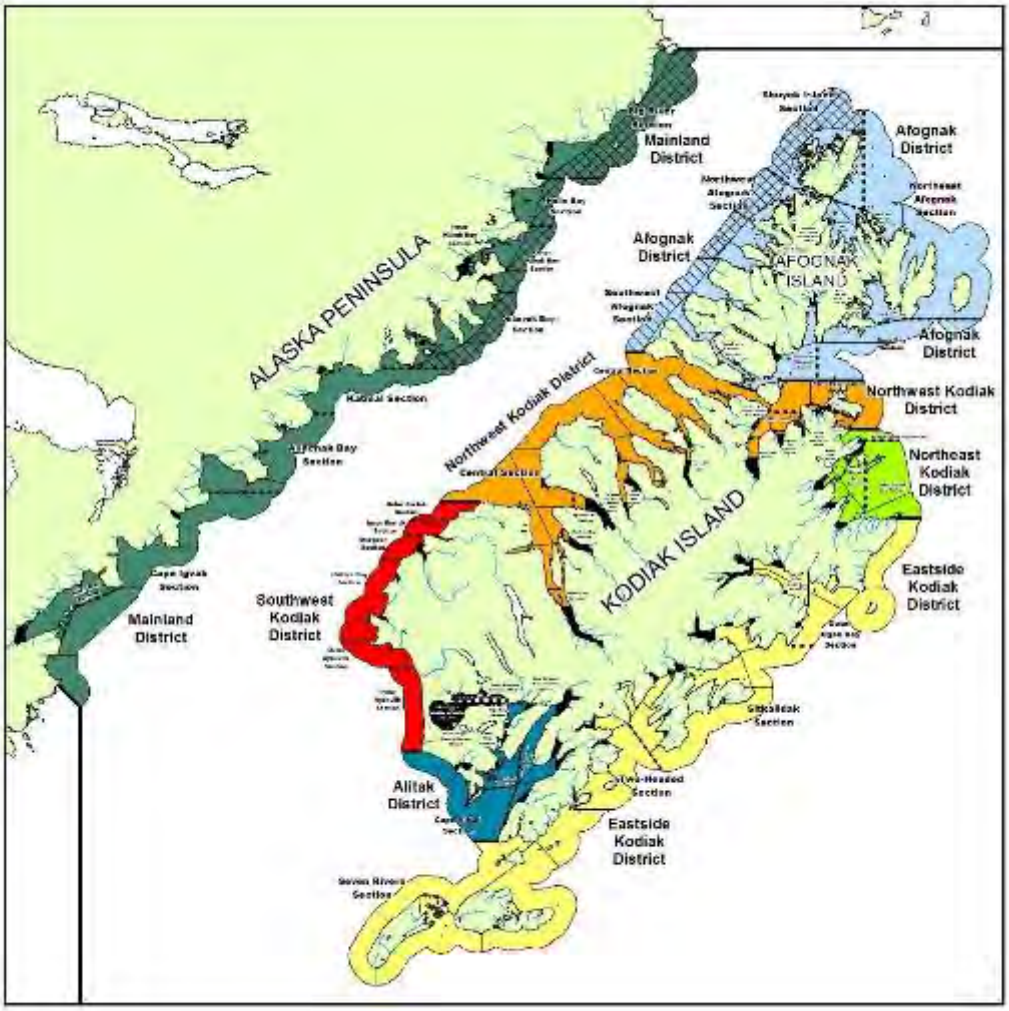
In summary, it is the position of the Kodiak Salmon Work Group that the Board should vote NO on proposals 58, 59, 60, 61, 62 and 63. These proposals are not supported by the Board's allocation criteria and do not have a rational relationship to Chignik's conservation needs.

Very truly yours,



Duncan Fields, Chairman


BERING SEA
ALASKA PENNINSULA
PACIFIC OCEAN
Cape Igvak Section
292 sq. mi.
Chignik Management Area
2,137 sq. mi.
0
25
50
75 mi



Review of Cape Igvak Salmon Management Plan and Proposals to the Alaska Board of Fisheries

Kodiak Salmon Working Group

Executive Summary

- The Cape Igvak Salmon Management Plan (CISMP) has been in place since 1978 and allocates 15% of total Chignik sockeye harvest to Cape Igvak (Kodiak Management Area) after Chignik is guaranteed 600,000 harvest from early and late runs combined, and escapement goals are projected to be met.
- Management strategies under CISMP have been very successful in meeting the sockeye allocation objective and providing escapements within goals.
- Recent genetics studies are robust, but limited sampling with highly variable results does not in itself justify changes to the management plan.
- Genetic results show that the current regulatory assumption that 90% of Igvak sockeye harvests are Chignik bound fish is overly conservative; all samples showed substantially lower contributions of Chignik-bound sockeye to the Igvak harvests.
- Board of Fisheries proposals to alter metrics guiding the Cape Igvak Salmon Management Plan are not well supported by available data.
- The long-standing Cape Igvak plan appears to be working well in terms of limiting harvest of Chignik origin sockeye through harvest guarantees to Chignik, and meeting escapement goals for early and late runs of Chignik sockeye.

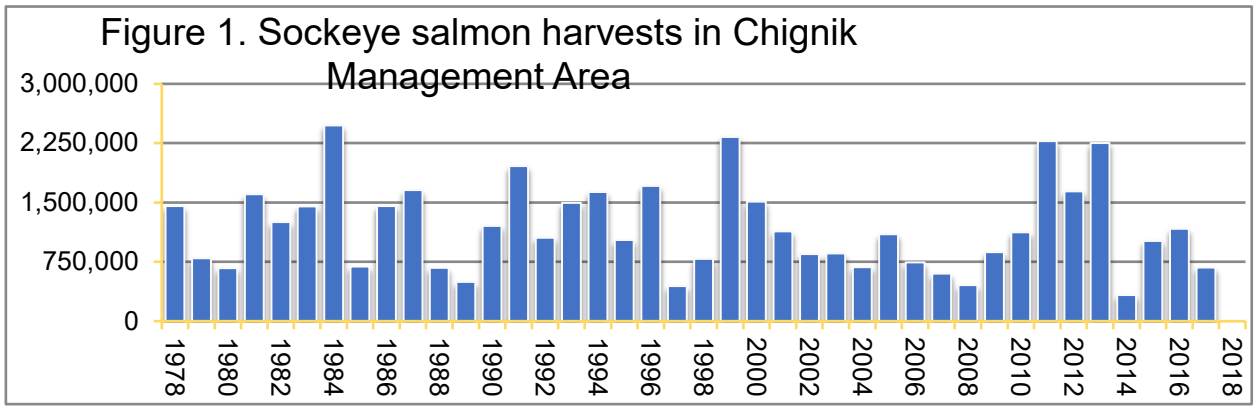
Cape Igvak Salmon Management Plan

A purse seine fishery has been active along capes in the Cape Igvak section of Kodiak Management Area (KMA) since 1964. Following a tagging study in 1969 (ADFG, unpub. data) where 84% of released tags were recovered in Chignik Area fisheries, periodic modifications to the fishery were directed by the Alaska Board of Fisheries. In 1978, the Cape Igvak Salmon Management Plan (CISMP) was adopted to restrict harvest of Chignik bound sockeye at Cape Igvak. The fishery is one of two in the state (the other is the Southeast District Mainland, Area M) in which harvest and escapement triggers from an adjacent management area (both Area L-Chignik) must be met before the fishery can open. From beginning of the fishing season to July 25, Chignik fishermen must harvest a minimum of 600,000 sockeye salmon (300,000 from both early and late Chignik runs) and adequate escapements for both runs must be projected to occur before harvest will be allowed in Igvak. KMA fishermen at Cape Igvak are allocated 15% of the total Chignik harvest. The Board stipulates that 90% of the harvest at Igvak and 80% of the harvest in Southeast District Mainland (Area M) are Chignik bound fish (Anderson et al., 2019, Wilburn, 2019). Proposals to the Board for the 2020 Kodiak Management Area focus on specific metrics in the plan.

Since the CISMP plan came about, management has been very effective at meeting the allocation objectives in the plan. Only four times in forty years has the 15% target been exceeded by more than 1% (Anderson et al., 2019), which is probably within reasonable expectations for management error. Harvests of Chignik bound fish at Igvak obviously go up and down with Chignik harvests and the Igvak fishery has been closed, or catches extremely low, three times between 2014 and 2018 due to poor

runs and lower harvests in Chignik. On the other hand, Igvak sockeye harvests were much more robust in 2011 and 2013 when Chignik sockeye harvests exceeded 2 million sockeye (Anderson et al., 2019). While Chignik sockeye harvest was essentially zero for 2018, the forty year history shows wide fluctuations, with two of the lowest and two of the highest harvests occurring in the past ten years (Figure 1). Average Chignik sockeye harvests between 1998 and 2018 were about 15% lower than harvests in the previous two decades, 1978-1997. However, three of four harvests over 2 million fish were also in the most recent two decades (Figure 1).

The management plan has also been effective from a conservation and sustainability standpoint. Early and Late sockeye runs to Chignik River have met or exceeded their respective escapement goals every year since 1980, until the run failure in 2018, when the early Chignik sockeye run failed to meet the escapement goal (Munro, 2019).



Recent Genetics Studies in Igvak Section

In the recent fishery genetic stock identification study in KMA, Shedd et al. (2016) added two sampling strata (early and middle) for Cape Igvak Section in each of the three study years, 2014-2016. No Igvak samples

were taken in 2014 because low Chignik harvest numbers kept the area closed to commercial harvest. In 2015, only the July stratum (middle) was sampled as Igvak was again closed in June due to inadequate sockeye harvests in Chignik Management Area. Harvest of Chignik fish in Igvak was estimated as 2,059 fish (total harvest 6,595) in the middle stratum, 2015. In both 2014 and 2015, the management plan had its intended effect of keeping Igvak closed or limited when Chignik harvests were low. In 2016, with a stronger Chignik run, an estimated 114,412 Chignik sockeye were harvested in the early (June) stratum. An estimated 10,006 Chignik bound sockeye were harvested at Igvak in July (Shedd et al., 2016).

While it is clear that Chignik fish were captured at Igvak in both years, with only three temporal strata sampled over a three year period, including a single datum for early strata harvests, specific conclusions about patterns of presence, magnitude or vulnerability of Chignik bound fish in Igvak fisheries are unwarranted. The single early (June) stratum sampled from the three year period estimated harvest of Chignik bound sockeye an order of magnitude larger than the two middle stratum harvests from 2015 and 2016. These data emphasize wide variation for Chignik bound sockeye harvests at Cape Igvak, and do not support substantive changes to the current management plan.

Data in Shedd et al. (2016) also does not support the presumption in the management plan that 90% of sockeye salmon harvests in Igvak are Chignik bound fish. The single middle stratum (July) estimate from 2015 found 31.2% Chignik sockeye from a total harvest of 6,595. The middle stratum estimate from 2016 was much lower, where only 5.6% of the sampled harvest were Chignik fish (total harvest 177,315). The sole early stratum (June) contribution in 2016 was much higher, estimating 74.1% of

Igvak harvests were Chignik origin (total harvest 154,318), but still did not reach 90%. The assumption that 90% of Igvak harvests are comprised of Chignik bound fish is very uncertain. Other genetic studies suggest uncertainty for similar assumptions in Southeast District Mainland (SEDM, Area M) fisheries, where Chignik bound sockeye are thought to represent 80% of sockeye harvested. Dann et al., (2012), showed that the overall proportion of Chignik bound fish harvested in SEDM was very consistent in 2010, 2011, and 2012 at 65%, 67% and 66% respectively, excluding the Northwest Stepovak Section in July.

Board of Fisheries Proposals

There are five proposals before the board which address the Cape Igvak fishery. Four of these seek to more severely curtail the fishery through specific alterations to metrics of the management plan. They propose completely eliminating fishing at Igvak prior to July 8 (proposal 58), lowering the board approved allocation of Chignik bound fish to KMA fishermen at Igvak from 15% to 5% (proposal 60), or dramatically raising Chignik harvest thresholds upon which Igvak fishery openings are predicated (proposal 61). A fourth proposal suggests that accounting practices for total Chignik harvest be changed such that harvests in Southeast District Mainland (Area M) and Igvak are no longer considered part of the Chignik total harvest. None of these proposals provide credible, data-driven justification for changing longstanding management plans. Recent genetic stock identification results reflect very limited sampling at Cape Igvak (Shedd et al. 2016) and as a result, insight regarding harvest patterns of Chignik sockeye in Igvak fisheries is narrow. There is no doubt that stock composition and harvest estimates are accurate and precise, but

only three strata in two different years were analyzed, where estimated harvest numbers of Chignik bound fish at Igvak were an order of magnitude different between them.

- **Proposal 58** would close Cape Igvak to fishing until July 8, based on increases in KMA harvests and declines in Chignik harvests. However, Chignik fish represented a relatively minor component of Westside KMA harvests sampled in Shedd et al. (2016) and there is no data linking historical harvests in KMA to Chignik harvests. Increases in KMA sockeye harvests over the years most-likely resulted from greater harvests of local sockeye stocks and sockeye from enhancement efforts by Kodiak Regional Aquaculture Association, which averaged about 345,000 during 2008 - 2017 (Anderson et al., 2018). Though Chignik suffered a run failure in 2018, long term average harvests during 1998-2018 are only 15% smaller than those from 1978-1997.

- **Proposal 59** seeks to change fishery accounting practices in CISMP by eliminating SEDM and Cape Igvak harvests from the total Chignik sockeye harvest, for allocation purposes within the plan. Currently 80% of sockeye harvested in most areas of SEDM and 90% of sockeye in Igvak are assumed part of total Chignik harvest. The effect of this is that allocation percentages would be reached sooner and harvests at Cape Igvak would be smaller. If the management plan assumes a specific percentage of Chignik origin fish in SEDM or Igvak, it must be included in

allocative accounting. It would be inappropriate to address only Igvak with such a proposal.

- **Proposal 60** would lower the allocation percentage of Chignik sockeye to Cape Igvak fishermen from 15% to 5% supposedly because at the inception of the management plan, KMA sockeye harvests were weak and Chignik harvests were robust, and now the situation is reversed. While KMA sockeye harvests have improved since 1978 due to local stock performance and enhancement efforts, there is no evidence that any declines of CMA sockeye harvests are tied to Cape Igvak sockeye harvests. Chignik harvests show wide variation since 1978 as many salmon systems do. Two of the highest and two of the lowest Chignik area sockeye harvests have occurred during the last decade (Figure 1). This proposal would significantly reduce harvest in Kodiak's longstanding fishery at Cape Igvak without justification.

- **Proposal 61** would raise harvest thresholds for the early and late Chignik run combined from 600,000 to 1,000,000 sockeye before Igvak could open and guarantee a harvest of 1,000,000 sockeye to Chignik fishermen. The proposal would probably close the Igvak fishery. Justification is based on unstated changes in assumptions and economic conditions that have occurred since inception of the management plan. This is essentially the same proposal submitted to the Area M board meeting in 2019 to

severely curtail the SEDM fishery, which the Board of fisheries rejected.

Proposal 62 creates mandatory reporting for vessels entering or leaving Cape Igvak section. It is likely unworkable and ineffective for fisheries managers to perform this monitoring.

Literature Cited

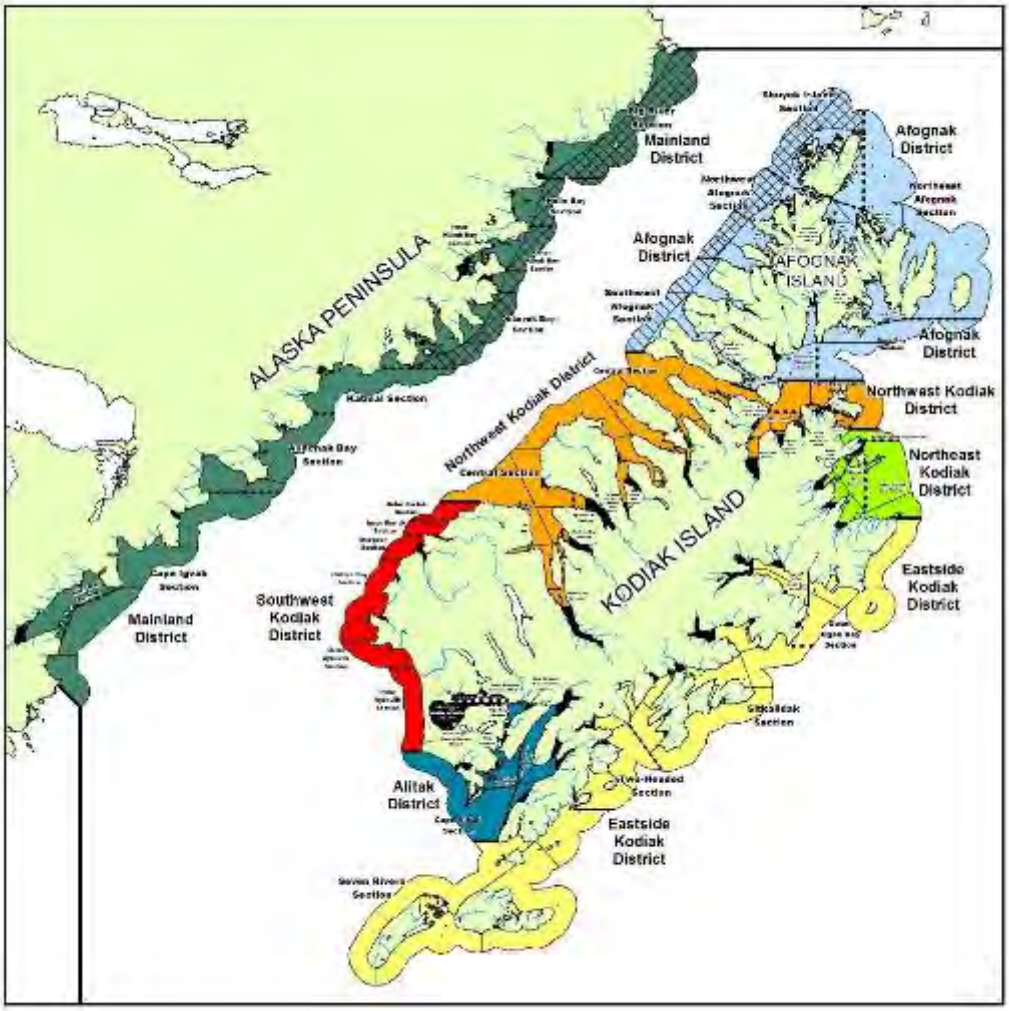
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Economic Analysis Proposal 58

Kodiak Salmon Workgroup

Key Findings

- Overall, proposed changes from Proposal 58 would result in an economic loss in the Kodiak Borough of almost three million dollars a year.
- On average, restrictions during the effected years would result in more than 75% of the current sockeye catch being eliminated.
- The complete implementation of proposal 58 would result in an average foregone harvest worth at least $1.9 million ex vessel price per year among affected fishermen.

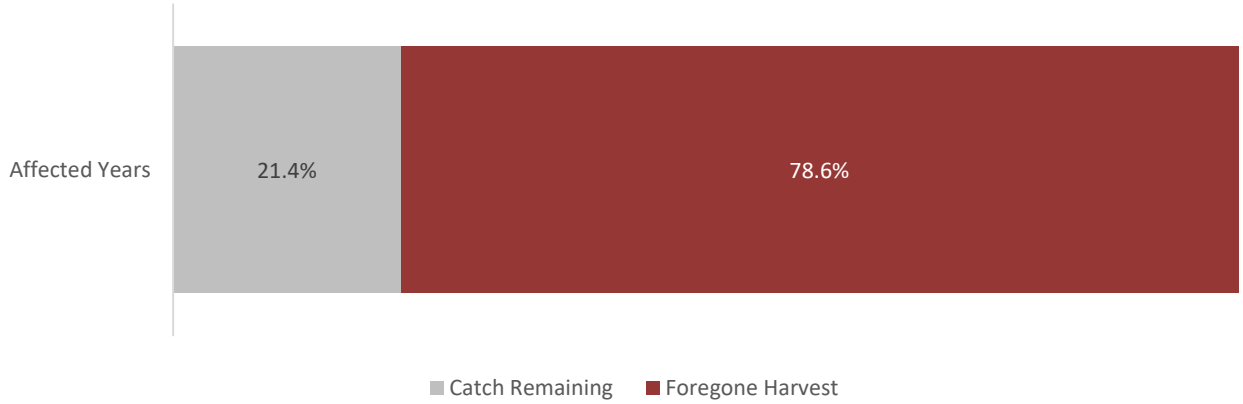
$2.99 Million Dollars Annual Economic Loss in the Kodiak Borough

- Direct loss of foregone sockeye harvest per year ranges from $140,000 to $6.25 million over the time period examined (1998-2019). The mean foregone sockeye harvest is valued at $1.89 million per year, using each year's prices.

$1.99 Million Dollars Yearly Direct Loss to Fishermen

- Sockeye loss per permit holder affected ranges from $3,000 to $79,000 per year (mean $27,000), depending on number of affected fishermen and count of foregone sockeye harvest.
- Total foregone harvest among all species is estimated to be 1.58 million pounds per year worth an average of $1.99 million per year, using each year's prices. Average loss per affected permit holder estimated to be $28,000 per year.
- Species specific foregone harvest ex vessel price estimated to range between $0 (coho) to $6.25 million (sockeye) per year.

Average Revenue Loss Per Year



Background

The 2019-2020 Board of Fish, Kodiak Finfish Proposal 58 proposes to amend the Cape Igvak Management Plan to restrict all commercial salmon fishing in the Cape Igvak Section before July 8th and until after the Chignik area sockeye harvest exceeds 300,000. The Chignik area includes all sockeye harvest in the Chignik Management Area, 80% of sockeye harvest in East Stepovak, Southwest Stepovak, Stepovak Flats, Balboa Bay, and Beaver Bay Sections and 90% of sockeye harvest in Cape Igvak.

Proposal 58 is only focused on the Cape Igvak section, Kodiak Mainland District.

Link to Proposal:
https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2019-2020/proposals/58.pdf

Data Sources

Foregone harvest days count and pound data was provided by the State of Alaska, Department of Fish and Game daily harvest reports. Price data for 1998-2018 was provided from the State of Alaska, Department of Fish and Game *Commercial Operator's Annual Reports* (COAR). 2019 price data was not available through the COAR report at the time of this analysis. 2019 price data is estimated from the five-year average of the reported 2014-2018 price per pound per species (see methods below). Multipliers for indirect and induced economic impact were commissioned from the US Department of Commerce, Bureau of Economic Analysis specifically for the Alaska commercial fishing industry. Inflation rates are provided from the US Department of Labor, Consumer Price Index. Tax information is from the State of Alaska, Department of Revenue and the Kodiak Borough.

Data Methods

Economic impact is estimated using historical harvest data from 1998-2019. Proposal 58 applies to all gear types and all gear harvest totals used in estimating impact. For the period prior to July 8th, no fishing occurred in Cape Igvak in 1998, 2008-2009, 2014-2015, and 2018-2019.

Proposal 58 would be in effect prior to July 25th for all years, including a total closure of the Cape Igvak fishery prior to July 8th. Additional restrictions would be in place dependent on Chignik sockeye harvest totals (under proposal 58, 90% of the Cape Igvak sockeye harvest is counted towards this value. Under BOF proposal 59, none of the Cape Igvak or Southeast Mainland District is counted towards this total). Total harvest counts in the Cape Igvak section were aggregated across days of closure (prior to July 8) for each year.

Additional closures would be in effect for a total of 10 days in 2003 and 2004 as the 300,000 minimum Chignik area harvest were not met.

The value of foregone harvest is calculated as species-specific foregone harvest pounds multiplied by species-specific Kodiak area price per pound for each year. Foregone harvest counts and economic impact are calculated for Cape Igvak as a whole. The number of permit holders affected by proposal 58 is calculated as the maximum number of unique permits during the closure period in harvest records.

Species specific prices per pound for each year between 1998-2018 were obtained from the Fish Game COAR for each individual year. The total net weight in the Kodiak area for each species for each season is divided by the respective net value.

Final 2019 COAR price per species data is not available. Species specific price for 2019 was estimated as a five-year average of available COAR data (2014-2018). Verification of 2019 data with the KSWG provided spreadsheets using Icicle, Ocean Beauty, and Pacific season prices for 2017-2019 compared to COAR for 2017, 2018. The spreadsheet values varied from published COAR by both higher and lower values up to 20%. The five-year average was much closer to 2017 and 2018 prices than the spreadsheet averages and weighted averages for respective years. The sockeye 2019 season price per pound estimate may be biased downwards given the processor spreadsheet; the COAR numbers were up to 20% lower than provided spreadsheet, and the five-year average is 16% lower than 2019 processor spreadsheet.

Indirect and induced economic loss was calculated from Regional Input-Output Modeling System (RIMS II) type I and type II multipliers. These take into account increase (in this case local loss) in regional economic activity due to change in industry specific earnings. For this report, the fisheries industry specific multipliers were used. Selected industry multipliers are specific to Alaska.

All values are adjusted for inflation and shown in 2019 dollar values.

Direct Losses

On average, in the years effected by Proposal 58, more than 75% of the current catch would be restricted. From year 1998-2019, more than 55% of the harvestable catch would be foregone. Overall, these changes would result in an economic loss to the Borough of almost three million dollars a year.

$1.99 Million Dollars Yearly Direct Loss to Fishermen

$2.99 Million Dollars Annual Economic Loss in the Kodiak Borough

Direct revenue lost to the Kodiak Borough per year:

Direct loss per affected year:	**$1.99 Million**
Loss from sockeye fishery:	$1.89 Million
Fisheries employment impact:	17.6 jobs per year
All employment impact:	22.1 jobs per year
Indirect community loss:	$414,120
Induced community loss:	$583,478
Total Annual Borough Loss:	**$2,992,397**

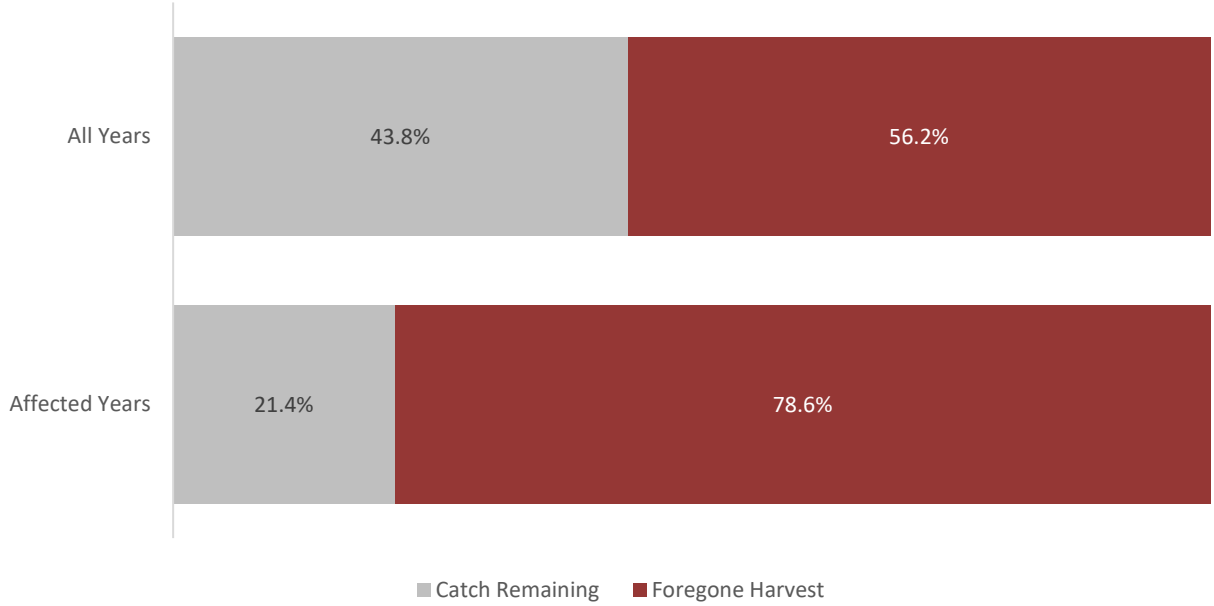
Proposal 58 would have impacts throughout the Kodiak Borough. The direct loss to fishermen would be $1.99 million per year. Of the total loss to the fishery, the limitation on the sockeye fishery comprise the majority of the impact, accounting for $1.89 million of the loss with $100,000 of the total loss distributed among other salmon species.

The direct impact of this proposal will result in a loss of 17.6 fisheries specific jobs and a total of 22.1 jobs overall in the Kodiak Borough per year. In addition to the direct loss impact of $1.99 million, there is a further indirect loss of $414k as a result of lost business to business economic activity for the community from purchases such as fuel, gear, and supplies. There is an additional $583k of induced loss in the community resulting from the lost direct and indirect economic activity (total $2.40 million) and reduced labor market. This impact results in a total loss to the community from direct, indirect, and induced losses of $2.99 million dollars per year.

Fisheries Loss

On average, restrictions during the effected years would result in more than 75% of the current catch being eliminated. For all years, including six unaffected years, the average revenue loss to the community would be more than 55%.

Chart 1: Average Revenue Loss Per Year



Over the last 22 years 1998-2019, there have been 10 years where the fisheries losses from these increase restrictions would result in a loss of more than one million dollars of foregone ex vessel value to the fishery. Six of the previous 22 years would be unaffected by the proposal changes. Fishing was severely restricted in 2018 due to historically low run returns.

The sockeye fishery would experience ex vessel losses of more than $1 million for nine of the 15 affected years.

Chart 2: Total Fishery Loss 1998-2019

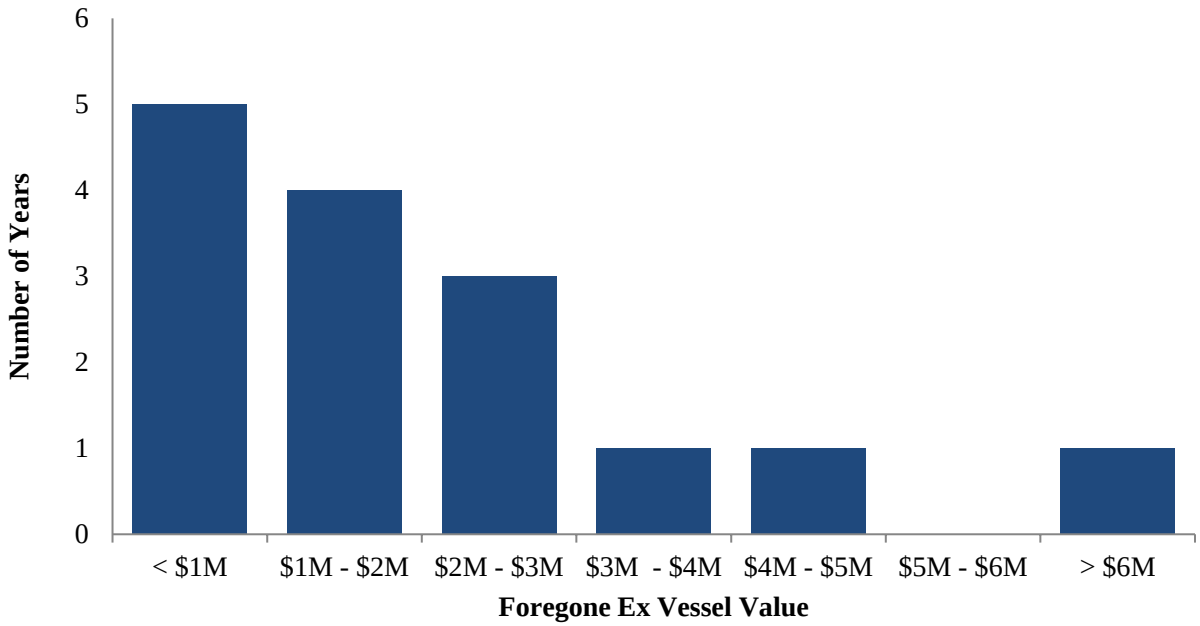
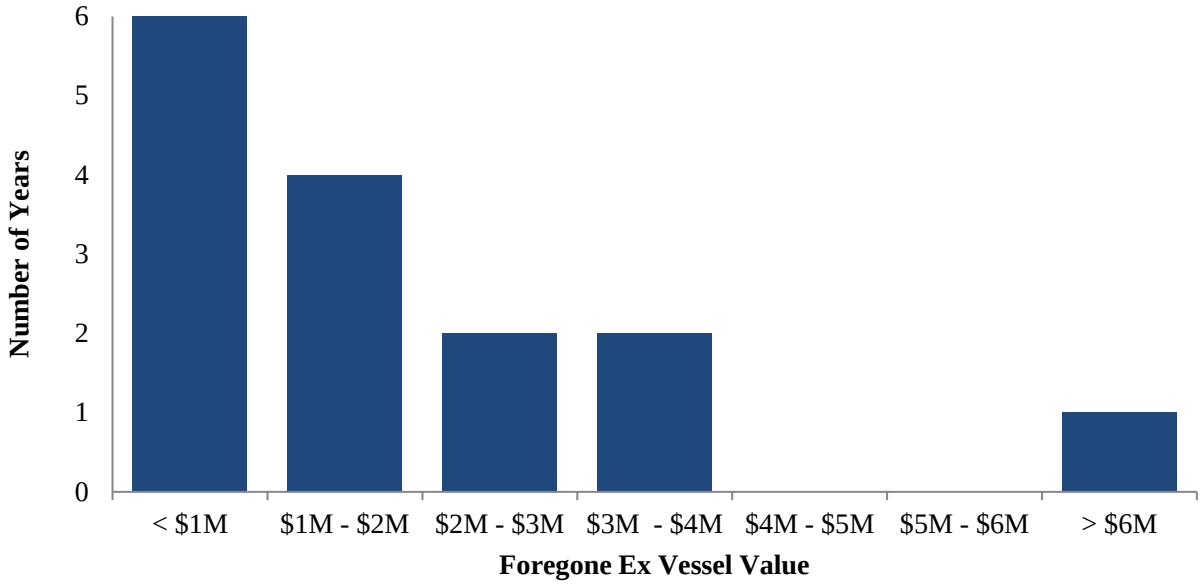


Chart 3: Total Sockeye Loss



The mean direct loss for all species per year is $1,994,798 with a median loss of $1,331,454. If these restrictions were in place the greatest impact would have been in 2011 with a loss of $6,659,154 and the least impact would have been in 2006 with a loss of $168,071.

Table 1: Direct Loss of Proposal 58 Implementation

Year	Direct Loss All Species	Direct Loss Sockeye
1998	No Impact	
1999	$3,508,007	$3,442,997
2000	$2,360,808	$2,323,611
2001	$1,024,685	$962,626
2002	$848,667	$799,675
2003	$688,343	$631,512
2004	$898,710	$869,284
2005	$2,217,289	$1,975,671
2006	$168,071	$139,644
2007	$505,519	$448,390
2008	No Impact	
2009	No Impact	
2010	$1,709,608	$1,622,292
2011	$6,659,154	$6,253,079
2012	$2,731,307	$2,586,591
2013	$4,003,809	$3,941,638
2014	No Impact	
2015	No Impact	
2016	$1,266,541	$1,159,328
2017	$1,331,454	$1,198,552
2018	No Impact	
2019	No Impact	
Mean	**$1,994,798**	**$1,890,326**
Median	**$1,331,454**	**$1,198,552**
Min	**$168,071**	**$139,644**
Max	**$6,659,154**	**$6,253,079**

Table 2: Direct Loss of Proposal 58 Implementation Per Fishermen

	Average Loss Per Fishermen – All Species	Average Loss Per Fishermen – Sockeye Only
Mean	**$28,399**	**$26,819**
Median	**$22,272**	**$21,921**
Min	**$3,909**	**$3,248**
Max	**$84,293**	**$79,153**

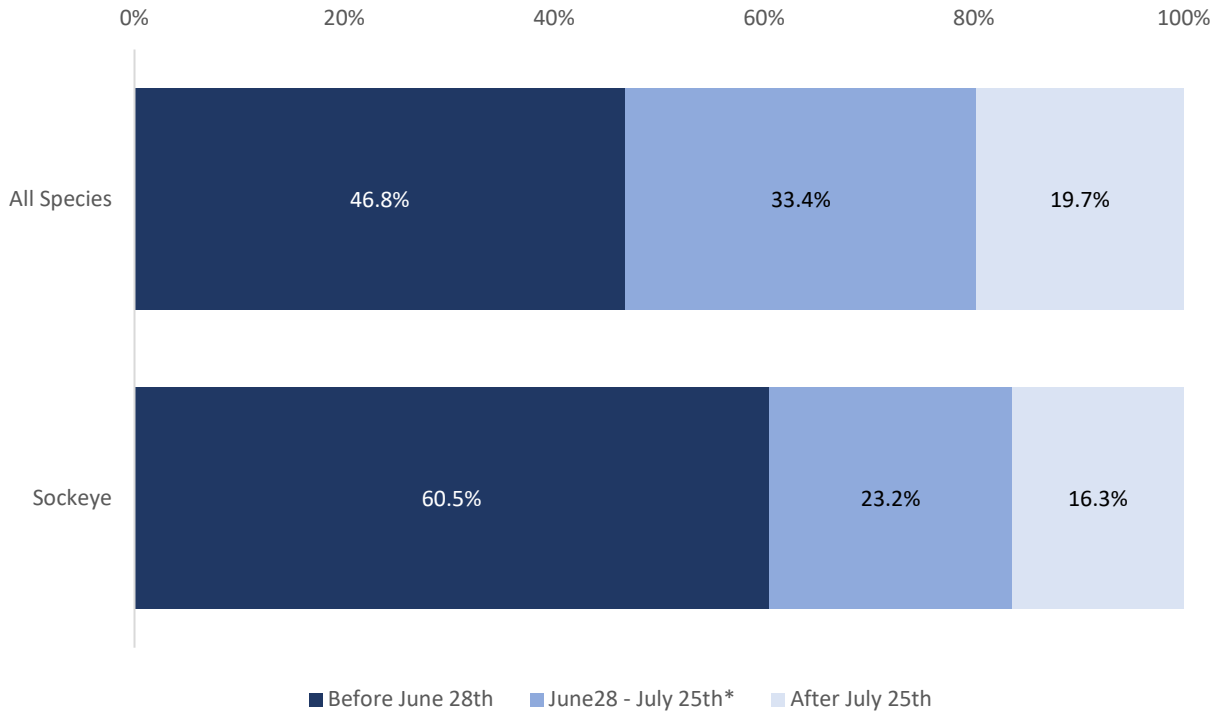
Based on the number of active permits per year, individual fishermen would experience a mean direct loss for all species per year of $28,399 with a median loss of $22,272. If these restrictions were in place the greatest impact would have been in 2011 with a loss of $84,293 per fishermen with the least impact in 2006 with an average loss of $3,909.

Table 3: Loss Per Affected Permit Holder

Year	Permits	Loss per Permit	Total Value Foregone Harvest	2019 Inflation Adjustment
1998	No Impact			
1999	104	$33,731	$2,272,025	$3,508,007
2000	106	$22,272	$1,580,192	$2,360,808
2001	57	$17,977	$705,220	$1,024,685
2002	68	$12,480	$593,473	$848,667
2003	78	$8,825	$492,377	$688,343
2004	37	$24,289	$659,846	$898,710
2005	71	$31,229	$1,683,590	$2,217,289
2006	43	$3,909	$131,717	$168,071
2007	32	$15,797	$407,348	$505,519
2008	No Impact			
2009	No Impact			
2010	58	$29,476	$1,448,820	$1,709,608
2011	79	$84,293	$5,826,032	$6,659,154
2012	57	$47,918	$2,438,667	$2,731,307
2013	72	$55,608	$3,626,639	$4,003,809
2014	No Impact			
2015	No Impact			
2016	60	$21,109	$1,181,475	$1,266,541
2017	78	$17,070	$1,269,261	$1,331,454
2018	No Impact			
2019	No Impact			
Average		**$28,399**	**$1,621,112**	**$1,994,798**

On average, the majority of sockeye and almost half of total catch (by weight) in Cape Igvak for each season is caught before June 28th. For this reason, the impact of proposal 58 (total closure of Cape Igvak before July 8th) is much higher than the impact of proposal 65 (closure between 6/28 and 7/25). Of note, no fishing occurred in Cape Igvak during any year (1998-2019) between June 28th and July 8th.

Chart 4: Average Total Weight Caught During the Season in Cape Igvak by Time Period



Foregone Tax Revenue

The foregone harvest due to proposal 58 implementation would have tax implications for state, borough, and city budgets. The state implements two relevant taxes in the region: the fisheries business tax (which is shared with local governments) and the salmon enhancement tax (SET). Fisheries business tax rates vary by type of processing activity and the proportion of each is estimated from the State of Alaska's Annual Tax Report for FY18. The salmon enhancement tax rate is 2% in the Kodiak region. The Borough implements a resource severance tax of 1.075% and receives a share of the fisheries business tax from the state. The local city governments also receive a share of the fisheries business tax from the State of Alaska. Borough and city shares of the fisheries business tax estimated from the Borough's FY18 annual tax report.

The implementation of proposal 58 would result in average yearly tax losses of $72,000 to the State of Alaska, $32,000 to the Kodiak Borough, and $10,000 to Kodiak City.

State Taxes	
Fisheries Business Tax (50% Share)	$32,326
SET Tax	$39,896
Total	**$72,222**

Borough	
Resource Severance Tax	$21,444
Fisheries Business Tax (Share of 50%)	$10,322
Total	**$31,766**

Cities (Share of Fisheries Business Tax)	
Akhiok	$2,409
Kodiak	**$9,620**
Larsen Bay	$2,407
Old Harbor	$2,585
Ouzinkie	$2,498
Port Lions	$2,484
Total	**$22,003**

Loss by Species

Table 4: Sockeye Foregone Harvest

Year	Foregone Harvest - lbs	Sockeye Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	No Impact			
1999	2,063,865	$1.08	$2,229,920	$3,442,997
2000	1,739,030	$0.89	$1,555,295	$2,323,611
2001	943,979	$0.70	$662,509	$962,626
2002	909,868	$0.61	$559,213	$799,675
2003	748,823	$0.60	$451,726	$631,512
2004	976,581	$0.65	$638,241	$869,284
2005	1,869,704	$0.80	$1,500,130	$1,975,671
2006	130,411	$0.84	$109,438	$139,644
2007	361,799	$1.00	$361,314	$448,390
2008	No Impact			
2009	No Impact			
2010	969,922	$1.42	$1,374,824	$1,622,292
2011	3,584,803	$1.53	$5,470,760	$6,253,079
2012	1,568,290	$1.47	$2,309,456	$2,586,591
2013	1,961,485	$1.82	$3,570,324	$3,941,638
2014	No Impact			
2015	No Impact			
2016	847,930	$1.28	$1,081,462	$1,159,328
2017	755,297	$1.51	$1,142,567	$1,198,552
2018	No Impact			
2019	No Impact			
Total	**19,431,787**		**$23,017,180**	**$28,354,890**

Table 5: Chum Foregone Harvest

Year	Foregone Harvest - lbs	Chum Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	No Impact			
1999	170,112	$0.19	$31,572	$48,747.61
2000	92,806	$0.22	$20,153	$30,108.15
2001	83,888	$0.32	$26,773	$38,900.99
2002	137,679	$0.16	$22,253	$31,821.74
2003	166,509	$0.14	$23,184	$32,410.91
2004	125,877	$0.12	$15,458	$21,053.48
2005	185,393	$0.20	$37,447	$49,318.10
2006	50,260	$0.33	$16,799	$21,436.08

2007	103,667	$0.35	$36,489	$45,283.38
2008	No Impact			
2009	No Impact			
2010	109,744	$0.56	$61,481	$72,547.59
2011	455,032	$0.69	$314,002	$358,904.81
2012	184,103	$0.60	$110,888	$124,194.16
2013	169,242	$0.25	$42,981	$47,450.60
2014	No Impact			
2015	No Impact			
2016	195,096	$0.34	$65,775	$70,510.56
2017	132,879	$0.57	$76,223	$79,958.03
2018	No Impact			
2019	No Impact			
Total	**2,362,287**		**$901,478**	**$1,072,646**

Table 6: Pink Foregone Harvest

Year	Foregone Harvest - lbs	Pink Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	No Impact			
1999	7,134	$0.14	$1,006	$1,553
2000	19,270	$0.14	$2,771	$4,139
2001	69,962	$0.12	$8,304	$12,066
2002	104,486	$0.09	$8,984	$12,848
2003	136,662	$0.09	$12,000	$16,776
2004	22,668	$0.10	$2,174	$2,961
2005	1,084,704	$0.12	$130,269	$171,564
2006	11,709	$0.16	$1,916	$2,445
2007	20,788	$0.18	$3,750	$4,654

2008	No Impact			
2009	No Impact			
2010	19,416	$0.44	$8,446	$9,967
2011	48,944	$0.47	$22,780	$26,038
2012	29,660	$0.48	$14,147	$15,844
2013	15,872	$0.42	$6,716	$7,415
2014	No Impact			
2015	No Impact			
2016	55,585	$0.47	$26,237	$28,126
2017	113,573	$0.43	$48,638	$51,021
2018	No Impact			
2019	No Impact			
Total	**1,760,433**		**$298,138**	**$367,416**

Table 7: Coho Foregone Harvest

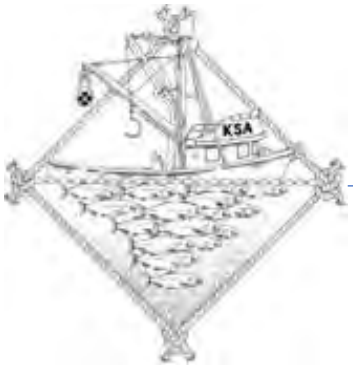
Year	Foregone Harvest - lbs	Coho Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	No Impact			
1999	0	$0.41	$0	$0
2000	0	$0.49	$0	$0
2001	62	$0.24	$15	$22
2002	10,920	$0.18	$20	$28
2003	5,693	$0.20	$1,138	$1,591
2004	29	$0.27	$8	$11
2005	341	$0.42	$143	$189
2006	14	$0.66	$9	$12
2007	36	$0.60	$22	$27
2008	No Impact			

2009	No Impact			
2010	116	$0.80	$92	$109
2011	120	$0.82	$98	$112
2012	7	$0.77	$5	$6
2013	0	$0.72	$0	$0
2014	No Impact			
2015	No Impact			
2016	227	$0.78	$178	$191
2017	52	$0.84	$43	$46
2018	No Impact			
2019	No Impact			
Total	**17,617**		**$1,772**	**$2,342**

Table 8: Chinook Foregone Harvest

Year	Foregone Harvest - lbs	Chinook Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	No Impact			
1999	13,994	$0.68	$9,527	$14,710
2000	2,980	$0.66	$1,974	$2,949
2001	10,589	$0.72	$7,619	$11,071
2002	8,155	$0.37	$3,003	$4,295
2003	12,202	$0.35	$4,330	$6,053
2004	7,700	$0.51	$3,965	$5,400
2005	20,508	$0.76	$15,601	$20,547
2006	3,792	$0.94	$3,554	$4,535
2007	6,479	$0.89	$5,774	$7,165
2008	No Impact			
2009	No Impact			

2010	6,169	$0.64	$3,977	$4,692
2011	20,535	$0.90	$18,391	$21,021
2012	6,866	$0.61	$4,171	$4,671
2013	11,504	$0.58	$6,618	$7,306
2014	No Impact			
2015	No Impact			
2016	8,635	$0.91	$7,823	$8,386
2017	2,337	$0.77	$1,789	$1,877
2018	No Impact			
2019	No Impact			
Total	**142,445**		**$98,116**	**$124,679**



Kodiak Seiners Association
PO Box 8835
Kodiak, AK 99615

December 12, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Opposition to Proposal 58

Dear Chairman Morisky and Board of Fish Members,

The **Kodiak Seiners Association (KSA) opposes Proposal 58**. The proposal intends to entirely eliminate the Cape Igvak fishery in June while sustaining the 15% allocation of Chignik bound sockeye in the Cape Igvak area along with other sustainability and allocation thresholds that are currently in place. The outcome of the proposal would be to focus the harvest of Chignik bound fish entirely on the second run in July while discontinuing the longstanding traditional harvest of early run Chignik bound sockeye in June.

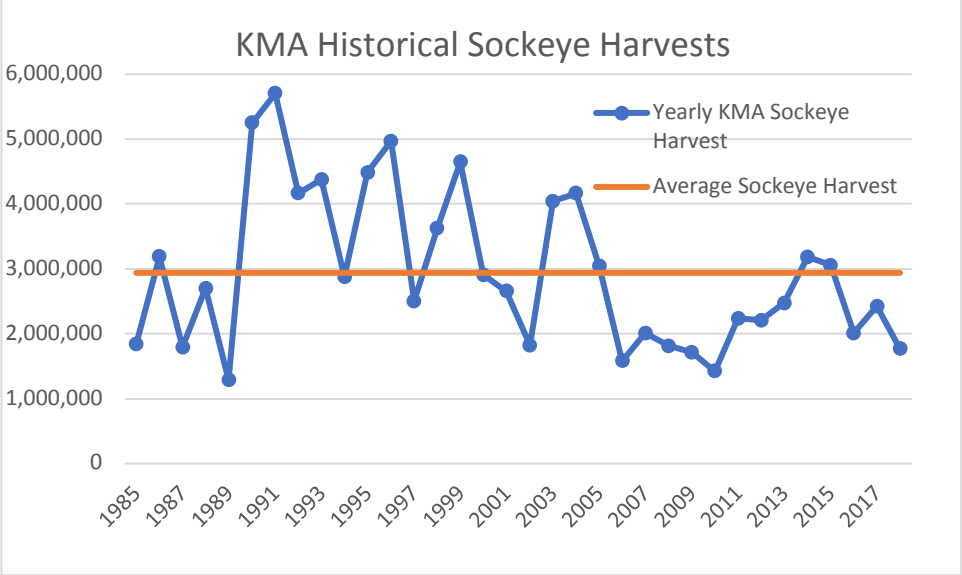
The Cape Igvak management plan was first adopted in 1978 and has been repeatedly evaluated by the Alaska Board of Fisheries, making it one of the most long-standing and intensely scrutinized management plans in the state. Repeated analysis through the application of the Sustainable Salmon Policy, the Mixed Stock Fisheries Policy, and the Allocation Criteria has resulted in no substantial changes to the Cape Igvak management plan since its inception. The durability of this plan reflects the care with which it was crafted to ensure a management structure that provides equal consideration to Chignik and Kodiak fishermen. The plan includes biological sustainability safeguards as well as allocation and economic considerations to ensure that *traditional fisheries* in *both* areas are preserved.

Despite the current narrative posited by detractors of the Cape Igvak fishery, this management was *not* developed as an ad hoc charity for Kodiak fishermen by providing them with access to Chignik stocks. Instead, the management plan was originally designed as a *restriction* on the traditional fishery in the Cape Igvak section. Prior to the implementation of the management plan, the Cape Igvak section would open to commercial harvest concurrently with Chignik, providing equal fishing time in both areas. The plan was crafted in collaboration with Chignik fishermen and it introduced new limitations for the harvest of Chignik bound stocks in Kodiak while recognizing the historical

importance of the fishery to Kodiak fishermen who have now for generations heavily relied on this fishery.

Kodiak's local early sockeye fisheries have not been spared from the gulf-wide trend of decline, likely caused by the notorious warm water event known as the "Pacific Blob." Consistently low harvests have occurred in recent years at Ayakulik, Karluk, Alitak and Spiridon as well as in the minor systems such as Litnik, Saltery, Uganik, Foul Bay, Pauls Bay and others. Nearly universally weak early sockeye runs have led to dismal June harvest numbers in Kodiak. The underlying premise of the proposal, that strong runs in Kodiak and weak runs in Chignik warrant focused fishing effort in the Cape Igvak section to July, is patently false and would provide further economic harm to a fleet that desperately needs more early season fishing opportunities.

KSA hopes that the Board is not swayed by false claims of abundant sockeye harvests in the Kodiak area. The graph below shows sockeye harvests in the KMA since 1985 and clearly demonstrates a long-term trend of decline. Only in 3 of the past 15 years has sockeye harvests in Kodiak exceeded the long-term average of 2.9 million fish:



The only notable exception in recent years to the decline of Kodiak's local sockeye runs is the late Karluk run. After a multidecadal slump, this run has shown signs of a potential revival. Unfortunately, late Karluk harvests proved disappointing in 2019 signaling a possible end to its recent rise. It is unclear how proponents of proposal 58 and 60 have concluded that Kodiak's salmon fishery is "exponentially healthier", since publicly available data clearly demonstrates the contrary. The trend of salmon abundance in Kodiak mirrors the rest of the western Gulf of Alaska, where unpredictability coupled with some historically poor harvests have left the fleet uneasy about the future of the fishery.

KSA would also like mention that our membership is increasingly frustrated in the gross inequity in the how the shared resource is currently managed. Chignik fishermen are prosecuting an expanding mixed stock fishery on non-local stocks (see WASSIP), yet their fishing efforts have no restrictions that account for the impact that their harvest has on Kodiak's fishery. Meanwhile, Kodiak fishermen have endured 2 consecutive years of closures in the Cape Igvak area in order to conserve the

Chignik fishery in addition to closures in the "seaward zones" of the North Shelikof straight designed to inhibit the harvest of Cook Inlet stocks. The impact of Chignik's harvest of Kodiak fish was made abundantly clear to our fishermen in 2018 when closures in Chignik and Area M resulted in far higher than expected returns to the Kodiak fishery. Although that season was still poor by most standards, a clear migration path for Karluk sockeye provided just enough fish to sustain our fleet for the season.

KSA respectfully requests the Board to **reject proposal 58** and recognize that Kodiak has not been somehow spared from impacts of the Pacific Blob or regional trends in declining sockeye runs. We thank you for the opportunity to comment on behalf of the membership of KSA. We appreciate the scientific and factual creation of regulations regarding our fisheries and trust that the Board continue to apply consistency in designing regulation changes while applying the guiding BOF policies, such as the Management for Mixed Stock Salmon Fisheries.

Kodiak Seiners Association represents 157 members, including the majority of actively fishing SO1K seine permit holders, Kodiak and Homer-based businesses, and individual crewmembers. Our focus is advocacy for our membership through positive interactions with ADF&G, the Board of Fisheries, and our State Legislature.

Sincerely,

Nate Rose
KSA President

Mariel ellingson

12/27/2019 10:35 PM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

My name is Mariel Ellingson, I'm 30 years old and I grew up set netting In kodiak. I live in kodiak and was fortunate to participate in this years salmon seine season. These are not conservation proposal.

December 24, 2019

Matthew Alward

60082 Clarice Way

Homer, AK 99603

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Opposition to proposal 58

Dear Chairman Morisky and board of fisheries members,

My name is Matthew Alward from Homer, AK and I oppose proposal 58 that would close a traditional Kodiak fishery. I support our family participating in the Kodiak salmon seine fishery and have raised our kids on the back deck of our family seine boat. The Cape Igvak section is an important part of our fishery and proposal 58 would close it from the beginning of the season till July 8th which has been part of the Kodiak fishery for many decades.

The Cape Igvak management plan was adopted in 1978 and since then it has had numerous proposals aimed at shifting the allocation more towards Chignik. Throughout all of the board of fisheries deliberations on the many proposals to amend the Cape Igvak management plan the board has applied their Allocation Criteria, Sustainable Salmon Policy, and the Mixed Stock Fisheries Policy and all of the past boards have determined that no changes were warranted. This proposal would take approximately 50% of Kodiak's longstanding traditional fishery in the Cape Igvak section away without any real justification.

The proposer alleges that the Cape Igvak management plan was put in place because of poor Kodiak sockeye returns which have rebounded and that justifies closing half of the Igvak fishery. In fact the plan was put in place to limit the Cape Igvak fishery and had nothing to do with Kodiak Island sockeye runs at all. Prior to the plans implementation Igvak was opened congruent with Chignik and they both

had equal fishing time. The current management plan acknowledges the mixed stock nature of the Igvak section and sets an allocation with protections for conservation in low abundance and the fact that the Cape Igvack section has not opened four of the last six years shows that the conservation measures in the plan are working.

Kodiak Island sockeye stocks have been negatively affected by the “Pacific warm blob” event that has affected many other Gulf of Alaska salmon stocks including Chignik. The last ten year average of Kodiak sockeye harvest has been below the 35 year average which shows the same declining trend that Chignik has experienced. I have not seen any data that would suggest a major shift in the sockeye harvest in the Cape Igvak management section that would warrant closing half of the Igvak fishery.

In closing I contend that the Cape Igvak management plan has been working as intended for over 40 years and should remain unchanged and respectively ask you to oppose proposal 58 and not adopt it.

Sincerely,

Matthew Alward

Nicholas Hoffman
PO Box 1212
Kodiak, AK 99615

12/24/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Oppose Proposal 58

Dear Chairman Morisky and Board of Fish members:

I'm a young Kodiak salmon fisherman. I have been running a seine boat since 2011 as well as participating in Kodiak halibut, sea cumber, cod jig, and tanner crab fisheries. I respectfully request the Board reject Proposal 58.

The Cape Igvak management plan is a historical plan that has been in place for a long time and worked very well. There are safeguards built into this plan that insure that Chignik fishermen catch lots of fish before the Igvak Area can even open to Kodiak fishermen. While unfortunately Chignik runs have been in a downcycle the last few years, run strengths are cyclical and Chignik may be strong again. This proposal is allocative and has no basis in conservation as the current Igvak management plan already takes weak Chignik runs into account: Igvak area does not open to Kodiak fishermen when Chignak has a weak run. This proposition is an attempt to disenfranchise a historical Kodiak fishery and give more fish to Chignik fishermen.

I see no reason for the Board to make any changes to the Kodiak Salmon Management plan. Thank you for the opportunity to comment on the proposals and the chance for my voice to be heard. I look forward to the Board of Fish members getting to spend time in Kodiak and learn more about our town and fishing community.

I humbly request the Board reject Proposal 58.

Sincerely,

Nicholas Hoffman
F/V Relentless

Oliver Holm
self
12/27/2019 02:57 PM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

I have fished salmon around Kodiak for more than fifty years. Not allowing an Igvak fishery before July 8th would mean the Kodiak seine fleet would be very unlikely to achieve the allocation. It has been very difficult for the Kodiak seine fleet to make money in June recently. If the Chignik run is week we wouldn't be fishing in June but in good returns Igvak is a significant opportunity to make June fishing viable for seiners. The long standing Igvak plan works well and nothing has changed that justifies changing it.

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

December 27, 2019 Alaska Board of Fisheries Board Support Section P.O. Box 115526?Juneau, AK 99811-5526 RE: Opposition to Proposal 58 Dear Board of Fish Members, ? My name is Peter Ivanoff and have been a commercial salmon fisherman in kodiak for 20 years and started going on salmon trips with my father earlier than that. I am very concerned with proposal 58 and how this proposal could affect my family and the kodiak community in general. The intention of this letter is to oppose Proposal 58. The proposal intends to entirely eliminate the Cape Igvak fishery in June while sustaining the 15% allocation of Chignik bound sockeye in the Cape Igvak area. This proposal would be to focus the harvest of Chignik bound fish entirely on the second run in July while discontinuing the longstanding traditional harvest of early run Chignik bound sockeye in June. The Management plan for this area has been active since 1978, and claims that the kodiak fishery is thriving while chignik is declining are not true. In actuality kodiak has had poor sockeye returns in the past ten years. The management plan was originally put together as a restriction on the fishery in the Cape Igvak section. Before the management plan in Cape Igvak, the section would open to fish at the same time as Chignik. This plan includes sustainability as well as allocation and economic considerations to ensure the fisheries remains healthy. A change to this plan and closing the area earlier than the current plan would have a devastating impact on the kodiak salmon fleet and shore based support. Peter Ivanoff

December 26, 2019

Quinn Alward

60082 Clarice Way

Homer, AK 99603

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Opposition to proposal 58

Dear Chairman Morisky and board of fisheries members,

My name is Quinn Alward and I have grown up fishing in the waters of Kodiak with my family since I was 10. It is 12 years later and commercial salmon seining is still a very big part of my life. I oppose proposal 58 that intends to close the Cape Igvak section from the beginning of the season until July 8th. The Cape Igvak section is a special area to me and being able to fish it when it's opened has helped me make enough to pay my way through college.

The current Cape Igvak management plan has been in place since 1978 and over the last few decades numerous proposals have been brought up trying to shift the allocation of Cape Igvak fish to the Chignik area. Every time the board of fisheries has deliberated the proposals it has applied their Sustainable Salmon Policy, the Mixed Stock Fisheries Policy and their Allocation Criteria always ending in with the determination that no changes were warranted.

The proposal would take away almost half of the time we can fish in Cape Igvak with no solid justification.

For this reason I ask that you oppose proposal 58 and by not adopting it, help me and my family continue on with fishing traditions I've known my whole life.

Sincerely,

Quinn Alward

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 58

Dear Chairman Morisky and Board of Fisheries Members,

I am Richard Roth, Kodiak salmon purse seine permit holder and fisherman. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife, three children and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Tzar. I formally owned and operated the F/V Kelly Girl. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

This proposal seeks to further limit Kodiak's traditional Cape Igvak fishery. Kodiak's salmon fishery has not changed since management plans were adopted starting with the Cape Igvak plan in 1978 and continuing through the early 1990s. Kodiak's salmon fishery is not a "new and expanding" fishery. This proposal is a familiar effort to limit the small portion of sockeye take that Kodiak fishermen are allowed in the Cape Igvak plan only after significant safety thresholds are reached by Chignik fishermen.

The Cape Igvak management plan was created because fishing there was part of Kodiak's historic fishing patterns prior to limited entry in 1973. The plan was put in place in 1978 to allow Kodiak fishermen access to their historic allocation of fish harvested during June and July. Kodiak's fishing opportunities at Cape Igvak are based off of existing built-in conservation measures designed to protect Chignik's second run with a safety net of 300,000 early run sockeye and 600,000 total sockeye for Chignik fishermen before *any fishing at Igvak occurs*. This purpose of this threshold is to prevent conservation issues during weak Chignik runs. This plan has been repeatedly evaluated by the Alaska Board of Fisheries through time, making it one of the most long-standing and intensely scrutinized management plans in the state.

If there are poor returns in Chignik, the current plan ensures that Kodiak fishermen won't fish at Igvak.

The 2019 Chignik Salmon Season Summary shows total values and average value per active permit in the Chignik Management Area in recent years, except for 2018, seem on track for what appears to be a normal range for the CMA within the last ten years. The 2019 season saw 51 active permits with a value per permit of $157,072, which is very close to a decade ago with a 2009 season of 55 permits and a value per permit of $156,926, much greater value than Kodiak permits.

I ask that the Board reject this proposal and not make any changes to the Cape Igvak Management Plan.

Thank you for your careful consideration,
Richard, Amanda, Stephanie, Noah, and Ranger Roth
F/V Sea Tzar
Homer, Alaska

December 19, 2019

Robert Fellows

266 E Bayview Ave.

Homer, AK. 99603

Alaska Board of Fisheries

Board Support Section

PO Box 115526

Juneau, Ak. 99811-5526

RE: Opposition to proposal 58

Dear chairman Morisky and Board of Fisheries members,

I am a commercial salmon fisherman who has fished in the Kodiak area for 29 years. Salmon fishing generates the majority of my family's yearly income as well as for my crewmembers. The Cape Igvak section is part of the historical fishing area for Kodiak and should remain so. I respectfully request the board reject proposal # 58.

The Cape Igvak management plan was created to allow Kodiak fishermen access to their historic fishing patterns. The Cape Igvak section currently doesn't open until 300,000 sockeye have been harvested in Chignik and the Chignik run has a sizable harvest surplus. When the Chignik run is weak the Cape Igvak section doesn't open. The proposal mentions run strengths. Run strengths are cyclical and Chignik's current run strength issues are 'mother nature" problems. One of the lakes in that system is silting in so the carrying capacity of the two lakes has been diminished. That is why their run strength has been weaker in recent years. The Cape Igvak section hasn't even been open prior to July 8th recently.

Sincerely,

Robert Fellows

Ron Kavanaugh
Self
12/28/2019 12:09 AM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

The current management plan has been successful in keeping the allocation of catch to 15%. In years of low escapement, it completely shuts down effort in the Igvak area, putting significant conservation burden on the KMA fleet. This plan effectively redistributes the allocation and does not address conservation or management. It will not improve Chignik stocks and will complicate management of the fishery.

Stephen OBrien
None
12/27/2019 03:57 PM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

This proposal is not based off historical data. I feel it is a last ditch effort to point blame for a few years of poor escarpment.

Steven Roth

12/27/2019 06:21 AM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

December 24, 2019 Alaska Board of Fisheries Board Support Section P.O. Box 115526 Juneau, AK 99811-5526 Re: Opposition to Proposal 58 Dear Chairman Morisky and Board of Fisheries Members, I am Steve Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Grace. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures. This proposal seeks to further limit Kodiak's traditional Cape Igvak fishery. Kodiak's salmon fishery has not changed since management plans were adopted starting with the Cape Igvak plan in 1978 and continuing through the early 1990s. Kodiak's salmon fishery is not a "new and expanding" fishery. This proposal is a familiar effort to limit the small portion of sockeye take that Kodiak fishermen are allowed in the Cape Igvak plan only after significant safety thresholds are reached by Chignik fishermen. The Cape Igvak management plan was created because fishing there was part of Kodiak's historic fishing patterns prior to limited entry in 1973. The plan was put in place in 1978 to allow Kodiak fishermen access to their historic allocation of fish harvested during June and July. Kodiak's fishing opportunities at Cape Igvak are based off of existing built-in conservation measures designed to protect Chignik's second run with a safety net of 300,000 early run sockeye and 600,000 total sockeye for Chignik fishermen before any fishing at Igvak occurs. This purpose of this threshold is to prevent conservation issues during weak Chignik runs. This plan has been repeatedly evaluated by the Alaska Board of Fisheries through time, making it one of the most long-standing and intensely scrutinized management plans in the state. If there are poor returns in Chignik, the current plan ensures that Kodiak fishermen won't fish at Igvak. The 2019 Chignik Salmon Season Summary shows total values and average value per active permit in the Chignik Management Area in recent years, except for 2018, seem on track for what appears to be a normal range for the CMA within the last ten years. The 2019 season saw 51 active permits with a value per permit of $157,072, which is very close to a decade ago with a 2009 season of 55 permits and a value per permit of $156,926, much greater value than Kodiak permits. I ask that the Board reject this proposal and not make any changes to the Cape Igvak Management Plan. Thank you for your careful consideration, Steve and Jenny Roth F/V Sea Grace Homer, Alaska

Thomas G Wischer
Northwest Setnetters Association
12/21/2019 06:34 PM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

My family and I are set gill net fishermen in Kupreanof Strait, which is in the Central Section of the Northwest Kodiak District. Kupreanof Strait flows into Shelikof Strait. The 2020 season will be my 43rd season fishing in the same locations. Gill net and seine gear types are not managed separately by ADF&G. Restrictions or closures in the Mainland Sections of the Kodiak Management Area will only result in increased seine effort in the Central Section. This will further facilitate potential conflicts in gear types in an area that already has enough competition between the gear types allowed. This proposal will be highly detrimental to the set gill net fisheries, which are barely able as it is to make a living.

Tollef Monson

12/25/2019 06:51 PM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

This is not good management policy/

Tyler-Rose Hoffman
PO Box 1212
Kodiak, AK 99615

12/24/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: **Oppose Proposal 58**

Dear Chairman Morisky and Board of Fish members:

I live in Kodiak and my husband and I operate a commercial fishing business. We rely on salmon for the bulk of our income, though we also participate in halibut, sea cucumber, and cod fisheries. Our ability to stay in Kodiak depends on the health of the Kodiak salmon fishery. I respectfully request the Board reject Proposal 58.

Despite the implications of this proposal, the Cape Igvak management plan was put in place not as charity to Kodiak fishermen, but as a limit on a traditional Kodiak fishery. The plan has been repeatedly evaluated by the Alaska Board of Fisheries and the close scrutiny has resulted in no major changes to the plan. The current plan already assures both the conservation and economic concerns of both areas are addressed by preventing Igvak from opening until 300,000 sockeye have been harvested in Chignik.

The Kodiak Salmon Management plan is good as it is and I see no need for any changes to it. Thank you for the opportunity to comment on the proposals before the meeting. As always, I look forward to visitors getting to enjoy our great town and vibrant fishing community.

I humbly request the Board reject Proposal 58.

Sincerely,

Tyler-Rose Hoffman
F/V Relentless

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 58

Dear Chairman Morisky and Board of Fisheries Members,

I am William Roth, Captian of the F/V Sea Chantey. I own a Kodiak seine permit and have been fishing it for the lasat 5 years as well as working as crew since 2010, I rely mostly on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

This proposal seeks to further limit Kodiak's traditional Cape Igvak fishery. Kodiak's salmon fishery has not changed since management plans were adopted starting with the Cape Igvak plan in 1978 and continuing through the early 1990s. Kodiak's salmon fishery is not a "new and expanding" fishery. This proposal is a familiar effort to limit the small portion of sockeye take that Kodiak fishermen are allowed in the Cape Igvak plan only after significant safety thresholds are reached by Chignik fishermen.

The Cape Igvak management plan was created because fishing there was part of Kodiak's historic fishing patterns prior to limited entry in 1973. The plan was put in place in 1978 to allow Kodiak fishermen access to their historic allocation of fish harvested during June and July. Kodiak's fishing opportunities at Cape Igvak are based off of existing built-in conservation measures designed to protect Chignik's second run with a safety net of 300,000 early run sockeye and 600,000 total sockeye for Chignik fishermen before *any fishing at Igvak occurs*. This purpose of this threshold is to prevent conservation issues during weak Chignik runs. This plan has been repeatedly evaluated by the Alaska Board of Fisheries through time, making it one of the most long-standing and intensely scrutinized management plans in the state.

If there are poor returns in Chignik, the current plan ensures that Kodiak fishermen won't fish at Igvak.

The 2019 Chignik Salmon Season Summary shows total values and average value per active permit in the Chignik Management Area in recent years, except for 2018, seem on track for what appears to be a normal range for the CMA within the last ten years. The 2019 season saw 51 active permits with a value per permit of $157,072, which is very close to a decade ago with a 2009 season of 55 permits and a value per permit of $156,926, much greater value than Kodiak permits.

I ask that the Board reject this proposal and not make any changes to the Cape Igvak Management Plan.

Thank you for your careful consideration,

William and Kaytlen Roth
F/V Sea Chantey
PO BOX 1230
Homer AK
99603

Aaron Nevin

12/27/2019 07:50 PM AKST

RE: PROPOSAL 59 Modify the definition of the total Chignik sockeye salmon catch used to determine allocation percentages in the Cape Igvak Salmon Management Plan

I believe this proposal is going to have a negative impact on me and accomplish nothing. My name is Aaron Nevin. Being born in Kodiak to a commercial fisherman father I grew up fishing salmon on his seiner. I have continued on in my currently twenty year long career to buy a permit and run his boat after retirement. The seining season usually accounts for the majority of my annual income and is incredibly important to my family.

Adelia Myrick

12/25/2019 06:40 PM AKST

RE: PROPOSAL 59 Modify the definition of the total Chignik sockeye salmon catch used to determine allocation percentages in the Cape Igvak Salmon Management Plan

Dear Board of Fish Members, I am a second-generation Kodiak fisherman. My father started salmon fishing here in 1967, and I have setnetted since I was a toddler with my family, for my whole life. I took over the permit from my dad several years ago, and in 2016 finally bought the setnet operation from my parents outright. You may be wondering why a setnetter who has no ability to fish the Igvak area is even commenting on this proposal. This is because we are drastically affected by the mobile seine fleet. If they are limited in where they can fish, we find our central section of the Northwest Kodiak district becoming more and more crowded with fewer opportunities for all to harvest in the traditional manner. So it behooves me to pay attention and understand what's going on. In asking to modify the definition of the total Chignik sockeye salmon catch used to determine allocation, Chignik is essentially arguing the opposite that they argue at Area M meetings when they say that the fish in the western part of Area M are bound for Area M. It appears now that they are saying the opposite. And then we note that there isn't any new information here. How can what can be counted as Chignik Sockeye be changed based on no "new information?" As a lifelong fisherman with a previous generation of history in my consciousness, I have to add that climate change and the warming of the oceans and ocean acidification is something we are coming up against. Changes are happening and I feel like they are going to keep happening. For this reason I urge you to be very cautious and careful about changing management plans in response to fisheries "disasters." Who knows what disasters will happen next and if you build management plans in response to these rather than based on deep analysis of science and the history and all other elements of the proposal, you'll be setting dangerous precedents for your future decisions. Thank you for your consideration, Adelia Myrick

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 59

Dear Chairman Morisky and Board of Fisheries Members,

I am Alex Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Wandering Star. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

This proposal seeks to further limit Kodiak's traditional Cape Igvak fishery. Kodiak's salmon fishery has not changed since management plans were adopted starting with the Cape Igvak plan in 1978 and continuing through the early 1990s. Kodiak's salmon fishery is not a "new and expanding" fishery. This proposal is a familiar effort to limit the small portion of sockeye take that Kodiak fishermen are allowed in the Cape Igvak plan only after significant safety thresholds are reached by Chignik fishermen.

The Cape Igvak management plan was created because fishing there was part of Kodiak's historic fishing patterns prior to limited entry in 1973. The plan was put in place in 1978 to allow Kodiak fishermen access to their historic allocation of fish harvested during June and July. Kodiak's fishing opportunities at Cape Igvak are based off of existing built-in conservation measures designed to protect Chignik's second run with a safety net of 300,000 early run sockeye and 600,000 total sockeye for Chignik fishermen before *any fishing at Igvak occurs*. This purpose of this threshold is to prevent conservation issues during weak Chignik runs. This plan has been repeatedly evaluated by the Alaska Board of Fisheries through time, making it one of the most long-standing and intensely scrutinized management plans in the state.

If there are poor returns in Chignik, the current plan ensures that Kodiak fishermen won't fish at Igvak.

The 2019 Chignik Salmon Season Summary shows total values and average value per active permit in the Chignik Management Area in recent years, except for 2018, seem on track for what appears to be a normal range for the CMA within the last ten years. The 2019 season saw 51 active permits with a value per permit of $157,072, which is very close to a decade ago with a 2009 season of 55 permits and a value per permit of $156,926, much greater value than Kodiak permits.

I ask that the Board reject proposal 59 and not make any changes to the Cape Igvak Management Plan.

Thank you for your careful consideration,

Alex and Jaime Roth
F/V Wandering Star
Homer, Alaska

RE: PROPOSAL 59 Modify the definition of the total Chignik sockeye salmon catch used to determine allocation percentages in the Cape Igvak Salmon Management Plan

Bo Calhoun 57177 Zulu Ct. Homer, AK 99603 12/26/19 RE: Opposition to Proposal #59 Dear Chairman Morisky and Board of Fish members: I'm a third generation Kodiak salmon seiner. I was born and raised in Homer, AK and continue to live here. My wife and I hope to raise our two sons on our family seine boat in a healthy Kodiak salmon fishery. I respectfully request you reject Proposal #59. The average Cape Igvak harvest has been significantly less than the 15% allocation. The current management plan is executed conservatively to avoid Kodiak fishers catching more than 15%, and is working as intended to limit this traditional fishery. Please reject Proposal #59. Sincerely, Bo Calhoun

Brad Marden
PO Box 2856
Homer, AK 99603

December 23, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: **opposition to Proposal 59**

Dear Chairman Morisky and Board of Fish members:

I first participated in the Kodiak seine fishery for salmon in 2004. Since then, I've worked as a deckhand in various salmon, halibut, and herring fisheries throughout the state, before buying my own boat in 2012, followed by a Kodiak seine permit in 2013. Since then I have exclusively fished in Kodiak waters. I respectfully request the Board **reject Proposal 59**.

Proposals to reduce the Cape Igvak allocation are a perennial request at the Kodiak and Chignik finfish meetings, and have been consistently rejected by the board in the past, for good reason. The allocation of 15% of overall Chignik bound fish is based on a historical use of the regional salmon resource from before limited entry. Repeating the same requests year after year to change allocation does not make a compelling case to warrant a change. When Chignik salmon escapement is weak, Kodiak fishermen do not get any fishing opportunity at Cape Igvak- this is fair; it also seems fair that in years of Chignik salmon abundance Kodiak fishermen should get a chance to catch the historical allocation. The Cape Igvak fishery helps spread out our fleet and can be an important part of having a decent fishing season for Kodiak fishermen.

I am sure that the Board tires of endless testimony claiming that the fish of concern are "our fish being stolen by those guys over there". It seems that in my 15 years of commercial fishing in Alaskan waters, Kodiak salmon fishermen are often on the defensive. Rather than retaliate with countering proposals of our own, I ask that we maintain status quo and keep historical allocations and fishing opportunity at Cape Igvak. For this reason, I ask that you **reject Proposal 59**. I want to thank you for your service and I hope the Board continues to apply consistency in upholding Mixed Stock Fisheries Policy, and the Sustainable Fisheries Policy.

Sincerely,

Brad Marden

Brian Mcwethy
KSA
12/23/2019 08:43 AM AKST

RE: PROPOSAL 59 Modify the definition of the total Chignik sockeye salmon catch used to determine allocation percentages in the Cape Igvak Salmon Management Plan

My name is Brian Mcwethy. I was born and raised in kodiak. I live in kodiak with my family and we all depend on my income. I fished with my father on his seiner growing up and now I own and operate a seiner. Salmon seining and tanner crab fishing in kodiak are currently our only sources of income. I plan to try and continue to fish the kodiak waters and possible my children will have the opportunity to. I hope the current and historical areas we fish aren't taken from us and the future generations of kodiak. I oppose this amendment because I based my business model on being able to fish this area.

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 37

Dear Chairman Morisky and Board of Fisheries Members,

My name is Chris Johnson and I am a second-generation fisherman in Kodiak, Alaska. I grew up fishing on my dad's boat and got my first crew job working for someone else two weeks after I graduated high school. I haven't missed a salmon season since. I bought into the fishing industry in 2011 with the purchase of a 25-foot jig boat that I worked for two years in the winter and spring months while I still crewed for salmon in the summer. Access to the jig fisheries focusing on cod and rockfish was the only way that I could afford to move into the salmon fleet with a 38-footer in 2013. After the recent cod collapse I now primarily rely on salmon seining and live here year-round with my wife.

Historically the average allocation in the Cape Igvak management plan has been approximately 13%, even though the allocation is managed for 15%. The author of this proposal is making the assumption that it is common for Cape Igvak fisherman to exceed the 15% allocation, and therefore we are given a larger allocation than the 15%. The historic average shows that this assumption is false.

Should proposal 59 go through, Kodiak fisherman would be looking at roughly 22-23% loss of the 15% allocation. On years where Chignik has a strong run, this could mean hundreds of thousands of fish lost to Kodiak fishermen from their traditional and historic fishery. This proposal, which has been repeatedly rejected by the Board of Fisheries including in 2017, is designed to conceal an allocation reduction of harvest in the Cape Igvak area, while proposing to fix a problem that doesn't exist.

Taking away any fishing opportunity from Kodiak fishermen, particularly from the small boat fleet, would have a direct negative impact on new entrants trying to gain a foothold in this industry, fishing families trying to get by, and fishing support businesses in our region. I'm proud to call Kodiak home and am working to protect our fishing way of life.

Sincerely,
Chris Johnson
F/V North Star

Cole Christiansen
F/V Mary Ann
12/22/2019 08:25 PM AKST

RE: PROPOSAL 59 Modify the definition of the total Chignik sockeye salmon catch used to determine allocation percentages in the Cape Igvak Salmon Management Plan

The genetic report done by Shedd from 2014 to 2016 indicates that the '90% of sockeye caught in the Cape Igvak section are Chignik bound' guideline, which can be a gross overestimation depending on ocean currents and winds. In addition to that, the proposer's hypothesis is that Kodiak fisherman are regularly catching more than the allocated 15% of Chignik harvest. However, historically on years that the Cape Igvak section has been open for fishing, Kodiak fisherman average 13% of Chignik total catch in area.

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 59

Dear Chairman Morisky and Board of Fisheries Members,

My name is Danielle Ringer and I appreciate the opportunity to comment on proposals before the Board in writing and in person for the Kodiak finfish meeting. I live in Kodiak with my husband and we own and operate the 38-foot F/V North Star. We chiefly rely on salmon seining and cod and rockfish jigging to maintain our fishing way of life and ability to live on Kodiak Island. I grew up in Homer learning to harvest and process fish from my parents in Kachemak Bay and dipnetting on the Kenai River. I hold a Master's degree from the University of Alaska Fairbanks in Political Ecology of Fisheries and was one of the researchers on the *Graying of the Fleet in Alaska's Fisheries: Defining the Problem and Assessing Alternatives* study in the Kodiak region.

Historically the average allocation in the Cape Igvak management plan has been approximately 13%, even though the allocation is managed for 15%. The author of this proposal is making the assumption that it is common for Cape Igvak fisherman to exceed the 15% allocation, and therefore we are given a larger allocation than the 15%. The historic average shows that this assumption is false.

Should proposal 59 go through, Kodiak fisherman would be looking at roughly 22-23% loss of the 15% allocation. On years where Chignik has a strong run, this could mean hundreds of thousands of fish lost to Kodiak fishermen from their traditional and historic fishery. This proposal, which has been repeatedly rejected by the Board of Fisheries including in 2017, is designed to conceal an allocation reduction of harvest in the Cape Igvak area, while proposing to fix a problem that doesn't exist.

Please do not accept Chignik's proposals seeking to hack away at Kodiak's salmon fishery. I see no biological, scientific, historical, economic, nor sociocultural reasons that could justify the Board making any changes to the Cape Igvak management plan and thus create ripple effects negatively impacting Kodiak fishermen, processing workers, and community businesses. Thank you for your consideration of my comments and I look forward Board of Fisheries members spending time in our fishing community during the Kodiak meeting.

I humbly request the Board to reject this proposal.

Respectfully,
Danielle Ringer, M.A.
F/V North Star

Dave Kubiak
F/V Lara Lee
12/21/2019 01:18 PM AKST

RE: PROPOSAL 59 Modify the definition of the total Chignik sockeye salmon catch used to determine allocation percentages in the Cape Igvak Salmon Management Plan

Historical averages of Cape Igvak catches show exceeding the 15% allocation is unlikely. The Igvak Management Plan is working just fine the way it is currently designed. Downstream effects of the proposed changes have far reaching negative consequences for Kodiak fishermen as fishing abundance fluctuates.

Donald Lawhead

12/26/2019 10:48 PM AKST

RE: PROPOSAL 59 Modify the definition of the total Chignik sockeye salmon catch used to determine allocation percentages in the Cape Igvak Salmon Management Plan

The management plan has worked fine since 1978. During years with high production Kodiak salmon fisherman get openings. During years of low production openings are few or none.

Fred Stager

F/V Lady Lu

December 12, 2019

Alaska Board of Fisheries Board Support Section

P.O. Box 115526 Juneau, AK 99811-5526

RE: Opposition to Proposal 59

Dear Chairman Morisky and Board of Fish Members,

This proposal, which has been repeatedly rejected by the Board of Fisheries including in 2017, is designed to conceal an allocation reduction of harvest in the Cape Igvak area, while proposing to fix a problem that doesn't exist. Kodiak fishermen have consistently averaged 20% *below* their allocation of Chignik bound sockeye as conservative management practices ensure that harvest overages are rare. Additionally, there is no indication that harvest overages in area M have ever led to overharvest in the Kodiak area. Area M fishermen are provided with a historical allocation of 6.5% of Chignik Bound fish, so that even if they were to harvest double their share, Kodiak's 15% percent allocation of the overage would only result in a temporary harvest goal that is less than 1% higher than it otherwise would be, which isn't nearly enough to overcome the typical 20% that the Kodiak fleet typically leaves on the table.

There are the allocative implications of the change to the harvest equation in the proposal. This proposal would result in significant loss of harvest opportunity in the Kodiak Management Area. If the Board finds cause to change the algebraic structure of how Kodiak's allocation is calculated in

order to base harvest at Cape Igvak exclusively on harvest in the Chignik area then the new equation must be formulated to have no impact on the net sockeye allocation to the Kodiak fleet.

Please **reject proposal 59.**

Thank You- Fred Stager

Garrett kavanaugh

12/27/2019 05:11 PM AKST

RE: PROPOSAL 59 Modify the definition of the total Chignik sockeye salmon catch used to determine allocation percentages in the Cape Igvak Salmon Management Plan

Dear Chairman and Members of the Board, As a young fishermen who is working their way into the Kodiak Salmon fishery this proposal will cause Kodiak fishermen to lose a substantial amount of their catch. I have been investing into the Kodiak salmon fishery as much as possible, in 2019 I purchased a Kodiak salmon permit. I ran a seiner for the month of august. I plan on running the same boat for the entire 2020 salmon season in Kodiak. When I was younger I remember testifying against proposals similar to these. These proposals are re-allocations of Kodiak historical catch. Kodiak has always had intercept fisheries and we already have management plans in place that have been effective for the Kodiak salmon fishery. Please help ensure the future for young fishermen entering into the Kodiak Salmon fishery, and the people who have been investing and are established in the fishery. Thank you for considering these comments, Garrett Kavanaugh

Iver Holm

12/27/2019 11:18 PM AKST

RE: PROPOSAL 59 Modify the definition of the total Chignik sockeye salmon catch used to determine allocation percentages in the Cape Igvak Salmon Management Plan

Dear Chairman Morisky and Board of Fish members: I am 31 years old and a life long resident of Kodiak. I grew up set netting in Uganik on the west side of the island with my mother until i was 14. I then started seining with my father until I was able to buy my own Kodiak seine operational the age of 27. Please oppose porposal 59 as it is yet another grab at fish. Historically we have been allocated 15% of the chignik run. this proposal makes it look like we have been exceeding this allocation, but in reality we have only averaged 13%. if proposal 59 is approved then this would result in a significant loss of fish from the Kodiak fishing community. thank you for your time Sincerely Iver Holm

James C Calhoun

12/26/2019 12:39 PM AKST

RE: PROPOSAL 59 Modify the definition of the total Chignik sockeye salmon catch used to determine allocation percentages in the Cape Igvak Salmon Management Plan

I have been intimately involved in the Kodiak seine fishery since 1968 to present. Presently my son is fishing the Kodiak area and it is my desire to have my grandsons be able to participate in a healthy Kodiak fishery if they so desire. Throughout my career I have come to the conclusion that the ADF&G management for Kodiak has been stellar and has kept the stocks in Kodiak healthy overall with the current management plan. The current management plan disallows fishing time in the Cape Igvak section when chignik runs are weak, but still allows kodiak fishers access to their traditional fishery when runs are more robust. C. Igvak early run has been closed 4 out the last 6 years. Alaska boats and permits asking value is $40,000 for Kodiak permits and Chignik permits are $100,000. I believe Kodiak fishers deserve acess to their traditional fishery under the present management plan. I oppose proposal 59.

Jamin Hall

12/27/2019 11:09 PM AKST

RE: PROPOSAL 59 Modify the definition of the total Chignik sockeye salmon catch used to determine allocation percentages in the Cape Igvak Salmon Management Plan

My name is Jamin Hall, my wife and I have a set net site in Uganik Bay. I am writing in opposition to proposal 59.

Ken Christiansen
F/V Mary Ann
12/26/2019 02:29 PM AKST

RE: PROPOSAL 59 Modify the definition of the total Chignik sockeye salmon catch used to determine allocation percentages in the Cape Igvak Salmon Management Plan

Historically the average catch has been lower than the 15% that the Management plan allows us to catch,indicating that the allocation is already managed conservatively. The Management Plan has been working for more than 40 years and has endured the cycles to date. While I sympathize with the recent poor catches in Chignik, I don't believe a long term change is warranted.

Kodiak Salmon Work Group
c/o Kodiak Regional Aquaculture Association
104 Center Ave., Suite 205
Kodiak, Alaska 99615

December 27, 2019

Chairman Morisky
Alaska Board of Fisheries
Boards Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: CAPE IGVAK MANAGEMENT PLAN
Chignik Proposals 58, 59, 60, 61, 62

Dear Chairman Morisky and Board Members:

The Kodiak Salmon Work Group (KSWG) is an ad hoc committee created to address the issues of Cook Inlet bound sockeye captured in the Kodiak Management Area and the continuation of the Cape Igvak Management Plan. Membership is open and encompasses seiners from both Kodiak seine organizations, setnetters from both Kodiak setnet organizations, beach seine permit holders and processors. In other words, all of Kodiak's salmon fishing community. The group is supported by voluntary stakeholder contributions including those from the City of Kodiak and the Kodiak Island Borough.

KSWG is herewith submitting several documents for the Board's review: 1. Structure and Function of the Kodiak Management Area Salmon Fisheries; 2. Review of Cape Igvak Salmon Management Plan and Proposals to the Alaska Board of Fisheries; and 3. Economic Analysis of Proposals 58, 60,61 and 64. An informational map is attached as well.

Cape Igvak Management Plan (Proposals 58-62)

Chignik's four substantive proposals regarding the Cape Igvak management plan don't outright request that the Board set aside the plan. Instead they focus on provisional changes that would

gut Kodiak's Cape Igvak fishery. Proposal 58 with the date change would reduce, on average, Kodiak's fishery by 79%. Proposal 59 is an accounting change that would reduce the Cape Igvak fishery by about 20%. Proposal 60, like proposal 58, would reduce Kodiak's revenues by about 67% and proposal 61 comes in with a 69% reduction. The fifth proposal (Proposal 62) is a record-keeping proposal that is untenable.

The Cape Igvak Management Plan is embedded in the Mixed Stock Fisheries Policy: "Most mixed stock fisheries are long standing and have been scrutinized many times by past Boards. Consequently, existing regulatory management plans are understood to incorporate conservation burden and allocation" (Allocation Criterion 2). Chignik's guaranteed catch allocation of 300,000 fish (early run) and 300,000 (late run) was a clear balancing in the original plan, favoring Chignik by providing an economic safety net. In addition, Kodiak would share the conservation burden in that the escapement would be assured before Kodiak would go fishing. On the other hand, if Chignik gets its escapement and minimum guaranteed catch, then Kodiak is allowed to harvest up to approximately what was historically caught in the fishery. This is a fairly balanced plan, if not already overbalanced to Chignik's advantage!

Also, the Board states in Allocation Criterion 3, "The policy should recognize that salmon resources are generally fully utilized and that stability is an important aspect of the fisheries." Why is stability important? Many salmon stakeholders make investments and commitments based on regulatory stability. If salmon management plans are subject to change with every Board cycle, fishery values (ex-vessel, permit and gear) will decrease as uncertainty increases, conservation may be compromised, and stakeholders will be encouraged to try to "get a better deal" at each successive Board meeting.

The history of the Cape Igvak Management Plan (Allocation Criterion 1) is of critical importance to understanding why it was developed and how it was balanced between stakeholders. Prior to the plan Kodiak could fish at Cape Igvak any day that the Chignik fleet fished. The "day for day" fishing caused area managers concern that Kodiak's fishing could impact a weaker "second run" to Chignik. Consequently, the catalyst for the Cape Igvak Management Plan was conservation of Chignik's runs. The plan balanced the conservation burden between the two

areas. The plan has been in place for 42 years and has had constant review over multiple Board cycles. Its durability establishes it as one of the marque fishery management plans in the State of Alaska. Changing a plan of such long duration without significant "new information" or "new fishing patterns" or "stock of concern" assessments or anything other than a proposer's feeling that something should be changed, compromises and undermines the Board's standing as a fair and impartial deliberative body.

The functionality of the Cape Igvak Management Plan as a conservation plan is seen in the plan's application over the past five years. Because of low Chignik escapements there was no Cape Igvak fishery during 3 seasons. Period! Kodiak cannot be held responsible for any of the current biological or economic issues in Chignik due to low Chignik sockeye returns. Kodiak did not fish at Cape Igvak.

The proposer's assertion, under Allocation Criterion 4, that Kodiak's salmon fishermen have more "alternative resources" is a false assertion. If this means that Kodiak has more salmon numerically or by species, then the Board must also recognize that Kodiak's salmon are divided between approximately 180 active seine fishermen and approximately 150 setnet fishermen ---in contrast to about 75 active Chignik permits. Resource availability is reflected in individual gross earnings. Chignik permits, on average over time, continue to earn more than Kodiak fishermen and, consequently, their permits are worth more in the market. "Alternative resources" in this sense would mean that Kodiak had less "alternative resources" per active permit holder than Chignik.

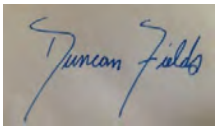
If the "alternative resources" idea means that Kodiak has more "species" available than Chignik salmon fishermen, this too is false. Both Kodiak and Chignik fishermen have access to halibut and cod in their areas although the Federal cod season is now closed in both areas. Only two or three Kodiak salmon fishermen are involved in the Gulf of Alaska trawl fisheries --- a fishery that limits participation with high costs of entry. Both Chignik and Kodiak have historically had a Tanner crab season. While Kodiak currently has a very small Tanner crab quota, only a subset of the Kodiak salmon fleet (like the Chignik fleet) have limited entry permits for the Tanner crab fishery. The Kodiak herring fishery is essentially gone. Kodiak fishermen, especially those from

Old Harbor, Akhiok, Ouzinkie, Port Lions and Larsen Bay just don't see what "alternative resources" are available in Kodiak that Chignik doesn't have. All rural communities in the Gulf of Alaska under about 1,500 people are struggling to survive on their fisheries economy--- which is now almost exclusively salmon.

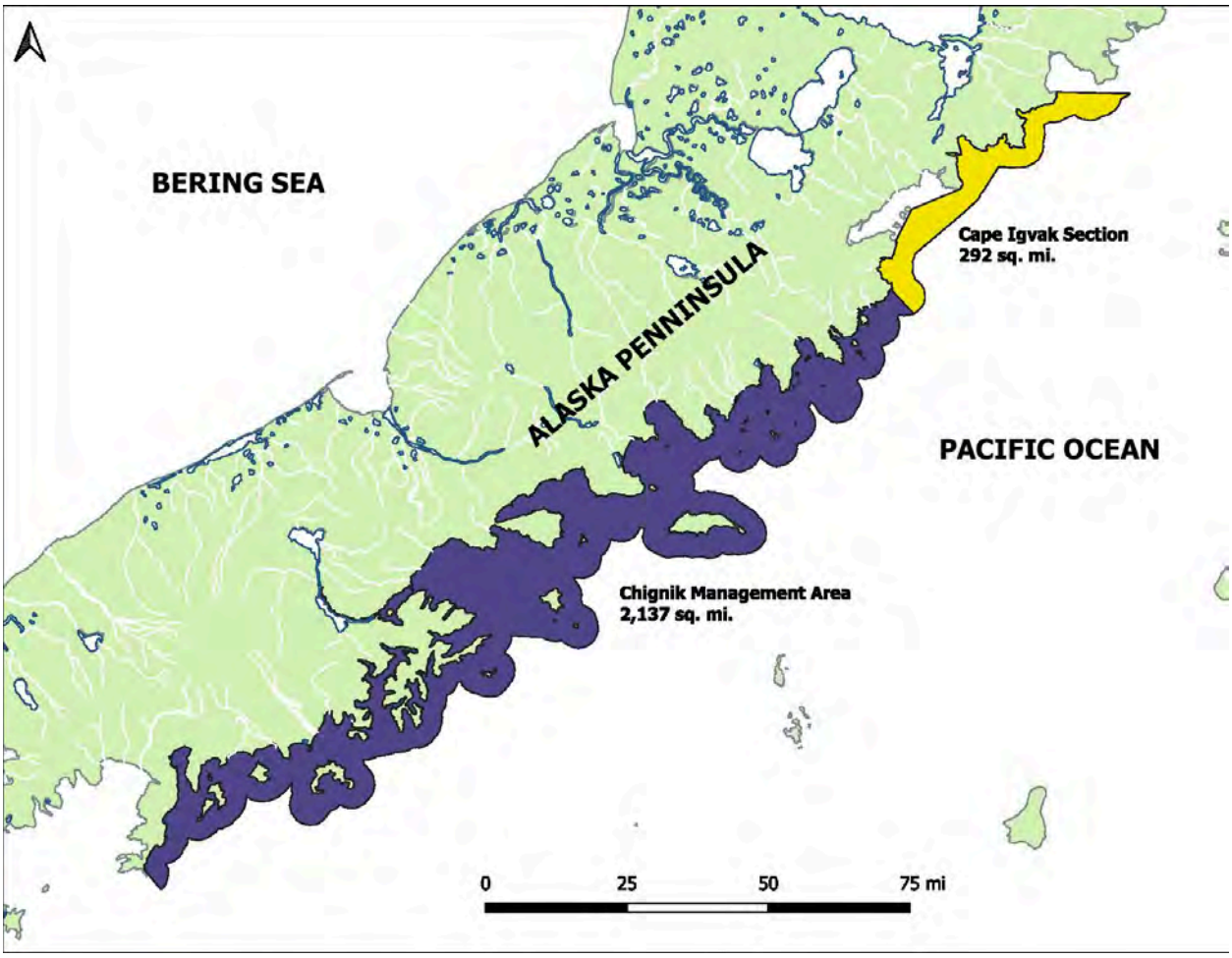
Finally, "The importance of the fishery to the economy of the region and the local area" (Allocation Criterion 7) favors Kodiak. The loss of the Cape Igvak fishery would cost Kodiak fishermen, on average, almost 4 million dollars. At best, the Igvak fishery would increase earnings by a subset of fishermen that actually live in Chignik or the Chignik region by less than an average of 12.0%. While not insignificant, the Igvak fishery is of reduced "importance to the economy of the Chignik region" when compared with the decline of active vessels and the number of Chignik fishermen that are now fishing in Kodiak and Prince William Sound. See further: Review of the Cape Igvak Management Plan and Proposals to the Alaska Board of Fisheries, Proposal 58 Economic Analysis, Proposal 60 Economic Analysis and Proposal 61 Economic Analysis.

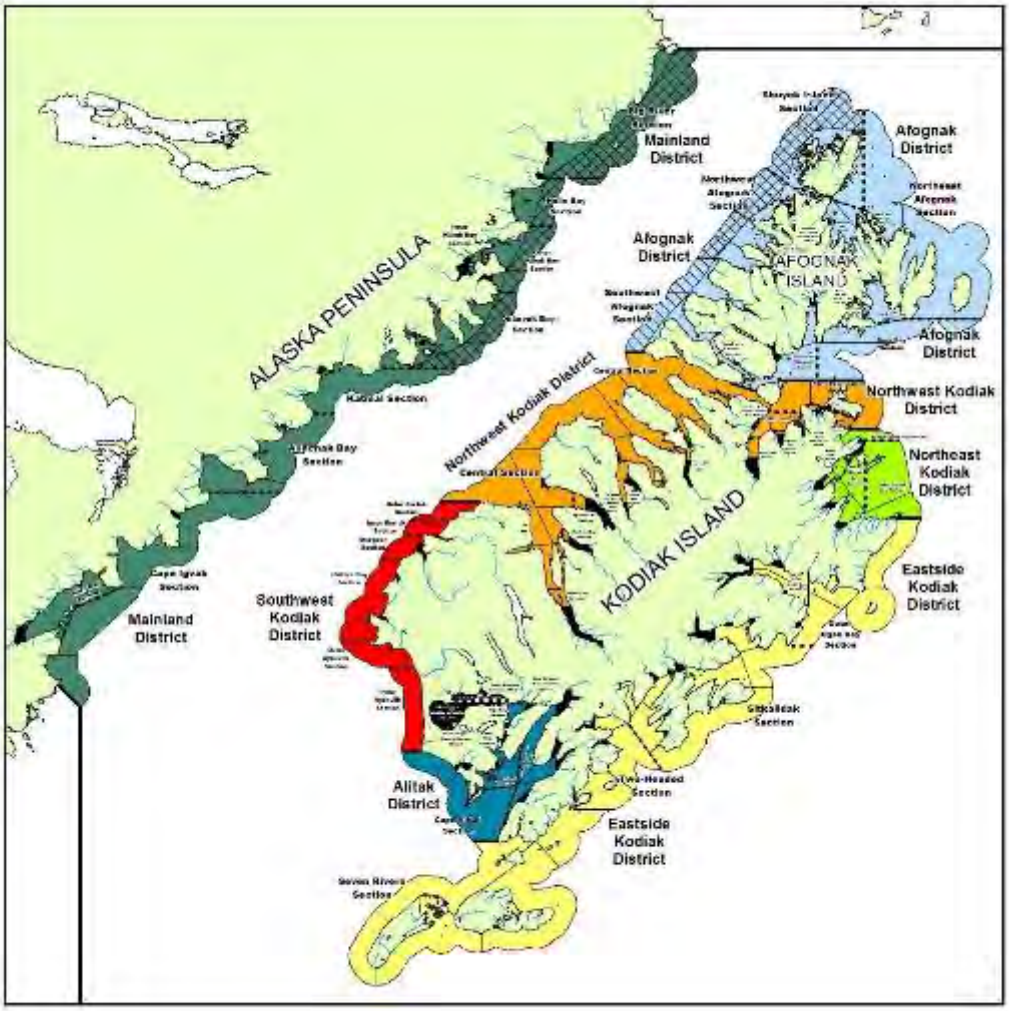
In summary, it is the position of the Kodiak Salmon Work Group that the Board should vote NO on proposals 58, 59, 60, 61, 62 and 63. These proposals are not supported by the Board's allocation criteria and do not have a rational relationship to Chignik's conservation needs.

Very truly yours,



Duncan Fields, Chairman


BERING SEA
Cape Igvak Section
292 sq. mi.
ALASKA PENNINSULA
PACIFIC OCEAN
Chignik Management Area
2,137 sq. mi.
0
25
50
75 mi



Review of Cape Igvak Salmon Management Plan and Proposals to the Alaska Board of Fisheries

Kodiak Salmon Working Group

Executive Summary

- The Cape Igvak Salmon Management Plan (CISMP) has been in place since 1978 and allocates 15% of total Chignik sockeye harvest to Cape Igvak (Kodiak Management Area) after Chignik is guaranteed 600,000 harvest from early and late runs combined, and escapement goals are projected to be met.
- Management strategies under CISMP have been very successful in meeting the sockeye allocation objective and providing escapements within goals.
- Recent genetics studies are robust, but limited sampling with highly variable results does not in itself justify changes to the management plan.
- Genetic results show that the current regulatory assumption that 90% of Igvak sockeye harvests are Chignik bound fish is overly conservative; all samples showed substantially lower contributions of Chignik-bound sockeye to the Igvak harvests.
- Board of Fisheries proposals to alter metrics guiding the Cape Igvak Salmon Management Plan are not well supported by available data.
- The long-standing Cape Igvak plan appears to be working well in terms of limiting harvest of Chignik origin sockeye through harvest guarantees to Chignik, and meeting escapement goals for early and late runs of Chignik sockeye.

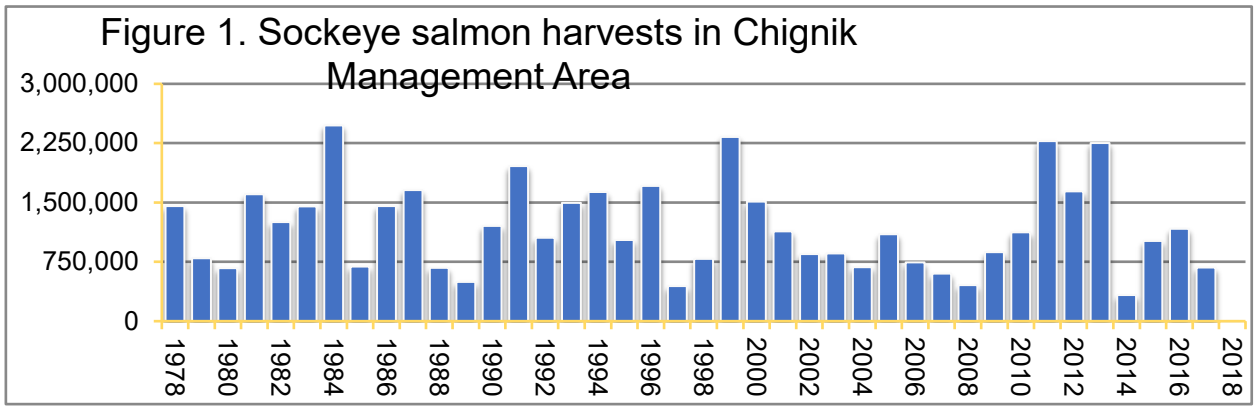
Cape Igvak Salmon Management Plan

A purse seine fishery has been active along capes in the Cape Igvak section of Kodiak Management Area (KMA) since 1964. Following a tagging study in 1969 (ADFG, unpub. data) where 84% of released tags were recovered in Chignik Area fisheries, periodic modifications to the fishery were directed by the Alaska Board of Fisheries. In 1978, the Cape Igvak Salmon Management Plan (CISMP) was adopted to restrict harvest of Chignik bound sockeye at Cape Igvak. The fishery is one of two in the state (the other is the Southeast District Mainland, Area M) in which harvest and escapement triggers from an adjacent management area (both Area L-Chignik) must be met before the fishery can open. From beginning of the fishing season to July 25, Chignik fishermen must harvest a minimum of 600,000 sockeye salmon (300,000 from both early and late Chignik runs) and adequate escapements for both runs must be projected to occur before harvest will be allowed in Igvak. KMA fishermen at Cape Igvak are allocated 15% of the total Chignik harvest. The Board stipulates that 90% of the harvest at Igvak and 80% of the harvest in Southeast District Mainland (Area M) are Chignik bound fish (Anderson et al., 2019, Wilburn, 2019). Proposals to the Board for the 2020 Kodiak Management Area focus on specific metrics in the plan.

Since the CISMP plan came about, management has been very effective at meeting the allocation objectives in the plan. Only four times in forty years has the 15% target been exceeded by more than 1% (Anderson et al., 2019), which is probably within reasonable expectations for management error. Harvests of Chignik bound fish at Igvak obviously go up and down with Chignik harvests and the Igvak fishery has been closed, or catches extremely low, three times between 2014 and 2018 due to poor

runs and lower harvests in Chignik. On the other hand, Igvak sockeye harvests were much more robust in 2011 and 2013 when Chignik sockeye harvests exceeded 2 million sockeye (Anderson et al., 2019). While Chignik sockeye harvest was essentially zero for 2018, the forty year history shows wide fluctuations, with two of the lowest and two of the highest harvests occurring in the past ten years (Figure 1). Average Chignik sockeye harvests between 1998 and 2018 were about 15% lower than harvests in the previous two decades, 1978-1997. However, three of four harvests over 2 million fish were also in the most recent two decades (Figure 1).

The management plan has also been effective from a conservation and sustainability standpoint. Early and Late sockeye runs to Chignik River have met or exceeded their respective escapement goals every year since 1980, until the run failure in 2018, when the early Chignik sockeye run failed to meet the escapement goal (Munro, 2019).



Recent Genetics Studies in Igvak Section

In the recent fishery genetic stock identification study in KMA, Shedd et al. (2016) added two sampling strata (early and middle) for Cape Igvak Section in each of the three study years, 2014-2016. No Igvak samples

were taken in 2014 because low Chignik harvest numbers kept the area closed to commercial harvest. In 2015, only the July stratum (middle) was sampled as Igvak was again closed in June due to inadequate sockeye harvests in Chignik Management Area. Harvest of Chignik fish in Igvak was estimated as 2,059 fish (total harvest 6,595) in the middle stratum, 2015. In both 2014 and 2015, the management plan had its intended effect of keeping Igvak closed or limited when Chignik harvests were low. In 2016, with a stronger Chignik run, an estimated 114,412 Chignik sockeye were harvested in the early (June) stratum. An estimated 10,006 Chignik bound sockeye were harvested at Igvak in July (Shedd et al., 2016).

While it is clear that Chignik fish were captured at Igvak in both years, with only three temporal strata sampled over a three year period, including a single datum for early strata harvests, specific conclusions about patterns of presence, magnitude or vulnerability of Chignik bound fish in Igvak fisheries are unwarranted. The single early (June) stratum sampled from the three year period estimated harvest of Chignik bound sockeye an order of magnitude larger than the two middle stratum harvests from 2015 and 2016. These data emphasize wide variation for Chignik bound sockeye harvests at Cape Igvak, and do not support substantive changes to the current management plan.

Data in Shedd et al. (2016) also does not support the presumption in the management plan that 90% of sockeye salmon harvests in Igvak are Chignik bound fish. The single middle stratum (July) estimate from 2015 found 31.2% Chignik sockeye from a total harvest of 6,595. The middle stratum estimate from 2016 was much lower, where only 5.6% of the sampled harvest were Chignik fish (total harvest 177,315). The sole early stratum (June) contribution in 2016 was much higher, estimating 74.1% of

Igvak harvests were Chignik origin (total harvest 154,318), but still did not reach 90%. The assumption that 90% of Igvak harvests are comprised of Chignik bound fish is very uncertain. Other genetic studies suggest uncertainty for similar assumptions in Southeast District Mainland (SEDM, Area M) fisheries, where Chignik bound sockeye are thought to represent 80% of sockeye harvested. Dann et al., (2012), showed that the overall proportion of Chignik bound fish harvested in SEDM was very consistent in 2010, 2011, and 2012 at 65%, 67% and 66% respectively, excluding the Northwest Stepovak Section in July.

Board of Fisheries Proposals

There are five proposals before the board which address the Cape Igvak fishery. Four of these seek to more severely curtail the fishery through specific alterations to metrics of the management plan. They propose completely eliminating fishing at Igvak prior to July 8 (proposal 58), lowering the board approved allocation of Chignik bound fish to KMA fishermen at Igvak from 15% to 5% (proposal 60), or dramatically raising Chignik harvest thresholds upon which Igvak fishery openings are predicated (proposal 61). A fourth proposal suggests that accounting practices for total Chignik harvest be changed such that harvests in Southeast District Mainland (Area M) and Igvak are no longer considered part of the Chignik total harvest. None of these proposals provide credible, data-driven justification for changing longstanding management plans. Recent genetic stock identification results reflect very limited sampling at Cape Igvak (Shedd et al. 2016) and as a result, insight regarding harvest patterns of Chignik sockeye in Igvak fisheries is narrow. There is no doubt that stock composition and harvest estimates are accurate and precise, but

only three strata in two different years were analyzed, where estimated harvest numbers of Chignik bound fish at Igvak were an order of magnitude different between them.

- **Proposal 58** would close Cape Igvak to fishing until July 8, based on increases in KMA harvests and declines in Chignik harvests. However, Chignik fish represented a relatively minor component of Westside KMA harvests sampled in Shedd et al. (2016) and there is no data linking historical harvests in KMA to Chignik harvests. Increases in KMA sockeye harvests over the years most-likely resulted from greater harvests of local sockeye stocks and sockeye from enhancement efforts by Kodiak Regional Aquaculture Association, which averaged about 345,000 during 2008 - 2017 (Anderson et al., 2018). Though Chignik suffered a run failure in 2018, long term average harvests during 1998-2018 are only 15% smaller than those from 1978-1997.

- **Proposal 59** seeks to change fishery accounting practices in CISMP by eliminating SEDM and Cape Igvak harvests from the total Chignik sockeye harvest, for allocation purposes within the plan. Currently 80% of sockeye harvested in most areas of SEDM and 90% of sockeye in Igvak are assumed part of total Chignik harvest. The effect of this is that allocation percentages would be reached sooner and harvests at Cape Igvak would be smaller. If the management plan assumes a specific percentage of Chignik origin fish in SEDM or Igvak, it must be included in

allocative accounting. It would be inappropriate to address only Igvak with such a proposal.

- **Proposal 60** would lower the allocation percentage of Chignik sockeye to Cape Igvak fishermen from 15% to 5% supposedly because at the inception of the management plan, KMA sockeye harvests were weak and Chignik harvests were robust, and now the situation is reversed. While KMA sockeye harvests have improved since 1978 due to local stock performance and enhancement efforts, there is no evidence that any declines of CMA sockeye harvests are tied to Cape Igvak sockeye harvests. Chignik harvests show wide variation since 1978 as many salmon systems do. Two of the highest and two of the lowest Chignik area sockeye harvests have occurred during the last decade (Figure 1). This proposal would significantly reduce harvest in Kodiak's longstanding fishery at Cape Igvak without justification.

- **Proposal 61** would raise harvest thresholds for the early and late Chignik run combined from 600,000 to 1,000,000 sockeye before Igvak could open and guarantee a harvest of 1,000,000 sockeye to Chignik fishermen. The proposal would probably close the Igvak fishery. Justification is based on unstated changes in assumptions and economic conditions that have occurred since inception of the management plan. This is essentially the same proposal submitted to the Area M board meeting in 2019 to

severely curtail the SEDM fishery, which the Board of fisheries rejected.

Proposal 62 creates mandatory reporting for vessels entering or leaving Cape Igvak section. It is likely unworkable and ineffective for fisheries managers to perform this monitoring.

Literature Cited

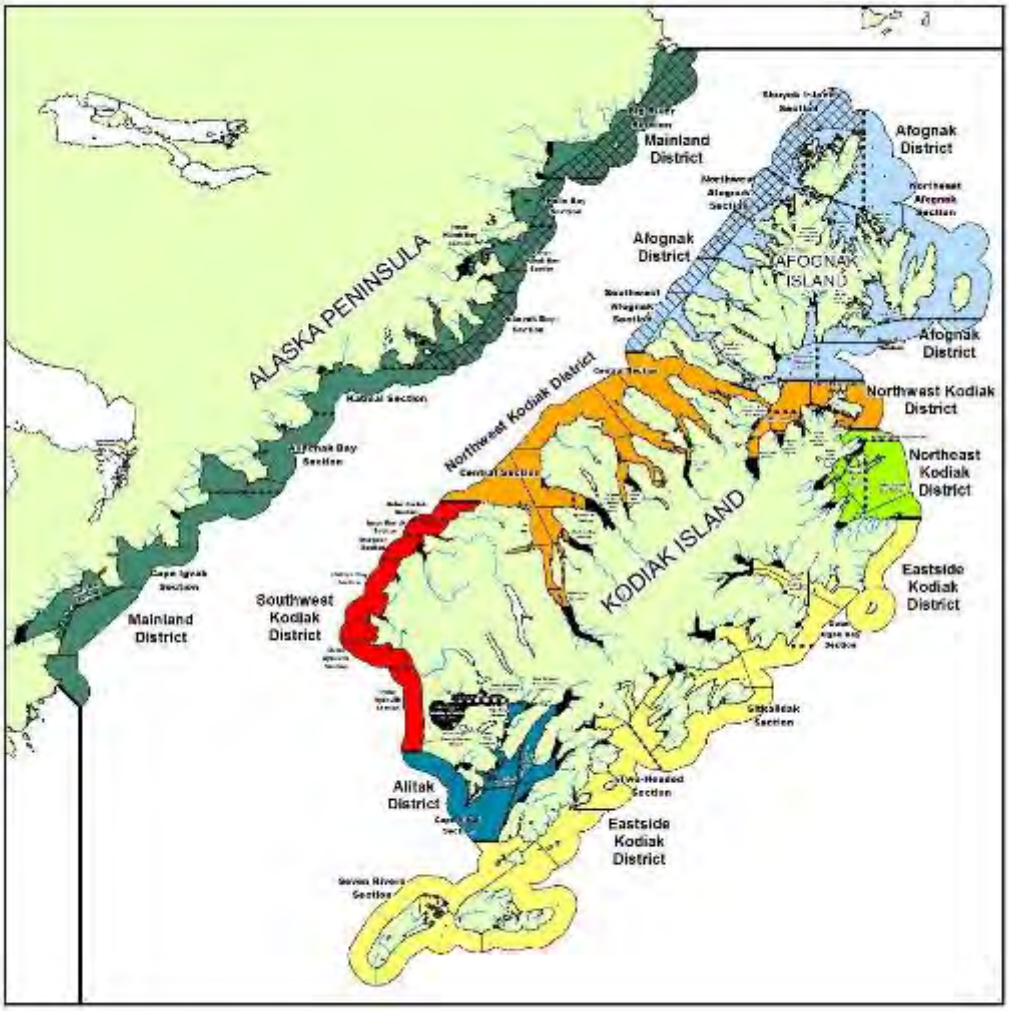
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Economic Analysis Proposal 58

Kodiak Salmon Workgroup

Key Findings

- Overall, proposed changes from Proposal 58 would result in an economic loss in the Kodiak Borough of almost three million dollars a year.
- On average, restrictions during the effected years would result in more than 75% of the current sockeye catch being eliminated.
- The complete implementation of proposal 58 would result in an average foregone harvest worth at least $1.9 million ex vessel price per year among affected fishermen.

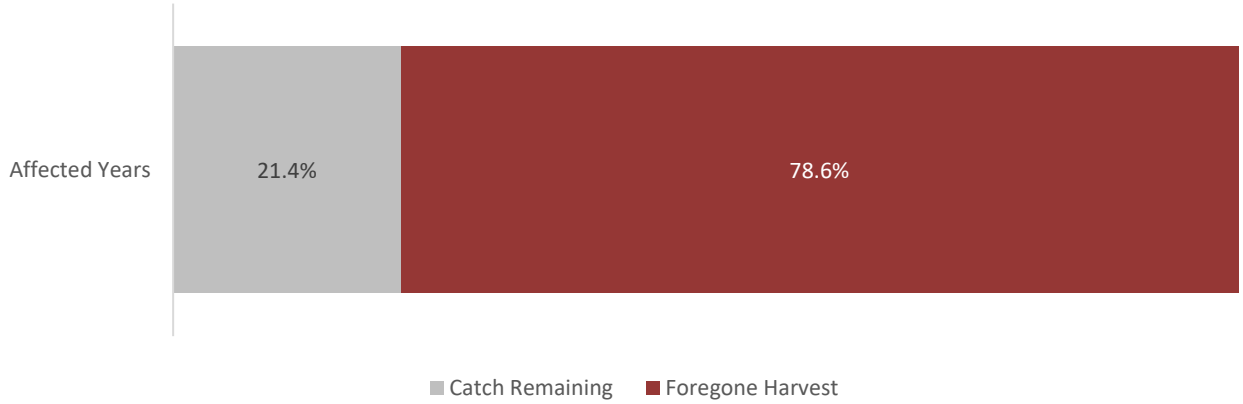
$2.99 Million Dollars Annual Economic Loss in the Kodiak Borough

- Direct loss of foregone sockeye harvest per year ranges from $140,000 to $6.25 million over the time period examined (1998-2019). The mean foregone sockeye harvest is valued at $1.89 million per year, using each year's prices.

$1.99 Million Dollars Yearly Direct Loss to Fishermen

- Sockeye loss per permit holder affected ranges from $3,000 to $79,000 per year (mean $27,000), depending on number of affected fishermen and count of foregone sockeye harvest.
- Total foregone harvest among all species is estimated to be 1.58 million pounds per year worth an average of $1.99 million per year, using each year's prices. Average loss per affected permit holder estimated to be $28,000 per year.
- Species specific foregone harvest ex vessel price estimated to range between $0 (coho) to $6.25 million (sockeye) per year.

Average Revenue Loss Per Year



Background

The 2019-2020 Board of Fish, Kodiak Finfish Proposal 58 proposes to amend the Cape Igvak Management Plan to restrict all commercial salmon fishing in the Cape Igvak Section before July 8th and until after the Chignik area sockeye harvest exceeds 300,000. The Chignik area includes all sockeye harvest in the Chignik Management Area, 80% of sockeye harvest in East Stepovak, Southwest Stepovak, Stepovak Flats, Balboa Bay, and Beaver Bay Sections and 90% of sockeye harvest in Cape Igvak.

Proposal 58 is only focused on the Cape Igvak section, Kodiak Mainland District.

Link to Proposal:
https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2019-2020/proposals/58.pdf

Data Sources

Foregone harvest days count and pound data was provided by the State of Alaska, Department of Fish and Game daily harvest reports. Price data for 1998-2018 was provided from the State of Alaska, Department of Fish and Game *Commercial Operator's Annual Reports* (COAR). 2019 price data was not available through the COAR report at the time of this analysis. 2019 price data is estimated from the five-year average of the reported 2014-2018 price per pound per species (see methods below). Multipliers for indirect and induced economic impact were commissioned from the US Department of Commerce, Bureau of Economic Analysis specifically for the Alaska commercial fishing industry. Inflation rates are provided from the US Department of Labor, Consumer Price Index. Tax information is from the State of Alaska, Department of Revenue and the Kodiak Borough.

Data Methods

Economic impact is estimated using historical harvest data from 1998-2019. Proposal 58 applies to all gear types and all gear harvest totals used in estimating impact. For the period prior to July 8th, no fishing occurred in Cape Igvak in 1998, 2008-2009, 2014-2015, and 2018-2019.

Proposal 58 would be in effect prior to July 25th for all years, including a total closure of the Cape Igvak fishery prior to July 8th. Additional restrictions would be in place dependent on Chignik sockeye harvest totals (under proposal 58, 90% of the Cape Igvak sockeye harvest is counted towards this value. Under BOF proposal 59, none of the Cape Igvak or Southeast Mainland District is counted towards this total). Total harvest counts in the Cape Igvak section were aggregated across days of closure (prior to July 8) for each year.

Additional closures would be in effect for a total of 10 days in 2003 and 2004 as the 300,000 minimum Chignik area harvest were not met.

The value of foregone harvest is calculated as species-specific foregone harvest pounds multiplied by species-specific Kodiak area price per pound for each year. Foregone harvest counts and economic impact are calculated for Cape Igvak as a whole. The number of permit holders affected by proposal 58 is calculated as the maximum number of unique permits during the closure period in harvest records.

Species specific prices per pound for each year between 1998-2018 were obtained from the Fish Game COAR for each individual year. The total net weight in the Kodiak area for each species for each season is divided by the respective net value.

Final 2019 COAR price per species data is not available. Species specific price for 2019 was estimated as a five-year average of available COAR data (2014-2018). Verification of 2019 data with the KSWG provided spreadsheets using Icicle, Ocean Beauty, and Pacific season prices for 2017-2019 compared to COAR for 2017, 2018. The spreadsheet values varied from published COAR by both higher and lower values up to 20%. The five-year average was much closer to 2017 and 2018 prices than the spreadsheet averages and weighted averages for respective years. The sockeye 2019 season price per pound estimate may be biased downwards given the processor spreadsheet; the COAR numbers were up to 20% lower than provided spreadsheet, and the five-year average is 16% lower than 2019 processor spreadsheet.

Indirect and induced economic loss was calculated from Regional Input-Output Modeling System (RIMS II) type I and type II multipliers. These take into account increase (in this case local loss) in regional economic activity due to change in industry specific earnings. For this report, the fisheries industry specific multipliers were used. Selected industry multipliers are specific to Alaska.

All values are adjusted for inflation and shown in 2019 dollar values.

Direct Losses

On average, in the years effected by Proposal 58, more than 75% of the current catch would be restricted. From year 1998-2019, more than 55% of the harvestable catch would be foregone. Overall, these changes would result in an economic loss to the Borough of almost three million dollars a year.

$1.99 Million Dollars Yearly Direct Loss to Fishermen

$2.99 Million Dollars Annual Economic Loss in the Kodiak Borough

Direct revenue lost to the Kodiak Borough per year:

Direct loss per affected year:	**$1.99 Million**
Loss from sockeye fishery:	$1.89 Million
Fisheries employment impact:	17.6 jobs per year
All employment impact:	22.1 jobs per year
Indirect community loss:	$414,120
Induced community loss:	$583,478
Total Annual Borough Loss:	**$2,992,397**

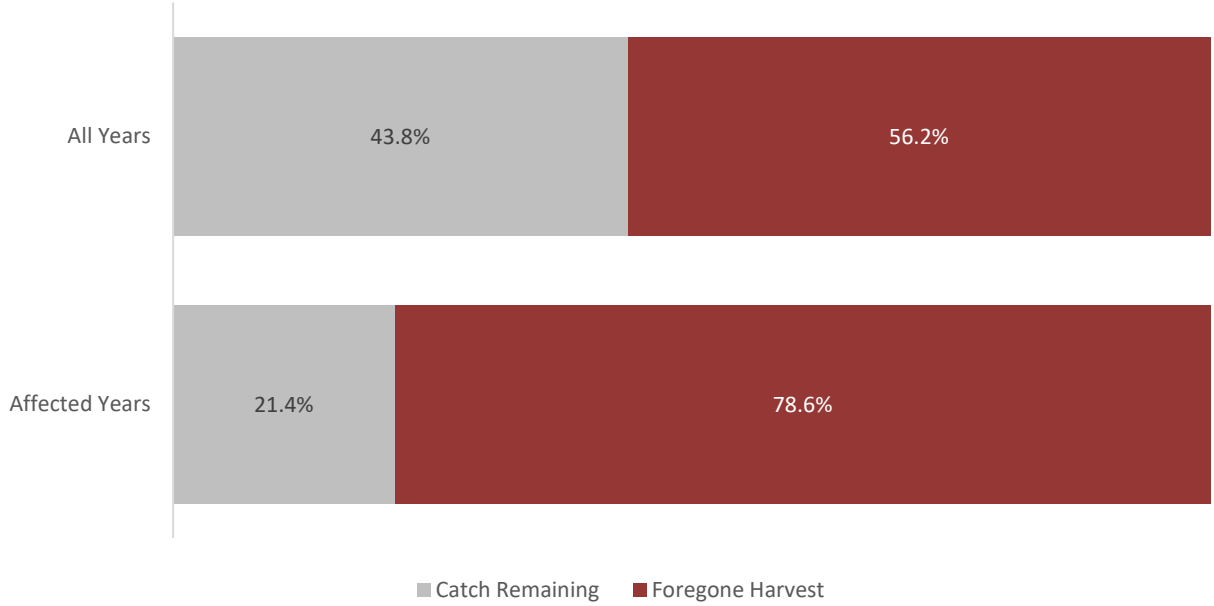
Proposal 58 would have impacts throughout the Kodiak Borough. The direct loss to fishermen would be $1.99 million per year. Of the total loss to the fishery, the limitation on the sockeye fishery comprise the majority of the impact, accounting for $1.89 million of the loss with $100,000 of the total loss distributed among other salmon species.

The direct impact of this proposal will result in a loss of 17.6 fisheries specific jobs and a total of 22.1 jobs overall in the Kodiak Borough per year. In addition to the direct loss impact of $1.99 million, there is a further indirect loss of $414k as a result of lost business to business economic activity for the community from purchases such as fuel, gear, and supplies. There is an additional $583k of induced loss in the community resulting from the lost direct and indirect economic activity (total $2.40 million) and reduced labor market. This impact results in a total loss to the community from direct, indirect, and induced losses of $2.99 million dollars per year.

Fisheries Loss

On average, restrictions during the effected years would result in more than 75% of the current catch being eliminated. For all years, including six unaffected years, the average revenue loss to the community would be more than 55%.

Chart 1: Average Revenue Loss Per Year



Over the last 22 years 1998-2019, there have been 10 years where the fisheries losses from these increase restrictions would result in a loss of more than one million dollars of foregone ex vessel value to the fishery. Six of the previous 22 years would be unaffected by the proposal changes. Fishing was severely restricted in 2018 due to historically low run returns.

The sockeye fishery would experience ex vessel losses of more than $1 million for nine of the 15 affected years.

Chart 2: Total Fishery Loss 1998-2019

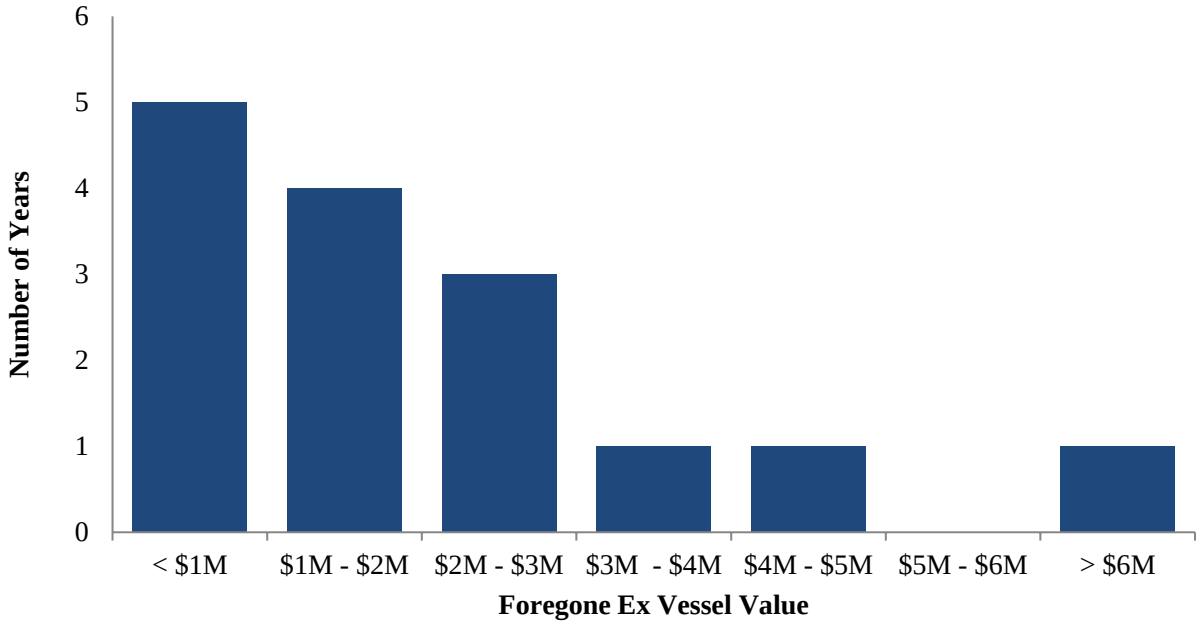
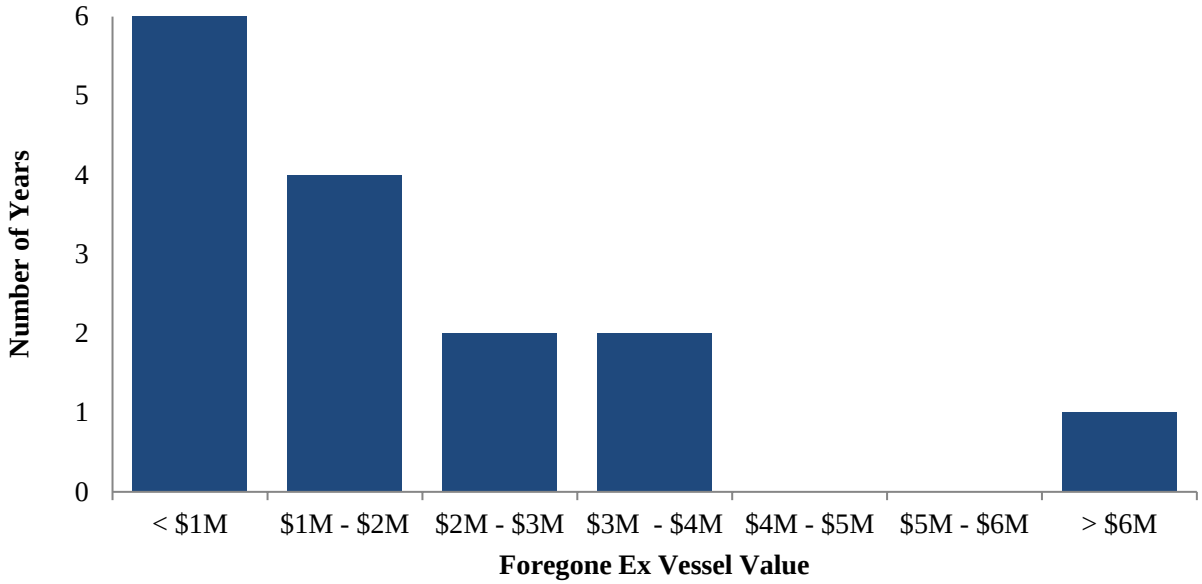


Chart 3: Total Sockeye Loss



The mean direct loss for all species per year is $1,994,798 with a median loss of $1,331,454. If these restrictions were in place the greatest impact would have been in 2011 with a loss of $6,659,154 and the least impact would have been in 2006 with a loss of $168,071.

Table 1: Direct Loss of Proposal 58 Implementation

Year	Direct Loss All Species	Direct Loss Sockeye
1998	No Impact	
1999	$3,508,007	$3,442,997
2000	$2,360,808	$2,323,611
2001	$1,024,685	$962,626
2002	$848,667	$799,675
2003	$688,343	$631,512
2004	$898,710	$869,284
2005	$2,217,289	$1,975,671
2006	$168,071	$139,644
2007	$505,519	$448,390
2008	No Impact	
2009	No Impact	
2010	$1,709,608	$1,622,292
2011	$6,659,154	$6,253,079
2012	$2,731,307	$2,586,591
2013	$4,003,809	$3,941,638
2014	No Impact	
2015	No Impact	
2016	$1,266,541	$1,159,328
2017	$1,331,454	$1,198,552
2018	No Impact	
2019	No Impact	
Mean	**$1,994,798**	**$1,890,326**
Median	**$1,331,454**	**$1,198,552**
Min	**$168,071**	**$139,644**
Max	**$6,659,154**	**$6,253,079**

Table 2: Direct Loss of Proposal 58 Implementation Per Fishermen

	Average Loss Per Fishermen – All Species	Average Loss Per Fishermen – Sockeye Only
Mean	**$28,399**	**$26,819**
Median	**$22,272**	**$21,921**
Min	**$3,909**	**$3,248**
Max	**$84,293**	**$79,153**

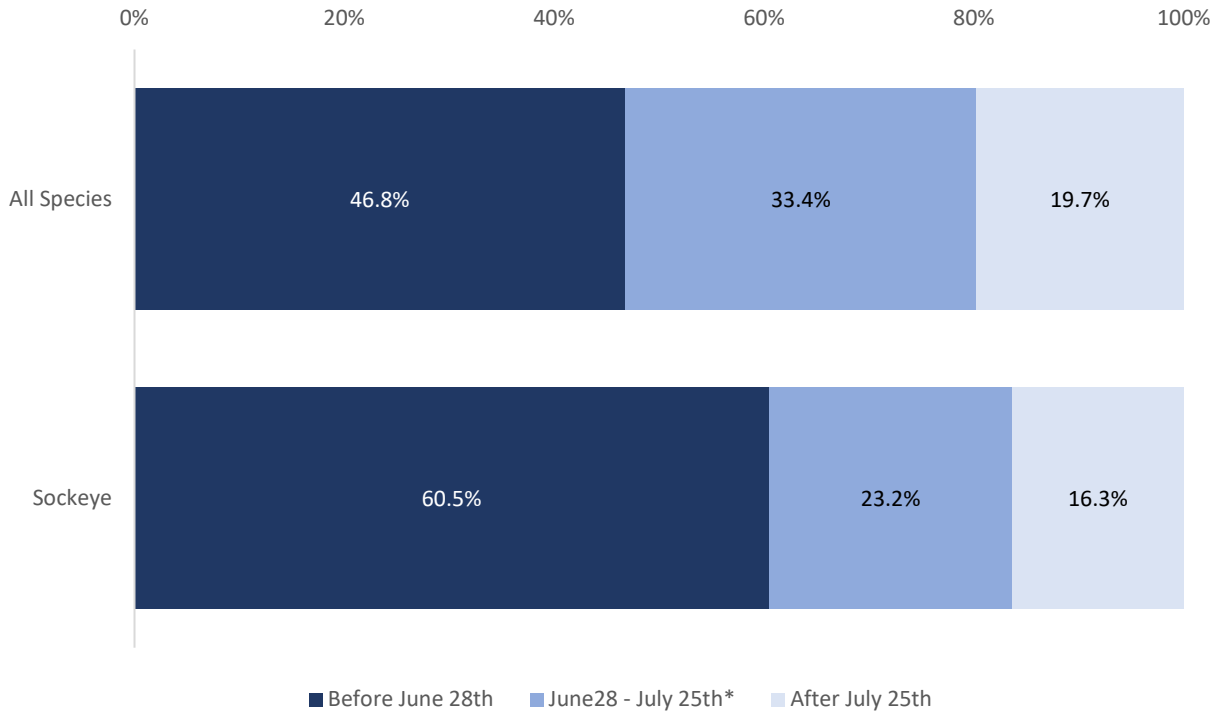
Based on the number of active permits per year, individual fishermen would experience a mean direct loss for all species per year of $28,399 with a median loss of $22,272. If these restrictions were in place the greatest impact would have been in 2011 with a loss of $84,293 per fishermen with the least impact in 2006 with an average loss of $3,909.

Table 3: Loss Per Affected Permit Holder

Year	Permits	Loss per Permit	Total Value Foregone Harvest	2019 Inflation Adjustment
1998	No Impact			
1999	104	$33,731	$2,272,025	$3,508,007
2000	106	$22,272	$1,580,192	$2,360,808
2001	57	$17,977	$705,220	$1,024,685
2002	68	$12,480	$593,473	$848,667
2003	78	$8,825	$492,377	$688,343
2004	37	$24,289	$659,846	$898,710
2005	71	$31,229	$1,683,590	$2,217,289
2006	43	$3,909	$131,717	$168,071
2007	32	$15,797	$407,348	$505,519
2008	No Impact			
2009	No Impact			
2010	58	$29,476	$1,448,820	$1,709,608
2011	79	$84,293	$5,826,032	$6,659,154
2012	57	$47,918	$2,438,667	$2,731,307
2013	72	$55,608	$3,626,639	$4,003,809
2014	No Impact			
2015	No Impact			
2016	60	$21,109	$1,181,475	$1,266,541
2017	78	$17,070	$1,269,261	$1,331,454
2018	No Impact			
2019	No Impact			
Average		**$28,399**	**$1,621,112**	**$1,994,798**

On average, the majority of sockeye and almost half of total catch (by weight) in Cape Igvak for each season is caught before June 28th. For this reason, the impact of proposal 58 (total closure of Cape Igvak before July 8th) is much higher than the impact of proposal 65 (closure between 6/28 and 7/25). Of note, no fishing occurred in Cape Igvak during any year (1998-2019) between June 28th and July 8th.

Chart 4: Average Total Weight Caught During the Season in Cape Igvak by Time Period



Foregone Tax Revenue

The foregone harvest due to proposal 58 implementation would have tax implications for state, borough, and city budgets. The state implements two relevant taxes in the region: the fisheries business tax (which is shared with local governments) and the salmon enhancement tax (SET). Fisheries business tax rates vary by type of processing activity and the proportion of each is estimated from the State of Alaska's Annual Tax Report for FY18. The salmon enhancement tax rate is 2% in the Kodiak region. The Borough implements a resource severance tax of 1.075% and receives a share of the fisheries business tax from the state. The local city governments also receive a share of the fisheries business tax from the State of Alaska. Borough and city shares of the fisheries business tax estimated from the Borough's FY18 annual tax report.

The implementation of proposal 58 would result in average yearly tax losses of $72,000 to the State of Alaska, $32,000 to the Kodiak Borough, and $10,000 to Kodiak City.

State Taxes	
Fisheries Business Tax (50% Share)	$32,326
SET Tax	$39,896
Total	**$72,222**

Borough	
Resource Severance Tax	$21,444
Fisheries Business Tax (Share of 50%)	$10,322
Total	**$31,766**

Cities (Share of Fisheries Business Tax)	
Akhiok	$2,409
Kodiak	**$9,620**
Larsen Bay	$2,407
Old Harbor	$2,585
Ouzinkie	$2,498
Port Lions	$2,484
Total	**$22,003**

Loss by Species

Table 4: Sockeye Foregone Harvest

Year	Foregone Harvest - lbs	Sockeye Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	No Impact			
1999	2,063,865	$1.08	$2,229,920	$3,442,997
2000	1,739,030	$0.89	$1,555,295	$2,323,611
2001	943,979	$0.70	$662,509	$962,626
2002	909,868	$0.61	$559,213	$799,675
2003	748,823	$0.60	$451,726	$631,512
2004	976,581	$0.65	$638,241	$869,284
2005	1,869,704	$0.80	$1,500,130	$1,975,671
2006	130,411	$0.84	$109,438	$139,644
2007	361,799	$1.00	$361,314	$448,390
2008	No Impact			
2009	No Impact			
2010	969,922	$1.42	$1,374,824	$1,622,292
2011	3,584,803	$1.53	$5,470,760	$6,253,079
2012	1,568,290	$1.47	$2,309,456	$2,586,591
2013	1,961,485	$1.82	$3,570,324	$3,941,638
2014	No Impact			
2015	No Impact			
2016	847,930	$1.28	$1,081,462	$1,159,328
2017	755,297	$1.51	$1,142,567	$1,198,552
2018	No Impact			
2019	No Impact			
Total	**19,431,787**		**$23,017,180**	**$28,354,890**

Table 5: Chum Foregone Harvest

Year	Foregone Harvest - lbs	Chum Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	No Impact			
1999	170,112	$0.19	$31,572	$48,747.61
2000	92,806	$0.22	$20,153	$30,108.15
2001	83,888	$0.32	$26,773	$38,900.99
2002	137,679	$0.16	$22,253	$31,821.74
2003	166,509	$0.14	$23,184	$32,410.91
2004	125,877	$0.12	$15,458	$21,053.48
2005	185,393	$0.20	$37,447	$49,318.10
2006	50,260	$0.33	$16,799	$21,436.08

2007	103,667	$0.35	$36,489	$45,283.38
2008	No Impact			
2009	No Impact			
2010	109,744	$0.56	$61,481	$72,547.59
2011	455,032	$0.69	$314,002	$358,904.81
2012	184,103	$0.60	$110,888	$124,194.16
2013	169,242	$0.25	$42,981	$47,450.60
2014	No Impact			
2015	No Impact			
2016	195,096	$0.34	$65,775	$70,510.56
2017	132,879	$0.57	$76,223	$79,958.03
2018	No Impact			
2019	No Impact			
Total	**2,362,287**		**$901,478**	**$1,072,646**

Table 6: Pink Foregone Harvest

Year	Foregone Harvest - lbs	Pink Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	No Impact			
1999	7,134	$0.14	$1,006	$1,553
2000	19,270	$0.14	$2,771	$4,139
2001	69,962	$0.12	$8,304	$12,066
2002	104,486	$0.09	$8,984	$12,848
2003	136,662	$0.09	$12,000	$16,776
2004	22,668	$0.10	$2,174	$2,961
2005	1,084,704	$0.12	$130,269	$171,564
2006	11,709	$0.16	$1,916	$2,445
2007	20,788	$0.18	$3,750	$4,654

2008	No Impact			
2009	No Impact			
2010	19,416	$0.44	$8,446	$9,967
2011	48,944	$0.47	$22,780	$26,038
2012	29,660	$0.48	$14,147	$15,844
2013	15,872	$0.42	$6,716	$7,415
2014	No Impact			
2015	No Impact			
2016	55,585	$0.47	$26,237	$28,126
2017	113,573	$0.43	$48,638	$51,021
2018	No Impact			
2019	No Impact			
Total	**1,760,433**		**$298,138**	**$367,416**

Table 7: Coho Foregone Harvest

Year	Foregone Harvest - lbs	Coho Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	No Impact			
1999	0	$0.41	$0	$0
2000	0	$0.49	$0	$0
2001	62	$0.24	$15	$22
2002	10,920	$0.18	$20	$28
2003	5,693	$0.20	$1,138	$1,591
2004	29	$0.27	$8	$11
2005	341	$0.42	$143	$189
2006	14	$0.66	$9	$12
2007	36	$0.60	$22	$27
2008	No Impact			

2009	No Impact			
2010	116	$0.80	$92	$109
2011	120	$0.82	$98	$112
2012	7	$0.77	$5	$6
2013	0	$0.72	$0	$0
2014	No Impact			
2015	No Impact			
2016	227	$0.78	$178	$191
2017	52	$0.84	$43	$46
2018	No Impact			
2019	No Impact			
Total	**17,617**		**$1,772**	**$2,342**

Table 8: Chinook Foregone Harvest

Year	Foregone Harvest - lbs	Chinook Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	No Impact			
1999	13,994	$0.68	$9,527	$14,710
2000	2,980	$0.66	$1,974	$2,949
2001	10,589	$0.72	$7,619	$11,071
2002	8,155	$0.37	$3,003	$4,295
2003	12,202	$0.35	$4,330	$6,053
2004	7,700	$0.51	$3,965	$5,400
2005	20,508	$0.76	$15,601	$20,547
2006	3,792	$0.94	$3,554	$4,535
2007	6,479	$0.89	$5,774	$7,165
2008	No Impact			
2009	No Impact			

2010	6,169	$0.64	$3,977	$4,692
2011	20,535	$0.90	$18,391	$21,021
2012	6,866	$0.61	$4,171	$4,671
2013	11,504	$0.58	$6,618	$7,306
2014	No Impact			
2015	No Impact			
2016	8,635	$0.91	$7,823	$8,386
2017	2,337	$0.77	$1,789	$1,877
2018	No Impact			
2019	No Impact			
Total	**142,445**		**$98,116**	**$124,679**

Kodiak Seiners Association
PO Box 8835
Kodiak, AK 99615

December 12, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: **Opposition to Proposal 59**

Dear Chairman Morisky and Board of Fish Members:

The Kodiak Seiners Association requests that you **reject Proposal 59** as it is written. This proposal, which has been repeatedly rejected by the Board of Fisheries including in 2017, is designed to conceal an allocation reduction of harvest in the Cape Igvak area, while proposing to fix a problem that doesn't exist. Kodiak fishermen have consistently averaged 20% *below* their allocation of Chignik bound sockeye as conservative management practices ensure that harvest overages are rare. Additionally, there is no indication that harvest overages in area M have ever led to overharvest in the Kodiak area. Area M fishermen are provided with a historical allocation of 6.5% of Chignik Bound fish, so that even if they were to harvest double their share, Kodiak's 15% percent allocation of the overage would only result in a temporary harvest goal that is less than 1% higher than it otherwise would be, which isn't nearly enough to overcome the typical 20% that the Kodiak fleet typically leaves on the table.

KSA hopes the Board understands the allocative implications of the change to the harvest equation in the proposal. Please see our comments on proposals 58 and 60 both of which address the allocative aspects of the fishery. This isn't an innocent "housekeeping" proposal but instead would result in significant loss of harvest opportunity in the Kodiak Management Area. If the Board finds cause to change the algebraic structure of how Kodiak's allocation is calculated in order to base harvest at Cape Igvak exclusively on harvest in the Chignik area then the new equation must be formulated to have no impact on the net sockeye allocation to the Kodiak fleet.

KSA respectfully requests the **Board reject proposal 59.** We thank you for the opportunity to comment on behalf of the membership of KSA. We appreciate the scientific and factual creation of regulations regarding our fisheries and trust that the Board continue to apply consistency in designing regulation changes while applying the guiding BOF policies, such as the Management for Mixed Stock Salmon Fisheries.

Kodiak Seiners Association represents 157 members, including the majority of actively fishing SO1K seine permit holders, Kodiak and Homer-based businesses, and individual crewmembers. Our focus is advocacy for our membership through positive interactions with ADF&G, the Board of Fisheries, and our State Legislature.

Sincerely,

Nate Rose, KSA President

December 24, 2019

Matthew Alward

60082 Clarice Way

Homer, AK 99603

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Opposition to proposal 59

Dear Chairman Morisky and board of fisheries members,

I operate my own salmon seine vessel in the Kodiak fishery and I oppose proposal 59 that would shift the allocation of sockeye salmon in the Cape Igvak management section from Kodiak to Chignik. I raised our family on the back deck of our seiner and continue to support our family in the Kodiak salmon seine fishery.

Proposal 59 askes the board to change what catch of Chignik bound sockeye make up the Chignik sockeye salmon catch by excluding two areas of Chignik bound sockeye harvest from the total catch number that the 15% Igvak allocation is based on. This is nothing more than an allocation shift from Kodiak to Chignik without any rational for an allocation shift. When asked "What is the issue you would like the board to address and why" the proposer does not mention anything about the necessity of an allocation shfit to Chignik which is all this proposal would do.

The Igvak management plan has been in place since 1978 making it one of the oldest allocative management plans in the state. The plan restricted the Kodiak fishery in the Cape Igvak section from equal fishing time with Chignik to as close to 15% of the Chignik harvest of sockeye as possible with Chignik sockeye harvest level triggers to protect stocks and the Chignik fishery in times of low abundance. The fact that Kodiak has only fished two out of the last six years in the Igvak section shows that this plan is working well. The board has been asked numerous times in the past to change the allocation in the Igvak section towards Chignik and each time has applied their Allocation Criteria, Mixed Stock Fisheries Policy, and Sustainable Salmon Policy and each of the numerous times has determined that the plan is working well as written. There is no data that I know of that would justify shifting the allocation of sockeye salmon from Kodiak to Chignik.

Given that this proposal is nothing more than an allocation shift that the proposer does not make any case to justify I kindly ask that you decline to adopt proposal 59.

Sincerely,

Matthew Alward

Nicholas Hoffman
PO Box 1212
Kodiak, AK 99615

12/24/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Oppose Proposal 59

Dear Chairman Morisky and Board of Fish members:

I'm a young Kodiak salmon fisherman. I have been running a seine boat since 2011 as well as participating in Kodiak halibut, sea cumber, cod jig, and tanner crab fisheries. I respectfully request the Board reject Proposal 59.

Historically Kodiak fishermen always catch less than the 15% allowable amount. This proposal assumes that Kodiak fishermen consistently exceed the 15% which isn't true. If the proposal passes, Kodiak would lose roughly a quarter of its current allocation.

I see no reason for the Board to make any changes to the Kodiak Salmon Management plan. Thank you for the opportunity to comment on the proposals and the chance for my voice to be heard. I look forward to the Board of Fish members getting to spend time in Kodiak and learn more about our town and fishing community.

I humbly request the Board reject Proposal 59.

Sincerely,

Nicholas Hoffman
F/V Relentless

December 26, 2019

Quinn Alward

60082 Clarice Way

Homer, AK 99603

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Opposition to proposal 59

Dear Chairman Morisky and board of fisheries members,

I have grown up seining in the Kodiak area with my family since I was 10 years old and it is a big part of who I am today 12 years later. I oppose proposal 59 that would shift the allocation of sockeye salmon in the Cape Igvak management section from Kodiak to Chignik.

Proposal 59 askes the board to change what catch of Chignik bound sockeye make up the Chignik sockeye salmon catch by excluding two areas of Chignik bound sockeye harvest from the total catch number that the 15% Igvak allocation is based on. This is nothing more than an allocation shift from Kodiak to Chignik without any justification for an allocation shift. When asked "What is the issue you would like the board to address and why" the proposer does not mention anything about the necessity of an allocation shift to Chignik which is all this proposal would do.

The Igvak management plan has been in place since 1978 making it one of the oldest allocative management plans in the state. The fact that Kodiak has only fished two out of the last six years in the Igvak section shows that the current plan in place is working well. The board has been asked numerous times in the past to change the allocation in the Igvak section towards Chignik and each time has applied their Allocation Criteria, Mixed Stock Fisheries Policy, and Sustainable Salmon Policy and each of the numerous times has determined that the plan is working well as written. There is no data that I have been presented that would justify shifting the allocation of sockeye salmon from Kodiak to Chignik.

Given that this proposal is nothing more than an allocation shift that the proposer does not make any case to justify, I kindly ask that you decline to adopt proposal 59.

Sincerely,

Quinn Alward

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 59

Dear Chairman Morisky and Board of Fisheries Members,

I am Richard Roth, Kodiak salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife, three children and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Tzar (I sold the F/V Kelly Girl this winter which I had fished for 9 seasons in kodiak). We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

This proposal seeks to further limit Kodiak's traditional Cape Igvak fishery. Kodiak's salmon fishery has not changed since management plans were adopted starting with the Cape Igvak plan in 1978 and continuing through the early 1990s. Kodiak's salmon fishery is not a "new and expanding" fishery. This proposal is a familiar effort to limit the small portion of sockeye take that Kodiak fishermen are allowed in the Cape Igvak plan only after significant safety thresholds are reached by Chignik fishermen.

The Cape Igvak management plan was created because fishing there was part of Kodiak's historic fishing patterns prior to limited entry in 1973. The plan was put in place in 1978 to allow Kodiak fishermen access to their historic allocation of fish harvested during June and July. Kodiak's fishing opportunities at Cape Igvak are based off of existing built-in conservation measures designed to protect Chignik's second run with a safety net of 300,000 early run sockeye and 600,000 total sockeye for Chignik fishermen before *any fishing at Igvak occurs*. This purpose of this threshold is to prevent conservation issues during weak Chignik runs. This plan has been repeatedly evaluated by the Alaska Board of Fisheries through time, making it one of the most long-standing and intensely scrutinized management plans in the state.

If there are poor returns in Chignik, the current plan ensures that Kodiak fishermen won't fish at Igvak.

The 2019 Chignik Salmon Season Summary shows total values and average value per active permit in the Chignik Management Area in recent years, except for 2018, seem on track for what appears to be a normal range for the CMA within the last ten years. The 2019 season saw 51 active permits with a value per permit of $157,072, which is very close to a decade ago with a 2009 season of 55 permits and a value per permit of $156,926, much greater value than Kodiak permits.

I ask that the Board reject proposal 59 and not make any changes to the Cape Igvak Management Plan.

Thank you for your careful consideration,

Richard, Amanda, Stephanie, Noah, and Ranger Roth
F/V Sea Tzar
Homer, Alaska

December 19, 2019

Robert Fellows

266 E Bayview Ave.

Homer, AK. 99603

Alaska Board of Fisheries

Board Support Section

PO Box 115526

Juneau, Ak. 99811-5526

RE: Opposition to proposal 59

Dear chairman Morisky and Board of Fisheries members,

I have been a commercial salmon fisherman in the Kodiak area form 29 years. The Cape Igvak section is a historical part of the Kodiak salmon fishery. In years of a surplus return to the Chignik management area, being able to have an opportunity to fish in the Cape Igvak section is important to trying to make a living fishing salmon in the Kodiak management area. I respectfully request the Board reject proposal #59

This proposal makes the assumption that it is common for Kodiak fishermen in the Cape Igvak section to exceed the 15% allocation. This is a false assumption. The historic average harvest from the Cape Igvak section is approximately 13%. The Cape Igvak management plan is a long-standing management plan that works well and has safeguards built in for years of weaker returns to the Chignik river system.

Sincerely,

Robert Fellows

Ron Kavanaugh
Self
12/28/2019 12:26 AM AKST

RE: PROPOSAL 59 Modify the definition of the total Chignik sockeye salmon catch used to determine allocation percentages in the Cape Igvak Salmon Management Plan

Another allocative reduction proposal. Cape Igvak fisherman only harvest fish in Cape Igvak after specific escapement goals are met. They are not allowed to harvest in years of low abundance. 15% is way below the long term historical catch which was reduced and capped in 1978 at the 15% goal. This proposal seeks to reduce the percentage by 21% and has no justification.

RE: PROPOSAL 59 Modify the definition of the total Chignik sockeye salmon catch used to determine allocation percentages in the Cape Igvak Salmon Management Plan

December 24, 2019 Alaska Board of Fisheries Board Support Section P.O. Box 115526 Juneau, AK 99811-5526 Re: Opposition to Proposal 59 Dear Chairman Morisky and Board of Fisheries Members, I am Steve Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Grace. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures. This proposal seeks to further limit Kodiak's traditional Cape Igvak fishery. Kodiak's salmon fishery has not changed since management plans were adopted starting with the Cape Igvak plan in 1978 and continuing through the early 1990s. Kodiak's salmon fishery is not a "new and expanding" fishery. This proposal is a familiar effort to limit the small portion of sockeye take that Kodiak fishermen are allowed in the Cape Igvak plan only after significant safety thresholds are reached by Chignik fishermen. The Cape Igvak management plan was created because fishing there was part of Kodiak's historic fishing patterns prior to limited entry in 1973. The plan was put in place in 1978 to allow Kodiak fishermen access to their historic allocation of fish harvested during June and July. Kodiak's fishing opportunities at Cape Igvak are based off of existing built-in conservation measures designed to protect Chignik's second run with a safety net of 300,000 early run sockeye and 600,000 total sockeye for Chignik fishermen before any fishing at Igvak occurs. This purpose of this threshold is to prevent conservation issues during weak Chignik runs. This plan has been repeatedly evaluated by the Alaska Board of Fisheries through time, making it one of the most long-standing and intensely scrutinized management plans in the state. If there are poor returns in Chignik, the current plan ensures that Kodiak fishermen won't fish at Igvak. The 2019 Chignik Salmon Season Summary shows total values and average value per active permit in the Chignik Management Area in recent years, except for 2018, seem on track for what appears to be a normal range for the CMA within the last ten years. The 2019 season saw 51 active permits with a value per permit of $157,072, which is very close to a decade ago with a 2009 season of 55 permits and a value per permit of $156,926, much greater value than Kodiak permits. I ask that the Board reject proposal 59 and not make any changes to the Cape Igvak Management Plan. Thank you for your careful consideration, Steve and Jenny Roth F/V Sea Grace Homer, Alaska

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 59

Dear Chairman Morisky and Board of Fisheries Members,

I am William Roth, Captian of the F/V Sea Chantey. I own a Kodiak seine permit and have been fishing it for the lasat 5 years as well as working as crew since 2010, I rely mostly on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

This proposal seeks to further limit Kodiak's traditional Cape Igvak fishery. Kodiak's salmon fishery has not changed since management plans were adopted starting with the Cape Igvak plan in 1978 and continuing through the early 1990s. Kodiak's salmon fishery is not a "new and expanding" fishery. This proposal is a familiar effort to limit the small portion of sockeye take that Kodiak fishermen are allowed in the Cape Igvak plan only after significant safety thresholds are reached by Chignik fishermen.

The Cape Igvak management plan was created because fishing there was part of Kodiak's historic fishing patterns prior to limited entry in 1973. The plan was put in place in 1978 to allow Kodiak fishermen access to their historic allocation of fish harvested during June and July. Kodiak's fishing opportunities at Cape Igvak are based off of existing built-in conservation measures designed to protect Chignik's second run with a safety net of 300,000 early run sockeye and 600,000 total sockeye for Chignik fishermen before *any fishing at Igvak occurs*. This purpose of this threshold is to prevent conservation issues during weak Chignik runs. This plan has been repeatedly evaluated by the Alaska Board of Fisheries through time, making it one of the most long-standing and intensely scrutinized management plans in the state.

If there are poor returns in Chignik, the current plan ensures that Kodiak fishermen won't fish at Igvak.

The 2019 Chignik Salmon Season Summary shows total values and average value per active permit in the Chignik Management Area in recent years, except for 2018, seem on track for what appears to be a normal range for the CMA within the last ten years. The 2019 season saw 51 active permits with a value per permit of $157,072, which is very close to a decade ago with a 2009 season of 55 permits and a value per permit of $156,926, much greater value than Kodiak permits.

I ask that the Board reject proposal 59 and not make any changes to the Cape Igvak Management Plan.

Thank you for your careful consideration,

William and Kaytlen Roth
F/V Sea Chantey
PO BOX 1230
Homer AK
99603

Aaron Nevin

12/27/2019 08:27 PM AKST

RE: PROPOSAL 60 Reduce the Cape Igvak Section allocation from 15 percent to five percent of the total Chignik Area sockeye salmon catch

The igvak area has been a historically important fishery for kodiaks already struggling fleet. I think this is something we cant afford. Also Chignik is not limited on there intercept of our fish. My name is Aaron Nevin. Being born in Kodiak to a commercial fisherman father I grew up fishing salmon on his seiner. I have continued on in my currently twenty year long career to buy a permit and run his boat after retirement. The seining season usually accounts for the majority of my annual income and is incredibly important to my family.

Adam Barker
Kashvik Fisheries LLC
12/26/2019 10:48 PM AKST

RE: PROPOSAL 60 Reduce the Cape Igvak Section allocation from 15 percent to five percent of the total Chignik Area sockeye salmon catch

Adam Barker 41584 Manson Drive Homer AK 99603 12/26/19 Chairman Reed Moriskey Alaska Board of Fisheries Board Support Section P.O. Box 115526 Juneau, AK 99811-5526 RE: proposal 60 Reduce the Cape Igvak Section allocation from 15 percent to five percent of total Chignik sockeye salmon catch Dear Chairman Morisky and Members of the Board of Fish My name is Adam Barker, I'm a third generation fisherman who grew up fishing the waters of Kodiak Island starting in 1988 with my dad. I purchased my own boat/permit for Kodiak seining in 1999, I now have two children who now come out and fish with me in the summers. I also tanner crab in the winter. I respectfully request the board rejects Prop # 60. The proposal # 60 reducing the Cape Igvak allocation from 15% down to 5% is redundant. If the Chignik run is grim no one will be fishing in the Cape Igvak Section. I used to commercial seine as a deckhand in the Chignik area. The invisible line separating the two areas is fundamentally meaningless as "our fish" swim through their area and vice versa. The reduction in return of fish to the Chignik watershed is not due to percentages caught by Kodiak Seiners. It well may be ocean warming and other factors possibly detrimental to all our shared fisheries. Please reject this proposal as counterproductive to business as usual for the past 40 years of Fish and Game management. I hope the board continues to apply consistency in its application of the guiding policies such as the mixed stock fisheries policy, and the sustainable fisheries policy. Sincerely, Adam Barker

Adelia Myrick

12/25/2019 06:47 PM AKST

RE: PROPOSAL 60 Reduce the Cape Igvak Section allocation from 15 percent to five percent of the total Chignik Area sockeye salmon catch

Dear Board of Fish Members, I am a second-generation Kodiak fisherman. My father started salmon fishing here in 1967, and I have setnetted since I was a toddler with my family, for my whole life. I took over the permit from my dad several years ago, and in 2016 finally bought the setnet operation from my parents outright. You may be wondering why a setnetter who has no ability to fish the Igvak area is even commenting on this proposal. This is because we are drastically affected by the mobile seine fleet. If they are limited in where they can fish, we find our central section of the Northwest Kodiak district becoming more and more crowded with fewer opportunities for all to harvest in the traditional manner. So it behooves me to pay attention and understand what's going on. In this proposal, we see just random numbers being thrown out for your consideration, but where is the data behind them? It seems as if they are drawn out of thin air. Remember, Cape Igvak is completely closed in years of low abundance. Statements in the proposal that changing the Cape Igvak Management Plan would better "align the Cape Igvak Management Plan with current fishery trends and economic realities" provide no data to back them up, and in fact the plan is one of the earliest and best examples of the board's Mixed Stock Fisheries Policy and the Policy for the Management of Sustainable Salmon Fisheries. As a lifelong fisherman with a previous generation of history in my consciousness, I have to add that climate change and the warming of the oceans and ocean acidification is something we are coming up against. Changes are happening and I feel like they are going to keep happening. For this reason I urge you to be very cautious and careful about changing management plans in response to fisheries "disasters." Who knows what disasters will happen next and if you build management plans in response to these rather than based on deep analysis of science and the history and all other elements of the proposal, you'll be setting dangerous precedents for your future decisions. Thank you for your consideration, Adelia Myrick

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 60

Dear Chairman Morisky and Board of Fisheries Members,

I am Alex Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Wandering Star. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

This proposal seeks to further limit Kodiak's traditional Cape Igvak fishery. Kodiak's salmon fishery has not changed since management plans were adopted starting with the Cape Igvak plan in 1978 and continuing through the early 1990s. Kodiak's salmon fishery is not a "new and expanding" fishery. This proposal is a familiar effort to limit the small portion of sockeye take that Kodiak fishermen are allowed in the Cape Igvak plan only after significant safety thresholds are reached by Chignik fishermen.

The Cape Igvak management plan was created because fishing there was part of Kodiak's historic fishing patterns prior to limited entry in 1973. The plan was put in place in 1978 to allow Kodiak fishermen access to their historic allocation of fish harvested during June and July. Kodiak's fishing opportunities at Cape Igvak are based off of existing built-in conservation measures designed to protect Chignik's second run with a safety net of 300,000 early run sockeye and 600,000 total sockeye for Chignik fishermen before *any fishing at Igvak occurs*. This purpose of this threshold is to prevent conservation issues during weak Chignik runs. This plan has been repeatedly evaluated by the Alaska Board of Fisheries through time, making it one of the most long-standing and intensely scrutinized management plans in the state.

If there are poor returns in Chignik, the current plan ensures that Kodiak fishermen won't fish at Igvak.

The 2019 Chignik Salmon Season Summary shows total values and average value per active permit in the Chignik Management Area in recent years, except for 2018, seem on track for what appears to be a normal range for the CMA within the last ten years. The 2019 season saw 51 active permits with a value per permit of $157,072, which is very close to a decade ago with a 2009 season of 55 permits and a value per permit of $156,926, much greater value than Kodiak permits.

I ask that the Board reject proposal 60 and not make any changes to the Cape Igvak Management Plan.

Thank you for your careful consideration,
Alex and Jaime Roth
F/V Wandering Star
Homer, Alaska

RE: PROPOSAL 60 Reduce the Cape Igvak Section allocation from 15 percent to five percent of the total Chignik Area sockeye salmon catch

Bo Calhoun 57177 Zulu Ct. Homer, AK 99603 12/26/19 RE: Opposition to Proposal #60 Dear Chairman Morisky and Board of Fish members: I'm a third generation Kodiak salmon seiner. I was born and raised in Homer, AK and continue to live here. My wife and I hope to raise our two sons on our family seine boat in a healthy Kodiak salmon fishery. I respectfully request you reject Proposal #60. The changing of the traditional Cape Igvak allocation is unjustified. Sockeye runs around the whole state have suffered recently, including those in Kodiak. Basing a huge allocation shift on a short term and undefined notion that Kodiak stocks are “exponentially healthier” creates a dangerous precedent in managing naturally cyclical fisheries. Beyond that, Chignik permits remain 2.5 to 3 times the cost of Kodiak permits and over half the S01K permits in Kodiak go unfished. Both Kodiak and Chignik are suffering from the recent weakening in sockeye runs. That does not justify taking from one fishery and giving to the other. Please reject Proposal #60. Thank you for taking the time to read public comments. Sincerely, Bo Calhoun

Brad Marden
PO Box 2856
Homer, AK 99603

December 23, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: **opposition to Proposal 60**

Dear Chairman Morisky and Board of Fish members:

I first participated in the Kodiak seine fishery for salmon in 2004. Since then, I've worked as a deckhand in various salmon, halibut, and herring fisheries throughout the state, before buying my own boat in 2012, followed by a Kodiak seine permit in 2013. Since then I have exclusively fished in Kodiak waters. I respectfully request the Board **reject Proposal 60**.

Proposals to reduce the Cape Igvak allocation are a perennial request at the Kodiak and Chignik finfish meetings, and have been consistently rejected by the board in the past, for good reason. The allocation of 15% of overall Chignik bound fish is based on a historical use of the regional salmon resource from before limited entry. Repeating the same requests year after year to change allocation does not make a compelling case to warrant a change. When Chignik salmon escapement is weak, Kodiak fishermen do not get any fishing opportunity at Cape Igvak- this is fair; it also seems fair that in years of Chignik salmon abundance Kodiak fishermen should get a chance to catch the historical allocation. The Cape Igvak fishery helps spread out our fleet and can be an important part of having a decent fishing season for Kodiak fishermen.

I am sure that the Board tires of endless testimony claiming that the fish of concern are "our fish being stolen by those guys over there". It seems that in my 15 years of commercial fishing in Alaskan waters, Kodiak salmon fishermen are often on the defensive, and during these 15 years sockeye harvest has trended downward and the fleet has consolidated. Rather than retaliate with countering proposals of our own, I ask that we maintain status quo and keep historical allocations and fishing opportunity at Cape Igvak. For this reason, I ask that you **reject Proposal 60**. I want to thank you for your service and I hope the Board continues to apply consistency in upholding Mixed Stock Fisheries Policy, and the Sustainable Fisheries Policy.

Sincerely,

Brad Marden

Brian Mcwethy
KSA
12/23/2019 09:05 AM AKST

RE: PROPOSAL 60 Reduce the Cape Igvak Section allocation from 15 percent to five percent of the total Chignik Area sockeye salmon catch

My name is Brian Mcwethy. I was born and raised in kodiak. I live in kodiak with my family and we all depend on my income. I fished with my father on his seiner growing up and now I own and operate a seiner. Salmon seining and tanner crab fishing in kodiak are currently our only sources of income. I plan to try and continue to fish the kodiak waters and possible my children will have the opportunity to. I hope the current and historical areas we fish aren't taken from us and the future generations of kodiak. I strongly oppose proposal 60. This would take seriously harm my business plan that I rely on to support my family.

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 60

Dear Chairman Morisky and Board of Fisheries Members,

My name is Chris Johnson and I am a second-generation fisherman in Kodiak, Alaska. I grew up fishing on my dad's boat and got my first crew job working for someone else two weeks after I graduated high school. I haven't missed a salmon season since. I bought into the fishing industry in 2011 with the purchase of a 25-foot jig boat that I worked for two years in the winter and spring months while I still crewed for salmon in the summer. Access to the jig fisheries focusing on cod and rockfish was the only way that I could afford to move into the salmon fleet with a 38-footer in 2013. After the recent cod collapse I now primarily rely on salmon seining and live here year-round with my wife.

There is no research or stock assessment that justifies the reduction of Kodiak's Cape Igvak fishery from 15% to 5%, nor any reduction in percentage for that matter. This proposal suggests a number pulled from thin air. There has been no change in the allocation criteria to justify needing a change in allocation. Kodiak's 15% allocation at Cape Igvak was an approximation of Kodiak's historical harvest in the years before the Cape Igvak management plan from 1978.

The proposer uses the justification that the Cape Igvak Management plan was created because Kodiak had weak sockeye stocks decades ago, and that now Chignik is showing weak sockeye stocks we should give up our historic fishing patterns in the Igvak section. From what I have learned that is not the historically accurate background for the Cape Igvak management plan. Furthermore, I simply do not accept their argument that Kodiak stocks and fishermen are doing fine. Salmon run strengths are cyclical and the trend of salmon abundance in Kodiak region mirrors the rest of the western Gulf of Alaska, where unpredictability coupled with some historically poor harvests have left the fleet and our communities uneasy about the future.

Chignik fishermen argue that they are in bad shape and that Kodiak fishermen are doing great and have plenty of opportunities. This is not the case. The Kodiak region is experiencing a contraction of our historic commercial fleet due to a suite of reasons, including ecological changes impacting available fisheries, barriers to entry for young people into ownership-level fishing careers, and high cost of permits/quota and difficulty of diversifying fishing portfolios. Around Kodiak the small boat fleet in the past relied on a four-legged stool of at least crab, herring, salmon and halibut. My dad who fished things ranging from JV Pollock to salmon seining on the Thelma C, the wooden boat that's now a museum piece down on the spit, always tells me how first crab went away and everything was still ok. Herring and halibut could balance out a bad salmon season. Then herring prices crashed and they were trying to balance on a two-legged stool. Then came the IFQs. Over the span of a generation, these factors have left many

fishermen struggling to balance on a precarious one-legged salmon stool. Most recently, the closure of the federal cod fishery has removed one of the wintertime support fisheries that we built our business on and now we're cripplingly reliant on salmon. We need this fishery to keep going on.

Taking away any fishing opportunity from Kodiak fishermen, particularly from the small boat fleet, would have a direct negative impact on new entrants trying to gain a foothold in this industry, fishing families trying to get by, and fishing support businesses in our region. I'm proud to call Kodiak home and am working to protect our fishing way of life.

Sincerely,
Chris Johnson
F/V North Star

Cole Christiansen
F/V Mary Ann
12/22/2019 08:52 PM AKST

RE: PROPOSAL 60 Reduce the Cape Igvak Section allocation from 15 percent to five percent of the total Chignik Area sockeye salmon catch

Historical sockeye returns are cyclical and recently the Kodiak area return has been strong, however the Alaska Department of Fish and Game predictions for summer 2020 indicate that Chignik will have a stronger run than Kodiak next summer. Cutting off Kodiak fisherman in the Cape Igvak section while Kodiak area sockeye returns are dropping will severely harm the Kodiak salmon fleet.

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 60

Dear Chairman Morisky and Board of Fisheries Members,

My name is Danielle Ringer and I appreciate the opportunity to comment on proposals before the Board at the Kodiak finfish meeting. I live in Kodiak with my husband and we own and operate the 38-foot F/V North Star. We chiefly rely on salmon seining and cod and rockfish jigging to maintain our fishing way of life and ability to live on Kodiak Island. I hold a Master's degree from the University of Alaska Fairbanks in Political Ecology of Fisheries and was one of the researchers on the Graying of the Fleet study in the Kodiak region.

There is no research or stock assessment that justifies the reduction of Kodiak's Cape Igvak fishery from 15% to 5%, nor any reduction in percentage for that matter. This proposal suggests a number pulled from thin air. There has been no change in the allocation criteria to justify needing a change in allocation. Kodiak's 15% allocation at Cape Igvak was an approximation of Kodiak's historical harvest in the years before the Cape Igvak management plan from 1978.

The proposer uses the justification that the Cape Igvak Management plan was created because Kodiak had weak sockeye stocks decades ago, and that now Chignik is showing weak sockeye stocks we should give up our historic fishing patterns in the Igvak section. From what I have learned that is not the historically accurate background for the Cape Igvak management plan. Furthermore, I simply do not accept their argument that Kodiak stocks and fishermen are doing fine. Salmon run strengths are cyclical and the trend of salmon abundance in Kodiak region mirrors the rest of the western Gulf of Alaska, where unpredictability coupled with some historically poor harvests have left the fleet and our communities uneasy about the future.

Chignik fishermen argue that they are in bad shape and that Kodiak fishermen are doing great and have plenty of opportunities. This is not the case. The Kodiak region is experiencing a contraction of our historic commercial fleet due to a suite of reasons, including ecological changes impacting available fisheries, barriers to entry for young people into ownership-level fishing careers, and high cost of permits/quota and difficulty of diversifying fishing portfolios. Around Kodiak the small boat fleet in the past relied on a four-legged stool of at least crab, herring, salmon and halibut. My husband's dad who fished things ranging from JV Pollock to salmon seining on the Thelma C, the wooden boat that's now a museum piece down on the spit, always tells us how first crab went away and everything was still ok. Herring and halibut could balance out a bad salmon season. Then herring prices crashed and they were trying to balance on a two-legged stool. Then came the IFQs. Over the span of a generation, these factors have left many fishermen struggling to balance on a precarious one-legged salmon stool. Most recently, the closure of the federal cod fishery has removed one of the wintertime support fisheries that we

built our business on and now we're cripplingly reliant on salmon. We need this fishery to keep going on.

Please do not accept Chignik's proposals seeking to hack away at Kodiak's salmon fishery. I see no biological, scientific, historical, economic, nor sociocultural reasons that could justify the Board making any changes to the Cape Igvak management plan and thus create ripple effects negatively impacting Kodiak fishermen, processing workers, and community businesses. Thank you for your consideration of my comments and I look forward Board of Fisheries members spending time in our fishing community during the Kodiak meeting.

I humbly request the Board to reject this proposal.

Respectfully,
Danielle Ringer, M.A.
F/V North Star

Dave Kubiak
F/V Lara Lee
12/21/2019 01:32 PM AKST

RE: PROPOSAL 60 Reduce the Cape Igvak Section allocation from 15 percent to five percent of the total Chignik Area sockeye salmon catch

This is a bald face grab for fish based on a cyclical low point in Chignik sockeye runs in a historically proven management plan. The Board should not change a proven management plan based on emotional whim.

Donald Lawhead

12/26/2019 10:51 PM AKST

RE: PROPOSAL 60 Reduce the Cape Igvak Section allocation from 15 percent to five percent of the total Chignik Area sockeye salmon catch

The mangement plan has worked fine since 1978. During years of high production Kodiak fisherman get openings. During years of low production there is few or no openings.

Fred Stager

F/V Lady Lu

December 12, 2019

Alaska Board of Fisheries Board Support Section

P.O. Box 115526 Juneau, AK 99811-5526

RE: Opposition to Proposal 60

Dear Chairman Morisky and Board of Fish Members,

I am writing to oppose Proposal 60: This proposal is simply an allocation grab purporting to solve a problem that doesn't exist.

The Cape Igvak management plan was first adopted in 1978 and has been repeatedly evaluated by the Alaska Board of Fisheries, making it one of the most long-standing and intensely scrutinized management plans in the state. This plan has stood the test of time and provided a reasonable allocation and harvest strategy for a fishery that stretches back well beyond the beginning of limited entry.

In years of abundance, Kodiak seiners are allowed to share in the harvest of Chignik bound sockeye, while in poor years the harvests are decreased or eliminated altogether. It is a sound plan that has stood the test of time and has provided the Kodiak fleet with a much needed source of June revenue.

How the proponents of prop 60 have concluded that Kodiak's salmon fishery is "exponentially healthier" than it used to be when we are well below the historical average for our sockeye harvest is a mystery to me.

I'm also frustrated in the unfairness in the how the shared resource is currently managed. Chignik fishermen are prosecuting an expanding mixed stock fishery on non-local stocks (see WASSIP), yet their fishing efforts have no restrictions that account for the impact that their harvest has on Kodiak's fishery. Meanwhile, Kodiak fishermen have endured 2 consecutive years of closures in the Cape Igvak for conservation.

I ask the board to **reject proposal 60** and recognize that Kodiak has not been somehow spared from regional trends in declining sockeye runs.

Thank You- Fred Stager

garrett kavanaugh

12/27/2019 05:12 PM AKST

RE: PROPOSAL 60 Reduce the Cape Igvak Section allocation from 15 percent to five percent of the total Chignik Area sockeye salmon catch

Dear Chairman and Members of the Board, As a young fishermen who is working their way into the Kodiak Salmon fishery this proposal will cause Kodiak fishermen to lose a substantial amount of their catch. I have been investing into the Kodiak salmon fishery as much as possible, in 2019 I purchased a Kodiak salmon permit. I ran a seiner for the month of august. I plan on running the same boat for the entire 2020 salmon season in Kodiak. When I was younger I remember testifying against proposals similar to these. These proposals are re-allocations of Kodiak historical catch. Kodiak has always had intercept fisheries and we already have management plans in place that have been effective for the Kodiak salmon fishery. Please help ensure the future for young fishermen entering into the Kodiak Salmon fishery, and the people who have been investing and are established in the fishery. Thank you for considering these comments, Garrett Kavanaugh

Iver Holm

12/27/2019 11:43 PM AKST

RE: PROPOSAL 60 Reduce the Cape Igvak Section allocation from 15 percent to five percent of the total Chignik Area sockeye salmon catch

Dear Chairman Morisky and Board of Fish members: I am 31 years old and a life long resident of Kodiak. I grew up set netting in Uganik on the west side of the island with my mother until i was 14. I then started seining with my father until I was able to buy my own Kodiak seine operational the age of 27. Please oppose proposal 60 there is no need to change a management plan that has been used successfully since 1973. thank you for your time sincerely Iver Holm

James C Calhoun

12/26/2019 12:35 PM AKST

RE: PROPOSAL 60 Reduce the Cape Igvak Section allocation from 15 percent to five percent of the total Chignik Area sockeye salmon catch

I have been intimately involved in the Kodiak seine fishery since 1968 to present. Presently my son is fishing the Kodiak area and it is my desire to have my grandsons be able to participate in a healthy Kodiak fishery if they so desire. Throughout my career I have come to the conclusion that the ADF&G management for Kodiak has been stellar and has kept the stocks in Kodiak healthy overall with the current management plan. The current management plan disallows fishing time in the Cape Igvak section when chignik runs are weak, but still allows kodiak fishers access to their traditional fishery when runs are more robust. C. Igvak early run has been closed 4 out the last 6 years. Alaska boats and permits asking value is $40,000 for Kodiak permits and Chignik permits are $100,000. I believe Kodiak fishers deserve acess to their traditional fishery under the present management plan. I oppose proposal 60.

Jamin Hall

12/27/2019 11:11 PM AKST

RE: PROPOSAL 60 Reduce the Cape Igvak Section allocation from 15 percent to five percent of the total Chignik Area sockeye salmon catch

My name is Jamin Hall, my wife and I have a set net site in Uganik Bay. I am writing in opposition to proposal 60.

Ken Christiansen
F/V Mary Ann
12/26/2019 02:39 PM AKST

RE: PROPOSAL 60 Reduce the Cape Igvak Section allocation from 15 percent to five percent of the total Chignik Area sockeye salmon catch

My name is Ken Christiansen. I have seined in Kodiak for more than fifty years, beginning with my father at the age of 6 and now with both my son and daughter. As a captain, for the past 40 years, I have fished the whole Kodiak Management Area. Any change to a management plan should be based on scientific reason. Outcry from one user group to take from another is simply a knee-jerk reaction with a sense of immediate gratification but not necessarily improved results. The recent run failures in the Chignik area may be related to normal cycles, climate change, past overfishing, poor spawning conditions, poor brood stock survival conditions, or other as of yet unknown reasons. Cape Igvak is a traditional fishery for Kodiak Fisherman, Thorvold Olsen, Billie Berestoff, Alfred Torsen, Marius Olsen, and Antril Suydam, to name a few, dating back to the 1960's, when boats were constructed of wood and were much smaller than the 58" limit seiners of today; and prior to the Cape Igvak Management plan. Further, the Management Plans in place already restrict Kodiak Fishermen until the escapement goals in Chignik have been met. Additional restriction of Kodiak fisherman does not guarantee that weather, currents, tides, and ocean conditions will cooperate to provide the ideal returns for Chignik fishermen

Kodiak Salmon Work Group
c/o Kodiak Regional Aquaculture Association
104 Center Ave., Suite 205
Kodiak, Alaska 99615

December 27, 2019

Chairman Morisky
Alaska Board of Fisheries
Boards Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: CAPE IGVAK MANAGEMENT PLAN
Chignik Proposals 58, 59, 60, 61, 62

Dear Chairman Morisky and Board Members:

The Kodiak Salmon Work Group (KSWG) is an ad hoc committee created to address the issues of Cook Inlet bound sockeye captured in the Kodiak Management Area and the continuation of the Cape Igvak Management Plan. Membership is open and encompasses seiners from both Kodiak seine organizations, setnetters from both Kodiak setnet organizations, beach seine permit holders and processors. In other words, all of Kodiak's salmon fishing community. The group is supported by voluntary stakeholder contributions including those from the City of Kodiak and the Kodiak Island Borough.

KSWG is herewith submitting several documents for the Board's review: 1. Structure and Function of the Kodiak Management Area Salmon Fisheries; 2. Review of Cape Igvak Salmon Management Plan and Proposals to the Alaska Board of Fisheries; and 3. Economic Analysis of Proposals 58, 60,61 and 64. An informational map is attached as well.

Cape Igvak Management Plan (Proposals 58-62)

Chignik's four substantive proposals regarding the Cape Igvak management plan don't outright request that the Board set aside the plan. Instead they focus on provisional changes that would

gut Kodiak's Cape Igvak fishery. Proposal 58 with the date change would reduce, on average, Kodiak's fishery by 79%. Proposal 59 is an accounting change that would reduce the Cape Igvak fishery by about 20%. Proposal 60, like proposal 58, would reduce Kodiak's revenues by about 67% and proposal 61 comes in with a 69% reduction. The fifth proposal (Proposal 62) is a record-keeping proposal that is untenable.

The Cape Igvak Management Plan is embedded in the Mixed Stock Fisheries Policy: "Most mixed stock fisheries are long standing and have been scrutinized many times by past Boards. Consequently, existing regulatory management plans are understood to incorporate conservation burden and allocation" (Allocation Criterion 2). Chignik's guaranteed catch allocation of 300,000 fish (early run) and 300,000 (late run) was a clear balancing in the original plan, favoring Chignik by providing an economic safety net. In addition, Kodiak would share the conservation burden in that the escapement would be assured before Kodiak would go fishing. On the other hand, if Chignik gets its escapement and minimum guaranteed catch, then Kodiak is allowed to harvest up to approximately what was historically caught in the fishery. This is a fairly balanced plan, if not already overbalanced to Chignik's advantage!

Also, the Board states in Allocation Criterion 3, "The policy should recognize that salmon resources are generally fully utilized and that stability is an important aspect of the fisheries." Why is stability important? Many salmon stakeholders make investments and commitments based on regulatory stability. If salmon management plans are subject to change with every Board cycle, fishery values (ex-vessel, permit and gear) will decrease as uncertainty increases, conservation may be compromised, and stakeholders will be encouraged to try to "get a better deal" at each successive Board meeting.

The history of the Cape Igvak Management Plan (Allocation Criterion 1) is of critical importance to understanding why it was developed and how it was balanced between stakeholders. Prior to the plan Kodiak could fish at Cape Igvak any day that the Chignik fleet fished. The "day for day" fishing caused area managers concern that Kodiak's fishing could impact a weaker "second run" to Chignik. Consequently, the catalyst for the Cape Igvak Management Plan was conservation of Chignik's runs. The plan balanced the conservation burden between the two

areas. The plan has been in place for 42 years and has had constant review over multiple Board cycles. Its durability establishes it as one of the marque fishery management plans in the State of Alaska. Changing a plan of such long duration without significant "new information" or "new fishing patterns" or "stock of concern" assessments or anything other than a proposer's feeling that something should be changed, compromises and undermines the Board's standing as a fair and impartial deliberative body.

The functionality of the Cape Igvak Management Plan as a conservation plan is seen in the plan's application over the past five years. Because of low Chignik escapements there was no Cape Igvak fishery during 3 seasons. Period! Kodiak cannot be held responsible for any of the current biological or economic issues in Chignik due to low Chignik sockeye returns. Kodiak did not fish at Cape Igvak.

The proposer's assertion, under Allocation Criterion 4, that Kodiak's salmon fishermen have more "alternative resources" is a false assertion. If this means that Kodiak has more salmon numerically or by species, then the Board must also recognize that Kodiak's salmon are divided between approximately 180 active seine fishermen and approximately 150 setnet fishermen ---in contrast to about 75 active Chignik permits. Resource availability is reflected in individual gross earnings. Chignik permits, on average over time, continue to earn more than Kodiak fishermen and, consequently, their permits are worth more in the market. "Alternative resources" in this sense would mean that Kodiak had less "alternative resources" per active permit holder than Chignik.

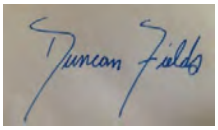
If the "alternative resources" idea means that Kodiak has more "species" available than Chignik salmon fishermen, this too is false. Both Kodiak and Chignik fishermen have access to halibut and cod in their areas although the Federal cod season is now closed in both areas. Only two or three Kodiak salmon fishermen are involved in the Gulf of Alaska trawl fisheries --- a fishery that limits participation with high costs of entry. Both Chignik and Kodiak have historically had a Tanner crab season. While Kodiak currently has a very small Tanner crab quota, only a subset of the Kodiak salmon fleet (like the Chignik fleet) have limited entry permits for the Tanner crab fishery. The Kodiak herring fishery is essentially gone. Kodiak fishermen, especially those from

Old Harbor, Akhiok, Ouzinkie, Port Lions and Larsen Bay just don't see what "alternative resources" are available in Kodiak that Chignik doesn't have. All rural communities in the Gulf of Alaska under about 1,500 people are struggling to survive on their fisheries economy--- which is now almost exclusively salmon.

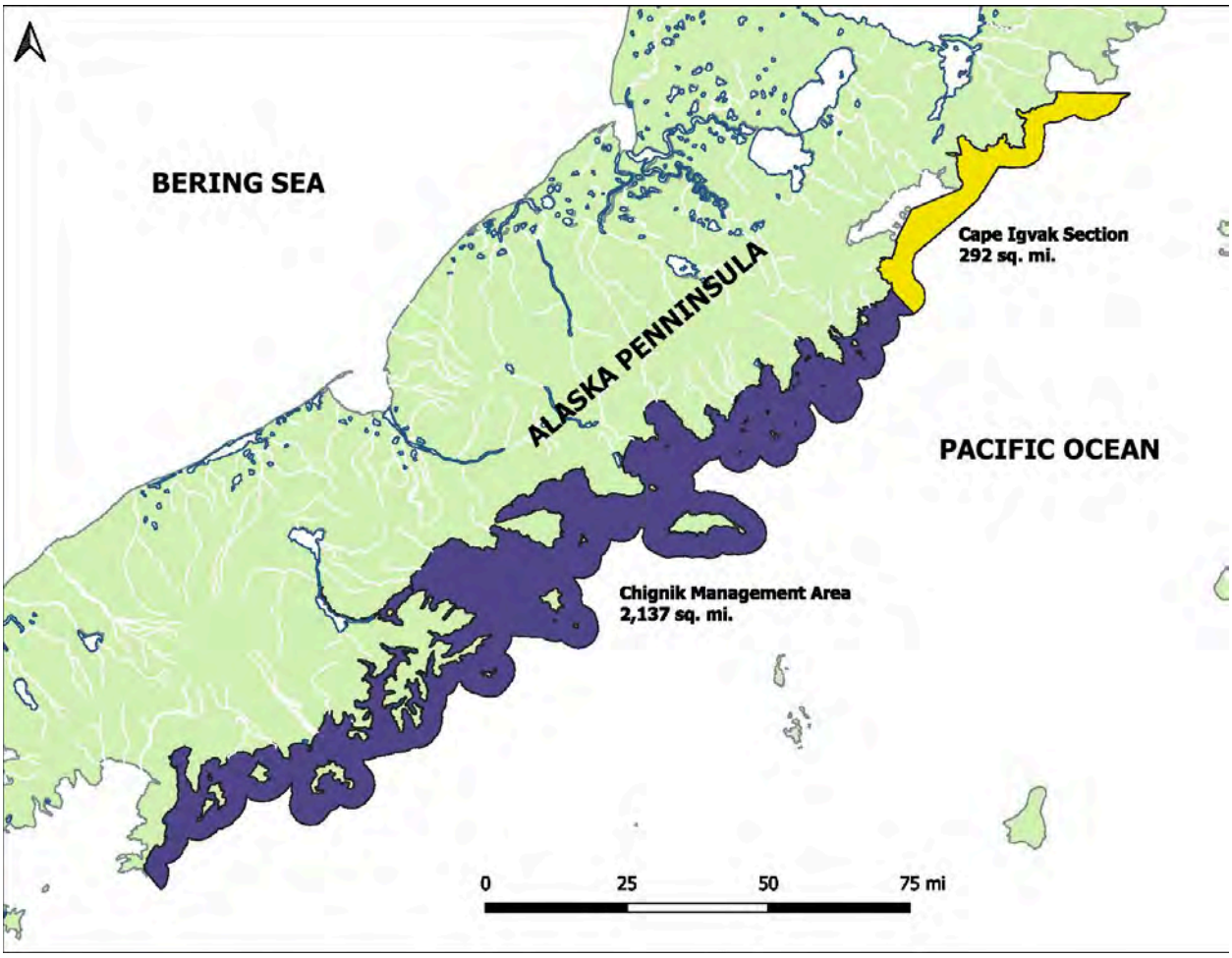
Finally, "The importance of the fishery to the economy of the region and the local area" (Allocation Criterion 7) favors Kodiak. The loss of the Cape Igvak fishery would cost Kodiak fishermen, on average, almost 4 million dollars. At best, the Igvak fishery would increase earnings by a subset of fishermen that actually live in Chignik or the Chignik region by less than an average of 12.0%. While not insignificant, the Igvak fishery is of reduced "importance to the economy of the Chignik region" when compared with the decline of active vessels and the number of Chignik fishermen that are now fishing in Kodiak and Prince William Sound. See further: Review of the Cape Igvak Management Plan and Proposals to the Alaska Board of Fisheries, Proposal 58 Economic Analysis, Proposal 60 Economic Analysis and Proposal 61 Economic Analysis.

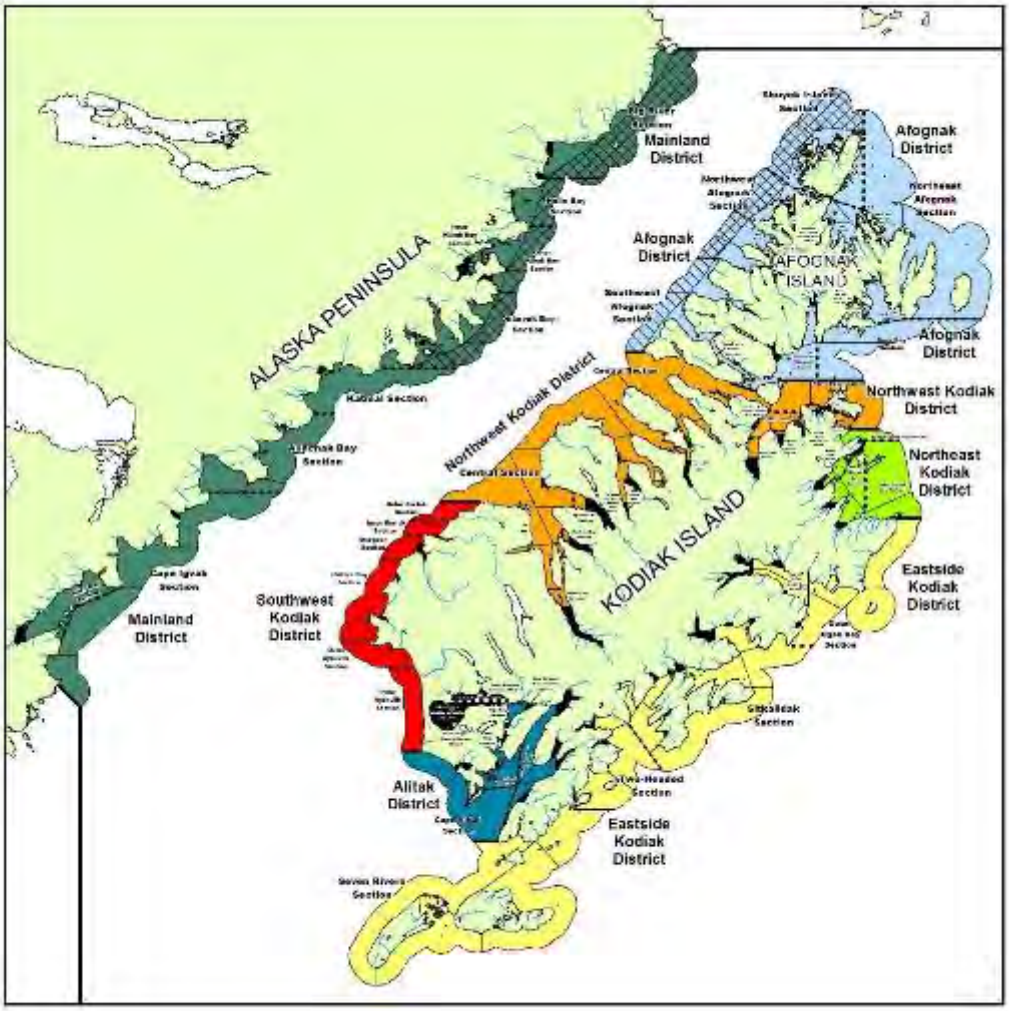
In summary, it is the position of the Kodiak Salmon Work Group that the Board should vote NO on proposals 58, 59, 60, 61, 62 and 63. These proposals are not supported by the Board's allocation criteria and do not have a rational relationship to Chignik's conservation needs.

Very truly yours,



Duncan Fields, Chairman


BERING SEA
ALASKA PENNINSULA
Cape Igvak Section
292 sq. mi.
PACIFIC OCEAN
Chignik Management Area
2,137 sq. mi.
0
25
50
75 mi



Review of Cape Igvak Salmon Management Plan and Proposals to the Alaska Board of Fisheries

Kodiak Salmon Working Group

Executive Summary

- The Cape Igvak Salmon Management Plan (CISMP) has been in place since 1978 and allocates 15% of total Chignik sockeye harvest to Cape Igvak (Kodiak Management Area) after Chignik is guaranteed 600,000 harvest from early and late runs combined, and escapement goals are projected to be met.
- Management strategies under CISMP have been very successful in meeting the sockeye allocation objective and providing escapements within goals.
- Recent genetics studies are robust, but limited sampling with highly variable results does not in itself justify changes to the management plan.
- Genetic results show that the current regulatory assumption that 90% of Igvak sockeye harvests are Chignik bound fish is overly conservative; all samples showed substantially lower contributions of Chignik-bound sockeye to the Igvak harvests.
- Board of Fisheries proposals to alter metrics guiding the Cape Igvak Salmon Management Plan are not well supported by available data.
- The long-standing Cape Igvak plan appears to be working well in terms of limiting harvest of Chignik origin sockeye through harvest guarantees to Chignik, and meeting escapement goals for early and late runs of Chignik sockeye.

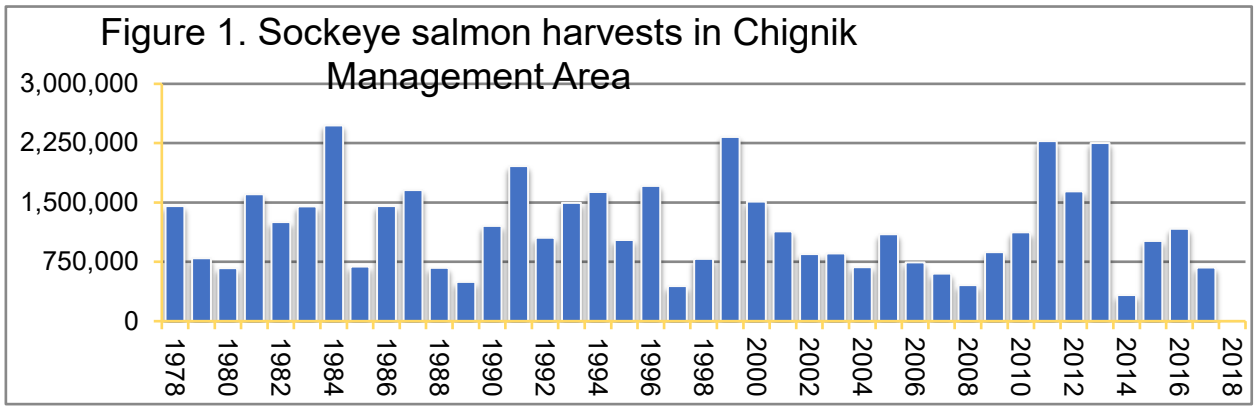
Cape Igvak Salmon Management Plan

A purse seine fishery has been active along capes in the Cape Igvak section of Kodiak Management Area (KMA) since 1964. Following a tagging study in 1969 (ADFG, unpub. data) where 84% of released tags were recovered in Chignik Area fisheries, periodic modifications to the fishery were directed by the Alaska Board of Fisheries. In 1978, the Cape Igvak Salmon Management Plan (CISMP) was adopted to restrict harvest of Chignik bound sockeye at Cape Igvak. The fishery is one of two in the state (the other is the Southeast District Mainland, Area M) in which harvest and escapement triggers from an adjacent management area (both Area L-Chignik) must be met before the fishery can open. From beginning of the fishing season to July 25, Chignik fishermen must harvest a minimum of 600,000 sockeye salmon (300,000 from both early and late Chignik runs) and adequate escapements for both runs must be projected to occur before harvest will be allowed in Igvak. KMA fishermen at Cape Igvak are allocated 15% of the total Chignik harvest. The Board stipulates that 90% of the harvest at Igvak and 80% of the harvest in Southeast District Mainland (Area M) are Chignik bound fish (Anderson et al., 2019, Wilburn, 2019). Proposals to the Board for the 2020 Kodiak Management Area focus on specific metrics in the plan.

Since the CISMP plan came about, management has been very effective at meeting the allocation objectives in the plan. Only four times in forty years has the 15% target been exceeded by more than 1% (Anderson et al., 2019), which is probably within reasonable expectations for management error. Harvests of Chignik bound fish at Igvak obviously go up and down with Chignik harvests and the Igvak fishery has been closed, or catches extremely low, three times between 2014 and 2018 due to poor

runs and lower harvests in Chignik. On the other hand, Igvak sockeye harvests were much more robust in 2011 and 2013 when Chignik sockeye harvests exceeded 2 million sockeye (Anderson et al., 2019). While Chignik sockeye harvest was essentially zero for 2018, the forty year history shows wide fluctuations, with two of the lowest and two of the highest harvests occurring in the past ten years (Figure 1). Average Chignik sockeye harvests between 1998 and 2018 were about 15% lower than harvests in the previous two decades, 1978-1997. However, three of four harvests over 2 million fish were also in the most recent two decades (Figure 1).

The management plan has also been effective from a conservation and sustainability standpoint. Early and Late sockeye runs to Chignik River have met or exceeded their respective escapement goals every year since 1980, until the run failure in 2018, when the early Chignik sockeye run failed to meet the escapement goal (Munro, 2019).



Recent Genetics Studies in Igvak Section

In the recent fishery genetic stock identification study in KMA, Shedd et al. (2016) added two sampling strata (early and middle) for Cape Igvak Section in each of the three study years, 2014-2016. No Igvak samples

were taken in 2014 because low Chignik harvest numbers kept the area closed to commercial harvest. In 2015, only the July stratum (middle) was sampled as Igvak was again closed in June due to inadequate sockeye harvests in Chignik Management Area. Harvest of Chignik fish in Igvak was estimated as 2,059 fish (total harvest 6,595) in the middle stratum, 2015. In both 2014 and 2015, the management plan had its intended effect of keeping Igvak closed or limited when Chignik harvests were low. In 2016, with a stronger Chignik run, an estimated 114,412 Chignik sockeye were harvested in the early (June) stratum. An estimated 10,006 Chignik bound sockeye were harvested at Igvak in July (Shedd et al., 2016).

While it is clear that Chignik fish were captured at Igvak in both years, with only three temporal strata sampled over a three year period, including a single datum for early strata harvests, specific conclusions about patterns of presence, magnitude or vulnerability of Chignik bound fish in Igvak fisheries are unwarranted. The single early (June) stratum sampled from the three year period estimated harvest of Chignik bound sockeye an order of magnitude larger than the two middle stratum harvests from 2015 and 2016. These data emphasize wide variation for Chignik bound sockeye harvests at Cape Igvak, and do not support substantive changes to the current management plan.

Data in Shedd et al. (2016) also does not support the presumption in the management plan that 90% of sockeye salmon harvests in Igvak are Chignik bound fish. The single middle stratum (July) estimate from 2015 found 31.2% Chignik sockeye from a total harvest of 6,595. The middle stratum estimate from 2016 was much lower, where only 5.6% of the sampled harvest were Chignik fish (total harvest 177,315). The sole early stratum (June) contribution in 2016 was much higher, estimating 74.1% of

Igvak harvests were Chignik origin (total harvest 154,318), but still did not reach 90%. The assumption that 90% of Igvak harvests are comprised of Chignik bound fish is very uncertain. Other genetic studies suggest uncertainty for similar assumptions in Southeast District Mainland (SEDM, Area M) fisheries, where Chignik bound sockeye are thought to represent 80% of sockeye harvested. Dann et al., (2012), showed that the overall proportion of Chignik bound fish harvested in SEDM was very consistent in 2010, 2011, and 2012 at 65%, 67% and 66% respectively, excluding the Northwest Stepovak Section in July.

Board of Fisheries Proposals

There are five proposals before the board which address the Cape Igvak fishery. Four of these seek to more severely curtail the fishery through specific alterations to metrics of the management plan. They propose completely eliminating fishing at Igvak prior to July 8 (proposal 58), lowering the board approved allocation of Chignik bound fish to KMA fishermen at Igvak from 15% to 5% (proposal 60), or dramatically raising Chignik harvest thresholds upon which Igvak fishery openings are predicated (proposal 61). A fourth proposal suggests that accounting practices for total Chignik harvest be changed such that harvests in Southeast District Mainland (Area M) and Igvak are no longer considered part of the Chignik total harvest. None of these proposals provide credible, data-driven justification for changing longstanding management plans. Recent genetic stock identification results reflect very limited sampling at Cape Igvak (Shedd et al. 2016) and as a result, insight regarding harvest patterns of Chignik sockeye in Igvak fisheries is narrow. There is no doubt that stock composition and harvest estimates are accurate and precise, but

only three strata in two different years were analyzed, where estimated harvest numbers of Chignik bound fish at Igvak were an order of magnitude different between them.

- **Proposal 58** would close Cape Igvak to fishing until July 8, based on increases in KMA harvests and declines in Chignik harvests. However, Chignik fish represented a relatively minor component of Westside KMA harvests sampled in Shedd et al. (2016) and there is no data linking historical harvests in KMA to Chignik harvests. Increases in KMA sockeye harvests over the years most-likely resulted from greater harvests of local sockeye stocks and sockeye from enhancement efforts by Kodiak Regional Aquaculture Association, which averaged about 345,000 during 2008 - 2017 (Anderson et al., 2018). Though Chignik suffered a run failure in 2018, long term average harvests during 1998-2018 are only 15% smaller than those from 1978-1997.

- **Proposal 59** seeks to change fishery accounting practices in CISMP by eliminating SEDM and Cape Igvak harvests from the total Chignik sockeye harvest, for allocation purposes within the plan. Currently 80% of sockeye harvested in most areas of SEDM and 90% of sockeye in Igvak are assumed part of total Chignik harvest. The effect of this is that allocation percentages would be reached sooner and harvests at Cape Igvak would be smaller. If the management plan assumes a specific percentage of Chignik origin fish in SEDM or Igvak, it must be included in

allocative accounting. It would be inappropriate to address only Igvak with such a proposal.

- **Proposal 60** would lower the allocation percentage of Chignik sockeye to Cape Igvak fishermen from 15% to 5% supposedly because at the inception of the management plan, KMA sockeye harvests were weak and Chignik harvests were robust, and now the situation is reversed. While KMA sockeye harvests have improved since 1978 due to local stock performance and enhancement efforts, there is no evidence that any declines of CMA sockeye harvests are tied to Cape Igvak sockeye harvests. Chignik harvests show wide variation since 1978 as many salmon systems do. Two of the highest and two of the lowest Chignik area sockeye harvests have occurred during the last decade (Figure 1). This proposal would significantly reduce harvest in Kodiak's longstanding fishery at Cape Igvak without justification.

- **Proposal 61** would raise harvest thresholds for the early and late Chignik run combined from 600,000 to 1,000,000 sockeye before Igvak could open and guarantee a harvest of 1,000,000 sockeye to Chignik fishermen. The proposal would probably close the Igvak fishery. Justification is based on unstated changes in assumptions and economic conditions that have occurred since inception of the management plan. This is essentially the same proposal submitted to the Area M board meeting in 2019 to

severely curtail the SEDM fishery, which the Board of fisheries rejected.

Proposal 62 creates mandatory reporting for vessels entering or leaving Cape Igvak section. It is likely unworkable and ineffective for fisheries managers to perform this monitoring.

Literature Cited

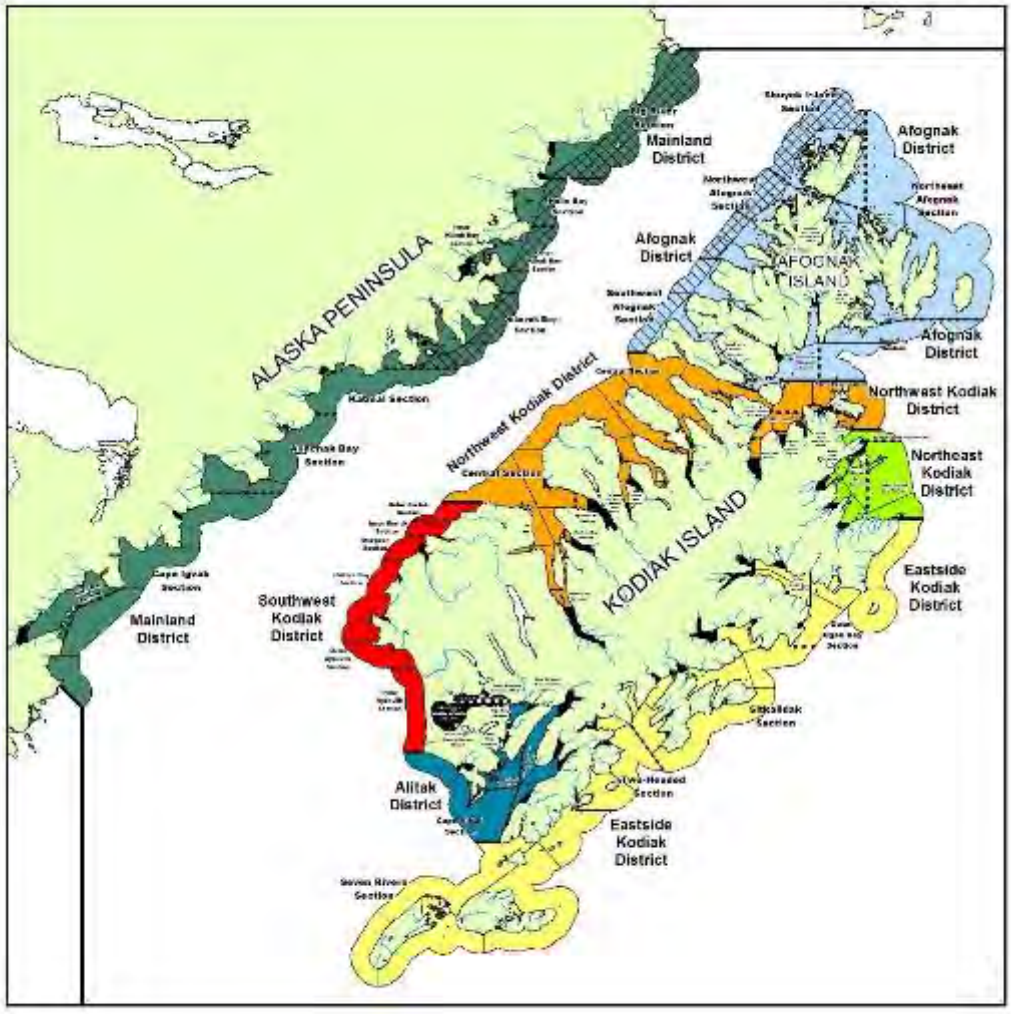
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Economic Analysis Proposal 60

Kodiak Salmon Workgroup

Key Findings

- Overall, changes from Proposal 60 would result in annual economic loss in the Kodiak Borough of almost $2.9 million.
- On average, restrictions during the effected years would result in more than 65% of the current sockeye catch being eliminated.
- The complete implementation of proposal 60 results in an average foregone harvest worth at least $1.91 million ex vessel price per year among affected fishermen.
- Direct loss of foregone sockeye harvest per year ranges from $318,000 to $4.19 million over the time period examined (1998-2019). Mean foregone sockeye harvest is valued at $1.56 million per year, using each year's prices.

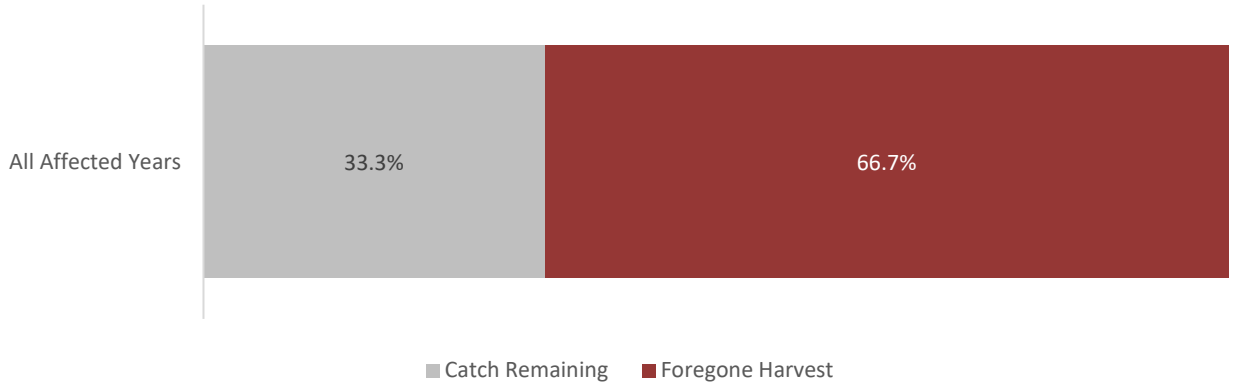
$1.91 Million Dollars Yearly Direct Loss to Fishermen

- The value of foregone sockeye per permit holder affected ranges from $5,500 to $51,000 per year (mean $22,000), depending on number of affected fishermen and count of foregone sockeye harvest.

$2.86 Million Dollars Annual Economic Loss in the Kodiak Borough

- Total foregone harvest among all species is estimated to be 1.6 million pounds per year worth an average of $1.91 million per year, using each year's prices. Average loss per affected permit holder estimated to be $28,000 per year.
- Species specific foregone harvest ex vessel price is estimated to range between $24 (chinook) to $4.19 million (sockeye) per year.

Average Revenue Loss Per Year



Background

The 2019-2020 Board of Fish, Kodiak Finfish Proposal 60 will amend the Cape Igvak Management Plan by reducing the Cape Igvak section allocation by 66 percent through a reduction in the current allocation from 15 percent to five percent of the total Chignik sockeye salmon catch.

Currently, the Chignik sockeye salmon catch constitutes those sockeye salmon caught within the Chignik Area plus 80 percent of the sockeye salmon caught in the East Stepovak, Southwest Steovak, Stepovak Flats, Balboa Bay, and Beaver Bay Sections, as described in 5 AAC 09.200(f), plus 90 percent of the sockeye salmon caught in the Cape Igvak Section.

Proposal 60 will only effect on the Cape Igvak section, Kodiak Mainland District.

Link to Proposal 60:
https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2019-2020/proposals/60.pdf

Data Sources

Foregone harvest days count and pound data was provided by the State of Alaska, Department of Fish and Game daily harvest reports. Price data for 1998-2018 was provided from the State of Alaska, Department of Fish and Game *Commercial Operator's Annual Reports* (COAR). 2019 price data was not available through the COAR report at the time of this analysis. 2019 price data is estimated from the five-year average of the reported 2014-2018 price per pound per species (see methods below).

Multipliers for indirect and induced economic impact were commissioned from the US Department of Commerce, Bureau of Economic Analysis specifically for the Alaska commercial fishing industry. Inflation rates are provided from the US Department of Labor, Consumer Price Index. Tax information is from the State of Alaska, Department of Revenue and the Kodiak Borough.

Data Methods

Economic impact is estimated using historical harvest data from 1998-2019. Cape Igvak is a purse seine fishery. For the period prior to July 8th, no fishing occurred in Cape Igvak in 1998, 2008-2009, 2014-2015, and 2018-2019.

Proposal 60 would be in effect prior to July 25th for all years. The target harvest for Cape Igvak would be reduced from approximately 15% of the Chignik Sockeye Count to a strict 5% limit. The limit is dependent on Chignik sockeye harvest totals (under proposal 60,

90% of the Cape Igvak sockeye harvest is counted towards this value. Under BOF proposal 59, none of the Cape Igvak or Southeast Mainland District is counted towards this total).

Fifteen to five percent is a two-thirds (2/3) reduction in harvest. Instead of calculating the precise foregone harvest for each year under the strict 5% plan, the decision was made to calculate a 2/3s loss for each season's Cape Igvak harvest with input and consent from the Kodiak Salmon Working Group (KSWG). Actual Cape Igvak harvests vary from < 1.0% to 19.2% of the Chignik Sockeye Count with a mean value of 12.1% (see results section). While the 2/3 reduction does not exactly measure the proposal's impact, the author believes this approximation is a fair estimate given available data.

This method will overestimate foregone harvests in some years and underestimate foregone harvests in other years. Due to the strict nature of the 5% limit (currently Cape Igvak is managed to approximately 15%, and this is allowed to fluctuate over the course of the season). Unlike the current management language, Proposal 60 does not allow regulators any flexibility for the percentage to rise above 5% cumulative harvest for the season at any time. Under the current regulation the managers have come in at well under the 15% on average, due to an expected abundance of caution. Under the proposed strict 5% regulation, is can be expected that managers will continue to apply this same level of caution resulting in actual the actual catch being substantially below the 5% average.

The value of foregone harvest is calculated as species-specific foregone harvest pounds multiplied by species-specific Kodiak area price per pound for each year. Foregone harvest counts and economic impact are calculated for Cape Igvak as a whole. The number of permit holders affected by proposal 60 is calculated as the maximum number of unique permits during the closure period in harvest records.

Species specific prices per pound for each year between 1998-2018 were obtained from the Fish Game COAR for each individual year. The total net weight in the Kodiak area for each species for each season is divided by the respective net value.

Final 2019 COAR price per species data is not available. Species specific price for 2019 was estimated as a five-year average of available COAR data (2014-2018). Verification of 2019 data with the KSWG provided spreadsheets using Icicle, Ocean Beauty, and Pacific season prices for 2017-2019 compared to COAR for 2017, 2018. The spreadsheet values varied from published COAR by both higher and lower values up to 20%. The five-year average was much closer to 2017 and 2018 prices than the spreadsheet averages and weighted averages for respective years. The sockeye 2019 season price per pound estimate may be biased downwards given the processor spreadsheet; the COAR numbers were up to 20% lower than provided spreadsheet, and the five-year average is 16% lower than 2019 processor spreadsheet.

Indirect and induced economic loss was calculated from Regional Input-Output Modeling System (RIMS II) type I and type II multipliers. These take into account increase (in this case local loss) in regional economic activity due to change in industry specific earnings.

For this report, the fisheries industry specific multipliers were used. Selected industry multipliers are specific to Alaska.

All values are adjusted for inflation and shown in 2019 dollar values.

Results & Data Tables

Direct Losses

On average, in the years effected by Proposal 60, more than 65% of the current catch would be restricted. From years 1998-2019, 50% of the harvestable catch would be foregone. Overall, these changes would result in an economic loss to the Borough of almost $2.9 million dollars a year.

$1.91 Million Dollars Yearly Direct Loss to Fishermen

$2.86 Million Dollars Annual Economic Loss in the Kodiak Borough

Direct revenue lost to the Kodiak Borough per year:

Direct loss per affected year:	**$1.91 Million**
Loss from sockeye fishery:	$1.56 Million
Fisheries employment impact:	16.8 jobs per year
All employment impact:	21.1 jobs per year
Indirect community loss:	$396,089
Induced community loss:	$558,073
Total Annual Borough Loss:	**$2,862,102**

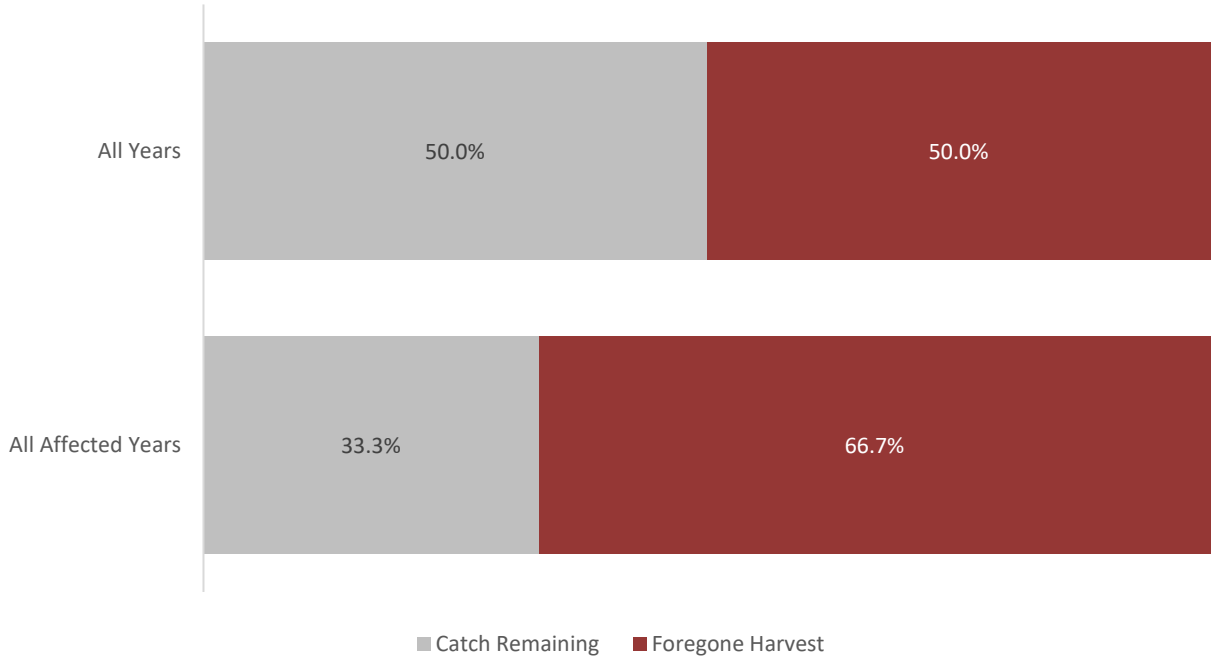
Proposal 60 would have impacts throughout the Kodiak Borough. The direct loss to fishermen would be $1.91 million per year. Of the total loss to the fishery, the limitation on the sockeye fishery comprise the majority of the impact, accounting for $1.56 million of the loss with $350,000 of the total loss distributed among other salmon species.

The direct impact of this proposal will result in a loss of 16.8 fisheries specific jobs and a total of 21.1 jobs overall in the Kodiak Borough per year. In addition to the direct loss impact of $1.91 million, there is a further indirect loss of $396k as a result of lost business to business economic activity for the community from purchases such as fuel, gear, and supplies. There is an additional $558k of induced loss in the community resulting from the lost direct and indirect economic activity (total $2.30 million) and reduced labor market. This impact results in a total loss to the community from direct, indirect, and induced losses of $2.86 million dollars per year.

Fisheries Loss

On average, restrictions during the effected years would result in more than 65% of the current catch being eliminated. For all years, including 16 affected years, the average revenue loss to the community would be 50%.

Chart 1: Average Revenue Loss Per Year



Over the last 22 years 1998-2019, there have been 12 years where the fisheries losses from these increase restrictions would result in a loss of more than one million dollars of foregone ex vessel value to the fishery. Six of the previous 22 years would be unaffected by the proposed changes. Fishing was severely restricted in 2018 due to historically low run returns.

The sockeye fishery would experience ex vessel losses of more than $1 million for nine of the 16 affected years.

Chart 2: Total Fishery Loss 1998-2019

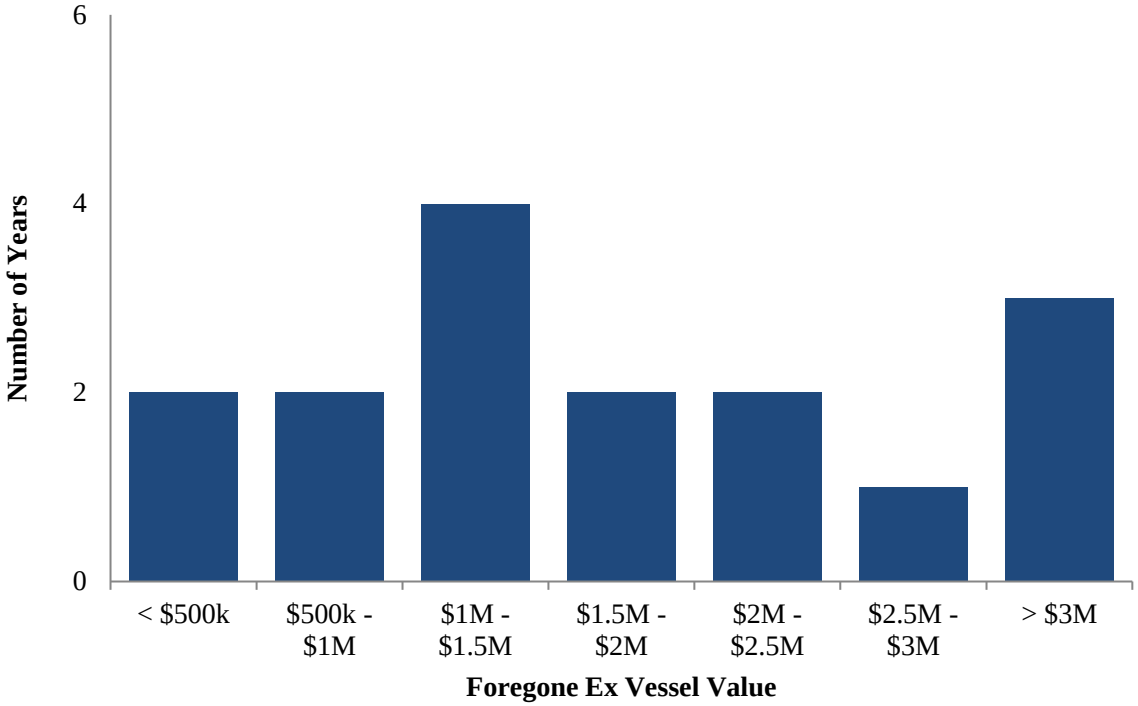
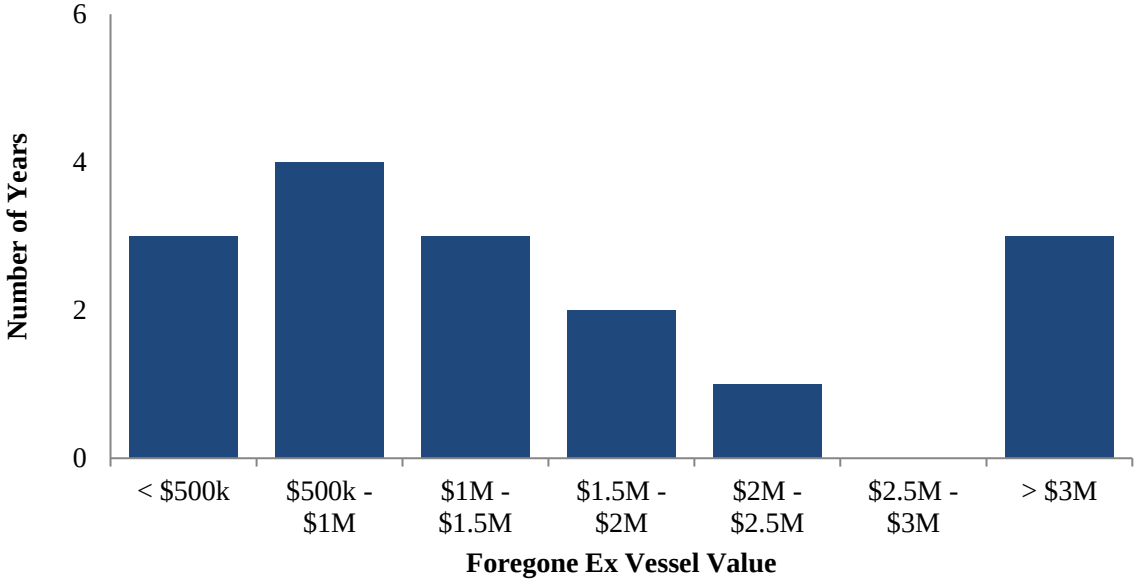


Chart 3: Total Sockeye Loss



The mean direct loss for all species per year is $1,907,941 with a median loss of $1,656,477. If these restrictions were in place the greatest impact would have been in 2011 with a loss of $4,537,403 and the least impact would have been in 2007 with a loss of $389,844.

Table 1: Direct Loss of Proposal 60 Implementation

Year	Direct Loss All Species	Direct Loss Sockeye
1998	No Impact	
1999	$4,229,620	$3,736,340
2000	$2,108,567	$1,908,644
2001	$1,430,565	$1,119,061
2002	$567,609	$533,116
2003	$479,670	$426,556
2004	$599,140	$579,523
2005	$1,478,192	$1,317,114
2006	No Impact	
2007	$389,844	$317,994
2008	No Impact	
2009	$1,197,960	$817,827
2010	$1,834,761	$1,327,089
2011	$4,537,403	$4,188,115
2012	$2,551,241	$2,332,505
2013	$3,775,755	$3,466,421
2014	No Impact	
2015	No Impact	
2016	$1,992,709	$1,743,820
2017	$1,264,071	$847,966
2018	No Impact	
2019	$2,089,948	$373,277
Mean	**$1,907,941**	**$1,564,711**
Median	**$1,656,477**	**$1,218,088**
Min	**$389,844**	**$317,994**
Max	**$4,537,403**	**$4,188,115**

Table 2: Direct Loss of Proposal 60 Implementation Per Fishermen

	Average Loss Per Fishermen – All Species	Average Loss Per Fishermen – Sockeye Only
Mean	**$27,845**	**$21,539**
Median	**$23,331**	**$17,107**
Min	**$6,150**	**$5,469**
Max	**$55,334**	**$51,075**

Based on the number of active permits per year, individual fishermen would experience a mean direct loss for all species per year of $27,845 with a median loss of $23,331. If these restrictions were in place the greatest impact would have been in 2011 with a loss of $55,334 per fishermen with the least impact in 2003 with an average loss of $6,150.

Table 3: Loss Per Affected Permit Holder

Year	Permits	Loss per Permit	Total Value Foregone Harvest	2019 Inflation Adjustment
1998			No Impact	
1999	126	$33,568	$2,739,391	$4,229,620
2000	126	$16,735	$1,411,357	$2,108,567
2001	81	$17,661	$984,559	$1,430,565
2002	69	$8,226	$396,929	$567,609
2003	78	$6,150	$343,112	$479,670
2004	37	$16,193	$439,897	$599,140
2005	71	$20,820	$1,122,394	$1,478,192
2006			No Impact	
2007	36	$10,829	$314,137	$389,844
2008			No Impact	
2009	28	$42,784	$999,132	$1,197,960
2010	71	$25,842	$1,554,882	$1,834,761
2011	82	$55,334	$3,969,732	$4,537,403
2012	60	$42,521	$2,277,894	$2,551,241
2013	78	$48,407	$3,420,068	$3,775,755
2014			No Impact	
2015			No Impact	
2016	63	$31,630	$1,858,870	$1,992,709
2017	83	$15,230	$1,205,025	$1,264,071
2018			No Impact	
2019	39	$53,588	$2,089,948	$2,089,948
Average		**$27,845**	**$1,592,687**	**$1,907,941**

Foregone Tax Revenue

The foregone harvest from proposal 60 would have tax implications for state, borough, and city budgets. The state implements two relevant taxes in the region: the fisheries business tax (which is shared with local governments) and the salmon enhancement tax (SET). Fisheries business tax rates vary by type of processing activity and the proportion of each is estimated from the State of Alaska's Annual Tax Report for FY18. The salmon enhancement tax rate is 2% in the Kodiak region. The Borough implements a resource severance tax of 1.075% and receives a share of the fisheries business tax from the state. The local city governments also receive a share of the fisheries business tax from the State of Alaska. Borough and city shares of the fisheries business tax estimated from the Borough's FY18 annual tax report.

The implementation of proposal 60 would result in average yearly tax losses of $68,686 to the State of Alaska, $30,259 to the Kodiak Borough, and $9,085 to Kodiak City.

State Taxes	
Fisheries Business Tax (50% Share)	$30,527
SET Tax	$38,159
Total	**$68,686**
Borough	
Resource Severance Tax	$20,510
Fisheries Business Tax (Share of 50%)	$9,748
Total	**$30,259**
Cities (Share of Fisheries Business Tax)	
Akhiok	$2,275
Kodiak	**$9,085**
Larsen Bay	$2,273
Old Harbor	$2,441
Ouzinkie	$2,359
Port Lions	$2,346
Total	**$20,779**

Loss by Species

Table 4: Cape Igvak Sockeye Harvest Per Year
(Proposal 60 imposes a strict 5% limit, affected years are bolded)

Year	Count Cape Igvak Sockeye Catch	Percent Cape Igvak Harvest	Total Chignik Sockeye Count
1998	8,813	1.0%	862,172
1999	**456,039**	**15.4%**	**2,956,471**
2000	**271,344**	**14.4%**	**1,884,415**
2001	**215,214**	**15.1%**	**1,429,242**
2002	**136,488**	**13.0%**	**1,049,494**
2003	**121,887**	**11.7%**	**1,046,495**
2004	**160,665**	**17.9%**	**896,927**
2005	**274,328**	**17.7%**	**1,550,952**
2006	41,834	5.0%	845,731
2007	**52,527**	**8.0%**	**653,740**
2008	0	0.0%	455,199
2009	**126,968**	**12.1%**	**1,047,180**
2010	**185,193**	**13.3%**	**1,395,595**
2011	**494,538**	**16.9%**	**2,928,856**
2012	**324,895**	**15.5%**	**2,091,495**
2013	**354,179**	**12.8%**	**2,776,632**
2014	0	0.0%	330,302
2015	5,936	0.5%	1,118,959
2016	**298,470**	**19.2%**	**1,558,034**
2017	**118,101**	**14.0%**	**841,241**
2018	0	0.0%	128
2019	76,399	10.8%	707,543

Table 5: Sockeye Foregone Harvest

Year	Foregone Harvest - lbs	Sockeye Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	No Impact			
1999	2,239,706	$1.08	$2,419,909	$3,736,340
2000	1,428,462	$0.89	$1,277,540	$1,908,644
2001	1,097,384	$0.70	$770,173	$1,119,061
2002	606,579	$0.61	$372,809	$533,116
2003	505,794	$0.60	$305,119	$426,556
2004	651,054	$0.65	$425,494	$579,523
2005	1,246,469	$0.80	$1,000,087	$1,317,114
2006	No Impact			
2007	256,585	$1.00	$256,240	$317,994
2008	No Impact			
2009	606,747	$1.12	$682,091	$817,827
2010	793,429	$1.42	$1,124,652	$1,327,089
2011	2,400,988	$1.53	$3,664,143	$4,188,115
2012	1,414,234	$1.47	$2,082,594	$2,332,505
2013	1,725,002	$1.82	$3,139,874	$3,466,421
2014	No Impact			
2015	No Impact			
2016	1,275,427	$1.28	$1,626,698	$1,743,820
2017	534,366	$1.51	$808,356	$847,966
2018	No Impact			
2019	269,229	$1.39	$373,277	$373,277
Total	**17,051,454**		**$20,331,104**	**$25,037,419**

Table 6: Chum Foregone Harvest

Year	Foregone Harvest - lbs	Chum Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	No Impact			
1999	959,079	$0.19	$178,002	$274,836
2000	347,606	$0.22	$75,482	$112,770
2001	467,041	$0.32	$149,056	$216,579
2002	91,786	$0.16	$14,835	$21,214
2003	130,255	$0.14	$18,136	$25,354
2004	83,918	$0.12	$10,305	$14,036
2005	123,595	$0.20	$24,965	$32,879
2006	No Impact			
2007	76,432	$0.35	$26,903	$33,387
2008	No Impact			
2009	283,465	$0.44	$124,222	$148,942
2010	529,073	$0.56	$296,398	$349,750
2011	343,781	$0.69	$237,232	$271,156
2012	248,926	$0.60	$149,931	$167,923
2013	348,035	$0.25	$88,387	$97,579
2014	No Impact			
2015	No Impact			
2016	253,825	$0.34	$85,575	$91,736
2017	200,969	$0.57	$115,282	$120,931
2018	No Impact			
2019	201,326	$0.46	$91,671	$91,671
Total	**4,689,113**		**$1,686,393**	**$2,070,752**

Table 7: Pink Foregone Harvest

Year	Foregone Harvest - lbs	Pink Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	No Impact			
1999	632,841	$0.14	$89,202	$137,728
2000	129,971	$0.14	$18,686	$27,917
2001	359,211	$0.12	$42,635	$61,949
2002	69,657	$0.09	$5,990	$8,565
2003	159,906	$0.09	$14,041	$19,630
2004	15,112	$0.10	$1,450	$1,974
2005	723,136	$0.12	$86,846	$114,376
2006	No Impact			
2007	108,274	$0.18	$19,532	$24,239
2008	No Impact			
2009	644,664	$0.26	$165,868	$198,876
2010	168,417	$0.44	$73,265	$86,453
2011	101,817	$0.47	$47,389	$54,166
2012	71,264	$0.48	$33,991	$38,069
2013	338,849	$0.42	$143,384	$158,296
2014	No Impact			
2015	No Impact			
2016	172,135	$0.47	$81,249	$87,099
2017	552,761	$0.43	$236,723	$248,323
2018	No Impact			
2019	3,879,657	$0.37	$1,432,939	$1,432,939
Total	**8,127,670**		**$2,806,609**	**$3,014,018**

Table 8: Coho Foregone Harvest

Year	Foregone Harvest - lbs	Coho Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	No Impact			
1999	92,247	$0.41	$37,430	$57,791
2000	74,789	$0.49	$36,463	$54,476
2001	18,824	$0.24	$4,522	$6,571
2002	7,280	$0.18	$1,293	$1,850
2003	14,551	$0.20	$2,908	$4,065
2004	19	$0.27	$5	$7
2005	227	$0.42	$96	$126
2006	No Impact			
2007	11,621	$0.60	$6,945	$8,619
2008	No Impact			
2009	34,717	$0.61	$21,141	$25,348
2010	67,377	$0.80	$53,693	$63,358
2011	10,186	$0.82	$8,325	$9,515
2012	4,278	$0.77	$3,298	$3,694
2013	46,813	$0.72	$33,508	$36,993
2014	No Impact			
2015	No Impact			
2016	69,644	$0.78	$54,542	$58,469
2017	50,886	$0.84	$42,539	$44,624
2018	No Impact			
2019	286,229	$0.67	$191,542	$191,542
Total	**789,690**		**$538,426**	**$607,223**

Table 9: Chinook Foregone Harvest

Year	Foregone Harvest - lbs	Chinook Price	Foregone Harvest Value	2019 Inflation Adjustment
	No Impact			
1999	21,809	$0.68	$14,848	$22,925
	4,808	$0.66	$3,185	$4,758
2001	25,255	$0.72	$18,173	$26,405
	5,437	$0.37	$2,002	$2,863
2003	8,194	$0.35	$2,908	$4,065
	5,133	$0.51	$2,643	$3,600
2005	13,672	$0.76	$10,401	$13,698
	No Impact			
2007	5,068	$0.89	$4,516	$5,605
	No Impact			
2009	8,493	$0.68	$5,811	$6,967
	10,664	$0.64	$6,874	$8,111
2011	14,117	$0.90	$12,643	$14,451
	13,301	$0.61	$8,079	$9,049
2013	25,927	$0.58	$14,915	$16,466
	No Impact			
2015	No Impact			
	11,929	$0.91	$10,807	$11,585
2017	2,774	$0.77	$2,124	$2,228
	No Impact			
2019	627	$0.83	$519	$519
Total	**177,208**		**$120,453**	**$153,301**

Kodiak Seiners Association
PO Box 8835
Kodiak, AK 99615

December 12, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: **Opposition to Proposal 60**

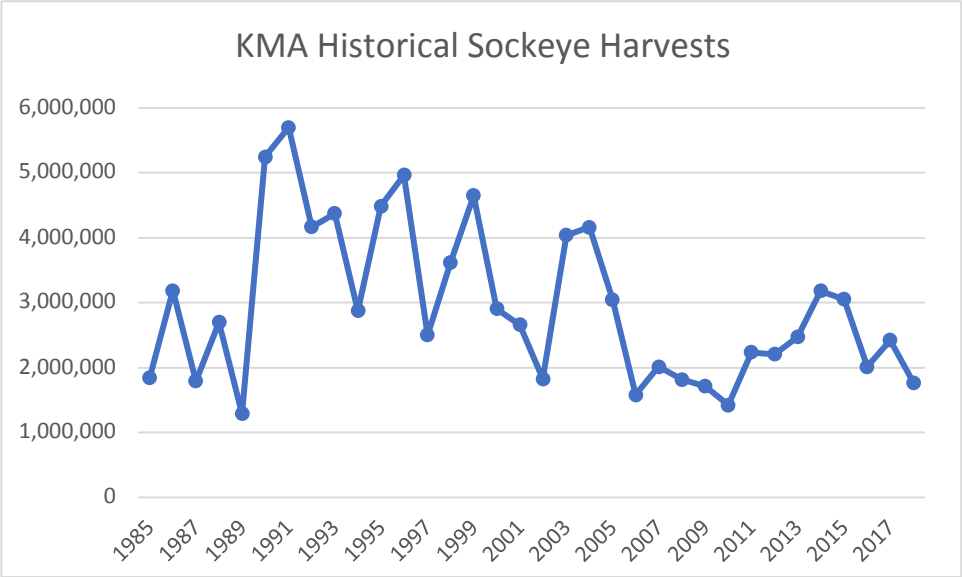
Dear Chairman Morisky and Board of Fish Members:

The Kodiak Seiners Association (KSA) is writing to express our adamant **opposition to proposal 60**, which intends to reduce our longstanding historical allocation of sockeye salmon harvested in the Cape Igvak section of the Kodiak Management Area (KMA). Kodiak fishermen have harvested fish in this area since well before initiation of the limited entry program for salmon. The Cape Igvak management plan was initiated in 1978 and has been repeatedly scrutinized and evaluated including at the 2017 Kodiak finfish Board of Fisheries (BOF) meeting, at which a virtually identical suite of proposals was considered and rejected.

The durability of the Cape Igvak management plan is a testament to the care with which the plan was crafted and the success of its implementation. The plan includes both escapement and harvest requirements in the Chignik area before triggering an opening in the Kodiak area so that relatively poor years in Chignik such as 2018 and 2019 result in no fishery being prosecuted at Cape Igvak prior to July 25. On years of relative abundance of Chignik bound sockeye with a high harvest rates in the Chignik area, Kodiak fishermen are allowed access to the Cape Igvak area where up to 25% of total KMA sockeye harvest occurs. On particularly poor years in Kodiak, such as 2016, the Cape Igvak fishery provides a critical lifeline for Kodiak fishermen who have recently endured historically poor local pink and chum runs during even years.

The Kodiak fishery cannot accurately be categorized as "notably and exceptionally healthier" as is claimed in the justification language for this proposal. Early sockeye runs in Kodiak have followed similar trends of scarcity seen throughout the Gulf of Alaska. Fishing opportunities have been highly restricted in the Ayakulik, Alitak, and Karluk areas and recent early run sockeye harvests have been abysmal. When the Cape Igvak management plan was originally introduced, and as it has been continually re-analyzed and challenged, Kodiak fishermen had historically harvested far higher numbers of sockeye and were allowed significantly more fishing opportunities in these areas. Below is a graph of sockeye harvests in Kodiak since 1985. Claims of increasingly abundant harvests of

sockeye salmon are patently false and only in 3 of the past 15 years has harvest exceeded the long-term average of 2.9 million fish.



In 1978, the year that the Cape Igvak management plan was implemented, 372 vessels participated in the Kodiak seine fishery. Over the past 10 years an average of only 167 boats have made deliveries in the Kodiak area, while over 200 permits have remained latent. This is a greater loss of vessels than any other seine fishery in the state. To put this number in perspective, the number of vessels that the Kodiak area has lost is roughly three times the number vessels currently participating in the Chignik fishery. This loss of vessels underscores the harsh economic reality of the Kodiak seine fishery. While over the past 10 years, Kodiak and Chignik fishermen have roughly the same average revenues per vessel, the Kodiak fishery is prosecuted over a longer season, and through greater geographic range resulting in higher costs and lower profit margins for KMA fishermen. This is why the cost of a Kodiak seine permit has consistently been the lowest values in the state – it's simply tough to make money in the area.

The contraction of Kodiak's historic commercial fleet is reflective of underlying economic factors that go beyond depressed salmon markets and depleted runs. While Chignik and Kodiak have virtually identical availability of alternative fishery resources, Kodiak fishermen have been more prone to exploit other fishing opportunities. When the Cape Igvak management plan was implemented Kodiak enjoyed prolific crab, halibut, shrimp, and herring fisheries. The collapse of the king crab and shrimp fisheries, the accelerated consolidation of the halibut fleet and the loss of a robust herring market followed by a complete collapse of that fishery (there wasn't a single commercial sac roe delivery last season) are all factors contributing to the long-term demise of Kodiak's commercial fishing fleet. Most recently, the virtual elimination of the cod fishery has now left the vast majority of Kodiak fishermen with only one option to make a living – salmon. A once thriving fleet and local economy that was built around a diversity of fishery resources has been distilled down to a fraction of the operating vessels desperately hoping for a decent salmon season to get them through the winter.

The harsh economic conditions facing the Kodiak fleet have been most acute in the remote and predominately Indigenous Alutiiq villages of the archipelago. Ouzinkie's fleet, which once numbered over 30 commercial vessels, has contracted to a single operating boat. Larson Bay has lost its school, and all resident fishing vessels, and the southern village of Akhiok also has only a single vessel left. Old Harbor and Port Lions are also at risk of losing their fleet as reduced participation threatens to completely wipe out the historical commercial fishing legacy of these areas.

Researchers from the University of Alaska declared in a report provided to the North Pacific Fishery Management Council in 2018 that the 6 outlying villages of Kodiak have "reached a crisis due to lost fishery access and the cumulative impacts of restrictive access management." Their research concluded that there has been a 75% decrease in the number families fishing along with an 85% decrease in young people owning state fishing permits in Kodiak's villages. Our salmon fishery is the final pillar supporting these communities and any effort by the Board to allocate fish away from Kodiak could lead to the ultimate collapse of our most vulnerable rural fishing communities.

A common point of confusion among KSA members that has recently received more attention is what appears to be the inconsistent application of the Mixed Stock Fisheries Policy. Chignik fishermen are undeniably prosecuting an expanding mixed stock fishery. At the 2019 Alaska Peninsula/Aleutian Island/Chignik finfish meeting, the Board of Fisheries was provided a report from the Chignik area management biologist Dawn Wilburn, reporting that:

> "Historically at least 80% if the sockeye salmon harvest have occurred in the Chignik Bay and Central Districts. Since 2014 Combined harvest in these districts has dropped ranging from 50 to 77% While the western district has seen an increase with 27 to 50% of the total CMA harvest depending on the year."

While Chignik fishermen often claim that they are prosecuting a terminal harvest fishery, the WASSIP study conclusively demonstrated the contrary. Rates of harvest from non-local stocks were recorded to exceed 50% in outlying districts with some area and strata logging in nearly 40% harvest rates of "East of WASSIP" fish, many of which were undoubtedly bound for Kodiak streams. As Chignik fishermen's harvest have drastically shifted into fully allocated mixed stocks, the BOF has decided to take no action to curtail this expanding fishery, despite clear guidance in the mixed stock fisheries policy which states that:

> *(*d) Most wild Alaska salmon stocks are fully allocated to fisheries capable of harvesting available surpluses. Consequently, the Board will restrict new or expanding mixed stock fisheries unless otherwise provided for by management plans or by application of the Board's allocation criteria…

Meanwhile, Kodiak fishermen are still subjected to the North Shelikof Straight management plan and the Cape Igvak management plan, which restrict the harvest of fish in the KMA to hold Kodiak fishermen accountable for the non-local components of their mixed-stock harvest. Chignik fishermen, on the other hand, are held uniquely unaccountable for their rapidly increasing harvest of eastbound stocks regardless of their impact on Kodiak's fishery. KSA strongly contends that any changes to the distribution of the salmon resources shared between Kodiak and Chignik must begin in the Chignik area, where fishermen have already taken for themselves a greater allocation of the Western Gulf's salmon runs.

Nevertheless, it is also our belief that problems in our area are best addressed locally and we have therefore abstained from busying the Board of Fisheries with numerous potential proposals that would intend to restrict Chignik fishermen to their historical fishing patterns. We believe that Board policy should be applied consistently, and that the ultimate outcome of restricting historical mixed stock fisheries would lead to net economic hardships for the State of Alaska along with reduced yield and lost confidence in salmon management. Responsibly prosecuted mixed stock fisheries should be celebrated instead of vilified and it is our hope the Board recognizes the value that geographic diversity of salmon harvest provides is creating economically more stable fisheries in the Western Gulf.

KSA understands and sympathizes with the difficulties facing the villages of the Chignik area, but it is clear that these challenges are not unique to these localities. The Board cannot solve Alaska's coastal problems by shuffling allocations between downtrodden fisheries without causing irreparable harm to those communities that lose access rights. KSA encourages the Board to be fair and consistent in its application of the Sustainable Salmon Policy and the Mixed-Stock Fisheries Policy and to consider allocative decisions through the rigorous analysis of the allocation criteria, including strong consideration to how changes in harvest distribution will impose economic hardship on communities within the Kodiak region. Allocating fish away from a historical fishery such as Kodiak's with unusually high latent permit rates and a depleted fleet would necessarily put even more of our fishermen out of work; you cannot shrink the pie and expect the same number of people to feed on it.

KSA respectfully requests the Board **REJECT proposal 60.** We thank you for the opportunity to comment on behalf of the membership of KSA. We appreciate the scientific and factual creation of regulations regarding our fisheries and trust that the Board will continue to apply consistency in designing regulation changes while applying the guiding BOF policies, such as the Management for Mixed Stock Salmon Fisheries.

Kodiak Seiners Association represents 157 members, including the majority of actively fishing SO1K seine permit holders, Kodiak and Homer-based businesses, and individual crewmembers. Our focus is advocacy for our membership through positive interactions with ADF&G, the Board of Fisheries, and our State Legislature.

Respectfully,

Nate Rose
KSA President

Mariel ellingson

12/27/2019 10:37 PM AKST

RE: PROPOSAL 60 Reduce the Cape Igvak Section allocation from 15 percent to five percent of the total Chignik Area sockeye salmon catch

My name is Mariel Ellingson, I'm 30 years old and I grew up set netting In kodiak. I live in kodiak and was fortunate to participate in this years salmon seine season. These are not conservation proposal.

December 24, 2019

Matthew Alward

60082 Clarice Way

Homer, AK 99603

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Opposition to proposal 60

Dear Chairman Morisky and board of fisheries members,

I am a Homer resident and make my living running my own boat in the Kodiak salmon seine fishery and I oppose proposal 60 that would create a major allocation shift in the sockeye harvest in the Cape Igvak management section form Kodiak to Chignik. The Igvak section is an important part of our fishery and helped to raise our family and put them through collage.

Proposal 60 would do two things that would change the sockeye allocation of the Igvak section form Kodiak to Chignik. First it would change the wording in the management plan from "will approach as near as possible" to "shall not exceed" 15% of the total Chignik sockeye salmon catch. Second it would change the allocation from 15% to 5% of the Chignik sockeye salmon catch.

The Cape Igvak management plan has been implemented since 1978 with the words "will approach as near as possible" in the plan since it was adopted. Changing this language to "shall not exceed" will have several consequences. The first and most important is that it would not allow the Kodiak harvest to exceed 15% of the Chignik harvest at any given time during the season. Kodiak has at many times during the June fishery exceeded the 15% for a short time but Chignik has much more fishing time and always catches up. Kodiak has only exceeded the 15% allocation at the end of the season a few times in the history of the plan and has averaged about 12% across its history when Kodiak was allowed to fish. Traditionally some of the early Chignik sockeye run in June travels by Igvak coming from the east and the late Chignik sockeye run in July travels from the west to Chignik and a low portion of the run passes through Igvak. If the Kodiak managers are not allowed to go over the 15% at times in the early run it will make it much harder to manage for the plan's allowed 15% allocation thus causing an allocation shift towards Chignik. The second thing that this language change would do is in the very rare instance

where Fish and Game accidently allowed the Kodiak harvest to end up a bit over the 15% that would cause a violation of regulations.

The second thing that this proposal would do if adopted is shift 66% of the Igvak allocation from Kodiak to Chignik. The proposer is claiming that this is justified because the Cape Igvak management plan was put in place because of poor Kodiak salmon returns. In fact the Cape Igvak management plan was put in place to curtail a traditional Kodiak fishery and allocate fish from Kodiak to Chignik. Before the plan's implementation Kodiak fished in the Cape Igvak section congruent with Chignik with both areas receiving equal fishing time and Kodiak gave up substantial fishing time under the plan. The management plan created an allocation with Chignik with conservation measures built in to protect the Chignik stocks and fishery in times of low abundance, and had nothing at all to do with giving Kodiak Chignik bound fish because of low abundance of Kodiak stocks. The justification of this proposal is built on false pretenses and the data in my opinion shows no substantial changes to the harvests of Igvak and Chignik that would justify an allocation shift at all, let alone one of 66%.

In closing I ask that you keep the long standing Cape Igvak management plan in place as written and oppose proposal 60.

Sincerely,

Matthew Alward

Nicholas Hoffman
PO Box 1212
Kodiak, AK 99615

12/24/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Oppose Proposal 60

Dear Chairman Morisky and Board of Fish members:

I'm a young Kodiak salmon fisherman. I have been running a seine boat since 2011 as well as participating in Kodiak halibut, sea cumber, cod jig, and tanner crab fisheries. I respectfully request the Board reject Proposal 60.

The 15% allocation was given in the first place because it was a historic Kodiak fishery, not because Kodiak needed more fish. There are already safeguards built into this plan that insure that Chignik fishermen catch lots of fish before the Igvak Area can even open. In the last few years its been sad to see a downcycle in the Chignik fishery, but run strengths are cyclical and Chignik may be strong again. Similarly, Kodiak's run strength fluctuates. This proposal is just a grab at fish and has no basis in conservation as the current Igvak management plan already takes that into account. This is simply an attempt to disenfranchise a historical Kodiak fishery and give more fish to Chignik fishermen. There has been no change in the allocation criteria to merit a change in the allocation.

I see no reason for the Board to make any changes to the Kodiak Salmon Management plan. Thank you for the opportunity to comment on the proposals and the chance for my voice to be heard. I look forward to the Board of Fish members getting to spend time in Kodiak and learn more about our town and fishing community.

I humbly request the Board reject Proposal 60.

Sincerely,

Nicholas Hoffman
F/V Relentless

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 60

Dear Chairman Morisky and Board of Fisheries Members,

I am Richard Roth, Kodiak salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife, three children and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Tzar. Previously i owned and operated the F/V Kelly Girl. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

This proposal seeks to further limit Kodiak's traditional Cape Igvak fishery. Kodiak's salmon fishery has not changed since management plans were adopted starting with the Cape Igvak plan in 1978 and continuing through the early 1990s. Kodiak's salmon fishery is not a "new and expanding" fishery. This proposal is a familiar effort to limit the small portion of sockeye take that Kodiak fishermen are allowed in the Cape Igvak plan only after significant safety thresholds are reached by Chignik fishermen.

The Cape Igvak management plan was created because fishing there was part of Kodiak's historic fishing patterns prior to limited entry in 1973. The plan was put in place in 1978 to allow Kodiak fishermen access to their historic allocation of fish harvested during June and July. Kodiak's fishing opportunities at Cape Igvak are based off of existing built-in conservation measures designed to protect Chignik's second run with a safety net of 300,000 early run sockeye and 600,000 total sockeye for Chignik fishermen before *any fishing at Igvak occurs*. This purpose of this threshold is to prevent conservation issues during weak Chignik runs. This plan has been repeatedly evaluated by the Alaska Board of Fisheries through time, making it one of the most long-standing and intensely scrutinized management plans in the state.

If there are poor returns in Chignik, the current plan ensures that Kodiak fishermen won't fish at Igvak.

The 2019 Chignik Salmon Season Summary shows total values and average value per active permit in the Chignik Management Area in recent years, except for 2018, seem on track for what appears to be a normal range for the CMA within the last ten years. The 2019 season saw 51 active permits with a value per permit of $157,072, which is very close to a decade ago with a 2009 season of 55 permits and a value per permit of $156,926, much greater value than Kodiak permits.

I ask that the Board reject proposal 60 and not make any changes to the Cape Igvak Management Plan.

Thank you for your careful consideration,
Richard, Amanda, Stephanie, noah, and Ranger Roth
F/V Sea Tzar
Homer, Alaska

December 19, 2019

Robert Fellows

266 E Bayview Ave.

Homer, AK. 99603

Alaska Board of Fisheries

Board Support Section

PO Box 115526

Juneau, Ak. 99811-5526

RE: Opposition to proposal 60

Dear chairman Morisky and Board of Fisheries members,

I have been a commercial salmon fisherman in the Kodiak management area for the past 29 years. I have been supporting myself and my family by commercial fishing for even longer. I have depended on the Cape Igvak fishery, in years of harvestable surplus in the Chignik area, to make fishing in Kodiak viable enough to continue to do. I respectfully request the Board rejects proposal #60.

The Cape Igvak management plan is a long standing, well-functioning management tool that allows access to historical fishing areas for Kodiak fishermen in years of harvestable abundance in the Chignik management area. There has been no change in the allocation criteria to justify needing a change in this allocation. The Cape Igvak section does not open when there are weak runs in the Chignik management area.

Sincerely,

Robert Fellows

Ron Kavanaugh
self
12/28/2019 12:36 AM AKST

RE: PROPOSAL 60 Reduce the Cape Igvak Section allocation from 15 percent to five percent of the total Chignik Area sockeye salmon catch

Reducing the Igvak harvest to 5% is essentially closing the Igvak section. While the catch of reds in Igvak is only 12% of the KMA harvest, it is critical income to the guys that traditionally fish there. This proposal doesn't enhance the Chignik runs, it won't do anything but intentionally strip common property fish from current harvesters dependent on opportunity.

Steven Roth

12/27/2019 06:26 AM AKST

RE: PROPOSAL 60 Reduce the Cape Igvak Section allocation from 15 percent to five percent of the total Chignik Area sockeye salmon catch

December 24, 2019 Alaska Board of Fisheries Board Support Section P.O. Box 115526 Juneau, AK 99811-5526 Re: Opposition to Proposal 60 Dear Chairman Morisky and Board of Fisheries Members, I am Steve Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Grace. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures. This proposal seeks to further limit Kodiak's traditional Cape Igvak fishery. Kodiak's salmon fishery has not changed since management plans were adopted starting with the Cape Igvak plan in 1978 and continuing through the early 1990s. Kodiak's salmon fishery is not a "new and expanding" fishery. This proposal is a familiar effort to limit the small portion of sockeye take that Kodiak fishermen are allowed in the Cape Igvak plan only after significant safety thresholds are reached by Chignik fishermen. The Cape Igvak management plan was created because fishing there was part of Kodiak's historic fishing patterns prior to limited entry in 1973. The plan was put in place in 1978 to allow Kodiak fishermen access to their historic allocation of fish harvested during June and July. Kodiak's fishing opportunities at Cape Igvak are based off of existing built-in conservation measures designed to protect Chignik's second run with a safety net of 300,000 early run sockeye and 600,000 total sockeye for Chignik fishermen before any fishing at Igvak occurs. This purpose of this threshold is to prevent conservation issues during weak Chignik runs. This plan has been repeatedly evaluated by the Alaska Board of Fisheries through time, making it one of the most long-standing and intensely scrutinized management plans in the state. If there are poor returns in Chignik, the current plan ensures that Kodiak fishermen won't fish at Igvak. The 2019 Chignik Salmon Season Summary shows total values and average value per active permit in the Chignik Management Area in recent years, except for 2018, seem on track for what appears to be a normal range for the CMA within the last ten years. The 2019 season saw 51 active permits with a value per permit of $157,072, which is very close to a decade ago with a 2009 season of 55 permits and a value per permit of $156,926, much greater value than Kodiak permits. I ask that the Board reject proposal 60 and not make any changes to the Cape Igvak Management Plan. Thank you for your careful consideration, Steve and Jenny Roth F/V Sea Grace Homer, Alaska

William Roth
Sea Chantey Marine
12/27/2019 12:43 PM AKST

RE: PROPOSAL 60 Reduce the Cape Igvak Section allocation from 15 percent to five percent of the total Chignik Area sockeye salmon catch

66%reduction in fishing is extreme. manage on facts not feelings.

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 60

Dear Chairman Morisky and Board of Fisheries Members,

I am William Roth, Captian of the F/V Sea Chantey. I own a Kodiak seine permit and have been fishing it for the lasat 5 years as well as working as crew since 2010, I rely mostly on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

This proposal seeks to further limit Kodiak's traditional Cape Igvak fishery. Kodiak's salmon fishery has not changed since management plans were adopted starting with the Cape Igvak plan in 1978 and continuing through the early 1990s. Kodiak's salmon fishery is not a "new and expanding" fishery. This proposal is a familiar effort to limit the small portion of sockeye take that Kodiak fishermen are allowed in the Cape Igvak plan only after significant safety thresholds are reached by Chignik fishermen.

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If there are poor returns in Chignik, the current plan ensures that Kodiak fishermen won't fish at Igvak.

The 2019 Chignik Salmon Season Summary shows total values and average value per active permit in the Chignik Management Area in recent years, except for 2018, seem on track for what appears to be a normal range for the CMA within the last ten years. The 2019 season saw 51 active permits with a value per permit of $157,072, which is very close to a decade ago with a 2009 season of 55 permits and a value per permit of $156,926, much greater value than Kodiak permits.

I ask that the Board reject proposal 60 and not make any changes to the Cape Igvak Management Plan.

Thank you for your careful consideration,

William and Kaytlen Roth
F/V Sea Chantey
PO BOX 1230
Homer AK
99603

December 27, 2019

Alaska Board of Fisheries
Board Support Section
PO Box 115526
Juneau, AK 99811-5526

Charles "Chuck" McCallum
601 N Bragaw Street
Anchorage, AK 99508

Subject: Support for reducing the Cape Igvak Interception fishery (Proposal 60)

Dear Alaska Board of Fisheries,

At the 1999 Alaska Board of Fisheries meeting the attached report, by AK Fisheries Consulting, was prepared for and submitted by Chignik Seiners Association (CSA). At the time I was the CSA executive director. While CSA is no longer an active organization, I find the arguments for reducing the Chignik allocation in the Cape Igvak Management Plan just as compelling as they were then. In recognition of such, the 1999 report is submitted for your review. Updated version of the tables and figures will be provided during the Board meeting.

Thank you

Sincerely,

Chuck McCallum

The Cape Igvak Salmon Management Plan – An Artifact of the Kodiak Sockeye Salmon Rebuilding Era?

By

Bruce M. Barrett

Technical Report No. CSA-99-1

Prepared for:

Chignik Seiners Association
P.O. Box 46
Chignik, Alaska 99564

Prepared by:

AK Fisheries Consulting
POB 3775
Soldotna, Alaska 99669
and
P.O. Box 322
Lakeside, Montana 59922

January 1999

ACKNOWLEDGEMENTS

The Chignik Seiners Association (CSA) provided funding for this report. Appreciation is due the Alaska Department of Fish and Game (ADF&G) and in particular, the Kodiak staff of the Commercial Fisheries Management and Development Division for supplying most of the fisheries performance data. Kodiak ADF&G biologists Dave Owen, Dave Prokopowich, Patricia Nelson, and Wayne Donaldson were most helpful in responding to data requests and questions. I thank Chuck McCallum (CSA) and Matt Siemion (CSA) for administrative assistance and document reviews. Editorial comments were received from Chignik fishers: Ernie Carlson, Al Anderson, Jason Alexander, and others.

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Executive Summary

Authored by the Chignik Seiners Association, Proposal 111 calls for a three-year phaseout of the Cape Igvak Salmon Management Plan. In deciding the merits of Proposal 111, the State Board of Fisheries should be aware of the following:

1. Fifty years before Kodiak began fishing migrant sockeye salmon in the Cape Igvak area, Chignik commercial and subsistence fishers were fully utilizing the two local sockeye runs into Black and Chignik Lakes.

2. In 1964, a Kodiak interception fishery on Chignik bound sockeye salmon began in the Cape Igvak area (Lechner 1971).

3. In the 1960's and 1970's, Chignik sockeye runs were healthy, Chignik fishers were relatively wealthy, Kodiak sockeye runs were severely depressed, and the Cape Igvak fishery provided an opportunity to redistribute revenue away from Chignik to Kodiak.

4. In 1978, the Board allocated 15% of the available Chignik sockeye harvest to Kodiak for economic reasons, and the Board assumed from a 1969 ADF&G tagging study that 80% of the Cape Igvak catch was Chignik fish.

5. The results of the 1969 ADF&G tagging study for the Cape Igvak area were misreported. Instead of 80%, the composition was 91% Chignik bound sockeye salmon. The error effectively assigned Kodiak a 17% economic allocation and increased the cumulative (1978-98) number of Chignik sockeye salmon in the Cape Igvak Section catch from 3,695,000 to 4,203,000, a difference of more than 0.5 million sockeye salmon.

6. Chignik permit prices and salmon catch values are now at record lows. From the 1978-1982 period, catch revenues for Chignik have dropped 31%, while Kodiak revenues are currently, averaging 39% higher (Figure 1). Chignik permit values for the 1994-1998 period are down 35 percent from the 1983–1987 average (Figure 2). Kodiak permits are 2% higher.

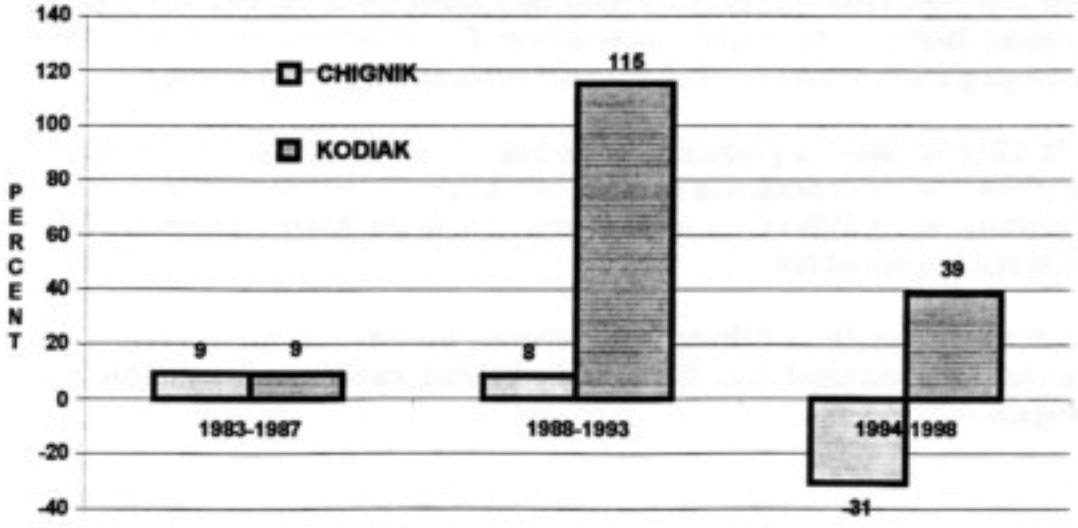


Figure 1. Percent change in the average ex-vessel value of purse seine catches from the baseline period of 1978-1982 for Chignik and Kodiak.

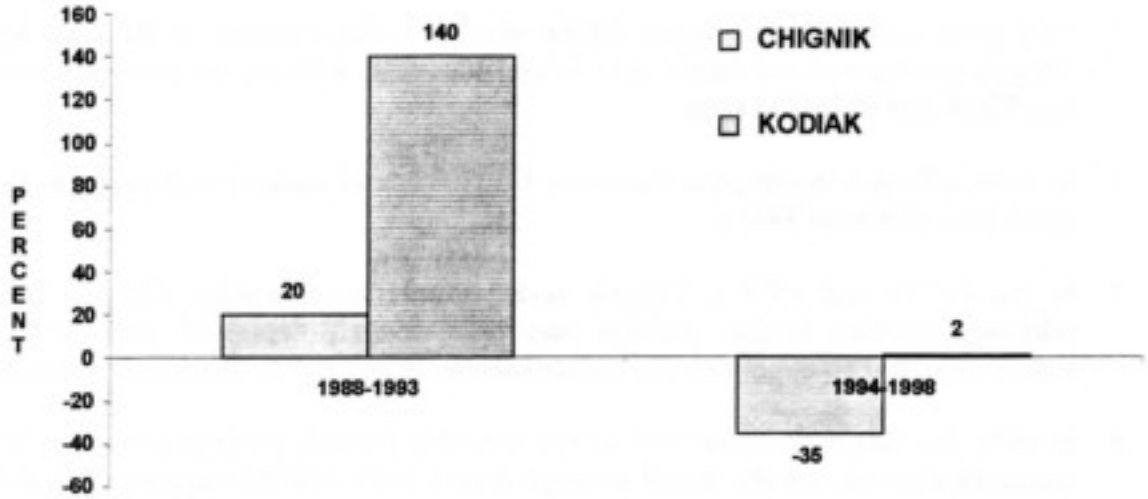


Figure 2. Average percent change in purse seine permit value from the baseline period of 1983- 1987 for Chignik and Kodiak.

7. From 1973 through 1977, Chignik averaged a 3.1:1 sockeye catch advantage over the Kodiak purse seine fishery. Chignik no longer has an advantage. Kodiak seiners surpassed Chignik in the late 1980's and are now averaging a 1.6:1 sockeye catch advantage (1994-98).

8. Alternative, non-salmon fisheries resources are on an economic slide in Chignik and for the last five years (1993-97) have averaged only about 4% of the total ex-vessel value of fish product landed. At Kodiak, non-salmon fish resources are an economic mainstay, averaging about 65% of the total ex-vessel value of fish product landed.

9. At Chignik, sockeye production is limited to two local runs. At Kodak, there are 39 significant sockeye-producing streams, two hatcheries, and several newly developed runs. Currently, about 20% of the sockeye harvested in the Kodiak Archipelago are from non-wild and introduced runs.

10. Since the Cape Igvak Salmon Management Plan was adopted in 1978, Kodiak sockeye catches have increased over 800%, while Chignik catches are fractionally higher at 41% (Figure 3).

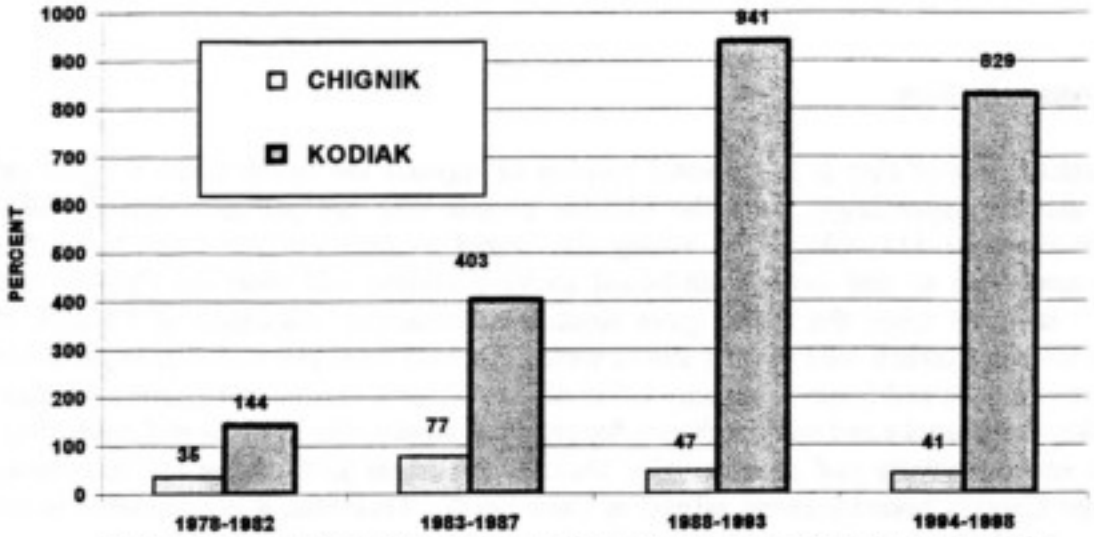


Figure 3. Annual percent change in sockeye salmon catch numbers from the baseline period of 1973-1977 for Chignik and Kodiak.

11. Chignik sockeye salmon are no longer a major component of the total sockeye catch for Kodiak. For the 1973 -1977 period, Chignik fish at Cape Igvak comprised about 23% of the total Kodiak sockeye catch (Figure 4). Now, Chignik sockeye salmon average 4%.

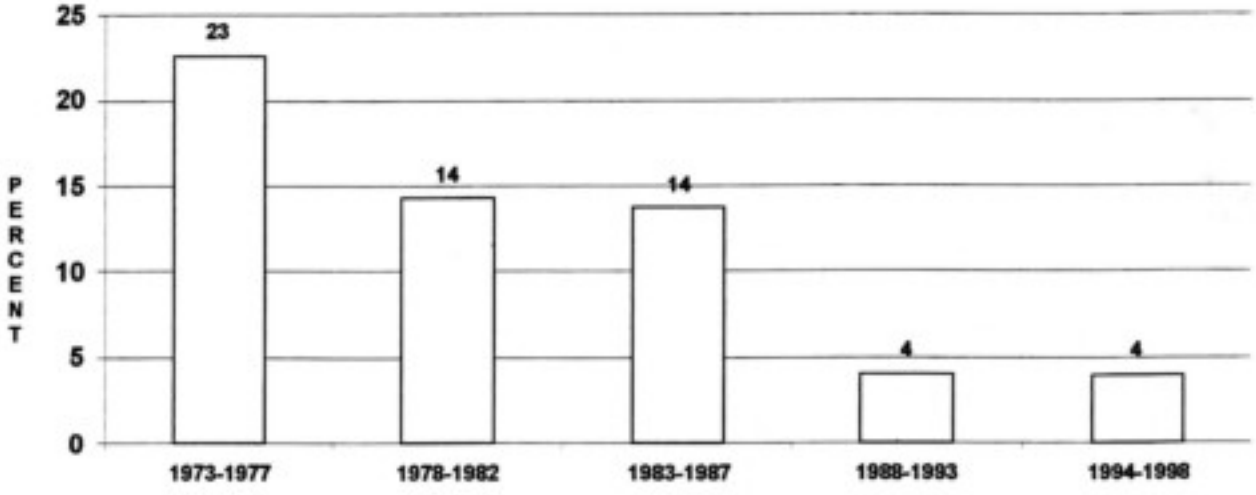


Figure 4. Average percent contribution of Chignik sockeye salmon harvested at Cape Igvak to the total Kodiak Management Area sockeye catch, 1973-1998.

12. The Kodiak sockeye salmon fishery is healthy with recent catches at or near record highs. In comparison, Chignik fishery revenues are at a 20-year low, and the economic severity of the Chignik salmon fishery is the principle reason for Governor Knowles declaring Chignik an economic disaster area in 1997 and 1998.

Recommendation

The Alaska Board of Fish is in a pivotal position to improve the health of the Chignik salmon fishery and correspondingly, help the Chignik people who are primarily Native Alaskans. Through Proposal 111, Chignik is asking the Board to phaseout the Cape Igvak Salmon Management Plan so that more south-bound sockeye salmon will enter the Chignik terminal fishery. In 1978 when the Board gave Kodiak an economic allocation of Chignik bound sockeye salmon, Kodiak wild salmon stocks were depressed from years of over exploitation and under escapements and Statewide, many believed that Chignik was too prosperous. Kodiak now has healthy wild stocks and two hatcheries for stocking barren lake systems and enhancing wild sockeye runs. Socially and economically, there is no longer justification for an interception fishery on Chignik bound sockeye salmon at Cape Igvak. Therefore, it is reasonable to end the Cape Igvak fishery.

Introduction

The Chignik Management Area (CMA) lies on the south side of the Alaska Peninsula from Kilokak Rocks on the north end to Kupreanof Point (Figure 5). The area has five year-round villages: Ivanof Bay, Perryville, Chignik, Chignik Lagoon, and Chignik Lake. Most of the 483 village residents, about 76%, are Native Alaskans (HDR Alaska, Inc. 1998). Salmon fishing is the economic mainstay for the CMA, providing the cash income for local families. Subsistence fishing and hunting is the primary source of food for nearly all local households (Scarbrough and Fall, 1996).

Commercial salmon fishing in the CMA began in the 1880's (Scarbrough and Fall, 1996). By 1911 the Chignik salmon fishery was fully recruited with about 30 fishing traps in Chignik lagoon and more operated from Chignik Bay northeast to Aniakchak. The target catch was the sockeye salmon runs into the Chignik Lakes. When traps were prohibited in 1959, purse seining became the exclusive harvest method and is still today.

Chignik is the only salmon management area on the south side of the Alaska Peninsula managed exclusively for local fish (ADF&G, 1996). To the north of Chignik is the Kodiak Management Area where fishers harvest Kodiak local runs and sockeye bound for Upper Cook Inlet. From June through late July in the Cape Igvak Section, Kodiak fishers also target sockeye salmon bound for Chignik.

The Kodiak Cape Igvak Section interception fishery is a relatively new fishery, developed in the 1960's and 1970's when the Kodiak sockeye runs were weak from years of overexploitation and under escapement, and Chignik sockeye runs were healthy (ADF&G, 1970; Lechner, 1971; D. Prokopowich, ADF&G, Kodiak, pers. comm., December 1998).

In the late 1970's, many people believed, in particular, Kodiak fishers and the Legislature, that Chignik fishers were much too wealthy and revenues should be shared (J. Huntington, Board Meeting, April 1978). When the Fish and Game Board met in April 1978, the consensus was: (1) Kodiak needed an economic allocation, (2) Chignik had too much revenue and; (3) the Cape Igvak sockeye fishery on Chignik bound stocks could re-distribute some of the wealth. The Board wrestled with various alternatives for ensuring a Kodiak harvest of Chignik bound sockeye salmon. These included fishing time ratios and allocations from 5% to 15% of the available Chignik catch. The Board chose a 15% allocation coupled with escapement and harvest priorities for Chignik. When the decision was made, the Board acknowledged: (1) that Cape Igvak was a relatively new fishery and; (2) that there was a policy against expanding intercept or cape fisheries. However, the Board justified the allocation as an appropriate move to "more evenly distribute the income" from the Chignik area over a greater number of people.

Did the Board of Fish and Game by its 1978 action intend to grant Kodiak seine fishers an exclusive and perpetual right of fishery at Cape Igvak? The transcripts covering that meeting suggest that this was not the case and that the Cape Igvak fishery could be reconsidered by future Boards.

At its meeting in Kodiak in January 1999, the Alaska Board of Fisheries will consider Proposal 111 which questions whether the Cape Igvak Salmon Management Plan is still justified and asks for a three-year phaseout of the sockeye fishery under that plan. In evaluating the merits of Proposal 111, the Board should examine the Kodiak and Chignik sockeye fisheries in detail, reviewing the history of the Igvak fishery, wild stock status, alternative non-salmon fishery opportunities, limited entry permit and catch values, resident participation, permit use, effort, supplemental production, and processor stability.

This report provides background information on the Cape Igvak sockeye fishery from its development to the present and a comparative social, economic, and biological evaluation of the Kodiak and Chignik Management Areas relative to the Cape Igvak fishery issue.

History

The Cape Igvak area sockeye fishery developed during the 1964 season (ADF&G 1970). Reportedly, only a "few" purse seine vessels operated there, and catches were "minimal". Three years later, 1967, catch and effort levels were increasing to where ADF&G considered the fishery a potential threat to migrant Chignik stocks (Lechner 1971). In 1968 and 1969, the Department conducted tagging in the Cape Igvak area and determined that most of the June and July sockeye catch was Chignik bound fish (ADF&G 1970; J. Lechner, ADF&G, BOF&G testimony, 4/13/78).

From 1964 through 1973, the Cape Igvak area was managed according to set fishing periods that usually allowed seining five days a week (Table 1). In 1974, the State Board of Fish and Game constrained the Igvak fishery to equal fishing time with Chignik. This continued through 1977. In 1978, the Board allocated 15% of the total available Chignik catch through July 25th to the Cape Igvak area fishery and concurrently, set a standard 80% Chignik stock composition on the catch. Also the Board established several guidelines to ensure a harvest preference for Chignik seiners and achievement of escapement goals. For the post July 25th period at Cape Igvak, ADF&G was free to manage the area for local pink, chum, and coho stocks. Presently, the Cape Igvak June through July 25th sockeye fishery is still managed under the terms and conditions of the 1978 Board adopted Cape Igvak Management Plan.

Stock Composition – Cape Igvak

Tagging Studies

Stock identification information on the Cape Igvak Section pre-July 26th sockeye harvest is limited. Two ADF&G tagging studies have been conducted, one in 1968 and the other in 1969. The 1968 tagging entailed the release of 325 fish on 22 June in the Cape Igvak area (ADF&G, 1968). From those 325, five recoveries were made: 4 in Chignik and 1 in Cook Inlet. ADF&G concluded that the 1968 study was statistically invalid because too few (5) tagged fish were recovered. However it was summarized, "that two stocks of fish comprised (Chignik and Cook Inlet) the commercial catch at Igvak."

A second tagging study, which occurred in 1969 in the area of Cape Igvak, entailed the release of a total of 791 sockeye salmon over a three-week period (ADF&G, 1970). The first group of

fish were tagged on 14 June, the second on 28 June, and the third on 6 July. Of the 791 fish tagged, all but six were released on 28 June (362) and 6 July (423). In total, 161 tags were recovered, and from those, ADF&G summarized that 80% of the fish at Cape Igvak were Chignik origin.

For more than 20 years, regulation of the Cape Igvak pre July 26th fishery has been founded on the premise that 80% of the sockeye harvested in the Cape Igvak Section are Chignik bound fish (Brennan 1998). Unfortunately, the 80% stock estimate is inaccurate. This is because the actual tagging data does not support the 80% estimate but rather a 90+% Chignik stock component (Table 2). In the original analysis, ADF&G included 12 tagged fish returns from the Cape Igvak Section. Since the tagging was done in the "area of Cape Igvak " and Cape Igvak is within the Cape Igvak Section and there are no sockeye systems within the Cape Igvak Section, the 12 recoveries should have been excluded. Corrected, Chignik stocks represent 90% of the total tagged fish recoveries based on 127 tags collected in the Chignik catch. If eight (8) tagged fish recovered from the Chignik escapement are included, the Chignik component at Cape Igvak is about 91% (Figure 6).

The corrected results of the 1969 ADF&G study indicate that the Chignik component of the Cape Igvak Section sockeye catch has been under estimated by about 13% since 1978. This translates to a total miss-assignment of about 510,000 Chignik bound sockeye salmon and an allocation for Kodiak of not 15% but 17% for the Cape Igvak fishery from 1978 through 1998.

Sockeye Catch Numbers and Effort

Since 1978, pre July 26th sockeye catches in the Kodiak purse seine fishery have increased much more than the Chignik catches (Table 3; Figure 7). At Chignik, the sockeye catch has increased about 48% from an average of 751,000 fish (1973-77) to 1,114,000 fish (1994–98). At Kodiak, the purse seine catch has increased 660% from a 240,000 fish average (1973-77) to a 1,825,000 fish average (1994-98). The Cape Igvak sockeye catch has also increased and currently, is an average 64% higher.

While Cape Igvak sockeye catches have increase since 1978, Chignik sockeye salmon are no longer a major component of the total catch for Kodiak. For the 1973 –1977 period, Chignik fish at Cape Igvak averaged about 23% of the entire Kodiak sockeye catch (Figure 4). Currently, Chignik sockeye salmon are an average 4% of the total.

In the Cape Igvak Section, fishing effort has increased since 1977 (Table 4). Pre 1978 about 22% of the seine fleet made at least one delivery from fishing Igvak waters whereas more currently, the average is about 39%. While more of the Kodiak purse seine fleet is at Cape Igvak than before, fewer purse seiners are solely fishing there. In the last 10 years, an average of less than one purse seiner has fished exclusively at Cape Igvak.

In 1997 and 1998, the Chignik early run failed. As a consequence at Cape Igvak, there was no pre July 26 fishing in 1997 and only minor opportunity with about 5% of the KMA purse seine fleet participating in 1998 (Table 4).

Permit and Catch Values

The State Commercial Fisheries Entry Commission (CFEC) has record of Kodiak and Chignik purse seine permit sales going back as far as 1982 (Tingley, 1998).

Chignik permits have dropped in value from the mid-1980's when they were averaging about $320,000 (1983–87) to a current average price of about $207,000 (1994-98) (Table 5). This represents a 35% reduction (Figure 2). In comparison, Kodiak seine permit values have risen slightly from the mid-1980's average price of $42,000 (1983-87) to the current average price of $43,000 (1994-98), a 2% increase. At present, Chignik and Kodiak purse permits are selling at record low values, with 1998 prices averaging about $185,500 and $30,400, respectively.

Chignik purse seine catch revenues have fluctuated dramatically since 1970. The average annual landed catch value for Chignik seine harvesters climbed from the mid-1970's, peaked in the late 1980's and are currently at near record lows (Table 5). From 1973 through 1977, Chignik purse seine catches averaged about $71,000, from 1978 through 1993 $167,000, and more currently, 1994 through 1998 $109,000. In the last two years (1997-98) purse seine catches have averaged $74,4000.

While the value of Chignik permits and catches has declined over the last five years, the ratio of catch value to permit value has fluctuated relatively little in the last 15 years (Table 5). From 1983 through 1987, a Chignik purse seine permit sold for twice the average catch value. From 1994 through 1998, permit value still averaged twice the catch value (2:1).

Kodiak purse seine catch values have risen substantially since the early 1970's. From 1973 through 1977, the average seine catch was worth $25,000, from 1978 through 1993 $89,000, and more currently, 1994 through 1998 $84,000 (Table 5).

Although Kodiak purse seine catch revenues have increased, the value of Kodiak purse seine permits has not increased at the same rate (Table 5). From 1978 through 1982, the average catch value was 50% higher than permit value (1:0.7) whereas in the most recent five-year period, 1984-1998, the average catch was worth twice the permit value (1:0.5). In 1998, a KMA seine permit averaged $30,400, and the catch $102,900.

The average annual landed catch value at Chignik is approaching that of the Kodiak purse seiners (Table 5). From 1978 through 1987, the Chignik seiners averaged 160% more revenue. However for the last 11 years (1988-98) the difference has dropped to an average of 30%. In two of the last 10 years Kodiak seiners surpassed Chignik in average catch revenue. The first was the M/V Exxon Valdez oil spill year of 1989 and in that year, Kodiak received a catch settlement worth 8% more than the Chignik catch; the second was in 1998 when Kodiak purse seiners averaged a 17% higher catch revenue than Chignik.

Residency and Permit Activity

Most of the Chignik (82%) and Kodiak (75%) purse seine permit holders are Alaska residents (Table 6). Nonresidents account for about 18% of the Chignik and 25% of the Kodiak purse seiners.

Over the last 10 years (88-98), more Chignik purse seiners have fished proportional to the number of permits available than have Kodiak purse seiners (Table 6). For Chignik, the average is about 97%, while for Kodiak 76%. In 1998, fewer purse seine permit holders fished in Chignik and Kodiak than any other time in the last 20 years. Of the 102 Chignik permits available, 85 were active in 1998, equating to an 83% participation rate. Of the 384 Kodiak purse seine permits available, 199 or 52% were active in 1998.

Alternative Fish Resources

Salmon are the backbone of the Chignik area economy, contributing about 90% of the fish revenue in the last 10 years (Table 7). Alternative, non-salmon fisheries resources are of lessor importance and are economically declining in value. From 1988 through 1992, Chignik non-salmon fish landings averaged $2.4 million. In the last five years (1993-97), the average was about $0.5 million, an 80% reduction from the 1988-92 period.

Salmon are also highly important to the Kodiak area economy, providing about 56% of the fisheries revenue for the last 10 years (Table 7). Non-salmon fisheries resources contribute substantially to the Kodiak economy at the rate of about $58 million annually. From 1988 through 1992, the value of non-salmon landings averaged $55.4 million and in the last five years (1993-97) about $60.2 million.

Overall, Chignik has experienced a more precipitous drop in the value of non-salmon fisheries resources than Kodiak. In the five years prior to 1993, Kodiak had about 23 times more value landed than did Chignik, and in the more recent five-year period, 1993-97, Kodiak dwarfed Chignik even more in non-salmon fisheries revenue by 131:1 (Table 7).

Pacific Gray Cod

At Chignik, the developing Pacific gray cod fishery has provided additional fishing opportunity to about 17 Chignik salmon permit holders (A. Anderson, Chignik, pers. comm., December 1998). In 1998, about six of the participants made a profit and the rest were at or below the break-even point due to new gear, extra fuel, and insurance costs. In total, about 50% of the boats in the fishery were from Chignik. The balance was nearly all from Kodiak and Sandpoint. The 1998 harvest totaled 5.7 million pounds, and the ex-vessel or delivery price averaged $0.18/lb (D. Jackson, ADF&G, Kodiak, pers. comm., January, 1999). A floating processor moored in Anchorage Bay did all the buying. The 1999 cod quota is 8.2 million pounds.

At Kodiak in the 1998 fishery, a total of 8.1 million pounds of Pacific gray cod were landed in the State waters fishery there at an average price of $0.22/lb (D. Jackson, ADF&G, Kodiak, pers. comm., January, 1999). Nearly all of the 1998 participants were Kodiak residents (95%). Twelve shore-based plants handled the product: 11 on Kodiak Island and 1 at Homer. For 1999, the harvest quota is 11.7 million pounds.

Chignik fishers believe that with some fine-tuning particularly with respect to lengthening the season and encouragement of shore-based processing and local hire, the Pacific gray cod fishery will provide an economic boost to Chignik especially at a time when the salmon fishery is on the downside.

Processor Stability

Kodiak has a relatively stable salmon processor base. In the past 10 years (1988-98), the number of salmon processing plants at Kodiak has remained relatively static at about 15 (D. Prokopowich, ADF&G, Kodiak, pers. comm., December 1998). In contrast, Chignik processor numbers have been far from stable and are declining (Table 8). An average of 12.6 processors operated in the Chignik area from 1984 through 1988, 7.8 from 1989 through 1993, and 5.2 from 1994 through 1998. Due to poor fishing and market conditions only two processors operated at Chignik in 1997 and 1998.

Sockeye Production

Wild Stocks

In the CMA, commercial sockeye production is limited to two wild stocks in the Chignik Lakes drainage, which have a combined escapement goal of 650,000 fish (Table 9). The estimated average harvest potential for these runs combined is 1.6 million fish based on the escapement goal and an assumed 3.5:1 return per spawner.

From 1973 through 1998 in the CMA, an average of 1.4 million sockeye salmon has been harvested annually in terminal wild-stock fisheries (Table 10). The recent five-year (1994-98) average, also 1.4 million fish, is about 40% more than the 1973-1977 average of 1.0 million. The 1997 and 1998 sockeye harvests are below average at 0.8 and 1.1 million fish, respectively. The KMA is highly diverse in wild stock sockeye production with 39 significant sockeye salmon producing streams (Brennan 1998). A total of five Kodiak sockeye runs have escapement goals in excess of 100,000 fish (Table 9). Overall, the wild stock escapement goal is an indexed 2 million fish and the harvest potential amounts to 5.4 million sockeye salmon (Prokopowich et al. 1996; Brennan 1998).

Since 1973 Kodiak has averaged a wild stock harvest of 2.0 million sockeye salmon (Table 10). The current five-year (1994-98) harvest has averaged 3.0 million fish, 650% more than the 1973-1977 average of 0.4 million. The 1997 and 1998 sockeye harvests were 2.1 million and 3.0 million, respectively.

Supplemental Stocks

Chignik has no salmon hatcheries or barren lake systems that offer sockeye rearing habitat or out-stocking potential (D. Owen, ADF&G, Kodiak, pers. comm., December 1998). Currently, the focus of the Chignik Regional Aquaculture has been to improve wild stock management through escapement goal refinement, habitat evaluation and protection, and smolt monitoring.

Kodiak sockeye production is not limited to wild stock runs. Two hatcheries operated by the Kodiak Regional Aquaculture Association (KRAA) release sockeye fry, fingerlings, and presmolt into a variety of barren and wild stock lakes and marine estuary annually on Kodiak and Afognak Islands. In 1998, the release totaled about 5.9 juvenile sockeye salmon (S. Honnold, ADF&G, Kodiak, pers. comm., December 1998).

Through efforts by ADF&G and KRAA, Kodiak sockeye harvest numbers are increasing as a direct result of successful introductions and hatchery operations (Table 10). Prior to 1977 only

wild sockeye stocks were harvested in the KMA. In 1978 about 3% of the total KMA sockeye harvest was from the introduced Frazer Lake run. Production from that system continued to grow and in 1991, the Frazer run provided a 1-million fish harvest in the Kodiak Alitak Bay District. In the last five years (1994-98) with the contribution of the Frazer Lake run, the new Spiridon run and several others, KMA commercial fishers have harvested about 3.6-million sockeye salmon of hatchery and introduced origin; annually, the average harvest has been 0.7 million fish. This represents nearly 20% of the total KMA sockeye catch.

All Stocks

Since the Cape Igvak Management Plan was adopted in 1978, Kodiak sockeye production has grown exponentially, while Chignik's growth is fractionally higher. Based on catch numbers, sockeye production at Chignik is currently averaging 41% higher than during the 1973-77 period. In comparison, Kodiak's sockeye production has increased more than 800% (Figure 3).

Recommendation

Commercial salmon fishing and processing is the largest and essentially the only industry in the Chignik area providing about 90% of the income and jobs (HDR Alaska, Inc. 1998). Chignik has no alternatives when salmon runs and market conditions deteriorate which has occurred in the last five years. Many of the Chignik residents are now finding themselves unable to make a reasonable living salmon fishing. This is not surprising, as Governor Knowles has declared Chignik an economic disaster area in 1997 and 1998.

The Alaska Board of Fish is in a pivotal position to improve the health of the Chignik salmon fishery and correspondingly, help the Chignik people who are primarily Native Alaskans. Through Proposal 111, Chignik is not asking for partial harvest rights on any of the 39 Kodiak sockeye runs including the Frazer and Spiridon Lakes runs developed by ADF&G. Rather, Chignik is asking the Board to phaseout over the next three fishing seasons, the Cape Igvak Salmon Management Plan so that more south-bound sockeye salmon will enter the Chignik terminal fishery. In 1978 when the Board gave Kodiak an economic allocation of Chignik bound sockeye salmon, the Kodiak sockeye runs were depressed from too many years of over-exploitation and under escapement. Kodiak now has highly productive wild stocks and hatcheries for planting barren lake systems and enhancing wild runs. Socially and economically, the Chignik sockeye allocation for the Cape Igvak fishery is no longer justified and therefore, it should be annulled.

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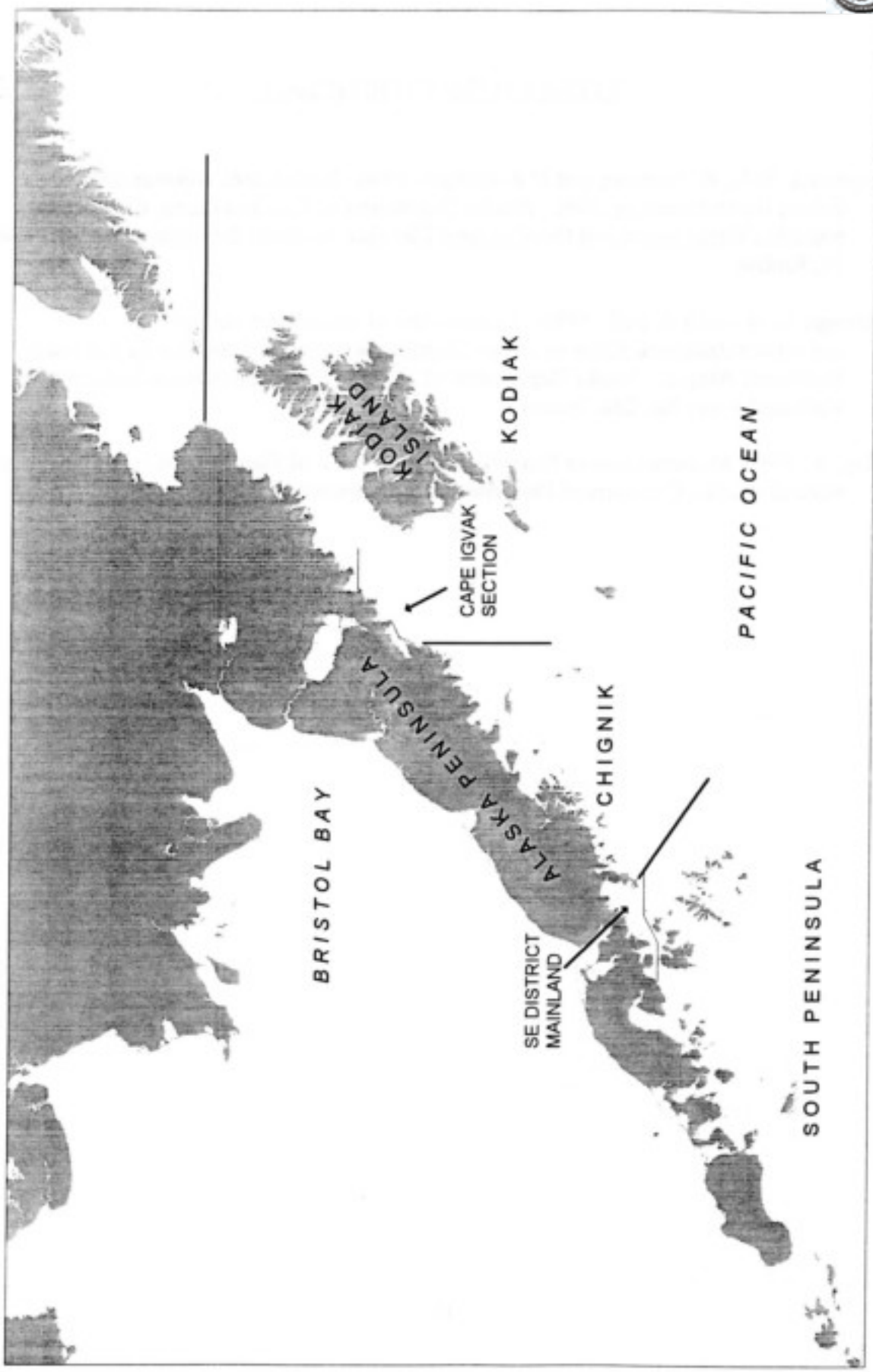


Figure 5. Map showing the location of the Chignik area relative to the Cape Igvak Section and other western Alaska areas.

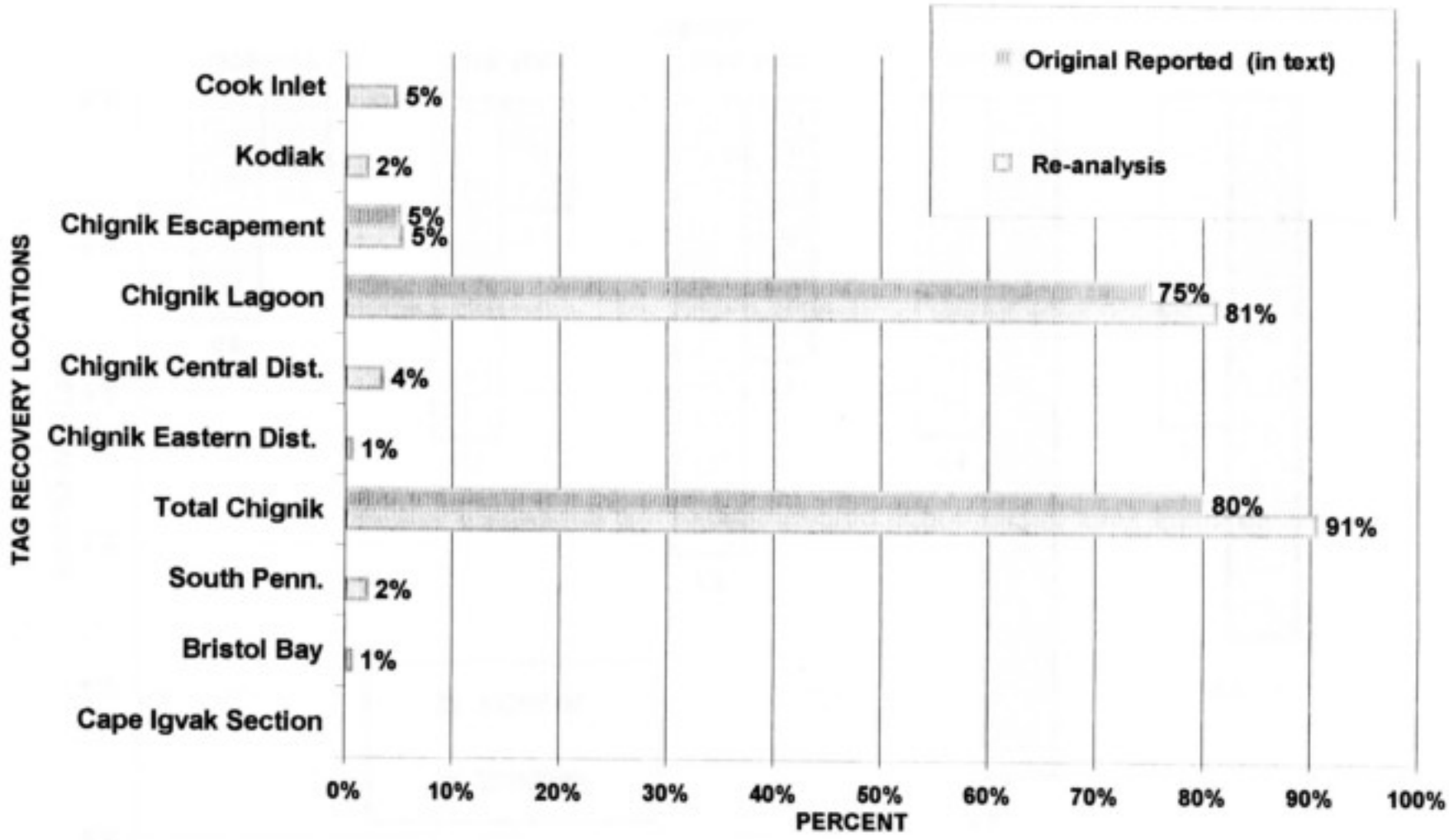


Figure 6. Results of the 1969 Cape Igvak sockeye salmon tagging study by ADF&G; original reported vs. re-analysis.

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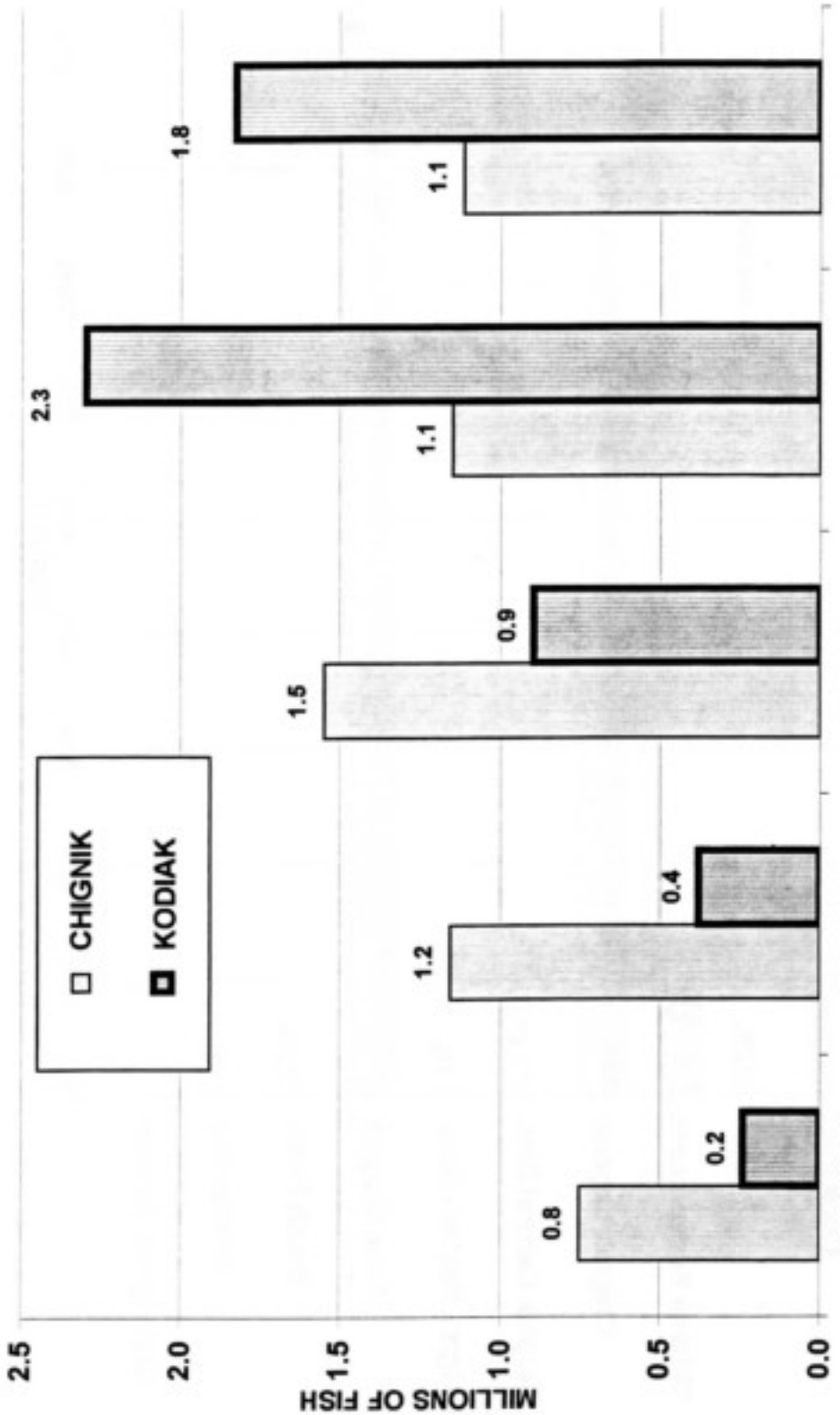


Figure 7. Average total sockeye catch in the pre-July 26th purse seine fisheries for Chignik and Kodiak, 1973-1998.

Table 1. Chronology of management strategies used for harvesting Chignik sockeye salmon in the Kodaik Management Area Cape Igvak Section, 1964-1998.

Management Strategy	1964 - 1973	1974 - 1977	1978 - 1998
Set Weekly Fishing Periods (about 5 days/wk.)	X		
Day to Day Fishing Time w/ Chignik Lagoon		X	
Chignik Escapement Priority	X	X	X
Allocation of Chignik Catch (%)			15%
Chignik Harvest Preference			X
Forecasted Chignik Catch <600k			X
Pre 7/9, no fishing until 300k Chignik catch			X
Post 7/8, no fishing until 300k Chignik catch & projected 600k Chignik catch			X
Forecasted Chignik Catch 600k or more & 1st run fails to develop & 600k Chignik catch not assured			X
Pre 7/9, curtailed fishing until 300k Chignik catch			X
Post 7/8, no fishing until 300k catch & projected 600k catch			X
Chignik 2nd Run Evaluation Period 6/26 - 7/9			
Restrict fishery to prevent 2nd run over harvest			X
Priority Kodiak Local Stock Harvest			
Pink, chum, and coho salmon		>7/25	>7/25

Source: ADF&G 1992; ADF&G 1996; D. Prokopowich, personal communication, ADF&G, Kodiak 12/8/98.

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Table 2. Re-analysis of the 1969 Cape Igvak sockeye tagging study conducted by the Alaska Department of Fish and Game and reported to the State Board of Fish and Game in 1978.

	Tag Recovery Locations											Summary Tag Recovery Locations		
	Cape Igvak Section	Bristol Bay	South Peninsula	Chignik Management Area: Eastern District	Central District	Chignik Lagoon	Chignik Escap.	Total	Kodiak	Cook Inlet	Total	Chignik	Non-Chignik	Total
ORIGINAL ANALYSIS 1/														
Text Reported ("Summary of Results")														
Number								80%				80%	20%	100.0%
Percent														
Analytical (in report table)														
Number	12	1	3	1	5	121	8	135	3	7	161	135	26	161
Percent	7.5%	0.6%	1.9%	0.6%	3.1%	75.2%	5.0%	83.9%	1.9%	4.3%	100.0%	83.9%	16.1%	100.0%
RE-ANALYSIS														
Total Recoveries excluding Escapement														
Number		1	3	1	5	121		127	3	7	141	127	14	141
Percent		0.7%	2.1%	0.7%	3.5%	85.8%		90.1%	2.1%	5.0%	100.0%	90.1%	9.9%	100.0%
Total Recoveries including Escapement														
Number		1	3	1	5	121	8	135	3	7	149	135	14	149
Percent		0.7%	2.0%	0.7%	3.4%	81.2%	5.4%	90.6%	2.0%	4.7%	100.0%	90.6%	9.4%	100.0%

1/ Source: ADF&G (1970) and Lechner (1971)

Note: 1. A total of 791 sockeye were tagged and 12 were recaptured in the Cape Igvak Section; those 12 were not considered in the re-analysis as there are no sockeye systems in the Cape Igvak Section and the tagging location of Cape Igvak is in the Cape Igvak Section.

2. In 1978 BOF testimony, ADF&G staff stated: "Chignik fish at Igvak to be 80% on the low end..." (Jack Lechner, ADF&G Regional Supervisor, BOF Tape #35, April 1978).

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Table 3. Number of sockeye salmon harvested in the pre July 26th purse seine fishery for Chignik and the Kodiak Management Areas and the Cape Igvak Section sockeye catch numbers by stock, 1973-1998.

	Purse Seine Pre- July 26th Catch (#'s)		Cape Igvak Section (pre July 26)			
				Stock Composition (#'s)		Percent of Total Chignik Bound
Year	Total Chignik Mgmt. Area	Total Kodiak Mgmt. Area	Total Catch	Chignik	other	Sockeye Harvested 1/
1973	769,258		71,685	57,348	14,337	6.6
1974	530,278	230,344	152,589	122,071	30,518	17.0
1975	115,984	43,539	29,544	23,635	5,909	16.7
1976	792,024	333,639	147,407	117,926	29,481	12.4
1977	1,547,285	350,808	161,065	128,852	32,213	7.5
1978	1,454,389	575,197	283,767	227,014	56,753	13.3
1979	794,504	178,525	17,437	13,950	3,487	1.6
1980	670,001	162,435	32	26	6	0.0
1981	1,606,300	655,659	353,139	282,511	70,628	14.1
1982	1,250,768	324,324	209,251	167,401	41,850	11.3
1983	1,450,832	598,193	397,560	318,048	79,512	15.9
1984	2,474,405	1,078,816	524,937	419,950	104,987	13.4
1985	696,169	814,367	154,534	123,627	30,907	14.2
1986	1,456,729	1,152,312	235,021	188,017	47,004	10.7
1987	1,659,615	840,562	401,883	321,506	80,377	15.1
1988	675,487	1,322,215	14,022	11,218	2,804	1.6
1989	496,044		Fishery Closed Due to M/V Exxon oil spill			
1990	1,205,575	2,376,721	134,632	107,706	26,926	7.5
1991	1,958,954	2,523,494	405,411	324,329	81,082	13.3
1992	1,054,309	2,671,625	190,448	152,358	38,090	11.7
1993	1,495,098	2,603,340	375,069	300,055	75,014	15.6
1994	1,632,435	1,305,228	312,787	250,230	62,557	12.4
1995	1,024,785	2,315,065	211,913	169,530	42,383	13.2
1996	1,710,249	2,644,495	385,409	308,327	77,082	14.4
1997	455,191	982,428	0	0	0	0.0
1998	746,709	1,876,241	11,016	8,813	2,203	1.0
AVERAGE						
1973-77	750,966	239,583	112,458	89,966	22,492	12.0
1978-82	1,155,192	379,228	172,725	138,180	34,545	8.1
1983-87	1,547,550	896,850	342,787	274,230	68,557	13.9
1988-93	1,147,578	2,299,479	223,916	179,133	44,783	9.9
1994-98	1,113,874	1,824,691	184,225	147,380	36,845	8.2

1/ Estimates derived by ADF&G; percents dervived by dividing 80% of the Igvak pre July 26th catch by the sum of the total CMA pre July 26th catch, 80% of the Igvak catch, and 80% of various fractions of the SE Mainaind District pre July 26th catch.

Source: Owen and Sarafin (in-prep.) and Donaldson (1998).

Table 4. Number of seine limited entry permits fished pre July 26th in the Cape Igvak Section and remainder of the Kodiak Management Area, 1974-98.

Year	Cape Igvak Section	Kodiak less Cape Igvak Section	Kodiak	Percent of All Kodiak Permits Fished at C. Igvak	Number of Permits Fished Only at C. Igvak
1974	59	214	220	27%	6
1975	45	229	233	19%	4
1976	54	333	333	16%	0
1977	87	315	316	28%	1
1978	131	359	361	36%	2
1979	93	362	362	26%	0
1980	Strike	345	345		
1981	109	318	318	34%	0
1982	155	215	275	56%	60
1983	147	329	329	45%	0
1984	170	285	287	59%	2
1985	129	260	262	49%	2
1986	91	277	277	33%	0
1987	172	284	285	60%	1
1988	43	316	316	14%	0
1989		Fishery closed due to M/V Exxon Valdez oil spill.			
1990	116	349	349	33%	0
1991	145	345	346	42%	1
1992	155	333	333	47%	0
1993	133	319	319	42%	0
1994	117	275	275	43%	0
1995	137	306	306	45%	0
1996	126	255	255	49%	0
1997	Closed	254	254		
1998	9	199	199	5%	0
AVERAGE					
1974-77	61	273	276	22%	3
1978-82	122	320	332	38%	16
1983-87	142	287	288	49%	1
1988-93	118	332	333	35%	0
1994-98	97	258	258	35%	0

Source: Donaldson (1998)

Table 5. Permit numbers fished, average permit values, and ex-vessel catch value for purse seine gear in the Chignik and Kodiak Management Areas, and a comparison of purse seine catch and permit values between those areas,1970-98.

	CHIGNIK				KODIAK				Area Comparisons	
Year	Total Number of Permits	Permit Value Average ($)	Catch Value Ex-vessel Average ($)	Ratio Catch $: Permit $	Total Number of Permits	Permit Value Average ($)	Catch Value Ex-vessel Average ($)	Ratio Catch $: Permit $	Permit $ Chignik: Kodiak	Catch $ Chignik: Kodiak
1970	69		$ 46,761				$ 41,880			1: 0.9
1971	77		$ 35,811				$ 13,397			1: 0.4
1972	79		$ 12,650				$ 9,233			1: 0.7
1973	77		$ 40,776				$ 5,075			1: 0.1
1974	94		$ 40,094		220		$ 15,993			1: 0.4
1975	86		$ 20,584		233		$ 13,300			1: 0.6
1976	77		$ 73,438		333		$ 43,017			1: 0.6
1977	88		$ 181,435		316		$ 46,942			1: 0.3
1978	95		$ 182,764		361		$ 70,685			1: 0.4
1979	101		$ 146,900		362		$ 51,263			1: 0.3
1980	101		$ 85,739		345		$ 62,363			1: 0.7
1981	103		$ 214,466		318		$ 79,877			1: 0.4
1982	105		$ 160,291		275	$ 39,817	$ 39,309	1: 1.0		1: 0.2
1983	100		$ 117,058		329		$ 30,239			1: 0.3
1984	101	$ 322,500	$ 215,381	1: 1.5	287		$ 71,550			1: 0.3
1985	101	$ 321,233	$ 86,494	1: 3.7	262	$ 46,337	$ 57,782	1: 0.8	1: 0.1	1: 0.7
1986	100		$ 184,475		277	$ 37,036	$ 92,696	1: 0.4		1: 0.5
1987	102	$ 315,667	$ 259,810	1: 1.2	285	$ 43,385	$ 79,814	1: 0.5	1: 0.1	1: 0.3
1988	102	$ 360,000	$ 272,069	1: 1.3	316	$ 66,734	$ 252,403	1: 0.3	1: 0.2	1: 0.9
1989	100	$ 371,667	$ 136,010	1: 2.7		$ 139,289	$ 146,502	1: 1.0	1: 0.4	1: 1.1
1990	101	$ 416,667	$ 245,314	1: 1.7	349	$ 148,563	$ 113,328	1: 1.3	1: 0.4	1: 0.5
1991	101	$ 409,400	$ 124,844	1: 3.3	346	$ 122,800	$ 77,511	1: 1.6	1: 0.3	1: 0.6
1992	101	$ 403,100	$ 151,429	1: 2.7	333	$ 69,300	$ 98,388	1: 0.7	1: 0.2	1: 0.6
1993	102	$ 349,800	$ 97,432	1: 3.6	319	$ 61,600	$ 94,927	1: 0.6	1: 0.2	1: 1.0
1994	99	$ 238,300	$ 119,557	1: 2.0	275	$ 45,400	$ 67,545	1: 0.7	1: 0.2	1: 0.6
1995	100	$ 228,300	$ 144,763	1: 1.6	306	$ 50,400	$ 135,769	1: 0.4	1: 0.2	1: 0.9
1996	100	$ 194,500	$ 131,699	1: 1.5	255	$ 46,900	$ 66,171	1: 0.7	1: 0.2	1: 0.5
1997	98	$ 188,300	$ 60,434	1: 3.1	254	$ 41,700	$ 48,842	1: 0.9	1: 0.2	1: 0.8
1998	85	$ 185,500	$ 88,335	1: 2.1	199	$ 30,400	$ 102,897	1: 0.3	1: 0.2	1: 1.2
Avg. 1973-77	84		$ 71,265		276		$ 24,865			1: 0.3
Avg. 1978-82	101		$ 158,032		332	$ 39,817	$ 60,699	1: 0.7		1: 0.4
Avg. 1983-87	101	$ 319,800	$ 172,644	1: 1.9	288	$ 42,253	$ 66,416	1: 0.6	1: 0.1	1: 0.4
Avg. 1988-93	101	$ 385,106	$ 171,183	1: 2.2	333	$ 101,381	$ 130,510	1: 0.8	1: 0.3	1: 0.8
Avg. 1994-98	96	$ 206,980	$ 108,958	1: 1.9	258	$ 42,960	$ 84,245	1: 0.5	1: 0.2	1: 0.8

Source: Permit value data provided by Al Tingley, 11/5/98, Commercial Fisheries Entry Commission, Juneau;1998 permit values provided by: Denise Nakachi, 12/2/98,Commercail Fisheries Entry Commission, Juneau. All other information from W. Donaldson, 11/17/98, ADF&G, Kodiak.

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Table 6. Numbers of permits fished and residency status for purse seine gear in the Chignik and Kodiak Management Areas, 1970-1998.

Year	Chignik			Kodiak			Area Comparison	
	Active # of Permits	Permit Ownership R	NR	Active # of Permits	Permit Ownership R	NR	Active Permits #'s Chignik: Kodiak	AK. Resident Chignik: Kodiak
1970	69	83%	17%					
1971	77	83%	17%					
1972	79	79%	22%					
1973	77	82%	18%					
1974	94	84%	16%	220			1: 2.3	
1975	86	84%	16%	233			1: 2.7	
1976	77	86%	14%	333			1: 4.3	
1977	88	84%	16%	316			1: 3.6	
1978	95	86%	14%	361			1: 3.8	
1979	101	86%	14%	362			1: 3.6	
1980	101	86%	14%	345			1: 3.4	
1981	103	85%	16%	318			1: 3.1	
1982	105	85%	15%	275			1: 2.6	
1983	100	84%	16%	329			1: 3.3	
1984	101	83%	17%	287			1: 2.8	
1985	101	84%	16%	262			1: 2.6	
1986	100	87%	13%	277			1: 2.8	
1987	102	87%	13%	285			1: 2.8	
1988	102	86%	14%	316	75%	25%	1: 3.1	1: 0.9
1989	100	84%	16%		75%	25%		
1990	101	84%	16%	349	74%	27%	1: 3.5	1: 0.9
1991	101	83%	17%	346	73%	27%	1: 3.4	1: 0.9
1992	101	84%	16%	333	73%	27%	1: 3.3	1: 0.9
1993	102	83%	17%	319	74%	26%	1: 3.1	1: 0.9
1994	99	83%	17%	275	75%	25%	1: 2.8	1: 0.9
1995	100	80%	20%	306	75%	25%	1: 3.1	1: 0.9
1996	100	80%	20%	255	75%	25%	1: 2.6	1: 0.9
1997	98	83%	17%	254	75%	26%	1: 2.6	1: 0.9
1998	85	82%	18%	199	74%	26%	1: 2.3	1: 0.9
Average								
1973-77	84	84%	16%	276			1: 3.5	
1978-82	101	86%	14%	332			1: 3.3	
1983-87	101	85%	15%	288			1: 2.9	
1988-93	101	84%	16%	333	74%	26%	1: 3.3	1: 0.9
1994-98	96	82%	18%	258	75%	25%	1: 2.7	1: 0.9

Source: Chignik data from Owen and Sarafin (in press); Kodiak data provided by D. Prokopowich, personal communication, 12/11/98, ADF&G, Kodiak.

Table 7. Approximate ex-vessel value, in millions of dollars, of fish product landed in the Chignik and Kodiak Management Areas, 1988-1998.

Year	Chignik			Kodiak			Area Comparison	
	Salmon	other	Total	Salmon	other	Total	Salmon Chignik:Kodiak	other fish Chignik:Kodiak
1988	$ 27.8	$ 6.0	$ 33.8	$ 103.8	$ 62.5	$ 166.3	1: 3.7	1: 10
1989	$ 13.6	$ 2.4	$ 16.0	$ 61.0	$ 39.2	$ 100.2	1: 4.5	1: 16
1990	$ 24.8	$ 1.7	$ 26.5	$ 52.6	$ 49.1	$ 101.7	1: 2.1	1: 29
1991	$ 12.6	$ 0.9	$ 13.5	$ 37.0	$ 59.9	$ 96.9	1: 2.9	1: 67
1992	$ 15.3	$ 0.9	$ 16.2	$ 40.5	$ 66.5	$ 107.0	1: 2.6	1: 74
1993	$ 9.9	$ 0.6	$ 10.5	$ 38.6	$ 42.9	$ 81.5	1: 3.9	1: 72
1994	$ 11.8	$ 0.8	$ 12.6	$ 27.1	$ 80.5	$ 107.6	1: 2.3	1: 101
1995	$ 14.5	$ 0.2	$ 14.7	$ 53.9	$ 51.5	$ 105.4	1: 3.7	1: 258
1996	$ 13.2	$ 0.3	$ 13.5	$ 25.8	$ 56.5	$ 82.3	1: 2.0	1: 188
1997	$ 5.9	$ 0.4	$ 6.3	$ 18.8	$ 69.8	$ 88.6	1: 3.2	1: 175
1998	$ 7.5			$ 29.8			1: 4.0	
Avg. 1988-92	$ 18.8	$ 2.4	$ 21.2	$ 59.0	$ 55.4	$ 114.4	1: 3.1	1: 23
Avg. 1993-97	$ 11.1	$ 0.5	$ 11.5	$ 32.8	$ 60.2	$ 93.1	1: 3.0	1: 131

Source: W. Donaldson, memorandum, 11/17/98, ADF&G, Kodiak.

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Table 8. Number of salmon processors operating in the Chignik Management Area, 1984-1998.

Year	Number	Year	Number	Year	Number
1984	20	1989	7	1994	7
1985	8	1990	5	1995	10
1986	10	1991	14	1996	5
1987	12	1992	8	1997	2
1988	13	1993	5	1998	2
Avg. (1984-88)	12.6	Avg. (1989-93)	7.8	Avg. (1994-98)	5.2

Source: Owen and Sarafin (in prep.)

Table 9. Listing of all wild and introduced Kodiak and Chignik sockeye salmon runs with a 100,000 or more fish escapement goal.

Kodiak			Chignik		
Run	Escapement Goal (1,000's)	Run Type	Run	Escapement Goal (1,000's)	Run Type
Karluk Early	150-250	Wild	Black Lake	400	Wild
Karluk Late	400-550	Wild	Chignik Lake	250	Wild
Upper Station Late	150-200	Wild			
Ayakulik	200-300	Wild			
Frazer	140-200	Introduced			
Uganik	80-120	Wild			

Source: Prokopowich et al. (1996) and Owen and Sarafin (1998b).

Table 10. Estimated sockeye salmon catch from natural producing systems and supplemental production from introductions, hatchery, and introductions, hatchery, and enhancement activities, Chignik and Kodiak Management Areas, 1974-98.

Year	Chignik Management Area (Numbers of fish)			Kodiak Management Area Catch (Numbers of Fish)			Kodiak Management Area Catch in Percent		
	Natural Wild Stock Systems	Supplemental Production (Introduced/Hatchery/ Enhanced)	Total	Natural Wild Stock Systems	Supplemental Production 1/ (Introduced/Hatchery/ Enhanced)	Total	Natural Wild Stock Systems	Supplemental Production 1/ (Introduced/Hatchery & Enhanced)	Total
1973	870,354	0	870,354	167,341	0	167,341	100%	0%	100%
1974	662,905	0	662,905	418,761	0	418,761	100%	0%	100%
1975	399,593	0	399,593	136,418	0	136,418	100%	0%	100%
1976	1,163,728	0	1,163,728	641,484	0	641,484	100%	0%	100%
1977	1,972,207	0	1,972,207	623,468	0	623,468	100%	0%	100%
1978	1,576,283	0	1,576,283	1,041,446	30,336	1,071,782	97%	3%	100%
1979	1,049,497	0	1,049,497	604,930	26,805	631,735	96%	4%	100%
1980	859,966	0	859,966	596,221	55,173	651,394	92%	8%	100%
1981	1,839,469	0	1,839,469	1,178,770	110,210	1,288,980	91%	9%	100%
1982	1,521,686	0	1,521,686	1,128,561	76,232	1,204,793	94%	6%	100%
1983	1,824,175	0	1,824,175	1,202,321	29,668	1,231,989	98%	2%	100%
1984	2,660,619	0	2,660,619	1,931,906	18,533	1,950,439	99%	1%	100%
1985	922,151	0	922,151	1,711,650	131,535	1,843,185	93%	7%	100%
1986	1,645,834	0	1,645,834	3,146,617	41,652	3,188,269	99%	1%	100%
1987	1,898,838	0	1,898,838	1,784,193	8,626	1,792,819	100%	0%	100%
1988	795,841	0	795,841	2,488,231	210,406	2,698,637	92%	8%	100%
1989	1,159,287	0	1,159,287	1,919,701	708,864	2,628,565	73%	27%	100%
1990	2,093,650	0	2,093,650	4,523,046	725,293	5,248,339	86%	14%	100%
1991	1,895,665	0	1,895,665	4,723,909	980,132	5,704,041	83%	17%	100%
1992	1,277,449	0	1,277,449	3,930,103	237,774	4,167,877	94%	6%	100%
1993	1,697,351	0	1,697,351	3,793,474	584,214	4,377,688	87%	13%	100%
1994	1,618,973	0	1,618,973	2,190,757	687,266	2,878,023	76%	24%	100%
1995	1,724,045	0	1,724,045	3,558,391	926,930	4,485,321	79%	21%	100%
1996	1,958,353	0	1,958,353	3,986,948	983,442	4,970,390	80%	20%	100%
1997	769,683	0	769,683	2,104,787	400,873	2,505,660	84%	16%	100%
1998	1,054,172	0	1,054,172	3,003,308	619,786	3,623,094	83%	17%	100%
Averages									
1973-77	1,013,757	0	1,013,757	397,494	0	397,494	100%	0%	100%
1978-88	1,508,578	0	1,508,578	1,528,622	67,198	1,595,820	95%	5%	100%
1989-93	1,624,680	0	1,624,680	3,778,047	647,255	4,425,302	85%	15%	100%
1994-98	1,425,045	0	1,425,045	2,968,838	723,659	3,692,498	81%	19%	100%

1/ Supplemental production systems in the KMA include the Kitoi and Pillar Creek hatcheries, and Frazer, Spiridon, Crescent, Hidden, and L. Waterfall Lakes
Source: Donaldson 1998; Owens and Sarafin 1998.

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December 12, 2019

Jason D. Alexander
213 Airport Road
Chignik, AK 99564

RECEIVED
DEC 1 2 2019
BOARDS

Alaska Board of Fisheries
P.O. Box 115526
Juneau, Alaska 99811-5526

Subject: Cape Igvak Fishery

Dear Alaska Board of Fisheries:

Chignik's two sockeye salmon runs should no longer be require to provide Kodiak an interception fishery at Cape Igvak. Our early run and late run are in trouble, relatively weak, and there is no assurance that they will not remain that way for years to come. In 2017 we had a well below average sockeye catch and in 2018 no fishery at all on either run. Last season were unable to fish our early run, and the late run which did provide fishing opportunity did not make up for the absence of an early run season. This coming season, according to F&G, is expected to be poor as the harvest forecast is for less than a 500,000 thousand catch or about 1/3 of our long-term average. With no even-year pink fishery expected, 2020 has all the makings of another very poor season.

You cannot make this up, Chignik is in trouble. We need a shore-based processor and that will not happen unless we harvest more salmon. For about the last 10 years most of our catch has gone to Kodiak and Sand Point while Chignik sits without any processor or employment opportunity for our locals.

Kodiak's economy and salmon resources are healthy. They have major sockeye runs and two substantial hatcheries. Further there are more than 7 fish processors on Kodiak and numerous non-salmon industries ensuring broad job opportunities. There are no alternative jobs in the Chignik area—it is all salmon fishing or nothing. Anyone of you on the Board could find employment in any week in Kodiak. In Chignik you would remain unemployed and looking for the welfare door from the fall though spring months.

We need to recover and capture some good seasons to get back on our feet. End the interception fishery at Igvak. This fishery was established when Kodiak was doing poorly and now it has, for several decades, fully recovered.

I strongly support Proposal #60 but adjusted to a 0 percent allocation. Even 5% is too much of an allocation given Chignik's situation.

Sincerely,

Jason D Alexander
JASON D. ALEXANDER
(907) 717-5639

Aaron Nevin

12/27/2019 08:44 PM AKST

RE: PROPOSAL 61 Amend the Cape Igvak Salmon Management Plan to increase the minimum expected sockeye salmon harvest thresholds from 300,000 to 600,000 prior to July 8 and 600,000 to 1,000,000 fish after July 8, and from 600,000 to 1,000,000 fish in years when runs are as strong as expected

This proposal is insulting the idea that kodiaks fleet intentionally misreport catch in the cape igvak section is just wrong. My name is Aaron Nevin. Being born in Kodiak to a commercial fisherman father I grew up fishing salmon on his seiner. I have continued on in my currently twenty year long career to buy a permit and run his boat after retirement. The seining season usually accounts for the majority of my annual income and is incredibly important to my family.

Adam Barker
Kashvik Fisheries LLC
12/26/2019 11:12 PM AKST

RE: PROPOSAL 61 Amend the Cape Igvak Salmon Management Plan to increase the minimum expected sockeye salmon harvest thresholds from 300,000 to 600,000 prior to July 8 and 600,000 to 1,000,000 fish after July 8, and from 600,000 to 1,000,000 fish in years when runs are as strong as expected

Adam Barker 41584 Manson Dr Homer, AK 99603 December 26th 2019 Chairman Reed Morisky Alaska Board of Fisheries -Board Support Section P.O. Box 115526 Juneau, AK 99811-5526 My name is Adam Barker and I've been fishing in Kodiak Island since I was a child in 1988. I'm a third generation fisherman and now bring my two children fishing in the summer. I've been an owner operator for Kodiak salmon since 1999. I also have a tanner crab permit and will be fishing that this January. I respectfully request the Board reject proposal # 61 The increase of expected minimum harvest to Chignik is harmful to local stocks by risking over-escapement of local chums and pink salmon in the Igvak section. We should not risk biased decisions on allocating salmon for special groups who have not historically fished the capes but were strictly a lagoon fishery. Please reject this as a ill advised proposal deeming one small area more deserving of special treatment over the greater area and mixed species of samonoids. I hope the board continues to apply consistency in its application of he guiding policies such as the mixed stock fisheries policy, and he sustainable fisheries policy. Sincerely, Adam Barker

Adelia Myrick

12/25/2019 06:56 PM AKST

RE: PROPOSAL 61 Amend the Cape Igvak Salmon Management Plan to increase the minimum expected sockeye salmon harvest thresholds from 300,000 to 600,000 prior to July 8 and 600,000 to 1,000,000 fish after July 8, and from 600,000 to 1,000,000 fish in years when runs are as strong as expected

Dear Board of Fish Members, I am a second-generation Kodiak fisherman. My father started salmon fishing here in 1967, and I have setnetted since I was a toddler with my family, for my whole life. I took over the permit from my dad several years ago, and in 2016 finally bought the setnet operation from my parents outright. You may be wondering why a setnetter who has no ability to fish the Igvak area is even commenting on this proposal. This is because we are drastically affected by the mobile seine fleet. If they are limited in where they can fish, we find our central section of the Northwest Kodiak district becoming more and more crowded with fewer opportunities for all to harvest in the traditional manner. So it behooves me to pay attention and understand what's going on. Again, when reading this proposal, it becomes apparent that claims are made with zero evidence to back them up. In particular, they sate that assumptions have become obsolete, but that is not true. When Chignik runs are strong the Cape Igvak fishery takes actually less than the 15% of Chignik bound sockeye originally assumed, and when the runs are weak, there is NO Cape Igvak fishery. It seems that this proposal is just another attempt to eliminate the Cape Igvak fishery but without any facts to back it up. We feel very badly for our Chignik neighbors who have had such complete disastrous seasons, but it must be understood cape Igvak never even opens at all in the bad years, so Kodiak fishermen can't be blamed for taking all their fish. As a lifelong fisherman with a previous generation of history in my consciousness, I have to add that climate change and the warming of the oceans and ocean acidification is something we are coming up against. Changes are happening and I feel like they are going to keep happening. For this reason I urge you to be very cautious and careful about changing management plans in response to fisheries "disasters." Who knows what disasters will happen next and if you build management plans in response to these rather than based on deep analysis of science and the history and all other elements of the proposal, you'll be setting dangerous precedents for your future decisions. Thank you for your consideration, Adelia Myrick

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 61

Dear Chairman Morisky and Board of Fisheries Members,

I am Alex Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Wandering Star. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

This proposal seeks to further limit Kodiak's traditional Cape Igvak fishery. Kodiak's salmon fishery has not changed since management plans were adopted starting with the Cape Igvak plan in 1978 and continuing through the early 1990s. Kodiak's salmon fishery is not a "new and expanding" fishery. This proposal is a familiar effort to limit the small portion of sockeye take that Kodiak fishermen are allowed in the Cape Igvak plan only after significant safety thresholds are reached by Chignik fishermen.

The Cape Igvak management plan was created because fishing there was part of Kodiak's historic fishing patterns prior to limited entry in 1973. The plan was put in place in 1978 to allow Kodiak fishermen access to their historic allocation of fish harvested during June and July. Kodiak's fishing opportunities at Cape Igvak are based off of existing built-in conservation measures designed to protect Chignik's second run with a safety net of 300,000 early run sockeye and 600,000 total sockeye for Chignik fishermen before *any fishing at Igvak occurs*. This purpose of this threshold is to prevent conservation issues during weak Chignik runs. This plan has been repeatedly evaluated by the Alaska Board of Fisheries through time, making it one of the most long-standing and intensely scrutinized management plans in the state.

If there are poor returns in Chignik, the current plan ensures that Kodiak fishermen won't fish at Igvak.

The 2019 Chignik Salmon Season Summary shows total values and average value per active permit in the Chignik Management Area in recent years, except for 2018, seem on track for what appears to be a normal range for the CMA within the last ten years. The 2019 season saw 51 active permits with a value per permit of $157,072, which is very close to a decade ago with a 2009 season of 55 permits and a value per permit of $156,926, much greater value than Kodiak permits.

I ask that the Board reject proposal 61 and not make any changes to the Cape Igvak Management Plan.

Thank you for your careful consideration,
Alex and Jaime Roth
F/V Wandering Star
Homer, Alaska

RE: PROPOSAL 61 Amend the Cape Igvak Salmon Management Plan to increase the minimum expected sockeye salmon harvest thresholds from 300,000 to 600,000 prior to July 8 and 600,000 to 1,000,000 fish after July 8, and from 600,000 to 1,000,000 fish in years when runs are as strong as expected

Bo Calhoun 57177 Zulu Ct. Homer, AK 99603 12/26/19 RE: Opposition to Proposal #61 Dear Chairman Morisky and Board of Fish members: I'm a third generation Kodiak salmon seiner. I was born in Homer, raised in Port Lions and Homer, and continue to live in Homer. My wife and I hope to raise our two sons on our family seine boat in a healthy Kodiak salmon fishery. I respectfully request you reject Proposal #61. The Cape Igvak Management Plan has been working as intended. The Cape Igvak fishery has not hurt the Chignik sockeye run due to the safeguards already in place. In four of the last six seasons, the early Cape Igvak fishery has remained closed and the current triggers allowing a Cape Igvak opener are sufficient. Also, the Cape Igvak fishery has on average caught less than the traditional allocation, showing that the fishery is managed conservatively. Please reject Proposal #61. Thank you for taking the time to read public comments. Sincerely, Bo Calhoun

Brad Marden
PO Box 2856
Homer, AK 99603

December 23, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: **opposition to Proposal 61**

Dear Chairman Morisky and Board of Fish members:

I first participated in the Kodiak seine fishery for salmon in 2004. Since then, I've worked as a deckhand in various salmon, halibut, and herring fisheries throughout the state, before buying my own boat in 2012, followed by a Kodiak seine permit in 2013. Since then I have exclusively fished in Kodiak waters. I respectfully request the Board **reject Proposal 61**.

Proposals to reduce the Cape Igvak allocation are a perennial request at the Kodiak and Chignik finfish meetings, and have been consistently rejected by the board in the past, for good reason. The allocation of 15% of overall Chignik bound fish is based on a historical use of the regional salmon resource from before limited entry. Kodiak fishermen have consistently harvested less than the 15% allocation. Repeating the same requests year after year to change allocation does not make a compelling case to warrant a change. When Chignik salmon escapement is weak, Kodiak fishermen do not get any fishing opportunity at Cape Igvak- this is fair; it also seems fair that in years of Chignik salmon abundance Kodiak fishermen should get a chance to catch the historical allocation. The Cape Igvak fishery helps spread out our fleet and can be an important part of having a decent fishing season for Kodiak fishermen.

I am sure that the Board tires of endless testimony claiming that the fish of concern are "our fish being stolen by those guys over there". It seems that in my 15 years of commercial fishing in Alaskan waters, Kodiak salmon fishermen are often on the defensive. Rather than retaliate with countering proposals of our own, I ask that we maintain status quo and keep historical allocations and fishing opportunity at Cape Igvak. For this reason, I ask that you **reject Proposal 61**. I want to thank you for your service and I hope the Board continues to apply consistency in upholding Mixed Stock Fisheries Policy, and the Sustainable Fisheries Policy.

Sincerely,

Brad Marden

Brian Mcwethy
KSA
12/23/2019 09:08 AM AKST

RE: PROPOSAL 61 Amend the Cape Igvak Salmon Management Plan to increase the minimum expected sockeye salmon harvest thresholds from 300,000 to 600,000 prior to July 8 and 600,000 to 1,000,000 fish after July 8, and from 600,000 to 1,000,000 fish in years when runs are as strong as expected

My name is Brian Mcwethy. I was born and raised in kodiak. I live in kodiak with my family and we all depend on my income. I fished with my father on his seiner growing up and now I own and operate a seiner. Salmon seining and tanner crab fishing in kodiak are currently our only sources of income. I plan to try and continue to fish the kodiak waters and possible my children will have the opportunity to. I hope the current and historical areas we fish aren't taken from us and the future generations of kodiak. I strongly oppose proposal 60. This would take away a lot of potential for my business possible make the difference in me being able to provide for my family.

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 61

Dear Chairman Morisky and Board of Fisheries Members,

My name is Chris Johnson and I am a second-generation fisherman in Kodiak, Alaska. I grew up fishing on my dad's boat and got my first crew job working for someone else two weeks after I graduated high school. I haven't missed a salmon season since. I bought into the fishing industry in 2011 with the purchase of a 25-foot jig boat that I worked for two years in the winter and spring months while I still crewed for salmon in the summer. Access to the jig fisheries focusing on cod and rockfish was the only way that I could afford to move into the salmon fleet with a 38-footer in 2013. After the recent cod collapse, I now primarily rely on salmon seining and live here year-round with my wife.

This proposal is simply a grab for fish. This proposal puts forth an arbitrary benchmark of changes to minimum catch for Chignik fishermen seeking reallocation away from Kodiak to Chignik fishermen without justification. The proposer asks that harvest triggers be increased to a level where a fishery in the Cape Igvak section is unlikely to occur. The Cape Igvak management plan is one of the longest standing management plans and one of only two management plans with concrete safeguards for escapements and to ensure the Chignik fisherman get to fish first. The argument that Kodiak fisherman place a negative burden on Chignik runs and the Chignik fishery is false. Run failures in Chignik are in no way the fault of Kodiak fisherman because of the safeguards built into the Cape Igvak Management plan.

Chignik fishermen also argue that Cape Igvak is not an important fishery for Kodiak and that we don't need it anymore. This is also not true. On years of relative abundance of Chignik bound sockeye with a high harvest rates in the Chignik area, Kodiak fishermen are allowed access to their historical Cape Igvak fishery, where up to 25% of total KMA sockeye harvest occurs. On particularly poor years in Kodiak, such as 2016, the Cape Igvak fishery provides a critical lifeline for Kodiak fishermen who have recently endured historically poor local pink and chum runs during even years.

Taking away any fishing opportunity from Kodiak fishermen, particularly from the small boat fleet, would have a direct negative impact on new entrants trying to gain a foothold in this industry, fishing families trying to get by, and fishing support businesses in our region. I'm proud to call Kodiak home and am working to protect our fishing way of life.

Sincerely,
Chris Johnson
F/V North Star

Cole Christiansen
KC Fisheries
12/22/2019 09:05 PM AKST

RE: PROPOSAL 61 Amend the Cape Igvak Salmon Management Plan to increase the minimum expected sockeye salmon harvest thresholds from 300,000 to 600,000 prior to July 8 and 600,000 to 1,000,000 fish after July 8, and from 600,000 to 1,000,000 fish in years when runs are as strong as expected

if the threshold is doubled, or near doubled, Kodiak fishermen will rarely ever have an opportunity to fish the surplus historically provided in the Cape Igvak section. This proposal would essentially cut Kodiak out of our historic fishing ground and damage the community by reducing our harvest opportunity.

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 61

Dear Chairman Morisky and Board of Fisheries Members,

My name is Danielle Ringer and I appreciate the opportunity to comment on proposals before the Board at the Kodiak finfish meeting. I live in Kodiak with my husband and we own and operate the 38-foot F/V North Star. We chiefly rely on salmon seining and cod and rockfish jigging to maintain our fishing way of life and ability to live on Kodiak Island. I hold a Master's degree from the University of Alaska Fairbanks in Political Ecology of Fisheries and was one of the researchers on the Graying of the Fleet study in the Kodiak region.

This proposal is simply a grab for fish. This proposal puts forth an arbitrary benchmark of changes to minimum catch for Chignik fishermen seeking reallocation away from Kodiak to Chignik fishermen without justification. The proposer asks that harvest triggers be increased to a level where a fishery in the Cape Igvak section is unlikely to occur. The Cape Igvak management plan is one of the longest standing management plans and one of only two management plans with concrete safeguards for escapements and to ensure the Chignik fisherman get to fish first. The argument that Kodiak fisherman place a negative burden on Chignik runs and the Chignik fishery is false. Run failures in Chignik are in no way the fault of Kodiak fisherman because of the safeguards built into the Cape Igvak Management plan.

Chignik fishermen also argue that Cape Igvak is not an important fishery for Kodiak and that we don't need it anymore. This is also not true. On years of relative abundance of Chignik bound sockeye with a high harvest rates in the Chignik area, Kodiak fishermen are allowed access to their historical Cape Igvak fishery, where up to 25% of total KMA sockeye harvest occurs. On particularly poor years in Kodiak, such as 2016, the Cape Igvak fishery provides a critical lifeline for Kodiak fishermen who have recently endured historically poor local pink and chum runs during even years.

Rural villages in the Kodiak Archipelago are struggling and protecting our region's traditional and historic salmon fishery is of utmost importance to prevent further negative impacts on these communities. Small boat harbors are emptying. Communities are depopulating and facing social problems. Schools are closing. For the Alutiiq peoples whose culture and economy has been built around fishing for 7,500 years this recent fisheries dispossession is especially egregious. Within one generation, there's been a:

- 75% decrease in families fishing
- 70% decrease in individual halibut IFQ holdings
- 100% decrease in individual sablefish IFQ holdings

• 85% decrease in the number of young people owning state fishing permits
• 70% decrease in the number of state fishing permits overall

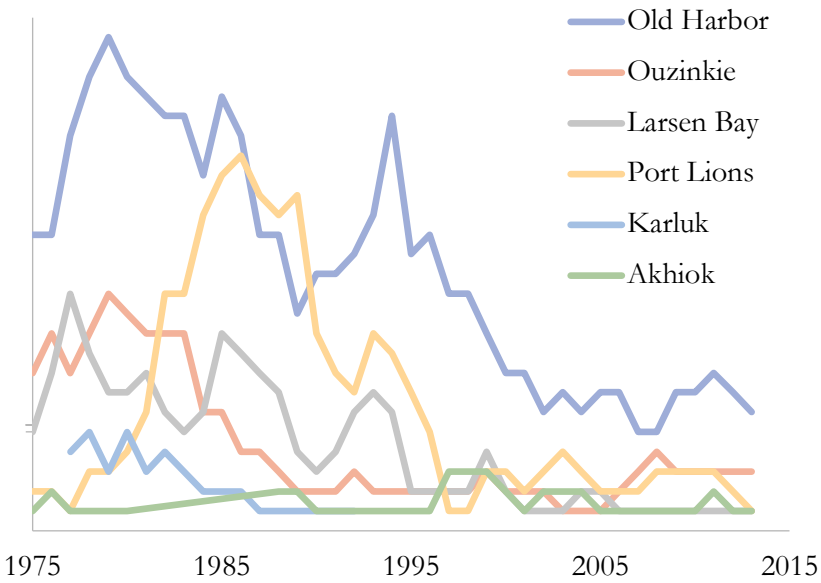


Fig. 1 Alaska limited entry permit holders under age 40 in Kodiak Archipelago communities, 1975-2013. Data: CFEC.

Please do not accept proposals from Chignik seeking to hack away at Kodiak's salmon fishery and way of life. I see no biological, scientific, historical, economic, nor sociocultural reasons that could justify the Board making any changes to the Cape Igvak management plan and thus create ripple effects negatively impacting Kodiak fishermen, processing workers, and community businesses. Thank you for your consideration of my comments and I look forward Board of Fisheries members spending time in our fishing community during the Kodiak meeting.

I humbly request the Board to reject this proposal.

Respectfully,
Danielle Ringer, M.A.
F/V North Star

Dave Kubiak
F/V Lara Lee
12/21/2019 01:42 PM AKST

RE: PROPOSAL 61 Amend the Cape Igvak Salmon Management Plan to increase the minimum expected sockeye salmon harvest thresholds from 300,000 to 600,000 prior to July 8 and 600,000 to 1,000,000 fish after July 8, and from 600,000 to 1,000,000 fish in years when runs are as strong as expected

This is a preposterous proposal, intending to cut Kodiak out of its traditional catches in the Cape Igvak Area. The Cape Igvak Management Plan is working just fine. The catches at Chignik are at low cycle, due to causes that are poorly understood, but are not as a result of the Cape Igvak allocation. While I am sympathetic to the pain of the low sockeye returns to Chignik, this does nothing to bring those fish back. This is just an attempted fish grab.

Donald Lawhead

12/26/2019 10:54 PM AKST

RE: PROPOSAL 61 Amend the Cape Igvak Salmon Management Plan to increase the minimum expected sockeye salmon harvest thresholds from 300,000 to 600,000 prior to July 8 and 600,000 to 1,000,000 fish after July 8, and from 600,000 to 1,000,000 fish in years when runs are as strong as expected

The mangement plan has worked fine since 1978. During years of high production Kodiak fisherman get openings. During years of low production there is few or no opening.

Fred Stager

F/V Lady Lu

December 12, 2019

Alaska Board of Fisheries Board Support Section

P.O. Box 115526 Juneau, AK 99811-5526

RE: Opposition to Proposal 61

Dear Chairman Morisky and Board of Fish Members,

This proposal is a fish grab plain and simple. It sets harvest triggers so high for a Cape Igvak fishery as to make it unavailable in most years.

Run failures in Chignik are not the result of the Kodiak fleet harvesting 13% of the run. This traditional harvest doesn't even occur until safeguards ensuring adequate escapement and a modest Chignik harvest are met.

The Cape Igvak Management plan has proven itself as a successful management strategy. **Please vote no on Proposal 61.**

Thank You- Fred Stager

garrett kavanaugh

12/27/2019 05:13 PM AKST

RE: PROPOSAL 61 Amend the Cape Igvak Salmon Management Plan to increase the minimum expected sockeye salmon harvest thresholds from 300,000 to 600,000 prior to July 8 and 600,000 to 1,000,000 fish after July 8, and from 600,000 to 1,000,000 fish in years when runs are as strong as expected

Dear Chairman and Members of the Board, As a young fishermen who is working their way into the Kodiak Salmon fishery this proposal will cause Kodiak fishermen to lose a substantial amount of their catch. I have been investing into the Kodiak salmon fishery as much as possible, in 2019 I purchased a Kodiak salmon permit. I ran a seiner for the month of august. I plan on running the same boat for the entire 2020 salmon season in Kodiak. When I was younger I remember testifying against proposals similar to these. These proposals are re-allocations of Kodiak historical catch. Kodiak has always had intercept fisheries and we already have management plans in place that have been effective for the Kodiak salmon fishery. Please help ensure the future for young fishermen entering into the Kodiak Salmon fishery, and the people who have been investing and are established in the fishery. Thank you for considering these comments, Garrett Kavanaugh

Iver Holm

12/27/2019 11:53 PM AKST

RE: PROPOSAL 61 Amend the Cape Igvak Salmon Management Plan to increase the minimum expected sockeye salmon harvest thresholds from 300,000 to 600,000 prior to July 8 and 600,000 to 1,000,000 fish after July 8, and from 600,000 to 1,000,000 fish in years when runs are as strong as expected

Dear Chairman Morisky and Board of Fish members: I am 31 years old and a life long resident of Kodiak. I grew up set netting in Uganik on the west side of the island with my mother until i was 14. I then started seining with my father until I was able to buy my own Kodiak seine operational the age of 27. Please oppose proposal 61, if it where adopted the Igvak section would almost never open except for the absolute strongest chignik sockeye runs. thank you for your time sincerely Iver Holm

James C Calhoun

12/26/2019 12:33 PM AKST

RE: PROPOSAL 61 Amend the Cape Igvak Salmon Management Plan to increase the minimum expected sockeye salmon harvest thresholds from 300,000 to 600,000 prior to July 8 and 600,000 to 1,000,000 fish after July 8, and from 600,000 to 1,000,000 fish in years when runs are as strong as expected

I have been intimately involved in the Kodiak seine fishery since 1968 to present. Presently my son is fishing the Kodiak area and it is my desire to have my grandsons be able to participate in a healthy Kodiak fishery if they so desire. Throughout my career I have come to the conclusion that the ADF&G management for Kodiak has been stellar and has kept the stocks in Kodiak healthy overall with the current management plan. The current management plan disallows fishing time in the Cape Igvak section when chignik runs are weak, but still allows kodiak fishers access to their traditional fishery when runs are more robust. C. Igvak early run has been closed 4 out the last 6 years. Alaska boats and permits asking value is $40,000 for Kodiak permit and Chignik permits are $100,000. I believe Kodiak fishers deserve acess to their traditional fishery under the present management plan. I oppose proposal 58.

RE: PROPOSAL 61 Amend the Cape Igvak Salmon Management Plan to increase the minimum expected sockeye salmon harvest thresholds from 300,000 to 600,000 prior to July 8 and 600,000 to 1,000,000 fish after July 8, and from 600,000 to 1,000,000 fish in years when runs are as strong as expected

My name is Jamin Hall, my wife and I have a set net site in Uganik Bay. I am writing in opposition to proposal 61.

Ken Christiansen
F/V Mary Ann
12/26/2019 02:53 PM AKST

RE: PROPOSAL 61 Amend the Cape Igvak Salmon Management Plan to increase the minimum expected sockeye salmon harvest thresholds from 300,000 to 600,000 prior to July 8 and 600,000 to 1,000,000 fish after July 8, and from 600,000 to 1,000,000 fish in years when runs are as strong as expected

Any change to a management plan should be based on scientific reason. Outcry from one user group to take from another is simply a knee-jerk reaction with a sense of immediate gratification but not necessarily improved results. The recent run failures in the Chignik area may be related to normal cycles, climate change, past overfishing, poor spawning conditions, poor brood stock survival conditions, or other as of yet unknown reasons. Cape Igvak is a traditional fishery for Kodiak Fisherman, Thorvold Olsen, Billie Berestoff, Alfred Torsen, Marius Olsen, and Antril Suydam, to name a few, dating back to the 1960's, when boats were constructed of wood and were much smaller than the 58" limit seiners of today; and prior to the Cape Igvak Management plan. The Cape Igvak Managment plan is one of the longest standing management plans and one of only 2 management plans with concrete safeguards for escapements and to ensure the Chignik fisherman get to fish first on. This is in no way any fault of the Kodiak Fishermen!

Kodiak Salmon Work Group
c/o Kodiak Regional Aquaculture Association
104 Center Ave., Suite 205
Kodiak, Alaska 99615

December 27, 2019

Chairman Morisky
Alaska Board of Fisheries
Boards Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: CAPE IGVAK MANAGEMENT PLAN
Chignik Proposals 58, 59, 60, 61, 62

Dear Chairman Morisky and Board Members:

The Kodiak Salmon Work Group (KSWG) is an ad hoc committee created to address the issues of Cook Inlet bound sockeye captured in the Kodiak Management Area and the continuation of the Cape Igvak Management Plan. Membership is open and encompasses seiners from both Kodiak seine organizations, setnetters from both Kodiak setnet organizations, beach seine permit holders and processors. In other words, all of Kodiak's salmon fishing community. The group is supported by voluntary stakeholder contributions including those from the City of Kodiak and the Kodiak Island Borough.

KSWG is herewith submitting several documents for the Board's review: 1. Structure and Function of the Kodiak Management Area Salmon Fisheries; 2. Review of Cape Igvak Salmon Management Plan and Proposals to the Alaska Board of Fisheries; and 3. Economic Analysis of Proposals 58, 60,61 and 64. An informational map is attached as well.

Cape Igvak Management Plan (Proposals 58-62)

Chignik's four substantive proposals regarding the Cape Igvak management plan don't outright request that the Board set aside the plan. Instead they focus on provisional changes that would

gut Kodiak's Cape Igvak fishery. Proposal 58 with the date change would reduce, on average, Kodiak's fishery by 79%. Proposal 59 is an accounting change that would reduce the Cape Igvak fishery by about 20%. Proposal 60, like proposal 58, would reduce Kodiak's revenues by about 67% and proposal 61 comes in with a 69% reduction. The fifth proposal (Proposal 62) is a record-keeping proposal that is untenable.

The Cape Igvak Management Plan is embedded in the Mixed Stock Fisheries Policy: "Most mixed stock fisheries are long standing and have been scrutinized many times by past Boards. Consequently, existing regulatory management plans are understood to incorporate conservation burden and allocation" (Allocation Criterion 2). Chignik's guaranteed catch allocation of 300,000 fish (early run) and 300,000 (late run) was a clear balancing in the original plan, favoring Chignik by providing an economic safety net. In addition, Kodiak would share the conservation burden in that the escapement would be assured before Kodiak would go fishing. On the other hand, if Chignik gets its escapement and minimum guaranteed catch, then Kodiak is allowed to harvest up to approximately what was historically caught in the fishery. This is a fairly balanced plan, if not already overbalanced to Chignik's advantage!

Also, the Board states in Allocation Criterion 3, "The policy should recognize that salmon resources are generally fully utilized and that stability is an important aspect of the fisheries." Why is stability important? Many salmon stakeholders make investments and commitments based on regulatory stability. If salmon management plans are subject to change with every Board cycle, fishery values (ex-vessel, permit and gear) will decrease as uncertainty increases, conservation may be compromised, and stakeholders will be encouraged to try to "get a better deal" at each successive Board meeting.

The history of the Cape Igvak Management Plan (Allocation Criterion 1) is of critical importance to understanding why it was developed and how it was balanced between stakeholders. Prior to the plan Kodiak could fish at Cape Igvak any day that the Chignik fleet fished. The "day for day" fishing caused area managers concern that Kodiak's fishing could impact a weaker "second run" to Chignik. Consequently, the catalyst for the Cape Igvak Management Plan was conservation of Chignik's runs. The plan balanced the conservation burden between the two

areas. The plan has been in place for 42 years and has had constant review over multiple Board cycles. Its durability establishes it as one of the marque fishery management plans in the State of Alaska. Changing a plan of such long duration without significant "new information" or "new fishing patterns" or "stock of concern" assessments or anything other than a proposer's feeling that something should be changed, compromises and undermines the Board's standing as a fair and impartial deliberative body.

The functionality of the Cape Igvak Management Plan as a conservation plan is seen in the plan's application over the past five years. Because of low Chignik escapements there was no Cape Igvak fishery during 3 seasons. Period! Kodiak cannot be held responsible for any of the current biological or economic issues in Chignik due to low Chignik sockeye returns. Kodiak did not fish at Cape Igvak.

The proposer's assertion, under Allocation Criterion 4, that Kodiak's salmon fishermen have more "alternative resources" is a false assertion. If this means that Kodiak has more salmon numerically or by species, then the Board must also recognize that Kodiak's salmon are divided between approximately 180 active seine fishermen and approximately 150 setnet fishermen ---in contrast to about 75 active Chignik permits. Resource availability is reflected in individual gross earnings. Chignik permits, on average over time, continue to earn more than Kodiak fishermen and, consequently, their permits are worth more in the market. "Alternative resources" in this sense would mean that Kodiak had less "alternative resources" per active permit holder than Chignik.

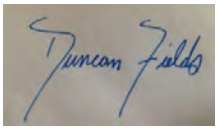
If the "alternative resources" idea means that Kodiak has more "species" available than Chignik salmon fishermen, this too is false. Both Kodiak and Chignik fishermen have access to halibut and cod in their areas although the Federal cod season is now closed in both areas. Only two or three Kodiak salmon fishermen are involved in the Gulf of Alaska trawl fisheries --- a fishery that limits participation with high costs of entry. Both Chignik and Kodiak have historically had a Tanner crab season. While Kodiak currently has a very small Tanner crab quota, only a subset of the Kodiak salmon fleet (like the Chignik fleet) have limited entry permits for the Tanner crab fishery. The Kodiak herring fishery is essentially gone. Kodiak fishermen, especially those from

Old Harbor, Akhiok, Ouzinkie, Port Lions and Larsen Bay just don't see what "alternative resources" are available in Kodiak that Chignik doesn't have. All rural communities in the Gulf of Alaska under about 1,500 people are struggling to survive on their fisheries economy--- which is now almost exclusively salmon.

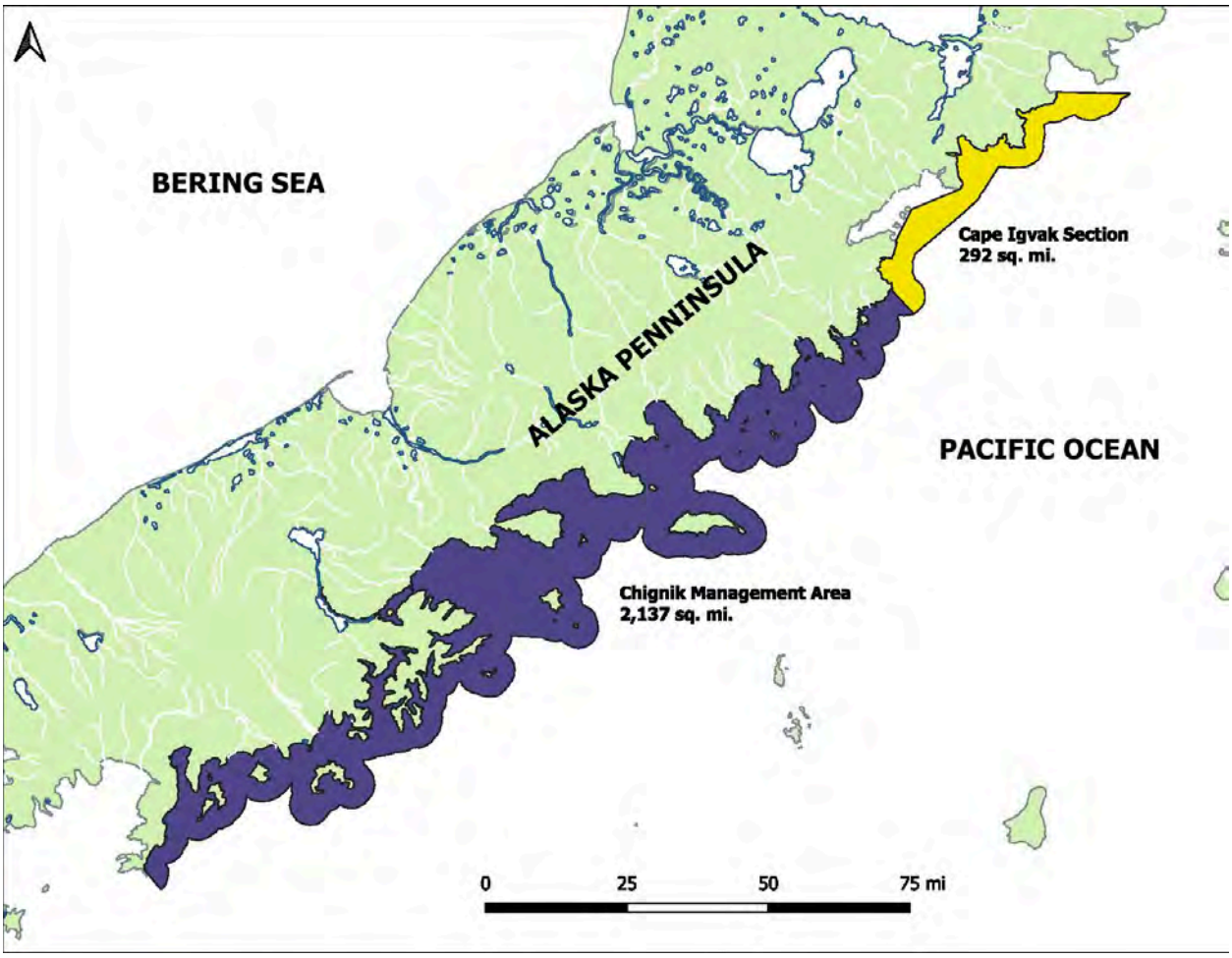
Finally, "The importance of the fishery to the economy of the region and the local area" (Allocation Criterion 7) favors Kodiak. The loss of the Cape Igvak fishery would cost Kodiak fishermen, on average, almost 4 million dollars. At best, the Igvak fishery would increase earnings by a subset of fishermen that actually live in Chignik or the Chignik region by less than an average of 12.0%. While not insignificant, the Igvak fishery is of reduced "importance to the economy of the Chignik region" when compared with the decline of active vessels and the number of Chignik fishermen that are now fishing in Kodiak and Prince William Sound. See further: Review of the Cape Igvak Management Plan and Proposals to the Alaska Board of Fisheries, Proposal 58 Economic Analysis, Proposal 60 Economic Analysis and Proposal 61 Economic Analysis.

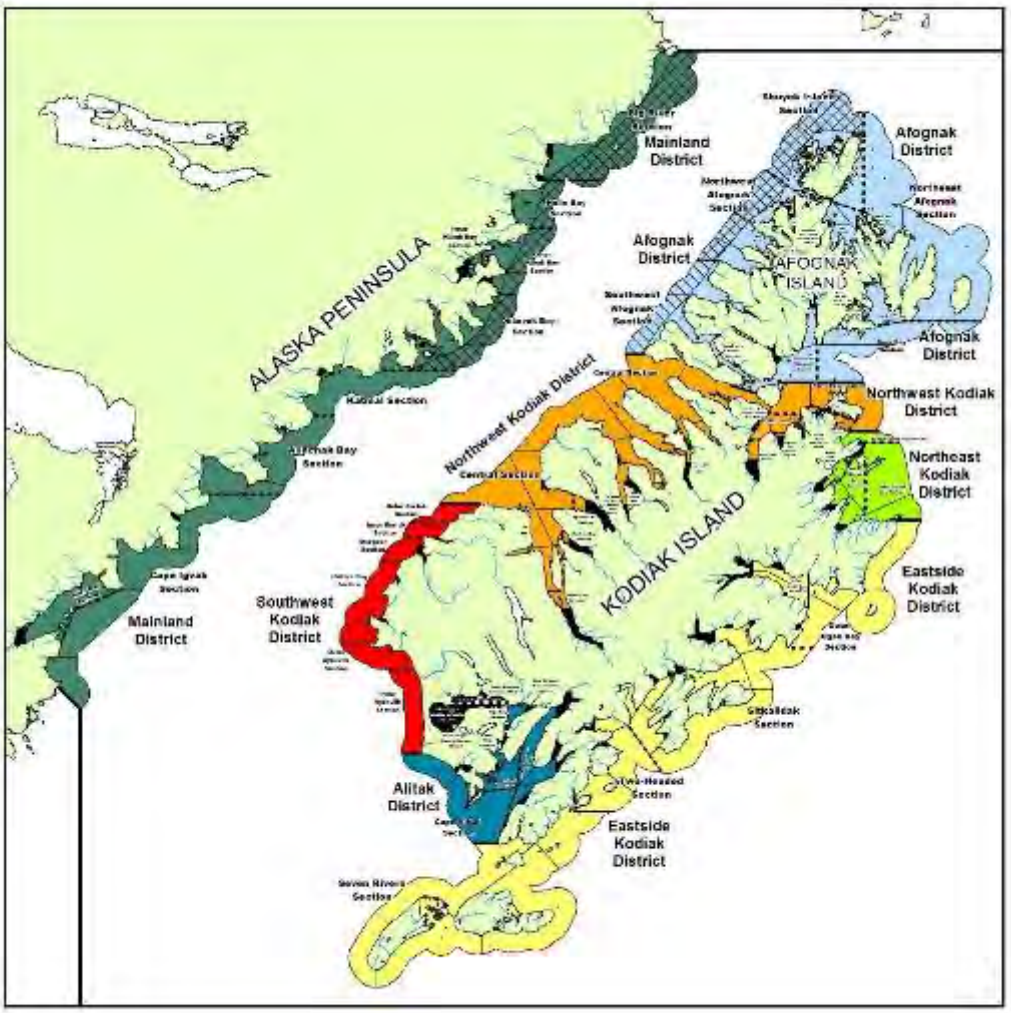
In summary, it is the position of the Kodiak Salmon Work Group that the Board should vote NO on proposals 58, 59, 60, 61, 62 and 63. These proposals are not supported by the Board's allocation criteria and do not have a rational relationship to Chignik's conservation needs.

Very truly yours,



Duncan Fields, Chairman


BERING SEA
ALASKA PENNINSULA
PACIFIC OCEAN
Cape Igvak Section
292 sq. mi.
Chignik Management Area
2,137 sq. mi.
0
25
50
75 mi



Review of Cape Igvak Salmon Management Plan and Proposals to the Alaska Board of Fisheries

Kodiak Salmon Working Group

Executive Summary

- The Cape Igvak Salmon Management Plan (CISMP) has been in place since 1978 and allocates 15% of total Chignik sockeye harvest to Cape Igvak (Kodiak Management Area) after Chignik is guaranteed 600,000 harvest from early and late runs combined, and escapement goals are projected to be met.
- Management strategies under CISMP have been very successful in meeting the sockeye allocation objective and providing escapements within goals.
- Recent genetics studies are robust, but limited sampling with highly variable results does not in itself justify changes to the management plan.
- Genetic results show that the current regulatory assumption that 90% of Igvak sockeye harvests are Chignik bound fish is overly conservative; all samples showed substantially lower contributions of Chignik-bound sockeye to the Igvak harvests.
- Board of Fisheries proposals to alter metrics guiding the Cape Igvak Salmon Management Plan are not well supported by available data.
- The long-standing Cape Igvak plan appears to be working well in terms of limiting harvest of Chignik origin sockeye through harvest guarantees to Chignik, and meeting escapement goals for early and late runs of Chignik sockeye.

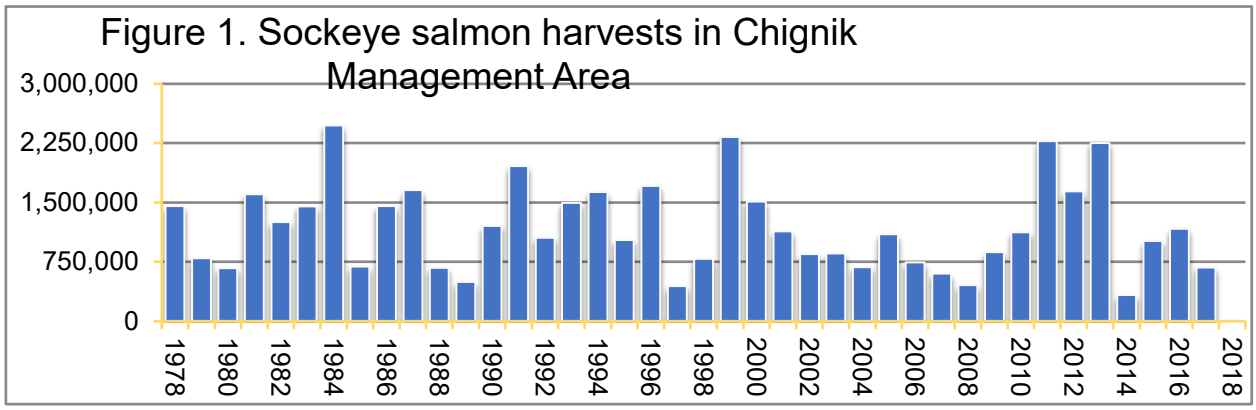
Cape Igvak Salmon Management Plan

A purse seine fishery has been active along capes in the Cape Igvak section of Kodiak Management Area (KMA) since 1964. Following a tagging study in 1969 (ADFG, unpub. data) where 84% of released tags were recovered in Chignik Area fisheries, periodic modifications to the fishery were directed by the Alaska Board of Fisheries. In 1978, the Cape Igvak Salmon Management Plan (CISMP) was adopted to restrict harvest of Chignik bound sockeye at Cape Igvak. The fishery is one of two in the state (the other is the Southeast District Mainland, Area M) in which harvest and escapement triggers from an adjacent management area (both Area L-Chignik) must be met before the fishery can open. From beginning of the fishing season to July 25, Chignik fishermen must harvest a minimum of 600,000 sockeye salmon (300,000 from both early and late Chignik runs) and adequate escapements for both runs must be projected to occur before harvest will be allowed in Igvak. KMA fishermen at Cape Igvak are allocated 15% of the total Chignik harvest. The Board stipulates that 90% of the harvest at Igvak and 80% of the harvest in Southeast District Mainland (Area M) are Chignik bound fish (Anderson et al., 2019, Wilburn, 2019). Proposals to the Board for the 2020 Kodiak Management Area focus on specific metrics in the plan.

Since the CISMP plan came about, management has been very effective at meeting the allocation objectives in the plan. Only four times in forty years has the 15% target been exceeded by more than 1% (Anderson et al., 2019), which is probably within reasonable expectations for management error. Harvests of Chignik bound fish at Igvak obviously go up and down with Chignik harvests and the Igvak fishery has been closed, or catches extremely low, three times between 2014 and 2018 due to poor

runs and lower harvests in Chignik. On the other hand, Igvak sockeye harvests were much more robust in 2011 and 2013 when Chignik sockeye harvests exceeded 2 million sockeye (Anderson et al., 2019). While Chignik sockeye harvest was essentially zero for 2018, the forty year history shows wide fluctuations, with two of the lowest and two of the highest harvests occurring in the past ten years (Figure 1). Average Chignik sockeye harvests between 1998 and 2018 were about 15% lower than harvests in the previous two decades, 1978-1997. However, three of four harvests over 2 million fish were also in the most recent two decades (Figure 1).

The management plan has also been effective from a conservation and sustainability standpoint. Early and Late sockeye runs to Chignik River have met or exceeded their respective escapement goals every year since 1980, until the run failure in 2018, when the early Chignik sockeye run failed to meet the escapement goal (Munro, 2019).



Recent Genetics Studies in Igvak Section

In the recent fishery genetic stock identification study in KMA, Shedd et al. (2016) added two sampling strata (early and middle) for Cape Igvak Section in each of the three study years, 2014-2016. No Igvak samples

were taken in 2014 because low Chignik harvest numbers kept the area closed to commercial harvest. In 2015, only the July stratum (middle) was sampled as Igvak was again closed in June due to inadequate sockeye harvests in Chignik Management Area. Harvest of Chignik fish in Igvak was estimated as 2,059 fish (total harvest 6,595) in the middle stratum, 2015. In both 2014 and 2015, the management plan had its intended effect of keeping Igvak closed or limited when Chignik harvests were low. In 2016, with a stronger Chignik run, an estimated 114,412 Chignik sockeye were harvested in the early (June) stratum. An estimated 10,006 Chignik bound sockeye were harvested at Igvak in July (Shedd et al., 2016).

While it is clear that Chignik fish were captured at Igvak in both years, with only three temporal strata sampled over a three year period, including a single datum for early strata harvests, specific conclusions about patterns of presence, magnitude or vulnerability of Chignik bound fish in Igvak fisheries are unwarranted. The single early (June) stratum sampled from the three year period estimated harvest of Chignik bound sockeye an order of magnitude larger than the two middle stratum harvests from 2015 and 2016. These data emphasize wide variation for Chignik bound sockeye harvests at Cape Igvak, and do not support substantive changes to the current management plan.

Data in Shedd et al. (2016) also does not support the presumption in the management plan that 90% of sockeye salmon harvests in Igvak are Chignik bound fish. The single middle stratum (July) estimate from 2015 found 31.2% Chignik sockeye from a total harvest of 6,595. The middle stratum estimate from 2016 was much lower, where only 5.6% of the sampled harvest were Chignik fish (total harvest 177,315). The sole early stratum (June) contribution in 2016 was much higher, estimating 74.1% of

Igvak harvests were Chignik origin (total harvest 154,318), but still did not reach 90%. The assumption that 90% of Igvak harvests are comprised of Chignik bound fish is very uncertain. Other genetic studies suggest uncertainty for similar assumptions in Southeast District Mainland (SEDM, Area M) fisheries, where Chignik bound sockeye are thought to represent 80% of sockeye harvested. Dann et al., (2012), showed that the overall proportion of Chignik bound fish harvested in SEDM was very consistent in 2010, 2011, and 2012 at 65%, 67% and 66% respectively, excluding the Northwest Stepovak Section in July.

Board of Fisheries Proposals

There are five proposals before the board which address the Cape Igvak fishery. Four of these seek to more severely curtail the fishery through specific alterations to metrics of the management plan. They propose completely eliminating fishing at Igvak prior to July 8 (proposal 58), lowering the board approved allocation of Chignik bound fish to KMA fishermen at Igvak from 15% to 5% (proposal 60), or dramatically raising Chignik harvest thresholds upon which Igvak fishery openings are predicated (proposal 61). A fourth proposal suggests that accounting practices for total Chignik harvest be changed such that harvests in Southeast District Mainland (Area M) and Igvak are no longer considered part of the Chignik total harvest. None of these proposals provide credible, data-driven justification for changing longstanding management plans. Recent genetic stock identification results reflect very limited sampling at Cape Igvak (Shedd et al. 2016) and as a result, insight regarding harvest patterns of Chignik sockeye in Igvak fisheries is narrow. There is no doubt that stock composition and harvest estimates are accurate and precise, but

only three strata in two different years were analyzed, where estimated harvest numbers of Chignik bound fish at Igvak were an order of magnitude different between them.

- **Proposal 58** would close Cape Igvak to fishing until July 8, based on increases in KMA harvests and declines in Chignik harvests. However, Chignik fish represented a relatively minor component of Westside KMA harvests sampled in Shedd et al. (2016) and there is no data linking historical harvests in KMA to Chignik harvests. Increases in KMA sockeye harvests over the years most-likely resulted from greater harvests of local sockeye stocks and sockeye from enhancement efforts by Kodiak Regional Aquaculture Association, which averaged about 345,000 during 2008 - 2017 (Anderson et al., 2018). Though Chignik suffered a run failure in 2018, long term average harvests during 1998-2018 are only 15% smaller than those from 1978-1997.

- **Proposal 59** seeks to change fishery accounting practices in CISMP by eliminating SEDM and Cape Igvak harvests from the total Chignik sockeye harvest, for allocation purposes within the plan. Currently 80% of sockeye harvested in most areas of SEDM and 90% of sockeye in Igvak are assumed part of total Chignik harvest. The effect of this is that allocation percentages would be reached sooner and harvests at Cape Igvak would be smaller. If the management plan assumes a specific percentage of Chignik origin fish in SEDM or Igvak, it must be included in

allocative accounting. It would be inappropriate to address only Igvak with such a proposal.

- **Proposal 60** would lower the allocation percentage of Chignik sockeye to Cape Igvak fishermen from 15% to 5% supposedly because at the inception of the management plan, KMA sockeye harvests were weak and Chignik harvests were robust, and now the situation is reversed. While KMA sockeye harvests have improved since 1978 due to local stock performance and enhancement efforts, there is no evidence that any declines of CMA sockeye harvests are tied to Cape Igvak sockeye harvests. Chignik harvests show wide variation since 1978 as many salmon systems do. Two of the highest and two of the lowest Chignik area sockeye harvests have occurred during the last decade (Figure 1). This proposal would significantly reduce harvest in Kodiak's longstanding fishery at Cape Igvak without justification.

- **Proposal 61** would raise harvest thresholds for the early and late Chignik run combined from 600,000 to 1,000,000 sockeye before Igvak could open and guarantee a harvest of 1,000,000 sockeye to Chignik fishermen. The proposal would probably close the Igvak fishery. Justification is based on unstated changes in assumptions and economic conditions that have occurred since inception of the management plan. This is essentially the same proposal submitted to the Area M board meeting in 2019 to

severely curtail the SEDM fishery, which the Board of fisheries rejected.

Proposal 62 creates mandatory reporting for vessels entering or leaving Cape Igvak section. It is likely unworkable and ineffective for fisheries managers to perform this monitoring.

Literature Cited

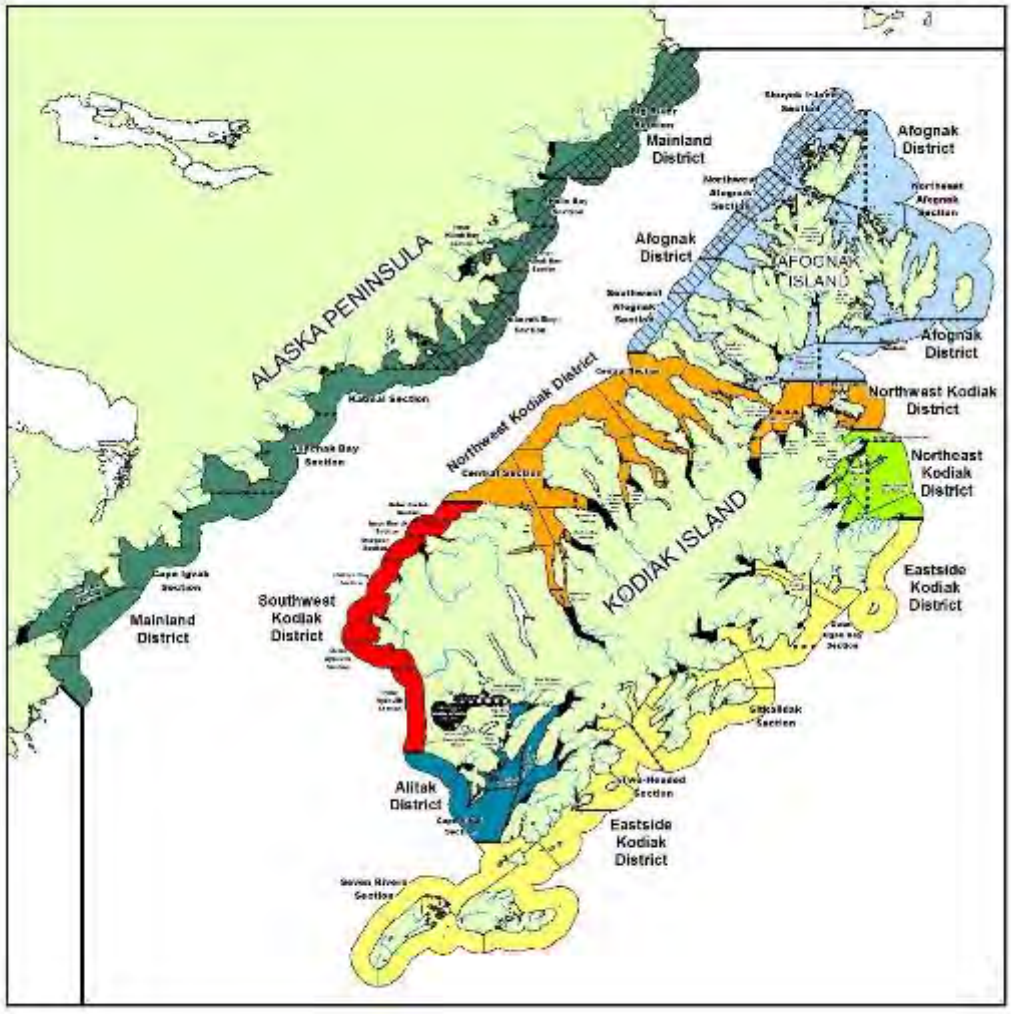
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Wilburn, D. M. 2019. Chignik Management Area commercial salmon fishery harvest strategy, 2019. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 4K19-09, Kodiak.



Economic Analysis Proposal 61

Kodiak Salmon Workgroup

Key Findings

- Overall, changes from Proposal 61 would result in an economic loss in the Kodiak Borough of more than two million dollars a year.

- On average, restrictions during the effected years would result in more than 65% of the current sockeye catch being eliminated.

- The complete implementation of proposal 61 would result in an average foregone harvest worth at least $1.37 million ex vessel price per year among affected fishermen.

$1.37 Million Dollars Yearly Direct Loss to Fishermen

- Direct loss of foregone sockeye harvest per year ranges from $5,500 to $2.99 million over the time period examined (1998-2019). The mean foregone sockeye harvest is valued at $1.13 million per year, using each year's prices.

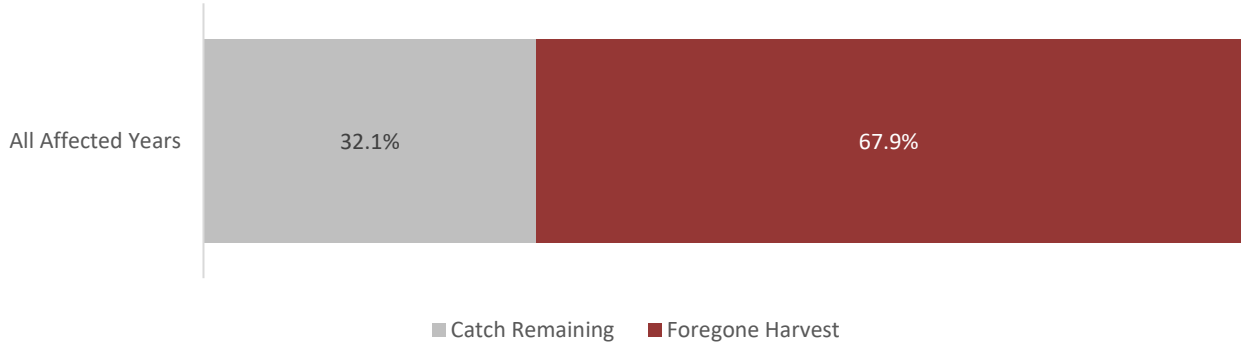
$2.05 Million Dollars Annual Economic Loss in the Kodiak Borough

- Sockeye loss per permit holder affected ranges from $300 to $41,000 per year (mean $17,000), depending on number of affected fishermen and count of foregone sockeye harvest.

- Total foregone harvest among all species is estimated to be 1.45 million pounds per year worth an average of $1.37 million per year, using each year's prices. Average loss per affected permit holder estimated to be $26,000 per year.

- Species specific foregone harvest ex vessel price estimated to range between $0 (coho) to $2.99 million (sockeye) per year.

Average Revenue Loss Per Year



Background

The 2019-2020 Board of Fish, Kodiak Finfish Proposal 61 will amend the Cape Igvak Management Plan to increase the minimum expected sockeye salmon harvest thresholds. The proposal will increase harvestable surplus above escapement goals from 300,000 to 600,000 and from 600,000 to 1,000,000 and change the definition of the Chignik sockeye count. The proposal raises minimum harvest counts required before the opening of the Cape Igvak fishery and imposes further limits if the Chignik harvest is not expected to exceed 1,000,000 sockeye. The proposal redefines the Chignik sockeye count to include only the Chignik Management Area before July 8th. Currently the Chignik area includes all sockeye harvest in the Chignik Management Area, 80% of sockeye harvest in East Stepovak, Southwest Stepovak, Stepovak Flats, Balboa Bay, and Beaver Bay Sections and 90% of sockeye harvest in Cape Igvak.

Proposal 61 is only focused on the Cape Igvak section, Kodiak Mainland District.

Link to Proposal:
https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2019-2020/proposals/58.pdf

Data Sources

Foregone harvest days count and pound data was provided by the State of Alaska, Department of Fish and Game daily harvest reports. Price data for 1998-2018 was provided from the State of Alaska, Department of Fish and Game *Commercial Operator's Annual Reports* (COAR). 2019 price data was not available through the COAR report at the time of this analysis. 2019 price data is estimated from the five-year average of the reported 2014-2018 price per pound per species (see methods below). Multipliers for indirect and induced economic impact were commissioned from the US Department of Commerce, Bureau of Economic Analysis specifically for the Alaska commercial fishing industry. Inflation rates are provided from the US Department of Labor, Consumer Price Index. Tax information is from the State of Alaska, Department of Revenue and the Kodiak Borough.

Data Methods

Economic impact is estimated using historical harvest data from 1998-2019. Proposal 61 applies to Cape Igvak, which is a purse seine fishery. For the period prior to July 8th, no fishing occurred in Cape Igvak in 1998, 2008-2009, 2014-2015, and 2018-2019.

Proposal 61 would be in effect for 21 of the 22 years affected (all except 2018 with historically low runs).

The value of foregone harvest is calculated as species-specific foregone harvest pounds multiplied by species-specific Kodiak area price per pound for each year. Foregone harvest counts and economic impact are calculated for Cape Igvak as a whole. The number of permit holders affected by proposal 61 is calculated as the maximum number of unique permits during the closure period in harvest records.

Species specific prices per pound for each year between 1998-2018 were obtained from the Fish Game COAR for each individual year. The total net weight in the Kodiak area for each species for each season is divided by the respective net value.

Final 2019 COAR price per species data is not available. Species specific price for 2019 was estimated as a five-year average of available COAR data (2014-2018). Verification of 2019 data with the KSWG provided spreadsheets using Icicle, Ocean Beauty, and Pacific season prices for 2017-2019 compared to COAR for 2017, 2018. The spreadsheet values varied from published COAR by both higher and lower values up to 20%. The five-year average was much closer to 2017 and 2018 prices than the spreadsheet averages and weighted averages for respective years. The sockeye 2019 season price per pound estimate may be biased downwards given the processor spreadsheet; the COAR numbers were up to 20% lower than provided spreadsheet, and the five-year average is 16% lower than 2019 processor spreadsheet.

Indirect and induced economic loss was calculated from Regional Input-Output Modeling System (RIMS II) type I and type II multipliers. These take into account increase (in this case local loss) in regional economic activity due to change in industry specific earnings. For this report, the fisheries industry specific multipliers were used. Selected industry multipliers are specific to Alaska.

All values are adjusted for inflation and shown in 2019 dollar values.

Direct Losses

On average, in the years effected by Proposal 61, more than 65% of the current catch would be restricted. Overall, these changes would result in an economic loss to the Borough of more than two million dollars a year.

Direct revenue lost to the Kodiak Borough per year:

$1.37 Million Dollars Yearly Direct Loss to Fishermen

$2.05 Million Dollars Annual Economic Loss in the Kodiak Borough

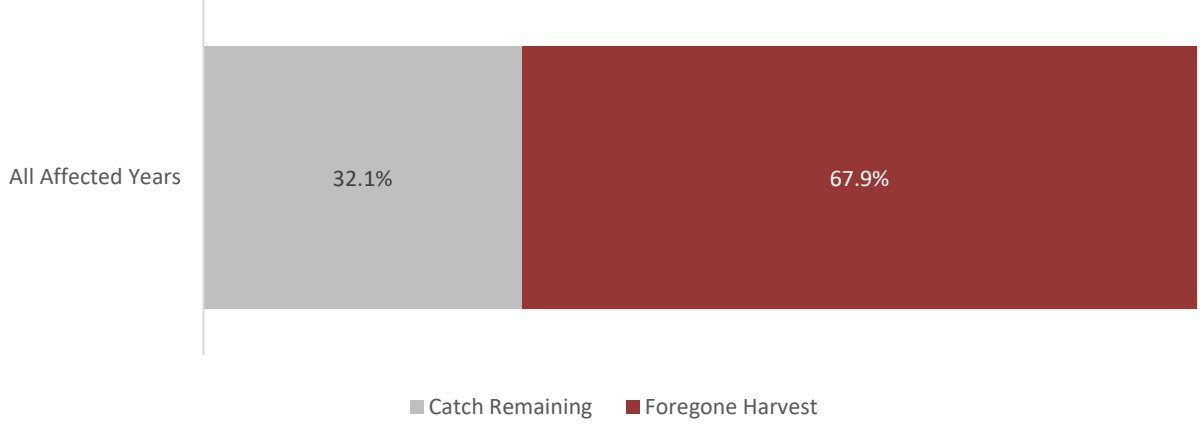
Direct loss per affected year:	**$1.37 Million**
Loss from sockeye fishery:	$1.13 Million
Fisheries employment impact:	12.1 jobs per year
All employment impact:	15.2 jobs per year
Indirect community loss:	$284,074
Induced community loss:	$400,249
Total Annual Borough Loss:	**$2,052,696**

Proposal 61 would have impacts throughout the Kodiak Borough. The direct loss to fishermen would be $1.37 million per year. Of the total loss to the fishery, the limitation on the sockeye fishery comprise the majority of the impact, accounting for $1.13 million of the loss with $240,000 of the total loss distributed among other salmon species.

The direct impact of this proposal will result in a loss of 12.1 fisheries specific jobs and a total of 15.2 jobs overall in the Kodiak Borough per year. In addition to the direct loss impact of $1.37 million, there is a further indirect loss of $284k as a result of lost business to business economic activity for the community from purchases such as fuel, gear, and supplies. There is an additional $400k of induced loss in the community resulting from the lost direct and indirect economic activity (total $1.65 million) and reduced labor market. This impact results in a total loss to the community from direct, indirect, and induced losses of $2.05 million per year.

Fisheries Loss

Chart 1: Average Revenue Loss Per Year



On average, restrictions during the effected years would result in more than 65% of the current catch being eliminated. 21 of the 22 years are affected. Proposal 61 would result in a complete closure of the fishery in 2002-2005, 2008, 2014, and 2019. Over the last 22 years 1998-2019, there have been 17 years where the fisheries losses from these increase restrictions would result in a loss of more than 500k dollars of foregone ex vessel value to the fishery. One of the previous 22 years would be unaffected by the proposal changes. Fishing was severely restricted in 2018 due to historically low run returns.

The sockeye fishery would experience ex vessel losses of more than $500k for 15 of the 21 affected years.

Chart 2: Total Fishery Loss 1998-2019

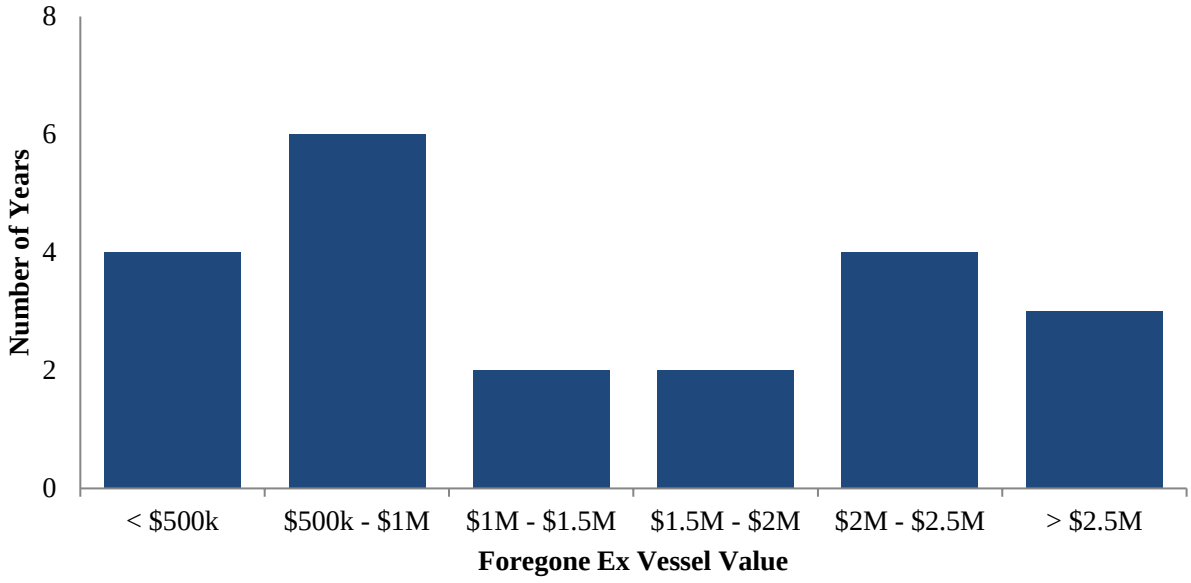
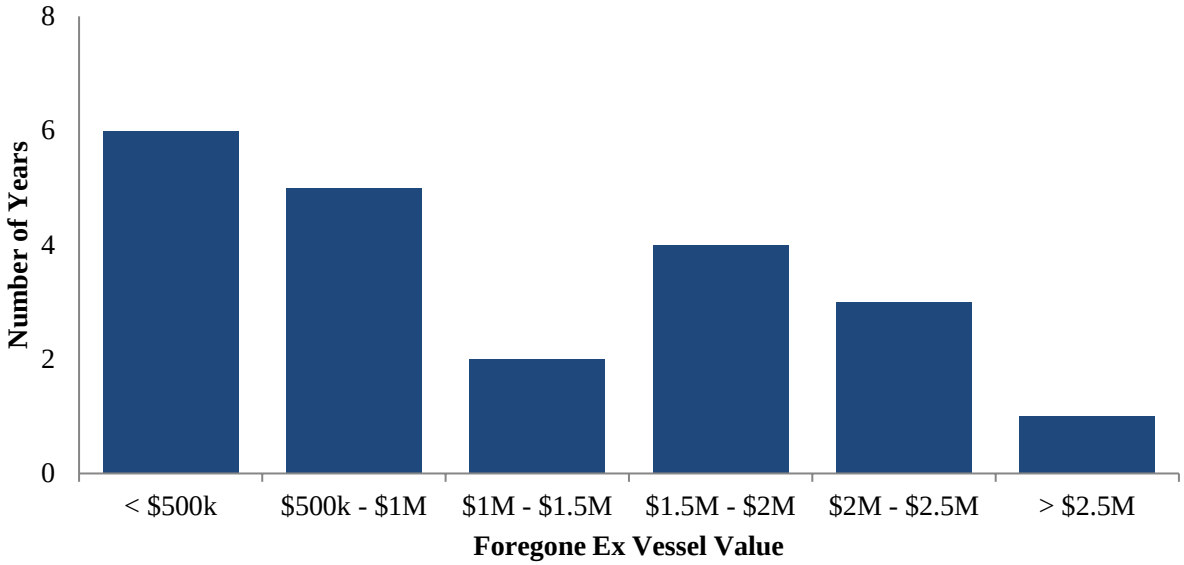


Chart 3: Total Sockeye Loss



The mean direct loss for all species per year is $1,368,372 with a median loss of $1,266,541. If these restrictions were in place the greatest impact would have been in 2019 with a loss of $3,134,923 and the least impact would have been in 1998 with a loss of $23,056.

Table 1: Direct Loss of Proposal 61 Implementation

Year	Direct Loss All Species	Direct Loss Sockeye
1998	$23,056	$17,926
1999	$1,792,067	$1,766,438
2000	$2,360,808	$2,323,611
2001	$2,048,165	$1,640,725
2002	$851,413	$799,675
2003	$719,506	$639,835
2004	$898,710	$869,284
2005	$2,217,289	$1,975,671
2006	$168,071	$139,644
2007	$546,640	$463,954
2008	$703,717	$144,405
2009	$877,409	$576,270
2010	$1,709,608	$1,622,292
2011	$2,385,643	$2,306,321
2012	$2,586,926	$2,450,203
2013	$3,034,590	$2,992,095
2014	$54,444	$29,775
2015	$24,842	$5,456
2016	$1,266,541	$1,159,328
2017	$1,331,454	$1,198,552
2018	No Impact	
2019	$3,134,923	$559,916
Mean	**$1,368,372**	**$1,127,685**
Median	**$1,266,541**	**$869,284**
Min	**$23,056**	**$5,456**
Max	**$3,134,923**	**$2,992,095**

Table 2: Direct Loss of Proposal 61 Implementation Per Fishermen

	Average Loss Per Fishermen – All Species	Average Loss Per Fishermen – Sockeye Only
Mean	**$25,711**	**$17,326**
Median	**$20,104**	**$18,051**
Min	**$1,553**	**$341**
Max	**$87,965**	**$40,837**

Based on the number of active permits per year, individual fishermen would experience a mean direct loss for all species per year of $25,711 with a median loss of $20,104. If these restrictions were in place the greatest impact in the sockeye fishery would have been in 2008 with a loss of $40,837 per fishermen with the least impact in 2015 with an average loss of $341

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Table 3: Loss Per Affected Permit Holder

Year	Permits	Loss per Permit	Total Value Foregone Harvest	2019 Inflation Adjustment
1998	10	$2,306	$14,611	$23,056
1999	126	$14,223	$1,160,665	$1,792,067
2000	126	$18,737	$1,580,192	$2,360,808
2001	81	$25,286	$1,409,611	$2,048,165
2002	69	$12,339	$595,394	$851,413
2003	78	$9,224	$514,668	$719,506
2004	37	$24,289	$659,846	$898,710
2005	71	$31,229	$1,683,590	$2,217,289
2006	46	$3,654	$131,717	$168,071
2007	36	$15,184	$440,484	$546,640
2008	8	$87,965	$588,885	$703,717
2009	28	$31,336	$731,784	$877,409
2010	71	$24,079	$1,448,820	$1,709,608
2011	82	$29,093	$2,087,177	$2,385,643
2012	60	$43,115	$2,309,755	$2,586,926
2013	78	$38,905	$2,748,723	$3,034,590
2014	5	$10,889	$50,133	$54,444
2015	16	$1,553	$22,896	$24,842
2016	63	$20,104	$1,181,475	$1,266,541
2017	83	$16,042	$1,269,261	$1,331,454
2018	No Impact			
2019	39	$80,383	$3,134,923	$3,134,923
Average		**$25,711**	**$1,131,648**	**$1,368,372**

Foregone Tax Revenue

State Taxes	
Fisheries Business Tax (50% Share)	$21,894
SET Tax	$27,367
Total	**$49,261**
Borough	
Resource Severance Tax	$14,710
Fisheries Business Tax (Share of 50%)	$6,992
Total	**$21,702**
Cities (Share of Fisheries Business Tax)	
Akhiok	$1,631
Kodiak	**$6,516**
Larsen Bay	$1,631
Old Harbor	$1,751
Ouzinkie	$1,692
Port Lions	$1,682
Total	**$14,902**

The foregone harvest due to proposal 61 implementation would have tax implications for state, borough, and city budgets. The state implements two relevant taxes in the region: the fisheries business tax (which is shared with local governments) and the salmon enhancement tax (SET). Fisheries business tax rates vary by type of processing activity and the proportion of each is estimated from the State of Alaska's Annual Tax Report for FY18. The salmon enhancement tax rate is 2% in the Kodiak region. The Borough implements a resource severance tax of 1.075% and receives a share of the fisheries business tax from the state. The local city governments also receive a share of the fisheries business tax from the State of Alaska. Borough and city shares of the fisheries business tax estimated from the Borough's FY18 annual tax report.

The implementation of proposal 61 would result in average yearly tax losses of $49,261 to the State of Alaska, $21,702 to the Kodiak Borough, and $6,516 to Kodiak City.

Loss by Species

Table 4: Sockeye Foregone Harvest

Year	Foregone Harvest - lbs	Sockeye Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	9,568	$1.187	$11,360	$17,926
1999	1,058,871	$1.080	$1,144,066	$1,766,438
2000	1,739,030	$0.894	$1,555,295	$2,323,611
2001	1,608,942	$0.702	$1,129,198	$1,640,725
2002	909,868	$0.615	$559,213	$799,675
2003	758,691	$0.603	$457,679	$639,835
2004	976,581	$0.654	$638,241	$869,284
2005	1,869,704	$0.802	$1,500,130	$1,975,671
2006	130,411	$0.839	$109,438	$139,644
2007	374,357	$0.999	$373,855	$463,954
2008	101,203	$1.194	$120,841	$144,405
2009	427,536	$1.124	$480,626	$576,270
2010	969,922	$1.417	$1,374,824	$1,622,292
2011	1,322,182	$1.526	$2,017,779	$2,306,321
2012	1,485,596	$1.473	$2,187,681	$2,450,203
2013	1,488,962	$1.820	$2,710,231	$2,992,095
2014	14,985	$1.830	$27,417	$29,775
2015	5,418	$0.928	$5,029	$5,456
2016	847,930	$1.275	$1,081,462	$1,159,328
2017	755,297	$1.513	$1,142,567	$1,198,552
2018	No Impact			
2019	403,843	$1.386	$559,916	$559,916
Total	**17,258,897**		**$19,186,847**	**$23,681,375**

Table 5: Chum Foregone Harvest

Year	Foregone Harvest - lbs	Chum Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	4,113	$0.19	$782	$1,235
1999	60,327	$0.19	$11,197	$17,287
2000	92,806	$0.22	$20,153	$30,108
2001	626,483	$0.32	$199,942	$290,516
2002	137,679	$0.16	$22,253	$31,822
2003	195,383	$0.14	$27,204	$38,031
2004	125,877	$0.12	$15,458	$21,053
2005	185,393	$0.20	$37,447	$49,318
2006	50,260	$0.33	$16,799	$21,436
2007	110,036	$0.35	$38,731	$48,065
2008	241,433	$0.50	$121,290	$144,942
2009	191,900	$0.44	$84,096	$100,831
2010	109,744	$0.56	$61,481	$72,548
2011	93,537	$0.69	$64,547	$73,777
2012	174,568	$0.60	$105,145	$117,762
2013	114,203	$0.25	$29,003	$32,019
2014	18,324	$0.53	$9,697	$10,530
2015	4,459	$0.38	$1,701	$1,845
2016	195,096	$0.34	$65,775	$70,511
2017	132,879	$0.57	$76,223	$79,958
2018	No Impact			
2019	301,989	$0.46	$137,506	$137,506
Total	**3,166,489**		**$1,146,429**	**$1,391,101**

Table 6: Pink Foregone Harvest

Year	Foregone Harvest - lbs	Pink Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	12,643	$0.15	$1,904	$3,004
1999	1,237	$0.14	$174	$269
2000	19,270	$0.14	$2,771	$4,139
2001	425,322	$0.12	$50,482	$73,350
2002	104,486	$0.09	$8,984	$12,848
2003	239,859	$0.09	$21,062	$29,445
2004	22,668	$0.10	$2,174	$2,961
2005	1,084,704	$0.12	$130,269	$171,564
2006	11,709	$0.16	$1,916	$2,445
2007	87,922	$0.18	$15,860	$19,683
2008	452,280	$0.37	$165,499	$197,772
2009	595,462	$0.26	$153,209	$183,697
2010	19,416	$0.44	$8,446	$9,967
2011	876	$0.47	$408	$466
2012	27,650	$0.48	$13,188	$14,771
2013	10,748	$0.42	$4,548	$5,021
2014	25,227	$0.33	$8,360	$9,079
2015	60,791	$0.25	$14,937	$16,207
2016	55,585	$0.47	$26,237	$28,126
2017	113,573	$0.43	$48,638	$51,021
2018	No Impact			
2019	5,819,486	$0.37	$2,149,409	$2,149,409
Total	**9,190,914**		**$2,828,476**	**$2,985,244**

Table 7: Coho Foregone Harvest

Year	Foregone Harvest - lbs	Coho Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	1,145	$0.37	$423	$668
1999	0	$0.41	$0	$0
2000	0	$0.49	$0	$0
2001	13,239	$0.24	$3,180	$4,621
2002	10,920	$0.18	$1,940	$2,774
2003	21,827	$0.20	$4,362	$6,098
2004	29	$0.27	$8	$11
2005	341	$0.42	$143	$189
2006	14	$0.66	$9	$12
2007	9,975	$0.60	$5,961	$7,398
2008	149,434	$1.20	$179,256	$214,210
2009	14,037	$0.61	$8,548	$10,249
2010	116	$0.80	$92	$109
2011	0	$0.82	$0	$0
2012	7	$0.77	$5	$6
2013	0	$0.72	$0	$0
2014	6,497	$0.67	$4,373	$4,750
2015	3,190	$0.38	$1,227	$1,331
2016	227	$0.78	$178	$191
2017	52	$0.84	$43	$46
2018	No Impact			
2019	429,343	$0.67	$287,313	$287,313
Total	**660,393**		**$497,063**	**$539,975**

Table 8: Chinook Foregone Harvest

Year	Foregone Harvest - lbs	Chinook Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	200	$0.71	$142	$224
1999	7,679	$0.68	$5,228	$8,072
2000	2,980	$0.66	$1,974	$2,949
2001	37,257	$0.72	$26,809	$38,953
2002	8,155	$0.37	$3,003	$4,295
2003	12,291	$0.35	$4,361	$6,097
2004	7,700	$0.51	$3,965	$5,400
2005	20,508	$0.76	$15,601	$20,547
2006	3,792	$0.94	$3,554	$4,535
2007	6,818	$0.89	$6,076	$7,540
2008	1,994	$1.00	$1,998	$2,388
2009	7,755	$0.68	$5,306	$6,362
2010	6,169	$0.64	$3,977	$4,692
2011	4,961	$0.90	$4,443	$5,078
2012	6,150	$0.61	$3,736	$4,184
2013	8,589	$0.58	$4,941	$5,455
2014	297	$0.96	$286	$310
2015	4	$0.68	$3	$3
2016	8,635	$0.91	$7,823	$8,386
2017	2,337	$0.77	$1,789	$1,877
2018	No Impact			
2019	940	$0.83	$779	$779
Total	**155,210**		**$105,793**	**$138,127**

Kodiak Seiners Association
PO Box 8835
Kodiak, AK 99615

December 12, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: **Oppose Proposal 61**

Dear Chairman Morisky and Board of Fish Members:

Thank you for the opportunity to comment on Proposal 61 in advance of the Kodiak Finfish meeting. The Kodiak Seiners Association (KSA) respectfully requests you **oppose proposal 61**, which is an allocative proposal lacking merit based on an application of the allocation criteria.

Please see other comments submitted by KSA addressing allocation issues concerning the Cape Igvak area. This proposal would drastically reduce the likelihood of a fishery being prosecuted at Cape Igvak and would allocate salmon resources away from a fishery that is highly dependent on access to this area. Implementation of this plan would impose incalculable harm to the Kodiak fleet and would result in a further loss of vessels from the Kodiak management area. This proposal intends to put Kodiak fishermen out of business in order to guarantee extraordinary seasons to Chignik fishermen before we are allowed access to our historical fishing grounds.

Kodiak's impact on Chignik's fishery has gone unchanged since the implementation of the plan and conservative management has resulted in Kodiak averaging 20% *below* our allocation of Chignik bound stocks. In contrast, Chignik fishermen are currently prosecuting an expanding mixed stock fishery that has negatively impacted the Kodiak area and provided for Chignik fishermen historically high harvests of non-local stocks. Any changes to the distribution of salmon allocation should start with restrictions to the intercept fishery in Chignik where fishermen have had to bear no burden of conservation for non-local stocks and where fishermen, due to the unregulated nature of their mixed stock fishery, have granted to themselves a greater allocation of the shared fishery resources.

KSA requests the **Board reject proposal 61.** We thank you for the opportunity to comment on behalf of the membership of KSA. We appreciate the scientific and factual creation of regulations regarding our fisheries and trust that the Board continue to apply consistency in designing regulation changes while applying the guiding BOF policies, such as the Management for Mixed Stock Salmon Fisheries.

Kodiak Seiners Association represents 157 members, including the majority of actively fishing SO1K seine permit holders, Kodiak and Homer-based businesses, and individual crewmembers. Our focus is advocacy for our membership through positive interactions with ADF&G, the Board of Fisheries, and our State Legislature.

Sincerely,

Nate Rose
KSA President

December 24, 2019

Matthew Alward

60082 Clarice Way

Homer, AK 99603

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Opposition to proposal 61

Dear Chairman Morisky and board of fisheries members,

I live in Homer, AK and make my living participating in the Kodiak salmon seine fishery and I oppose proposal 61 which will make multiple changes to the allocative nature of the Cape Igvak management plan. I raised our kids on the back deck of our family seiner with part of that time fishing in the Cape Igvak section which is a longstanding part of the traditional Kodiak fishery.

Proposal 61 seeks to make several changes to the Cape Igvak management plan that has been in place since 1978. First it asks to raise the Chignik harvest trigger that allows an Igvak fishery from an expected 600,000 fish harvest in Chignik by two thirds to a one million fish harvest. Second it asks that if the Chignik harvest is expected to be less than the new trigger of the two thirds higher number of one million fish then the Cape Igvak fishery cannot open until Chignik has harvested 600,000 fish which is double the current number of 300,000 fish. Third change is to the current language which states that "after July 8th after 300,000 fish are harvested in Chignik and Chignik escapement goals are being met the department may manage a fishery as long as Chignik is expected to harvest 600,000 fish". The proposed change would say that now 600,000 fish would have to be harvested before instead of after July 8th and that Chignik would have to be expected to harvest one million fish instead of 600,000 before the department would be allowed to manage an Igvak fishery. Fourth this proposal would change the definition of the Chignik sockeye salmon harvest from current language to exclude two areas of Chignik sockeye harvest from the "Chignik sockeye salmon harvest" that the Cape Igvak allocation is based on which would reduce the traditional Kodiak allocation of Chignik sockeye salmon. Fifth change this proposal looks to make is under the current plan Igvak may not open before the first fishing period of the Chignik area and the proposed change would create a 72 hour delay before Igvak may open. The last change this proposal seeks to make is changing the date that the plan's allocation method will be in

effect from July 25th to July 8th. As I read this language change it would in affect close the Igvak section from July 8th to July 25th removing about half of the potential fishing time under the Cape Igvak management plan.

To raise the Chignik harvest trigger by two thirds to one million fish is nothing more than a way to shift some of the allocation of the management plan from Kodiak to Chignik. Kodiak has not fished in Igvak in four of the last six years which shows me that the conservation measures built into the plan are working. There is no data that warrants a rise of the harvest trigger by two thirds.

In times when a lower than the harvest threshold are expected, to double the harvest trigger necessary to allow an Igvak fishery and to make the new doubled number have to be caught before instead of after July 8th, is yet another way to shift allocation from Kodiak to Chignik. Again the Cape Igvak management plan has been in effect since 1978 and has had numerous proposals made to shift the allocation towards Chignik. Each of the many proposals has had a previous board apply your Allocative Criteria, Mixed Stock Fisheries Policy, and Sustainable Salmon Management Policy and each time the boards have determined that the plan was working well and warranted no changes.

Another allocative change this proposal seeks to make is by redefining how the Chignik sockeye harvest is calculated which is the same change proposal 59 asks to make. This is simply another allocation shift towards Chignik on top of multiple other allocation changes this proposal would make. By removing two areas of Chignik sockeye harvest from the total Chignik sockeye harvest that the 15% allocation is based on would just reduce the Kodiak Chignik sockeye harvest thus allocating fish to Chignik.

Creating a 72 hour window from the first Chignik opener before an opener in Igvak is allowed only serves to reduce potential fishing time in Igvak with no explanation of why this in necessary. While this would not change the allocation measures in the plan, when added upon the other changes this proposal would make it would add to the large allocation shift towards Chignik that this proposal as a whole would make.

And finally to change the date that the Cape Igvak management plan allocation method is in effect from July 25th to July 8th would close the Igvak section from July 8th to July 25th which is about half of the potential fishing time allowed under the plan. This is another large allocation shift from Kodiak to Chignik which combined with all of the other elements in this proposal would make for a huge allocative change.

The reasoning the proposer has for making such a large allocative shift towards Chignik is their claim that many of the assumptions and safeguards made in the plan have been found incorrect and/or have become obsolete. I have not seen or heard of any new evidence that would suggest incorrect or obsolete assumptions that the plan is based on and in my opinion this is just a proposal seeking to change the allocation without giving any reason why a large allocative shift is justified. The fact that Kodiak has not had a fishery is Igvak in four of the last six years I think is strong evidence that the safeguards made in the plan are working well. Chignik has an expanding mixed stock fishery on their outer coast which is known to harvest non Chignik bound stocks and if there is any evidence of changed assumptions from when the plan was put in place it's that Chignik is harvesting Kodiak bound stocks too. Another known change from when the plan was put in place is that the plan assumes that 90% of sockeye harvested in Igvak are Chignik bound and the little bit of data we have from the sockeye genetic study suggests that it is more like 74% of the sockeye harvested in Igvak are Chignik stocks.

In closing I respectively ask that given the lack of evidence of changed assumptions and safeguards that the Cape Igvak management plan was based on I ask that you keep this long standing allocative management plan in place as written and oppose proposal 61.

Sincerely,

Matthew Alward

Nicholas Hoffman
PO Box 1212
Kodiak, AK 99615

12/24/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Oppose Proposal 61

Dear Chairman Morisky and Board of Fish members:

I'm a young Kodiak salmon fisherman. I have been running a seine boat since 2011 as well as participating in Kodiak halibut, sea cumber, cod jig, and tanner crab fisheries. I respectfully request the Board reject Proposal 61.

This proposal would raise harvest triggers to a level where a fishery in Igvak would be extremely unlikely except in phenomenal Chignik runs. The current plan was put in place to allow Kodiak fishermen access to their historic allocation, not because Kodiak needed additional fish. The current thresholds already insure conservation of Chignik's fishery and allow Chignik fishermen to fish first. This proposal claims that the underlying assumptions in the Cape Igvak Plan have become incorrect with the passage of time, but does cite any specific issue or false assumption. Nothing has changed to merit the adjustment of the current thresholds. The proposals also accuses Kodiak fishermen of placing a negative burden on the Chignik fishery, which is false. When Chignik has a weak run year, Kodiak already doesn't fish the Igvak section under the current thresholds. Weak runs in Chignik are not the fault of Kodiak fishermen or Cape Igvak Management Plan.

I see no reason for the Board to make any changes to the Kodiak Salmon Management plan. Thank you for the opportunity to comment on the proposals and the chance for my voice to be heard. I look forward to the Board of Fish members getting to spend time in Kodiak and learn more about our town and fishing community.

I humbly request the Board reject Proposal 61.

Sincerely,

Nicholas Hoffman
F/V Relentless

December 26, 2019

Quinn Alward

60082 Clarice Way

Homer, AK 99603

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Opposition to proposal 61

Dear Chairman Morisky and board of fisheries members,

My name is Quinn Alward and I have grown up seined salmon in the waters of Kodiak with my family since I was 10. After over a decade of working both on the deck and in the skiff of our family owned and operated boat, I still love it and intend on continuing on fishing as long as I can.

I oppose proposal 61 that intends to make several changes to the Cape Igvak management plan. The Cape Igvak section is a special area to me and being able to fish it when it's opened has helped me make enough money to pay my way through college.

The current Cape Igvak management plan has been in place since 1978 and over the last few decades numerous proposals have been brought up trying to shift the allocation of Cape Igvak fish to the Chignik area. Every time the board of fisheries has deliberated the proposals it has applied their Sustainable Salmon Policy, the Mixed Stock Fisheries Policy and their Allocation Criteria always ending in with the determination that no changes were warranted.

Proposal 61 seeks to make several changes to the Cape Igvak management plan that has been in place since 1978. First it asks to raise the Chignik harvest trigger that allows an Igvak fishery from an expected 600,000 fish harvest in Chignik by two thirds to a one million fish harvest. Second it asks that if the Chignik harvest is expected to be less than the new trigger of the two thirds higher number of one million fish then the Cape Igvak fishery cannot open until Chignik has harvested 600,000 fish which is double the current number of 300,000 fish. Third change is to the current language which states that "after July 8th after 300,000 fish are harvested in Chignik and Chignik escapement goals are being met the department may manage a fishery as long as Chignik is expected to harvest 600,000 fish". The proposed change would say that now 600,000 fish would have to be harvested before instead of after July 8th and that Chignik would have to be expected to harvest one million fish instead of 600,000 before the department would be allowed to manage an Igvak fishery. Fourth this proposal would change the definition of the Chignik sockeye salmon harvest from current language to exclude two areas of Chignik sockeye harvest from the "Chignik sockeye salmon harvest" that the Cape Igvak allocation is

based on which would reduce the traditional Kodiak allocation of Chignik sockeye salmon. Fifth change this proposal looks to make is under the current plan Igvak may not open before the first fishing period of the Chignik area and the proposed change would create a 72 hour delay before Igvak may open. The last change this proposal seeks to make is changing the date that the plan's allocation method will be in effect from July 25th to July 8th. As I read this language change it would close the Igvak section from July 8th to July 25th.

The proposal would take away almost half of the time we can fish in Cape Igvak with no solid justification.

For this reason I ask that you oppose proposal 61 and by not adopting it, help me and my family continue on with fishing traditions I've known most of my life.

Sincerely,

Quinn Alward

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 61

Dear Chairman Morisky and Board of Fisheries Members,

I am Richard Roth, Kodiak salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife, three children and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Tzar. Previously I owned and operated the F/V Kelly Girl. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

This proposal seeks to further limit Kodiak's traditional Cape Igvak fishery. Kodiak's salmon fishery has not changed since management plans were adopted starting with the Cape Igvak plan in 1978 and continuing through the early 1990s. Kodiak's salmon fishery is not a "new and expanding" fishery. This proposal is a familiar effort to limit the small portion of sockeye take that Kodiak fishermen are allowed in the Cape Igvak plan only after significant safety thresholds are reached by Chignik fishermen.

The Cape Igvak management plan was created because fishing there was part of Kodiak's historic fishing patterns prior to limited entry in 1973. The plan was put in place in 1978 to allow Kodiak fishermen access to their historic allocation of fish harvested during June and July. Kodiak's fishing opportunities at Cape Igvak are based off of existing built-in conservation measures designed to protect Chignik's second run with a safety net of 300,000 early run sockeye and 600,000 total sockeye for Chignik fishermen before *any fishing at Igvak occurs*. This purpose of this threshold is to prevent conservation issues during weak Chignik runs. This plan has been repeatedly evaluated by the Alaska Board of Fisheries through time, making it one of the most long-standing and intensely scrutinized management plans in the state.

If there are poor returns in Chignik, the current plan ensures that Kodiak fishermen won't fish at Igvak.

The 2019 Chignik Salmon Season Summary shows total values and average value per active permit in the Chignik Management Area in recent years, except for 2018, seem on track for what appears to be a normal range for the CMA within the last ten years. The 2019 season saw 51 active permits with a value per permit of $157,072, which is very close to a decade ago with a 2009 season of 55 permits and a value per permit of $156,926, much greater value than Kodiak permits.

I ask that the Board reject proposal 61 and not make any changes to the Cape Igvak Management Plan.

Thank you for your careful consideration,
Richard, Amanda, Stephanie, Noah, and Ranger Roth
F/V Sea Tzar
Homer, Alaska

December 19, 2019

Robert Fellows

266 E Bayview Ave.

Homer, AK. 99603

Alaska Board of Fisheries

Board Support Section

PO Box 115526

Juneau, Ak. 99811-5526

RE: Opposition to proposal 61

Dear chairman Morisky and Board of Fisheries members,

I am a commercial fisherman and have commercially fished salmon in the Kodiak management area for the past 29 years. I depend on this fishery under its current management plans to make most of my family's yearly income. I rely on the historical access to the Cape Igvak section, during years of harvestable surplus in the Chignik management area, to help make it viable to make a living in the Kodiak management area. I respectfully request the Board reject proposal #61.

By asking to raise the trigger level this proposal effectively eliminates any opportunity for an opening in the Cape Igvak section. The Cape Igvak management plan is one of the longest standing management plans. It works very well as is and has safeguards built in to ensure escapement for the Chignik management area and ensures Chignik fishermen have opportunity and that they get to fish first.

Sincerely,

Robert Fellows

Ron Kavanaugh
self
12/28/2019 12:38 AM AKST

RE: PROPOSAL 61 Amend the Cape Igvak Salmon Management Plan to increase the minimum expected sockeye salmon harvest thresholds from 300,000 to 600,000 prior to July 8 and 600,000 to 1,000,000 fish after July 8, and from 600,000 to 1,000,000 fish in years when runs are as strong as expected

see comments from proposal #60

Steven Roth

12/27/2019 06:29 AM AKST

RE: PROPOSAL 61 Amend the Cape Igvak Salmon Management Plan to increase the minimum expected sockeye salmon harvest thresholds from 300,000 to 600,000 prior to July 8 and 600,000 to 1,000,000 fish after July 8, and from 600,000 to 1,000,000 fish in years when runs are as strong as expected

December 24, 2019 Alaska Board of Fisheries Board Support Section P.O. Box 115526 Juneau, AK 99811-5526 Re: Opposition to Proposal 61 Dear Chairman Morisky and Board of Fisheries Members, I am Steve Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Grace. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures. This proposal seeks to further limit Kodiak's traditional Cape Igvak fishery. Kodiak's salmon fishery has not changed since management plans were adopted starting with the Cape Igvak plan in 1978 and continuing through the early 1990s. Kodiak's salmon fishery is not a "new and expanding" fishery. This proposal is a familiar effort to limit the small portion of sockeye take that Kodiak fishermen are allowed in the Cape Igvak plan only after significant safety thresholds are reached by Chignik fishermen. The Cape Igvak management plan was created because fishing there was part of Kodiak's historic fishing patterns prior to limited entry in 1973. The plan was put in place in 1978 to allow Kodiak fishermen access to their historic allocation of fish harvested during June and July. Kodiak's fishing opportunities at Cape Igvak are based off of existing built-in conservation measures designed to protect Chignik's second run with a safety net of 300,000 early run sockeye and 600,000 total sockeye for Chignik fishermen before any fishing at Igvak occurs. This purpose of this threshold is to prevent conservation issues during weak Chignik runs. This plan has been repeatedly evaluated by the Alaska Board of Fisheries through time, making it one of the most long-standing and intensely scrutinized management plans in the state. If there are poor returns in Chignik, the current plan ensures that Kodiak fishermen won't fish at Igvak. The 2019 Chignik Salmon Season Summary shows total values and average value per active permit in the Chignik Management Area in recent years, except for 2018, seem on track for what appears to be a normal range for the CMA within the last ten years. The 2019 season saw 51 active permits with a value per permit of $157,072, which is very close to a decade ago with a 2009 season of 55 permits and a value per permit of $156,926, much greater value than Kodiak permits. I ask that the Board reject proposal 61 and not make any changes to the Cape Igvak Management Plan. Thank you for your careful consideration, Steve and Jenny Roth F/V Sea Grace Homer, Alaska

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 61

Dear Chairman Morisky and Board of Fisheries Members,

I am William Roth, Captian of the F/V Sea Chantey. I own a Kodiak seine permit and have been fishing it for the lasat 5 years as well as working as crew since 2010, I rely mostly on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

This proposal seeks to further limit Kodiak's traditional Cape Igvak fishery. Kodiak's salmon fishery has not changed since management plans were adopted starting with the Cape Igvak plan in 1978 and continuing through the early 1990s. Kodiak's salmon fishery is not a "new and expanding" fishery. This proposal is a familiar effort to limit the small portion of sockeye take that Kodiak fishermen are allowed in the Cape Igvak plan only after significant safety thresholds are reached by Chignik fishermen.

The Cape Igvak management plan was created because fishing there was part of Kodiak's historic fishing patterns prior to limited entry in 1973. The plan was put in place in 1978 to allow Kodiak fishermen access to their historic allocation of fish harvested during June and July. Kodiak's fishing opportunities at Cape Igvak are based off of existing built-in conservation measures designed to protect Chignik's second run with a safety net of 300,000 early run sockeye and 600,000 total sockeye for Chignik fishermen before *any fishing at Igvak occurs*. This purpose of this threshold is to prevent conservation issues during weak Chignik runs. This plan has been repeatedly evaluated by the Alaska Board of Fisheries through time, making it one of the most long-standing and intensely scrutinized management plans in the state.

If there are poor returns in Chignik, the current plan ensures that Kodiak fishermen won't fish at Igvak.

The 2019 Chignik Salmon Season Summary shows total values and average value per active permit in the Chignik Management Area in recent years, except for 2018, seem on track for what appears to be a normal range for the CMA within the last ten years. The 2019 season saw 51 active permits with a value per permit of $157,072, which is very close to a decade ago with a 2009 season of 55 permits and a value per permit of $156,926, much greater value than Kodiak permits.

I ask that the Board reject proposal 61 and not make any changes to the Cape Igvak Management Plan.

Thank you for your careful consideration,

William and Kaytlen Roth
F/V Sea Chantey
PO BOX 1230
Homer AK
99603

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 62

Dear Chairman Morisky and Board of Fisheries Members,

I am Alex Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak mainly. I own and operate the F/V Wandering Star. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

The author of this proposal argues that Kodiak fishermen are intentionally misreporting fish caught in Cape Igvak area. The Alaska State Troopers previously issued a public report saying that they had examined numerous vessels traveling across Shelikof Strait from the Cape Igvak area, and all of the fishermen had already delivered and properly reported their harvest.

This proposal shows a complete lack of understanding of the geographic realities of fishing the region. In addition to assisting ADF&G in sustainably managing salmon stocks, the Processors in our region would be greatly displeased with the quality of fish that travel across Shelikof Strait and are held for extra time by fishermen. This alone would completely negate the "economic incentive" argument of the author.

This is the second time the Board of Fisheries has had to deliberate on this proposal which would increase the time and financial commitments of ADF&G with absolutely no benefit to any region and would be overly burdensome to Kodiak salmon fishermen.

I request that the Board reject this proposal based which seems to be simply personal assumptions as to the character of their fellow fishermen in another region.

Thank you for your careful consideration,

Respectfully,

Alex and Jaime Roth
F/V Wandering Star
Homer, AK

RE: PROPOSAL 62 Require reporting prior to commercial fishing in the Cape Igvak Section and upon leaving the section

Bo Calhoun 57177 Zulu Ct. Homer, AK 99603 12/26/19 RE: Opposition to Proposal #62 Dear Chairman Morisky and Board of Fish members: I'm a third generation Kodiak salmon seiner. I was born in Homer, raised in Port Lions and Homer, and continue to live in Homer. My wife and I hope to raise our two sons on our family seine boat in a healthy Kodiak salmon fishery. I respectfully request you reject Proposal #62. I have never heard of anyone intentionally misreporting Cape Igvak caught fish, or fish from any other area. Beyond having confidence that we generally try to do the right thing, the incentives for an individual to do so are extremely weak. One delivery out of many has very little likelihood of changing our chances to get more fishing time in Cape Igvak section. Also, enforcing proposal #62 would be an unnecessary burden to management and enforcement. Please reject proposal #62. Thank you for taking the time to read public comments. Sincerely, Bo Calhoun

December 26, 2019

Dear Chairman Morisky and Board of Fish members:

I oppose Proposal 62 for the following reasons. But first a story: In 1982 when I fished Chignik on a medical transfer on the seiner Moondance, I had to cut my seine in half to fish the inner Chignik District after fishing a month in the outer district. After talking to several local fishermen, many said that you can 'fudge' the length to 130 fathoms. On opening day in July off the beach in front of the lagoon, I along with 15-20 other vessels set our nets. I was the shortest net there, and the only one that got 'busted'. I went back to the cannery dock, cut the extra length off and fished a shorter net than the rest of the fleet for the rest of the season.

Although the above story has nothing to do with Proposal 62 – 'Reporting prior to fishing and prior to leaving Cape Igvak' It does highlight the fact that management cannot regulate honesty and in addition, it is my belief that if it happens at all (miss-reporting area fish caught) this proposal due to the logistics of tendering and weather in the Cape Igvak district is unenforceable.

Thank you for your consideration of my comments and again urge you to reject Proposal 62.

Sincerely,
Bob Bowhay
M/V Moondance
P.O. Box 187
Kodiak, Alaska 99615
907-486-4594

Brian Mcwethy
KSA
12/23/2019 09:18 AM AKST

RE: PROPOSAL 62 Require reporting prior to commercial fishing in the Cape Igvak Section and upon leaving the section

My name is Brian Mcwethy. I was born and raised in kodiak. I live in kodiak with my family and we all depend on my income. I fished with my father on his seiner growing up and now I own and operate a seiner. Salmon seining and tanner crab fishing in kodiak are currently our only sources of income. I plan to try and continue to fish the kodiak waters and possible my children will have the opportunity to. I hope the current and historical areas we fish aren't taken from us and the future generations of kodiak. I oppose this proposal. It is unrealistic for everyone to do this. Adfg would have to constantly be having to monitor the fishing boats at all hours of the day as the fisherman typical travel overnight and fish during the day. This would put a burden on the fishermen and processors and the adfg's already strained manpower. There isn't any real incentive to misreport as it is already illegal.

Charles and Theresa Peterson
1850 Three Sisters Way
Kodiak, AK 99615

December 26, 2019

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE**: Oppose Proposal 62**

Dear Chairman Morisky and Board of Fish members:

We moved to Kodiak in the 1980's to pursue the opportunity for a livelihood in commercial fishing. We found what we were looking for, a chance to make a living off the sea and stayed, raising three children and developing deep relationships in our island home. Kodiak is a community built on fish and the size of the fleet, the processing infrastructure, the support services and the overall health of our coastal community is dependent on sustainable fisheries. Salmon fishing is the mainstay of our commercial fishing business and without it we would not have the financial means to stay in Kodiak, maintain a vessel and prosecute other fisheries. We own a 42', shallow draft seine vessel that primarily operates in the Alitak district. Our son now runs the boat and Charles and I run a setnet site in Alitak Bay. We choose to diversify our salmon fishing with participation in both the seine and setnet fishery so our son can run the boat with his crew and the rest of the family can prosecute the fishery from a shore-based operation.

We are opposed to proposal 62 and see this as an accusatory proposal without merit. There are no grounds to base this proposal as there have never been indications of misreporting nor have there been enforcement concerns. The management challenges for this proposal would be time consuming, costly and potentially dangerous for the seine fleet. As the fishery opens at 12:01, ADF&G staff would need to be available to check in, requiring valuable use of time and resources to appease an insinuation of a unfounded illicit behavior. What happens if a vessel is unable to reach ADF&G due to technical difficulties getting through? Does this mean they cannot anchor and have to travel back across to Kodiak? This proposal is costly, unnecessary and disparaging and we encourage the board to oppose it.

Sincerely,

Charles and Theresa Peterson

Charlie johnson

12/27/2019 07:38 PM AKST

RE: PROPOSAL 62 Require reporting prior to commercial fishing in the Cape Igvak Section and upon leaving the section

Landings are already reported on fish tickets from the igvak section.

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 62

Dear Chairman Morisky and Board of Fisheries Members,

My name is Chris Johnson and I am a second-generation fisherman in Kodiak, Alaska. I grew up fishing on my dad's boat and got my first crew job working for someone else two weeks after I graduated high school. I haven't missed a salmon season since. I bought into the fishing industry in 2011 with the purchase of a 25-foot jig boat that I worked for two years in the winter and spring months while I still crewed for salmon in the summer. Access to the jig fisheries focusing on cod and rockfish was the only way that I could afford to move into the salmon fleet with a 38-footer in 2013. After the recent cod collapse, I now primarily rely on salmon seining and live here year-round with my wife.

The proposer makes the baseless argument that Kodiak fisherman are liars and intentionally misreport fish caught at Cape Igvak. The number of fish that would need to be misreported would have to be so great to impact any change to the allocation that it is an unrealistic accusation. This proposal shows a complete lack of understanding of the geographic realities as well as sociocultural values of our regional fishery. There are also logistics concerns regarding how fishermen would report by "telephone, radio, or in person to a local representative of the department". For example, I don't have a TRAC phone. How am I supposed to talk to ADF&G before and after fishing at Cape Igvak? It also creates much more work for ADF&G staff for a completely unnecessary requirement that is based off the proposal author's personal assumptions rather than factual context.

Furthermore, this is the same proposal that was submitted at the last Board of Fisheries meeting in Kodiak. Here we are again having to defend against a flagrantly rude proposal that I honestly believe is a waste of the Board's time and energy. The last time this came up the Alaska State Troopers issued a public report saying that they had examined numerous vessels traversing the Shelikof Straight from the Cape Igvak area, and all of the fishermen had already delivered and properly reported their harvest.

Taking away any fishing opportunity from Kodiak fishermen, particularly from the small boat fleet, would have a direct negative impact on new entrants trying to gain a foothold in this industry, fishing families trying to get by, and fishing support businesses in our region. I'm proud to call Kodiak home and am working to protect our fishing way of life.

Sincerely,
Chris Johnson
F/V North Star

Cole Christiansen
KC Fisheries
12/22/2019 09:19 PM AKST

RE: PROPOSAL 62 Require reporting prior to commercial fishing in the Cape Igvak Section and upon leaving the section

Adding this bureaucratic burden to an already underfunded ADF&G department is unwarranted and a waste of resources. The is no valid incentive for Kodiak fishermen to misreport there catch in the Cape Igvak section. The canneries that Kodiak fisherman work for require fishermen located anywhere on the mainland side of the Shelikoff to deliver daily in order to provide fresh fish to the processors. Furthermore, no captain in their right minds would waste fuel and time driving to another section to report their catch.

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 62

Dear Chairman Morisky and Board of Fisheries Members,

My name is Danielle Ringer and I appreciate the opportunity to comment on proposals before the Board in writing and in person for the Kodiak finfish meeting. I live in Kodiak with my husband and we own and operate the 38-foot F/V North Star. We chiefly rely on salmon seining and cod and rockfish jigging to maintain our fishing way of life and ability to live on Kodiak Island. I grew up in Homer learning to harvest and process fish from my parents in Kachemak Bay and dipnetting on the Kenai River. I hold a Master's degree from the University of Alaska Fairbanks in Political Ecology of Fisheries and was one of the researchers on the *Graying of the Fleet in Alaska's Fisheries: Defining the Problem and Assessing Alternatives* study in the Kodiak region.

The proposer makes the baseless argument that Kodiak fisherman are liars and intentionally misreport fish caught at Cape Igvak. The number of fish that would need to be misreported would have to be so great to impact any change to the allocation that it is an unrealistic accusation. This proposal shows a complete lack of understanding of the geographic realities as well as sociocultural values of our regional fishery. There are also logistics concerns regarding how fishermen would report by "telephone, radio, or in person to a local representative of the department". For example, we don't have a TRAC phone. How are we supposed to talk to ADF&G before and after fishing at Cape Igvak? It also creates much more work for ADF&G staff for a completely unnecessary requirement that is based off the proposal author's personal assumptions rather than factual context.

Furthermore, this is the same proposal that was submitted at the last Board of Fisheries meeting in Kodiak. Here we are again having to defend against a flagrantly rude proposal that I honestly believe is a waste of the Board's time and energy. The last time this came up the Alaska State Troopers issued a public report saying that they had examined numerous vessels traversing the Shelikof Straight from the Cape Igvak area, and all of the fishermen had already delivered and properly reported their harvest.

I see no biological, scientific, historical, economic, nor sociocultural reasons that could justify the Board making any changes to the Cape Igvak management plan with this reporting requirement based off of personal assumptions. Thank you for your consideration of my comments and I look forward Board of Fisheries members spending time in our fishing community during the Kodiak meeting. I humbly request the Board to reject this proposal.

Respectfully,
Danielle Ringer, M.A., F/V North Star

December 22, 2019
Darren Platt (FV Agnes Sabine)
10708 Birch Cir
Kodiak, AK 99615

Alaska Board of Fisheries
Board Support Section
PO Box 115526
Juneau, AK 99811-5526

RE: **Oppose Proposal 62**

The members of the Alaska Board of Fisheries,

I'm writing in **Opposition to proposal 62**, which intends to create reporting requirements for vessels fishing in the Cape Igvak area. This proposal implies that Kodiak fishermen are perpetrating a scam and regularly breaking the law. It is offensive and meritless. I have never heard of fisherman misreporting their Igvak harvest and most processors require delivery before leaving Igvak, anyways, unless the fisherman is coming straight to town.

Do they think we are delivering at Igvak and instructing our tenders to lie on our fish tickets and report a harvest area? If so, then it would be extremely easy to verify that this is happening.

Otherwise, do they imagine that we are traveling back across the Shelikof straight with fish on board and our refrigeration systems running just because we think that delivering the fish elsewhere *and* illegally reporting the fish as being harvested outside of Igvak may lead to more fishing opportunities? If so then the cost of doing this is far higher than any payback the fisherman could expect, so why would anyone do this? There is no individual incentive in this scenario.

As far as I'm aware there has never been a single reported case of this lawbreaking behavior, but yet again we have to defend ourselves against baseless allegations. This proposal would cost the state money and busy our fleet with needless communications. I think at some point, the accusers who repeatedly submit this proposal should at least provide some shred of evidence that the alleged malfeasance is actually occurring. Otherwise, this proposal is just a groundless insult hurled at the Kodiak fleet.

Thank you,
Darren Platt

Dave Kubiak
F/V Lara Lee
12/21/2019 01:47 PM AKST

RE: PROPOSAL 62 Require reporting prior to commercial fishing in the Cape Igvak Section and upon leaving the section

This proposal is awkward, cumbersome, and pointless. The law already provides for area of catch reporting. Modern quality control requires unloading to tenders in the area. Fuel costs, travel time, and quality control already support the reporting in management area rules.

garrett kavanaugh

12/27/2019 05:18 PM AKST

RE: PROPOSAL 62 Require reporting prior to commercial fishing in the Cape Igvak Section and upon leaving the section

Dear Chairman and Members of the Board, As a young fishermen who is working their way into the Kodiak Salmon fishery this proposal will cause Kodiak fishermen to lose a substantial amount of their catch. I have been investing into the Kodiak salmon fishery as much as possible, in 2019 I purchased a Kodiak salmon permit. I ran a seiner for the month of august. I plan on running the same boat for the entire 2020 salmon season in Kodiak.This only adds another inconvenience to fishermen and ADF&G, fishermen dont always know what they are going to do. What if you head to igvak at 8 pm and want to get the first set at 5 am. No one will be in the office to report to and will know where you are, do you have to wait till fish and game opens to report that you are at igvak? This proposal is unnecessary. When I was younger I remember testifying against proposals similar to these. These proposals are re-allocations of Kodiak historical catch. Kodiak has always had intercept fisheries and we already have management plans in place that have been effective for the Kodiak salmon fishery. Please help ensure the future for young fishermen entering into the Kodiak Salmon fishery, and the people who have been investing and are established in the fishery. Thank you for considering these comments, Garrett Kavanaugh

Iver Holm

12/28/2019 12:00 AM AKST

RE: PROPOSAL 62 Require reporting prior to commercial fishing in the Cape Igvak Section and upon leaving the section

Dear Chairman Morisky and Board of Fish members: I am 31 years old and a life long resident of Kodiak. I grew up set netting in Uganik on the west side of the island with my mother until i was 14. I then started seining with my father until I was able to buy my own Kodiak seine operational the age of 27. Please oppose proposition 62. It is already against the law to miss represent where our fish have been caught. thank you for your time sincerely Iver Holm

James C Calhoun

12/26/2019 12:44 PM AKST

RE: PROPOSAL 62 Require reporting prior to commercial fishing in the Cape Igvak Section and upon leaving the section

There are already laws for this concerning fish ticket reporting.

Jamin Hall

12/27/2019 11:14 PM AKST

RE: PROPOSAL 62 Require reporting prior to commercial fishing in the Cape Igvak Section and upon leaving the section

My name is Jamin Hall, my wife and I have a set net site in Uganik Bay. I am writing in opposition to proposal 62.

Ken Christiansen
F/V Mary Ann
12/26/2019 03:07 PM AKST

RE: PROPOSAL 62 Require reporting prior to commercial fishing in the Cape Igvak Section and upon leaving the section

The reasons stated by the Author of this proposal are ridiculous! First of all, no one in there right mind would run the fish across the Shelikof due to the possibility of weather and time jeopardizing the quality of the product. Also, the canneries send tenders over and insist the product be delivered before being able to fish around the island again.

Kodiak Salmon Work Group
c/o Kodiak Regional Aquaculture Association
104 Center Ave., Suite 205
Kodiak, Alaska 99615

December 27, 2019

Chairman Morisky
Alaska Board of Fisheries
Boards Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: CAPE IGVAK MANAGEMENT PLAN
Chignik Proposals 58, 59, 60, 61, 62

Dear Chairman Morisky and Board Members:

The Kodiak Salmon Work Group (KSWG) is an ad hoc committee created to address the issues of Cook Inlet bound sockeye captured in the Kodiak Management Area and the continuation of the Cape Igvak Management Plan. Membership is open and encompasses seiners from both Kodiak seine organizations, setnetters from both Kodiak setnet organizations, beach seine permit holders and processors. In other words, all of Kodiak's salmon fishing community. The group is supported by voluntary stakeholder contributions including those from the City of Kodiak and the Kodiak Island Borough.

KSWG is herewith submitting several documents for the Board's review: 1. Structure and Function of the Kodiak Management Area Salmon Fisheries; 2. Review of Cape Igvak Salmon Management Plan and Proposals to the Alaska Board of Fisheries; and 3. Economic Analysis of Proposals 58, 60,61 and 64. An informational map is attached as well.

Cape Igvak Management Plan (Proposals 58-62)

Chignik's four substantive proposals regarding the Cape Igvak management plan don't outright request that the Board set aside the plan. Instead they focus on provisional changes that would gut Kodiak's Cape Igvak fishery. Proposal 58 with the date change would reduce, on average,

Kodiak's fishery by 79%. Proposal 59 is an accounting change that would reduce the Cape Igvak fishery by about 20%. Proposal 60, like proposal 58, would reduce Kodiak's revenues by about 67% and proposal 61 comes in with a 69% reduction. The fifth proposal (Proposal 62) is a record-keeping proposal that is untenable.

The Cape Igvak Management Plan is embedded in the Mixed Stock Fisheries Policy: "Most mixed stock fisheries are long standing and have been scrutinized many times by past Boards. Consequently, existing regulatory management plans are understood to incorporate conservation burden and allocation" (Allocation Criterion 2). Chignik's guaranteed catch allocation of 300,000 fish (early run) and 300,000 (late run) was a clear balancing in the original plan, favoring Chignik by providing an economic safety net. In addition, Kodiak would share the conservation burden in that the escapement would be assured before Kodiak would go fishing. On the other hand, if Chignik gets its escapement and minimum guaranteed catch, then Kodiak is allowed to harvest up to approximately what was historically caught in the fishery. This is a fairly balanced plan, if not already overbalanced to Chignik's advantage!

Also, the Board states in Allocation Criterion 3, "The policy should recognize that salmon resources are generally fully utilized and that stability is an important aspect of the fisheries." Why is stability important? Many salmon stakeholders make investments and commitments based on regulatory stability. If salmon management plans are subject to change with every Board cycle, fishery values (ex-vessel, permit and gear) will decrease as uncertainty increases, conservation may be compromised, and stakeholders will be encouraged to try to "get a better deal" at each successive Board meeting.

The history of the Cape Igvak Management Plan (Allocation Criterion 1) is of critical importance to understanding why it was developed and how it was balanced between stakeholders. Prior to the plan Kodiak could fish at Cape Igvak any day that the Chignik fleet fished. The "day for day" fishing caused area managers concern that Kodiak's fishing could impact a weaker "second run" to Chignik. Consequently, the catalyst for the Cape Igvak Management Plan was conservation of Chignik's runs. The plan balanced the conservation burden between the two areas. The plan has been in place for 42 years and has had constant review over multiple Board cycles. Its durability establishes it as one of the marque fishery management plans in the State of Alaska. Changing a

plan of such long duration without significant “new information” or “new fishing patterns” or “stock of concern” assessments or anything other than a proposer’s feeling that something should be changed, compromises and undermines the Board’s standing as a fair and impartial deliberative body.

The functionality of the Cape Igvak Management Plan as a conservation plan is seen in the plan’s application over the past five years. Because of low Chignik escapements there was no Cape Igvak fishery during 3 seasons. Period! Kodiak cannot be held responsible for any of the current biological or economic issues in Chignik due to low Chignik sockeye returns. Kodiak did not fish at Cape Igvak.

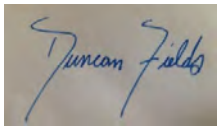
The proposer’s assertion, under Allocation Criterion 4, that Kodiak’s salmon fishermen have more “alternative resources” is a false assertion. If this means that Kodiak has more salmon numerically or by species, then the Board must also recognize that Kodiak’s salmon are divided between approximately 180 active seine fishermen and approximately 150 setnet fishermen ---in contrast to about 75 active Chignik permits. Resource availability is reflected in individual gross earnings. Chignik permits, on average over time, continue to earn more than Kodiak fishermen and, consequently, their permits are worth more in the market. “Alternative resources” in this sense would mean that Kodiak had less “alternative resources” per active permit holder than Chignik.

If the “alternative resources” idea means that Kodiak has more “species” available than Chignik salmon fishermen, this too is false. Both Kodiak and Chignik fishermen have access to halibut and cod in their areas although the Federal cod season is now closed in both areas. Only two or three Kodiak salmon fishermen are involved in the Gulf of Alaska trawl fisheries --- a fishery that limits participation with high costs of entry. Both Chignik and Kodiak have historically had a Tanner crab season. While Kodiak currently has a very small Tanner crab quota, only a subset of the Kodiak salmon fleet (like the Chignik fleet) have limited entry permits for the Tanner crab fishery. The Kodiak herring fishery is essentially gone. Kodiak fishermen, especially those from Old Harbor, Akhiok, Ouzinkie, Port Lions and Larsen Bay just don’t see what “alternative resources” are available in Kodiak that Chignik doesn’t have. All rural communities in the Gulf of Alaska under about 1,500 people are struggling to survive on their fisheries economy--- which is now almost exclusively salmon.

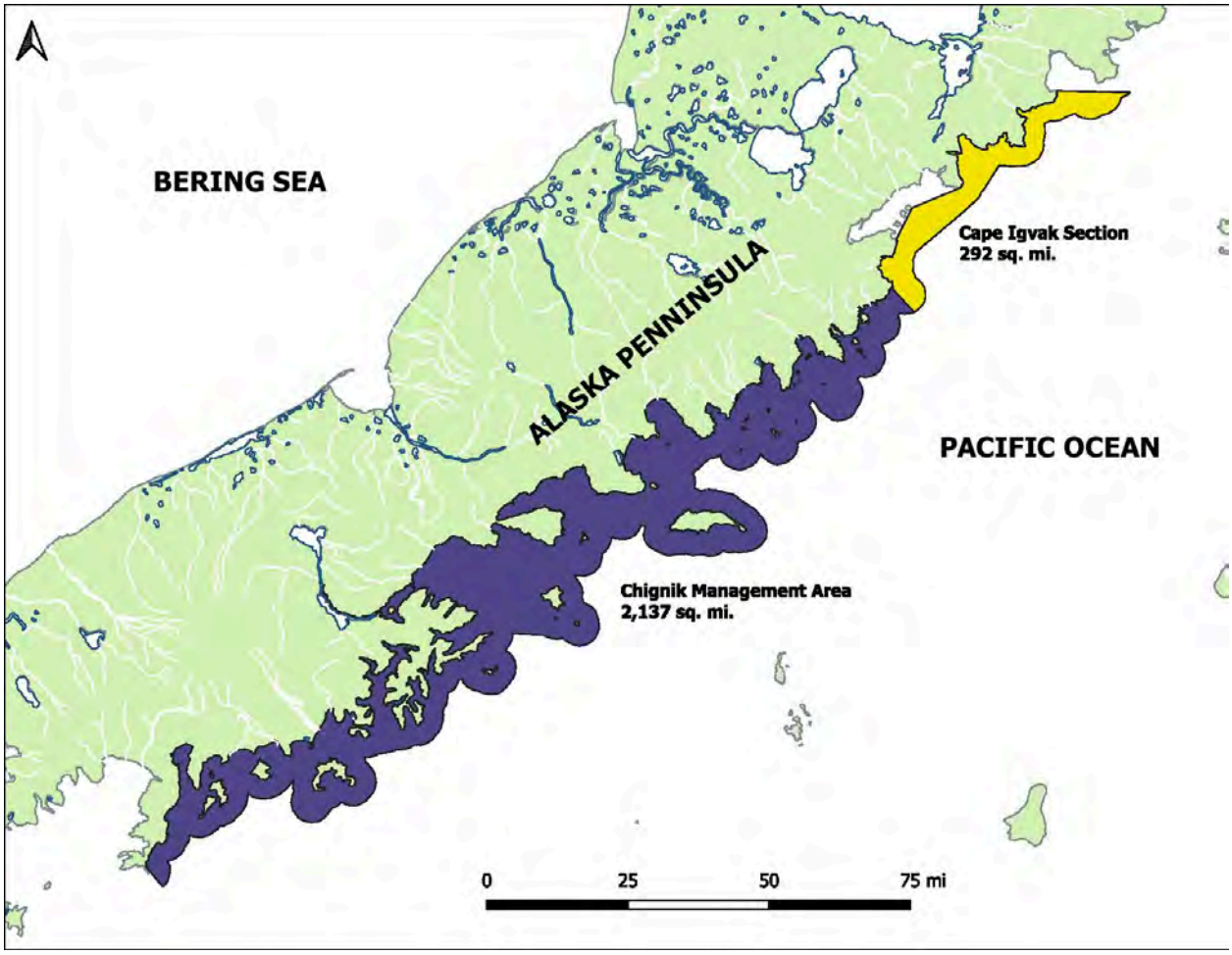
Finally, “The importance of the fishery to the economy of the region and the local area” (Allocation Criterion 7) favors Kodiak. The loss of the Cape Igvak fishery would cost Kodiak fishermen, on average, almost 4 million dollars. At best, the Igvak fishery would increase earnings by a subset of fishermen that actually live in Chignik or the Chignik region by less than an average of 12.0%. While not insignificant, the Igvak fishery is of reduced “importance to the economy of the Chignik region” when compared with the decline of active vessels and the number of Chignik fishermen that are now fishing in Kodiak and Prince William Sound. See further: Review of the Cape Igvak Management Plan and Proposals to the Alaska Board of Fisheries, Proposal 58 Economic Analysis, Proposal 60 Economic Analysis and Proposal 61 Economic Analysis.

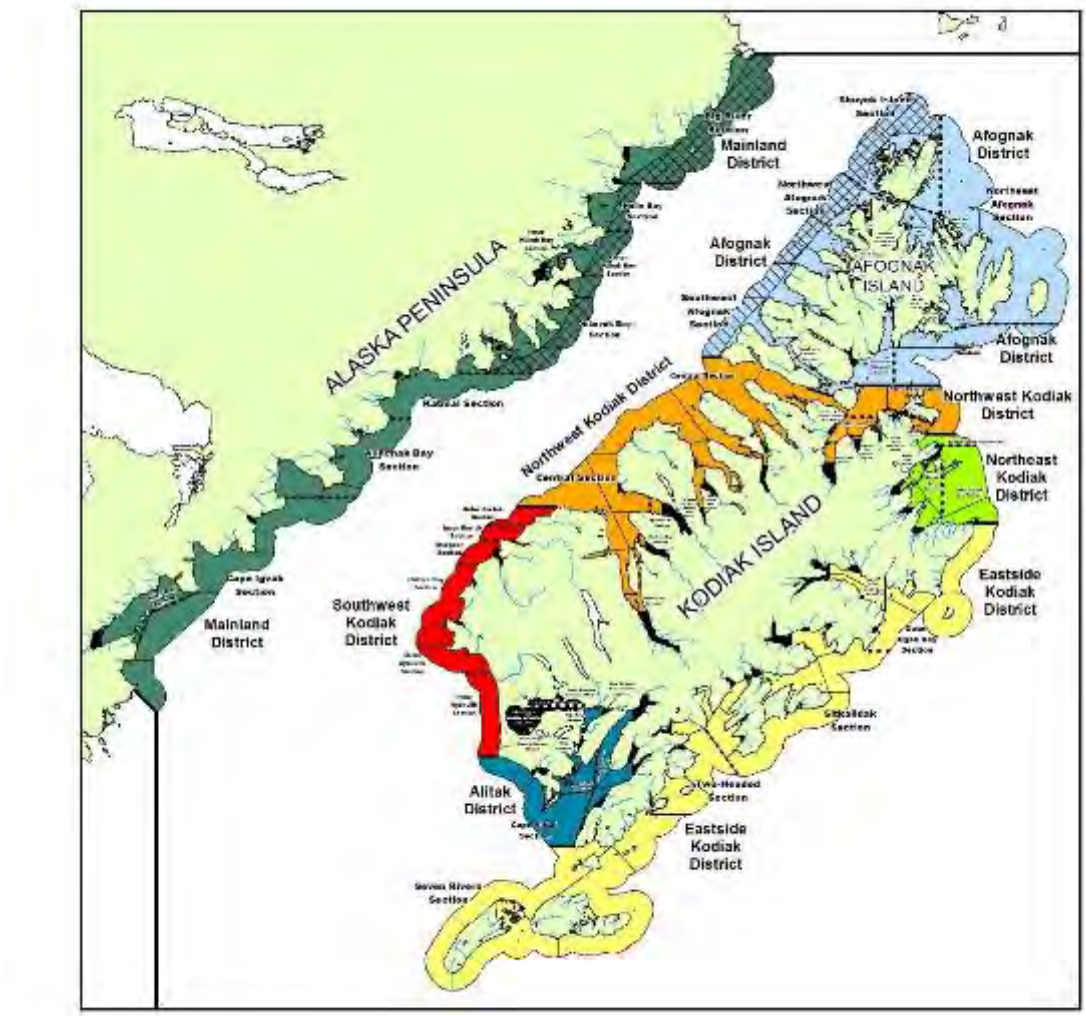
In summary, it is the position of the Kodiak Salmon Work Group that the Board should vote NO on proposals 58, 59, 60, 61, 62 and 63. These proposals are not supported by the Board’s allocation criteria and do not have a rational relationship to Chignik’s conservation needs.

Very truly yours,



Duncan Fields, Chairman


BERING SEA
ALASKA PENNINSULA
Cape Igvak Section
292 sq. mi.
PACIFIC OCEAN
Chignik Management Area
2,137 sq. mi.
0
25
50
75 mi



Review of Cape Igvak Salmon Management Plan and Proposals to the Alaska Board of Fisheries

Kodiak Salmon Working Group

Executive Summary

- The Cape Igvak Salmon Management Plan (CISMP) has been in place since 1978 and allocates 15% of total Chignik sockeye harvest to Cape Igvak (Kodiak Management Area) after Chignik is guaranteed 600,000 harvest from early and late runs combined, and escapement goals are projected to be met.
- Management strategies under CISMP have been very successful in meeting the sockeye allocation objective and providing escapements within goals.
- Recent genetics studies are robust, but limited sampling with highly variable results does not in itself justify changes to the management plan.
- Genetic results show that the current regulatory assumption that 90% of Igvak sockeye harvests are Chignik bound fish is overly conservative; all samples showed substantially lower contributions of Chignik-bound sockeye to the Igvak harvests.
- Board of Fisheries proposals to alter metrics guiding the Cape Igvak Salmon Management Plan are not well supported by available data.
- The long-standing Cape Igvak plan appears to be working well in terms of limiting harvest of Chignik origin sockeye through harvest guarantees to Chignik, and meeting escapement goals for early and late runs of Chignik sockeye.

Cape Igvak Salmon Management Plan

A purse seine fishery has been active along capes in the Cape Igvak section of Kodiak Management Area (KMA) since 1964. Following a tagging study in 1969 (ADFG, unpub. data) where 84% of released tags were recovered in Chignik Area fisheries, periodic modifications to the fishery were directed by the Alaska Board of Fisheries. In 1978, the Cape Igvak Salmon Management Plan (CISMP) was adopted to restrict harvest of Chignik bound sockeye at Cape Igvak. The fishery is one of two in the state (the other is the Southeast District Mainland, Area M) in which harvest and escapement triggers from an adjacent management area (both Area L-Chignik) must be met before the fishery can open. From beginning of the fishing season to July 25, Chignik fishermen must harvest a minimum of 600,000 sockeye salmon (300,000 from both early and late Chignik runs) and adequate escapements for both runs must be projected to occur before harvest will be allowed in Igvak. KMA fishermen at Cape Igvak are allocated 15% of the total Chignik harvest. The Board stipulates that 90% of the harvest at Igvak and 80% of the harvest in Southeast District Mainland (Area M) are Chignik bound fish (Anderson et al., 2019, Wilburn, 2019). Proposals to the Board for the 2020 Kodiak Management Area focus on specific metrics in the plan.

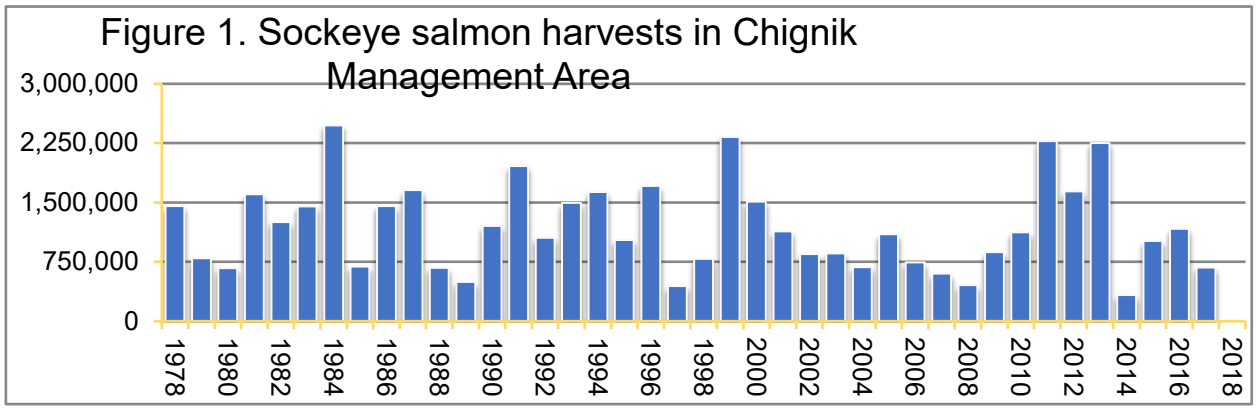
Since the CISMP plan came about, management has been very effective at meeting the allocation objectives in the plan. Only four times in forty years has the 15% target been exceeded by more than 1% (Anderson et al., 2019), which is probably within reasonable expectations for management error. Harvests of Chignik bound fish at Igvak obviously go up and down with Chignik harvests and the Igvak fishery has been closed, or catches extremely low, three times between 2014 and 2018 due to poor runs and lower harvests in Chignik. On the other hand, Igvak sockeye harvests were much more robust in 2011 and 2013 when Chignik sockeye harvests exceeded 2 million sockeye (Anderson et al., 2019). While Chignik sockeye harvest was

essentially zero for 2018, the forty year history shows wide fluctuations, with two of the lowest and two of the highest harvests occurring in the past ten years (Figure 1). Average Chignik sockeye harvests between 1998 and 2018 were about 15% lower than harvests in the previous two decades, 1978-1997. However, three of four harvests over 2 million fish were also in the most recent two decades (Figure 1).

The management plan has also been effective from a conservation and sustainability standpoint. Early and Late sockeye runs to Chignik River have met or exceeded their respective escapement goals every year since 1980, until the run failure in 2018, when the early Chignik sockeye run failed to meet the escapement goal (Munro, 2019).

Recent Genetics Studies in Igvak Section

In the recent fishery genetic stock identification study in KMA, Shedd et al. (2016) added two sampling strata (early and middle) for Cape Igvak Section in each of the three study years, 2014-2016. No Igvak samples were taken in 2014 because low Chignik harvest numbers kept the area closed to commercial harvest. In 2015, only the July stratum (middle) was sampled as Igvak was again closed in June due to inadequate sockeye harvests in Chignik Management Area. Harvest of Chignik fish in Igvak was estimated as 2,059 fish (total harvest 6,595) in the middle stratum, 2015. In both 2014 and



2015, the management plan had its intended effect of keeping Igvak closed or limited when Chignik harvests were low. In 2016, with a stronger Chignik run, an estimated 114,412 Chignik sockeye were harvested in the early (June) stratum. An estimated 10,006 Chignik bound sockeye were harvested at Igvak in July (Shedd et al., 2016).

While it is clear that Chignik fish were captured at Igvak in both years, with only three temporal strata sampled over a three year period, including a single datum for early strata harvests, specific conclusions about patterns of presence, magnitude or vulnerability of Chignik bound fish in Igvak fisheries are unwarranted. The single early (June) stratum sampled from the three year period estimated harvest of Chignik bound sockeye an order of magnitude larger than the two middle stratum harvests from 2015 and 2016. These data emphasize wide variation for Chignik bound sockeye harvests at Cape Igvak, and do not support substantive changes to the current management plan.

Data in Shedd et al. (2016) also does not support the presumption in the management plan that 90% of sockeye salmon harvests in Igvak are Chignik bound fish. The single middle stratum (July) estimate from 2015 found 31.2% Chignik sockeye from a total harvest of 6,595. The middle stratum estimate from 2016 was much lower, where only 5.6% of the sampled harvest were Chignik fish (total harvest 177,315). The sole early stratum (June) contribution in 2016 was much higher, estimating 74.1% of Igvak harvests were Chignik origin (total harvest 154,318), but still did not reach 90%. The assumption that 90% of Igvak harvests are comprised of Chignik bound fish is very uncertain. Other genetic studies suggest uncertainty for similar assumptions in Southeast District Mainland (SEDM, Area M) fisheries, where Chignik bound sockeye are thought to represent 80% of sockeye harvested. Dann et al., (2012), showed that the overall proportion of Chignik bound fish harvested in SEDM was very consistent in 2010, 2011, and 2012

at 65%, 67% and 66% respectively, excluding the Northwest Stepovak Section in July.

Board of Fisheries Proposals

There are five proposals before the board which address the Cape Igvak fishery. Four of these seek to more severely curtail the fishery through specific alterations to metrics of the management plan. They propose completely eliminating fishing at Igvak prior to July 8 (proposal 58), lowering the board approved allocation of Chignik bound fish to KMA fishermen at Igvak from 15% to 5% (proposal 60), or dramatically raising Chignik harvest thresholds upon which Igvak fishery openings are predicated (proposal 61). A fourth proposal suggests that accounting practices for total Chignik harvest be changed such that harvests in Southeast District Mainland (Area M) and Igvak are no longer considered part of the Chignik total harvest. None of these proposals provide credible, data-driven justification for changing longstanding management plans. Recent genetic stock identification results reflect very limited sampling at Cape Igvak (Shedd et al. 2016) and as a result, insight regarding harvest patterns of Chignik sockeye in Igvak fisheries is narrow. There is no doubt that stock composition and harvest estimates are accurate and precise, but only three strata in two different years were analyzed, where estimated harvest numbers of Chignik bound fish at Igvak were an order of magnitude different between them.

- **Proposal 58** would close Cape Igvak to fishing until July 8, based on increases in KMA harvests and declines in Chignik harvests. However, Chignik fish represented a relatively minor component of Westside KMA harvests sampled in Shedd et al. (2016) and there is no data linking historical harvests in KMA to Chignik harvests.

Increases in KMA sockeye harvests over the years most-likely resulted from greater harvests of local sockeye stocks and sockeye from enhancement efforts by Kodiak Regional Aquaculture Association, which averaged about 345,000 during 2008 - 2017 (Anderson et al., 2018). Though Chignik suffered a run failure in 2018, long term average harvests during 1998-2018 are only 15% smaller than those from 1978-1997.

- **Proposal 59** seeks to change fishery accounting practices in CISMP by eliminating SEDM and Cape Igvak harvests from the total Chignik sockeye harvest, for allocation purposes within the plan. Currently 80% of sockeye harvested in most areas of SEDM and 90% of sockeye in Igvak are assumed part of total Chignik harvest. The effect of this is that allocation percentages would be reached sooner and harvests at Cape Igvak would be smaller. If the management plan assumes a specific percentage of Chignik origin fish in SEDM or Igvak, it must be included in allocative accounting. It would be inappropriate to address only Igvak with such a proposal.

- **Proposal 60** would lower the allocation percentage of Chignik sockeye to Cape Igvak fishermen from 15% to 5% supposedly because at the inception of the management plan, KMA sockeye harvests were weak and Chignik harvests were robust, and now the situation is reversed. While KMA sockeye harvests have improved since 1978 due to local stock performance and enhancement efforts, there is no evidence that any declines of CMA sockeye harvests are tied to Cape Igvak sockeye harvests.

Chignik harvests show wide variation since 1978 as many salmon systems do. Two of the highest and two of the lowest Chignik area sockeye harvests have occurred during the last decade (Figure 1). This proposal would significantly reduce harvest in Kodiak's longstanding fishery at Cape Igvak without justification.

- **Proposal 61** would raise harvest thresholds for the early and late Chignik run combined from 600,000 to 1,000,000 sockeye before Igvak could open and guarantee a harvest of 1,000,000 sockeye to Chignik fishermen. The proposal would probably close the Igvak fishery. Justification is based on unstated changes in assumptions and economic conditions that have occurred since inception of the management plan. This is essentially the same proposal submitted to the Area M board meeting in 2019 to severely curtail the SEDM fishery, which the Board of fisheries rejected.

Proposal 62 creates mandatory reporting for vessels entering or leaving Cape Igvak section. It is likely unworkable and ineffective for fisheries managers to perform this monitoring.

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Kodiak Seiners Association
PO Box 8835
Kodiak, AK 99615

December 12, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: **Oppose Proposal 62**

Dear Chairman Morisky and Board of Fish Members:

The Kodiak Seiners Association is writing to express our **opposition to proposal 62**. To be absolutely clear, our contention with this proposal is founded in the underlying insinuation that Kodiak fishermen are dishonest and lawless swindlers. This proposal is at its core a direct insult to our fishermen and its premise is entirely preposterous. There has never been a single reported incident of Kodiak fishermen intentionally mis-reporting harvest at the Cape Igvak area, nor have any of our members ever heard of anyone committing such a scheme. When this proposal was submitted in 2017 Board of Fisheries meeting the Alaska State Troopers issued a public report that they had examined numerous vessels traversing the Shelikof Straight from the Cape Igvak area, and all of the fishermen had already delivered and properly reported their harvest.

The Board should be aware that the assertion of a "strong incentive" to misreport harvest at Cape Igvak is absurd. If fish harvested at in the Cape Igvak area were misreported as being harvested elsewhere, then those fish would not be allocated directly to the individual fishermen but instead to the whole Kodiak fleet. With an average of 53 boats annually participating the Cape Igvak fishery and 90% assignment rate of fish as "Chignik Bound", this means that the offending fishermen could reasonably expect to harvest 90% of 1/53rd of the fish that he/she misreports, which amounts to a mere 1.7% of the illegally reported delivery. To put this figure into perspective, if the vessel harvested 1000 fish, a pretty good delivery, the fishermen could only reasonably expect to gain a harvest of 17 fish by breaking the law, and this is only if there is subsequent opening in the Cape Igvak area.

Additionally, processors typically require vessels to deliver fish before traveling to and from the Cape Igvak area, with some requiring daily deliveries due to quality concerns related to long transport times between Igvak and Kodiak. Fishermen also tend to prefer delivering before leaving the Igvak area in order to avoid the cost of running refrigeration equipment over long travel periods and to prevent having to arrange tender service in other areas which would likely mean a sacrifice of fishing time. It is more cost effective and convenient for fishermen to deliver to a nearby tender in

the Igvak area and, and there is no way for the 17 out of 1000 fish incentive to possibly overcome the burden of delivering the fish elsewhere.

KSA would like to reassure the Board that Kodiak fishermen are honest and hardworking small business owners. We have no interest in conducting illegal scams to earn our living and just wish for a fair opportunity to sustain our fishing rights and continue the orderly prosecution of our fishery.

KSA respectfully requests the Board to **reject proposal 62.** We thank you for the opportunity to comment on behalf of the membership of KSA. We appreciate the scientific and factual creation of regulations regarding our fisheries and trust that the Board continue to apply consistency in designing regulation changes while applying the guiding BOF policies, such as the Management for Mixed Stock Salmon Fisheries.

Kodiak Seiners Association represents 157 members, including the majority of actively fishing SO1K seine permit holders, Kodiak and Homer-based businesses, and individual crewmembers. Our focus is advocacy for our membership through positive interactions with ADF&G, the Board of Fisheries, and our State Legislature.

Sincerely,



Nate Rose
KSA President

December 24, 2019

Matthew Alward

60082 Clarice Way

Homer, AK 99603

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Opposition to proposal 62

Dear Chairman Morisky and board of fisheries members,

I reside in Homer, AK and make my living participating in the Kodiak salmon seine fishery and I oppose proposal 62 which accuses Kodiak fishermen of breaking the law. I have raised my family on the back deck of our seine boat and have participated many times in the Cape Igvak fishery.

The bases of this proposal is the unfounded accusation that fishermen are taking their harvest of fish caught in the Cape Igvak section back to Kodiak Island to deliver and reporting them on their fish tickets as harvested on the Island which is a crime. This same proposer has made the same accusations the last two board cycles and has never provided any evidence of this activity occurring. In fact the last time that the Igvak section was open in June the Alaska State Troopers boarded fishing vessels leaving the Igvak section and inspected their fish holds and found no evidence of anyone trying to falsify fish tickets.

The claim is that Kodiak fishermen have strong incentive to break the law is not born out by the facts. While it is true that if sockeye harvested in the Igvak section is underreported it is not counted against the 15% allocation that the Igvak management allows, it would have to be a very large occurrence of many boats breaking the law to make any significant financial gains for an individual. On average there have been around 50 vessels that partake in the Igvak fishery. If one boat was to miss report their Igvak harvest whatever amount of fish they lied about would be available to the whole fleet to catch. I don't know why anyone would risk a fishing violation on their record and fines to give 49 other fishermen an opportunity to catch those fish.

This proposal would make it so we have to call into the department before entering and leaving the Igvak section. Igvak opens and closes at midnight which would require Fish and Game staff to be on duty through the night to take calls. It also requires everyone to have a satellite phone to make the call. While I do have a very expensive sat phone on my boat, last season it was broke down for two thirds of the season and if this proposal was in place I would not have been able to make a call to the department.

In closing this is the third time that this proposer has accused Kodiak fishermen of breaking the law with no evidence and I respectively ask that you do not adopt proposal 62.

Sincerely,

Matthew Alward

Nicholas Hoffman
PO Box 1212
Kodiak, AK 99615

12/24/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Oppose Proposal 62

Dear Chairman Morisky and Board of Fish members:

I'm a young Kodiak salmon fisherman. I have been running a seine boat since 2011 as well as participating in Kodiak halibut, sea cumber, cod jig, and tanner crab fisheries. I respectfully request the Board reject Proposal 62.

This proposal is insulting to the hardworking fishermen of the Kodiak fleet. Not to mention costly to ADF&G and also possibly a safety concern due to fishermen who may not be able to check out because of technical difficulties being trapped on the mainland if weather comes up. There has never been a ticket given or even a rumor of any Kodiak fisherman driving their fish across the Shelikof for the purpose of misreporting. The number of fish that would need to be misreported would require a large concerted effort by multiple boats to make any difference to our allocation which is unrealistic and implausible. I feel this proposal is a waste of the Board's time because it is based on what is basically a conspiracy theory and in addition was already debated and voted down during the last cycle.

I see no reason for the Board to make any changes to the Kodiak Salmon Management plan. Thank you for the opportunity to comment on the proposals and the chance for my voice to be heard. I look forward to the Board of Fish members getting to spend time in Kodiak and learn more about our town and fishing community.

I humbly request the Board reject Proposal 62.

Sincerely,

Nicholas Hoffman
F/V Relentless

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 62

Dear Chairman Morisky and Board of Fisheries Members,

I am Richard Roth, Kodiak salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife three children and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Tzar. I formally owned and operated the F/V Kelly Girl. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

The author of this proposal argues that Kodiak fishermen are intentionally misreporting fish caught in Cape Igvak area. The Alaska State Troopers previously issued a public report saying that they had examined numerous vessels traveling across Shelikof Strait from the Cape Igvak area, and all of the fishermen had already delivered and properly reported their harvest.

This proposal shows a complete lack of understanding of the geographic realities of fishing the region. In addition to assisting ADF&G in sustainably managing salmon stocks, the Processors in our region would be greatly displeased with the quality of fish that travel across Shelikof Strait and are held for extra time by fishermen. This alone would completely negate the "economic incentive" argument of the author.

This is the second time the Board of Fisheries has had to deliberate on this proposal which would increase the time and financial commitments of ADF&G with absolutely no benefit to any region and would be overly burdensome to Kodiak salmon fishermen.

I request that the Board reject this proposal based which seems to be simply personal assumptions as to the character of their fellow fishermen in another region.

Thank you for your careful consideration,

Respectfully,

Richard, Amanda, Stephanie, Noah, and Ranger Roth
F/V Sea Tzar
Homer, AK

December 19, 2019

Robert Fellows

266 E Bayview Ave.

Homer, AK. 99603

Alaska Board of Fisheries

Board Support Section

PO Box 115526

Juneau, Ak. 99811-5526

RE: Opposition to proposal 62

Dear chairman Morisky and Board of Fisheries members,

I am a commercial fisherman who has fished for salmon in the Kodiak management area for 29 years. I make most of my family's yearly income from this salmon fishery. Historical access to the Cape Igvak section, in years of harvestable surplus in the Chignik management area, is one of the reasons why I started fishing in Kodiak. I respectfully request the Board reject proposal # 62.

This proposer is insinuating that Kodiak fishermen and processors are liars. The implication that fish caught in the Cape Igvak section are delivered somewhere else is completely false. To my knowledge all processors have for decades required their fishermen to deliver within the Cape Igvak section before leaving and many require that their fleet delivers on a daily basis to better track the harvest.

Sincerely,

Robert Fellows

Ron Kavanaugh
self
12/28/2019 12:49 AM AKST

RE: PROPOSAL 62 Require reporting prior to commercial fishing in the Cape Igvak Section and upon leaving the section

After being submitted 3-4 times and failing, I find this proposal to continue to be insulting. It implies that Igvak fisherman are breaking the law. There are no investigations, arrests, or other concerns in regards to this proposals issue. The proposer is insinuating and alleging unlawful behavior with not evidence in fact. The Department of Law finds that it would be hard to enforce. Modeling after Bristol Bay makes no sense. There is no time for stand downs or waiting for conformation. This would lower quality, hinder processor methods of delivering, transporting, and complicate procedure. We would also state that the use of an inreach is not fail proof. You are not guaranteed a timely confirmation. We have waited on replies for days, weeks, and months all while receiving additional messages from other inreach users. Coming and going from Igvak is complicated by weather and timing of both the area and other districts. Delays could reduce efficiency, have high cost from lost opportunity, and create safety concerns.

Steven Roth

12/27/2019 06:32 AM AKST

RE: PROPOSAL 62 Require reporting prior to commercial fishing in the Cape Igvak Section and upon leaving the section

December 24, 2019 Alaska Board of Fisheries Board Support Section P.O. Box 115526 Juneau, AK 99811-5526 Re: Opposition to Proposal 62 Dear Chairman Morisky and Board of Fisheries Members, I am Steve Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak mainly. I own and operate the F/V Sea Grace. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures. The author of this proposal argues that Kodiak fishermen are intentionally misreporting fish caught in Cape Igvak area. The Alaska State Troopers previously issued a public report saying that they had examined numerous vessels traveling across Shelikof Strait from the Cape Igvak area, and all of the fishermen had already delivered and properly reported their harvest. This proposal shows a complete lack of understanding of the geographic realities of fishing the region. In addition to assisting ADF&G in sustainably managing salmon stocks, the Processors in our region would be greatly displeased with the quality of fish that travel across Shelikof Strait and are held for extra time by fishermen. This alone would completely negate the “economic incentive” argument of the author. This is the second time the Board of Fisheries has had to deliberate on this proposal which would increase the time and financial commitments of ADF&G with absolutely no benefit to any region and would be overly burdensome to Kodiak salmon fishermen. I request that the Board reject this proposal based which seems to be simply personal assumptions as to the character of their fellow fishermen in another region. Thank you for your careful consideration, Respectfully, Steve and Jenny Roth F/V Sea Grace Homer, AK

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 62

Dear Chairman Morisky and Board of Fisheries Members,

I am William Roth, Captian of the F/V Sea Chantey. I own a Kodiak seine permit and have been fishing it for the lasat 5 years as well as working as crew since 2010, I rely mostly on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

The author of this proposal argues that Kodiak fishermen are intentionally misreporting fish caught in Cape Igvak area. The Alaska State Troopers previously issued a public report saying that they had examined numerous vessels traveling across Shelikof Strait from the Cape Igvak area, and all of the fishermen had already delivered and properly reported their harvest.

This proposal shows a complete lack of understanding of the geographic realities of fishing the region. In addition to assisting ADF&G in sustainably managing salmon stocks, the Processors in our region would be greatly displeased with the quality of fish that travel across Shelikof Strait and are held for extra time by fishermen. This alone would completely negate the "economic incentive" argument of the author.

This is the second time the Board of Fisheries has had to deliberate on this proposal which would increase the time and financial commitments of ADF&G with absolutely no benefit to any region and would be overly burdensome to Kodiak salmon fishermen.

I request that the Board reject this proposal based which seems to be simply personal assumptions as to the character of their fellow fishermen in another region.

Thank you for your careful consideration,

Respectfully,

William and Kaytlen Roth
F/V Sea Chantey
PO BOX 1230
Homer AK
99603

Aaren Ellsworth

12/28/2019 12:39 AM AKST

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

I oppose this proposal. There are very, very few Chinook harvested in the Mainland District. A king salmon genetics study was done in Kodiak waters in 2014 -2016 and the estimated total Cook Inlet king salmon harvest for the Mainland District was 7 fish in 2014, 29 fish in 2015, and 62 fish in 2016. It is absurd to propose massive closures and disruptions to traditional fisheries for infinitesimal savings in Chinook harvest.

Aaron Nevin

12/27/2019 08:54 PM AKST

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

There is no evidence or reason to believe that this proposal would achieve its desired affect. My name is Aaron Nevin. Being born in Kodiak to a commercial fisherman father I grew up fishing salmon on his seiner. I have continued on in my currently twenty year long career to buy a permit and run his boat after retirement. The seining season usually accounts for the majority of my annual income and is incredibly important to my family.

Adam Barker
Kashvik Fisheries LLC
12/26/2019 11:38 PM AKST

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

Adam Barker 41584 Manson Dr Homer, AK 99603 December 26th 2019 Chairman Reed Morisky Alaska Board of Fisheries-Board Support Section P.O. Box 115526 Juneau, AK 99811-5526 RE: Prop 63 Dear Chairman of the Board of fish members My name is Adam Barker, I am a third generation fisherman who started fishing in Kodiak in 1988 with my dad. I am an owner operator and bought into the Kodiak seine fishery in 1999. My children now help on my boat in the summer. I would like to reject this extreme and biased proposal, I would like to expose it as a ploy to try and enhance the struggling Cook Inlet salmon gillnet fishery. What is changing in their fishery is the user groups and the destruction of the local salmon nesting areas. The growth of human population on the Kenai Peninsula and the popularity of sport fishing and charter fishing in these areas. Preventing seining the capes on Kodiak Island will not rejuvenate Cook Inlet salmon. Please reject this proposal as a request to try and fix a problem that is caused by many factors and cannot be pinned on Kodiak seiners fishing as they have for the last 40 years. I hope the board continues to apply consistency in its application of the guiding policies such as the mixed stock fisheries policy, and the sustainable fisheries policy. Sincerely, Adam Barker

Adelia Myrick

12/26/2019 09:45 AM AKST

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

Dear Board of Fish Members, I am a second-generation Kodiak fisherman. My father started salmon fishing here in 1967, and I have setnetted since I was a toddler with my family, for my whole life. I took over the permit from my dad several years ago, and in 2016 finally bought the setnet operation from my parents outright. Though I am not a seiner, this creation of restricted commercial seine fishing would impact my business because it would crowd the other areas, notably the central district of the Northwest Kodiak district. I have concerns with the math on this proposal and the seemingly arbitrary number of hours of fishing allowed per week. Also, the author of the proposal seems to discount the release of chinook by the seine fleet but it appears that his mortality rate numbers are not based on this fishery and are therefore completely suspect. Obviously people are concerned about fishing in these areas and are proposing any and all ideas they can think of to restrict the seine fleet but it is apparent that they are not based on hard data. Thank you for your consideration, Adelia Myrick

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 63

Dear Chairman Morisky and Board of Fisheries Members,

I am Alex Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Wandering Star. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

According to the 2014-2016 study of Genetic Stock Identification of Chinook Salmon in the sport and commercial fisheries in Kodiak, 80% of the kings caught in both sport and commercial fishery are from British Colombia and U.S. West coast. In 2014 the total Kodiak Management Area commercial harvest of Cook Inlet origin kings was **182 fish**, in 2015 total Cook Inlet origin kings was **334 fish**, and in 2016 total Cook inlet origin kings was **260 fish**. The economic loss of amending the Kodiak Management Plan per the proposer's recommendations could never be balanced by the economic gain to the Cook Inlet region of another approximately 180-334 individual kings total.

In 2016 McDowell prepared a report on the economic impact of the seafood industry in the Kodiak region for the Kodiak Island Borough (KIB) and the City of Kodiak. They found that for every million pounds of salmon landed and processed in the KIB, $900,000 in total labor income is created in the KIB economy, including all direct, indirect, and induced effects. For every million dollars paid to fishermen for salmon landed in the KIB, a total of $1.22 million in labor income is created in the KIB. This doesn't even include fishermen, like me, where our income contributes directly to the economy of the Kenai Peninsula.

This proposal is short-sighted and borders on absurd in its aim to claim a small handful of kings at the expense of a much larger fishery which contributes to the food security of our nation.

I request that the Board to reject this proposal.

Alex and Jaime Roth
F/V Wandering Star
Homer, Alaska

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

Bo Calhoun 57177 Zulu Ct. Homer, AK 99603 12/26/19 RE: Opposition to Proposal #63 Dear Chairman Morisky and Board of Fish members: I'm a third generation Kodiak salmon seiner. I was born in Homer, raised in Port Lions and Homer, and continue to live in Homer. My wife and I hope to raise our two sons on our family seine boat in a healthy Kodiak salmon fishery. I respectfully request you reject Proposal #63. There is no evidence this proposal would protect more Chinook, since it's not clear seaward zones have disproportionately high catches of Chinook. Also, the numbers of Chinook caught in this area are so small, they don't justify the potential losses to the Kodiak fishery. Please oppose proposal #63. Thank you for taking the time to read public comments. Sincerely, Bo Calhoun

Brad Marden
PO Box 2856
Homer, AK 99603

December 23, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: **opposition to Proposal 63**

Dear Chairman Morisky and Board of Fish members:

I first participated in the Kodiak seine fishery for salmon in 2004. Since then, I've worked as a deckhand in various salmon, halibut, and herring fisheries throughout the state (including work on Upper Cook Inlet drift boats), before buying my own boat in 2012, followed by a Kodiak seine permit in 2013. Since then I have exclusively fished in Kodiak waters. I respectfully request the Board **reject Proposal 63**.

Proposals to create additional "seaward" and shoreward" zones for Kodiak seiners fishing the Mainland district allocation will do little or nothing to help conserve Upper Cook Inlet-bound Chinook salmon. Catching a single king in this region is notable, and the fish is required to be returned unharmed to the water, and there is no financial incentive whatsoever for fishermen to target this species. This proposal was poorly researched and is based more on conjecture and extrapolation than any facts. Instead of helping conserve UCI-bound Chinook, the proposal would prove harmful to the entire Kodiak salmon fleet, and with no benefit. We must all work to help conserve Chinook stocks around the state, but this proposal would be ineffective, with costly unintended consequences. Fishing opportunity in the Mainland District fishery helps spread out our Kodiak fleet and can be an important part of having a decent fishing season for Kodiak fishermen. Fisheries managers are already empowered with a variety of tools to manage the Mainland District.

I am sure that the Board tires of endless testimony claiming that the fish of concern are "our fish being stolen by those guys over there". It seems that in my 15 years of commercial fishing in Alaskan waters, Kodiak salmon fishermen are often the scapegoat. Rather than passing the blame along to the next guy, I ask that we consider proposals with more merit and less collateral damage. For this reason, I ask that you **reject Proposal 63**. I want to thank you for your service and I hope the Board continues to apply consistency in upholding Mixed Stock Fisheries Policy, and the Sustainable Fisheries Policy.

Sincerely,

Brad Marden

Brian Mcwethy
KSA
12/23/2019 09:23 AM AKST

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

My name is Brian Mcwethy. I was born and raised in kodiak. I live in kodiak with my family and we all depend on my income. I fished with my father on his seiner growing up and now I own and operate a seiner. Salmon seining and tanner crab fishing in kodiak are currently our only sources of income. I plan to try and continue to fish the kodiak waters and possible my children will have the opportunity to. I hope the current and historical areas we fish aren’t taken from us and the future generations of kodiak. I oppose this proposal strongly. This proposal would greatly decrease the area we could fish. In an already crowded fishery the loss of any fishing area would greatly affect all area K users. Seiners and setnetters would have more completion and less opportunity.

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 63

Dear Chairman Morisky and Board of Fisheries Members,

My name is Chris Johnson and I am a second-generation fisherman in Kodiak, Alaska. I grew up fishing on my dad's boat and got my first crew job working for someone else two weeks after I graduated high school. I haven't missed a salmon season since. I bought into the fishing industry in 2011 with the purchase of a 25-foot jig boat that I worked for two years in the winter and spring months while I still crewed for salmon in the summer. Access to the jig fisheries focusing on cod and rockfish was the only way that I could afford to move into the salmon fleet with a 38-footer in 2013. After the recent cod collapse, I now primarily rely on salmon seining and live here year-round with my wife.

According to Genetic Stock Identification of Chinook Salmon in the sport and commercial fisheries in Kodiak from 2014-2016, 80% of the kings caught in both sport and commercial fishery are from British Colombia and U.S. West coast. In 2014 the total Kodiak Management Area commercial harvest of Cook Inlet origin kings was 182 fish, in 2015 total Cook Inlet origin kings was 334, and in 2016 total Cook inlet origin kings was 260.The economic loss of amending the Kodiak Management Plan per the proposer's recommendations could never be balanced by the economic gain to the Cook Inlet region of another approximately 180-334 kings.

Taking away any fishing opportunity from Kodiak fishermen, particularly from the small boat fleet, would have a direct negative impact on new entrants trying to gain a foothold in this industry, fishing families trying to get by, and fishing support businesses in our region. I'm proud to call Kodiak home and am working to protect our fishing way of life.

Sincerely,
Chris Johnson
F/V North Star

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 63

Dear Chairman Morisky and Board of Fisheries Members,

My name is Danielle Ringer and I appreciate the opportunity to comment on proposals before the Board in writing and in person for the Kodiak finfish meeting. I live in Kodiak with my husband and we own and operate the 38-foot F/V North Star. We chiefly rely on salmon seining and cod and rockfish jigging to maintain our fishing way of life and ability to live on Kodiak Island. I grew up in Homer learning to harvest and process fish from my parents in Kachemak Bay and dipnetting on the Kenai River. I hold a Master's degree from the University of Alaska Fairbanks in Political Ecology of Fisheries and was one of the researchers on the *Graying of the Fleet in Alaska's Fisheries: Defining the Problem and Assessing Alternatives* study in the Kodiak region.

According to Genetic Stock Identification of Chinook Salmon in the sport and commercial fisheries in Kodiak from 2014-2016, 80% of the kings caught in both sport and commercial fishery are from British Colombia and U.S. West coast. In 2014 the total Kodiak Management Area commercial harvest of Cook Inlet origin kings was 182 fish, in 2015 total Cook Inlet origin kings was 334, and in 2016 total Cook inlet origin kings was 260.The economic loss of amending the Kodiak Management Plan per the proposer's recommendations could never be balanced by the economic gain to the Cook Inlet region of another approximately 180-334 kings.

In 2016 McDowell prepared a report on the economic impact of the seafood industry in the Kodiak region for the Kodiak Island Borough (KIB) and the City of Kodiak. They stated that by quantifying the relationship between harvest volumes and values and labor income in 2014, the analysis could provide guidance on the potential economic impact of changes in seafood industry activity in the region. For example:

- For every million pounds of salmon landed and processed in the KIB, $900,000 in total labor income is created in the KIB economy, including all direct, indirect, and induced effects.
- For every million dollars paid to fishermen for salmon landed in the KIB, a total of $1.22 million in labor income is created in the KIB, including all harvest and processing related multiplier effects.

I see no biological, scientific, historical, economic, nor sociocultural reasons that could justify the Board making any changes to the salmon management plans in the Kodiak Management Area, which would create ripple effects negatively impacting Kodiak fishermen, processing workers, and community businesses. Thank you for your consideration of my comments and I

look forward Board of Fisheries members spending time in our fishing community during the Kodiak meeting.

I humbly request the Board to reject this proposal.

Respectfully,
Danielle Ringer, M.A.
F/V North Star

Dave Kubiak
F/V Lara Lee
12/21/2019 02:00 PM AKST

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

This passionate and radical proposal is not supported by science. 80% of Kings caught in the sport and commercial fishery are from British Columbia and US West Coast. The results of this proposal would be a huge economic loss offset by a very few more Kings returning to Cook Inlet. Reversing the degradation of natal spawning habitat closer to home may yield more productive solutions.

Donald Lawhead

12/26/2019 10:57 PM AKST

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

There is no need to change the mangement plan. There is no data to support this proposal.

Fred Stager

F/V Lady Lu

December 12, 2019

Alaska Board of Fisheries Board Support Section

P.O. Box 115526 Juneau, AK 99811-5526

RE: Opposition to Proposal 63

Dear Chairman Morisky and Board of Fish Members,

I am writing to ask you to **oppose proposal 63.** Creating "seaward" and "shoreward" harvest zones in the mainland district of the Kodiak Management Area (KMA) with the intention of preserving king salmon bound for Cook Inlet waters. While I understand that King Salmon populations in the Western Gulf of Alaska are at unprecedented lows and that these circumstances call for extreme management measures in order to preserve stocks with critically low populations. I endorse and encourage the continuation of the non-retention policy for king salmon in Kodiak waters. This policy has now been in place for 6 seasons and amounts to an extraordinary and unusual conservation practice that our fleet has willingly accepted.

Proposal 63 relies on fundamentally flawed assumptions about the harvest of king salmon in Kodiak. There is no evidence to suggest that king salmon are harvested in greater abundance in the Seaward Zones, and in fact, feeding kings typically accumulate further into bays where they prey on herring, capelin, and other schools of baitfish. These salmon, colloquially termed "feeders" have particularly high mortality rates when released due to scale loss. Feeders comprise the majority of king salmon harvested in Kodiak, and adoption of proposal 63 would likely intensify the harvest and mortality of king salmon in the KMA. Forcing the seine fleet into

"shoreward zones" is therefore a counterproductive approach to conserving king populations and it entirely lacks a sound scientific basis.

There is absolutely no factual basis to believe that the areas covered by this proposal exhibit consistently high harvest rates of Cook Inlet chinook stocks, and given that the catch of chinook is typically random and evenly diffused throughout harvest in the KMA, the Board can expect that every chinook preserved by this plan will result in the unintended harvest loss of at least tens of thousands of salmon of various species from healthy stocks. Unless there are absolutely no other management measures that can be taken in the vicinity of the runs of concern, it would be entirely unjustifiable to enact a management plan that has such immense and certain costs without conveying any measurable benefits.

Board policy must be applied consistently throughout the state. If the current Board wishes to engage in such a drastic policy shift that it would begin adopting additional measures to further limit the harvest of non-local stocks in Kodiak then we would expect and anticipate these standards to apply to regions to our south, such as the Chignik Management area, where there are currently *no* measures in place designed to limit the harvest of non-local stocks. The Kodiak seine fleet has had to bear the sole burden of conservation for our local stocks in addition to the conservation burden of non-local harvest inherent in the Cape Igvak and North Shelikof Straight management plans. Salmon management in the Western Gulf of Alaska already exhibits an inequitable distribution of the burden of conservation due to the uneven applications of Board policies. Kodiak fishermen have been resultantly held accountable for non-local harvest while our own stocks are apparently considered unworthy of similar concerns when harvested in other management areas.

Without knowledge of what is causing the scarcity of king salmon, but with an understanding that minimal volume of Cook Inlet origin king salmon is caught in the KMA, it is important that the public temper its expectations of conservation potential within the Kodiak area. You cannot use management measures in the KMA to conserve fish that Kodiak fishermen simply aren't catching. **Please reject proposal 63.** Thank You- Fred Stager

garrett kavanaugh

12/27/2019 05:19 PM AKST

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

Dear Chairman and Members of the Board, As a young fishermen who is working their way into the Kodiak Salmon fishery this proposal will cause Kodiak fishermen to lose a substantial amount of their catch. I have been investing into the Kodiak salmon fishery as much as possible, in 2019 I purchased a Kodiak salmon permit. I ran a seiner for the month of august. I plan on running the same boat for the entire 2020 salmon season in Kodiak. When I was younger I remember testifying against proposals similar to these. These proposals are re-allocations of Kodiak historical catch. Kodiak has always had intercept fisheries and we already have management plans in place that have been effective for the Kodiak salmon fishery. Please help ensure the future for young fishermen entering into the Kodiak Salmon fishery, and the people who have been investing and are established in the fishery. Thank you for considering these comments, Garrett Kavanaugh

Iver Holm

12/28/2019 12:27 AM AKST

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

Dear Chairman Morisky and Board of Fish members: I am 31 years old and a life long resident of Kodiak. I grew up set netting in Uganik on the west side of the island with my mother until i was 14. I then started seining with my father until I was able to buy my own Kodiak seine operational the age of 27. Please oppose proposal 63. thank you for your time sincerely
Iver Holm

James Calhoun

12/26/2019 02:59 PM AKST

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

I have been intimately involved in the Kodiak seine fishery since 1968 to present. Presently my son is fishing the Kodiak area and it is my desire to have my grandsons be able to participate in a healthy Kodiak fishery if they so desire. Throughout my career I have come to the conclusion that the ADF&G management for Kodiak has been stellar and has kept the stocks in Kodiak healthy overall with the current management plan. It has been my experience my commercial and sport catch of kings have in been bays not offshore. Forcing boats inshore would only exacerbate catch and be contrary to the intent of this proposal. The king salmon catch in this area is relatively small and Cook Inlet bound kings smaller yet. It would seem to me to be more effective to eradicate the pike populations in the rivers in Northern Cook Inlet. I oppose proposal 63. thank you.

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

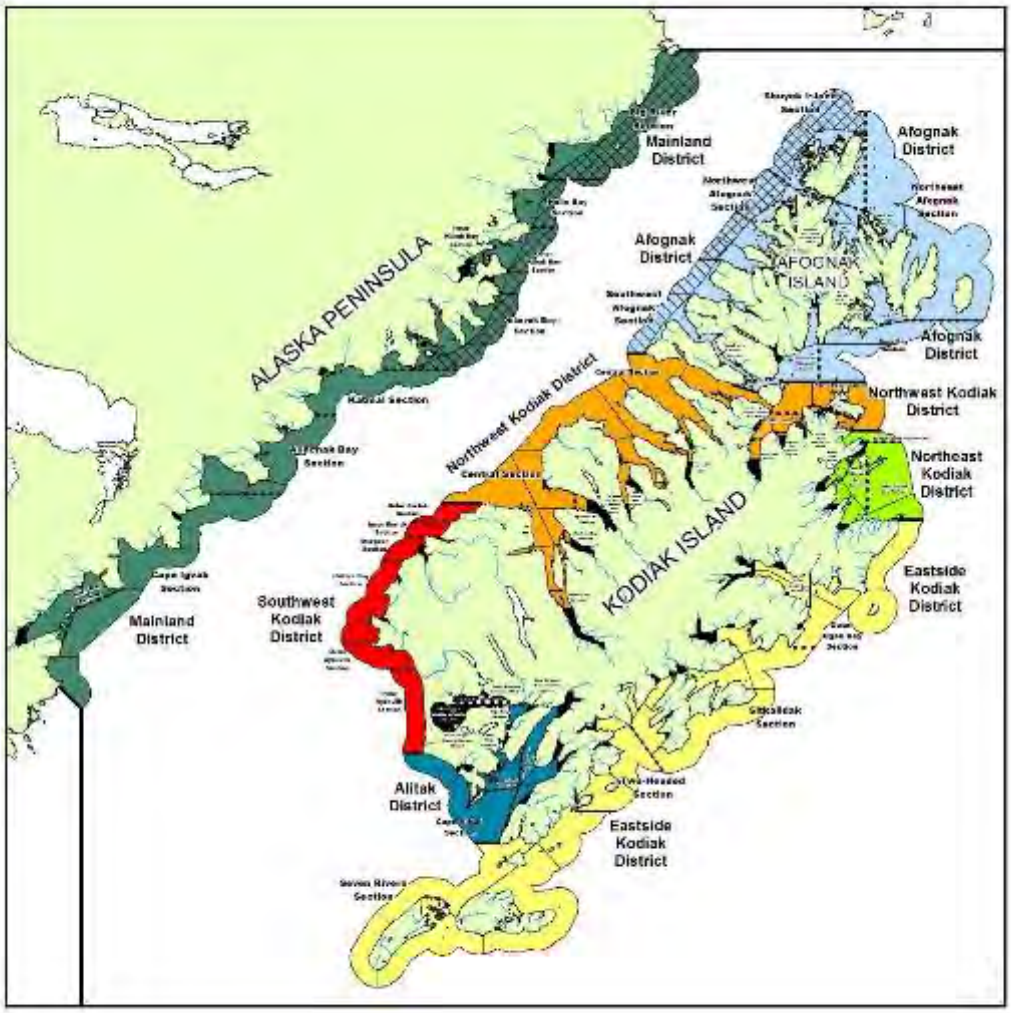
My name is Jamin Hall, my wife and I have a set net site in Uganik Bay. I am writing in opposition to proposal 63.

Ken Christiansen
F/V Mary Ann
12/26/2019 03:28 PM AKST

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

The economic loss of amending the Kodiak Management Plan per the proposers recommendations could never be balanced by the economic gain to the Cook Inlet region of another 180-334 kings. Any change to a management plan should be based on scientific reason. Outcry from one user group to take from another is simply a knee-jerk reaction with a sense of immediate gratification but not necessarily improved results.

December 2019



Synthesis of Chinook Salmon Stock Contribution Estimates within the Kodiak Management Area **Commercial Salmon Fisheries (Proposals 63 & 37)**

Kodiak Salmon Work Group

EXECUTIVE SUMMARY

- During all years and sampling periods regardless of the commercial salmon fishery district sampled, British Columbia (hatchery stocks) Chinook salmon dominated the stock

composition of the harvest. Estimates of contribution ranged from a low of 30% to a high of 70% with respective harvests of several hundred to several thousand fish.

- Consistently, contributions from Washington and Oregon Chinook stocks (Western US stocks) to the KMA commercial harvest ranged from 7.3% to 37% and averaged 28%.

- Contributions from Southeast Alaska/North Gulf Coast were in most cases higher than the combined contributions from both Kodiak and Cook Inlet. The estimates generally seemed to be reflective of periods of higher (1997-1999) and lower abundance (2014-2016) for Southeast Alaska stocks.

- The capability of any marine salmon fisheries sampling program to consistently estimate the harvest, in a timely manner, of at most several hundred fish over a commercial fishing season within the geographic scope of the Kodiak Management Area is untenable. Given the current status of both the Kodiak and Cook Inlet Chinook salmon stocks at present, the actions suggested by Proposal 37 are unwarranted.

- It should be noted that for the Cook Inlet stocks harvested within the Kodiak Management Area, a majority are hatchery fish produced for marine or in-river sport fisheries.

- The Chinook salmon stocks contributing to the Kodiak Management Area commercial fishery are similar to those contributing to most of the marine commercial and recreational fisheries from Yakutat to Adak, or coastwide.

INTRODUCTION

The Kodiak Management Area and the associated salmon fisheries has a long and storied history of sustainable fisheries management success. A foundational feature for this success is the escapement enumeration program using weirs and counting individual fish as they migrate upstream. This program has largely been in place since the early 1900s with weirs operated annually on the Karluk, Ayakulik and Frazer lake systems. Daily and cumulative escapement counts are relayed to the area management office for each system and when combined with other sources of data: harvests, aerial survey index counts (for systems without weirs), fishing effort along with additional biological data (timing, migration patterns, age composition) are all sourced into fishery management decisions and emergency orders to open or close districts, sections and subsections of fishing areas throughout the salmon fishing season. An additional vital feature of this program is the inclusion of enclosures or "traps" that allow for live sampling of the escapement, specifically for sockeye and Chinook salmon and the collection of biological attribute data (age, sex, length) which is imperative for building brood tables which in turn are employed for establishing and evaluating biological escapement goals and generating pre-season forecasts.

An additional prominent feature of the Kodiak Management Area salmon fisheries are the 7 management plans which guide management of the salmon stocks and species during the salmon fishing season which commences in early to mid-June and extends into late September. The management planning process was largely initiated in the mid to late 1970s which was a period of extremely poor salmon production throughout the entire Kodiak Archipelago and was cause for

multiple years of limited commercial fishing by all gear groups with the overall objective of rebuilding wild salmon stocks. These management plans were the result of extensive efforts by ADF&G management and research biologists, commercial fishermen, the local fish and game advisory committee and ultimately the Alaska Board of Fisheries over multiple triannual meetings (Malloy, 1988).

Description of Kodiak Chinook Salmon Fishery

The Kodiak Island area has two wild chinook salmon stocks (Karluk and Ayakulik Rivers) and one introduced run which originates in the Dog Salmon River. There have also been several hatchery produced chinook release sites permitted that promote road accessible shore/boat recreational fisheries. The commercial seine and set gillnet fisheries harvest Chinook salmon incidentally while targeting local sockeye, chum and pink salmon stocks along nearshore migration pathways. The harvests typically occur during June and July and at times the harvests can consist of immature or feeder Chinook that are traversing well established commercial fishing areas in the Westside, Southwest and Alitak Districts. The record commercial harvest of 42,000 fish in 1993 consisted of large numbers of immature/feeder kings and stimulated concern from the recreational sector within the Cook Inlet area that large numbers of the harvested fish were of Cook Inlet origin. The harvest during 1993 was almost twice the previous high estimate of 24,000 fish, which occurred in 1992. As a back drop to this concern, several chinook salmon stocks within Cook Inlet were experiencing poor production (Deshka and Early Run Kenai R.) while simultaneously there was a serge in production from stocks originating in British Columbia, Washington and Oregon which were largely of hatchery origin; a portion of these hatchery fish were marked with a coded wire tag and missing the adipose fin (Swanton, 1997). There are several hatchery stocks in Cook Inlet that were marked and could thereby serve for detecting the presence of these stocks in the Kodiak Fishery. A pilot commercial catch sampling program was initiated in 1994 (Swanton 1997) and was followed by a focused interdivisional sampling and harvest estimation program for the years 1997-1999 (Clark and Nelson 2001). A more contemporary and comprehensive genetic stock identification (GSI) program was conducted for the years 2014-2016 and generally corroborated previous results (Shedd et al. 2016).

North American Chinook salmon Ocean Migrations

There are literally hundreds of Chinook Salmon stocks spanning the Coastline from Oregon, Washington, British Columbia and throughout Alaska from Southeast and along the Alaska Peninsula; these stocks are often referenced as far north migrating stocks, as opposed to stocks that have more localized or truncated ocean migrations. With the advent of Coded Wire Tagging (early 1970s) coupled with extensive High Seas Tagging (conducted throughout the North Pacific) and scale pattern analyses efforts conducted by the University of Washington much insight was gleaned regarding migration patterns along coastal and open ocean migration routes. Substantial increases in hatchery production of Chinook salmon in Oregon, Washington and British Columbia occurred in the early 1990s which resulted in a surge in coastwide abundance. Much of the increased hatchery production was in response to poor production from wild stocks, compensation for habitat destruction, tribal agreements, hydroelectric dam impacts or mitigation owing to wild stock endangered species act (ESA) listings.

Coastwide abundance of feeding/rearing Chinook increased markedly and harvests of Chinook increased both within Alaska's commercial and recreational coastal marine fisheries as well as bycatch of chinook in federal fisheries operating in the Gulf of Alaska. The Pacific Salmon Treaty between the United States and Canada governs harvests of these stocks throughout Southeast Alaska (Ketchikan to Yakutat) where jurisdiction between the parties ends. The harvest of these

stocks throughout the remainder of the Gulf of Alaska is viewed with recognition that they originate in other states or British Columbia and harvest should be limited or constrained where appropriate. This has been the policy direction followed by both ADF&G and the Alaska Board of Fisheries certainly within the last 10-15 years and pertains to Kodiak, Kachemak Bay and Homer spring and winter recreational fisheries and both commercial and recreational fisheries prosecuted in Prince William Sound.

Data Summaries by Year

(Swanton, 1997) Caution is suggested relative to these estimates owing to low marking fractions and less than optimum temporal and spatial sampling coverage**.**

1994

The two Kodiak commercial fishing areas where CWT sampling occurred (Westside and Alitak Districts) experienced a commercial harvest of 5,089 Chinook salmon (80% CI 2,927-7,253 fish) from marked cohorts which represented 32.5% of the sampled harvest. The stock groupings represented by the tag recoveries were: 9.7% Southeast Alaska; 83% from British Columbia; 4.9% from Washington state and 2.4% from Oregon.

From the Westside Kodiak area most of the marked cohorts were of British Columbia origin with marked fish from Southeast Alaska, Washington and Oregon also detected in lower numbers. There was an apparent temporal change in stock contribution from the week of June 12-18 which were more varied, as compared to the period June 19-25 when only British Columbia and Southeast Alaska stocks were detected. The marked cohort contribution estimates for this area spanning 12 June through 30 July was 4,655 fish (80% CI 2,517-6,793 fish) from a total catch of 14,619 fish or 31.8%.

Within the Alitak Bay District all marked fish recoveries were of British Columbia origin and represented 435 Chinook out of a total catch of 640 fish. This represented 68% of the catch during the period off sampling.

(Clark and Nelson 2001)

1997

During the 1997 Kodiak commercial salmon fishing season there were 18,728 Chinook salmon harvested with 89% of the harvest occurring during the CWT sampling period of 9 June-8 August; a majority 67% of this harvest (about 11,000 fish) took place within the Westside area.

The study plan designated a sampling fraction of inspecting 20% of the observed catch for CWT's which is consistent with Coastwide sampling programs sanctioned by the Pacific Salmon Commission.

The number of Chinook salmon inspected for a missing adipose fin in1997 was 6,015 or 36% of the harvest during the sampling period; 37% of the harvest was inspected within the Westside District catch; 60% within the Alitak Bay District; sampling within the Eastside District exceeded 20% and an additional 24% (792 fish) were inspected from harvests within the Mainland fishing District.

The general stock composition from the sampled harvest was: 13% from Alaska stocks, 72% from British Columbia, 7% from Washington and 8% from Oregon Chinook stocks. The 18 tag recoveries from Alaska stocks was further broken down to include 11 recoveries from Cook Inlet: two Kenai River, three Ship Creek, three Ninilchik River, one from Deception Cr., one from Crooked R. and one from Homer Spit.

1998

In 1998 there were 17,341 Chinook harvested commercially during the sampling period 9 June- 8 August with approximately 93% occurring within the Westside (including the Southwest Afognak Section and Northwest Kodiak District), Alitak Bay and Eastside Kodiak Districts. There was 53% of this harvest sampled: 45% in the Westside District, 50% in the Alitak District and 43% within the Eastside District. No samples were collected from the Mainland District as the overall catch was 393 fish.

The identified tagged fish were represented as follows: 31% (79) were Alaska stocks; 49% (125) were from British Columbia; 15% from Washington and 5% from Oregon. The Alaskan stocks originating in Cook Inlet (46 tag recoveries) were three from Resurrection Bay; 5 from Seldovia Harbor; 10 from Homer Spit; 5 from Halibut Cove; 6 from Ninilchik R., 13 from Deception Cr., one from Crooked Cr. and two from the Kenai R. The additional Alaskan stock recoveries were 9 from Southeast Alaska and 24 from the Buskin River.

1999

During the 1999 commercial salmon fishery there were 18,299 Chinook harvested which represented 94% of the harvest that occurred during the June 9-August 8 sampling time frame. About three quarters (73%) of the harvest was realized within the aforementioned fishing areas, and similar to previous years, a majority of the harvest was realized within the Westside Kodiak District. There was 46% of the harvest (7,940 fish) inspected for CWT via a missing adipose fin. Similar to the previous years 45% of the catch was from the Westside District, 41% of the Alitak Bay District. No sampling results were reported for the Eastside District, however 12% of the Mainland District (356 fish) harvest was opportunistically sampled.

There were 201 tag recoveries from the 1999 sampling effort, 124 were from the Westside Kodiak District, 10 from the Mainland District, 20 from the Eastside and three from the Alitak Bay District. There were 32% (64 tagged fish recovered) from Alaska stocks, 31% from British Columbia, 13% from Washington and 24% that originated from Oregon. There were 21 tagged fish recovered that originated from Cook Inlet stocks with distribution by area similar to 1998.

The authors after consulting with fishery management staff, suggested that if any non-local stock or stock grouping was estimated to have a 10-15% exploitation rate (harvest rate applied over the entire brood year) imposed by fisheries within the Kodiak Management Area that this would be cause for concern. In addressing this, Clark and Nelson (2001) stated " Therefore, publication of imprecise, but consistently small harvests of Cook Inlet hatchery cohorts in the KMA fishery provided the best indication of the lack of importance of the KMA fishery in influencing production of chinook salmon bound for Cook Inlet."

(Shedd et al. 2016)

This study employed genetic stock identification techniques to generate stock contribution estimates for chinook salmon harvested within both the commercial and recreational fisheries throughout the Westward Region (Kodiak, Chignik and the Alaska Peninsula Management areas). The information summarized below is only for the commercial fishery within the Kodiak Management Area to maintain consistency in comparing other information presented within this summary. This study focused on 4 Districts/reporting areas and two temporal strata (Early: 1 June-5 July; Late: 6 July-5 August).

2014

Overall, there were 8,382 fish commercially harvested of which 3,050 fish were sampled (sampling fraction of 36.4%) for all areas and time strata. The results of GSI for the entire time and area strata were: 55.6% British Columbia, 34% West Coast US (Washington and Oregon stocks combined),

3.4% Southeast Alaska and Northeast Gulf of Alaska stocks(Southeast Alaska/Gulf Coast, 2.6% Cook Inlet, 1.9% Kodiak and 1.6% referred to as the Eastern Bering Sea stock grouping. The following are the aggregate stock composition estimates broken down by geographical and temporal strata:

Northwest Kodiak District and Afognak(Statistical Areas: 251, 253 and 254)

- Early (1 June-July 5) 72.1% British Columbia stocks, 15.7% West Coast US, 4.3% Kodiak, 2.7% Cook Inlet and 2.4% Southeast Alaska/North Gulf Coast Alaska.
- Late (July 6-August 5) 56.0% British Columbia stocks, 34.7% West Coast US, 4.6% Southeast Alaska/Gulf Coast, 2.2% Cook Inlet and 1.2% Kodiak Stocks.

Eastside Kodiak and Afognak District (Statistical Areas: 258, 259 and 252)

- Early (1 June-July 5): 51.2% British Columbia Chinook stocks, 35.3% West Coast US, 4.2% Southeast Alaska/Gulf Coast, 0.3% Cook Inlet and 4.2% Kodiak stocks.
- Late (July 6- August 5):51.7% British Columbia stocks, 37.5% West Coast US, 2.6% Southeast Alaska/Gulf Coast, 4.0% Cook Inlet and 0.1% Kodiak Chinook salmon stocks.

Southwest Kodiak Alitak Districts (Statistical Areas: 255, 256 and 257)

- Early (June 1-July 5): 51.2% British Columbia stocks, 30.8% West Coast US, 6.1% Southeast Alaska and Gulf Coast, 1.1 % Cook Inlet and 10.0% Kodiak Stocks.
- Late (July 6-August 5): 54.5% British Columbia, 39.0% West Coast US, 2.9% Southeast Alaska/Gulf Coast, 1.4% Cook Inlet and 1.0% Kodiak stocks.

Mainland District (Statistical Area 262) There was no sampling conducted for the "Early" strata during 2014.

- Late: July 6-August 5): 51.2% British Columbia Stocks, 39.5% West Coast US stocks, 4.8% Southeast Alaska/Gulf Coast, 1.5% Cook Inlet and 0.9% Kodiak stocks.

2015

During 2015 the Chinook harvest was 8,087 of which 2,775 fish were sampled resulting in a 34% sampling fraction. The estimated stock contributions for this commercial fishing season were: 51.6% British Columbia, 33.9% West Coast US, 4.9% Southeast Alaska/Gulf Coast, 4.5% Cook Inlet and 4.5% Kodiak.

Northwest Kodiak District and Afognak(Statistical Areas: 251, 253 and 254)

- Early (June 1-July 5): 54.8% British Columbia, 24.3% West Coast US, 8.5% Southeast Alaska/Gulf Coast, 6.4% Cook Inlet and 4.5% Kodiak.
- Late (July 6-August 5):52.1% British Columbia, 34.9% West Coast US, 4.9% Southeast Alaska and Gulf Coast, 4.3% Cook Inlet and 3.2% Kodiak.

Eastside Kodiak and Afognak District (Statistical Areas: 258, 259 and 252)

- Early (June 1-July 5):36.4% British Columbia stocks, 46.8 West Coast US stocks, 4.8% Southeast Alaska and Gulf Coast stocks, 7.8% Cook Inlet and 3.1% Kodiak Chinook Stocks.
- Late (July 6-August 5):49.4% British Columbia stocks, 40.7 West Coast US stocks, 3.5% Southeast Alaska and Gulf Coast, 1.3% Cook Inlet and 4.3% Kodiak Chinook stocks.

Southwest Kodiak and Alitak Districts (Statistical Areas: 255, 256 and 257)

- Early (June 1- July 5): 33.8% British Columbia stocks, 35.2% West Coast US, 3.2% Southeast Alaska/Gulf Coast stocks, 2.5% Cook Inlet and 24.9% Kodiak Stocks.

- Late (July 6-August 5):63.1% British Columbia stocks, 30.3% West Coast US, 3.4% Southeast Alaska and Gulf Coast stocks, 1.4% Cook Inlet and 1.2% Kodiak Chinook stock contributions.

Mainland District (Statistical Area 262) Similar to 2014, there was no sampling conducted during 2015 within the period June 1- July 5 for this district.

- Late (July 6-August 5): 64% British Columbia stocks, 19.6% West Coast US, 3.0% Southeast Alaska/Gulf Coast, 12.8% Cook Inlet stocks and no contribution from Kodiak Chinook stocks.

2016

The harvest during 2016 was only 7,471 Chinook of which 3,189 fish were sampled, which represented a 43% sampling fraction. The various stock contributions to the commercial harvest for 2016 were: 56.5% British Columbia, 30.6% West Coast US, 6.2% Southeast Alaska/Gulf Coast, 3.8% Cook Inlet and 1.3% Kodiak stocks.

Northwest Kodiak District and Afognak (Statistical Areas: 251, 253 and 254)

- Early (June 1-July 5): 59.6% British Columbia stocks, 15.0% West Coast US, 12.7% Southeast Alaska and Gulf Coast, 7.8% Cook Inlet and 3.2% Kodiak stocks.
- Late (July 6-August 5):61.8% British Columbia stocks, 17.3% West Coast US, 11.5% Southeast Alaska and Gulf Coast, 6.7% Cook Inlet stocks and 1.6% Kodiak stocks.

Eastside Kodiak and Afognak District (Statistical Areas: 258, 259 and 252)

- Early (June 1- July 5): 57% British Columbia stocks, 27.4% West Coast US Chinook stocks, 6.4% Southeast Alaska/Gulf Coast, 2.3% Cook Inlet and 2.6% Kodiak stocks.
- Late (July 6-August 5):51.5% British Columbia Chinook stocks, 39.5% West Coast US stocks, 1.3% Southeast Alaska/Gulf Coast stocks, 3.8% Cook Inlet and 2.8% Kodiak stocks.

Southwest Kodiak and Alitak Districts (Statistical Areas: 255, 256 and 257)

- Early (June 1-July 5): 67.1% British Columbia, 24.6% West Coast US stocks, 3.1% Southeast Alaska/Gulf Coast, 1.4% Cook Inlet and 2.9% Kodiak stocks.
- Late (July 6-August 5): 69.2% British Columbia stocks, 24.7% West Coast US, 1.8% Southeast Alaska, 2.5% Cook Inlet stocks and 1.1% Kodiak Chinook stocks.

Mainland District (Statistical Area 262)

- Early (June 1-July 5): 46.6% British Columbia stocks, 44.1% West Coast US, 3.6% Southeast Alaska and Gulf Coast, 1.9% Cook Inlet and 0.3% Kodiak stocks.
- Late (July 6-August 5):54.1% British Columbia Chinook stocks, 37.1% West Coast US, 5.1% Southeast Alaska and Gulf Coast, 2.5% Cook Inlet and no contribution from Kodiak Chinook stocks to the harvest.

A direct comparison of the presented information and contribution estimates to the KMA Chinook harvest is difficult because of specific requirements related to CWT estimates and those generated using GSI. For generating reliable harvest estimates using CWT data, a large marking fraction (number of fish marked/total released) combined with a recommended 20% sampling fraction (number of fish sampled from the total catch) is statistically necessary. In the case of both the Kodiak and Cook Inlet Chinook stocks for the years 1994 and 1997-1999, the number of marked fish from the various hatchery releases was small and when combined with low numbers of

recoveries, the harvest estimates were uncertain or informative at best. For these reasons, the comparisons of the CWT contributions with those generated using GSI are completed using a simple percent contribution to the overall sampled harvest (Table 1). In reviewing the data, the overall stock contributions are reasonably consistent: British Columbia stocks consistently contribute greater than 50% to the sampled harvest, followed by Washington and Oregon stocks and to a lesser extent Southeast Alaska with minor contributions from either Kodiak or Cook Inlet stocks.

Summary and Recommendations

- During all years and sampling periods regardless of the commercial salmon fishery district sampled, British Columbia Chinook salmon stocks dominated the stock composition of the harvest. Estimates of the percent contribution ranged from a low of 30% to a high of 70%, representing harvests of several hundred to several thousand fish.

- Consistently, contributions from stocks originating in Washington and Oregon (Western US stocks) to the commercial harvests ranged from a low of 7.3% to a high of 37% and averaged 28% of the estimated harvest.

- Contributions from Southeast Alaska/North Gulf Coast were in most cases higher than the combined contributions from both Kodiak and Cook Inlet. These contributions also seem to be reflective of periods of higher and lower abundance when comparing contributions from 1997-1999 (higher abundance) to those from 2014-2016 which was a period of lower Southeast Alaska stock abundance.

- The capability of any marine salmon fisheries sampling program to consistently estimate the harvest in a timely manner, of at most several hundred fish over a commercial fishing season within the geographic scope of the Kodiak Management Area, is untenable.

- Given the stock status of both the Kodiak and Cook Inlet Chinook salmon stocks a regime such as that outlined in Proposal 37 is unwarranted. Both the Kodiak (0%-4.5%) and Cook Inlet (2.6%-4.5%) stock contributions to the Chinook harvest are minor.

- It should be noted that for the Cook Inlet stocks harvested within the Kodiak Management area, a majority are hatchery fish produced for marine or in river sport fisheries. A specific brood stock selection (similar life history and migration traits to the wild stock) and marking program are required for a hatchery stock to be employed as a proxy for wild stocks, therefore the Cook Inlet tag recoveries and rates should not be applied to Cook Inlet wild Chinook salmon stocks.

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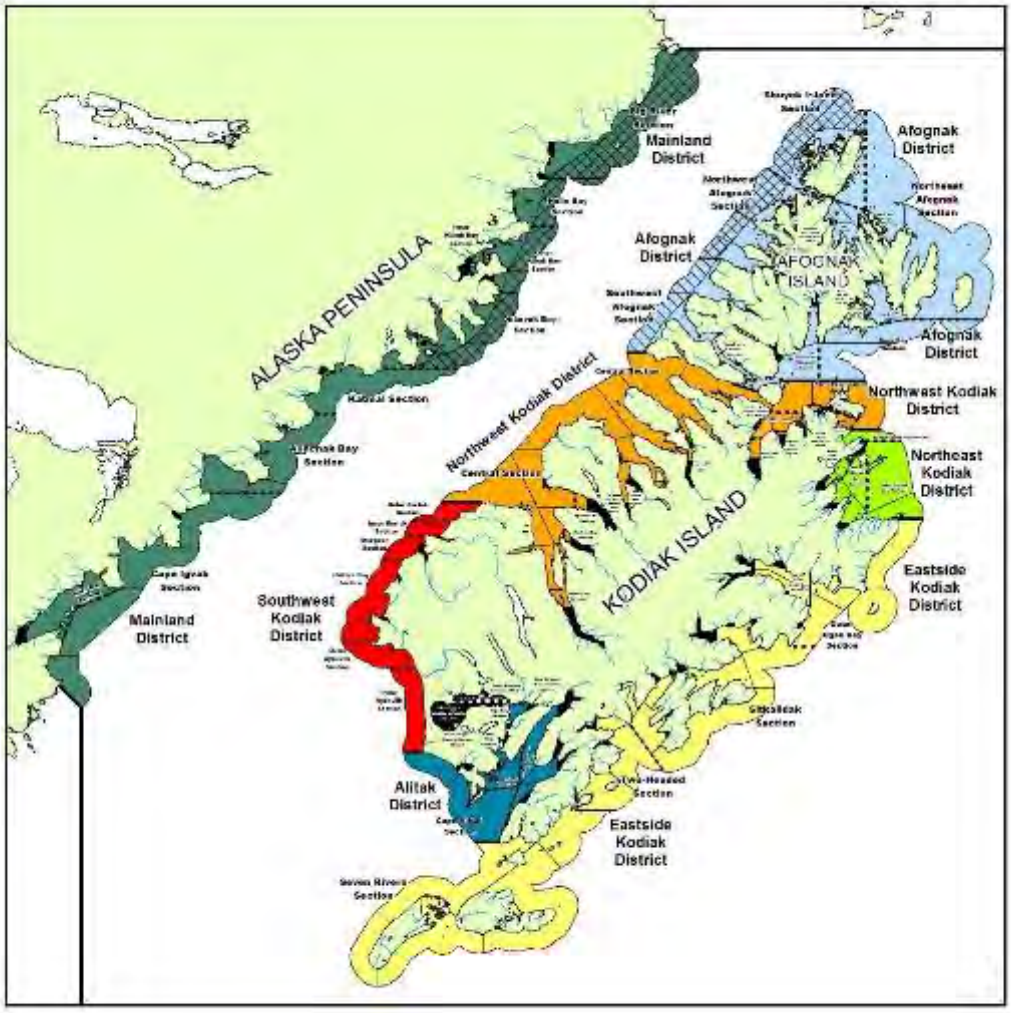
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Table 1. Summary of Chinook Stock Group Harvest Percentages in the Kodiak Management Area.

	Calendar Year						
	1994	1997	1998	1999	2014	2015	2016
Sample size	5,089	6,015	9,191	7,940	3,050	2,775	3,189
Stock Group							
British Columbia	83%	72%	49%	31%	56%	52%	57%
Washington &Oregon	7%	15%	20%	37%	34%	34%	31%
SE Alaska/Gulf Coast	10%	13%	31%	32%	3%	5%	6%
Cook Inlet	0%	present[1]	present[1]	present[1]	2%	2%	4%
Kodiak	0%	n/a[2]	n/a[2]	n/a[2]	1%	1%	1%

[1] CWTs were recovered however insufficient totals to estimate a harvest proportion

[2] no CWTs recovered from fishery sampling



Review of Genetic Studies of Sockeye Salmon Harvests in the Kodiak Management Area

Kodiak Salmon Working Group

Executive Summary

- Recent genetic analyses in Kodiak Management Area provide accurate and precise estimates of sockeye salmon stock proportions and harvest numbers in targeted Westside Kodiak fisheries, during monthly (June, July, August) time periods in 2014-2016. Very limited sampling occurred at Cape Igvak.

- The study was not designed to understand migratory patterns of sockeye salmon through KMA, nor to address finer temporal patterns of non-local stock distribution which might describe rapidly changing abundance of migrating stocks in specific areas. WASSIP results showed that proportions of one non-local reporting group varied by as much as eight fold in weekly samples of Shumagin Island and Dolgoi June fisheries harvests, 2007-2008.

- Harvests of Cook Inlet sockeye in KMA fisheries varied by an order of magnitude between study years and between monthly samples within a year. Incidental harvests in 2015 were particularly divergent, especially for July harvests, during an exceptionally large pink salmon run. The widely divergent harvest proportions of Cook Inlet fish in this three year study suggest no reliable patterns upon which to base specific management actions.

- Susitna bound fish overall represented the smallest component of Cook Inlet stocks incidentally harvested in KMA and accounted for less than

2.5% of total KMA sockeye harvest in 2014-2016 and less than 4.5% of annual harvests in the sampled areas. Due to high estimated harvest rates of Susitna fish in Cook Inlet fisheries (average 38% 2006-2015) and large uncertainties in Susitna escapement estimates, it is unlikely that effects of any “savings” of these stocks in KMA fisheries could be measured with any confidence.

- In 2014-2016, estimated harvest of Susitna fish in Upper Cook Inlet fisheries was 3 fold to more than 40 fold greater than in KMA. Any conservation efforts for Susitna fish should be addressed in Cook Inlet fisheries.

- Data from Cape Igvak is limited to harvests in three temporal periods from two years. Incidental harvest of Cook Inlet fish varies by two orders of magnitude (50 fold) among those strata.

- Evidence suggests that management plans in KMA are working well, as all key sockeye stocks on the Westside are achieving their escapement goals and odd year pink salmon goals are consistently met.

Study Purpose and Design

The purpose of Shedd et al. (2016) was to use Genetic Stock Identification (GSI) methods to estimate temporal stock contribution to select Kodiak Management Area (KMA) sockeye fisheries during 2014-2016 by sampling major sockeye fisheries where significant harvest of salmon occurs (Foster and Dann, 2014, 2015). At its inception, the study intended to meet multiple information needs. Some local fishermen were interested in a

sampling program that could identify particular stocks in area fisheries, especially Alitak-bound fish harvested in Westside fisheries. Fisheries interests outside of Kodiak desired a better understanding of harvests of "non-local" sockeye salmon in Kodiak area fisheries; and area biologists who sought to understand production dynamics of area stocks wanted better stock-specific harvest information for improvement of brood tables, run-reconstructions, and escapement goals for local stocks. Funding constraints resulted in a limited geographic scope for the study.

The work provided accurate and precise estimates of stock-specific harvests for six Westside fishery areas within the KMA over approximately monthly time periods (June,July, August), during the years 2014-2016. Much more limited sampling occurred in Igvak fisheries. Within this scope, it is a robust study which uses state of the art analytic and statistical approaches to generate estimates for sampled areas and times. It has contributed to brood table improvement for area sockeye stocks, especially Karluk and Ayakulik (ADFG, pers. comm).

As the author notes, the study was not designed to understand migratory patterns of sockeye salmon through KMA (Shedd et al., 2016). The design also does not address finer temporal scale patterns of non-local stock distribution which might describe rapidly changing abundance of migrating stocks in specific areas, or address broader questions about sockeye migratory characteristics in and around Kodiak Island outside of sampled areas. Both are important to inform policy debate on allocating harvests from one management area to another.

Finally, there is no information provided on harvest rates to provide context for actual impacts of non-local stock harvest in Kodiak area fisheries. An understanding of stock-specific harvests with respect to run sizes (i.e.,

harvest rates) for those non-local stocks is essential for discussing perceived conservation issues (Habicht et al., 2012).

Sampling

Samples for genetic analyses were gathered at fish processing facilities in Kodiak, Larsen Bay and Alitak. Through close communication with processors, samplers could be in place at facilities when deliveries occurred. Efforts were made to ensure samples only represented fishing in one of the management areas intended for sampling and were taken only from deliveries that could be attributed to the intended area. Deliveries from multiple study areas were not sampled. In Uganik/Kupreanof portion of the NW Kodiak district, where both set gillnet and purse seine vessels contributed to harvests, most samples were taken from set gillnet harvests because seine vessels often had mixed loads (ADFG, pers. com.). Brennan et al., (2017, this volume) point out that gillnets used there are selective for larger fish and sampling from mostly this gear group in Uganik/Kupreanof could bias samples towards Cook Inlet harvests because Cook Inlet sockeye are typically larger fish than Karluk Lake sockeye.

Samples from specific area harvests were collected a number of times, often weekly or more often, throughout the monthly sampling stratum when fish were delivered (Shedd at al., 2016 and ADF&G pers. comm.). Samples were taken on specific dates from fish available on that date. It is not completely clear how samples were randomized within a delivery, but generally, the target sample number (100-400) was taken from the delivery and placed in a separate tote for sampling. These samples represented a bulk sample of tissues from fish for that date. Typically, at least four bulk samples were acquired during monthly periods for each area. Each sample

represents the group of fish delivered on a one or two day period (see Shedd et al. 2016, Appendix B for details).

Post-season, samples for genetic analyses were selected from date-specific bulk samples in proportion to daily harvests for that month, and combined to generate a monthly stock contribution estimate. Previous reviewers of the study have found the general approach of stratified random sampling, sampling in proportion to the harvest and sample sizes to be defensible (Geiger and Quinn, 2017, this volume). To summarize the sampling approach:

- Sampling was adequate for generating monthly estimates of stock-specific sockeye harvest in targeted areas. Samples were collected periodically through the month, and care was taken to ensure that sampled deliveries were from intended fishery areas. Samples selected for analysis were taken from all bulk samples in proportion to the harvest for the month.

- Sampling was not designed to identify times and areas where non-local stocks are most prevalent in KMA or to provide comprehensive information on migration patterns. The study estimated stock proportions and harvests from targeted areas in select Westside fisheries and Igvak using monthly time periods.

- Spatial resolution was limited to major Westside KMA fisheries including Uganik/Kupreanof, Uyak, Karluk/Halibut Bay, Ayakulik/Sturgeon and Alitak, and Cape Igvak in the Mainland District. There are no comprehensive mixed stock analyses for fisheries in Afognak, Eastside District, Olga Bay, Special Harvest

Areas, nor for harvest after August 29, presumed to be mainly local stocks. Authors estimate that sampled areas represented 47-62% of Kodiak sockeye harvest in 2014-2016.

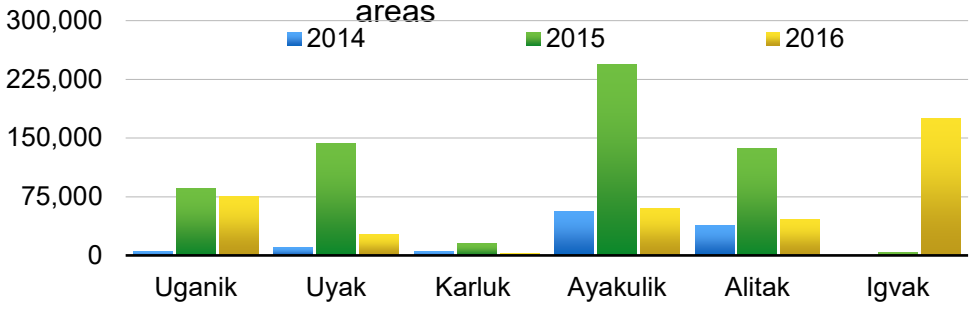
- Temporal resolution was limited to stock compositions for June, July, and August. The periods roughly coincide with fishery management approaches during each period, where early sockeye stocks are harvested in the early stratum (June), pink salmon and sockeye stocks in the middle stratum (July), and late sockeye and pink salmon in the late stratum (August). Harvest stock composition within the monthly periods was not examined.

Results: Variation within and between years

Cook Inlet Stocks

There are very large inter-annual differences among sampled areas in KMA for harvest of Cook Inlet genetic reporting group. Annual estimates of Cook Inlet harvest numbers for all sampled KMA fisheries varied by an order

Figure 1. Annual harvests of Cook Inlet bound sockeye salmon within individual Kodiak Management sub-areas



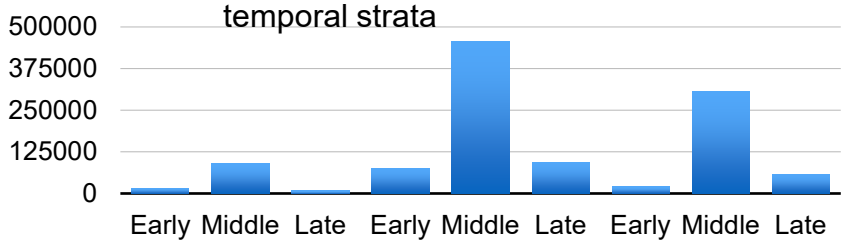
of magnitude between years, especially evident for Uyak, Ayakulik/Sturgeon, and Alitak, where 2015 estimates far exceeded either adjacent year. Uganik/Kupreanof harvests of Cook Inlet fish in 2016 were comparable to

those in 2015 and Igvak had a single, large catch of Cook Inlet stocks in July 2016. Estimated harvests of Cook Inlet reporting group in 2014 were uniformly small for all sampled areas (Figure 1).

It is also clear that incidental harvest of Cook Inlet sockeye stocks in July (middle stratum) were dramatically larger than early or late strata in 2015 and 2016 (Figure 2). This is particularly pronounced for Alitak and Ayakulik/Halibut Bay harvests. For the Alitak District, harvests of Cook Inlet stocks in July (middle stratum) were an order of magnitude higher than early or late strata in all years. Harvests were more than three times larger in 2015 than middle strata in 2014 or 2016 (Figure 3). July (middle stratum) harvests of Cook Inlet stocks in Ayakulik/Halibut Bay were also highest in all years, and much higher in 2015 (Figure 3).

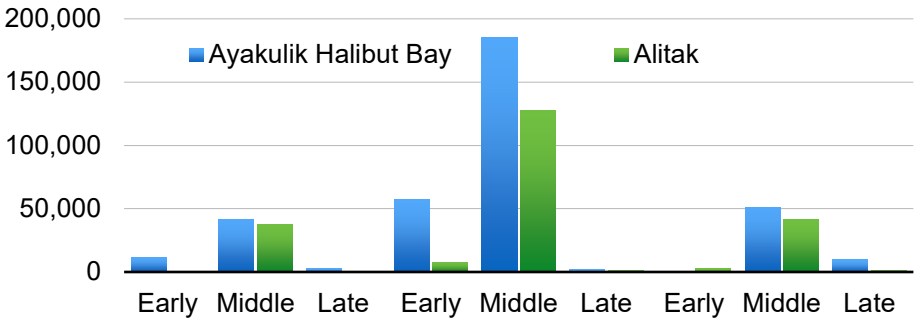
Higher incidental harvest of non-local sockeye in 2015 are likely associated with a very large pink salmon run. At 33 million, pink salmon harvest in 2015 was more than 3 fold larger than 2014 and roughly ten times greater than 2016 (Anderson et al. 2016). The large abundance of pink salmon in 2015 resulted in management actions to increase fishing time. Westside commercial fishing periods in 2015 were extended twice in July and many were open for the majority of August (Anderson et al., 2016). Larger incidental harvests of Cook Inlet sockeye in Westside

Figure 2. Harvests of Cook Inlet bound sockeye salmon in Kodiak Management Area among all sampled areas and years, by temporal strata



isheries during 2015 may partially be explained by pink salmon bundance, reflecting management actions in complex, multi-species fisheries.

Figure 3. Harvest of Cook Inlet bound sockeye salmon by temporal strata, over all years, in Ayakulik/Halibut Bay and Alitak sub-areas of KMA.



While Shedd et al. (2016) is the first genetic stock identification study to focus on KMA, it is modeled after the large WASSIP study which also revealed wide variation in stock specific harvests between and within sampling years, especially for those fisheries known to harvest a mixture of stocks on the South Alaska Peninsula (Dann et al., 2012). The East of WASSIP (EOW) reporting group in that study is a good example. It represents mixed stock analysis assignments made to stock groups beyond Chignik, the Eastern boundary of WASSIP. Specific stock composition of EOW reporting group is unknown, but it likely contains significant and variable proportions of Kodiak, Chignik and Cook Inlet stocks.

- For the Western and Perryville Districts within Chignik Management Area, samples from the same 10 day time interval in July (7/20-7/31) showed

EOW reporting group harvest proportions more than twice as high in 2007 (38.8%) as 2008 (14.9%).

- For the Shumagin Islands June fishery, large differences were also observed for the EOW reporting group proportions among years and within weekly sampling periods. In 2006, among three sampled strata in June, EOW proportions ranged from 18.6% to 43.6%. In 2007, proportions for the same weekly strata ranged between 4.9% and 16.5%. For comparable strata sampled in 2008, the range was 9.4% to 10.6%. Over the three year period, harvest proportions for EOW reporting group in Shumagin June fisheries varied nearly nine fold within the month of June.

- For Dolgoi Area June fisheries, among weekly strata, proportions of EOW reporting group ranged from 17.1% to 39.5% in 2006, 35.8% to 56.2% in 2007, and 7.4% to 27.4% in 2008. EOW proportions varied by nearly 8 fold in Dolgoi within and among years in the WASSIP study (Dann et al., 2012).

Both WASSIP investigators and Shedd et al. (2016) express pointed caution about making inferences beyond their three year study periods. Like any GSI study, the data represent environmental and fishery conditions during those years and changes in relative proportions of reporting groups will be influenced by prosecution of fisheries and ocean conditions (physical and biological) which affect fish migrations. The wide variation observed in WASSIP between weekly sampling intervals among years demonstrates how much stock specific harvests may change within a monthly period. The broad inter-annual variation in WASSIP and the recent KMA study should

emphasize the inherent uncertainty in our understanding of stock vulnerability to commercial fisheries from year to year and within a fishing season.

Results: Measuring Impacts

Shedd et al., (2016) showed that over a three year study period, highly variable numbers of Cook Inlet sockeye salmon were harvested in KMA at some locations and times. However, these data alone provide little insight into impacts of these non-local harvests on Cook Inlet runs. Fishery stakeholders in the WASSIP study, from Area L to AYK, insisted that reporting of stock proportions be accompanied by harvest rates, so that stock-specific harvests could be assessed in relation to their respective run sizes (Habicht et al., 2012). The importance of this exercise is clearly demonstrated by WASSIP data for Outer Port Heiden (OPH) harvests during 2007-2008. Among six sampled time strata for OPH fisheries in 2007-2008, Bristol Bay stocks represented 65%-90% of the sample, while harvest rates on Bristol Bay fish for the same two years were less than 1% (Dann et al., 2012, Habicht et al., 2012). Significant numbers of sockeye bound for Bristol Bay were harvested in OPH, with negligible effect on the overall run.

Though no harvest rates were reported, Shedd et al. (2016) produced analyses to distinguish among four different genetic reporting groups within broader Cook Inlet harvests, including Susitna River, a currently designated stock of concern (Shedd et al., 2017). Overall, Susitna fish represented the smallest component of incidental Cook Inlet harvests in KMA, representing 0.3% to 4.4% of KMA commercial sockeye harvests in sampled fisheries during 2014-2016 (Shedd et al., 2017). They represented only 0.1% to 2.4% of the total KMA sockeye harvest for study years 2014-2016.

Having dispensed with a biased sonar program (Fair et al., 2009), assessment of escapement for Susitna sockeye is now made by three weirs on Judd, Chelatna and Larson Lakes. Based on mark-recapture experiments in 2006-2008, Fair et al. (2009) estimated that combined Chelatna and Judd Lake escapements represent about 42% of Yenta drainage escapements and Larson Lake represents roughly 52% of mainstem Susitna escapement. Escapement goals for these lakes were established in 2017. Over the last decade, goals for Chelatna have always been met or exceeded, Judd was below goal in a single year, and Larson missed three goals by less than 20% (Munro, 2019). Escapements to these index lakes by themselves do not suggest a concern for conservation of Susitna fish. Other Lakes, such as Shell, once estimated to account for 10% of Susitna drainage sockeye production, have been severely impacted by pike predation and Beaver dams, and produce far fewer sockeye than in the past (Shields and Frothingham, 2018).

If management actions were taken to reduce harvest of Susitna bound sockeye in KMA, it is important to consider the fate of these “savings” and how we could evaluate effects of these actions. Any incidental harvest of Cook Inlet stocks avoided in KMA fisheries would be subject to a variety of harvest and natural mortalities before reaching spawning grounds, as they pass through fisheries in Lower and Upper Cook Inlet. Recent estimates of harvest rates on Susitna origin sockeye in Upper Cook Inlet fisheries range widely, but average 38%, 2006-2015 (Erickson, 2017, ADF&G report to Board of Fisheries). A large proportion of these fish would be harvested in Cook Inlet fisheries before reaching their natal streams and lakes.

Importantly, impacts of Susitna bound sockeye harvest in KMA on annual Susitna runs probably cannot be measured with confidence for two

reasons. First, Shedd et al. (2017) used a genetic baseline that includes populations throughout the Susitna/Yentna drainage but does not distinguish fish which may be destined for Judd, Chelatna and Larson Lakes. The lake stocks can be justified as a separate JCL reporting group in Cook Inlet genetic studies (Barclay, 2018). As a result, the relationship between KMA harvest of Susitna reporting group and goals established to index Susitna escapement is unknown because KMA harvests of Susitna stocks cannot be attributed to any of these lakes.

Also, recent mark recapture studies suggest large uncertainties with estimating drainage wide escapements to Susitna drainage (Yanusz et al., 2007). Results from 2006-2008 studies revealed wide 95% confidence intervals (2006, 335,448 - 500,946; 2007, 292,867 - 362,597; 2008, 320,763 - 398,317) for escapements of sockeye to Yenta and Susitna Rivers combined (Erickson, ADFG report to Board of Fisheries). The highest estimated catch for Susitna fish in any KMA stratum, without accounting for additional harvest and predation in Cook Inlet, falls within those confidence intervals. It is unlikely that effects of reducing harvest of Susitna fish in KMA could be detected in Susitna run estimates.

In 2014-2016, estimated harvest of Susitna fish in Upper Cook Inlet fisheries was 3 fold to more than 40 fold greater than in KMA (Barclay, 2018, Shedd et al., 2016). Attempts to conserve Susitna fish must primarily include Cook Inlet fisheries, where savings are more efficiently realized and can be measured.

Cape Igvak

The management plan for Cape Igvak has been in place since 1978. The Cape Igvak fishery is one of only two areas in the state (the other is Southeast District Mainland) in which harvest and escapement triggers from an adjacent management area (both Area L-Chignik) must be met before the fishery can open. For this study, no Igvak samples were taken in 2014 because low Chignik harvest numbers kept the area closed to commercial harvest. In 2015, only the July stratum (middle) was sampled as Igvak was again closed at first due to inadequate harvests in Chignik. Harvest of Chignik fish in Igvak was estimated as 2,059 fish. In both 2014 and 2015, the management plan had its intended effect of keeping Igvak closed or limited when Chignik harvests were low. In 2016, with a stronger Chignik run, an estimated 114,412 Chignik sockeye were harvested in the early (June) stratum. A little more than 10,006 Chignik fish were harvested in July. With only three temporal strata sampled over a three year period, there is no new information on harvest patterns of Chignik fish at Igvak that would support changes to the management plan. While it is clear that some Chignik fish are captured at Igvak (which is reason for the management plan), one data point an order of magnitude greater than the other two reveals dramatic swings in non-local stock abundance. There is no data in this study that supports the presumption in the management plan that 90% of sockeye salmon harvests in Igvak are Chignik bound fish.

Management Plans

The management of KMA fisheries is guided by a number of management plans including the Westside Management plan (5AAC 18.362) and the Alitak District Management plan (5AAC 18.361), most relevant to this

genetics study. While each has very specific management direction for date ranges and particular areas, the central theme is prosecution of traditional fisheries to sustainably harvest early and late runs of sockeye salmon to Karluk, Ayakulik, Upper Station and Frazer Rivers, as well as harvest pink, chum and coho salmon to a variety of locations in July, August and September. The plans have an odd year emphasis for pink salmon management as these are typically larger than even year runs in KMA.

From a biological perspective, successful fisheries management in Alaska is measured through achievement of escapement goals. The Alaska Board of Fisheries pays careful attention to escapement goal performance as a yardstick for sustainable management. For Karluk early sockeye, goals have been achieved or exceeded every year since 2012, and for the late run, since 2010. For early and late sockeye runs to Ayakulik , goals have been achieved every year since 2010. For early Upper Station stock, goals were achieved in 2017 and 2018 and for late Upper Station, goals have been met every year since 2010. For Frazer Lake sockeye, goals have been met every year since 2010. Odd year pink salmon goals in the Kodiak Archipelago have been met or exceeded every year since 2011 (Munro, 2019). Recognizing that scientifically defensible escapement goals are foundational for maximizing yields in future years, it seems clear that KMA fisheries management has been successful and that these management plans are working well.

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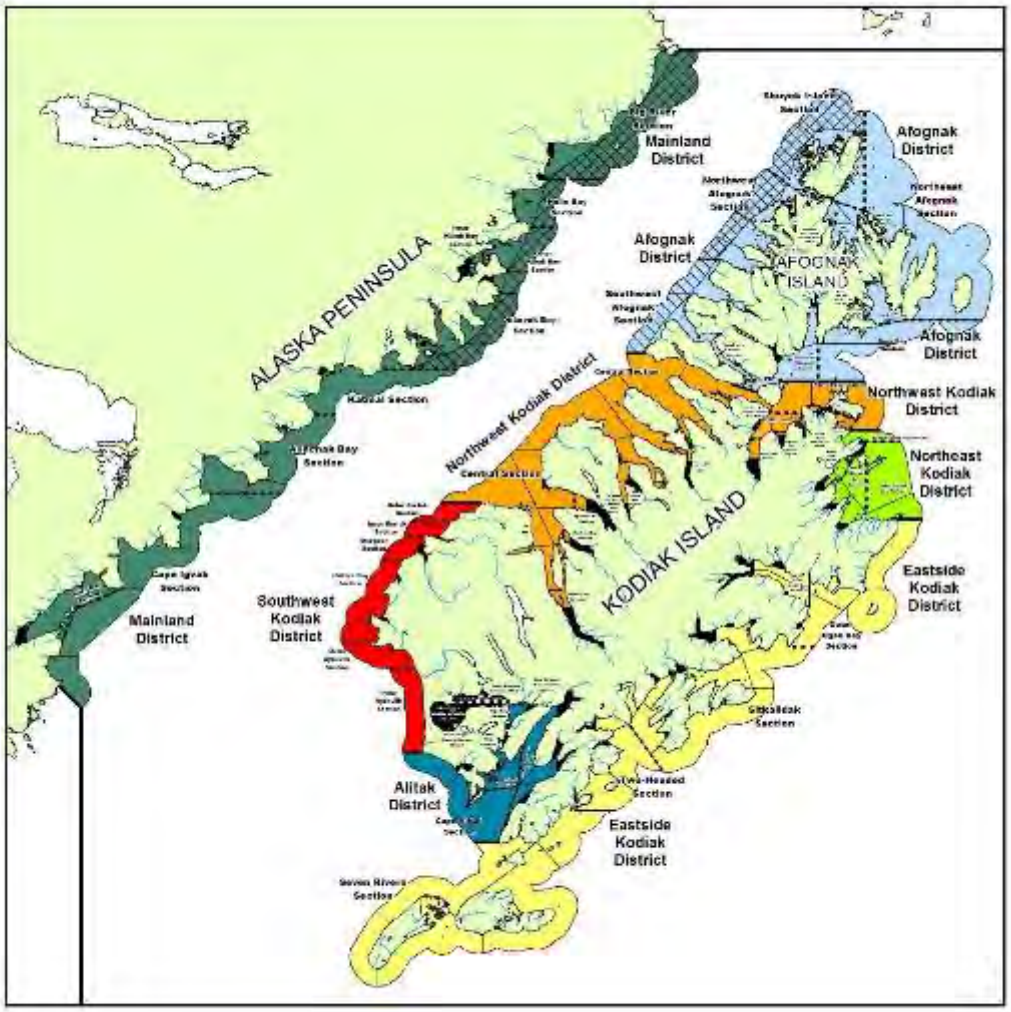
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Review of Shedd et al. (2016): *Genetic Stock Composition of the Commercial Harvest of Sockeye Salmon in Kodiak Management Area, 2014-2016*

Report to the Kodiak Salmon Workgroup

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September 11, 2017

Executive Summary

The Kodiak Salmon Workgroup contracted us[1] to provide a scientific review of the report by Shedd et al. (2016) entitled *Genetic Stock Composition of the Commercial Harvest of Sockeye Salmon in Kodiak Management Area, 2014-2016*. This review consists of an examination of the scientific merit of the study, its utility compared to previous studies, an interpretation of how the results should be viewed in terms of the magnitude of interceptions of Cook Inlet sockeye salmon in the Kodiak Management Area's commercial fisheries, and thoughts about further investigations that may shed additional insight into Kodiak and Cook Inlet stock compositions of sockeye salmon.

Our primary findings:

1. From the point of view of fishery policy, the most important statistic is the *stock-specific harvest rate,* which is not reported in the Shedd et al. (2016) document for stocks outside the Kodiak Management Area. What is reported is the *stock-specific contribution rate*. Stock composition estimates represent the proportions of a catch that was made by various stocks in a particular spatial and temporal stratum or groups of strata. In contrast, the harvest rate describes the proportion of an annual return that was harvested in a fishery or group of fisheries. Consequently, a fishery may show a large contribution rate for a stock, but the total effect on that stock may be quite small. We illustrate this phenomenon below.
2. The new genetic stock composition approach used in this study is superior to other approaches used in the past, because the real stock composition is estimated rather than inferred from less reliable measurements (e.g., length composition). The use of a Bayesian modeling approach to estimate stock composition is state-of-the-art and allows for the appropriate treatment of random variability due to both random error caused by sampling the fishery mixture and also from the sampling of the contributing stocks.
3. The stratified sampling design used is appropriate with respect to accuracy and precision of stock composition (relative and absolute). It is clear that the authors devoted substantial attention to implementing the sampling design with the intent of obtaining a random or representative sample within combinations of major regional and temporal strata. Further information would be desirable about how the implementation was conducted on finer spatial and temporal scales to justify the assumption of a random or representative sample. For example, how was an individual fish selected for genetic sampling and were there protocols established to prevent selecting fish with particular physical characteristics, such as size?
4. Similar to past studies, results from the study revealed substantial variability in stock composition across years, among spatial strata, and among temporal strata. Further study may be desirable to determine if there are consistent patterns in this variability across years, spatial strata, and temporal strata. Continued genetic sampling and analysis in the future would thus be desirable.

Introduction and Overview

We were asked to provide a scientific review of the Shedd et al. (2016) titled *Genetic Stock Composition of the Commercial Harvest of Sockeye Salmon in Kodiak Management Area*. This complex 154-page report describes an extensive genetic analysis followed by a statistical

[1] See brief biographical statement in Appendix A

analysis of the genetic data for Kodiak area fisheries in catch years 2014, 2015, and 2016. The principal genetic tools that were used for this study were the single nucleotide polymorphism, or SNP, approach. Here we will comment on scientific criticisms of the study that appear relevant, we will briefly comment on the various methods and techniques that were used, and we will offer a broad assessment of the significance of the major findings. As we will explain in more detail below, the study appears to have been carefully conducted and the numerical estimates appear to be well crafted and reliable.

The Alaska Department of Fish and Game had previously tried to use scale pattern analysis and an analysis of fish size to estimate the proportion of non-local stocks in the Kodiak Management Area. For various technical reasons neither of these techniques were very successful. In one of the last reports on the attempts to use fish size for this purpose, Vining (1996) wrote, "As the 1995 analysis indicates, this methodology continues to generate only rough estimates, some with little confidence." It is the opinion of Vining that "other techniques, such as genetic stock identification, tagging or scale pattern analysis should be evaluated for use in the future, if more precise estimates of stock composition for sockeye salmon caught within the [Kodiak Management Area] are desired." This leads us to the present genetic study by Shedd et al. (2016).

The genetic analysis of stock mixtures rests on several assumptions. The analysis starts with the definition of a *catch mixture*, because the catch is presumably made up of a mix of stocks. Importantly, the number of contributing stocks must be known, they all must be sampled, and the genetic character of each stock must be established. Next, a representative sample of the catch mixture must be drawn and the genetic character of each specimen in the catch sample must also be established. Finally, a complicated statistical algorithm can then be used to produce an estimate of the proportion of each of the stocks in the mixture by comparing the genetic characterizations of each fish in the catch mixture to the previously established genetic characterization of the contributing stocks.

A complete analysis must include a study of both the accuracy and the precision of the estimates. In this context, *accuracy* refers to the absence of any statistical bias or other kinds of systematic errors that would consistently cause specific stock estimates to be too high or low. Here *precision* refers to errors that are caused by using only a sample from the stock of origin and the catch mixture, rather than an examination of every single fish in the fishery and every single fish in the spawning stocks. Generally, accuracy is harder to study, detect, and control, while precision can generally be controlled by increasing the sample size. Also, precision is usually studied by looking at the variation from one specimen to another in the samples. Precision measures are usually offered in the form of confidence intervals, standard errors, or coefficients of variations.

Sampling Design

The goal of the study by Shedd et al. (2016) is to determine stock compositions of sockeye salmon within the Kodiak Management Area. Consequently, sampling was restricted to the Kodiak Management Area, rather than to the overall range of sockeye salmon in the western Gulf of Alaska. The authors defined six Kodiak spatial strata of interest (called subregional sampling groups) for *sampling* genetic tissues, comprised of (1) Uganik-Kupreanof, (2) Uyak, (3) Karluk-Sturgeon, (4) Ayakulik-Halibut Bay, (5) Alitak, and (6) Igvak. The first five are located around Kodiak Island, while Igvak is part of the mainland district. The Chignik regional reporting group had combined estimates from subregions Black Lake and Chignik Lake. Four other regional spatial strata outside of Kodiak and Chignik were West of Chignik,

Cook Inlet, Prince William Sound, and South of Cape Suckling. The report did not contain justification for this particular choice of spatial strata, but suggests that considerations included areas with active management and those that are used in run reconstructions to aid management.

One confusing area is that several spatial scales are referred to in the report. For *reporting* purposes (instead of *sampling*), there are a total of 14 subregional *reporting groups* listed on page 2 that constitute the entire western Alaska area. The report designates ten of these groups as *subregional reporting groups* within the Kodiak (8 subregions) or Chignik (2 subregions) *regional reporting groups*. Six regional reporting groups including those outside of Kodiak and Chignik are listed in the tables, with subregional breakdowns for the 8 Kodiak subregions and the 2 Chignik subregions. In the end the system does seem to be consistent; however, we recommend a simpler and clearer description of spatial divisions. *These definitions of spatial strata must be understood to understand the tables and figures of results, which include both regional reporting groups and subregional reporting groups.*

The report indicates that temporal strata are also considered in combination with the spatial subregional strata: Early, Middle, and Late (see page 3 in the Shedd et al. (2016) report. The temporal strata are consistent with patterns that have been observed in past studies.

The sample size goal was to extract 380 tissue samples from each time-area stratum; no reference was provided for this number. The sampling within temporal strata was intended to be proportional to daily abundance. When this was not possible, the total sample size was obtained by sampling days with sufficient additional samples at random until the total of 380 was achieved, a reasonable approach.

We could not determine if sampling was representative within spatial strata, although the intent of the authors appears to be sampling proportional to harvest, a reasonable goal. It would be helpful to have a brief description elaborating the protocol used to achieve this goal.

The sampling design most appropriate for multiple strata with high variation among strata, to obtain high precision and accuracy, is stratified random sampling (Thompson 2016). In the future it would be desirable to show that high variation is present and the improvement in precision by using stratification over simple random sampling. One advantage to using a proportional allocation of sample size with respect to within stratum variation is that different choices for strata are not likely to produce inaccurate estimates. Nevertheless, it is not necessary to use proportional sampling to justify the use of stratified sampling in terms of accuracy, as long as a representative sample is obtained within each stratum. In particular, the use of a fixed sample size of 380 for all spatio-temporal strata is completely acceptable. (Although it may not be the most efficient allocation scheme, it does not induce estimation bias.)

The use of stratified random sampling also has a desirable product in that both relative and absolute stock compositions can be estimated both for individual strata and for combinations of strata, including that portion of the entire Kodiak Management Area that was sampled (not every single fishery was sampled). The main reason for this ability is that catches are known for all spatio-temporal strata. This is one fundamental principle that makes estimation across strata intuitive, accurate, and precise, because relative stock compositions are projected to the total catch to get absolute stock compositions by strata that can then simply be summed across a set of strata of interest.

An additional feature of the sampling design is a set of data quality control procedures regarding the genetic data to avoid the inclusion of erroneous data into the analysis (pages 8–9). Thus, we were unable to uncover any appreciable flaws in sampling, genetic data processing, or genetic analyses in the study.

In summary, we believe that the overall sampling design of using stratified random sampling is appropriate for the genetic analysis of estimating stock composition of sockeye salmon in the Kodiak Management Area. Further studies should be done to consider alternative stratification choices both within space and time and to justify the sample size goal of 380 samples per stratum.

Policy Issues and Stated Goals for the Study

In the introduction of the Shedd et al. (2016) report, the reader finds that the stated purpose of the study was to "sample the major sockeye salmon commercial fisheries in marine waters of [the Kodiak Management Area] from June through the end of August and use genetic mixed stock analysis (MSA) to estimate stock compositions and stock-specific harvests." Later in the report, the reader finds this statement about the goal of the project: "The overall goal of this project is to provide information that will be useful for reconstructing runs, building accurate brood tables to define escapement goals, and refining management by identifying spatial and temporal harvest patterns of *local* and *nonlocal* stocks (emphasis in the original)." Later, the reader finds four stated objectives, including "report [genetic mixed stock analysis] results of stock-specific harvests of sockeye salmon sampled from *selected* commercial fisheries in [the Kodiak Management Area], 2014—2016 (emphasis added)," and "characterize where stocks were harvested from *select* commercial fisheries (again, emphasis added)." This report did not have the express purpose of making arguments regarding allocation decisions by the Alaska Board of Fisheries.

Regardless, the study does conclusively demonstrate that sockeye salmon bound for Cook Inlet were caught in some times and in some areas in the fishing years studied. In the case of the Kodiak Area, there really was no reason to believe that the commercial harvest was made up of only single stocks that originated in the Kodiak Management Area. That is, a finding of rich stock mixtures in at least some times and areas should not have been surprising. There have been many long-standing questions about the degree to which stocks are mixed in the Kodiak Management Area. Summarizing historical tagging studies, Barrett and Swanton (1991) report that sockeye harvests in the North Shelikof Strait in the 1940s, 1970s, and 1980s ranged from 30% to 100% Kodiak fish and 0% to 59% Cook Inlet-origin fish. Moreover, Barrett and Swanton concluded there were large numbers of Cook Inlet bound fish in the North Shelikof Strait fishery in July of 1990.

Contribution Rate Versus Harvest Rate

There are two important rates or proportions that can be derived from stock composition analysis and discussed before policy-making bodies, such as the Alaska Board of Fisheries: the *contribution rate* and the *harvest rate*. These two statistics have very different significance to management. These two rates have often been confused in conversations among fishermen, in testimony before the Alaska Board of Fisheries, and in conversations with members of the press. The percentage that each stock makes up in a mixture of stocks is called the *contribution*

rate (or sometimes the *stock proportion*). For example a fishery may have harvested 50 fish, and 40 of those fish might be from Stock A, with 10 fish from Stock B. Then the *contribution rate* of Stock A is 80%=(40/50)100%. For the purposes of management that could be either high or low. But if the contribution rate was 80%, then this does *not* mean that 80% of the stock was harvested; a harvest rate can be estimated only with abundance or run-size information for the stock of interest.

A large number for the contribution rate is not necessarily important to management, but it could be. If the original size of Stock A was 10,000 fish before this harvest, then the *harvest rate* on Stock A in the catch mixture would be 40/10,000 = 0.4%—which may be considered insignificant. Alternatively, if the original size of stock A was only 150 fish before the harvest, then the harvest rate would be 40/ 250 = 27%—which would usually be considered significant from a management perspective. Although moderate-to-large contribution rate statistics can lead to misplaced anxiety or even outrage, the most important statistic for management policy is the harvest rate, which is the rate that is most clearly related to the population dynamics of a stock.

Technical Comments on Bayesian Analysis and Uncertainty Measures

The statistical analysis was carried out using the Bayesian method of Pella and Masuda (2001). We contend that this method is a reasonable approach with several advantages over the more traditional *maximum likelihood* approach. As this is a Bayesian approach, there are some differences between the interpretations of the measurements that may be confusing and unnecessarily tedious to some readers of the Shedd et al. (2016) report. In the method of Pella and Masuda (2001), the unknown contribution rates (or stock mixing proportions, as they call them) are treated as unknown random variables rather than constant and unknown parameters in the maximum likelihood approach. The analysis proceeds by simulating the probability distributions of these random quantities, with the genetic data used to help develop these distributions.

In a Bayesian analysis, uncertainty in stock contribution rates is frequently displayed by the use of *credible intervals* rather than *confidence intervals*. For example, in Table 3 of the Shedd et al. (2016) report, for the Kodiak reporting group the 90% credible interval runs from 80.9% to 88.1%. The correct interpretation of this interval is that given all of the stated assumptions, *the probability is* 90% that the true value is found between 80.9% and 88.1%, given a list of assumptions. Many people, incorrectly, think this is exactly what a 90% confidence interval is, but this is a mistake for some technical, statistical reasons. For the purposes of readers of this report, we note that the Bayesian results will often closely approximate the more traditional results (Pella and Masuda 2001), so that there should be no harm in simply interpreting the Shedd et al. (2016) credible intervals as the more familiar 90% confidence intervals to investigate uncertainty in the stock composition estimates. While every one of the assumptions that underpin the analysis is probably not strictly true, these intervals do seem to be a very reasonable guide to the precision in the estimates. Based on the reported credible intervals and based on the assumptions stated in the report, the Shedd et al. (2016) estimates appear to be both accurate and precise enough for the purposes of the study.

The Results

In trying to understand the results of the analysis, readers of the Shedd et al. (2016) report may find Figures 8 through 19 helpful, especially when paired with the maps provided in Figures 1–7. Figures 8, 10, 12, etc. (the even-numbered figures) show the estimated contribution rates (or stock mixing rates) for stocks using two levels of detail for the authors' *subregional* and *regional reporting groups* mentioned above. These estimates are then reported by specific time-area catch strata. At the highest level of aggregation there are six regional reporting groups, or what might be considered stocks in the broadest sense: (1) West of Chignik, (2) Chignik, (3) Kodiak, (4) Cook Inlet, (5) Prince William Sound, and (6) South of Cape Suckling. These groups may be the most useful for discussions about fishery management policy. Additionally there are estimates for 10 specific subregional reporting groups, or what might be considered stocks in a more narrow sense, in the Westward Region, and these estimates may be more useful for actual managers or to look at the reasonableness of some of the estimates. Similarly, the odd-numbered figures (Figures 9, 11, 13, etc. in Shedd et al. (2016)) have the stock contribution rates re-expressed as the stock-specific *number of fish harvested* (compared to rates in the previously mentioned figures) in the mixtures.

The usual pattern in these figures is that the majority of the fish harvested in each time-area grouping originated in the Kodiak management area. There are some notable exceptions, especially in 2015. For example, in the Ayakulik-Halibut Bay area, a large fraction of the fish were classified to be of Cook Inlet origin, especially in 2015 during the July 4 to August 1 period (Figure 14 in the report by Shedd et al. (2016)). When viewed in terms of numbers of fish, rather than proportions, the effect looks even stronger (Figure 15). In the Alitak district the catches of fish classified to Cook Inlet exceed the number of fish classified to the Kodiak area in two years: 2015 and 2016. Here too, the effect looks even stronger when views as the number of fish harvested 2015 (Figure 17). However, when summing over time and area, in all study years fish of Kodiak area origin dominate the catch, although catches of Cook Inlet-origin fish increased in 2015, and to a lesser extent, remained high in 2016, when compared to 2014 (Figure 20 in Shedd et al. (2016)).

Questions about why the harvest of Cook Inlet fish might be higher or lower in specific times or areas are beyond the scope of this review. One obvious question is could this variation in the proportion of Cook Inlet-origin fish be due to variation in the sizes of sockeye salmon runs in Cook Inlet?

To get at this question we simply ignored Lower Cook Inlet and brought together run size estimates for Upper Cook Inlet (Alaska Department of Fish and Game, retrieved August 17, 2017), together with the Shedd et al. (2016) estimates of the harvest of Cook Inlet bound fish in the Kodiak Management Area (taken by eye from Figure 20 or from Tables 67–69). As a point of reference, Stopha (2017) projected that approximately 0.3 million sockeye salmon would be returning to hatcheries in Lower Cook Inlet 2017. We assume that the times and areas sampled by Shedd et al. (2016) represent areas where interceptions of Cook Inlet fish would have been considered to be most likely, although we do not know that is true. Here again, as a point of reference, the total fish accounted for by the six Regional Reporting Groups in Tables 67–69 was about 50%–60% of the total reported harvest for the Kodiak Management Area for the three study years (catch numbers from Munro 2015 and later reports in this series). Even though not all times and areas in Kodiak Management Area were sampled and even though there was some sockeye salmon production in Lower Cook Inlet, we expect that the Shedd et al. sockeye salmon catch estimates of Cook Inlet bound fish caught in the Kodiak Management Area divided by the estimated Upper Cook Inlet run size to provide a crudely reasonable—

even if slightly too low—approximation to the harvest rate on Cook Inlet-origin fish harvested in the Kodiak Management Area (Table 1).

Although there are only three years available for comparison, it does not appear that changes in run size explain the difference in harvest rates on the Cook Inlet stocks. The highest harvest rate on Cook Inlet stocks was in 2015, the year with the highest in-Inlet run size among the three study years, but the second highest harvest rate is on the year with the lowest run size (Table 1 below).

Table 1. Upper Cook Inlet run size in millions of sockeye salmon **(A)** (from ADF&G), the estimated harvest of Cook Inlet-origin sockeye salmon caught in the Kodiak Management area in millions of fish **(B)** (From 67–69 in the Shedd et al. (2016) report), and the approximate harvest rate (estimated harvest in the Kodiak Management Area divided by the in-Inlet run size plus the harvest in the Kodiak Management Area) on Cook Inlet-origin sockeye salmon in the Kodiak Management Area **(C)**.

	(A)	**(B)**	**(C)**
	Cook Inlet run size	Cook Inlet catch in KMA	Approximate harvest rate
Year	(millions)	(millions)	in KMA
2010	5.71		
2011	8.68		
2012	6.46		
2013	5.74		
2014	5.54	0.1	2%
2015	6.29	0.6	9%
2016	5.04	0.4	7%

Another important question: were the harvests of Cook Inlet-bound sockeye salmon excessive? Though this is a policy judgment, rather than a scientific question, we note that in the years 2014-2016, the estimated *harvest rate* ranged from 2% to 9%, and did not reach or exceed 10% in any year in the study (Table 1). Some might point out that the way we calculated the harvest rate under-represents its true magnitude—and the estimates in Table 1 very well may be too low. Even so, it would be highly unlikely we have underestimated it by a factor of 2, meaning that the median harvest rate over the three study years would have been almost surely less than 15%, and probably considerably less.

Are there areas where the proportion or numbers of Cook Inlet-origin sockeye salmon are higher than in other areas? Figures 22, 23, and 24 in the Shedd et al. (2016) report are useful for speculating about this question—although it is really impossible to establish a trend with only three years of data. Notice that the area with the highest number of Cook Inlet-origin fish was Ayakulik-Halibut Bay in 2014 and again in 2015. However, in 2016 the number of Cook Inlet-origin fish in this district was much reduced from the previous year, and a larger number of Cook Inlet-bound sockeye salmon was caught in the Igvak area—which had previously been an area with very few Cook Inlet-origin fish harvested.

When time is brought into the discussion the situation also appears murky. The proportion of Cook Inlet-origin fish caught in the Uyak area is relatively low in all sampling periods in 2014 (Tables 15, 16, and 17 in the Shedd et al. (2016) report, yet the proportion rises to relatively high levels (54% and 32%) in the second and third sampling periods in 2015 (Tables 20 and 21). Then in 2016, the proportion was much reduced, with over 80% of the fish harvested in each period in this catch area belonging to the Kodiak reporting group (Tables 23, 24, and 25). This observed variation shows the danger in looking at just three years and thinking that one sees a trend. Further sampling and study is warranted to understand patterns of temporal variation.

The proportion of Cook Inlet-origin fish in the Ayakulik-Halibut Bay area is relatively low (less than 8%) in the first sampling period (June 1 to June 27) in 2014, but that this rises to 24% in the second period (June28 – July 25) of that year, and then falls to about 5% in the last sampling period of that year (Tables 39, 40, and 41). However, in the next year this proportion starts high in the first period (28%), rises to 48% in the second period, and then drops to less than 10% in the last period (Tables 43, 44, and 45). In 2016, the first period contains essentially all fish originating from the Kodiak Management Area (>99%; Table 47), but the proportion of Cook Inlet-origin fish again rises in the second period to nearly 42%, and remains high at 28% in the third period (Tables 47, 48, and 49). A person focusing on the similarities would note that the second sampling period for this district was consistently high in all three sampled years, and that is correct. However, someone focusing on the large year-to-year variation in the proportion of Cook Inlet-origin fish would correctly point out that with three data points it is premature to speculate that this pattern will continue into the future.

Final Comments

The Shedd et al. (2016) report is generally well written, organized, and it offers a reasonable amount of specific details about the actual genetic and statistical analyses. While it is impossible to judge the care, attention to detail, and technical skill that actually went into actual genetic analysis from the written page, the report demonstrates a great deal of technical sophistication. The sections on "Laboratory Quality Control" appears to demonstrate that the authors did take reasonable care to detect and report on obvious mistakes. The Alaska

Department of Fish and Game's Gene Conservation Lab has an excellent reputation for this kind of work. It would be extremely surprising to find that many, if any, outright mistakes were made in either the genetic or the statistical analyses.

The estimates in the Shedd et al. (2016) report seem quite reasonable. Catches were generally dominated by fish that originated within the Kodiak Management Area. Although there are some exceptions, a finer-scale examination shows catches were generally dominated by stocks that originated near the area of harvest. The Shedd et al. (2016) report is technically sophisticated and it contains features that we have found are indicative of a study that is carefully conducted. We found no reason to think that there were any large inaccuracies in the study, and the reported measures of precision provide evidence that the reported estimates are trustworthy and suitable for their intended purposes.

Finally, we note that the estimated harvest rate on Cook Inlet-bound sockeye salmon were below 10% in each year, and substantially below 10% in one year. These harvest rates generally agree with what previous, less accurate studies, have suggested. However, with only three years of measurements, with a large fraction of the catch not sampled, and with large annual variation in those measurements (much larger than the error obtained from the credible intervals), it is very hard to conclude that these results bracket the range of what to expect if the study were to be repeated, or to conclude that these results represent what would happen in a "typical year" (if there ever is such a thing). We recommend that the genetic analyses in this study be conducted to better understand the apparently real variation in stock contribution estimates (both rates and harvests).

These estimates in Shedd et al. would have been more useful for policy discussions if they could be recast in terms of harvest rate rather than contribution rate. In fairness, we note that this was not one of the stated goals for the study, but this appears to be a subject that needs to be addressed in the future. We have tried to crudely approximate the harvest rate using information that was easily accessible to us. While our specific harvest rate estimates can be easily criticized, it is clear that the harvest rate was probably much less than 10% in most study years and almost surely less than about 15% in each year of the study. In the future, we recommend sampling in some of the time and area strata that were not sampled in 2014–2016, or else we recommend some discussion of why specific time-area strata can be assumed to have very low contribution rates for stocks outside the Kodiak Management Area.

Acknowledgments

We thank Heather McCarty for her help in proposing this review and guidance into the scientific and management issues involved.

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Appendix A – Biographical Statements for the Authors

Harold J. Geiger is the chief scientist for the St. Hubert Research Group, a small consulting company in Juneau, Alaska. He previously worked for the Alaska Department of Fish and Game, holding several positions on the salmon research staff of the Division of Commercial Fisheries before retiring in 2007. He held the position of Chief Biometrician in the late 1990s and was the Salmon Research Supervisor for the Southeast Region in the early 2000s. He holds a Master's degree in Statistics from Oregon State University and a PhD from the College of Fisheries and Ocean Sciences at the University of Alaska Fairbanks.

Terrance J. Quinn II, Ph.D. has been Professor of Fish Population Dynamics in the Fisheries Department, College of Fisheries and Ocean Sciences, University of Alaska Fairbanks for 32 years. He obtained his Ph.D. in Biomathematics from the University of Washington in 1980. Dr. Quinn's research focuses on fish population dynamics; estimation of fish and whale abundance; sampling theory; and renewable resource management systems. He is the co-author or co-editor of 4 books and over 100 scientific publications and has shepherded about 40 students through their post-graduate careers. He has been a member of the Statistical and Scientific Committee of the North Pacific Fishery Management Council since 1986 and was a former chair of that body. He is a former member of the Ocean Studies Board of the National Academy of Sciences and served on five of their committees, including two as chair or co-chair. He is an Associate Editor of the Canadian Journal of Fisheries and Aquatic Sciences.

Appendix B: Some Comments on Stock Mixture Analysis

The earliest techniques for developing these estimates were based on simply capturing migrating salmon, tagging them with a visible tag, and then looking for the tags on spawning fish. By comparison, this is a crude technique as it is hard or even impossible to control for how much effort went into looking for tags. That is, a stock with a small contribution to the mixture could result in a large fraction of the recovered tags if, for example, there was a counting weir on the spawning stream of that stock.

A technique that is somewhat more sophisticated is based on an analysis of scale patterns, and this technique was used extensively in the 1980s and 1990s. The technique was based on the assumption that fish originating from different systems had different growth patterns, which would be represented on the scales of the fish. A large sample of scales needed to be collected for each stock, each year. Then a very large (often over 100 measurements) can be used to characterize the scale pattern for that stock, as the growing conditions that affect the scale patterns change from year to year. A complex statistical algorithm (called a linear discriminate function) is used to look for the specific measurements that show the most differences among

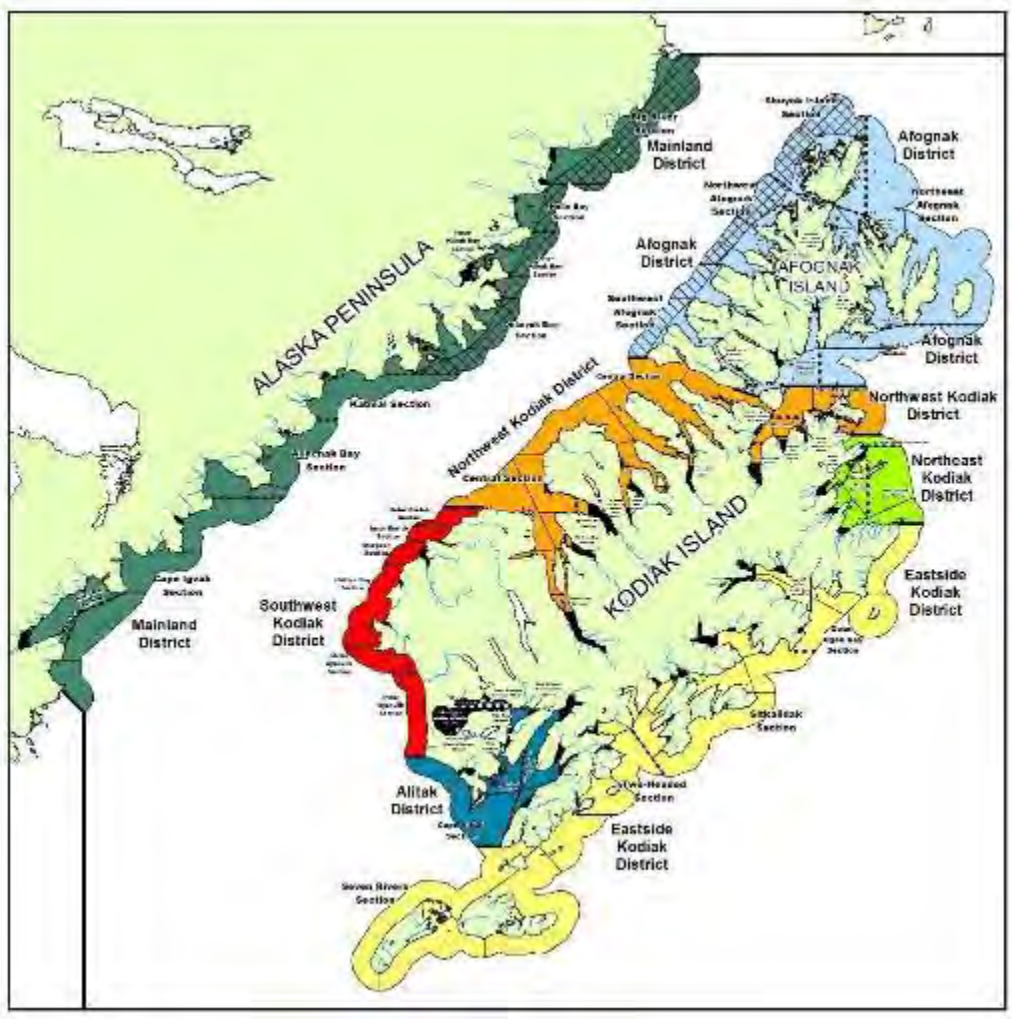
stocks. The results from this discriminate function can then be used to classify fish in the fishery mixture to the stock that most likely produced it.

In Lynn Canal in Southeast Alaska, scale patterns were used to estimate the proportions of Chilkat and Chilkoot Lake sockeye salmon in a mixture to both actively manage a gillnet fishery during the fishing season and to study the productivity of the stocks after the fishing season. This was an ideal situation as the number of stocks was small and the patterns were quite different. As the number of stock in the mixture increased beyond just a few, or as the growing conditions among the stocks were more similar, scale pattern analysis estimates become uncontrollably imprecise, and the accuracy of the estimates would also degrade.

In the 1990s, genetic tools showed obvious advantages over other techniques. The first genetic techniques are sometimes called the allozyme techniques. Although these were time consuming and expensive, one of the main advantages was the individual stocks no longer needed to be characterized each year, as the genetic character of the stock changed slowly, if at all. Later, microsatellite techniques replaced allozyme techniques for a number of technical reasons. Finally, the SNP (Seeb et al. 2011) approach, used in this study, is usually thought of as the current state of the art and most cost-effective method of conducting a complex stock mixture analysis.

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Structure and Function of the Kodiak Management Area Salmon Fisheries, A Summary and Update of Brennan et al. 2017.

Kodiak Salmon Working Group December 2019

Structure and Function of Kodiak Management Area Salmon Fisheries, a Summary and Update of Brennan et al. (2017)

by the Kodiak Salmon Work Group

In late 2017 a trio of former Kodiak area management biologists, with 34 years of cumulative, consecutive experience, authored a detailed report on the salmon fisheries and various salmon fishery management plans that pertain to the Kodiak management area (KMA). Their report was prepared in light of the potential effects of an agenda change request (ACR 11) that had been submitted by the United Cook Inlet Drift Association (UCIDA) for the Alaska Board of Fisheries work session in October 2017.

ACR 11 presented UCIDA's "umbrella plan" for Kodiak fisheries, and was essentially the same as the "umbrella plan" that is laid out in Proposal 66 currently in front of the board. Thus, the Brennan et al. report is as relevant today as it was two years ago. This report by former area management biologists also provides information that applies to the board's consideration of Proposals 64 and 65.

The main conclusion from Brennan et al. is that adjustments to the longstanding KMA management plans, such as those requested by Proposals 64-66, are not justified and would drastically damage the Kodiak salmon fisheries while providing little to no meaningful benefit to Cook Inlet fishermen or stocks.

In essence, imposition of management actions outlined in Proposals 64-66 would violate the board's Policy for the Management of Mixed Stock Salmon Fisheries (5 AAC 39.220) and the board's Policy for the Management of Sustainable Salmon Fisheries (5 AAC 39.222), and would not be consistent with the board's Allocation Criteria (AS 16.05.251(e)).

Specific Conclusions

The new mixed stock analysis (MSA), or genetic stock identification (GSI) study, on Kodiak sockeye salmon fisheries authored by Shedd et al. (2016) has limited applicability, and is not sufficient reason to change current KMA management. The salmon fisheries in the KMA are long-standing mixed stock, multi-species fisheries, with a variable and unpredictable component of nonlocal sockeye salmon.

The mixed stock nature of KMA salmon fisheries, including the incidental harvest of non-local, Cook Inlet sockeye stocks, is well known, not new.

There are no conservation emergencies for salmon and salmon fisheries within the KMA, including non-local sockeye stocks bound for Cook Inlet or Chignik.

Results of the 2014-2016 genetic MSA report did not provide sufficient cause for the board to accept ACR 11 and do not now support passage of proposals such as Proposals 64-66. Alteration

of the KMA salmon management plans is not justified under application of the board's Mixed Stock Salmon Fisheries Policy or the Sustainable Salmon Fisheries Policy.

Pertinent Considerations

Based on location and oceanography, mixed stocks of Pacific salmon migrate through the Kodiak management area, and are harvested in KMA salmon fisheries. The mixed stock nature of KMA salmon fisheries and the KMA harvest of nonlocal, Cook Inlet-bound sockeye have long been known and accounted for.

KMA commercial salmon fishery management plans are complex and were developed with the potential for harvest of nonlocal sockeye in mind. With early-run sockeye, pink and chum, late-run sockeye and coho salmon runs showing at different systems at different times through a long fishing season, a blended management approach was formulated.
Targeting of nonlocal salmon was minimized by focusing fishing opportunity on the timing and abundance of local salmon.

In 1978, the Board of Fisheries passed the first Kodiak salmon management plan, the allocative *Cape Igvak Salmon Management Plan* (5 AAC 18.361). In 1987, based on increasing allocative disputes among set gillnet fishermen in the Alitak District, the Kodiak area management team wrote up and brought to the BOF a local stock management plan for the Alitak District.

In March 1990, the BOF considered two main Kodiak management plans. The first was the *Westside Kodiak Salmon Management Plan* (5 AAC 18.362); adopted into regulation was the blended management chronology of the major salmon fisheries in the Northwest Kodiak and Southwest Kodiak Districts.

The second, the *North Shelikof Strait Sockeye Salmon Management Plan* (5 AAC 18.363), was developed as an allocative plan meant to contain KMA salmon fisheries in the North Shelikof area after uniquely high catches of migrating sockeye occurred offshore in Shelikof Strait in 1988. The North Shelikof Plan, plus strict restriction of fishing to within three-miles of shore, precludes any repetition of 1988-style harvests on non-local sockeye, yet still provides for traditional opportunities to harvest high quality local pink and chum salmon. The North Shelikof Plan constitutes a significant contribution of KMA fisheries to the "burden of conservation" for Cook Inlet sockeye stocks.

Mixed stock analysis (MSA, via comparison of average weights and scale pattern analysis) continued on the July North Shelikof sockeye harvest and, in 1993, MSA was expanded to include the entire KMA except for the Cape Igvak fishery. The result was estimates of extremely variable numbers of nonlocal Cook Inlet sockeye stocks in KMA sockeye harvests.

Between 1990 and 1999, five more regulatory management plans were developed by the Kodiak area management team and adopted by the BOF. During those deliberations, the mixed stock nature of KMA sockeye harvests and the variable and potentially large occasional harvest of Cook Inlet sockeye in various places around the KMA were known facts and often discussed.

The negative effects of adopting the UCIDA "umbrella plan" (ACR 11 and Proposal 66) are not presented by the proponents. But, the negative effects would be drastic: they would include extensive KMA fishery closures from late June through July resulting in substantial lost harvest opportunity, reduced salmon product quality, increased gear conflicts, and ultra-conservative management in the face of loss of traditional fishing patterns. The economy of Kodiak would be severely, negatively impacted.

Susitna sockeye are a designated as a stock of yield concern, and is not a conservation concern under present day management of Cook Inlet and KMA fisheries. The Action Plan for Susitna sockeye has not included reducing the harvest from Lower Cook Inlet or KMA fisheries, though it does identify many other sources of concern, such as invasive species (northern pike), loss or alteration of freshwater habitat, change in water quality and quantity, pathogens and freshwater fisheries.

The genetic MSA report (Shedd et al. 2016) shows a snapshot of events, with some significant limitations. The limits are outlined by the authors of the report, and should be heeded. Funding limited the scope of the study, and the study design was not intended to answer many biological and allocative questions regarding incidental KMA catch of nonlocal sockeye. Further, it is apparent that the information provided by the new KMA sockeye genetic MSA may be misused, and may create more uncertainty rather than less.

Some may believe that KMA local salmon stocks could all be harvested within 'terminal' fishing areas or 'inside the capes'. Long experience has shown that allowing salmon to enter the fresher (less saline), warmer, inside waters of the KMA will very quickly lead to loss of quality, or to complete loss to the fishery as the fish home-in and refuse to move out of closed water sanctuaries. Managing salmon escapement to within stated escapement goals would become much more difficult and threaten future stock productivity.

Policy for Management of Mixed Stock Salmon Fisheries and associated findings (93-07- FB):

- The Mixed Stock Policy asserts that the board's preference in assigning a burden of conservation in mixed stock fisheries is through the application of regulatory management plans. The KMA has operated under an interrelated suite of such management plans for decades.
- Each of the KMA regulatory management plans was developed and adopted by the Board of Fisheries with full knowledge of ongoing

incidental harvest of non-local stocks, including sockeye salmon otherwise returning to Cook Inlet.

- The mixed stock nature of salmon fisheries such as those in the KMA was explicitly recognized and accepted by the Board of Fisheries in their findings.
- The very large harvest of presumably Cook Inlet-bound sockeye in Shelikof Strait in 1988 was the one instance where a "new or expanding" fishery has developed in the KMA, and the board took quick action to curtail that type of fishery expansion with the 1990 *North Shelikof Strait Sockeye Salmon Management Plan*, almost 30 years ago.
- KMA commercial salmon fishermen already bear a significant and potentially disproportionately high burden of conservation for Cook Inlet sockeye stocks through the regulations for the North Shelikof Plan. An additional burden of conservation for relatively healthy Cook Inlet salmon stocks should not be prioritized at the risk of harm to KMA fisheries and local salmon stocks.
- The BOF findings assert that "it is not the intent of this policy to create a terminal fisheries preference…" Rather, the board recognized that "stability is an important aspect of [Alaska's] fisheries," most of which "harvest stocks which are mixed".

Policy for the Management of Sustainable Salmon Fisheries:

- The stated goals of the policy include not only conservation of salmon and habitat, but the policy also seeks to ensure "the sustained economic health of Alaska's fishing communities." Moreover, the board will consider "existing harvest patterns" when formulating any fishery management plan. There is no doubt that the significant changes to KMA's long-standing salmon management plans sought in Proposals 64-66 would drastically negatively impact the economic health of Kodiak communities.
- Fortunately, there are no major conservation concerns for sockeye salmon stocks in Cook Inlet, thus the Sustainable Salmon Fisheries Policy is currently accommodated by existing regulatory management plans.
- Regarding the Susitna stock of yield concern, the associated action plan indicates that factors other than the incidental harvest of nonlocal sockeye in the KMA, or even in lower Cook Inlet, are the appropriate focus for action.

The Alaska Board of Fisheries' Allocation Criteria:

- The BOF has adopted directly the statutory language of AS 16.05.251 (e) as its standard for allocation criteria: subparagraphs (1), (4), (5), and (6) are most applicable to consideration of Proposals 64-66: (1) the history

of each fishery, (4) the availability of alternative fisheries resources, (5) the importance of eachfishery to the economy of the state, and (6) the importance of each fishery to the economy of the region and local area in which the fishery is located.

- Regarding the history of KMA salmon fisheries, they have been ongoing for over a hundred years with a recognized incidental catch of migrating, non-local sockeye bound for Cook Inlet. A large suite of regulatory management plans has been enacted to manage fisheries in the KMA, all of which considered and accommodated the variable and unpredictable harvests of mixed and non-local stocks. These harvests have become a part of Kodiak longstanding allocation and opportunity to harvest salmon. Proposals 64-66 would abrogate that recognized history and allocation, and for no apparent benefit.
- Regarding the availability of alternative resources, Proposals 64-66 purport to protect some fraction of the Cook Inlet-bound migration of sockeye salmon through KMA fisheries, but the proposed mechanisms would directly and greatly diminishthe Kodiak fleets' ability to harvest alternative fishery resources such as local pink, chum and coho salmon.
- Regarding the importance of each fishery to the economy of the state, it is clear that the losses to KMA sockeye, pink, chum and coho fisheries caused by adoption of Proposals 64-66 and others, would greatly overshadow the minimal (if even detectable) gains that might accrue to the Cook Inlet fisheries. Thus, there would be a net negative impact to the economy of the state.
- Regarding the importance of each fishery to the economy of the region and local area, it is clear that a very large portion of the economy of Kodiak Island is directly dependent upon the harvesting and processing of sockeye, pink, chum and coho salmon. By contrast, the Cook Inlet sockeye fisheries comprise an important but proportionately less dominant contribution to the economy of Cook Inlet communities, the greater Anchorage area, and the Matanuska-Susitna region. Moreover, the very small (likely undetectable) gains to sockeye harvests in Cook Inlet constitute even that much smaller a contribution to the greater Cook Inlet economy.
- Finally, while not stated explicitly in the language of the Allocation Criteria, there is an implicit requirement of fairness, equity, and proportional benefit and cost for any action taken by the board. In this instance, it is clear that actions to implement Proposals 64-66 would impose costs many, many times higher than any possible calculation of benefit and thus would violate any reasonable standard of fairness or equity.

A Review of Agenda Change Request #11 and the ADF&G Kodiak 2014-2016 Sockeye Genetic Mixed Stock Analysis technical Fishery Manuscript, with recommendations to the BOF.

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Prepared for the Kodiak Salmon Work Group
September 25, 2017

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INTRODUCTION: BOF AGENDA CHANGE REQUEST CRITERIA AND CONSIDERATION OF ACR #11

United Cook Inlet Drift Association has submitted an Agenda Change Request (ACR #11), asking the BOF to consider an out-of-cycle proposal for a new salmon management plan in the Kodiak Management Area, to limit nontraditional harvest of nonlocal sockeye in KMA commercial salmon fisheries.

Normally, Kodiak Finfish issues are addressed during regularly scheduled (on-cycle) BOF meetings; only if the BOF accepts a properly submitted Agenda Change Request (ACR) will unscheduled (off-cycle) BOF consideration be approved. ACRs, reviewed at fall BOF work sessions, must meet the Policy for Changing Board of Fisheries Agenda (5 AAC 39.999). ACR consideration usually requires clear and concise biological concerns. Subsequent allocative considerations receive a lower priority. Application of BOF Criteria and Policies requires that unless there is compelling NEW information, then any allocatively-based ACRs would be denied. Such issues would then come up at the next on-cycle BOF meeting (for Kodiak Finfish that would be the 2019/2020 cycle).

The Criteria for an Agenda Change Request are found in the Alaska Administrative Code (regulations). For this discussion, the pertinent portions of that regulation are as follows:

> 5 AAC 39.999. POLICY FOR CHANGING BOARD AGENDA. (a) The Board of Fisheries (board) will, in its discretion, change its schedule for consideration of a proposed regulatory change in response to an agenda change request, submitted on a form provided by the board, in accordance with the following guidelines:
>
> (1) the board will accept an agenda change request only
>
> (A) for a fishery conservation purpose or reason;
>
> (B) to correct an error in a regulation; or
>
> (C) to correct an effect on a fishery that was unforeseen when a regulation was adopted;
>
> (2) the board will not accept an agenda change request that is predominantly allocative in nature in the absence of new information found by the board to be compelling.

Based on our review of the new MSA report and ACR #11, our brief responses to these criteria are:

Criteria 1(A): The BOF may accept an ACR for a fishery conservation purpose or reason. However, there isn't a Conservation Concern for any sockeye salmon stock in the Cook Inlet or Kodiak Management Areas. Published ADF&G forecasts for the 2014 to 2016 (GSI study years) and 2017 for Cook Inlet salmon fisheries predicted harvestable surplus for all sockeye stocks. Commercial fisheries were prosecuted in Upper Cook Inlet from 2014-2017, and there is no chronic inability to meet UCI sockeye escapement goals. Susitna sockeye are a Stock of Yield Concern, not a Conservation Concern. A BOF approved Action Plan was developed in 2008 and has been modified with BOF review (more detail is offered below).

Criteria 1 (B): The BOF may accept an ACR to correct an error in a regulation.

We feel there are no errors in current regulations governing the KMA salmon fisheries. This salmon fishery has been identified as a Mixed Stock Fishery, and past studies have revealed similar numbers and percentages of Cook Inlet sockeye present in KMA harvests, as did the new Kodiak sockeye genetic MSA study. KMA regulatory Salmon Management Plans (SMP) were written, discussed, and passed by the BOF with that knowledge.

Should that fact then dictate that nonlocal salmon in KMA harvests be discussed by the Board to consider possible change to KMA commercial salmon fishing regulations, then the BOF may schedule the issue for the on-cycle, regularly scheduled Kodiak finfish meeting. That option also allows for continued study, education, discussion and potential agreement or acceptance by stakeholders. Options and possible courses of action could be discussed among ADF&G researchers and managers.

An error in regulation is more likely with hasty, ill-prepared, unjustified or politically motivated proposed regulation changes. An issue of this importance and complexity deserves adequate consideration prior to changes to traditional and historical fisheries, changes which would also bring severe economic consequences to the Kodiak salmon fishery.

Criteria 1 (C): The BOF may accept an ACR to correct an effect on a fishery that was unforeseen when a regulation was adopted. There hasn't been any "effect on a fishery" demonstrated by ADF&G's new MSA study or report. There was substantial data, yet little to no analyses. The net effect of the KMA harvest of nonlocal sockeye is not new nor has it been demonstrated that it is endangering any sockeye stocks. Perhaps an ADF&G evaluation of the effect of KMA harvest of nonlocal sockeye is needed, and we suggest taking the time to ask the Department that, and other germane questions.

The presence of relatively large numbers of Cook Inlet salmon within KMA commercial salmon harvests during any year cannot be categorized as "unforeseen," for the reasons stated throughout this review. As previously shown, even a measure of the magnitude of the KMA commercial harvest of Cook Inlet sockeye estimated by the new MSA study was clearly demonstrated and reported to the BOF in the early to mid-1990s (over 20 years ago). No negative effects on the nonlocal sockeye stocks have been shown. Unfortunately, many UCI fishermen may hear of the NEW study and expect that the Mixed Stock nature of KMA salmon fisheries was an unforeseen effect.

Criteria (2): The board will not accept an agenda change request that is predominantly allocative in nature in the absence of new information found by the board to be compelling.

Does this new MSA study and report show that there should be new concern for the sustainability or conservation of any Cook Inlet sockeye stock? In the absence of a Biological Concern, what remains are Allocative Concerns. Based on our experiences, we do not believe that the new MSA is new and compelling.

We feel that the BOF should not accept any ACRs regarding KMA nonlocal salmon harvest at fall Board of Fisheries work sessions. Board review of KMA commercial salmon fishery

regulations should remain ON-CYCLE, to next occur during the BOF's 2019/2020 meeting cycle.

We have ISSUES with the ISSUES PRESENTED by UCIDA in ACR #11. There are misstatements and untruths contained in the ACR explanations and descriptions. For clarity, we comment on the UCIDA responses to the questions posed on the Agenda Change Request Form:

ACR #11 - Question 1: UCIDA asks for the adoption of a new regulatory management plan for the KMA. As stated, we do not believe that the Criteria for an Agenda Change request have been met.

ACR #11 Question 2: UCIDA states that the problem is "the harvest of Cook Inlet and other non-local salmon stocks in the Kodiak Area".

No evidence of harm or any problem with UCI sockeye stocks is shown or postulated. It appears that UCIDA feels that ANY harvest of nonlocal salmon in the KMA is a 'problem', despite the fact that Cook Inlet salmon have historically been present in the KMA and were identified in KMA salmon harvests in virtually all KMA MSA studies. Nonlocal sockeye salmon are a natural occurrence in the KMA, the magnitude of which may be related to overall abundance. Many uncontrollable factors are involved such as weather, ocean conditions, and migratory patterns.

ACR #11 - Question 4A: The fishery conservation purpose or reason appears to be that currently ADF&G does not use precise genetic stock estimates in development of escapement goals, management plans or brood tables.

ADF&G will use the best science available, and has successfully managed UCI and Kodiak sockeye stocks without precise genetic stock composition estimates. The KMA genetic MSA was just finished and published. TIME is needed to attempt to use data from the recent MSA. The new Kodiak sockeye genetic MSA was not designed or analyzed to determine appropriate limits on nonlocal, Cook Inlet sockeye harvest in KMA fisheries. Additional genetic studies, such as that conducted annually in Upper Cook Inlet, would be necessary.

ACR #11 - Question 4B: The error in regulation given by UCIDA seems to be the inaccurate or unfairly applied burden of conservation.

The Policy for the Management of Sustainable Salmon Fisheries (5 AAC 39.222), in subsection 4) D), states "in the absence of a regulatory management plan that otherwise allocates or restricts harvests, and when it is necessary to restrict fisheries on salmon stocks where there are known conservation problems, the burden of conservation shall be shared among all fisheries in close proportion to each fisheries' respective use…" (emphasis added). UCI sockeye escapements are met, Cook Inlet salmon fisheries are allowed, so the conservation burden is minimal. There is not a known conservation problem; Susitna sockeye are a Stock of Yield Concern only.

KMA already shares the burden of conservation with Cook Inlet. In December 1989, the Board passed a regulatory plan for the harvest of Cook Inlet sockeye salmon in the KMA, the North Shelikof Strait Sockeye SMP, which:

- is located to afford the most protection for UCI sockeye as they migrate through the KMA commercial salmon fisheries (the North Shelikof);
  o is timed to cover the estimated peak timing of nonlocal sockeye presence in the KMA (July 6-25);
- local Kodiak salmon forecasts and run strength indicators, with designated 2½ to 4½ day fishery closures each week; and,
- only allows continued fishing in inshore waters (Shoreward Zones; offshore Seaward Zones, from the baseline to the 3 mile limit, are closed).

This is already a very large conservation burden on KMA fishermen, for which no positive net effect on UCI stocks has ever been demonstrated. Over half of the Mainland and Afognak Districts are subject to fishery closures in July, based on the 1988 KMA harvest of nonlocal Cook Inlet salmon. Many KMA stakeholders would say that the conservation burden is currently unfairly slanted against KMA fishermen.

ACR #11 - Question 4C: The magnitude of nonlocal salmon harvests was known and was before the Board when KMA management plans were deliberated and adopted, but a new MSA has inspired a new round in the ongoing Cook Inlet-Kodiak fish fight.

This type of proposal is not new. In the past, UCIDA and UCI stakeholders have submitted many proposals for changes in management of the KMA fisheries. Very similar proposals were submitted to the BOF in the mid-1990s. With dozens of meetings and hundreds of hours of BOF discussions, committee discussions, as well as 2 years of work by a BOF ADF&G-Stakeholder Cook Inlet-Kodiak Inter-Area Work Group, it is clear to us that the BOF has been informed, has reviewed the KMA nonlocal salmon issue, and has deliberated on such restrictive management plan proposals.

ACR #11 - Question 6: UCIDA rightly admits that their ACR (#11) is allocative. We concur.

ACR #11 - Question 7: This compels the Board to consider an allocative proposal outside of the regular cycle. UCIDA claims that "Now, years later, with the aid of genetics, we know much more about the timing, location, extent and magnitude of the harvests of Cook Inlet origin salmon stocks. This ACR is the first opportunity to look at the harvest of Cook Inet stocks in the Kodiak Management area, and we consider this a very serious misstatement of fact. This is not the first look at harvests of Cook Inlet salmon in the KMA. Beginning in the 1920s, salmon researchers have studied KMA salmon stocks composition and shown that Cook Inlet salmon contribute to KMA commercial fisheries. The magnitude of nonlocal sockeye in KMA commercial fishery harvests has been previously studied extensively by ADF&G. MSA estimates were conducted and reported to the BOF and the public between 1989 and 1996, with similar results as the new genetic MSA.

The recent 2014-16 Kodiak genetic MSA has indeed added to the data available, however it gives little to NO definitive answers to migratory timing, location, extent or magnitude of nonlocal salmon passing through the Kodiak Management Area. It was a limited, short term study that looked at only some parts of June-August KMA salmon fisheries for only three years (three data points for each temporal/spatial stratum). Data was pooled into three fairly long temporal periods and six fairly large geo-spatial strata. For any temporal/spatial strata, there are only three annual data points. Three data points will show a false trend more often than a true trend. Three data points are most likely to show no trend.

The study cannot infer an absolute or precise harvest rate of nonlocal sockeye in KMA provided limited results from a limited sampling plan that was NOT intended to provide nonlocal salmon harvest rates, but rather the sockeye stock components of seleced KMA fisheries during limited time periods. UCIDA claims that the Kodiak sockeye genetic MSA is new information that should prompt the BOF to "look at the harvests of Cook Inlet sockeye stocks in the Kodiak Management Area. We strongly disagree. Again, more will be discussed regarding these point, in subsequent parts of this review.

ACR #11 - Question 9: UCIDA clearly states that there is NEW proposal, "not previously… before the board" and that it was "modeled after existing portions of both the Kodiak and Cook Inlet Alaska Administrative Code themes and regulations."

The proposed UCIDA restrictive umbrella plan form ACR #11 is not a new proposal. It is modeled after proposals from the November 1995 Kodiak Finfish BOF meeting and prior BOF meetings.

At that meeting, there were several such proposed changes to KMA fisheries. And the Board did not adopt any further restrictions. In the Summary of Actions taken at that meeting, it clearly states that "the past Board had pretty much resolved the issue in 1989 utilizing the best information available. And that information has not changed to this point. The effort and catch has increased in the disputed areas due to local management practices in other areas of Kodiak. And it is difficult to determine if this (is) a new and expanding fishery when both this area and Cook Inlet fisheries are at an all-time high. The overriding reason for apparent increase in intercept of Cook Inlet stocks seems to be directly related to the density and strength of that run." (emphasis added).

The 1995 Board of Fisheries reviewed MSA and harvest information and determined that shifts in effort levels could be fishermen movement due to closures of North Shelikof fisheries SMP, not new or expanded targeting of Cook Inlet stocks. They recognized that nonlocal salmon harvests occur in KMA fisheries and the relative level of such harvests were related to run strength. No biological concerns and no allocative concerns meant no change to Kodiak SMPs.

In both 1995 and 1988, Kodiak salmon fishermen submitted proposals to increase the harvest triggers used in the North Shelikof July 6-25 fisheries. They did so because the number of local Kodiak sockeye had increased since 1988, due to both an increase in natural production and increased enhancement of Kodiak sockeye. This would have increased the number of local

sockeye salmon available in the North Shelikof fisheries. However, because of the complexity of the situations involved, the BOF did not accept either proposal.

There were subsequent changes to the North Shelikof SMP. In 2002, the Ouzinkie Native Corporation, representing tribal commercial fishermen from Ouzinkie and Port Lions, proposed a less restrictive plan for Southwest Afognak section commercial salmon fisheries during the North Shelikof SMP mid-season time period (July 6-25). The BOF allowed KMA fishermen to continue to fish traditional seine hauls in the Southwest Afognak Section out to within ½ Mile of the baseline (a reduction of the Seaward Zone). And at a regular Kodiak Finfish meeting in January 2008, the Board accepted an amended version of the Ouzinkie proposal, reducing the Seaward Zone in the Northwest Afognak Section to allow KMA fishermen to continue to fish traditional seine hauls.

The BOF, despite multiple considerations of the KMA salmon fisheries and the North Shelikof plan, has not accepted proposals for increased restriction of KMA fisheries based on Cook Inlet sockeye salmon harvests within the KMA.

Concern is expressed in the ACR that if the proposed plan is not adopted, KMA salmon fisheries continue to incidentally harvest nonlocal Cook Inlet sockeye salmon, and then there will be detrimental biological or ecological effects. Yet there are no examples given of what detriments have been experienced in Cook Inlet due to recent KMA salmon fisheries or fishing patterns. Nor was any potential biological or ecological harm identified in the ACR #11.

Since 1989, the Board of Fisheries has addressed dozens of proposals from Cook Inlet salmon fishery stakeholders, for KMA management plans or regulatory restrictions. And very few changes have been made to the existing Cook Inlet-Kodiak allocative SMP by the BOF, and the BOF has not deemed it necessary to expand the regulatory KMA fishery restrictions by time (before or beyond 7/6-25) or location (North Shelikof vs. other major fishing areas of the KMA such as the east side or southwest sides of Kodiak Island).

UCIDA's proposal would establish a complicated plan covering an expanded time period (5 weeks, from 6/25 to 7/29) and newly expanded locations to include most of the KMA wild stock salmon fisheries. Within the identified time period and locations, there would be weekly and "seasonal" (6/25 to 7/29) commercial harvest limits for sockeye salmon.

This proposed plan would completely change the nature of KMA commercial salmon fisheries, and the opportunity for KMA salmon fishermen to harvest millions of local salmon would be uncertain or lost due to shifting of fisheries to only inner bays and terminal harvest areas.

Long-standing harvest strategy criteria by which KMA managers have operated could be more difficult to assure or complete. For example, since about 1971, the KMA general pink salmon fishery has been managed to coordinate multiple fishery openings whenever possible, (several locations over a wide area opening to the salmon fishery during the same time periods) to disperse the purse seine fleet. More restriction of fishing areas means more boats in smaller places, increasing the likelihood of conflict. And since about 1980, managers have attempted to

maximize harvest opportunities on the highest quality salmon during orderly fisheries. More restrictions and a completely new harvest management plan would reduce opportunities, and would likely lead to poorer quality salmon products (brighter, fresher salmon are found outside of bays and in early pink salmon fisheries) as well as the potential for more gear conflicts.

Managers would be forced to be ultra-conservative in order to meet the proposed new plan's expectation that fishery managers would make closure announcements if they EXPECT a limit to be reached or if the current harvest is within 15% of that limit. The weekly and seasonal sockeye harvest limits given in the UCIDA proposal are vastly lower than actual harvest in the past. For example, for the Westside Districts the proposed weekly limit is 12,500 sockeye, yet over the past ten years (2008-2017) the weekly Westside sockeye harvest during the 6/25 to 7/29 plan duration has averaged over 61,000 sockeye.

In our opinion, such widespread KMA fishery restrictions in late June through July (five weeks in the middle of the KMA salmon season) would greatly reduce ADF&G's management precision (more uncertainty means more conservative management) and increase the likelihood of 'lost' harvest opportunities, reduced quality of the pink salmon harvested and increase the likelihood that Kodiak sockeye and pink salmon escapements would exceed the appropriate levels that have been determined by ADF&G and the BOF.

And, the proposed sockeye harvest limits are substantially below the recent or historical sockeye harvests in those fisheries. The vast majority of past KMA salmon fisheries (1985-present) would have been restricted had this proposed umbrella plan been in effect. The proposed management plan's weekly and/or seasonal sockeye harvest limits would have been met, forcing restriction of major KMA fisheries to only inshore waters.

This is a long-running fish fight, and one could expect that the KMA stakeholders would follow with their own Agenda Change Requests, proposed management plan adoption or modifications, negative rhetoric, legislative inquiries or legal actions. The effects of the proposed UCIDA umbrella plan on traditional strategies and fishing opportunities would force a substantial negative response by not only the KMA salmon fishermen, but by processors, business owners, local Borough and City governments, and local legislators that would know and experience the negative ramifications to KMA mid-season salmon fisheries.

Based on our knowledge of the KMA commercial salmon fishery, it is expected that should this proposal pass as is, it would severely cripple the Kodiak commercial salmon fishery and devastate the Kodiak economy.

IS THERE AN EMERGENCY OR COMPELLING NEW INFORMATION?

We feel there is no biological or conservation-based emergency, nor compelling new information that forces the Board to consider this Allocative Proposal. Therefore, we see no reason to take this issue up out of the regular BOF fishery-review meeting cycle.

BIOLOGICAL CONCERNS are mentioned in UCIDA's ACR #11. For a salmon run, escapement and resulting production are known biological concerns that are affected by commercial salmon fisheries.

Escapement estimation for Upper Cook Inlet salmon streams is a complicated and changing process. Based on data obtained from ADF&G, it appears that sockeye salmon escapement goals are generally being met (Table 1), and there is no chronic inability to meet escapement needs.

Table 1. Upper Cook Inlet sockeye salmon escapement goal ranges and recent escapement estimates, 2010 2017. Data from ADF&G, Division of Commercial Fisheries, Anchorage, 8-22-17.

Sockeye Escapement Goal Ranges [1]								
2010			2011	2012	2013	2014	2015	2016
Kasilof River	160,000 - 340,000	267,013	245,721	374,523	489,654	439,977	470,677	239,981
Kenai River	1,000,000 -	970,662	1,300,000	1,599,217	1,581,555	1,359,893	1,520,340	1,704,767	1,383,692
Fish Creek	15,000 - 45,000	126,829	66,678	18,813	18,912	43,915	102,296	46,202
Chelatna	20,000 - 45,000	37,784	70,353	36,736	70,555	26,212	69,897	60,792
Judd	15,000 - 40,000	18,466	39,984	18,715		22,229	47,934	No Count
Larson	15,000 - 35,000	20,324		16,566	14,088		23,185	
			12,190		21,821	12,430		14,333

1. Escapement goals are those provided by ADF&G following a 2017 Board of Fisheries review.

Harvestable surpluses of UCI sockeye salmon have been consistently realized. ADF&G forecasts for 2014-2017 Cook Inlet salmon fisheries show significant surplus sockeye salmon production, over and above published escapement needs. Harvest records show that recent annual Cook Inlet sockeye salmon commercial harvests were in excess of forecast.

Actual Cook Inlet commercial, subsistence or sport harvests may vary and at times may even be lower than in the past. However, commercial fisheries were prosecuted in Lower and Upper Cook Inlet resulting in Cook Inlet commercial salmon fishery harvests of millions of sockeye salmon. Sockeye salmon production seems to be near historical highs, based on data provided by ADF&G.

A STOCK of CONCERN designation was placed on the Susitna sockeye stock in 2008. However, the Susitna sockeye stock was categorized as a YIELD concern, not a Management or a Conservation Concern. Even that designation was not without controversy, both for and against. The level of Concern for Susitna sockeye has not changed with almost 10 years of subsequent ADF&G and BOF review.

Based on the Policy for the Management of Sustainable Salmon Fisheries, "yield concern" means a concern arising from chronic inability, despite the use of specific

management needs (5 AAC 39.222(f)(42)). Based on the Sustainable Salmon Policy, there is an Action Plan for Susitna sockeye salmon as a Stock of Yield Concern, and that plan is reviewed and updated as necessary during salmon area specific BOF meetings. The Action Plan, in part, must contain goals, measurable and implementable objectives, and provisions, including fishery management actions needed to achieve rebuilding goals and objectives, as well as descriptions of new or expanding salmon fisheries.

Within the Susitna sockeye salmon Action Plan, there are NO new or expanding fisheries listed. This is especially surprising when considering the near meteoric rise in sport fishing effort and commercial sport fishing operations (guides, charter operators and lodges) across the State of Alaska in the past 20 years. The Kodiak commercial salmon fishery has not been identified as 'New and Expanding', nor have any portion of KMA salmon fisheries.

The Susitna sockeye salmon Action Plan designates that ADF&G Division of Commercial Fisheries will manage the Susitna sockeye stock using commercial fishery regulation of Upper Cook Inlet's Northern and Central Districts, only (Figure 1). There are no commercial salmon fisheries restrictions in Lower Cook Inlet (5 Districts) based on this Stock of Concern.

It seems like an over-reach to ask for severe commercial fishing restriction in the KMA, so far 'downstream', while ignoring Lower Cook Inlet. Especially since all Upper Cook Inlet stocks MUST pass through Lower Cook Inlet.

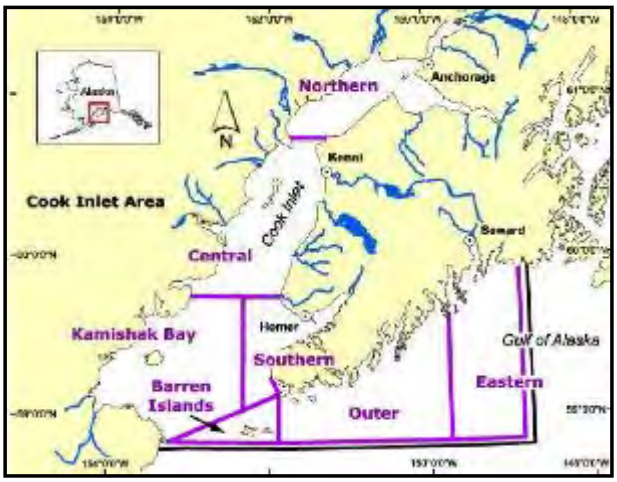


Figure 1. Map of Cook Inlet's commercial salmon fishing districts. Figure taken from ADF&G website

ADF&G has identified several other factors, besides natural or incidental mortality, that may be affecting the survival (yield) of Susitna sockeye salmon in freshwater (spawning and rearing areas), including the introduction of invasive species (Northern Pike), loss or alteration of habitat, changes in water quality or quantity, pathogens, or harvest by sport fishing. Yield Concerns, by definition, are NOT concerns for the sustainability or successful management of the stock, rather it is concern for lower than desired harvestable surpluses, above expected

escapement needs. To 'conserve' UCI sockeye salmon for harvest by a select group of Alaska fishermen, for only Cook Inlet commercial salmon fishermen or sport fishermen or commercial sport fishing business owners, is based on allocation; it is not a concern for conservation caused by new and expanding fisheries.

We feel confident that no biological reason exists for restricting KMA fisheries in order to protect Cook Inlet-bound salmon, based on the information given in the UCIDA ACR, or in the 2014-16 KMA genetic MSA (more in following part of this review).

Nothing New has been determined with which to accurately determine the impact of KMA sockeye harvests of nonlocal salmon on Cook Inlet sockeye salmon stocks.

Perhaps some people have assumed that the magnitude of the Cook Inlet sockeye component of KMA harvests was an unknown. Perhaps some people assumed that Cook Inlet salmon rarely migrate through the KMA, so the harvest numbers in the report were shocking to them.

However, the 2014-16 MSA report was not an analysis of nonlocal sockeye harvest in the KMA. It is a reporting of recent data collected in yet another MSA in the KMA. In the 2014-16 KMA sockeye genetic MSA, only very limited information from past tagging studies was included, and there is only one citation from several Kodiak MSA reports by ADF&G from 1989-1996.

Without a discussion of 'How we got here' it is often difficult to correctly ascertain exactly where we are now. It is unfortunate that, in the new MSA report, Shedd et al (2016) included only very limited information on past Kodiak sockeye MSA studies and published reports.

Earlier MSA Studies were Conducted in the KMA using existing fisheries data and samples, such as analyses of run timing, or of scale samples for stock-specific age-markers or patterns, or use of average sockeye salmon lengths or weights from KMA vs CIMA commercial harvests. A quick comparison shows that many data from the new KMA genetic MSA and from previous KMA average weight MSAs are similar. There was no mention or analysis of these facts in the new MSA report.

Included in the new MSA report are over 60 tables describing the annual estimates of local and nonlocal sockeye salmon in each of six preselected geographic areas (geospatial strata) during each of three time periods (temporal strata). The middle stratum encompasses the July 6-25 period used in earlier studies, so is most comparable with that earlier data. The 1994 Barrett and Vining report also looked at specific area harvests, some of which approximate the 2014-2016 sampling areas.

Barrett and Vining (1994), using average weights, estimated the stock compositions of KMA July harvests from eight KMA locations (geospatial strata), which are basically the same as the geospatial strata in the recent KMA genetic MSA. For example, in Barrett and Vining (1994), for Ayakulik and Halibut Bay, the nonlocal (Cook Inlet) sockeye harvests for July, 1988-1992, ranged from 103,900 to 444,400 fish. In the recent KMA genetic MSA report, the mid-season (basically July) 2014-2016 KMA harvest of nonlocal sockeye in the Ayakulik/Halibut Bay strata

ranged from 41,300 to 185,100 fish. From this comparison it is obvious that the earlier studies not only showed that Cook Inlet sockeye were present and were caught in July Ayakulik halibut Bay fisheries, but that the magnitude of the incidental harvest was greater than in 2014-2016. Should the NEW information be touted as a decline in nonlocal salmon harvests, or only annual variability?

Using another example, the 1988-1992 MSA (Barrett and Vining 1994), the July (mid-season strata) Cape Alitak nonlocal (Cook Inlet) sockeye salmon harvest was estimated at 46,400 to 63,200 fish, and in the 2014-2016 KMA genetic MSA (Shedd et al, 2016) the harvest of nonlocal sockeye in the Alitak District ranged from 37,500 to 127,700 fish. The average weight MSA estimated significant harvest of nonlocal sockeye in the Alitak District, which was confirmed by the KMA genetic MSA. However, does the new MSA study point out an increase in nonlocal salmon harvest in the Alitak Bay District, or annual variability?

There is simply no truthful way to claim that the harvest of nonlocal, Cook Inlet salmon is new information, or that the magnitude of those incidental harvests is new information, or that the timing and estimated number of incidental sockeye harvested is anything but unpredictable and widely variable between and among years.

The New Genetic MSA Report, by presenting seemingly new MSA data with high numbers and percentages of nonlocal salmon in KMA salmon harvests, without comparing that to past study data and results (such as previously determined bycatch levels of Cook Inlet sockeye in KMA harvests), has led to unfounded conclusions and has created an emotional response by stakeholders from Cook Inlet fisheries. Vital information is not included, again pointing to the need for development of a comprehensive document or set of data, for review by stakeholders and the BOF prior to deliberating on any proposed change to KMA salmon management.

In the new 2014-2016 Kodiak sockeye genetic MSA report, authors show the number of nonlocal, Cook Inlet sockeye salmon estimated to be harvested in KMA commercial fisheries as a percent of the KMA commercial harvests during selected time periods and within selected portions of the area. This shows the estimated stock contribution rate (stock proportions) of the KMA harvest. We feel this has been misleading for some people.

The Kodiak genetic MSA provides nonlocal harvest data as a percentage of the KMA harvest. It does not attempt to show the potential impact to Cook Inlet stocks. It is understandable (and should have been expected) that some people, upon seeing tables of numbers demonstrating large percentages of nonlocal salmon, may jump to the conclusion that there is a danger to the sustainability of any seemingly fully utilized stocks. The new MSA report does not provide a comparison of the estimated KMA nonlocal Cook Inlet harvest to the total Cook Inlet sockeye harvest or run, or to individual CI sockeye runs (a harvest rate).

But again, as with number of salmon, similarity between the nonlocal stock contribution proportions from earlier and recent KMA sockeye MSA is quickly evident.

Within the new MSA report, the 2014-2016 estimates of overall nonlocal contribution to KMA harvests ranged from 12% (2014) to 42% (2015 and 2016); this is within the ranges determined by earlier studies, and is not new information. In 1996, ADF&G estimated that overall, during July 6-25 sockeye salmon harvest for 1983-1995 (excluding 1989), nonlocal sockeye salmon were from 10.6% to 76.2% of the KMA harvest (excluding Cape Igvak; Vining 1996).

The average weight studies were a rigorous scientific statistical analysis, much discussed, agreed to by ADF&G headquarters, Cook Inlet and Kodiak ADF&G staffs, edited by ADF&G, and the various authors thoroughly discussed the limitations of such a study and cautioned against misapplication of results.

Comparing the estimated number of nonlocal Cook Inlet sockeye harvested in sampled KMA commercial salmon fisheries against the total Cook Inlet harvest or total run, gives a look at the harvest rate of Cook Inlet salmon in KMA fisheries. This is an important distinction, if one is trying to gauge the potential biological impact of bycatch of Cook Inlet sockeye salmon (Table 2). Still, great caution must be employed when trying to determine accurate harvest rates for Cook Inlet sockeye in KMA fisheries. We can only generate very rough estimates of harvest rates from the available data. The 2014-2016 KMA sockeye genetic MSA was not intended or designed to provide accurate harvest rates of Cook Inlet-bound sockeye in KMA fisheries.

Table 2. Estimated KMA nonlocal Cook Inlet sockeye harvest in select KMA commercial fisheries, 2014 2017. Data from ADF&G Anchorage, 8-22-17.

Year	Estimated KMA Harvest of CI Sockeye	Cook Inlet Sockeye Salmon		
		% of KMA harvest	% of Cook Inlet Harvest	% of Cook Inlet Run
2014	113,972	7.5%	4.2%	2.1%
2015	626,473	36.6%	17.9%	9.1%
2016	384,089	29.6%	12.4%	6.9%

Table 2 (above) shows that current estimated harvest percentages are also in agreement with Vining (1996); he showed the estimated percent of the UCI sockeye runs (in the Kodiak Management Area harvest) from 1983-1995 ranged from 1% to 12.1%. Using an overall estimate, it appears that less than 15% of Cook Inlet sockeye runs are harvested in KMA fisheries. It is interesting to note that the other KMA allocative plan, the Cape Igvak plan, allows KMA fishermen to harvest up to 15% of the Chignik sockeye runs. Annual variability is again perhaps the only fact that is clearly demonstrated.

The study and report document only numbers and percentages. Authors (Shedd et al, 2016a) do not comment on whether nonlocal sockeye presence and levels were an affirmation of historical migration patterns and natural background levels of historic bycatch in commercial salmon fisheries targeting Kodiak salmon stocks in this known Mixed Stock fishery.

LIMITATIONS OF THE KMA GENETIC MSA

The recent MSA study was only the first look at a KMA mixed stock fishery using modern stock separation methods (Genetic Stock Identification). And, the report clearly informs readers that it only provided new harvest statistics for some fisheries for a limited set of years, for limited time periods. The lack of analyses or any further interpretation of this data and the lack of comparisons with previous sockeye stock composition estimates, within the KMA genetic MSA report or in a separate report, has led some people to draw their own conclusions.

CAUTIONS: However, the authors (Shedd et al, 2016a) did specify that, since the study was limited, caution must be exercised when trying to extrapolate limited results to wider questions or if trying to fit the data to other issues: "However, while this 3-year data set provides some measure of interannual variability in environmental and fishery conditions, some caution must be exercised when extrapolating the results to years, areas, and temporal periods not analyzed because changes in relative abundance among reporting groups, prosecution of fisheries, or migratory behavior due to ocean conditions very likely affect distribution of stock-specific harvests among fisheries." (Shedd, et al, 2016a, page ; emphasis added).



Figure 2. Kodiak Area management units sampled for genetic stock identification, 2014-2016.
Figure taken from Shedd, et al, 2016.

Funding Limits are very real constraints. Authors of the 2014-16 MSA report also found that

"funding constraints limited the scope of this project to specific sampling areas and time periods". The genetic sockeye MSA study planners had to limit both the study area (number of geospatial strata) and the time periods (temporal strata within the June 1 to October 31 KMA commercial salmon fishing season). Though the initial objective of this project was to sample the major directed sockeye salmon commercial fisheries in marine waters of KMA, only eight locations were selected, with all of them in the west and southwestern part of the KMA (Figure 2. **Only three sampling time periods were used, spanning June 1 through August. Significant harvests of sockeye salmon can occur in September and October.**

Other Limits: It is clear that the new MSA study is a "snapshot", showing results of samples collected from limited areas during limited time periods over a limited set of years. Not included in this new MSA study were not only the known areas where KMA fisheries may target nonlocal stocks (Afognak and Mainland District sections bordering the North Shelikof), but also areas of prior Board review for KMA harvest of nonlocal sockeye (Eastside Kodiak District). The authors of the new MSA report admit that, succumbing to funding limits, they sampled less than they intended, both in areas covered and time periods sampled.

The authors admit that GSI techniques are not robust enough to distinguish between Ayakulik and Frazer sockeye stocks; they did not attempt to distinguish between local Saltery stock sockeye salmon (Eastside District) and enhancement project production at Spiridon Lake (NW Kodiak District; west side). Are there other stocks that are difficult to distinguish? ADF&G also published a KMA Genetic Baseline report that contains many such statistics and graphic presentations. However, it is not clear to me, and may not be to any but the initiated, if there are KMA and UCI sockeye stocks that are so closely 'related' genetically, that there could be overlap or misidentification (i.e. Horse Marine sockeye salmon).

The study does not speculate on reasons for the observed variability in harvests between the three years. There are factors that could influence this and research could be directed at answering other important questions beside 'How many?' Funding has limited sampling by time and area, and stock similarity has limited the separation of at least three stocks, so this study cannot reveal the full picture over a robust set of years.

Do the results clarify or obfuscate issues relating to the use of this data or the controversy regarding KMA harvest of nonlocal sockeye?

The new KMA genetic MSA report authors believe that the study was successful: "These results represent a majority of sockeye salmon commercial harvests in KMA and <u>should</u> improve our understanding of stock productivity and migratory patterns, and provide information to evaluate assumptions built into management plans." (Shedd, et al, 2016a, page 23; emphasis added).

Sufficient time should be given for ADF&G managers and researchers to utilize the limited data they've collected to discover its usefulness to actual fishery management needs.

We note that the 2014-2016 MSA report may seem incomprehensibly technical to some, but it s easy to seize on numbers! As written, this report is of questionable utility for BOF members for the purpose of a specific discussion of issues that could lead to restrictive regulatory changes to

KMA salmon fishery management, let alone stakeholder understanding, interpretation, and education. We do not mean to diminish the work done; the report is a fine piece of Scientific Reporting, and meets ADF&G standards for technical publications.

The 2014-16 MSA report is fine for a scientific audience, not as the basis for stakeholder discussions or restrictive BOF actions that would destabilize the KMA fisheries. For concerned stakeholders, and the BOF, it is more likely to lead to misunderstanding, and raises more questions than answered. People want to jump on numbers, but may miss the limitations.

We feel this technical study and report should only serve to provide limited information on a limited study. It should be the impetus and basis for a further report to BOF, if the BOF determines that further review is needed at this time.

The study results alone are not sufficient for restricting KMA fisheries to potentially re-allocate sockeye salmon harvests; an additional more comprehensive report on the specific issue of Cook Inlet salmon within the KMA should be considered to educate and inform stakeholders and begin discussions, prior to Board action.

Any such additional document would need to include a thorough discussion of issues (not stats, not methods, etc.) in more digestible form. A more colloquial summarization, perhaps formulated by a joint stakeholder committee, would best serve if further discussion of nonlocal salmon harvest in the KMA is to become a Board of Fisheries agenda item at 'Special' meetings or the next regular Kodiak Finfish meeting.

The intent, goals and objectives of the new MSA study and report are shown within the report. Caution must be taken against misuse the data provided based on personal concerns.

It was not the intent and goal of the new MSA to produce specific information for a BOF review of KMA fisheries, nor was it to suggest restriction of the KMA fishery due to reported UCI sockeye harvest numbers. And the new MSA study and report's goal was certainly not to open another allocative dispute, though that outcome could have been predicted and may have been prevented by additional analyses.

INTENT: When reviewing a scientific study, it is vital to bear in the forefront of one's mind the general intent or purpose of that study, its specific goals and objectives, as well as the assumptions and limitations that encompass any analyses. It may be difficult, even dangerous, to try to draw answers or conclusions from information that was not collected specifically to answer that question, or which has many poorly founded assumptions. The possibility for misinterpretation, misuse and mistakes are increased. False assumptions or misinterpretation of data can lead to completely inaccurate conclusions.

The KMA sockeye genetic MSA study (or indeed any study) and the report should primarily be viewed through the lenses of the intent, or purpose, of the study. What was the intent of study planners and report authors? What was it needed for and why? What did it seek to show or do?

What issues or what answers were beyond the scope of the study? Attention to intent, goals and objectives will inform us what the results may actually demonstrate.

Unfortunately, the intent of the new MSA study is not clearly defined in the early portions of the report, but rather is found scattered throughout the report. In the acknowledgements comes the most basic purpose of this study. Authors thank a former ADF&G Director for "prioritizing department resources to address this knowledge gap in KMA" (Shedd, et al, 2016a, page 27; emphasis added).

Genetic stock identification for Mixed Stock Analysis has been completed for much of Western Alaska (WASSIP), and GSI has been used in Cook Inlet since 2005, to identify the mixed stocks within UCI fisheries. No such genetic data existed for the KMA (a knowledge gap), so a Kodiak salmon genetic MSA was funded.

PLEASE NOTE: the MSA of Cook Inlet fisheries show NO nonlocal salmon, not because only local stocks are present... it appears that nonlocal stocks are NOT part of the UCI MSA model. That is, researchers assume that there are NO nonlocal salmon in Cook Inlet fisheries; nonlocal sockeye are not looked for! You can't find what you don't look for.

In other places in the new MSA report we find additional comments regarding intent. The authors state that: "The impetus for this study was to provide analytically sound estimates of stocks harvested in KMA fisheries to better understand stock productivity and address management assumptions. The principal objective of this project was to sample the major directed sockeye salmon commercial fisheries in marine waters of KMA." (Shedd, et al, 2016a, page 23).

Unfortunately , what the authors meant by "management assumptions" is not defined within this report; if that was a serious consideration by study developers and planners, then those assumptions should have been clearly defined. All assumptions of specific scientific research, particularly if they are to be tested in the study, should be clearly stated. The need to address management assumptions, if not defined, should not be a focus for use of data collected.

As former Kodiak Area Management Biologists, we know of no 'management assumptions' that would require a three year genetic study. Indeed, as managers we know that limited research is too often misused and is commonly taken 'too far' by strongly opinionated people in attempts to prove their point.

In another passage the authors state that: "While nonlocal harvest of sockeye salmon in KMA commercial fisheries has been assumed in regulation and demonstrated in previous studies based on tagging, scale pattern analysis (Barrett and Swanton 1991, 1992), or average weight (Vining 1996), this project represents the first effort to use modern MSA techniques to quantify that harvest" (Shedd, et al, 2016a, page 26; emphasis added).

The primary intent was to use newly provided funding for a 'first effort' to try genetic stock identification methods in a Kodiak MSA, since no GSI had been attempted prior to 2014.

STUDY GOAL or PRINCIPLE OBJECTIVES: The report authors specifically define their goal: "The overall goal of this project is to provide information that will be useful for reconstructing runs, building accurate brood tables to define escapement goals, and refining management by identifying spatial and temporal harvest patterns of local and nonlocal stocks…." (Shedd, et al, 2016a, page 5, emphasis added).

Unfortunately, this goal has NOT yet been met. Satisfactory completion of the stated goal will require additional time and analysis of the gathered information.

It is important to give ADF&G time to actually apply these results to run reconstructions and brood table development. ADF&G may then be able to refine pre-season management by providing better predictors of stock productivity and anticipated run strengths (forecast). Inseason fishery management will not be improved.

It truly seems that there is an intent to reverse the order and to change management based on a limited study, rather than explore the statistics to see if solid, scientifically valid results point to needed changes in established, stable management. The possibility exists for future analysis and study, additional research, discussions between stakeholders and managers, researchers, and the BOF. We encourage the BOF to take this opportunity, and to use this study as intended. We fear a hasty, knee-jerk reaction to an emotional issue to appease a vocal user group.

The principle objective has been addressed, yet not fully met. "The principal objective of this project was to sample the major sockeye salmon commercial fisheries in marine waters of KMA from June through the end of August and use genetic mixed stock analysis (MSA) to estimate stock compositions. The study only partially accomplished this objective. KMA harvest samples have been collected and analyzed using the most current genetic MSA techniques. However, the project was not able to sample all KMA commercial fisheries, and so was limited to specific geographic areas, within specific time strata, for a limited number of years.

ADF&G study planners and authors agreed, with authors stating that: "these results may only have limited utility in formal run-reconstructions for 2 primary reasons. First, not all fishing areas were sampled, and sampling did not include harvest after August 29, when substantial numbers of Karluk and Upper Station late-run fish can be harvested. Second, the genetic baseline was unable to adequately distinguish between Ayakulik and Frazer stocks for the purposes of MSA." (Shedd, et al, 2016a, page 26).

To meet the study's goals, it would appear that there is a need to work further with the information gathered, in run reconstruction (back-casting, to improve fit of forecasting models) and escapement goal review. Authors caution: "Management would benefit from estimates of stock-specific harvest of Ayakulik and Frazer stocks and future research should explore means to accomplish this objective (Shedd, et al, 2016a, page 24).

There needs to be further analysis of the Ayakulik/Frazer samples to either separate or determine and apply additional information needed to split this grouping into the two distinct stocks.

Four (4) objectives are then specifically listed, 1 through 4, yet these objectives address the report, not the study. The stated objectives for the report that describes the study are:

1) Describe sampling of genetic tissues from sockeye salmon caught from June through August in select commercial fisheries in the KMA, 2014 2016;
2) Describe subsampling of genetic tissues in proportion to catch within sampling areas and temporal strata;
3) Report MSA results of stock proportions and stock-specific harvests of sockeye salmon sampled from select commercial fisheries in the KMA, 2014 2016;
4) Characterize where stocks were harvested from select commercial fisheries in the KMA, Shedd, et al, 2016a, page 5)

AN IMPERFECT DESIGN

The new MSA study design left many pertinent questions unanswered and many data needs unmet. The study design seems practical for the general overall goal; that is, during some portion of KMA commercial salmon fishery, to collect samples from some portion of the KMA salmon fisheries and analyze for genetic MSA stock identification, over three years.

Unfortunately, it was not designed to address or answer some very fundamental questions that could enlighten the issue of variable incidental harvest of Cook Inlet sockeye in KMA fisheries. As shown previously, the study did not include the North Shelikof Straits. However, it is possible that, with additional sampling, analyses or interpretation of results, more definitive answers or conclusions could be made that would be helpful to the BOF during their consideration of this ongoing fish fight.

The BOF has attempted to 'solve' this issue in the past. After 4 years of ACRs and proposals at every Kodiak Finfish BOF review, in 1994 the BOF formed a Work Group to determine possible solutions.

In 1994, a Kodiak / Cook Inlet Inter-Area Work Group (hereafter referred to as the IAWG or the Work Group) was formed by the BOF. As previously stated, in 1988 following the occurrence of a large harvest of nonlocal sockeye salmon in mid-stream Shelikof Strait, the active allocative dispute between Cook Inlet and Kodiak fishermen gained strength. From 1988 through 1996, Kodiak ADF&G conducted sockeye stock identification studies (MSA). Cook Inlet-Kodiak allocative conflicts were the subject of many meetings with the Board of Fisheries. The IAWG met several times prior to reporting to the BOF at a Special Meeting in March 1995.

At the beginning of IAWG discussions, ADF&G researchers and managers, Work Group stakeholder members, and the BOF members mutually agreed upon several key 'facts':

- The bycatch of Cook Inlet-bound sockeye in KMA fisheries is directly proportional to Cook Inlet sockeye run strength;
- The incidence of Cook Inlet sockeye in KMA fisheries varies widely. It is inconsistent as to area, annual timing, and between years;
- The incidence of Cook Inlet salmon in KMA fisheries is 'insignificant' if the Cook Inlet sockeye run is less than 4 million;
- The July 6-25 period is not only an important time period in KMA salmon fisheries management, it is the period of PEAK abundance of Cook Inlet-bound sockeye salmon in KMA waters;
- Within that period, the majority of bycatch occurs within a narrower, 7-10 day period.

These facts were established by ADF&G and stakeholders on the IAWG, based on the 19881995 Kodiak MSA studies and fisheries. These facts served the BOF and ADF&G by focusing the scope of research and discussions to a manageable level and by focusing any potential Board action on the most effective time period within the fishing season.

The 1994-95 Inter-Area Work Group also recommended that ADF&G undertake additional inseason stock-separation studies and develop inseason indices or markers to determine when Cook Inlet salmon are present in KMA fisheries. The IAWG asked that Kodiak and Cook Inlet ADF&G estimate timing and percentage of Cook Inlet run present.

Other serious limits to the Kodiak sockeye genetic MSA include:

GEAR SELECTIVITY could have biased many of the genetic MSA samples. The geospatial strata included 2 location in the Central Section (Uyak and Uganik/Kupreanof), where both Set Gillnet and Seine gear are legal to operate. Based on concerns for getting 'pure' samples from these specific locations, the samples were collected from fixed set gillnet gear. Gillnets will select for the larger fish. In both 2015 and 2016, average sockeye sizes were lower than average, which would further bias against the smaller, local Kodiak sockeye. Karluk sockeye are the dominant stock, so these locations represent the major sockeye fishery of the KMA. Yet, the MSA study does not even mention gear type in the discussion of genetic sampling.

TEMPORAL STRATA used in the 2014-16 KMA genetic MSA do not readily correspond with actual KMA management plan fishing periods, which includes an important mid-season management period (July 6-25). We also feel the time periods used for this study are not sufficiently narrow to define periods when Cook Inlet sockeye stocks may be in the KMA and vulnerable to harvest.

Temporal strata were not consistent among the three years of the study, and the use of different and changing mid-season temporal strata effectively muddles the comparative usefulness of the data presented. During 2014 and 2016 the middle strata dates were June 28 through July 25, and in 2015 this was shifted to July 4 through August 1. While we recognize that, in some years, run timing may be delayed, pushing the mid-season temporal stratum by 7 days based on someone's perception of run timing also confounds interpretation of the study results and their potential use for regulatory discussions. The KMA regulatory Salmon Management Plans all use calendar DATES that do not shift based on perceived run timing.

Anecdotal, first-hand knowledge shows that the location of harvest of larger, suspected Cook Inlet sockeye are almost ephemeral… here today, gone tomorrow. More relevant to CIMA-KMA allocative issues might be the selection and achievement of specific numbers of genetic samples during narrower time periods that correspond to how KMA fisheries are actually prosecuted, particularly during the July 6-25 time period.

GEOSPATIAL STRATA employed in the KMA genetic MSA report are overly broad, and the ability to determine potential offshore or cape fishery "hot spots" was lost. This could lead to misrepresentation. For example, Alitak sampling did not include set gillnet areas and combined the inside (inner bay) and outside (cape or offshore) seine fisheries; it was meant to be representative of the entire Alitak District harvests. However, even limited information about more specific harvest location is of interest and could be important in understanding stock compositions, timing and migratory patterns in KMA mixed stock fisheries.

DATA POOLING may also obscure important or essential information. The manner in which samples were later subsampled and data was pooled to fit temporal strata affects how the sample data can be used. Within the 2014-16 KMA genetic MSA report, there is no commercial fishery data given beside sample date, sample and subsample size, and the reported KMA sockeye catch from that particular sample was from a Seiner or Gillnetter. Effort data is lost.

Caution must be taken in use of the KMA genetic MSA data. Again, we feel that since the study was limited by its intent and goals, by funding, by MSA and study design shortcomings, and was not designed to answer the known and important questions regarding Cook Inlet sockeye in KMA salmon harvests, such as above, then it would be very unwise to apply this new data other than as intended.

DOES THE GENETIC MSA CREATE MORE UNCERTAINTY OR LESS?

The 2014-16 MSA report provides good presence/absence data, and provides MSA composition estimates for some geographic strata and/or time periods previously either unsampled or found to have insignificant or undiscernible levels of nonlocal sockeye. The report simply presents data, with little interpretation, leaving that to the readers. However, to fully explain the harvest numbers, there are many additional considerations (which we hope are becoming clearer after our review).

Presenting snapshots of fishery harvest stock compositions does not elucidate why or how those levels of harvest may have occurred. Is it due to targeting, or some unusual environmental factors? The 2014-16 MSA report does not show actual fishing time during periods in question… Was commercial fishing effort in high catch stratum due to targeting? Did participation increase following some initial 'event'? Would the effects of actual 2014 to 2016 management actions (Emergency Order-based fishing time) and commercial fishing effort point to a 'problem area'?

It should be fairly easy to disprove beliefs that there is a targeted interception fishery on Upper Cook Inlet sockeye in KMA fisheries. Yes, salmon fishermen target sockeye salmon, due to market demand and price, but KMA fishery managers and fishermen are not conducting a secret fishery within KMA salmon fisheries. A pairing of sample collection and estimated stock composition data with actual hours of fishing time and number of landings would show the incidental nature of nonlocal sockeye harvests.

The current KMA salmon commercial fishery management 'harvest strategy' relies on a period during July (July 6-25) when fishing periods targeting pink salmon are weekly 'pulse fisheries' with limited hours of fishing time allowed each week. Pink salmon numbers increase almost exponentially during this time period, but fish QUALITY remains good. After July 25, management sections may be opened for longer weekly periods only in sections where production is expected to be in excess of escapement needs. Management during the July 6-25 mid-season time period actually reduces potential bycatch of nonlocal sockeye. We feel that is an important consideration.

Similarly, without consideration of all factors, some may believe that KMA salmon stocks could all be harvested within 'terminal' fishing areas or 'inside the capes'. Long experience has shown that allowing salmon to enter the fresher (less saline), warmer, inside-waters of the KMA will very quickly lead to loss of quality, or to complete loss to the fishery as the fish home-in and refuse to move out of closed water sanctuaries.

Without consideration of all factors, we cannot answer truly important questions (i.e. Why is there such variability in estimated nonlocal contribution to KMA salmon harvests, between and among years, time strata and geospatial strata?) This could be a topic requiring much study to fully elucidate.

The depth and complexity of the issues involved requires extensive analyses and discussions between ADF&G authors and managers and interested stakeholders, just to set the ground rules for further review and evaluation of proposed restrictive BOF actions. We feel this cannot occur in a few months, but will require additional time for all parties to become apprised of important considerations which may not be apparent to someone not intimately familiar with both KMA and Cook Inlet fisheries and the issues at hand.

We feel that there has always been some level of nonlocal sockeye salmon harvests in KMA salmon fisheries; KMA is a mixed stock fishery. This is an annual part of the KMA salmon fishery harvest, not an aberration or an unanticipated consequence or a new and expanding targeted 'interception' fishery. Identifying the 'natural' background level of harvest of nonlocal salmon would allow for the identification of new or expanding fisheries on nonlocal sockeye salmon versus historical fisheries of the KMA.

If 'reallocation' of some portion of the KMA salmon fishery harvest is to occur (restricting KMA fisheries with the HOPE to positively influence the harvest in UCI) then a lot of information needs to be clearly elucidated in a comprehensive report to the BOF. We offer a limited list of questions that we would like to see addressed prior to any BOF action.

EVALUATION OF APPLICATION OF THE POLICIES OF THE ALASKA BOF

MIXED STOCK FISHERIES POLICY

In March 1993, the Alaska Board of Fisheries (BOF) adopted a significant policy into regulation, The Policy for the Management of Mixed Stock Salmon Fisheries (5 AAC 39.220; effective 5-291993). The Mixed Stock Fisheries (MSF) policy created a framework through which the BOF could analyze specific Alaska salmon fisheries with the goal of determining if Board action is appropriate and required to conserve and protect the salmon stocks in question. With this policy in regulation, any proposed change in the salmon fishery regulations or Board approved Management Plans, is to be judged against the criteria established in the Mixed Stock policy.

In fact, the 1988-1992 allocative disputes between the sport and commercial fishermen of Cook Inlet and the commercial salmon fishermen of the KMA were the 'backdrop' during the discussion and adoption of the Mixed Stock Policy into regulation.

The first use (test) of the MSF Policy following its adoption by the BOF (March 1993) was yet another petition from Upper Cook Inlet stakeholders seeking to control the harvest of Cook Inletbound salmon in KMA salmon fisheries; that petition failed.

It is important to evaluate each of the MSF policy's elements, and those of the associated findings (93-07-FB), against the best available information regarding the Kodiak salmon fishery, the associated take of Cook Inlet sockeye, and the status of Cook Inlet's sockeye stocks.

Pertinent sections of the MSF policy and our evaluation include:

(a) In applying this statewide mixed stock salmon policy for all users, conservation of wild salmon stocks consistent with sustained yield shall be accorded the highest priority"

For UCI sockeye salmon, conservation and sustained yield, the highest priorities under the Mixed Stock Policy, are not threatened. This leaves allocation as the major consideration left, and any BOF actions must abide by established allocation criteria.

(b) In the absence of a regulatory management plan that otherwise allocates or restricts harvests and when it is necessary to restrict fisheries on stocks where there are known conservation problems, the burden of conservation shall be shared among all fisheries in close proportion to their respective harvest on the stock of concern"

.

There is an allocative management plan in place that allocates and restricts harvest, the North Shelikof fisheries management plan.

Further, no conservation problem has been shown for Cook Inlet sockeye stocks (Susitna Sockeye are a Stock of Yield Concern, not Conservation Concern). KMA commercial salmon fishermen currently bear a burden of conservation which protects an unknown proportion of nonlocal salmon within KMA waters and fisheries. Would additional restrictions actually help

in possible future conservation concerns? We feel the BOF should not be restricting fisheries

and reallocating historic harvests of nonlocal salmon in the absence of a true Conservation Concern. We feel that much additional discussion is needed to begin to define and answer such questions.

(d) Consequently, the board will restrict new or expanding mixed stock fisheries… Natural fluctuations in the abundance of stocks harvested in a fishery shall not be the single factor that identifies a fishery as new or expanding.

The KMA harvest of nonlocal salmon is neither new nor has it been shown to be expanding. In fact, the number of participants in KMA fisheries has significantly contracted (Figure 3). The KMA salmon fishery is old and contracting!



Figure 3. The number of Limited Entry permits actually fished for Kodiak commercial salmon fisheries, by gear type, 1980-2016. (No 1989 fisheries due to EVOS) Data from ADF&G, Kodiak.

For the 2014-2016 MSA study period, KMA set gillnet permit participation was down 22.5%, KMA purse seine participation was down 52.6%, and KMA beach seine participation was down 92.4% from the number of available permits to fish during those same three years.

A determination of the "natural fluctuation of abundance" of nonlocal salmon in the KMA is required in order to define any "new and expanding" fisheries in the KMA that target nonlocal sockeye salmon.

(e) This policy will be implemented only by the board through regulations adopted (1) during its regular meeting cycle, or (2) through procedures established in the …Policy for Changing Board Agenda (5 AAC 39.999).

This issue must be tabled until KMA fisheries come up in the regular BOF meeting cycle. The criteria for changing the BOF agenda have not been met.

Past analyses of the harvest of Cook Inlet sockeye in Kodiak waters, using the accepted MSA at the time, have postulated that such bycatch is negligible when Cook Inlet returns are poor to average (Ruggerone and Rogers, 1994). Under conditions when conservation of Cook Inlet's sockeye returns would be a concern, it is not likely that any significant Kodiak bycatch of those sockeye would occur. You can't catch what isn't there.

The Board's Findings, associated with adoption of the Mixed Stock Fishery policy regulations, not only reiterate specific points of the policy but amplify and clarify the Board's intent outside of the constraint of regulatory language. Several of these findings apply to consideration of this Kodiak-Cook Inlet sockeye issue.

The Board found that Alaska's salmon industry appropriately relies upon stable existing fisheries, most of which harvest mixed stocks. Kodiak's established management program for the harvest and conservation of mixed stocks has been successful in sustaining and promoting Kodiak's century-old industry. The findings also speak to harvest of many mixed stocks with an eye towards QUALITY of the harvest, and management of KMA fisheries has promoted protection, rebuilding and high-quality harvests of a large number of stocks of salmon. To restrict fisheries to inside 'terminal' areas will lead to a significant decline in salmon quality, thereby significantly reducing the volume and value of KMA salmon fisheries.

KMA salmon fisheries are already managed according to a well-orchestrated series of management plans, none of which need to be amended now to account for harvests of fish that fluctuate on the basis of natural abundance and pose no threat to conservation. There is no indication that 135 years of commercial salmon fishing in Kodiak's waters ever posed any threat to Cook Inlet salmon stocks

SUSTAINABLE SALMON POLICY: The Policy for the Management of Sustainable Salmon Fisheries (5 AAC 39.222; aka Sustainable Salmon policy), developed by the BOF, was adopted into regulation in September 2000. This policy greatly expands some of the same principles found in the Mixed Stock policy.

The policy updates and strengthens long-standing principles of Alaska's salmon management program. Most importantly, it directs ADF&G and the Alaska Board of Fisheries to follow a systematic process for evaluating the health of salmon stocks throughout the state by requiring ADF&G to provide the Board, in concert with its regulatory cycle, with reports on the status of salmon stocks and fisheries under consideration for regulatory changes (Clark, et al, 2006). The policy also defines a new process for identifying stocks of concern (stocks which have not met escapement goals or yield expectations), and requires ADF&G and the Alaska Board of

Fisheries to develop action plans to rebuild these stocks through the use of management measures, improved research, and restoring and protecting habitat.

The Sustainable salmon policy is a long and very complicated policy, and we will not attempt to review KMA nonlocal salmon harvests through all of its many parts. We will instead point out what we consider to be salient points that apply to the current issue.

The stated goal of the policy include not only conservation of salmon and habitat, and protection of subsistence and other customary and traditional uses plans, restricting fisheries to protect nonlocal salmon, would negatively change the economic health of Kodiak communities to a considerable degree.

The policy also provides many clear definitions for terms commonly used and newly developed terms or classifications. Of note is the definition of Stocks of Concern (SOC). As mentioned earlier, the Susitna sockeye salmon stock was listed as a Stock of Yield Concern in 2008. Yield chronic inability, despite the use of specific management measures, to maintain expected yields, or harvestable surpluses, above a stock's escapement needs; a yield concern is less severe than a management concern, which is less severe than a conservation concern". Based on that definition, there is NO conservation concern for Susitna sockeye salmon.

The policy dictates that an Action Plan be developed for SOC action. Such plans "should contain goals, measurable and implementable objectives, and provisions" including "fishery management actions needed to achieve rebuilding goals and objectives, in proportion to each fishery's use of, and hazards posed to, a salmon stock" and "a research plan as necessary to provide information to address concerns".

The Action Plan for Susitna sockeye salmon, as prepared by ADF&G and approved by BOF through at least three BOF meeting cycles (over 9 years), contains NO mention of concern about Susitna salmon harvest in adjacent Areas (Kodiak) nor the need to further investigate (through research) possible nonlocal harvest. There is no concern of sufficient importance to even consider nonlocal harvest, let alone restriction of KMA salmon fisheries.

In fact, restriction to address the SOC status of Susitna sockeye salmon are limited to Northern or Central District salmon fisheries. No ADF&G management actions are taken in Cook Inlet salmon fisheries in the more southerly districts of the Cook Inlet Area (including Kamishak, Southern, Eastern and Outer Districts). The VAST majority of Susitna salmon MUST migrate through those southerly districts.

How could a restriction to KMA salmon fisheries, where some unknown portion of the Susitna sockeye run may sometimes migrate in unknown patterns) even be considered?

Deferral of ACRs and potential BOF regulatory action until the regular meeting cycle for KMA (and UCI) salmon fisheries is supported by our analysis of application of other BOF policies and criteria. This issue should be addressed within the BOF regular schedule for consideration of Alaska salmon fisheries, during the 2019/2020 cycle.

CONCLUSIONS

Importantly, not included in the new 2014-16 MSA report is any discussion of the incidence of KMA sockeye salmon in Cook Inlet or Chignik salmon fisheries. We learn in elementary school that we should first balance an equation in order to solve it, and working with unequal factors will lead to skewed solutions. The KMA is nestled between the Cook Inlet and Chignik management areas. Early tagging studies sought information on stock of origin as well as migration patterns and timing.

Management plans defining fishing opportunities on KMA local stock were developed by stakeholders, Management Biologists at ADF&G, concerned representatives of government and scientific agencies, and many prior Alaska Boards of Fisheries, over the course of many years. Discussions and decisions were made with full knowledge that KMA was a mixed stock fishery and that significant numbers of both Chignik and Cook Inlet sockeye will be found and may be harvested in KMA fisheries.

Nowhere in existing Alaska Statute, regulation, policy, or management plan does it allow for decisions based on political expediency or personal bias. Allocative pressures within Cook Inlet salmon fisheries are very real, very large, and are growing. The establishment of BOF findings is needed, clarifying the extent to which Inter-Area allocative disputes may be used to modify long standing regulatory structure. Without a definitive pronouncement that x number or percent of nonlocal salmon are harvested, either generally or by stock of origin, then allocative fish fights will be waged.

It is impossible to maintain the economic success of a fishery that is subject to capricious reduction based on poor information or colloquial opinion. A Board finding that historic KMA harvest may contain x% of salmon from Cook Inlet and x% of Chignik salmon will allow determination of new or expanded fisheries and sound allocative decisions.

The 2014-2016 MSA report is a technical report and maximum opportunity needs to be given for this report, and all other pertinent data, to be interpreted for stakeholders and interested parties. It's written in a format that makes ready understanding difficult for those uninitiated in modern genetics research. The format of the report does not lead to easy consumption. It's long on methods, techniques, statistics and data (a data dump from a three year project) and short on analysis.

All parties would benefit from time spent discussing the report, finding answers to questions that it brings up, seeking information from ADF&G or others, educating and discussing pertinent issues with as many stakeholders as possible, defining problems (from the most obvious to the minute), defining possible and favored BOF actions, refining arguments (both for and against), and educating the public. All this should occur PRIOR to full BOF review and deliberation on potential regulatory actions. Another document, more comprehensive and written for BOF and Stakeholder consideration, would be helpful and should be drafted with clearly defined issues and goals, all available data, lists of possible actions and repercussions, as well as the potential of success of proposed actions under the defined goals.

This issue, while not new, is unique and very complex. The new 2014-16 MSA only represents another piece of the larger puzzle. Representative and informed decision will require different /more information and involves further discussions with and between ADF&G and stakeholders. Stakeholders need background and education. They need to narrow their concerns, look for common ground, identify issues and potential problems, review possible actions to deal with the identified issues, and then suggest to the BOF a range of possible actions and recommendations, if needed.

There is potential for additional analyses or even additional research studies that would better inform the issue. We urge caution, and with no immediate biological conservations issues we urge the BOF to postpone or deny any regulatory limitations to the KMA salmon fisheries at this time.

It is a broad truth that Mother Nature has allocated nonlocal salmon to Kodiak salmon fisheries. It cannot be predicted, nor can it be identified inseason or postseason, without a recurring annual MSA. The effects of restricting KMA fisheries to limit nonlocal sockeye harvests on CIMA sockeye escapement or harvest cannot be identified or quantified.

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Kodiak Seiners Association
PO Box 8835
Kodiak, AK 99615

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: **Opposition to Proposal 63**

Dear Chairman Morisky and Board of Fish Members:

The Kodiak Seiners Association (KSA) is writing to express our **opposition to proposal 63** which creates "seaward" and "shoreward" harvest zones in the mainland district of the Kodiak Management Area (KMA) with the intention of preserving king salmon bound for Cook Inlet waters. KSA recognizes the scarcity of King Salmon in the Western Gulf of Alaska, and we understand that these circumstances call for extreme management measures in order to preserve stocks with critically low populations. With this in mind, we endorse and encourage the continuation of the non-retention policy for king salmon in Kodiak waters. This policy has now been in place for 6 seasons and amounts to an extraordinary and unusual conservation practice that our fleet has willingly accepted.

Proposal 63 relies on fundamentally flawed assumptions about the harvest of king salmon in Kodiak. There is no evidence to suggest that king salmon are harvested in greater abundance in the Seaward Zones, and in fact, feeding kings typically accumulate further into bays where they prey on herring, capelin, and other schools of baitfish. These salmon, colloquially termed "feeders" have particularly high mortality rates when released due to scale loss. Feeders comprise the majority of king salmon harvested in Kodiak, and adoption of proposal 63 would likely intensify the harvest and mortality of king salmon in the KMA. Forcing the seine fleet into "shoreward zones" is therefore a counterproductive approach to conserving king populations and it entirely lacks a sound scientific basis.

The Board should also be aware that the area under consideration for proposal 63 is already the most restrictively managed seine area in the KMA. There are no general openers allowed in the mainland district in June, and in July a maximum of 4 non-extendable 57-hour openers are allowed. It is not unusual for the Cape Igvak section to remained entirely closed before July 25th, and the Wide Bay section cannot open before July 27th, despite prolific pink and chum runs in the area. Under the current management plan our members already consider fishing opportunities in the mainland district to be insufficient, particularly on years of abundant early pink and chum salmon returns, when high

harvest rates and escapements still don't allow for extensions of fishing time during July. The Board should consider the conservation burden inherent in imposing weekly 111-hour closures in this area.

KSA strongly believes that conservation measures are most effective in the vicinity of the natal streams of concerned stocks. This fact become most apparent when analyzing the content of Cook Inlet bound king salmon as a component of the overall harvest in the KMA. Kodiak harvested 7,723 kings last year out of a total harvest of 36,251,506 salmon. The genetic stock assessment of chinook in the KMA determined an average harvest rate of 3.6% Cook Inlet origin stocks. This means that only one out of every 130,388 fish harvested in the KMA is the intended conservation target of this proposal 63.

There is absolutely no factual basis to believe that the areas covered by this proposal exhibit consistently high harvest rates of Cook Inlet chinook stocks, and given that the catch of chinook is typically random and evenly diffused throughout harvest in the KMA, the Board can expect that every chinook preserved by this plan will result in the unintended harvest loss of at least tens of thousands of salmon of various species from healthy stocks. Unless there are absolutely no other management measures that can be taken in the vicinity of the runs of concern, it would be entirely unjustifiable to enact a management plan that has such immense and certain costs without conveying any measurable benefits.

KSA also believes that Board policy must be applied consistently throughout the state. If the current Board wishes to engage in such a drastic policy shift that it would begin adopting additional measures to further limit the harvest of non-local stocks in Kodiak then we would expect and anticipate these standards to apply to regions to our south, such as the Chignik Management area, where there are currently *no* measures in place designed to limit the harvest of non-local stocks. The Kodiak seine fleet has had to bear the sole burden of conservation for our local stocks in addition to the conservation burden of non-local harvest inherent in the Cape Igvak and North Shelikof Straight management plans. Salmon management in the Western Gulf of Alaska already exhibits an inequitable distribution of the burden of conservation due to the uneven applications of Board policies. Kodiak fishermen have been resultantly held accountable for non-local harvest while our own stocks are apparently considered unworthy of similar concerns when harvested in other management areas.

KSA acknowledges the current scarcity of king salmon in the western gulf, and we accept that commercial fishermen have an important role to play in the conservation of these fish, however it is our hope that the BOF understands and openly acknowledges that the current state of scarcity of GOA chinook was not caused by longstanding commercial fisheries and that unusually high and accounted ocean mortality rates are driving the population decline.

Without knowledge of what is causing the scarcity of king salmon, but with an understanding that minimal volume of Cook Inlet origin king salmon is caught in the KMA, it is important that the public temper its expectations of conservation potential within the Kodiak area. Although some individuals may express resentment of the harvest of any kings in Kodiak, it is important that conservation measures are designed to be effective instead of merely punitive. You cannot use management measures in the KMA to conserve fish that Kodiak fishermen simply aren't catching.

KSA respectfully requests the Board **reject proposal 63.** We thank you for the opportunity to comment on behalf of the membership of KSA. We appreciate the scientific and factual creation of regulations regarding our fisheries and trust that the Board continue to apply consistency in designing regulation changes while applying the guiding BOF policies, such as the Management for Mixed Stock Salmon Fisheries.

Kodiak Seiners Association represents 157 members, including the majority of actively fishing SO1K seine permit holders, Kodiak and Homer-based businesses, and individual crewmembers. Our focus is advocacy for our membership through positive interactions with ADF&G, the Board of Fisheries, and our State Legislature.

Sincerely,



Nate Rose
KSA President

December 24, 2019

Matthew Alward

60082 Clarice Way

Homer, AK 99603

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Opposition to proposal 63

Dear Chairman Morisky and board of fisheries members,

I live in Homer, AK and run my own seine boat in the Kodiak salmon fishery and I oppose proposal 63 that would create a prescriptive management plan through July 28th in the mainland district. I raised our family on the back deck of our fishing boat and the mainland district has been an integral part of our fishery. To create time and area management based on no scientific data would only cause large economic harm to Kodiak with no known gains.

This proposal seeks to create "seaward" and "shoreward" zones in the mainland district with only two 12 hour openings allowed in the seaward zone per week with the intention of making Kodiak share in the burden of conservation of Cook Inlet origin king salmon stocks. According to the Alaska Department of Fish and Game's (AKDFG) Fishery Manuscript series No. 16-11 Genetic Stock Composition of the Commercial and Sport Harvest of Chinook Salmon in Westward Region, 2014-2016 tables 35, 36, and 37 there was an average of 21 Cook Inlet origin Chinook salmon harvested annually in the mainland district. There is no data or research that looks at king salmon harvest in the mainland district based on the seaward and shoreward zones and thus there in no data to base prescriptive time and area management on to create a sharing of the burden of conservation of Cook Inlet king salmon stocks.

When asked "what is the issue you would like the board to address and why" the proposer states that since Kodiak seine fishermen are required to release king salmon 28 inches and over there is not enough data to quantify King salmon harvests and stock origins in the mainland district. While I do agree that the required release of king salmon 28" and over creates a lack of data, I would also argue that that

same lack of data is justification enough for not creating time and area closures for the purpose of King salmon conservation.

In closing I want to reiterate that the genetic data that we do have about king salmon harvests in the mainland district states that there is an average annual harvest of 21 Cook Inlet origin king salmon with no data if those fish are caught in the proposed “seaward” or “shoreward” zones. Given the genetic harvest data that we do have and the lack of data to justify the prescriptive management proposed I respectively ask that you oppose proposal 63 and do not adopt it.

Sincerely,

Matthew Alward

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

Michelle Rittenhouse PO Box KWP Kodiak, AK 99697 December 18, 2019 Chairman Reed Morisky Alaska Board of Fisheries Board Support Section PO Box 115526 Juneau, AK 99811-5526 RE: Proposal #65 Dear Chairman Reed Morisky and Board of Fish Members: I am a 3rd generation commercial fisherman from Kodiak, AK. I have been an active participant in Kodiak’s salmon fishery for 23 of my 32 years, working alongside my family as crew until I purchased my own vessel, which I have been operating since 2013. As a young business owner heavily invested in especially the Kodiak salmon fishery, and whose livelihood is solely based on fishing, I consider this proposal a serious threat to my ability at making a living. I respectfully ask that the Board reject proposal #65. The Kodiak management plan has a longstanding history for being tried and true. It has been well-constructed to prevent conservation issues to other fishing areas and salmon stocks of non-local origin. It is a known fact that salmon runs are cyclical in nature, experiencing highs and lows in returns, and to blame Kodiak fishermen for the lack of salmon returns to other areas is a baseless argument with negligible evidence to support it. My reliance on getting as much fishing time as possible during the salmon season in Kodiak continues to grow heavier, as other options I explore, such as longlining for halibut and Pacific gray cod fisheries continue to diminish in stock. It is difficult enough to survive the normal ups and downs our fisheries, much less make changes to Kodiak’s management plan that will forever negatively impact my ability to pay off my fishing operation. Commercial fishing is not only my livelihood, but also my passion, and I would like to continue doing it for many years to come. Again, I respectfully request that the Board of Fish reject Proposal #65. Thank you for giving me the opportunity to comment, and for your time. I hope the Board continues to apply consistency in its application of the guiding policies such as the Mixed Stock Fisheries Policy and the Sustainable Fisheries Policy. Most sincerely, Michelle Rittenhouse

Mike ferris
F/V Cally Rose
12/20/2019 10:07 AM AKST

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

I am a life long kodiak resident & salmon Seiner, I'll keep it short but if its not broke don't fix it the existing management plan that has been in place since late 80s is effective and proven to be adequate

Nicholas Hoffman
PO Box 1212
Kodiak, AK 99615

12/24/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Oppose Proposal 63

Dear Chairman Morisky and Board of Fish members:

I'm a young Kodiak salmon fisherman. I have been running a seine boat since 2011 as well as participating in Kodiak halibut, sea cumber, cod jig, and tanner crab fisheries. I respectfully request the Board reject Proposal 63.

This proposal would severely limit Kodiak fishermen from harvesting our local stocks of pink, chum, and sockeye salmon. The Chinook Salmon non-retention has dramatically reduced the number of king salmon caught by the Kodiak seine fleet. This proposal puts an unfair weight of conservation on the commercial seine fleet when the current sport catch of Chinook salmon is equal to the seine catch with few limits and little reporting. In addition, the sport catch of Chinook salmon has been expanding in recent years with new charter boats arriving every year.

I see no reason for the Board to make any changes to the Kodiak Salmon Management plan. Thank you for the opportunity to comment on the proposals and the chance for my voice to be heard. I look forward to the Board of Fish members getting to spend time in Kodiak and learn more about our town and fishing community.

I humbly request the Board reject Proposal 63.

Sincerely,

Nicholas Hoffman
F/V Relentless

Oliver Holm
self
12/27/2019 03:12 PM AKST

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

I have over fifty years experience fishing salmon around Kodiak, mostly seining. The connection to Cook Inlet chinook is faulty because the vast majority of chinook caught around Kodiak are not of Cook Inlet origin. This is known from coded wire tagging and genetic sampling. Another thing wrong with this proposal is the idea that more kings are caught while fishing off shore. In deeper offshore waters kings have the ability to dive out of our relatively shallow seines. Where they can't dive out is in shallow water inshore. We don't target kings and we shouldn't be penalized for the glut of hatchery released kings feeding in the Kodiak area some years.

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 63

Dear Chairman Morisky and Board of Fisheries Members,

I am Richard Roth, Kodiak salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife three children and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Tzar. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

According to the 2014-2016 study of Genetic Stock Identification of Chinook Salmon in the sport and commercial fisheries in Kodiak, 80% of the kings caught in both sport and commercial fishery are from British Colombia and U.S. West coast. In 2014 the total Kodiak Management Area commercial harvest of Cook Inlet origin kings was **182 fish**, in 2015 total Cook Inlet origin kings was **334 fish**, and in 2016 total Cook inlet origin kings was **260 fish**. The economic loss of amending the Kodiak Management Plan per the proposer's recommendations could never be balanced by the economic gain to the Cook Inlet region of another approximately 180-334 individual kings total.

In 2016 McDowell prepared a report on the economic impact of the seafood industry in the Kodiak region for the Kodiak Island Borough (KIB) and the City of Kodiak. They found that for every million pounds of salmon landed and processed in the KIB, $900,000 in total labor income is created in the KIB economy, including all direct, indirect, and induced effects. For every million dollars paid to fishermen for salmon landed in the KIB, a total of $1.22 million in labor income is created in the KIB. This doesn't even include fishermen, like me, where our income contributes directly to the economy of the Kenai Peninsula.

This proposal is short-sighted and borders on absurd in its aim to claim a small handful of kings at the expense of a much larger fishery which contributes to the food security of our nation.

I request that the Board to reject this proposal.

Richard, Amanda, Stephanioe, Noah, and Ranger Roth
F/V Sea Tzar
Homer, Alaska

December 19, 2019

Robert Fellows

266 E Bayview Ave.

Homer, AK. 99603

Alaska Board of Fisheries

Board Support Section

PO Box 115526

Juneau, Ak. 99811-5526

RE: Opposition to proposal 63

Dear Chairman Morisky and Board of Fisheries Members,

I am a commercial fisherman who has fished salmon in the Kodiak management area for 29 years. My family and my crew and their families depend on the commercial salmon fishery in Kodiak for the majority of our yearly income. This proposal would make it extremely difficult to make a living commercially fishing salmon in The Kodiak management area. I respectfully request the Board reject proposal #63.

The chinook salmon genetic stock identification information from 2014-2016 shows that 80% of the sport and commercially harvested kings are from British Columbia and US West Coast origins. The total commercial harvest of Cook Inlet origin kings in the Kodiak Management Area for 2014 was only 182. For 2015 it was 334, and for 2016 a total of 260. The economic loss to the Kodiak commercial salmon fishery that would happen under this proposal could never be balanced by any type of gain in the Cook Inlet region by so few fish. In addition, the Cook Inlet year around sport/charter fishery extracts far more Cook Inlet bound kings. I have attended Homer area AC meetings where this proposer, who is on the Homer AC, makes a habit of putting forth misleading information.

Sincerely,

Robert Fellows

Ron Kavanaugh
self
12/28/2019 12:54 AM AKST

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

We are opposed to this proposal. We believe it would cause local mangement problems, that it is purely an attempt to reallocate without care for local Kodiak stocks or King Salmon.

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

December 24, 2019 Alaska Board of Fisheries Board Support Section P.O. Box 115526 Juneau, AK 99811-5526 Re: Opposition to Proposal 63 Dear Chairman Morisky and Board of Fisheries Members, I am Steve Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Grace. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures. ? According to the 2014-2016 study of Genetic Stock Identification of Chinook Salmon in the sport and commercial fisheries in Kodiak, 80% of the kings caught in both sport and commercial fishery are from British Colombia and U.S. West coast. In 2014 the total Kodiak Management Area commercial harvest of Cook Inlet origin kings was 182 fish, in 2015 total Cook Inlet origin kings was 334 fish, and in 2016 total Cook inlet origin kings was 260 fish. The economic loss of amending the Kodiak Management Plan per the proposer’s recommendations could never be balanced by the economic gain to the Cook Inlet region of another approximately 180-334 individual kings total. In 2016 McDowell prepared a report on the economic impact of the seafood industry in the Kodiak region for the Kodiak Island Borough (KIB) and the City of Kodiak. They found that for every million pounds of salmon landed and processed in the KIB, $900,000 in total labor income is created in the KIB economy, including all direct, indirect, and induced effects. For every million dollars paid to fishermen for salmon landed in the KIB, a total of $1.22 million in labor income is created in the KIB. This doesn’t even include fishermen, like me, where our income contributes directly to the economy of the Kenai Peninsula. This proposal is short-sighted and borders on absurd in its aim to claim a small handful of kings at the expense of a much larger fishery which contributes to the food security of our nation. I request that the Board to reject this proposal. Steve and Jenny Roth F/V Sea Grace Homer, Alaska

Corina Watt, Kodiak Salmon Setnet Commercial Fisherman
Trap Pt/ Moser Bay Fisheries: Alitak District with sites across Olga, Moser & Alitak Bays
12/25/2019 09:01 PM AKST

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

I support proposal 63 to “Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25” for the following reasons: 1) It will increase the quality and viability of many local Kodiak sockeye salmon systems. 2) It will support a return to higher escapements for local sockeye systems including early and late Upper Station runs and Dog Salmon in the Alitak District of Kodiak. 3) It will support long term sustainability Kodiak sockeye salmon systems.

Ed Fisher, Kodiak Salmon Setnet Commercial Fisherman
Trap Pt/ Moser Bay Fisheries
12/25/2019 10:28 PM AKST

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

I support proposal 63 to “Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25” for the following reasons: 1) It will increase the quality and viability of many local Kodiak sockeye salmon systems. 2) It will support a return to higher escapements for local sockeye systems including early and late Upper Station runs and Dog Salmon in the Alitak District of Kodiak. 3) It will support long term sustainability Kodiak sockeye salmon systems.

Jason Watt Kodiak Salmon Setnet Fisherman
Trap Pt/ Moser Bay Fisheries, Alitak District with sites across Olga, Moser & Alitak Bays
12/25/2019 09:03 PM AKST

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

I support proposal 63 to “Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25” for the following reasons: 1) It will increase the quality and viability of many local Kodiak sockeye salmon systems. 2) It will support a return to higher escapements for local sockeye systems including early and late Upper Station runs and Dog Salmon in the Alitak District of Kodiak. 3) It will support long term sustainability Kodiak sockeye salmon systems.

Judy Fisher, Kodiak Setnet Commercial Salmon Fisherman
Trap Pt/ Moser Bay Fisheries
12/25/2019 10:32 PM AKST

RE: PROPOSAL 63 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25 based on those zones

I support proposal 63 to “Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1–July 25” for the following reasons: 1) It will increase the quality and viability of many local Kodiak sockeye salmon systems. 2) It will support a return to higher escapements for local sockeye systems including early and late Upper Station runs and Dog Salmon in the Alitak District of Kodiak. 3) It will support long term sustainability Kodiak sockeye salmon systems.

Aaren Ellsworth

12/28/2019 12:44 AM AKST

RE: PROPOSAL 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 based on those zones

I oppose this proposal. The mixed stock nature of KMA salmon fisheries and the KMA harvest of nonlocal Cook Inlet sockeye salmon are well known, not new. Targeting of nonlocal salmon has been minimized by focusing fishing opportunity only on the abundance of local salmon. KMA commercial salmon fishermen already bear a disproportionate Conservation Burden for Cook Inlet sockeye stocks through the regulations for the North Shelikof Strait Sockeye Salmon Management Plan.

Aaron Nevin

12/27/2019 09:16 PM AKST

RE: PROPOSAL 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 based on those zones

The cape igvak section is already managed in an overly conservative way. Its the most restricted area on the island. It seems wrong to restrict it further and limit our local stocks for an insignificant amount of other areas fish. My name is Aaron Nevin. Being born in Kodiak to a commercial fisherman father I grew up fishing salmon on his seiner. I have continued on in my currently twenty year long career to buy a permit and run his boat after retirement. The seining season usually accounts for the majority of my annual income and is incredibly important to my family.

Adam Barker
Kashvik LLC
12/27/2019 12:11 AM AKST

RE: PROPOSAL 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 based on those zones

Adam Barker 41584 Manson Dr Homer, AK 99603 December 26th 2019 Chairman Reed Morisky Alaska Board of Fisheries-Board Support Section P.O. Box 115526 Juneau, AK 99811-5526 RE: Prop # 64 Dear Chariman Morisky and Board of Fish members: My name is Adam Barker, I have been fishing in Kodiak since 1988 as a third generation fisherman. I started with my dad and now I'm an owner operator of my own vessel since 1999. I now take my two children out fishing. I respectfully request the board reject proposal # 64. I roundly oppose this prop as an attempt to remedy the poor gillnet salmon fishing in Cook Inlet. Stopping Kodiak seiners from fishing the capes as they have for the last 40 years will not improve commercial salmon gillnetting in Cook Inlet. In fact the Kenai river was over-escaped last year. A unfortunate problem that cannot be blamed or fixed by constraining the "Kodiak Management Area." Please reject this proposal as an attempt to bind and control the Kodiak Seine fleet in an attempt to bolster the ailing Cook Inlet gillnet fishery. Thank you for the chance to comment. I hope the board continues to apply consistency in its application of the guiding policies such as the mixed stock fisheries policy, and the sustainable fisheries policy. Sincerely, Adam Barker

Adelia Myrick
P.O. Box 2971
Kodiak, AK 99615

December 26, 2019

Alaska Board of Fisheries
Boards Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Dear Board of Fish members:

I am writing in opposition to proposal 64 for many reasons. There is no new data (despite the proposers arguments that the Shedd genetic report is new information) and if the proposal were to be adopted, it would set a difficult and dangerous precedent about mixed stock management statewide, it would severely damage ADF&G's ability to manage all of Kodiak's salmon species for sustainability, and it would impose drastic economic hardship to Kodiak's salmon fishermen.

I am a second-generation Kodiak fisherman. My father started salmon fishing here in 1967, and I have setnetted since I was a toddler with my family, for my whole life. I took over the permit from my dad several years ago, and in 2016 finally bought the setnet operation from my parents outright. It was a monumental business decision allowing me to quit teaching at the college (where I had benefits and retirement), but one that I made with the historic nature and rhythms of the fishery in mind. Knowing that there are always bound to be cycles of horrible years mixed in with good ones, I determined that, through careful financial management and planning, I could make it work – setnetting in Kodiak could provide for me. As a young fisherman entering the industry, I am in a particularly precarious financial position. If this proposal were to go into effect, it would change everything. Having five weeks of severely curtailed fishing time for the seine fleet would increase pressure in the already crowded central section of the Northwest Kodiak district, which is the only area where setnetters can fish. We can't fish elsewhere and are already feeling the squeeze. If there are more seiners pushed into the bays, we will all struggle economically.

My opposition to the agenda change request is not only about my circumstances, or me, however. The change request simply doesn't make any sense. I know you consider and deliberate about what precedents you set, and this proposal is concerning for several reasons.

A. There is no new conservation concern. Kodiak salmon fisheries have proceeded historically in the same manner for decades. There is no new fishery or targeted catch of Cook Inlet bound sockeye, so the conservation

concern should not be considered new. There are no new fishing patterns. In terms of sustainability, according to the "Sustainable Salmon Fisheries Policy Checklist" of 2008, there is nothing happening in Kodiak that causes a concern about sustainability. I argue that the Kenai peninsula is where habitat degradation is occurring, not Kodiak, particularly not the west side of the island, which is virtually all National Wildlife Refuge land, and on the pristine Mainland. Kodiak should not bear the conservation burden for the peninsula's habitat destruction.

B. The Kodiak and Cook Inlet management plans have been developed carefully with input from many stakeholders over the years, and this one genetic study of only 3 years, while perhaps interesting does NOT indicate that there has been an error in regulation. In fact, it simply confirms what we already know.

C. While at first glance, the genetic stock composition study does seem to shed new light on the mixed stock nature of Kodiak's salmon fishery, analysis into historical information and records shows this is not the case. This study clearly does not represent any new information that wasn't present when the Kodiak and Cook Inlet management plans were established, nor is it even enough information to establish any trends. Independent third party reviews of the study indicates that finding mixed stock in KMA is not surprising given the historical information on file. According to the third party report, "Barrett and Swanton (1991) report that sockeye harvests in the North Shelikof Strait in the 1940s, 1970s and 1980s ranged from 30% to 100% Kodiak fish and 0% to 59% Cook Inlet origin fish." This historical information is supported, not contradicted, by the latest science. In addition, as any scientist will tell you, a small-scale 3-year study is not enough to understand a pattern or trend. Kodiak's managers had the information available when developing our current management plans, and there is no reason to believe that this information was unforeseen when the plans were developed.

It is also important to consider the implications of this proposal in a broader sense. Of grave concern is the precedent that this would set regarding mixed stock management, statewide. We have never believed that Kodiak catches only Kodiak fish, due to its location. This was taken into account when developing management plans. What's key here is that Kodiak is not unique. Your 1993 finding, "Alaska Board of Fisheries Findings on Policy For Mixed Stock Salmon Fisheries" (93-145-FB), provides guidance. Particularly relevant are the following points:

(2) "…Most mixed stock fisheries are long standing and have been scrutinized many times by past boards. Consequently, existing regulatory management plans are understood to incorporate conservation burden and allocation…."

(3) "The policy should recognize that salmon resources are generally fully utilized and that stability is an important aspect of the fishery."

(5) "The policy should not be a tool to be used for allocating outside of the Board's allocation criteria."

Sustainability of all salmon stocks is, of course, in the best interest of everyone in the state of Alaska. However, this proposal hamstrings Kodiak's salmon managers, taking away the tools they need to effectively manage a complex, multi-species salmon fishery. Although I am a new site owner, I have been fishing my whole life and have been steeped in the history of Kodiak's salmon fishery. I know that Kodiak's management plans have been developed carefully to manage the complex nature of our fishery; they are not just about sockeye. The plans also take into account chum, coho, and pink salmon. If our fishing time is to be curtailed, how will that affect the health and sustainability of ALL of our species? What will stop over-escapement? In the Northwest Kodiak District, we have seen first-hand the effects of over escapement at Karluk, which caused a huge crash of the system and basically created "disaster fishing" for sockeyes from (2008 to 2012) for many of us. Supporters of this proposal will argue that we can fish the inner bays. This is not a solution for several reasons. Setnetting is not allowed in the inner bays, so only part of the users of Kodiak would be able to access those fish; the fish are of lower quality and that is the last thing we want to put on the market; and most alarmingly, weather and other events of nature and run timing can more easily allow over-escapement to occur. We must allow Kodiak's fisheries managers the tools to manage the different KMA areas for long-term sustainability, and this proposal basically erases those tools by mandating closures not based on science but on arbitrarily chosen numbers.

The proposal would have severe economic repercussions, as well. Kodiak has been managed in the same manner for decades, and has a whole economy built on the stability of the commercial salmon fishery. This proposal ignores the other species we rely on in Kodiak – pinks are my bread and butter – and would significantly hurt my bottom line. It isn't just a matter of a few fishermen's livelihoods being torn apart, though – it's a matter of the whole community struggling to stay afloat. Losing those tax dollars would have a significant negative effect on Kodiak's overall health as a community.

Quite simply, we have a new genetic study with more detailed and up to date scientific analysis and methods, but the information it contains regarding the mixed stock nature of Kodiak's fisheries is NOT new and WAS taken into account when the management plans were set up. I'm old enough to remember my parents writing letters to the BOF regarding the Kodiak/Cook Inlet conflicts and discussions that took place in the early 90's over the exact same issue, and I know it has all been hashed out before. If anything, we need more science, not knee-jerk reactions.

Thank you for your work and deliberation on this important issue.

Sincerely,

Adelia B. Myrick
Uganik Bay Setnetter

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 64

Dear Chairman Morisky and Board of Fisheries Members,

I am Alex Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Wandering Star. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

The author of this proposal is citing a genetic study showing nothing new, simply a confirmation of something already known – that Cook Inlet origin sockeye sometimes swim through Kodiak waters. There are measures already in place (such as the North Shelikof Management Plan) that address this, to ensure that the vast majority of Cook Inlet- bound sockeye that do swim the Shelikof, make it through. Placing a cape to cape line on the mainland would keep Kodiak-area managers from maintaining the stability of local pink, silver, and chum salmon and raise serious concerns and precedents about the underlying foundation of common property fisheries in the State of Alaska.

Instead of an attempt to restructure the fisheries in a neighboring region, the Board's time would be better spent investigating the number of years the Kenai and Kasilof rivers have exceeded their escapement, and yet Cook Inlet drift-gillnetters and set-gillnetters still have minimal fishing time when in other regions there would be emergency openings to maintain the health of fish stocks and the rivers. For example, 2019 was a banner year, and yet commercial fishermen were forced to sit on their hands while the Kenai and Kasilof rivers were over-escaped by the hundreds of thousands.

The Kodiak Management Plan is a solid plan that has a proven working track record. The author appears to have little care for the success and sustainability of the management plan in our region and how it allows for the harvesting of local sockeye, pinks, silvers and chums.

I wish all the best to the user-groups of the Cook Inlet Region and hope that in the near future the user groups and management will be able to work together for more peaceful fisheries and sustainable and strong runs in that region.

I strongly encourage the Board to reject this proposal.

Thank you for your careful consideration,

Alex and Jaime Roth
F/V Wandering Star
Homer, AK

RE: PROPOSAL 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 based on those zones

Bo Calhoun 57177 Zulu Ct. Homer, AK 99603 12/26/19 RE: Opposition to Proposal #64 Dear Chairman Morisky and Board of Fish members: I'm a third generation Kodiak salmon seiner. I was born in Homer, raised in Port Lions and Homer, and continue to live in Homer. My wife and I hope to raise our two sons on our family seine boat in a healthy Kodiak salmon fishery. I respectfully request you reject Proposal #64. The genetic study this proposal is based on lacks the necessary data to show the trend the proposer assumes. The data in the study, especially from 2016 Cape Igvak section, was extremely anomalous and incomplete. Many areas, including Cook Inlet and Chignik also catch mixed stocks, including salmon returning to Kodiak. The Mixed Stock Fisheries Policy should be applied evenly to all areas of the state and the application of highly disruptive prescriptive management restrictions like those proposed here should only be based on long term trends demonstrated by studies with sufficient data. Please reject proposal #64. Thank you for taking the time to read public comments. Sincerely, Bo Calhoun

Brad Marden
PO Box 2856
Homer, AK 99603

December 23, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: **opposition to Proposal 64**

Dear Chairman Morisky and Board of Fish members:

I first participated in the Kodiak seine fishery for salmon in 2004. Since then, I've worked as a deckhand in various salmon, halibut, and herring fisheries throughout the state (including work on Upper Cook Inlet drift boats), before buying my own boat in 2012, followed by a Kodiak seine permit in 2013. Since then I have exclusively fished in Kodiak waters. I respectfully request the Board **reject Proposal 64**.

This proposal is accusatory and inaccurate, as it seems to portray the Mainland District of KMA as an unorganized fishery without concern for fisheries conservation. This is simply not true. "Seaward" and shoreward" zones for Kodiak seiners fishing the Mainland district already exist, thanks to the North Shelikof Strait Management Plan. This 'hard cap' style of fisheries regulation is draconian enough, and often hamstrings Kodiak biologists when attempting to effectively manage local mixed stocks, so we don't need to go further down this road. Fishing opportunity in the Mainland District fishery helps spread out our fleet and can be an important part of having a decent fishing season for Kodiak fishermen. Fisheries managers are already empowered with a variety of tools to manage the Mainland District and can do their job best when allowed flexibility.

I am sure that the Board tires of endless testimony claiming that the fish of concern are "our fish being stolen by those guys over there". It seems that in my 15 years of commercial fishing in Alaskan waters, Kodiak salmon fishermen are often the scapegoat. Rather than passing the blame along to the next guy, I ask that we consider proposals with more merit and less collateral damage. For this reason, I ask that you **reject Proposal 64**. I want to thank you for your service and I hope the Board continues to apply consistency in upholding Mixed Stock Fisheries Policy, and the Sustainable Fisheries Policy.

Sincerely,

Brad Marden

Brian Mcwethy
KSA
12/23/2019 09:28 AM AKST

RE: PROPOSAL 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 based on those zones

My name is Brian Mcwethy. I was born and raised in kodiak. I live in kodiak with my family and we all depend on my income. I fished with my father on his seiner growing up and now I own and operate a seiner. Salmon seining and tanner crab fishing in kodiak are currently our only sources of income. I plan to try and continue to fish the kodiak waters and possible my children will have the opportunity to. I hope the current and historical areas we fish aren’t taken from us and the future generations of kodiak. I oppose proposal 64. This proposal would dramatically reduce Kodiak seiners historical fishing area and reduce our ability to harvest local pink and chum salmon. In an area that is very unfriendly to fish sometime the only area to safely fish with a seine is outside the cape. I have based my business plan on being able to fish historical areas.

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 64

Dear Chairman Morisky and Board of Fisheries Members,

My name is Chris Johnson and I am a second-generation fisherman in Kodiak, Alaska. I grew up fishing on my dad's boat and got my first crew job working for someone else two weeks after I graduated high school. I haven't missed a salmon season since. I bought into the fishing industry in 2011 with the purchase of a 25-foot jig boat that I worked for two years in the winter and spring months while I still crewed for salmon in the summer. Access to the jig fisheries focusing on cod and rockfish was the only way that I could afford to move into the salmon fleet with a 38-footer in 2013. After the recent cod collapse, I now primarily rely on salmon seining and live here year-round with my wife.

The author is grasping at a solution for a propositioned, yet unfounded, problem that came out of the genetic study in 2016. The genetic study showed nothing new, simply a confirmation of something already known – that Cook Inlet origin sockeye sometimes swim through Kodiak waters. Placing a cape to cape line on the mainland would hamstring the ability of Kodiak fishermen to harvest local pink, silver, and chum salmon.The Kodiak Management Plan is a solid plan that has a proven working track record.

Taking away any fishing opportunity from Kodiak fishermen, particularly from the small boat fleet, would have a direct negative impact on new entrants trying to gain a foothold in this industry, fishing families trying to get by, and fishing support businesses in our region. I'm proud to call Kodiak home and am working to protect our fishing way of life.

Sincerely,
Chris Johnson
F/V North Star

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 64

Dear Chairman Morisky and Board of Fisheries Members,

My name is Danielle Ringer and I appreciate the opportunity to comment on proposals before the Board in writing and in person for the Kodiak finfish meeting. I live in Kodiak with my husband and we own and operate the 38-foot F/V North Star. We chiefly rely on salmon seining and cod and rockfish jigging to maintain our fishing way of life and ability to live on Kodiak Island. I grew up in Homer learning to harvest and process fish from my parents in Kachemak Bay and dipnetting on the Kenai River. I hold a Master's degree from the University of Alaska Fairbanks in Political Ecology of Fisheries and was one of the researchers on the *Graying of the Fleet in Alaska's Fisheries: Defining the Problem and Assessing Alternatives* study in the Kodiak region.

The author is grasping at a solution for a propositioned, yet unfounded, problem that came out of the genetic study in 2016. The genetic study showed nothing new, simply a confirmation of something already known – that Cook Inlet origin sockeye sometimes swim through Kodiak waters. Placing a cape to cape line on the mainland would hamstring the ability of Kodiak fishermen to harvest local pink, silver, and chum salmon and raise serious concerns and precedents about the underlying foundation of common property fisheries in the State of Alaska.

The Kodiak Management Plan is a solid plan that has a proven working track record. The proposer appears to have little understanding of the management plan in our region and how it allows for the harvesting of local sockeye, pinks, silvers and chums.

I see no biological, scientific, historical, economic, nor sociocultural reasons that could justify the Board making any changes to the salmon management plans in the Kodiak Management Area, which would create ripple effects negatively impacting Kodiak fishermen, processing workers, and community businesses. Thank you for your consideration of my comments and I look forward Board of Fisheries members spending time in our fishing community during the Kodiak meeting.

I humbly request the Board to reject this proposal.

Respectfully,
Danielle Ringer, M.A.
F/V North Star

Dave Kubiak
F/V Lara Lee
12/21/2019 02:20 PM AKST

RE: PROPOSAL 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 based on those zones

Incidental catches of Cook Inlet bound sockeye in Kodiak waters is nothing new, as salmon move with the winds, tides, and currents. Incidental catches of Cook Inlet salmon have been addressed in the Kodiak Salmon Management Plan. This proposal would have harsh economic consequences for Kodiak salmon fishermen targeting their own local stocks while not changing Cook Inlet's essential problems.

Donald Lawhead

12/26/2019 11:01 PM AKST

RE: PROPOSAL 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 based on those zones

The mangement plans already have caps and time restrictions.

Fred Stager

F/V Lady Lu

December 12, 2019

Alaska Board of Fisheries Board Support Section

P.O. Box 115526 Juneau, AK 99811-5526

RE: Opposition to Proposal 64

I can't present a better argument than the Kodiak Seiners Association has:

This proposal (proposal 64) represents and perpetuates an amalgamation of misconceptions concerning the salmon fishery in the Kodiak Management Area (KMA). First and foremast is the implication that Kodiak currently bears no burden of conservation of Cook Inlet (CI) stocks and that we are essentially operating in the absence of regulations that substantially restrict harvest. The North Shelikof Straight Management Plan was established with the intention of annually limiting the harvest Cook Inlet bound sockeye regardless of run strength. This means that on years of abundant CI stocks higher harvest rates trigger early closures of the seaward zones which then remain closed until July 25th, depriving the fleet of substantial fishing opportunity in an effort to conserve a fishery that is chronically under-harvested while also inhibiting the harvest of our local stocks.

Additionally, the Mainland District, which includes the Cape Igvak section, is the most stringently managed area in the KMA during the time of consideration for this proposal. Kodiak fishermen are only allowed a maximum of four 57-hour openings in the mainland district before August 1st. These openings cannot be extended regardless of the abundance of local and non-local stocks. The Wide Bay section does not open before July 25th, and it is not unusual for the Cape Igvak section to remain closed until July 25th as well, long after the peak of the late Chignik and Cook Inlet

sockeye runs. There is no other district in the KMA that is so rigidly managed during this time frame, and the current management structure already provides insufficient opportunity to harvest local stocks.

The Board should also consider that the structure of the Cape Igvak management plan inherently acts to conserve CI stocks on the rare occasion that they are harvested there. Although the harvest

allocation for Igvak is set according to measures of abundance in Chignik, the harvest of any stocks counts against that allocation and will trigger a closure. Consider the anomalously high harvest rates of 2016. An abundance of what we now know were Cook Inlet stocks that were perplexingly swimming westward led to unusually high harvest rates, quickly triggering a closure of the Cape Igvak area which then remained closed for the rest of the season. Kodiak fishermen are always operating under strictly imposed harvest quotas at Igvak and these harvest caps apply regardless of the stock composition. For that reason, Igvak especially and the rest of the mainland in general are currently managed under a structure that provides maximum safeguards to CI stocks and minimal opportunities to harvest local stocks while prosecuting our traditional fishery.

Another glaring falsehood stated in this proposal is the claim that the KMA only has 7 streams with sockeye present. Kodiak has, in fact, 15 un-enhanced streams that are common sources of commercial harvest in addition to 4 major enhancement systems with associated terminal harvest areas. There are additionally numerous other minor wild systems and subsistence enhancement projects that contribute to mixed stock sockeye harvest in the KMA. A list of important sockeye systems that contribute to mixed stock harvest throughout the KMA is provided below:

Non-Enhanced (Wild) Systems	**Enhanced Systems**
. 1) Karluk . 2) Ayakulik	1) Spiridon 2) Kitoi . 3) Foul Bay

. 3) Frazer . 4) Upper Station . 5) Dog Salmon . 6) Saltery . 7) Pasagshak . 8) Buskin . 9) Litnik . 10) Pauls Bay . 11) Discovery Bay . 12) Thorsheim . 13) Malina Creek . 14) Uganik . 15) Kaflia	. 4) Waterfall Bay

Typical aggregate escapement numbers for these systems exceeds 1.5 million sockeye annually, and enhancement projects can contribute hundreds of thousands additional sockeye for harvest. These fish are widely distributed in the KMA both geographically and temporally, and sockeye bound for KMA systems are harvested throughout the season and in all districts, including the mainland district. It is unclear how the proposer concluded that Kodiak has only 7 sockeye runs only 2 of which are "of minor production status." In reality, 9 of Kodiak's rivers have weirs counting sockeye, and aerial surveys are common for numerous other systems, like Uganik.

It is our hope that the Board understands that the majority of sockeye harvested in Kodiak are of local origin and that our fisheries are responsibly prosecuted as directed harvest of local stocks of sockeye,

chum, pink, and coho salmon along with our historical and traditional harvest allocation at Igvak.

One of the most frustrating gaps in the greater public understanding of the mixed stock fishery in Kodiak is that we are prosecuting a mixed-stock, multi-species fishery. The recent publication of the genetic stock assessment focused public attention exclusively on the sockeye component of commercial harvest, while neglecting to provide harvest figures for the non-sockeye portion, which comprises the vast majority of fish harvested in Kodiak. For example, sockeye made up only about 6% of the fish harvested in the KMA in 2019, and even in July, during the period of concern for this proposal, Kodiak harvest was overwhelmingly pink and chum salmon. Efforts to curtail the harvest of sockeye in Kodiak, especially CI stocks which exhibit no predictable migration patterns in the KMA, would inevitably result in significant collateral damage in the form of lost harvest of local, pink, chum, and coho stocks that are largely the focus of our directed fishery.

This very situation highlights the fundamental reason why the Alaska Board of Fisheries adopted a mixed stock fisheries policy. Migrating salmon do not conveniently segregate themselves by species and stocks of origin, and they do not embark on predictable migration paths far away from their natal streams. As a result, non-local mixed stock harvest of salmon is inevitable in all Alaskan waters and attempts to manage our fisheries in order to somehow distill out non-local components will inevitably result in sub-optimal use of the resource.

The Mixed Stock Fisheries policy and its associated findings resulted from the acceptance that Alaska must manage its fisheries in a way that best complies with Article VIII of the Alaska state constitution which declares that, “Wherever occurring in the their natural state, fish...are reserved to the people for common use” and that fishery resources be “utilized, developed and maintained on the sustained yield principle” and finally that uses of the resource is available for “maximum use” and for the “maximum benefit” of Alaskans.

The purely allocative proposals offered to the Alaska Board of Fisheries for

this meeting would inevitably result in reduced yields of local stocks in addition to massive disruption of a long- established traditional fishery. If the Board were to apply the same reasoning presented in this proposal to management regimes throughout the state, then the net result would be to forsake the sustained yield principle as well as other constitutional statutes and Board policies. The uniform application of the reasoning found in Proposal 64 would inflict substantial economic losses for the state and most acutely for Alaska's coastal fishing communities. Ultimately, managing our fisheries for the maximum benefit and sustained yield standards means that we must accept that the unpredictable nature of salmon migration negates the unrealistic standard of purely localized harvest.

Although some user groups may lament the faraway harvest of what they consider to be *their stocks,* the policies that allow for this harvest were crafted with immense consideration of how to develop consistent management plans that when universally applied maximize the use of the resource and the benefit conveyed to Alaskans. Although it may seem intuitive to some that it is somehow inherently unfair for Kodiak fisherman to harvest Cook Inlet stocks, the Board should consider whether it would be fair for those same fishermen to sacrifice the harvest of hundreds of local fish

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in order to potentially provide Cook Inlet waters with a single additional salmon from chronically under-harvested stocks.

Ultimately, Alaska's fisheries are dedicated for common use, and wholesale regional entitlement, which is asserted in this proposal, would violate the very foundational principles of our constitution. Although KSA strongly believes that subsistence users should be granted ultimate priority, there would be no value conveyed to the state by attempting to disrupt a historical fishery just to alter the geographic location of commercial harvest. There are no Board policies or legal statutes that direct managers to ensure commercial harvest be focused exclusively in the region of natal streams. As long as an established commercial fishery alone does not intrinsically threaten the biological sustainability of stocks or the ability to

provide subsistence harvest opportunities, then that fishery should not be disrupted simply to regionally reallocate commercial harvest.

Additionally, the Board should consider the importance of consistency in the application of their policies. Currently, Kodiak fishermen bear the sole burden of conservation of KMA stocks despite the documentation of substantial harvest of "East of WASSIP" stocks in Chignik and further south. While KSA is strongly ideologically opposed to meddling in the management of fisheries in adjacent areas, we also believe that whatever standards are applied *to* our fishermen must also be applied *for* our fishermen so that any further restrictions on harvest in the KMA designed to prevent the catch of non-local stocks must be coupled with restrictions to the south designed to prevent the unregulated harvest of KMA and Cook Inlet bound stocks in the Chignik management area and wherever else these fish may be present. After all, the legitimacy of the Board's reasoning is critically and inextricably dependent on the consistency with which its policies are applied.

Please **oppose proposal 64** and support the responsible application of the Mixed Stock Fisheries Policy in Kodiak. We believe that adopting this proposal would result in substantial and irreversible economic harm to our fleet community.

Thank You- Fred Stager

garrett kavanaugh

12/27/2019 05:20 PM AKST

RE: PROPOSAL 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 based on those zones

Dear Chairman and Members of the Board, As a young fishermen who is working their way into the Kodiak Salmon fishery this proposal will cause Kodiak fishermen to lose a substantial amount of their catch. I have been investing into the Kodiak salmon fishery as much as possible, in 2019 I purchased a Kodiak salmon permit. I ran a seiner for the month of august. I plan on running the same boat for the entire 2020 salmon season in Kodiak. When I was younger I remember testifying against proposals similar to these. These proposals are re-allocations of Kodiak historical catch. Kodiak has always had intercept fisheries and we already have management plans in place that have been effective for the Kodiak salmon fishery. Please help ensure the future for young fishermen entering into the Kodiak Salmon fishery, and the people who have been investing and are established in the fishery. Thank you for considering these comments, Garrett Kavanaugh

Iver Holm

12/28/2019 12:28 AM AKST

RE: PROPOSAL 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 based on those zones

Dear Chairman Morisky and Board of Fish members: I am 31 years old and a life long resident of Kodiak. I grew up set netting in Uganik on the west side of the island with my mother until i was 14. I then started seining with my father until I was able to buy my own Kodiak seine operational the age of 27. Please oppose proposal 64. thank you for your time sincerely
Iver Holm

James Calhoun

12/26/2019 03:53 PM AKST

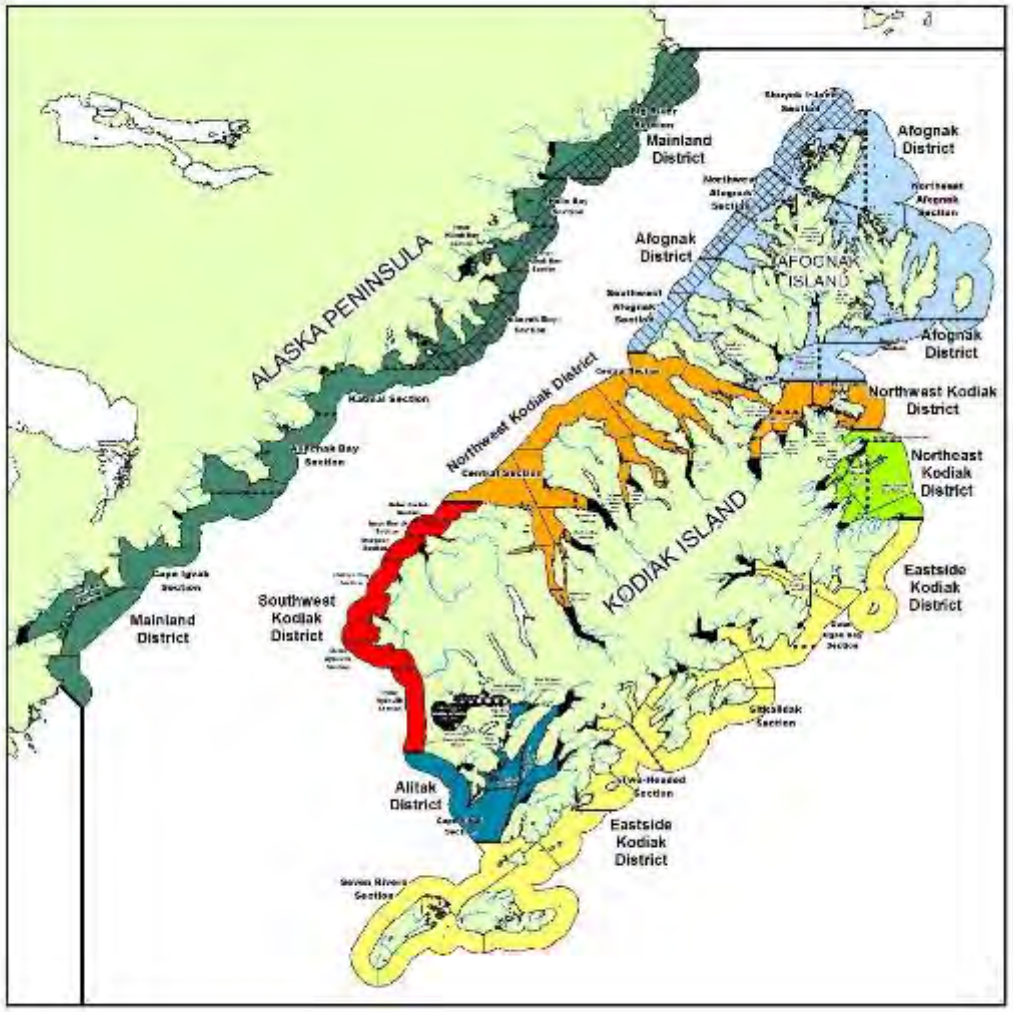
RE: PROPOSAL 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 based on those zones

I have been intimately involved in the Kodiak seine fishery since 1968 to present. Presently my son is fishing the Kodiak area and it is my desire to have my grandsons be able to participate in a healthy Kodiak fishery if they so desire. Throughout my career I have come to the conclusion that the ADF&G management for Kodiak has been stellar and has kept the stocks in Kodiak healthy overall with the current management plan. It is well known area M, Chignik, Kodiak and Cook Inlet intercept fish going to other areas. As far back as 1957 fish tagged in Seldovia Bay by Tyler and Noerenberg indicate the pink salmon were returning to streams in PWS and both sides of Kodiak Island. Every area has mixed stock fisheries.To single out Kodiak based on a genetic study in 2016 based on a catch rate and event that I had never seen or heard of before or since, is not good science. It was truly an anomaly quaint as that phrase maybe. If the board is going change a very good Kodiak management plan of local stocks developed over decades of experience, then all areas should be subjected to the same policy. please oppose proposal 64. thank you

Ken Christiansen
F/V Mary Ann
12/26/2019 03:40 PM AKST

RE: PROPOSAL 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 based on those zones

In my opinion this is just a means for one user group to take away from another user group to try fix a problem that can be dealt with internally. Targeted interception of Cook Inlet bound sockeye ended in 1989 with creation of North Shelikof Sockeye Management plan



Economic Analysis of the Cumulative Impacts from Proposals 64 and 58.

Kodiak Salmon Workgroup

Summary:

The cumulative effects of all Cape Igvak proposals would close the fishery entirely before July 25th in all years (proposals 58 and 64). There would be additional restrictions due to the harvest minimums in Chignik area being raised to 600,000 (proposal 61). Assuming these closures, the reduction of Cape Igvak harvest to 5% of total Chignik sockeye count (proposal 60) would result in no additional limits on Cape Igvak harvests.

Cape Igvak Cumulative Direct Losses

On average, the cumulative effects of Cape Igvak Proposals 58, 60, 61, and 65, will result in more than 95% reduction of the current catch. Overall, these changes would result in an economic loss to the Borough of almost 3.23 million dollars a year.

Direct revenue lost to the Kodiak Borough per year:

$2.15 Million Dollars Yearly Direct Loss to Fishermen

$3.23 Million Dollars Annual Economic Loss in the Kodiak Borough

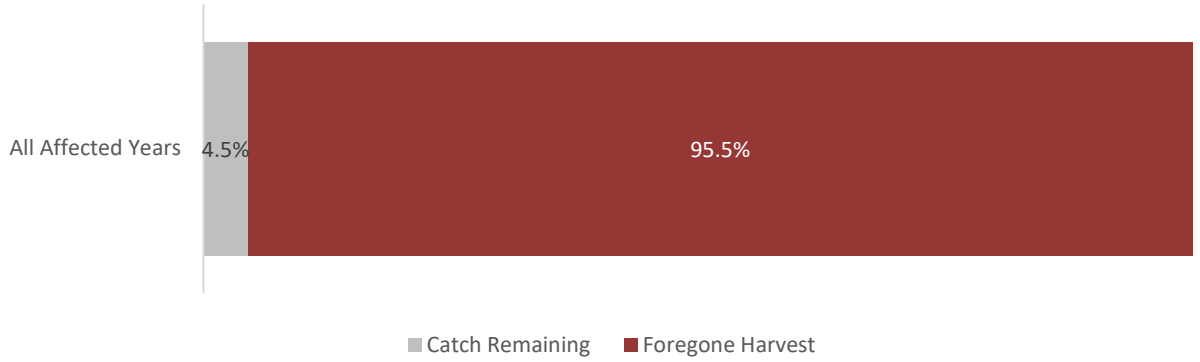
Direct loss per affected year:	**$2.15 Million**
Loss from sockeye fishery:	$1.77 Million
Fisheries employment impact:	19 jobs per year
All employment impact:	23.8 jobs per year
Indirect community loss:	$446,401
Induced community loss:	$628,960
Total Annual Borough Loss:	**$3,225,653**

The cumulative effects of the Cape Igvak proposals would have impacts throughout the Kodiak Borough. The direct loss to fishermen would be $2.15 million per year. Of the total loss to the fishery, the limitations on the sockeye fishery comprise the majority of the impact, accounting for $1.77 million of the loss with $380,000 of the total loss distributed among other salmon species.

The direct impact of this proposal will result in a loss of 19 fisheries specific jobs and a total of 23.8 jobs overall in the Kodiak Borough per year. In addition to the direct loss impact of $2.15 million, there is a further indirect loss of $446k as a result of lost business to business economic activity for the community from purchases such as fuel, gear, and supplies. There is an additional $629k of induced loss in the community resulting from the lost direct and indirect economic activity (total $2.60 million) and reduced labor market. This impact results in a total loss to the community from direct, indirect, and induced losses of $3.23 million per year.

Fisheries Loss

Chart 1: Average Revenue Loss Per Year



On average, restrictions during the affected years would result in more than 95% of the current catch being eliminated. 21 of the 22 years are affected. Over the last 22 years 1998-2019, there have been 18 years where the fisheries losses from these increased restrictions would result in a loss of more than 500k dollars of foregone ex vessel value to the fishery. One of the previous 22 years would be unaffected by the proposed changes. Fishing was severely restricted in 2018 due to historically low run returns.

The sockeye fishery would experience ex vessel losses of more than $500k for 15 of the 21 affected years.

Chart 2: Total Fishery Loss 1998-2019

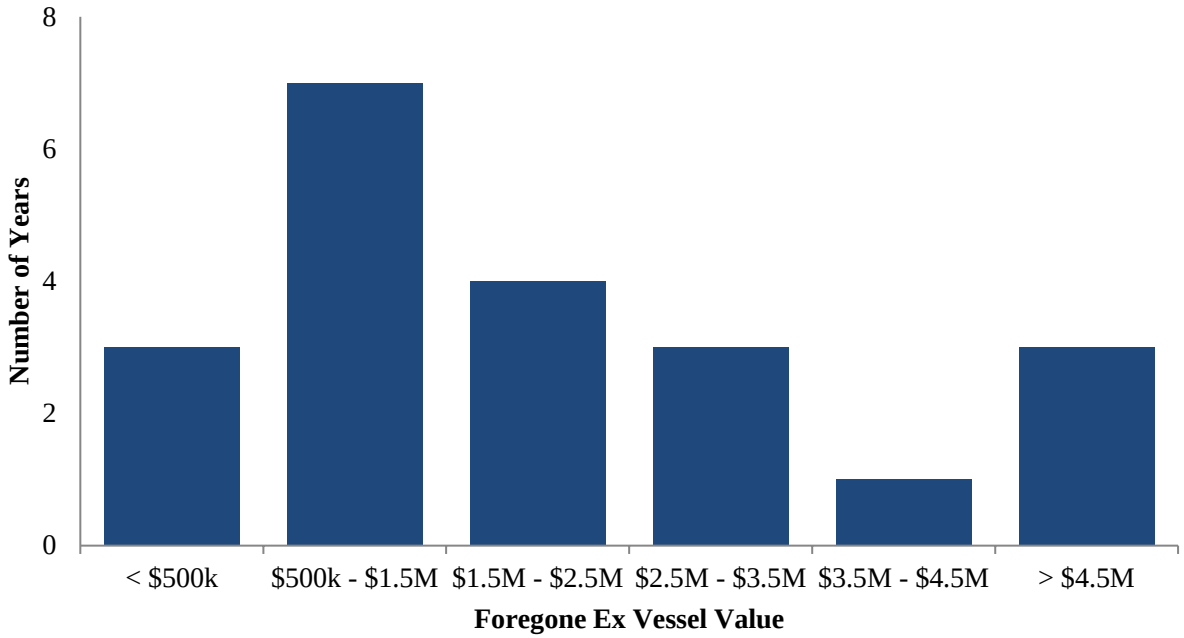
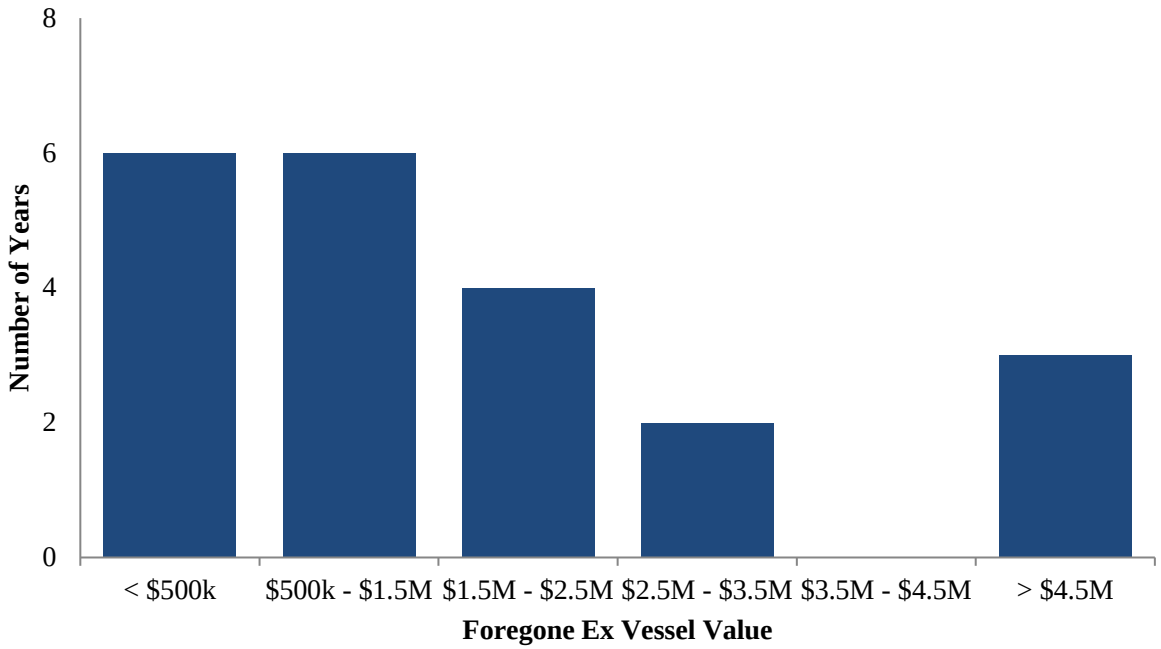


Chart 3: Total Sockeye Loss



The mean direct loss for all species per year is $2,150,292 with a median loss of $1,732,055. If these restrictions were in place the greatest impact would have been in 2011 with a loss of $6,644,239 and the least impact would have been in 2014 with a loss of $54,444.

Table 1: Direct Loss of Cape Igvak Proposal Implementation

Year	Direct Loss All Species	Direct Loss Sockeye
1998	$132,121	$91,646
1999	$5,619,379	$5,149,012
2000	$3,097,396	$2,831,444
2001	$2,048,165	$1,640,725
2002	$851,413	$799,675
2003	$719,506	$639,835
2004	$898,710	$869,284
2005	$2,217,289	$1,975,671
2006	$528,224	$241,350
2007	$546,640	$463,954
2008	$703,717	$144,405
2009	$1,732,055	$1,183,727
2010	$2,319,549	$1,873,907
2011	$6,644,239	$6,238,496
2012	$3,806,759	$3,482,478
2013	$5,663,632	$5,199,632
2014	$54,444	$29,775
2015	$344,912	$43,676
2016	$2,761,597	$2,462,796
2017	$1,331,454	$1,198,552
2019	$3,134,923	$559,916
Mean	**$2,150,292**	**$1,767,617**
Median	**$1,732,055**	**$1,183,727**
Min	**$54,444**	**$29,775**
Max	**$6,644,239**	**$6,238,496**

Table 2: Direct Loss of Cape Igvak Proposal Implementation Per Fishermen

	Average Loss Per Fishermen – All Species	Average Loss Per Fishermen – Sockeye Only
Mean	**$37,320**	**$26,004**
Median	**$25,286**	**$20,256**
Min	**$9,224**	**$2,730**
Max	**$87,965**	**$76,079**

Based on the number of active permits per year, individual fishermen would experience a mean direct loss for all species per year of $37,320 with a median loss of $25,286. If these restrictions were in place the greatest impact in the sockeye fishery would have been in 2008 with a loss of $87,965 per fishermen with the least impact in 2003 with an average loss of $9,224.

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Table 3: Loss Per Affected Permit Holder

Year	Permits	Loss per Permit	Total Value Foregone Harvest	2019 Inflation Adjustment
1998	10	$13,212	$83,727	$132,121
1999	126	$44,598	$3,639,494	$5,619,379
2000	126	$24,583	$2,073,223	$3,097,396
2001	81	$25,286	$1,409,611	$2,048,165
2002	69	$12,339	$595,394	$851,413
2003	78	$9,224	$514,668	$719,506
2004	37	$24,289	$659,846	$898,710
2005	71	$31,229	$1,683,590	$2,217,289
2006	46	$11,483	$413,969	$528,224
2007	36	$15,184	$440,484	$546,640
2008	8	$87,965	$588,885	$703,717
2009	28	$61,859	$1,444,583	$1,732,055
2010	71	$32,670	$1,965,720	$2,319,549
2011	82	$81,027	$5,812,982	$6,644,239
2012	60	$63,446	$3,398,892	$3,806,759
2013	78	$72,611	$5,130,102	$5,663,632
2014	5	$10,889	$50,133	$54,444
2015	16	$21,557	$317,892	$344,912
2016	63	$43,835	$2,576,117	$2,761,597
2017	83	$16,042	$1,269,261	$1,331,454
2019	39	$80,383	$3,134,923	$3,134,923
Average		**$37,320**	**$1,771,595**	**$2,150,292**

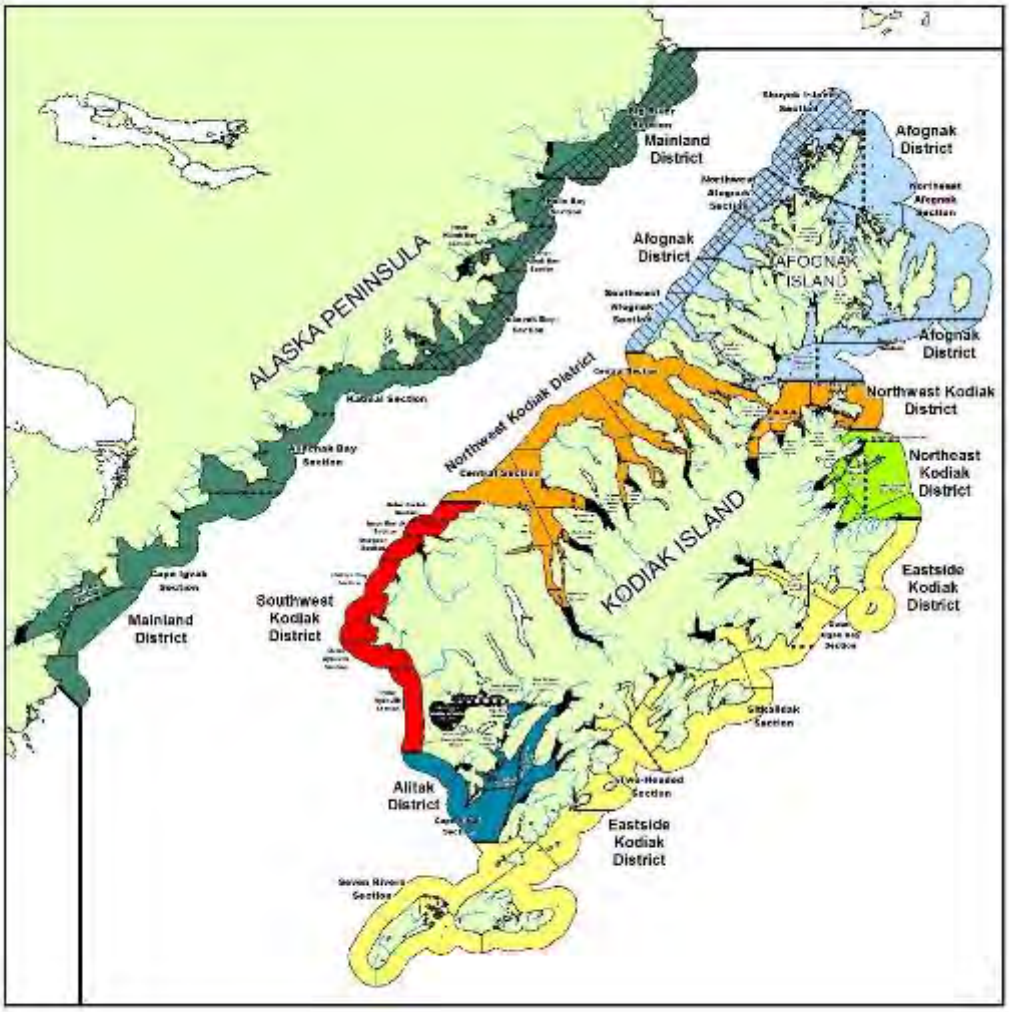
Foregone Tax Revenue

State Taxes	
Fisheries Business Tax (50% Share)	$34,405
SET Tax	$43,006
Total	**$77,410**
Borough	
Resource Severance Tax	$23,116
Fisheries Business Tax (Share of 50%)	$10,987
Total	**$34,102**

Cities	
(Share of Fisheries Business Tax)	
Akhiok	$2,564
Kodiak	**$10,239**
Larsen Bay	$2,562
Old Harbor	$2,751
Ouzinkie	$2,659
Port Lions	$2,643
Total	**$23,418**

The foregone harvest due to Cape Igvak Proposal Implementation would have tax implications for state, borough, and city budgets. The state implements two relevant taxes in the region: the fisheries business tax (which is shared with local governments) and the salmon enhancement tax (SET). Fisheries business tax rates vary by type of processing activity and the proportion of each is estimated from the State of Alaska's Annual Tax Report for FY18. The salmon enhancement tax rate is 2% in the Kodiak region. The Borough implements a resource severance tax of 1.075% and receives a share of the fisheries business tax from the state. The local city governments also receive a share of the fisheries business tax from the State of Alaska. Borough and city shares of the fisheries business tax estimated from the Borough's FY18 annual tax report.

The implementation of these proposals would result in average yearly tax losses of $77,410 to the State of Alaska, $34,102 to the Kodiak Borough, and $10,239 to Kodiak City.



Review of Genetic Studies of Sockeye Salmon Harvests in the Kodiak Management Area

Kodiak Salmon Working Group

Executive Summary

- Recent genetic analyses in Kodiak Management Area provide accurate and precise estimates of sockeye salmon stock proportions and harvest numbers in targeted Westside Kodiak fisheries, during monthly (June, July, August) time periods in 2014-2016. Very limited sampling occurred at Cape Igvak.

- The study was not designed to understand migratory patterns of sockeye salmon through KMA, nor to address finer temporal patterns of non-local stock distribution which might describe rapidly changing abundance of migrating stocks in specific areas. WASSIP results showed that proportions of one non-local reporting group varied by as much as eight fold in weekly samples of Shumagin Island and Dolgoi June fisheries harvests, 2007-2008.

- Harvests of Cook Inlet sockeye in KMA fisheries varied by an order of magnitude between study years and between monthly samples within a year. Incidental harvests in 2015 were particularly divergent, especially for July harvests, during an exceptionally large pink salmon run. The widely divergent harvest proportions of Cook Inlet fish in this three year study suggest no reliable patterns upon which to base specific management actions.

- Susitna bound fish overall represented the smallest component of Cook Inlet stocks incidentally harvested in KMA and accounted for less than

2.5% of total KMA sockeye harvest in 2014-2016 and less than 4.5% of annual harvests in the sampled areas. Due to high estimated harvest rates of Susitna fish in Cook Inlet fisheries (average 38% 2006-2015) and large uncertainties in Susitna escapement estimates, it is unlikely that effects of any “savings” of these stocks in KMA fisheries could be measured with any confidence.

- In 2014-2016, estimated harvest of Susitna fish in Upper Cook Inlet fisheries was 3 fold to more than 40 fold greater than in KMA. Any conservation efforts for Susitna fish should be addressed in Cook Inlet fisheries.

- Data from Cape Igvak is limited to harvests in three temporal periods from two years. Incidental harvest of Cook Inlet fish varies by two orders of magnitude (50 fold) among those strata.

- Evidence suggests that management plans in KMA are working well, as all key sockeye stocks on the Westside are achieving their escapement goals and odd year pink salmon goals are consistently met.

Study Purpose and Design

The purpose of Shedd et al. (2016) was to use Genetic Stock Identification (GSI) methods to estimate temporal stock contribution to select Kodiak Management Area (KMA) sockeye fisheries during 2014-2016 by sampling major sockeye fisheries where significant harvest of salmon occurs (Foster and Dann, 2014, 2015). At its inception, the study

intended to meet multiple information needs. Some local fishermen were interested in a sampling program that could identify particular stocks in area fisheries, especially Alitak-bound fish harvested in Westside fisheries. Fisheries interests outside of Kodiak desired a better understanding of harvests of “non-local” sockeye salmon in Kodiak area fisheries; and area biologists who sought to understand production dynamics of area stocks wanted better stock-specific harvest information for improvement of brood tables, run-reconstructions, and escapement goals for local stocks. Funding constraints resulted in a limited geographic scope for the study.

The work provided accurate and precise estimates of stock-specific harvests for six Westside fishery areas within the KMA over approximately monthly time periods (June,July, August), during the years 2014-2016. Much more limited sampling occurred in Igvak fisheries. Within this scope, it is a robust study which uses state of the art analytic and statistical approaches to generate estimates for sampled areas and times. It has contributed to brood table improvement for area sockeye stocks, especially Karluk and Ayakulik (ADFG, pers. comm).

As the author notes, the study was not designed to understand migratory patterns of sockeye salmon through KMA (Shedd et al., 2016). The design also does not address finer temporal scale patterns of non-local stock distribution which might describe rapidly changing abundance of migrating stocks in specific areas, or address broader questions about sockeye migratory characteristics in and around Kodiak Island outside of sampled areas. Both are important to inform policy debate on allocating harvests from one management area to another.

Finally, there is no information provided on harvest rates to provide context for actual impacts of non-local stock harvest in Kodiak area

fisheries. An understanding of stock-specific harvests with respect to run sizes (i.e., harvest rates) for those non-local stocks is essential for discussing perceived conservation issues (Habicht et al., 2012).

Sampling

Samples for genetic analyses were gathered at fish processing facilities in Kodiak, Larsen Bay and Alitak. Through close communication with processors, samplers could be in place at facilities when deliveries occurred. Efforts were made to ensure samples only represented fishing in one of the management areas intended for sampling and were taken only from deliveries that could be attributed to the intended area. Deliveries from multiple study areas were not sampled. In Uganik/Kupreanof portion of the NW Kodiak district, where both set gillnet and purse seine vessels contributed to harvests, most samples were taken from set gillnet harvests because seine vessels often had mixed loads (ADFG, pers. com.). Brennan et al., (2017, this volume) point out that gillnets used there are selective for larger fish and sampling from mostly this gear group in Uganik/Kupreanof could bias samples towards Cook Inlet harvests because Cook Inlet sockeye are typically larger fish than Karluk Lake sockeye.

Samples from specific area harvests were collected a number of times, often weekly or more often, throughout the monthly sampling stratum when fish were delivered (Shedd at al., 2016 and ADF&G pers. comm**.**). Samples were taken on specific dates from fish available on that date. It is not completely clear how samples were randomized within a delivery, but generally, the target sample number (100-400) was taken from the delivery and placed in a separate tote for sampling. These samples represented a bulk sample of tissues from fish for that date. Typically, at least four bulk

samples were acquired during monthly periods for each area. Each sample represents the group of fish delivered on a one or two day period (see Shedd et al. 2016, Appendix B for details).

Post-season, samples for genetic analyses were selected from date-specific bulk samples in proportion to daily harvests for that month, and combined to generate a monthly stock contribution estimate. Previous reviewers of the study have found the general approach of stratified random sampling, sampling in proportion to the harvest and sample sizes to be defensible (Geiger and Quinn, 2017, this volume). To summarize the sampling approach:

- Sampling was adequate for generating monthly estimates of stock-specific sockeye harvest in targeted areas. Samples were collected periodically through the month, and care was taken to ensure that sampled deliveries were from intended fishery areas. Samples selected for analysis were taken from all bulk samples in proportion to the harvest for the month.

- Sampling was not designed to identify times and areas where non-local stocks are most prevalent in KMA or to provide comprehensive information on migration patterns. The study estimated stock proportions and harvests from targeted areas in select Westside fisheries and Igvak using monthly time periods.

- Spatial resolution was limited to major Westside KMA fisheries including Uganik/Kupreanof, Uyak, Karluk/Halibut Bay, Ayakulik/Sturgeon and Alitak, and Cape Igvak in the Mainland District. There are no comprehensive mixed stock analyses for

fisheries in Afognak, Eastside District, Olga Bay, Special Harvest Areas, nor for harvest after August 29, presumed to be mainly local stocks. Authors estimate that sampled areas represented 47-62% of Kodiak sockeye harvest in 2014-2016.

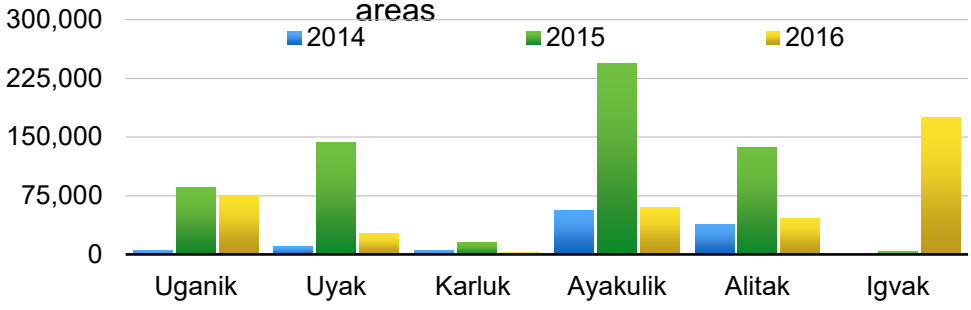
- Temporal resolution was limited to stock compositions for June, July, and August. The periods roughly coincide with fishery management approaches during each period, where early sockeye stocks are harvested in the early stratum (June), pink salmon and sockeye stocks in the middle stratum (July), and late sockeye and pink salmon in the late stratum (August). Harvest stock composition within the monthly periods was not examined.

Results: Variation within and between years

Cook Inlet Stocks

There are very large inter-annual differences among sampled areas in KMA for harvest of Cook Inlet genetic reporting group. Annual estimates

Figure 1. Annual harvests of Cook Inlet bound sockeye salmon within individual Kodiak Management sub-areas



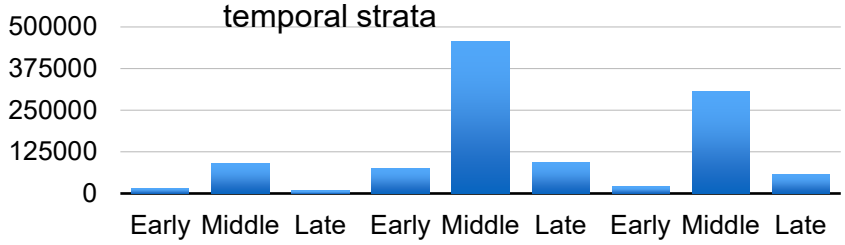
of Cook Inlet harvest numbers for all sampled KMA fisheries varied by an order of magnitude between years, especially evident for Uyak, Ayakulik/Sturgeon, and Alitak, where 2015 estimates far exceeded either

adjacent year. Uganik/Kupreanof harvests of Cook Inlet fish in 2016 were comparable to those in 2015 and Igvak had a single, large catch of Cook Inlet stocks in July 2016. Estimated harvests of Cook Inlet reporting group in 2014 were uniformly small for all sampled areas (Figure 1).

It is also clear that incidental harvest of Cook Inlet sockeye stocks in July (middle stratum) were dramatically larger than early or late strata in 2015 and 2016 (Figure 2). This is particularly pronounced for Alitak and Ayakulik/Halibut Bay harvests. For the Alitak District, harvests of Cook Inlet stocks in July (middle stratum) were an order of magnitude higher than early or late strata in all years. Harvests were more than three times larger in 2015 than middle strata in 2014 or 2016 (Figure 3). July (middle stratum) harvests of Cook Inlet stocks in Ayakulik/Halibut Bay were also highest in all years, and much higher in 2015 (Figure 3).

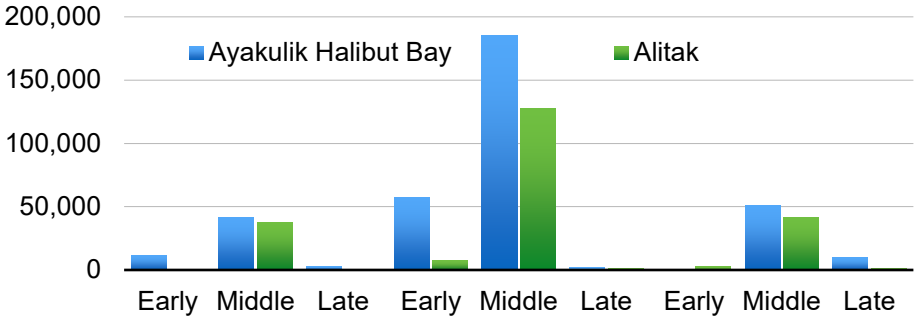
Higher incidental harvest of non-local sockeye in 2015 are likely associated with a very large pink salmon run. At 33 million, pink salmon harvest in 2015 was more than 3 fold larger than 2014 and roughly ten times greater than 2016 (Anderson et al. 2016). The large abundance of pink salmon in 2015 resulted in management actions to increase fishing time. Westside commercial fishing periods in 2015 were extended twice in July and many were open for the majority of August (Anderson et al., 2016). Larger incidental harvests of Cook Inlet sockeye in Westside

Figure 2. Harvests of Cook Inlet bound sockeye salmon in Kodiak Management Area among all sampled areas and years, by temporal strata



isheries during 2015 may partially be explained by pink salmon bundance, reflecting management actions in complex, multi-species fisheries.

Figure 3. Harvest of Cook Inlet bound sockeye salmon by temporal strata, over all years, in Ayakulik/Halibut Bay and Alitak sub-areas of KMA.



While Shedd et al. (2016) is the first genetic stock identification study to focus on KMA, it is modeled after the large WASSIP study which also revealed wide variation in stock specific harvests between and within sampling years, especially for those fisheries known to harvest a mixture of stocks on the South Alaska Peninsula (Dann et al., 2012). The East of WASSIP (EOW) reporting group in that study is a good example. It represents mixed stock analysis assignments made to stock groups beyond Chignik, the Eastern boundary of WASSIP. Specific stock composition of EOW reporting group is unknown, but it likely contains significant and variable proportions of Kodiak, Chignik and Cook Inlet stocks.

- For the Western and Perryville Districts within Chignik Management Area, samples from the same 10 day time interval in July (7/20-7/31) showed EOW reporting group harvest proportions more than twice as high in 2007 (38.8%) as 2008 (14.9%).

- For the Shumagin Islands June fishery, large differences were also observed for the EOW reporting group proportions among years and within weekly sampling periods. In 2006, among three sampled strata in June, EOW proportions ranged from 18.6% to 43.6%. In 2007, proportions for the same weekly strata ranged between 4.9% and 16.5%. For comparable strata sampled in 2008, the range was 9.4% to 10.6%. Over the three year period, harvest proportions for EOW reporting group in Shumagin June fisheries varied nearly nine fold within the month of June.

- For Dolgoi Area June fisheries, among weekly strata, proportions of EOW reporting group ranged from 17.1% to 39.5% in 2006, 35.8% to 56.2% in 2007, and 7.4% to 27.4% in 2008. EOW proportions varied by nearly 8 fold in Dolgoi within and among years in the WASSIP study (Dann et al., 2012).

Both WASSIP investigators and Shedd et al. (2016) express pointed caution about making inferences beyond their three year study periods. Like any GSI study, the data represent environmental and fishery conditions during those years and changes in relative proportions of reporting groups will be influenced by prosecution of fisheries and ocean conditions (physical and biological) which affect fish migrations. The wide

variation observed in WASSIP between weekly sampling intervals among years demonstrates how much stock specific harvests may change within a monthly period. The broad inter-annual variation in WASSIP and the recent KMA study should emphasize the inherent uncertainty in our understanding of stock vulnerability to commercial fisheries from year to year and within a fishing season.

Results: Measuring Impacts

Shedd et al., (2016) showed that over a three year study period, highly variable numbers of Cook Inlet sockeye salmon were harvested in KMA at some locations and times. However, these data alone provide little insight into impacts of these non-local harvests on Cook Inlet runs. Fishery stakeholders in the WASSIP study, from Area L to AYK, insisted that reporting of stock proportions be accompanied by harvest rates, so that stock-specific harvests could be assessed in relation to their respective run sizes (Habicht et al., 2012). The importance of this exercise is clearly demonstrated by WASSIP data for Outer Port Heiden (OPH) harvests during 2007-2008. Among six sampled time strata for OPH fisheries in 2007-2008, Bristol Bay stocks represented 65%-90% of the sample, while harvest rates on Bristol Bay fish for the same two years were less than 1% (Dann et al., 2012, Habicht et al., 2012). Significant numbers of sockeye bound for Bristol Bay were harvested in OPH, with negligible effect on the overall run.

Though no harvest rates were reported, Shedd et al. (2016) produced analyses to distinguish among four different genetic reporting groups within broader Cook Inlet harvests, including Susitna River, a currently designated stock of concern (Shedd et al., 2017). Overall, Susitna fish represented the

smallest component of incidental Cook Inlet harvests in KMA, representing 0.3% to 4.4% of KMA commercial sockeye harvests in sampled fisheries during 2014-2016 (Shedd et al., 2017). They represented only 0.1% to 2.4% of the total KMA sockeye harvest for study years 2014-2016.

Having dispensed with a biased sonar program (Fair et al., 2009), assessment of escapement for Susitna sockeye is now made by three weirs on Judd, Chelatna and Larson Lakes. Based on mark-recapture experiments in 2006-2008, Fair et al. (2009) estimated that combined Chelatna and Judd Lake escapements represent about 42% of Yenta drainage escapements and Larson Lake represents roughly 52% of mainstem Susitna escapement. Escapement goals for these lakes were established in 2017. Over the last decade, goals for Chelatna have always been met or exceeded, Judd was below goal in a single year, and Larson missed three goals by less than 20% (Munro, 2019). Escapements to these index lakes by themselves do not suggest a concern for conservation of Susitna fish. Other Lakes, such as Shell, once estimated to account for 10% of Susitna drainage sockeye production, have been severely impacted by pike predation and Beaver dams, and produce far fewer sockeye than in the past (Shields and Frothingham, 2018).

If management actions were taken to reduce harvest of Susitna bound sockeye in KMA, it is important to consider the fate of these “savings” and how we could evaluate effects of these actions. Any incidental harvest of Cook Inlet stocks avoided in KMA fisheries would be subject to a variety of harvest and natural mortalities before reaching spawning grounds, as they pass through fisheries in Lower and Upper Cook Inlet. Recent estimates of harvest rates on Susitna origin sockeye in Upper Cook Inlet fisheries range widely, but average 38%, 2006-2015

(Erickson, 2017, ADF&G report to Board of Fisheries). A large proportion of these fish would be harvested in Cook Inlet fisheries before reaching their natal streams and lakes.

Importantly, impacts of Susitna bound sockeye harvest in KMA on annual Susitna runs probably cannot be measured with confidence for two reasons. First, Shedd et al. (2017) used a genetic baseline that includes populations throughout the Susitna/Yentna drainage but does not distinguish fish which may be destined for Judd, Chelatna and Larson Lakes. The lake stocks can be justified as a separate JCL reporting group in Cook Inlet genetic studies (Barclay, 2018). As a result, the relationship between KMA harvest of Susitna reporting group and goals established to index Susitna escapement is unknown because KMA harvests of Susitna stocks cannot be attributed to any of these lakes.

Also, recent mark recapture studies suggest large uncertainties with estimating drainage wide escapements to Susitna drainage (Yanusz et al., 2007). Results from 2006-2008 studies revealed wide 95% confidence intervals (2006, 335,448 - 500,946; 2007, 292,867 - 362,597; 2008, 320,763 - 398,317) for escapements of sockeye to Yenta and Susitna Rivers combined (Erickson, ADFG report to Board of Fisheries). The highest estimated catch for Susitna fish in any KMA stratum, without accounting for additional harvest and predation in Cook Inlet, falls within those confidence intervals. It is unlikely that effects of reducing harvest of Susitna fish in KMA could be detected in Susitna run estimates.

In 2014-2016, estimated harvest of Susitna fish in Upper Cook Inlet fisheries was 3 fold to more than 40 fold greater than in KMA (Barclay, 2018, Shedd et al., 2016). Attempts to conserve Susitna fish must primarily

include Cook Inlet fisheries, where savings are more efficiently realized and can be measured.

Cape Igvak

The management plan for Cape Igvak has been in place since 1978. The Cape Igvak fishery is one of only two areas in the state (the other is Southeast District Mainland) in which harvest and escapement triggers from an adjacent management area (both Area L-Chignik) must be met before the fishery can open. For this study, no Igvak samples were taken in 2014 because low Chignik harvest numbers kept the area closed to commercial harvest. In 2015, only the July stratum (middle) was sampled as Igvak was again closed at first due to inadequate harvests in Chignik. Harvest of Chignik fish in Igvak was estimated as 2,059 fish. In both 2014 and 2015, the management plan had its intended effect of keeping Igvak closed or limited when Chignik harvests were low. In 2016, with a stronger Chignik run, an estimated 114,412 Chignik sockeye were harvested in the early (June) stratum. A little more than 10,006 Chignik fish were harvested in July. With only three temporal strata sampled over a three year period, there is no new information on harvest patterns of Chignik fish at Igvak that would support changes to the management plan. While it is clear that some Chignik fish are captured at Igvak (which is reason for the management plan), one data point an order of magnitude greater than the other two reveals dramatic swings in non-local stock abundance. There is no data in this study that supports the presumption in the management plan that 90% of sockeye salmon harvests in Igvak are Chignik bound fish.

Management Plans

The management of KMA fisheries is guided by a number of management plans including the Westside Management plan (5AAC 18.362) and the Alitak District Management plan (5AAC 18.361), most relevant to this genetics study. While each has very specific management direction for date ranges and particular areas, the central theme is prosecution of traditional fisheries to sustainably harvest early and late runs of sockeye salmon to Karluk, Ayakulik, Upper Station and Frazer Rivers, as well as harvest pink, chum and coho salmon to a variety of locations in July, August and September. The plans have an odd year emphasis for pink salmon management as these are typically larger than even year runs in KMA.

From a biological perspective, successful fisheries management in Alaska is measured through achievement of escapement goals. The Alaska Board of Fisheries pays careful attention to escapement goal performance as a yardstick for sustainable management. For Karluk early sockeye, goals have been achieved or exceeded every year since 2012, and for the late run, since 2010. For early and late sockeye runs to Ayakulik , goals have been achieved every year since 2010. For early Upper Station stock, goals were achieved in 2017 and 2018 and for late Upper Station, goals have been met every year since 2010. For Frazer Lake sockeye, goals have been met every year since 2010. Odd year pink salmon goals in the Kodiak Archipelago have been met or exceeded every year since 2011 (Munro, 2019). Recognizing that scientifically defensible escapement goals are foundational for maximizing yields in future years, it seems clear that

KMA fisheries management has been successful and that these management plans are working well.

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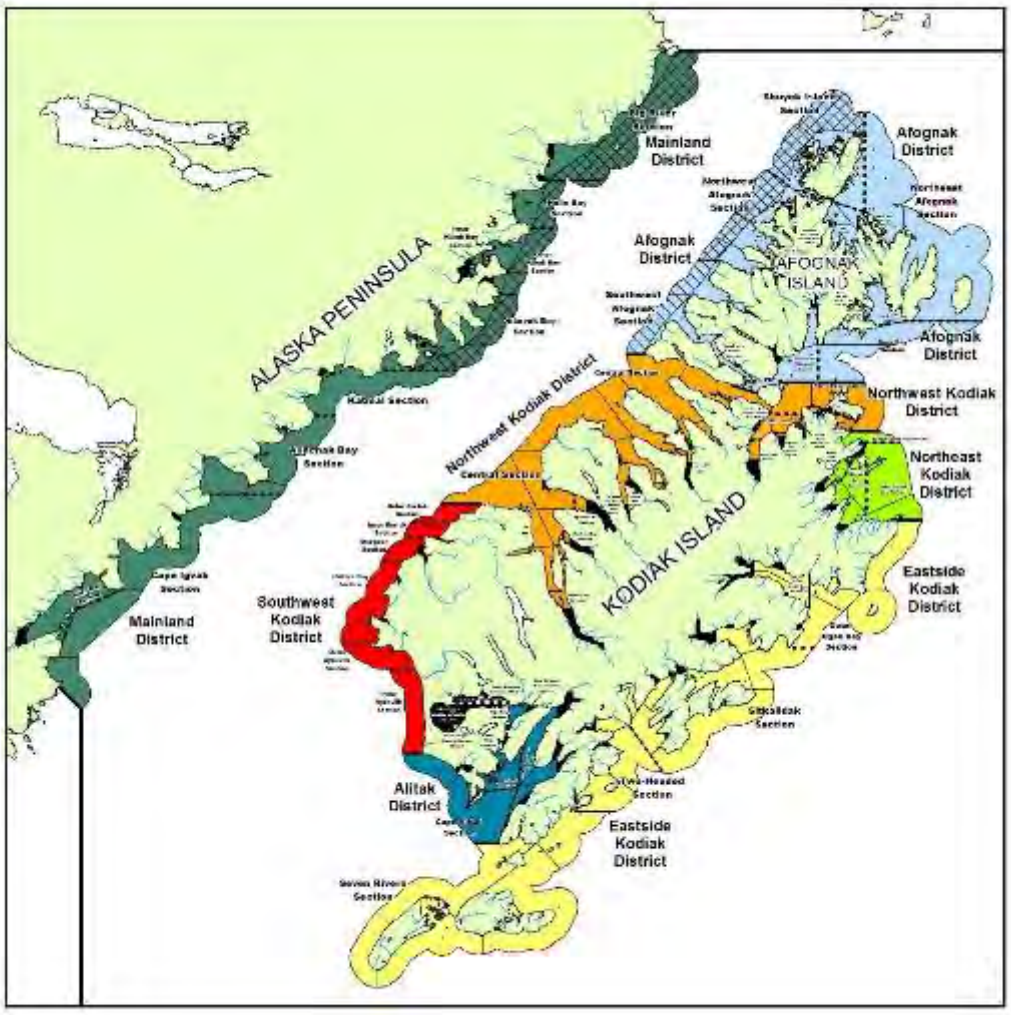
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Review of Shedd et al. (2016): *Genetic Stock Composition of the Commercial Harvest of Sockeye Salmon in Kodiak Management Area, 2014-2016*

Report to the Kodiak Salmon Workgroup

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September 11, 2017

Executive Summary

The Kodiak Salmon Workgroup contracted us[1] to provide a scientific review of the report by Shedd et al. (2016) entitled *Genetic Stock Composition of the Commercial Harvest of Sockeye Salmon in Kodiak Management Area, 2014-2016*. This review consists of an examination of the scientific merit of the study, its utility compared to previous studies, an interpretation of how the results should be viewed in terms of the magnitude of interceptions of Cook Inlet sockeye salmon in the Kodiak Management Area's commercial fisheries, and thoughts about further investigations that may shed additional insight into Kodiak and Cook Inlet stock compositions of sockeye salmon.

Our primary findings:

1. From the point of view of fishery policy, the most important statistic is the *stock-specific harvest rate*, which is not reported in the Shedd et al. (2016) document for stocks outside the Kodiak Management Area. What is reported is the *stock-specific contribution rate*. Stock composition estimates represent the proportions of a catch that was made by various stocks in a particular spatial and temporal stratum or groups of strata. In contrast, the harvest rate describes the proportion of an annual return that was harvested in a fishery or group of fisheries. Consequently, a fishery may show a large contribution rate for a stock, but the total effect on that stock may be quite small. We illustrate this phenomenon below.
2. The new genetic stock composition approach used in this study is superior to other approaches used in the past, because the real stock composition is estimated rather than inferred from less reliable measurements (e.g., length composition). The use of a Bayesian modeling approach to estimate stock composition is state-of-the-art and allows for the appropriate treatment of random variability due to both random error caused by sampling the fishery mixture and also from the sampling of the contributing stocks.
3. The stratified sampling design used is appropriate with respect to accuracy and precision of stock composition (relative and absolute). It is clear that the authors devoted substantial attention to implementing the sampling design with the intent of obtaining a random or representative sample within combinations of major regional and temporal strata. Further information would be desirable about how the implementation was conducted on finer spatial and temporal scales to justify the assumption of a random or representative sample. For example, how was an individual fish selected for genetic sampling and were there protocols established to prevent selecting fish with particular physical characteristics, such as size?
4. Similar to past studies, results from the study revealed substantial variability in stock composition across years, among spatial strata, and among temporal strata. Further study may be desirable to determine if there are consistent patterns in this variability across years, spatial strata, and temporal strata. Continued genetic sampling and analysis in the future would thus be desirable.

Introduction and Overview

We were asked to provide a scientific review of the Shedd et al. (2016) titled *Genetic Stock Composition of the Commercial Harvest of Sockeye Salmon in Kodiak Management Area*. This

[1] See brief biographical statement in Appendix A

complex 154-page report describes an extensive genetic analysis followed by a statistical analysis of the genetic data for Kodiak area fisheries in catch years 2014, 2015, and 2016. The principal genetic tools that were used for this study were the single nucleotide polymorphism, or SNP, approach. Here we will comment on scientific criticisms of the study that appear relevant, we will briefly comment on the various methods and techniques that were used, and we will offer a broad assessment of the significance of the major findings. As we will explain in more detail below, the study appears to have been carefully conducted and the numerical estimates appear to be well crafted and reliable.

The Alaska Department of Fish and Game had previously tried to use scale pattern analysis and an analysis of fish size to estimate the proportion of non-local stocks in the Kodiak Management Area. For various technical reasons neither of these techniques were very successful. In one of the last reports on the attempts to use fish size for this purpose, Vining (1996) wrote, "As the 1995 analysis indicates, this methodology continues to generate only rough estimates, some with little confidence." It is the opinion of Vining that "other techniques, such as genetic stock identification, tagging or scale pattern analysis should be evaluated for use in the future, if more precise estimates of stock composition for sockeye salmon caught within the [Kodiak Management Area] are desired." This leads us to the present genetic study by Shedd et al. (2016).

The genetic analysis of stock mixtures rests on several assumptions. The analysis starts with the definition of a *catch mixture*, because the catch is presumably made up of a mix of stocks. Importantly, the number of contributing stocks must be known, they all must be sampled, and the genetic character of each stock must be established. Next, a representative sample of the catch mixture must be drawn and the genetic character of each specimen in the catch sample must also be established. Finally, a complicated statistical algorithm can then be used to produce an estimate of the proportion of each of the stocks in the mixture by comparing the genetic characterizations of each fish in the catch mixture to the previously established genetic characterization of the contributing stocks.

A complete analysis must include a study of both the accuracy and the precision of the estimates. In this context, *accuracy* refers to the absence of any statistical bias or other kinds of systematic errors that would consistently cause specific stock estimates to be too high or low. Here *precision* refers to errors that are caused by using only a sample from the stock of origin and the catch mixture, rather than an examination of every single fish in the fishery and every single fish in the spawning stocks. Generally, accuracy is harder to study, detect, and control, while precision can generally be controlled by increasing the sample size. Also, precision is usually studied by looking at the variation from one specimen to another in the samples. Precision measures are usually offered in the form of confidence intervals, standard errors, or coefficients of variations.

Sampling Design

The goal of the study by Shedd et al. (2016) is to determine stock compositions of sockeye salmon within the Kodiak Management Area. Consequently, sampling was restricted to the Kodiak Management Area, rather than to the overall range of sockeye salmon in the western Gulf of Alaska. The authors defined six Kodiak spatial strata of interest (called subregional sampling groups) for *sampling* genetic tissues, comprised of (1) Uganik-Kupreanof, (2) Uyak, (3) Karluk-Sturgeon, (4) Ayakulik-Halibut Bay, (5) Alitak, and (6) Igvak. The first five are located around Kodiak Island, while Igvak is part of the mainland district. The Chignik

regional reporting group had combined estimates from subregions Black Lake and Chignik Lake. Four other regional spatial strata outside of Kodiak and Chignik were West of Chignik, Cook Inlet, Prince William Sound, and South of Cape Suckling. The report did not contain justification for this particular choice of spatial strata, but suggests that considerations included areas with active management and those that are used in run reconstructions to aid management.

One confusing area is that several spatial scales are referred to in the report. For *reporting* purposes (instead of *sampling*), there are a total of 14 subregional *reporting groups* listed on page 2 that constitute the entire western Alaska area. The report designates ten of these groups as *subregional reporting groups* within the Kodiak (8 subregions) or Chignik (2 subregions) *regional reporting groups*. Six regional reporting groups including those outside of Kodiak and Chignik are listed in the tables, with subregional breakdowns for the 8 Kodiak subregions and the 2 Chignik subregions. In the end the system does seem to be consistent; however, we recommend a simpler and clearer description of spatial divisions. *These definitions of spatial strata must be understood to understand the tables and figures of results, which include both regional reporting groups and subregional reporting groups.*

The report indicates that temporal strata are also considered in combination with the spatial subregional strata: Early, Middle, and Late (see page 3 in the Shedd et al. (2016) report. The temporal strata are consistent with patterns that have been observed in past studies.

The sample size goal was to extract 380 tissue samples from each time-area stratum; no reference was provided for this number. The sampling within temporal strata was intended to be proportional to daily abundance. When this was not possible, the total sample size was obtained by sampling days with sufficient additional samples at random until the total of 380 was achieved, a reasonable approach.

We could not determine if sampling was representative within spatial strata, although the intent of the authors appears to be sampling proportional to harvest, a reasonable goal. It would be helpful to have a brief description elaborating the protocol used to achieve this goal.

The sampling design most appropriate for multiple strata with high variation among strata, to obtain high precision and accuracy, is stratified random sampling (Thompson 2016). In the future it would be desirable to show that high variation is present and the improvement in precision by using stratification over simple random sampling. One advantage to using a proportional allocation of sample size with respect to within stratum variation is that different choices for strata are not likely to produce inaccurate estimates. Nevertheless, it is not necessary to use proportional sampling to justify the use of stratified sampling in terms of accuracy, as long as a representative sample is obtained within each stratum. In particular, the use of a fixed sample size of 380 for all spatio-temporal strata is completely acceptable. (Although it may not be the most efficient allocation scheme, it does not induce estimation bias.)

The use of stratified random sampling also has a desirable product in that both relative and absolute stock compositions can be estimated both for individual strata and for combinations of strata, including that portion of the entire Kodiak Management Area that was sampled (not every single fishery was sampled). The main reason for this ability is that catches are known for all spatio-temporal strata. This is one fundamental principle that

makes estimation across strata intuitive, accurate, and precise, because relative stock compositions are projected to the total catch to get absolute stock compositions by strata that can then simply be summed across a set of strata of interest.

An additional feature of the sampling design is a set of data quality control procedures regarding the genetic data to avoid the inclusion of erroneous data into the analysis (pages 8–9). Thus, we were unable to uncover any appreciable flaws in sampling, genetic data processing, or genetic analyses in the study.

In summary, we believe that the overall sampling design of using stratified random sampling is appropriate for the genetic analysis of estimating stock composition of sockeye salmon in the Kodiak Management Area. Further studies should be done to consider alternative stratification choices both within space and time and to justify the sample size goal of 380 samples per stratum.

Policy Issues and Stated Goals for the Study

In the introduction of the Shedd et al. (2016) report, the reader finds that the stated purpose of the study was to "sample the major sockeye salmon commercial fisheries in marine waters of [the Kodiak Management Area] from June through the end of August and use genetic mixed stock analysis (MSA) to estimate stock compositions and stock-specific harvests." Later in the report, the reader finds this statement about the goal of the project: "The overall goal of this project is to provide information that will be useful for reconstructing runs, building accurate brood tables to define escapement goals, and refining management by identifying spatial and temporal harvest patterns of *local* and *nonlocal* stocks (emphasis in the original)." Later, the reader finds four stated objectives, including "report [genetic mixed stock analysis] results of stock-specific harvests of sockeye salmon sampled from *selected* commercial fisheries in [the Kodiak Management Area], 2014—2016 (emphasis added)," and "characterize where stocks were harvested from *select* commercial fisheries (again, emphasis added)." This report did not have the express purpose of making arguments regarding allocation decisions by the Alaska Board of Fisheries.

Regardless, the study does conclusively demonstrate that sockeye salmon bound for Cook Inlet were caught in some times and in some areas in the fishing years studied. In the case of the Kodiak Area, there really was no reason to believe that the commercial harvest was made up of only single stocks that originated in the Kodiak Management Area. That is, a finding of rich stock mixtures in at least some times and areas should not have been surprising. There have been many long-standing questions about the degree to which stocks are mixed in the Kodiak Management Area. Summarizing historical tagging studies, Barrett and Swanton (1991) report that sockeye harvests in the North Shelikof Strait in the 1940s, 1970s, and 1980s ranged from 30% to 100% Kodiak fish and 0% to 59% Cook Inlet-origin fish. Moreover, Barrett and Swanton concluded there were large numbers of Cook Inlet bound fish in the North Shelikof Strait fishery in July of 1990.

Contribution Rate Versus Harvest Rate

There are two important rates or proportions that can be derived from stock composition analysis and discussed before policy-making bodies, such as the Alaska Board of Fisheries:

the *contribution rate* and the *harvest rate*. These two statistics have very different significance to management. These two rates have often been confused in conversations among fishermen, in testimony before the Alaska Board of Fisheries, and in conversations with members of the press. The percentage that each stock makes up in a mixture of stocks is called the *contribution rate* (or sometimes the *stock proportion*). For example a fishery may have harvested 50 fish, and 40 of those fish might be from Stock A, with 10 fish from Stock B. Then the *contribution rate* of Stock A is 80%=(40/50)100%. For the purposes of management that could be either high or low. But if the contribution rate was 80%, then this does *not* mean that 80% of the stock was harvested; a harvest rate can be estimated only with abundance or run-size information for the stock of interest.

A large number for the contribution rate is not necessarily important to management, but it could be. If the original size of Stock A was 10,000 fish before this harvest, then the *harvest rate* on Stock A in the catch mixture would be 40/10,000 = 0.4%—which may be considered insignificant. Alternatively, if the original size of stock A was only 150 fish before the harvest, then the harvest rate would be 40/ 250 = 27%—which would usually be considered significant from a management perspective. Although moderate-to-large contribution rate statistics can lead to misplaced anxiety or even outrage, the most important statistic for management policy is the harvest rate, which is the rate that is most clearly related to the population dynamics of a stock.

Technical Comments on Bayesian Analysis and Uncertainty Measures

The statistical analysis was carried out using the Bayesian method of Pella and Masuda (2001). We contend that this method is a reasonable approach with several advantages over the more traditional *maximum likelihood* approach. As this is a Bayesian approach, there are some differences between the interpretations of the measurements that may be confusing and unnecessarily tedious to some readers of the Shedd et al. (2016) report. In the method of Pella and Masuda (2001), the unknown contribution rates (or stock mixing proportions, as they call them) are treated as unknown random variables rather than constant and unknown parameters in the maximum likelihood approach. The analysis proceeds by simulating the probability distributions of these random quantities, with the genetic data used to help develop these distributions.

In a Bayesian analysis, uncertainty in stock contribution rates is frequently displayed by the use of *credible intervals* rather than *confidence intervals*. For example, in Table 3 of the Shedd et al. (2016) report, for the Kodiak reporting group the 90% credible interval runs from 80.9% to 88.1%. The correct interpretation of this interval is that given all of the stated assumptions, *the probability is* 90% that the true value is found between 80.9% and 88.1%, given a list of assumptions. Many people, incorrectly, think this is exactly what a 90% confidence interval is, but this is a mistake for some technical, statistical reasons. For the purposes of readers of this report, we note that the Bayesian results will often closely approximate the more traditional results (Pella and Masuda 2001), so that there should be no harm in simply interpreting the Shedd et al. (2016) credible intervals as the more familiar 90% confidence intervals to investigate uncertainty in the stock composition estimates. While every one of the assumptions that underpin the analysis is probably not strictly true, these intervals do seem to be a very reasonable guide to the precision in the estimates. Based on the reported credible intervals and based on the assumptions stated in the report,

the Shedd et al. (2016) estimates appear to be both accurate and precise enough for the purposes of the study.

The Results

In trying to understand the results of the analysis, readers of the Shedd et al. (2016) report may find Figures 8 through 19 helpful, especially when paired with the maps provided in Figures 1–7. Figures 8, 10, 12, etc. (the even-numbered figures) show the estimated contribution rates (or stock mixing rates) for stocks using two levels of detail for the authors' *subregional* and *regional reporting groups* mentioned above. These estimates are then reported by specific time-area catch strata. At the highest level of aggregation there are six regional reporting groups, or what might be considered stocks in the broadest sense: (1) West of Chignik, (2) Chignik, (3) Kodiak, (4) Cook Inlet, (5) Prince William Sound, and (6) South of Cape Suckling. These groups may be the most useful for discussions about fishery management policy. Additionally there are estimates for 10 specific subregional reporting groups, or what might be considered stocks in a more narrow sense, in the Westward Region, and these estimates may be more useful for actual managers or to look at the reasonableness of some of the estimates. Similarly, the odd-numbered figures (Figures 9, 11, 13, etc. in Shedd et al. (2016)) have the stock contribution rates re-expressed as the stock-specific *number of fish harvested* (compared to rates in the previously mentioned figures) in the mixtures.

The usual pattern in these figures is that the majority of the fish harvested in each time-area grouping originated in the Kodiak management area. There are some notable exceptions, especially in 2015. For example, in the Ayakulik-Halibut Bay area, a large fraction of the fish were classified to be of Cook Inlet origin, especially in 2015 during the July 4 to August 1 period (Figure 14 in the report by Shedd et al. (2016)). When viewed in terms of numbers of fish, rather than proportions, the effect looks even stronger (Figure 15). In the Alitak district the catches of fish classified to Cook Inlet exceed the number of fish classified to the Kodiak area in two years: 2015 and 2016. Here too, the effect looks even stronger when views as the number of fish harvested 2015 (Figure 17). However, when summing over time and area, in all study years fish of Kodiak area origin dominate the catch, although catches of Cook Inlet-origin fish increased in 2015, and to a lesser extent, remained high in 2016, when compared to 2014 (Figure 20 in Shedd et al. (2016)).

Questions about why the harvest of Cook Inlet fish might be higher or lower in specific times or areas are beyond the scope of this review. One obvious question is could this variation in the proportion of Cook Inlet-origin fish be due to variation in the sizes of sockeye salmon runs in Cook Inlet?

To get at this question we simply ignored Lower Cook Inlet and brought together run size estimates for Upper Cook Inlet (Alaska Department of Fish and Game, retrieved August 17, 2017), together with the Shedd et al. (2016) estimates of the harvest of Cook Inlet bound fish in the Kodiak Management Area (taken by eye from Figure 20 or from Tables 67–69). As a point of reference, Stopha (2017) projected that approximately 0.3 million sockeye salmon would be returning to hatcheries in Lower Cook Inlet 2017. We assume that the times and areas sampled by Shedd et al. (2016) represent areas where interceptions of Cook Inlet fish would have been considered to be most likely, although we do not know that is true. Here again, as a point of reference, the total fish accounted for by the six Regional Reporting

Groups in Tables 67–69 was about 50%–60% of the total reported harvest for the Kodiak Management Area for the three study years (catch numbers from Munro 2015 and later reports in this series). Even though not all times and areas in Kodiak Management Area were sampled and even though there was some sockeye salmon production in Lower Cook Inlet, we expect that the Shedd et al. sockeye salmon catch estimates of Cook Inlet bound fish caught in the Kodiak Management Area divided by the estimated Upper Cook Inlet run size to provide a crudely reasonable—even if slightly too low—approximation to the harvest rate on Cook Inlet-origin fish harvested in the Kodiak Management Area (Table 1).

Although there are only three years available for comparison, it does not appear that changes in run size explain the difference in harvest rates on the Cook Inlet stocks. The highest harvest rate on Cook Inlet stocks was in 2015, the year with the highest in-Inlet run size among the three study years, but the second highest harvest rate is on the year with the lowest run size (Table 1 below).

Table 1. Upper Cook Inlet run size in millions of sockeye salmon **(A)** (from ADF&G), the estimated harvest of Cook Inlet-origin sockeye salmon caught in the Kodiak Management area in millions of fish **(B)** (From 67–69 in the Shedd et al. (2016) report), and the approximate harvest rate (estimated harvest in the Kodiak Management Area divided by the in-Inlet run size plus the harvest in the Kodiak Management Area) on Cook Inlet-origin sockeye salmon in the Kodiak Management Area **(C)**.

	(A) Cook Inlet run size	**(B)** Cook Inlet catch in KMA	**(C)** Approximate harvest rate
Year	(millions)	(millions)	in KMA
2010	5.71		
2011	8.68		
2012	6.46		
2013	5.74		
2014	5.54	0.1	2%
2015	6.29	0.6	9%
2016	5.04	0.4	7%

Another important question: were the harvests of Cook Inlet-bound sockeye salmon excessive? Though this is a policy judgment, rather than a scientific question, we note that in the years 2014-2016, the estimated *harvest rate* ranged from 2% to 9%, and did not reach or exceed 10% in any year in the study (Table 1). Some might point out that the way we calculated the harvest rate under-represents its true magnitude—and the estimates in Table 1 very well may be too low. Even so, it would be highly unlikely we have underestimated it by a factor of 2, meaning that the median harvest rate over the three study years would have been almost surely less than 15%, and probably considerably less.

Are there areas where the proportion or numbers of Cook Inlet-origin sockeye salmon are higher than in other areas? Figures 22, 23, and 24 in the Shedd et al. (2016) report are useful for speculating about this question—although it is really impossible to establish a trend with only three years of data. Notice that the area with the highest number of Cook Inlet-origin fish was Ayakulik-Halibut Bay in 2014 and again in 2015. However, in 2016 the number of Cook Inlet-origin fish in this district was much reduced from the previous year, and a larger number of Cook Inlet-bound sockeye salmon was caught in the Igvak area—which had previously been an area with very few Cook Inlet-origin fish harvested.

When time is brought into the discussion the situation also appears murky. The proportion of Cook Inlet-origin fish caught in the Uyak area is relatively low in all sampling periods in 2014 (Tables 15, 16, and 17 in the Shedd et al. (2016) report, yet the proportion rises to relatively high levels (54% and 32%) in the second and third sampling periods in 2015 (Tables 20 and 21). Then in 2016, the proportion was much reduced, with over 80% of the fish harvested in each period in this catch area belonging to the Kodiak reporting group (Tables 23, 24, and 25). This observed variation shows the danger in looking at just three years and thinking that one sees a trend. Further sampling and study is warranted to understand patterns of temporal variation.

The proportion of Cook Inlet-origin fish in the Ayakulik-Halibut Bay area is relatively low (less than 8%) in the first sampling period (June 1 to June 27) in 2014, but that this rises to 24% in the second period (June28 – July 25) of that year, and then falls to about 5% in the last sampling period of that year (Tables 39, 40, and 41). However, in the next year this proportion starts high in the first period (28%), rises to 48% in the second period, and then drops to less than 10% in the last period (Tables 43, 44, and 45). In 2016, the first period contains essentially all fish originating from the Kodiak Management Area (>99%; Table 47), but the proportion of Cook Inlet-origin fish again rises in the second period to nearly 42%, and remains high at 28% in the third period (Tables 47, 48, and 49). A person focusing on the similarities would note that the second sampling period for this district was consistently high in all three sampled years, and that is correct. However, someone focusing on the large year-to-year variation in the proportion of Cook Inlet-origin fish would correctly point out that with three data points it is premature to speculate that this pattern will continue into the future.

Final Comments

The Shedd et al. (2016) report is generally well written, organized, and it offers a reasonable amount of specific details about the actual genetic and statistical analyses. While it is impossible to judge the care, attention to detail, and technical skill that actually went into actual genetic analysis from the written page, the report demonstrates a great deal of

technical sophistication. The sections on "Laboratory Quality Control" appears to demonstrate that the authors did take reasonable care to detect and report on obvious mistakes. The Alaska Department of Fish and Game's Gene Conservation Lab has an excellent reputation for this kind of work. It would be extremely surprising to find that many, if any, outright mistakes were made in either the genetic or the statistical analyses.

The estimates in the Shedd et al. (2016) report seem quite reasonable. Catches were generally dominated by fish that originated within the Kodiak Management Area. Although there are some exceptions, a finer-scale examination shows catches were generally dominated by stocks that originated near the area of harvest. The Shedd et al. (2016) report is technically sophisticated and it contains features that we have found are indicative of a study that is carefully conducted. We found no reason to think that there were any large inaccuracies in the study, and the reported measures of precision provide evidence that the reported estimates are trustworthy and suitable for their intended purposes.

Finally, we note that the estimated harvest rate on Cook Inlet-bound sockeye salmon were below 10% in each year, and substantially below 10% in one year. These harvest rates generally agree with what previous, less accurate studies, have suggested. However, with only three years of measurements, with a large fraction of the catch not sampled, and with large annual variation in those measurements (much larger than the error obtained from the credible intervals), it is very hard to conclude that these results bracket the range of what to expect if the study were to be repeated, or to conclude that these results represent what would happen in a "typical year" (if there ever is such a thing). We recommend that the genetic analyses in this study be conducted to better understand the apparently real variation in stock contribution estimates (both rates and harvests).

These estimates in Shedd et al. would have been more useful for policy discussions if they could be recast in terms of harvest rate rather than contribution rate. In fairness, we note that this was not one of the stated goals for the study, but this appears to be a subject that needs to be addressed in the future. We have tried to crudely approximate the harvest rate using information that was easily accessible to us. While our specific harvest rate estimates can be easily criticized, it is clear that the harvest rate was probably much less than 10% in most study years and almost surely less than about 15% in each year of the study. In the future, we recommend sampling in some of the time and area strata that were not sampled in 2014–2016, or else we recommend some discussion of why specific time-area strata can be assumed to have very low contribution rates for stocks outside the Kodiak Management Area.

Acknowledgments

We thank Heather McCarty for her help in proposing this review and guidance into the scientific and management issues involved.

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Appendix A – Biographical Statements for the Authors

Harold J. Geiger is the chief scientist for the St. Hubert Research Group, a small consulting company in Juneau, Alaska. He previously worked for the Alaska Department of Fish and Game, holding several positions on the salmon research staff of the Division of Commercial Fisheries before retiring in 2007. He held the position of Chief Biometrician in the late 1990s and was the Salmon Research Supervisor for the Southeast Region in the early 2000s. He holds a Master's degree in Statistics from Oregon State University and a PhD from the College of Fisheries and Ocean Sciences at the University of Alaska Fairbanks.

Terrance J. Quinn II, Ph.D. has been Professor of Fish Population Dynamics in the Fisheries Department, College of Fisheries and Ocean Sciences, University of Alaska Fairbanks for 32 years. He obtained his Ph.D. in Biomathematics from the University of Washington in 1980. Dr. Quinn's research focuses on fish population dynamics; estimation of fish and whale abundance; sampling theory; and renewable resource management systems. He is the co-author or co-editor of 4 books and over 100 scientific publications and has shepherded about 40 students through their post-graduate careers. He has been a member of the Statistical and Scientific Committee of the North Pacific Fishery Management Council since 1986 and was a former chair of that body. He is a former member of the Ocean Studies Board of the National Academy of Sciences and served on five of their committees, including two as chair or co-chair. He is an Associate Editor of the Canadian Journal of Fisheries and Aquatic Sciences.

Appendix B: Some Comments on Stock Mixture Analysis

The earliest techniques for developing these estimates were based on simply capturing migrating salmon, tagging them with a visible tag, and then looking for the tags on spawning fish. By comparison, this is a crude technique as it is hard or even impossible to control for how much effort went into looking for tags. That is, a stock with a small contribution to the mixture could result in a large fraction of the recovered tags if, for example, there was a counting weir on the spawning stream of that stock.

A technique that is somewhat more sophisticated is based on an analysis of scale patterns, and this technique was used extensively in the 1980s and 1990s. The technique was based on the assumption that fish originating from different systems had different growth patterns,

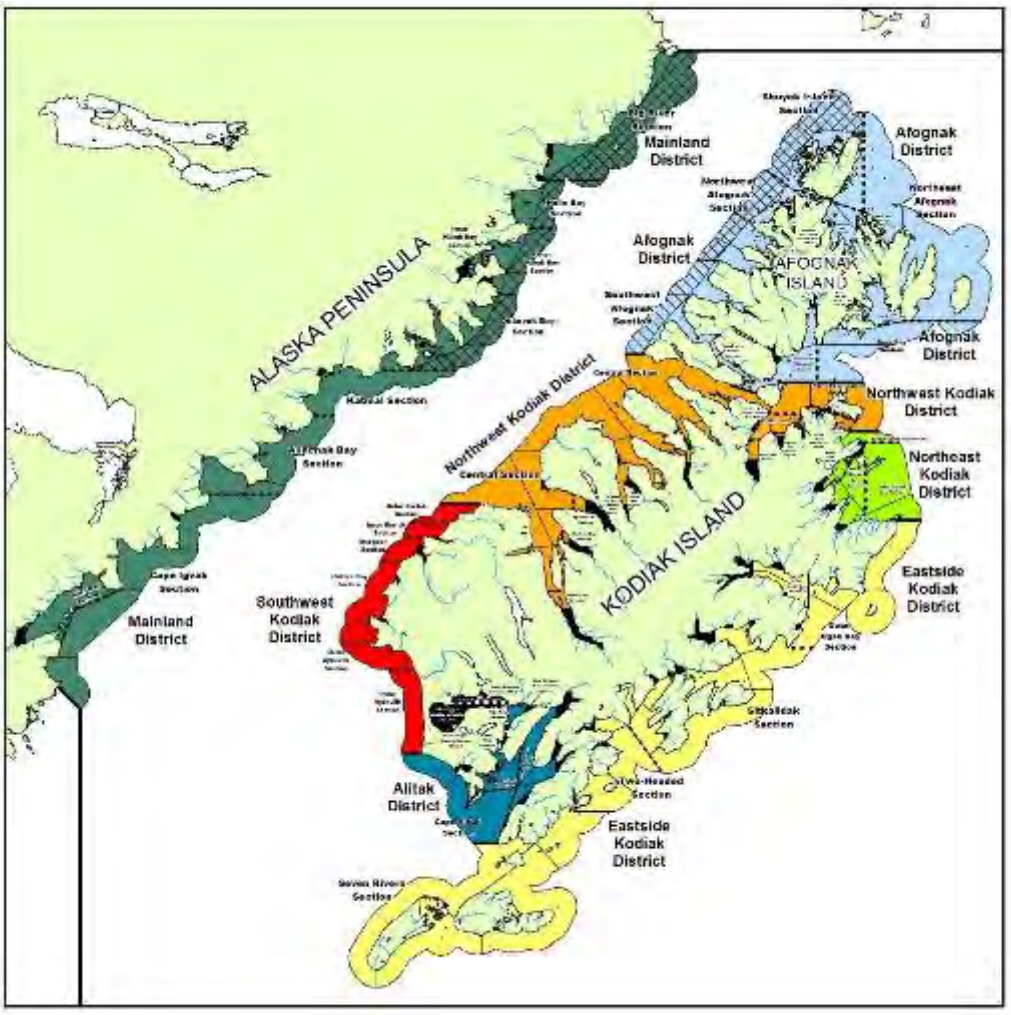
which would be represented on the scales of the fish. A large sample of scales needed to be collected for each stock, each year. Then a very large (often over 100 measurements) can be used to characterize the scale pattern for that stock, as the growing conditions that affect the scale patterns change from year to year. A complex statistical algorithm (called a linear discriminate function) is used to look for the specific measurements that show the most differences among stocks. The results from this discriminate function can then be used to classify fish in the fishery mixture to the stock that most likely produced it.

In Lynn Canal in Southeast Alaska, scale patterns were used to estimate the proportions of Chilkat and Chilkoot Lake sockeye salmon in a mixture to both actively manage a gillnet fishery during the fishing season and to study the productivity of the stocks after the fishing season. This was an ideal situation as the number of stocks was small and the patterns were quite different. As the number of stock in the mixture increased beyond just a few, or as the growing conditions among the stocks were more similar, scale pattern analysis estimates become uncontrollably imprecise, and the accuracy of the estimates would also degrade.

In the 1990s, genetic tools showed obvious advantages over other techniques. The first genetic techniques are sometimes called the allozyme techniques. Although these were time consuming and expensive, one of the main advantages was the individual stocks no longer needed to be characterized each year, as the genetic character of the stock changed slowly, if at all. Later, microsatellite techniques replaced allozyme techniques for a number of technical reasons. Finally, the SNP (Seeb et al. 2011) approach, used in this study, is usually thought of as the current state of the art and most cost-effective method of conducting a complex stock mixture analysis.

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Gulf of Alaska Climate Conditions and Sockeye Salmon

Run Timing During 2014-2016

Report to the Kodiak Salmon Work Group

Michael A. Litzow, PhD

Executive Summary

During 2014-2016, staff from the Alaska Department of Fish and Game sampled sockeye salmon in Kodiak Management Area commercial catches to estimate stock-specific contribution rates to the fishery (Shedd et al. 2016). The authors of that report cautioned that "these analyses represent environmental and fishery conditions during a specific period of time…caution must be exercised when extrapolating the results to years, areas, and temporal periods not analyzed because changes in relative abundance among reporting groups, prosecution of fisheries, or migratory behavior due to ocean conditions very likely affect distribution of stock-specific harvests among fisheries" (p. 23).

The current report[2] evaluates the conditions during the years of the genetics study (2014-2016) in order to summarize how well that study may represent "typical" conditions for Gulf of Alaska sockeye runs. The specific goals of this report are to 1) review the state of ocean climate conditions during 2014-2016, 2) evaluate the evidence for effects on sockeye salmon migration and run timing during these years, and 3) summarize implications for applying the findings of the Shedd et al. (2016) genetics study as justification for making changes to sockeye salmon fisheries management in future years.

The primary findings of this work are as follows:

1. **The "Warm Blob" climate event dramatically affected ocean physics across the North Pacific during 2014-2016.** These years were characterized by unprecedented climate conditions in the Gulf of Alaska. Sea surface temperatures and air temperatures were at or beyond previously-observed maxima. River temperatures in South Central Alaska were also higher than ever observed, and river flow volumes were unusually low. Summer sea level pressure was unusually high, which led to reduced wind mixing of ocean water.
2. **Many unusual ecosystem responses were observed in the Gulf of Alaska during 2014-2016**, highlighting the strong effects that unusual climate conditions had on populations and communities at all taxonomic levels, from plankton to fish, seabirds, and marine mammals.
3. **Sockeye salmon showed unusual run timing during 2014-2016.** Catches and escapement were later than usual in many areas, both in Kodiak and Upper Cook Inlet. At the same time, some runs, such Kasilof River sockeye, were earlier than usual. Since no data on at-sea migration patterns of sockeye salmon are available for these years, these findings provide the best available information concerning sockeye salmon migration during 2014-2016, and suggest the possibility for unusual patterns of stock mixing.
4. **Unusual sockeye run timing is directly linked to unusual climate conditions.** The link between climate conditions and run timing is highly nonlinear and accelerating. In general, warmer conditions and increased atmospheric pressure during 2014-2106 were directly related to a tendency towards later overall run timing in sockeye salmon, although some runs were also unusually early.
5. **The rate of physical and biological change currently occurring in the Gulf of Alaska is unprecedented, and suggests the need for caution when re-evaluating long-standing management practices based on a few years of data.** Biological responses to climate disturbance are complex and often time-lagged. The trajectory of fisheries change in the Gulf

[2] See Appendix A – Biographical Statement

of Alaska is therefore impossible to predict, but given the size of the ongoing climate disturbance, the full range of fisheries responses has likely not yet played out. Data from 2014-2016 are likely to be a snapshot of a rapidly changing system, and given the potential impacts of physical conditions on stock mixing, are likely to quickly become outdated as unusual climate conditions continue.

Conclusion: The Gulf of Alaska is currently undergoing rapid change outside the envelope of historical conditions. In this situation, the ability of data from 2014-2016 to serve as a reliable guide for future conditions is highly questionable. These considerations are exactly in line with the caution provided by Shedd et al. (2016) concerning the use of their data in situations materially different from those under which the study took place, and suggests the need for a precautionary approach to possible management changes based on these results.

Background

Unprecedented high atmospheric pressure over large areas of the North Pacific in winter 2013-14 led to reduced wind mixing and Ekman transport, so that normal ocean cooling at the end of summer failed to occur. This event persisted into 2016, and became known as the "Warm Blob" (Bond et al. 2015). In terms of duration, size of area affected, and degree of warming involved, this event became the strongest marine heatwave ever observed globally (Di Lorenzo and Mantua 2016, Hobday et al. 2018). In the Gulf of Alaska, temperatures during 2014-2016 were by far the highest in the historical record (Fig. 1). After a hiatus in 2017, unusually warm temperatures returned in 2018-2019, and warm temperatures are expected to intensify over coming decades (Walsh et al. 2018). The best scientific understanding is therefore that the Gulf of Alaska is entering a period of persistent change.

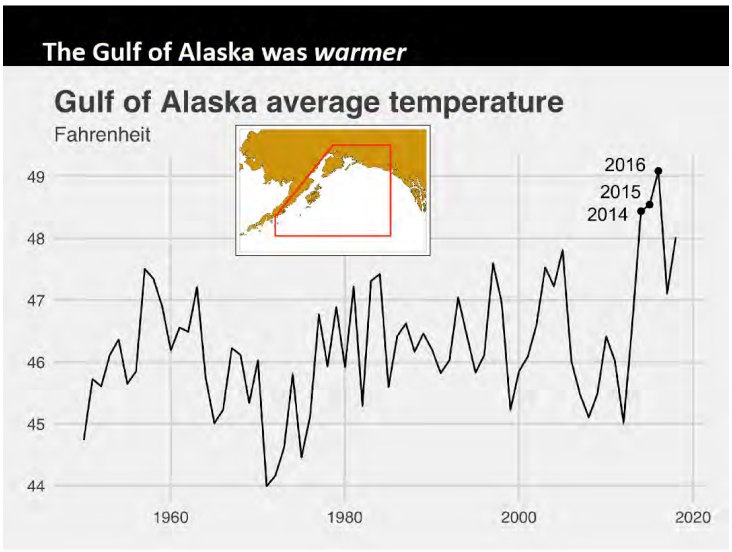


Fig. 1. Gulf of Alaska sea surface temperature (annual means), 1950-2018. Data from NOAA Extended Reconstructed SST v5.

A suite of other highly unusual climate conditions also occurred during 2014-2016 in the Gulf of Alaska. These included air temperatures and river temperatures that were at or above previous historical record high values (Fig. 2). And, in line with the high atmospheric pressure that was the immediate cause of the Warm Blob event across the North Pacific, atmospheric pressure at sea level was generally elevated over the Gulf of Alaska during 2014-2016 (Fig. 3). This high atmospheric pressure was associated with unusually weak wind mixing and wind-driven currents in the Gulf of Alaska ecosystem.

Salmon migration patterns are known to be highly sensitive to physical factors such as ocean temperature, ocean currents, river volume and river temperature (Quinn and Adams 1996, Hodgson and Quinn 2002, Hodgson et al. 2006). Sockeye runs in Cook Inlet are particularly prone to shared patterns of variability in run timing – in other words, unusual migration behavior tends to affect runs across Cook Inlet as a group (Hodgson et al 2006). Given the known sensitivity of salmon migration behavior to physical conditions, the climate event in the Gulf of Alaska has important potential implications for changing patterns of stock mixing in sockeye salmon.

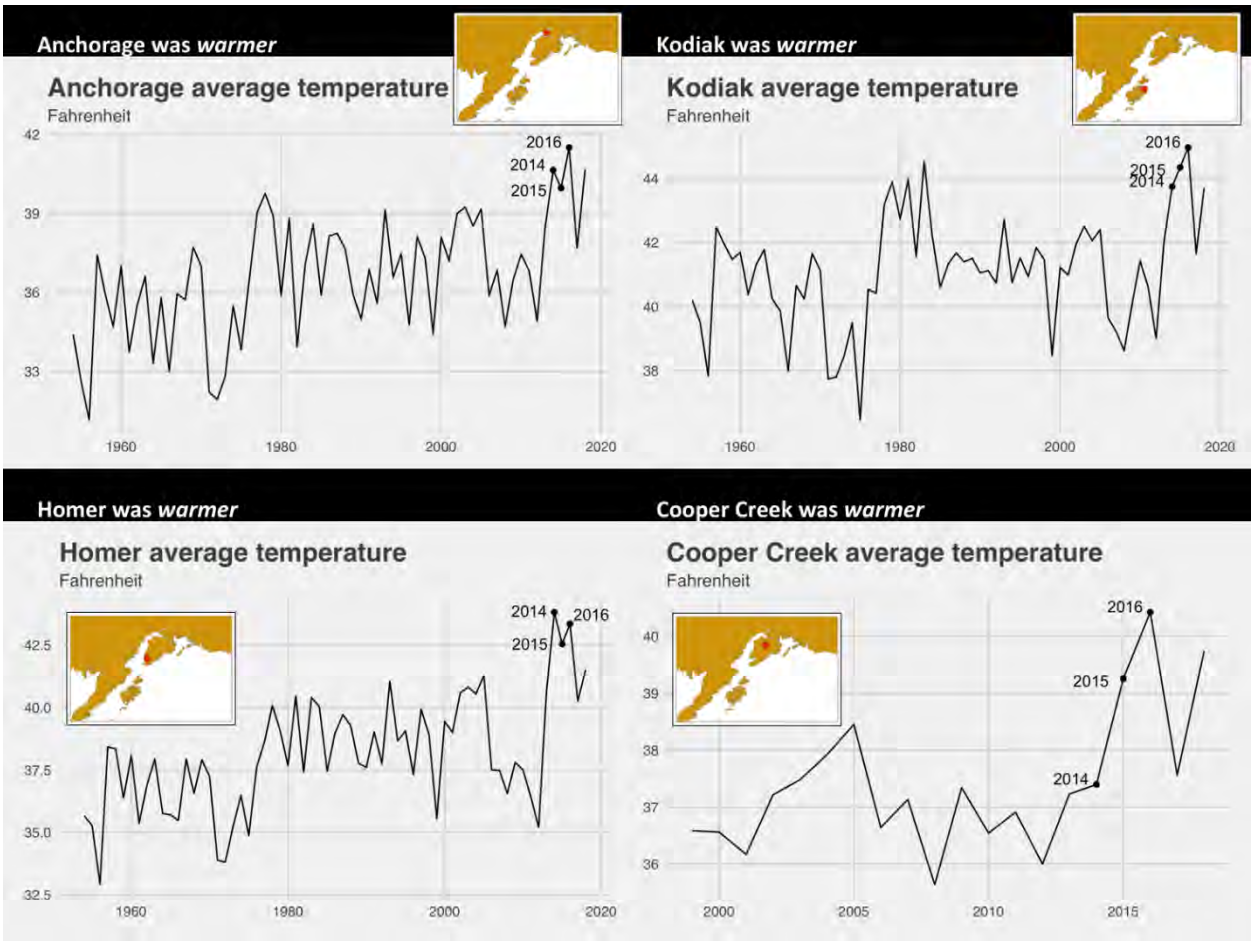


Fig. 2. Unusual air and river temperatures in Southcentral Alaska during 2014-2016.

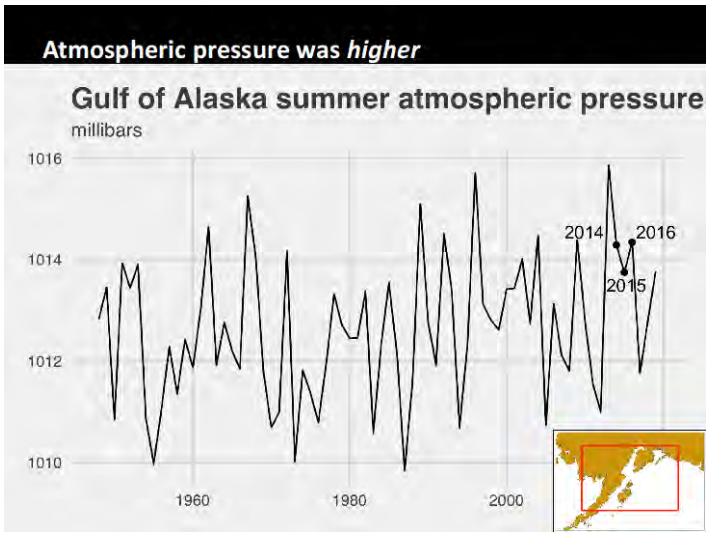


Fig. 3. Summer atmospheric pressure over the Gulf of Alaska, 1950-2018.

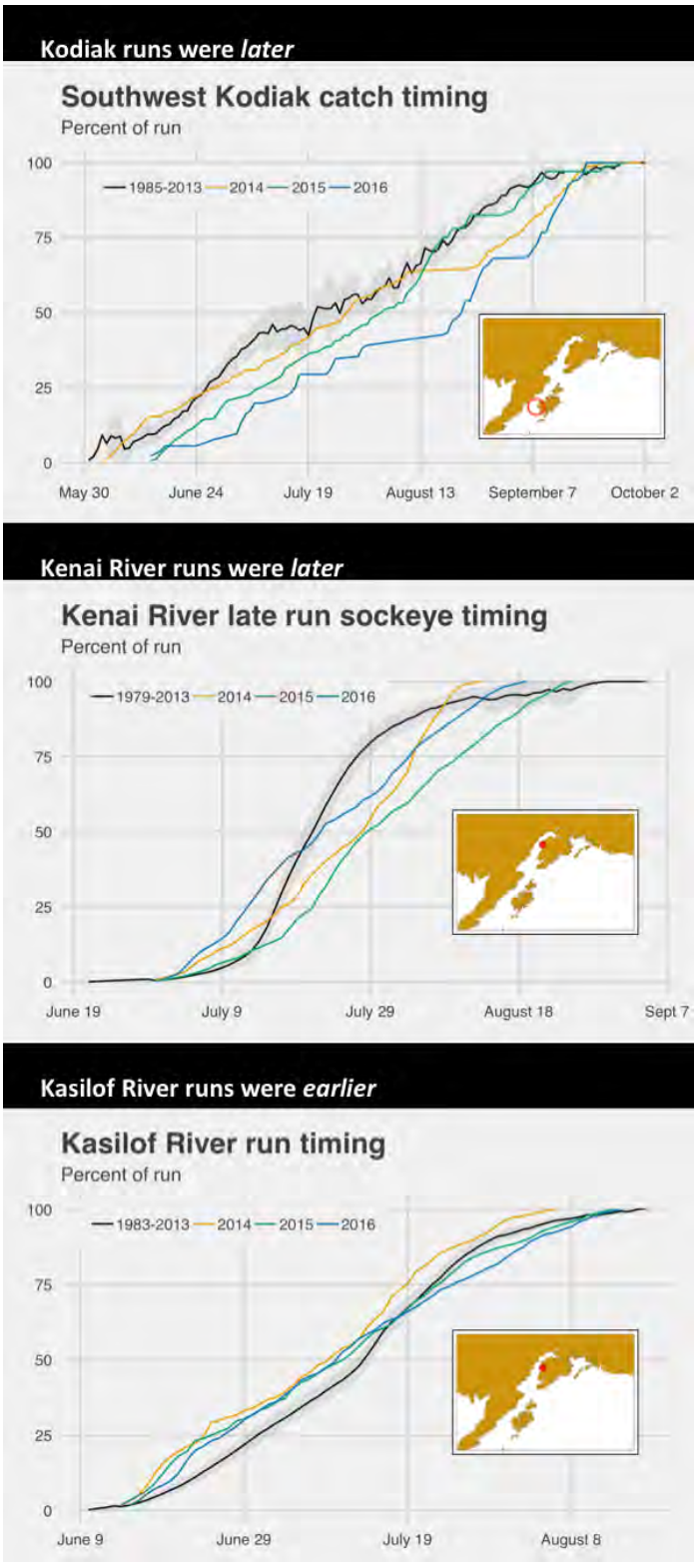


Fig. 4. Run timing of Southwest Kodiak, Kenai River, and Kasilof River sockeye salmon during 2014-2016 compared to long-term means.

Linking Ocean Temperate and Sockeye Run Timing

At-sea migration patterns in salmon remain poorly understood, and no data are available concerning the distribution and timing of Gulf of Alaska sockeye salmon returning to natal rivers during the period of interest. However, extensive records are available for the timing of commercial catches and escapement for important stocks, and these data provide the best available information for understanding recent changes in sockeye migration. Sockeye salmon run timing was estimated for this report with data on both escapement from a variety of Gulf of Alaska runs, as well as commercial catch data from both Upper Cook Inlet and the Kodiak Management Area (details in Data Sources and Methods). Several important sockeye runs showed run timing during 2014-2016 that was highly unusual when compared to long-term means (Fig. 4), suggesting that the unusual climate conditions during these years affected sockeye migration patterns.

In order to formally analyze the relationship between climate conditions and run timing, data were standardized across different long-term time series by calculating the day of the year in which 50% of the total run (catch or escapement) had occurred in each year (Quinn and Adams 1996). A Dynamic Factor Analysis (DFA) model was then used to summarize variability across the many different run timing information sources (Zuur et al. 2003). This DFA model showed evidence of shared variability (positive loadings) for Southwest Kodiak catches and Kasilof and Kenai River escapement. A variety of other data sources had weaker loadings on the shared trend (Fig. 5). The shared trend of variability in run timing showed an increasing trend since the early 2000s, with a further step increase beginning around 2014 (Fig. 6). Positive values in this

shared trend indicate a change towards later runs in time series with positive loadings, and earlier runs in time series with negative loadings.

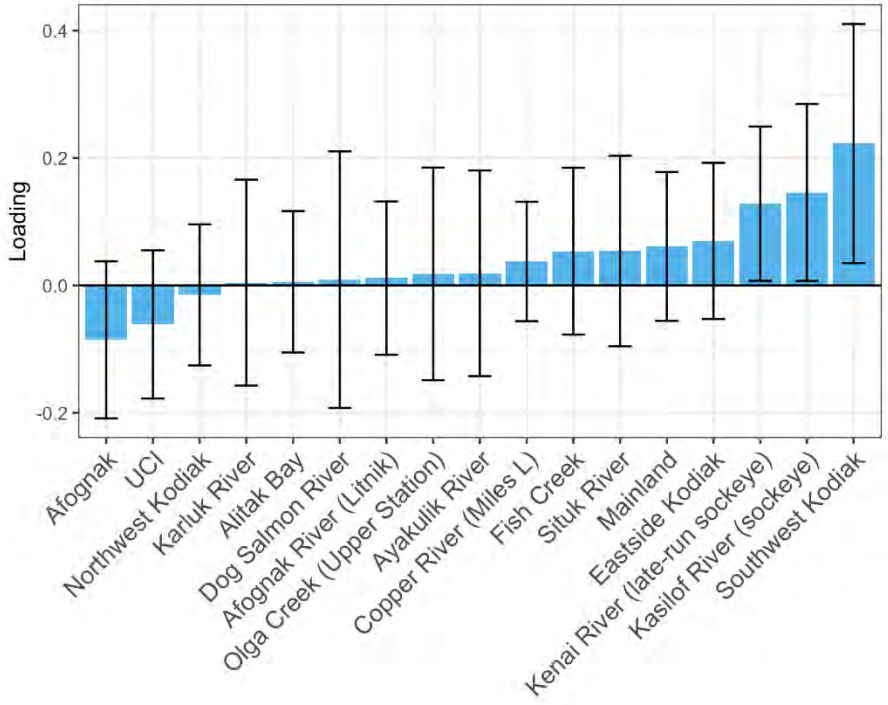


Fig. 5. Dynamic Factor Analysis summary of Gulf of Alaska sockeye salmon run timing, 1978-2019. Loadings on individual escapement and catch time series (day of year when 50% of run has occurred in each year, estimates with 95% confidence intervals). Time series with positive loadings are later when shared trend goes up; time series with negative trends are earlier when the shared trend goes up. UCI = = Upper Cook Inlet total commercial catch.

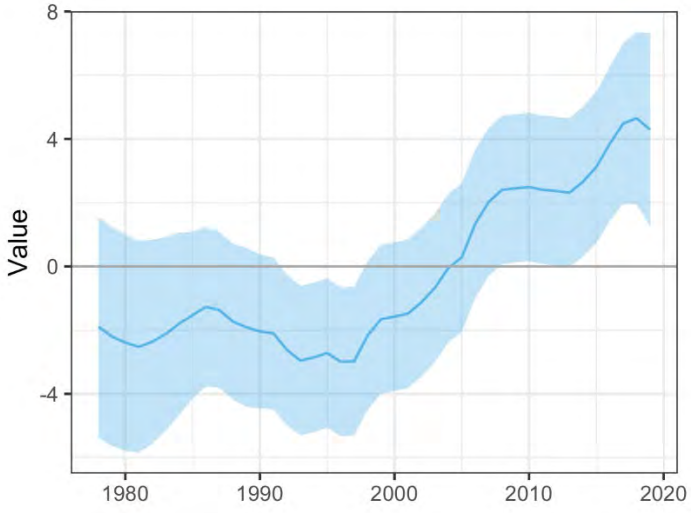


Fig. 6. Shared trend in sockeye run timing (estimate and 95% confidence interval) from DFA model. Value of 0 indicates average overall timing.

A variety of different Gulf of Alaska climate variables may influence sockeye salmon run timing, including sea surface temperature, sea level atmospheric pressure, river temperature, and river flow. A DFA model was again used to summarize variability across these different climate variables. This DFA model summarized overall climate variability as a combination of positive loadings for a range

of air, sea, and river temperature time series, and negative loadings for stream flow in Cooper Creek (Kenai River drainage) and Willow Creek (Susitna River Drainage; Fig. 7). In other words the model captures the tendency for temperatures at different sites to vary together, and for stream flow at those two Southcentral Alaska sites to decline in warm conditions. The shared trend of climate variability from this DFA model clearly shows the transition to extreme conditions since 2014 (Fig. 8).

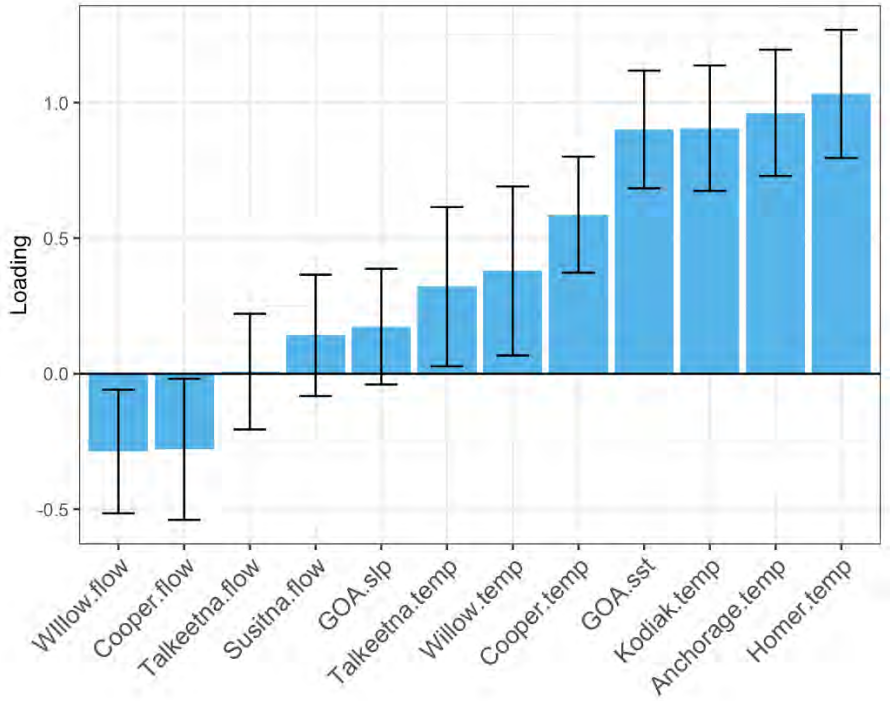


Fig. 7. Dynamic Factor Analysis summary of Gulf of Alaska and South-Central climate, 1978-2019. Loadings on individual climate time series (estimates with 95% confidence intervals). Time series with positive loadings go up when the shared trend goes up; time series with negative trends go down when the shared trend goes up. GOA.slp = Gulf of Alaska sea level atmospheric pressure, GOA.sst = Gulf of Alaska sea surface temperature.

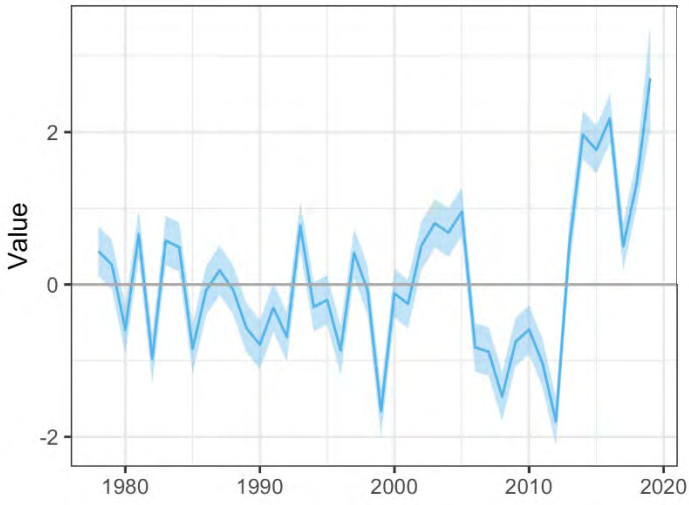


Fig. 8. Shared trend in climate variability (estimate and 95% confidence interval) from DFA model. Value of 0 indicates average conditions.

These results confirm that overall trends in both overall sockeye run timing (Fig. 6) and overall climate conditions for sockeye (Fig. 8) have been at unprecedented levels since 2014. The next step of the analysis is to evaluate the evidence that the two trends are related. An initial examination of possible driver-response relationships with a scatter plot of annual values in the climate trend and the sockeye run timing trend suggests a highly nonlinear relationship, with two distinct clusters of observations in the 1978-2019 time period (Fig. 9). This initial result suggests the possibility of two overlapping mathematical functions describing climate effects on salmon, occupying different parts of the time series. This kind of complex driver-response relationship, sometimes referred to as "alternative stable states" is a common feature of ecosystems experiencing disturbance from external factors such as climate change (Scheffer et al. 2012, Litzow and Hunsicker 2016). *This scatter plot also illustrates the highly unusual nature of the 2014-2016 period for both climate conditions and sockeye run timing: both quantities were at unprecedented levels in 2014-2016.*

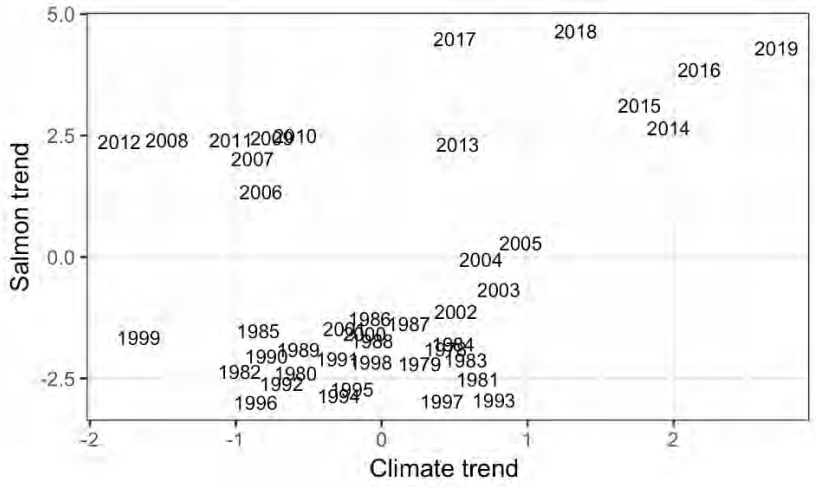


Fig. 9. Time series of climate conditions (shared trend from climate DFA model; driver variable) and sockeye run timing (shared trend from salmon DFA model; response variable).

The next step in this analysis was to test for meaningful relationships between sockeye run timing and climate state. This part of the analysis answers the question of whether there is evidence that run timing is responding to changes in the climate. This analysis used Bayesian linear regression models to determine if the slope of sockeye run timing on the shared climate trend (unit change in run timing per unit change in climate) is different from zero. These models do support the hypothesis of a meaningful relationship between climate state and run timing with an estimated slope that is clearly different from zero. These models also indicate that the relationship is strengthening over time (increasing intercept since the early 2000s (Fig. 10).

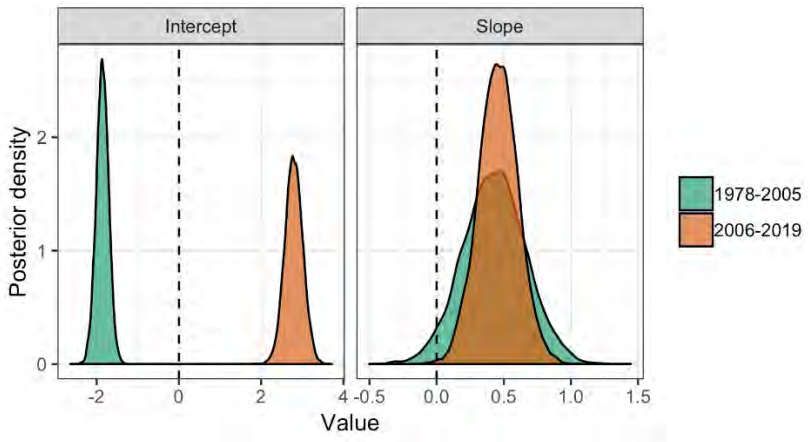


Fig. 10. Era-specific relationships between shared climate trend and shared trend in sockeye salmon run timing: posterior distributions for intercept and slope from Bayesian linear regression fit separately to data from 1978-2005 and 2006-2019.

As noted earlier, this kind of time-dependent driver-response relationship is a common feature of ecosystems experiencing external forcing (Scheffer et al. 2012), especially in instances of changing climate variables (Wolkovich et al. 2014). However, the causes of this kind of complex, nonlinear relationship are typically very difficult to determine, and understanding the apparent jump in sockeye response to climate forcing is beyond the scope of this report. What is apparent is the effect of the simultaneous change in run timing and climate: 2019 was the most extreme year on record for the climate trend, and 2017-2019 were the most unusual years on record for the shared trend in sockeye run timing, with 2014-2016 close behind (Fig. 9). In addition, a sensitivity analysis shows that similar results were obtained when only escapement time series were analyzed, indicating that management changes to catch timing do not explain changing run timing in recent years (results not shown).

Ecosystem Context

In addition to the unusual sockeye run timing noted above, a wide range of ecosystem responses to unusual climate conditions have been noted since 2014 in the Gulf of Alaska. These include the largest-ever observed mass mortality event for common murres and a variety of other chronic seabird mass mortality events; acute and chronic production of neurotoxins by harmful algal blooms (McCabe et al. 2016, Roggatz et al. 2019); significant mortality in humpback whales; unprecedented irruptions of pelagic colonial tunicates (*Pyrosoma* sp.); fisheries failures for Pacific cod and pink salmon; unusual patterns of primary productivity (spring blooms that are unusually early and small; Litzow et al. in prep), and shifts in zooplankton abundance and community structure (Litzow et al. in prep.). Taken together, these responses underscore the unusual nature of both the initial 2014-2016 Warm Blob and subsequent years, and the potential for continuing ecological change as long as the current warming event lasts.

Implications for Management

A very high degree of uncertainty currently attends ecosystem status in the Gulf of Alaska, both for the specific question of sockeye run timing and stock mixing, and for broader questions of stability in the ecosystem and fisheries. While the 2014-2016 return years were highly unusual for sockeye run timing as measured by the shared trend of run timing variability, even these extreme values have been exceeded during 2017-2019 (Fig. 3b). Given that biological responses to ecosystem perturbations such as climate forcing are complex and often lagged in time (Frank et al. 2011, Hughes et al. 2013), and that climate conditions have again returned to levels commensurate with those seen in 2016, the full scope of biological consequences of the current climate event has likely not yet become apparent. *In this situation of rapid change outside the envelope of historical conditions, the ability of data from 2014-2016 to serve as a reliable guide for future conditions is highly questionable.* The speed of change currently occurring in the Gulf of Alaska underscores the caution provided by Shedd et al. (2016) concerning the use of their data in situations materially different from those under which the study took place, and suggests the need for a precautionary approach to possible management changes based on these results.

Data Sources and Methods

Sea surface temperature data were extracted from the NOAA Extended Reconstructed Sea Surface Temperature data set (ncdc.noaa.gov). Sea level pressure data come from the NCEP/NCAR Reanalysis (esrl.noaa.gov). River temperature and river flow data come from the US Geological Survey (waterdata.usgs.gov). Air temperature data come from the Alaska Climate Research Center (climate.gi.alaska.edu). Data on sockeye run timing come both from escapement counts and commercial catch data obtained from ADF&G (adfg.alaska.gov). DFA models were fit following the recommendations of Holmes et al. (2018). Bayesian regression models were fit following the recommendations of Gelman et al. (2014).

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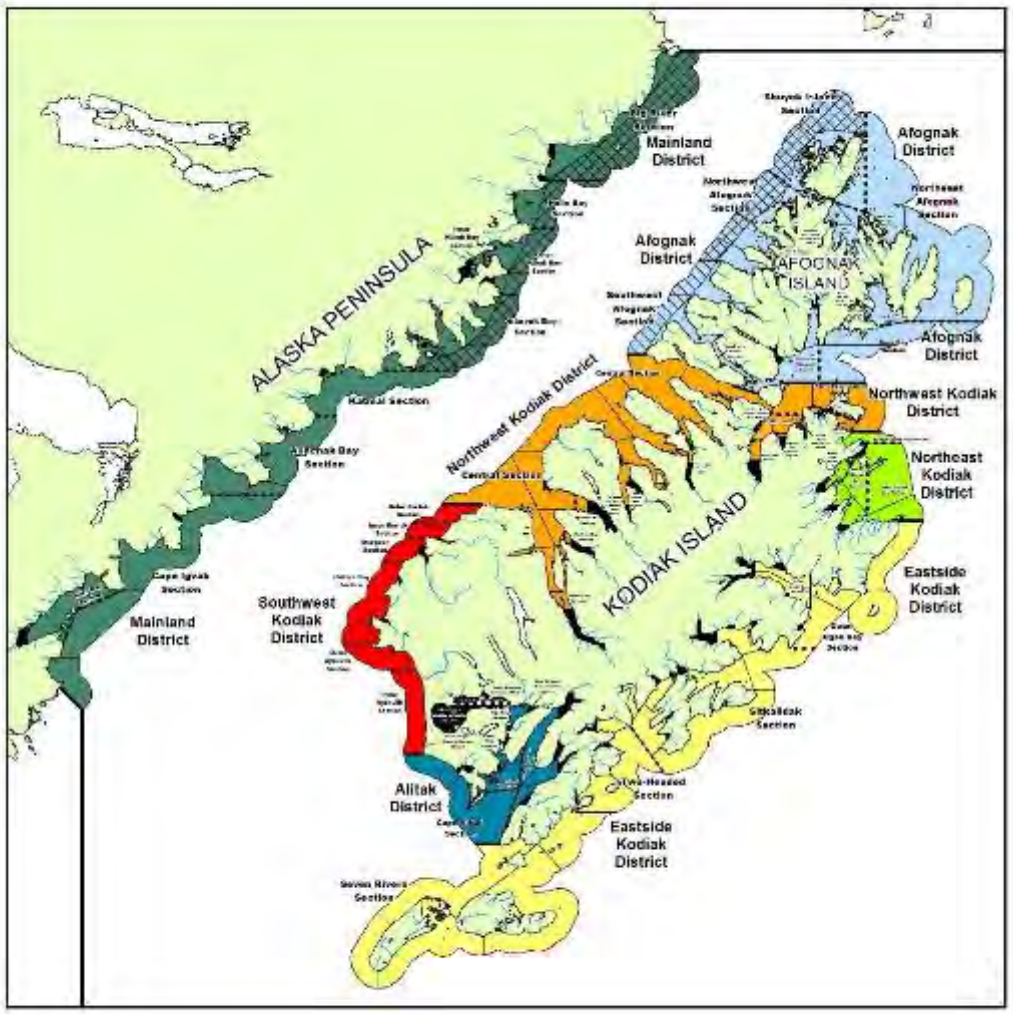
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Appendix A – Author's Biographical Statement

Dr. Michael Litzow is a fisheries oceanographer who studies the impacts of climate variability and climate change on commercially important fish stocks in Alaska. He obtained his B.S. in Biological Sciences from the University of Alaska, Fairbanks, his M.S. in Marine Science from the University of California, Santa Cruz, and his Ph.D. in Ocean Sciences from the University of Tasmania, Australia. Dr. Litzow's recent research has focused on the effects of changing ocean climate on Gulf of Alaska salmon stocks. His previous research has involved a variety of taxa, including groundfish, crabs, shrimp, herring, other forage fish, and seabirds, and he is the author of thirty peer-reviewed papers. Dr. Litzow is the owner of Blue World Research, a private consulting firm, and until recently was a research faculty member at the University of Alaska, College of Fisheries and Ocean Sciences.

December 2019



Synthesis of Chinook Salmon Stock Contribution Estimates within the Kodiak Management Area **Commercial Salmon Fisheries (Proposals 63 & 37)**

Kodiak Salmon Work Group

EXECUTIVE SUMMARY

- During all years and sampling periods regardless of the commercial salmon fishery district sampled, British Columbia (hatchery stocks) Chinook salmon dominated the

stock composition of the harvest. Estimates of contribution ranged from a low of 30% to a high of 70% with respective harvests of several hundred to several thousand fish.

- Consistently, contributions from Washington and Oregon Chinook stocks (Western US stocks) to the KMA commercial harvest ranged from 7.3% to 37% and averaged 28%.

- Contributions from Southeast Alaska/North Gulf Coast were in most cases higher than the combined contributions from both Kodiak and Cook Inlet. The estimates generally seemed to be reflective of periods of higher (1997-1999) and lower abundance (2014-2016) for Southeast Alaska stocks.

- The capability of any marine salmon fisheries sampling program to consistently estimate the harvest, in a timely manner, of at most several hundred fish over a commercial fishing season within the geographic scope of the Kodiak Management Area is untenable. Given the current status of both the Kodiak and Cook Inlet Chinook salmon stocks at present, the actions suggested by Proposal 37 are unwarranted.

- It should be noted that for the Cook Inlet stocks harvested within the Kodiak Management Area, a majority are hatchery fish produced for marine or in-river sport fisheries.

- The Chinook salmon stocks contributing to the Kodiak Management Area commercial fishery are similar to those contributing to most of the marine commercial and recreational fisheries from Yakutat to Adak, or coastwide.

INTRODUCTION

The Kodiak Management Area and the associated salmon fisheries has a long and storied history of sustainable fisheries management success. A foundational feature for this success is the escapement enumeration program using weirs and counting individual fish as they migrate upstream. This program has largely been in place since the early 1900s with weirs operated annually on the Karluk, Ayakulik and Frazer lake systems. Daily and cumulative escapement counts are relayed to the area management office for each system and when combined with other sources of data: harvests, aerial survey index counts (for systems without weirs), fishing effort along with additional biological data (timing, migration patterns, age composition) are all sourced into fishery management decisions and emergency orders to open or close districts, sections and subsections of fishing areas throughout the salmon fishing season. An additional vital feature of this program is the inclusion of enclosures or “traps” that allow for live sampling of the escapement, specifically for sockeye and Chinook salmon and the collection of biological attribute data (age, sex, length) which is imperative for building brood tables which in turn are employed for establishing and evaluating biological escapement goals and generating pre-season forecasts.

An additional prominent feature of the Kodiak Management Area salmon fisheries are the 7 management plans which guide management of the salmon stocks and species during the salmon

fishing season which commences in early to mid-June and extends into late September. The management planning process was largely initiated in the mid to late 1970s which was a period of extremely poor salmon production throughout the entire Kodiak Archipelago and was cause for multiple years of limited commercial fishing by all gear groups with the overall objective of rebuilding wild salmon stocks. These management plans were the result of extensive efforts by ADF&G management and research biologists, commercial fishermen, the local fish and game advisory committee and ultimately the Alaska Board of Fisheries over multiple triannual meetings (Malloy, 1988).

Description of Kodiak Chinook Salmon Fishery

The Kodiak Island area has two wild chinook salmon stocks (Karluk and Ayakulik Rivers) and one introduced run which originates in the Dog Salmon River. There have also been several hatchery produced chinook release sites permitted that promote road accessible shore/boat recreational fisheries. The commercial seine and set gillnet fisheries harvest Chinook salmon incidentally while targeting local sockeye, chum and pink salmon stocks along nearshore migration pathways. The harvests typically occur during June and July and at times the harvests can consist of immature or feeder Chinook that are traversing well established commercial fishing areas in the Westside, Southwest and Alitak Districts. The record commercial harvest of 42,000 fish in 1993 consisted of large numbers of immature/feeder kings and stimulated concern from the recreational sector within the Cook Inlet area that large numbers of the harvested fish were of Cook Inlet origin. The harvest during 1993 was almost twice the previous high estimate of 24,000 fish, which occurred in 1992. As a back drop to this concern, several chinook salmon stocks within Cook Inlet were experiencing poor production (Deshka and Early Run Kenai R.) while simultaneously there was a serge in production from stocks originating in British Columbia, Washington and Oregon which were largely of hatchery origin; a portion of these hatchery fish were marked with a coded wire tag and missing the adipose fin (Swanton, 1997). There are several hatchery stocks in Cook Inlet that were marked and could thereby serve for detecting the presence of these stocks in the Kodiak Fishery. A pilot commercial catch sampling program was initiated in 1994 (Swanton 1997) and was followed by a focused interdivisional sampling and harvest estimation program for the years 1997-1999 (Clark and Nelson 2001). A more contemporary and comprehensive genetic stock identification (GSI) program was conducted for the years 2014-2016 and generally corroborated previous results (Shedd et al. 2016).

North American Chinook salmon Ocean Migrations

There are literally hundreds of Chinook Salmon stocks spanning the Coastline from Oregon, Washington, British Columbia and throughout Alaska from Southeast and along the Alaska Peninsula; these stocks are often referenced as far north migrating stocks, as opposed to stocks that have more localized or truncated ocean migrations. With the advent of Coded Wire Tagging (early 1970s) coupled with extensive High Seas Tagging (conducted throughout the North Pacific) and scale pattern analyses efforts conducted by the University of Washington much insight was gleaned regarding migration patterns along coastal and open ocean migration routes. Substantial increases in hatchery production of Chinook salmon in Oregon, Washington and British Columbia occurred in the early 1990s which resulted in a surge in coastwide abundance. Much of the increased hatchery production was in response to poor production from wild stocks, compensation for habitat destruction, tribal agreements, hydroelectric dam impacts or mitigation owing to wild stock endangered species act (ESA) listings.

Coastwide abundance of feeding/rearing Chinook increased markedly and harvests of Chinook increased both within Alaska's commercial and recreational coastal marine fisheries as well as bycatch of chinook in federal fisheries operating in the Gulf of Alaska. The Pacific Salmon Treaty between the United States and Canada governs harvests of these stocks throughout Southeast Alaska (Ketchikan to Yakutat) where jurisdiction between the parties ends. The harvest of these stocks throughout the remainder of the Gulf of Alaska is viewed with recognition that they originate in other states or British Columbia and harvest should be limited or constrained where appropriate. This has been the policy direction followed by both ADF&G and the Alaska Board of Fisheries certainly within the last 10-15 years and pertains to Kodiak, Kachemak Bay and Homer spring and winter recreational fisheries and both commercial and recreational fisheries prosecuted in Prince William Sound.

Data Summaries by Year

(Swanton, 1997) Caution is suggested relative to these estimates owing to low marking fractions and less than optimum temporal and spatial sampling coverage**.**

1994

The two Kodiak commercial fishing areas where CWT sampling occurred (Westside and Alitak Districts) experienced a commercial harvest of 5,089 Chinook salmon (80% CI 2,927-7,253 fish) from marked cohorts which represented 32.5% of the sampled harvest. The stock groupings represented by the tag recoveries were: 9.7% Southeast Alaska; 83% from British Columbia; 4.9% from Washington state and 2.4% from Oregon.

From the Westside Kodiak area most of the marked cohorts were of British Columbia origin with marked fish from Southeast Alaska, Washington and Oregon also detected in lower numbers. There was an apparent temporal change in stock contribution from the week of June 12-18 which were more varied, as compared to the period June 19-25 when only British Columbia and Southeast Alaska stocks were detected. The marked cohort contribution estimates for this area spanning 12 June through 30 July was 4,655 fish (80% CI 2,517-6,793 fish) from a total catch of 14,619 fish or 31.8%.

Within the Alitak Bay District all marked fish recoveries were of British Columbia origin and represented 435 Chinook out of a total catch of 640 fish. This represented 68% of the catch during the period off sampling.

(Clark and Nelson 2001)

1997

During the 1997 Kodiak commercial salmon fishing season there were 18,728 Chinook salmon harvested with 89% of the harvest occurring during the CWT sampling period of 9 June-8 August; a majority 67% of this harvest (about 11,000 fish) took place within the Westside area. The study plan designated a sampling fraction of inspecting 20% of the observed catch for CWT's which is consistent with Coastwide sampling programs sanctioned by the Pacific Salmon Commission.

The number of Chinook salmon inspected for a missing adipose fin in1997 was 6,015 or 36% of the harvest during the sampling period; 37% of the harvest was inspected within the Westside District catch; 60% within the Alitak Bay District; sampling within the Eastside District exceeded 20% and an additional 24% (792 fish) were inspected from harvests within the Mainland fishing District.

The general stock composition from the sampled harvest was: 13% from Alaska stocks, 72% from British Columbia, 7% from Washington and 8% from Oregon Chinook stocks. The 18 tag recoveries from Alaska stocks was further broken down to include 11 recoveries from Cook Inlet: two Kenai River, three Ship Creek, three Ninilchik River, one from Deception Cr., one from Crooked R. and one from Homer Spit.

1998

In 1998 there were 17,341 Chinook harvested commercially during the sampling period 9 June-8 August with approximately 93% occurring within the Westside (including the Southwest Afognak Section and Northwest Kodiak District), Alitak Bay and Eastside Kodiak Districts. There was 53% of this harvest sampled: 45% in the Westside District, 50% in the Alitak District and 43% within the Eastside District. No samples were collected from the Mainland District as the overall catch was 393 fish.

The identified tagged fish were represented as follows: 31% (79) were Alaska stocks; 49% (125) were from British Columbia; 15% from Washington and 5% from Oregon. The Alaskan stocks originating in Cook Inlet (46 tag recoveries) were three from Resurrection Bay; 5 from Seldovia Harbor; 10 from Homer Spit; 5 from Halibut Cove; 6 from Ninilchik R., 13 from Deception Cr., one from Crooked Cr. and two from the Kenai R. The additional Alaskan stock recoveries were 9 from Southeast Alaska and 24 from the Buskin River.

1999

During the 1999 commercial salmon fishery there were 18,299 Chinook harvested which represented 94% of the harvest that occurred during the June 9-August 8 sampling time frame. About three quarters (73%) of the harvest was realized within the aforementioned fishing areas, and similar to previous years, a majority of the harvest was realized within the Westside Kodiak District. There was 46% of the harvest (7,940 fish) inspected for CWT via a missing adipose fin. Similar to the previous years 45% of the catch was from the Westside District, 41% of the Alitak Bay District. No sampling results were reported for the Eastside District, however 12% of the Mainland District (356 fish) harvest was opportunistically sampled.

There were 201 tag recoveries from the 1999 sampling effort, 124 were from the Westside Kodiak District, 10 from the Mainland District, 20 from the Eastside and three from the Alitak Bay District. There were 32% (64 tagged fish recovered) from Alaska stocks, 31% from British Columbia, 13% from Washington and 24% that originated from Oregon. There were 21 tagged fish recovered that originated from Cook Inlet stocks with distribution by area similar to 1998. The authors after consulting with fishery management staff, suggested that if any non-local stock or stock grouping was estimated to have a 10-15% exploitation rate (harvest rate applied over the entire brood year) imposed by fisheries within the Kodiak Management Area that this would be cause for concern. In addressing this, Clark and Nelson (2001) stated " Therefore, publication of imprecise, but consistently small harvests of Cook Inlet hatchery cohorts in the KMA fishery provided the best indication of the lack of importance of the KMA fishery in influencing production of chinook salmon bound for Cook Inlet."

(Shedd et al. 2016)

This study employed genetic stock identification techniques to generate stock contribution estimates for chinook salmon harvested within both the commercial and recreational fisheries throughout the Westward Region (Kodiak, Chignik and the Alaska Peninsula Management areas). The information summarized below is only for the commercial fishery within the Kodiak

Management Area to maintain consistency in comparing other information presented within this summary. This study focused on 4 Districts/reporting areas and two temporal strata (Early: 1 June-5 July; Late: 6 July-5 August).

2014

Overall, there were 8,382 fish commercially harvested of which 3,050 fish were sampled (sampling fraction of 36.4%) for all areas and time strata. The results of GSI for the entire time and area strata were: 55.6% British Columbia, 34% West Coast US (Washington and Oregon stocks combined), 3.4% Southeast Alaska and Northeast Gulf of Alaska stocks(Southeast Alaska/Gulf Coast, 2.6% Cook Inlet, 1.9% Kodiak and 1.6% referred to as the Eastern Bering Sea stock grouping. The following are the aggregate stock composition estimates broken down by geographical and temporal strata:

Northwest Kodiak District and Afognak(Statistical Areas: 251, 253 and 254)

- Early (1 June-July 5) 72.1% British Columbia stocks, 15.7% West Coast US, 4.3% Kodiak, 2.7% Cook Inlet and 2.4% Southeast Alaska/North Gulf Coast Alaska.
- Late (July 6-August 5) 56.0% British Columbia stocks, 34.7% West Coast US, 4.6% Southeast Alaska/Gulf Coast, 2.2% Cook Inlet and 1.2% Kodiak Stocks.

Eastside Kodiak and Afognak District (Statistical Areas: 258, 259 and 252)

- Early (1 June-July 5): 51.2% British Columbia Chinook stocks, 35.3% West Coast US, 4.2% Southeast Alaska/Gulf Coast, 0.3% Cook Inlet and 4.2% Kodiak stocks.
- Late (July 6- August 5):51.7% British Columbia stocks, 37.5% West Coast US, 2.6% Southeast Alaska/Gulf Coast, 4.0% Cook Inlet and 0.1% Kodiak Chinook salmon stocks.

Southwest Kodiak Alitak Districts (Statistical Areas: 255, 256 and 257)

- Early (June 1-July 5): 51.2% British Columbia stocks, 30.8% West Coast US, 6.1% Southeast Alaska and Gulf Coast, 1.1 % Cook Inlet and 10.0% Kodiak Stocks.
- Late (July 6-August 5): 54.5% British Columbia, 39.0% West Coast US, 2.9% Southeast Alaska/Gulf Coast, 1.4% Cook Inlet and 1.0% Kodiak stocks.

Mainland District (Statistical Area 262) There was no sampling conducted for the "Early" strata during 2014.

- Late: July 6-August 5): 51.2% British Columbia Stocks, 39.5% West Coast US stocks, 4.8% Southeast Alaska/Gulf Coast, 1.5% Cook Inlet and 0.9% Kodiak stocks.

2015

During 2015 the Chinook harvest was 8,087 of which 2,775 fish were sampled resulting in a 34% sampling fraction. The estimated stock contributions for this commercial fishing season were: 51.6% British Columbia, 33.9% West Coast US, 4.9% Southeast Alaska/Gulf Coast, 4.5% Cook Inlet and 4.5% Kodiak.

Northwest Kodiak District and Afognak(Statistical Areas: 251, 253 and 254)

- Early (June 1-July 5): 54.8% British Columbia, 24.3% West Coast US, 8.5% Southeast Alaska/Gulf Coast, 6.4% Cook Inlet and 4.5% Kodiak.
- Late (July 6-August 5):52.1% British Columbia, 34.9% West Coast US, 4.9% Southeast Alaska and Gulf Coast, 4.3% Cook Inlet and 3.2% Kodiak.

Eastside Kodiak and Afognak District (Statistical Areas: 258, 259 and 252)

- Early (June 1-July 5):36.4% British Columbia stocks, 46.8 West Coast US stocks, 4.8% Southeast Alaska and Gulf Coast stocks, 7.8% Cook Inlet and 3.1% Kodiak Chinook Stocks.
- Late (July 6-August 5):49.4% British Columbia stocks, 40.7 West Coast US stocks, 3.5% Southeast Alaska and Gulf Coast, 1.3% Cook Inlet and 4.3% Kodiak Chinook stocks.

Southwest Kodiak and Alitak Districts (Statistical Areas: 255, 256 and 257)

- Early (June 1- July 5): 33.8% British Columbia stocks, 35.2% West Coast US, 3.2% Southeast Alaska/Gulf Coast stocks, 2.5% Cook Inlet and 24.9% Kodiak Stocks.
- Late (July 6-August 5):63.1% British Columbia stocks, 30.3% West Coast US, 3.4% Southeast Alaska and Gulf Coast stocks, 1.4% Cook Inlet and 1.2% Kodiak Chinook stock contributions.

Mainland District (Statistical Area 262) Similar to 2014, there was no sampling conducted during 2015 within the period June 1- July 5 for this district.

- Late (July 6-August 5): 64% British Columbia stocks, 19.6% West Coast US, 3.0% Southeast Alaska/Gulf Coast, 12.8% Cook Inlet stocks and no contribution from Kodiak Chinook stocks.

2016

The harvest during 2016 was only 7,471 Chinook of which 3,189 fish were sampled, which represented a 43% sampling fraction. The various stock contributions to the commercial harvest for 2016 were: 56.5% British Columbia, 30.6% West Coast US, 6.2% Southeast Alaska/Gulf Coast, 3.8% Cook Inlet and 1.3% Kodiak stocks.

Northwest Kodiak District and Afognak (Statistical Areas: 251, 253 and 254)

- Early (June 1-July 5): 59.6% British Columbia stocks, 15.0% West Coast US, 12.7% Southeast Alaska and Gulf Coast, 7.8% Cook Inlet and 3.2% Kodiak stocks.
- Late (July 6-August 5):61.8% British Columbia stocks, 17.3% West Coast US, 11.5% Southeast Alaska and Gulf Coast, 6.7% Cook Inlet stocks and 1.6% Kodiak stocks.

Eastside Kodiak and Afognak District (Statistical Areas: 258, 259 and 252)

- Early (June 1- July 5): 57% British Columbia stocks, 27.4% West Coast US Chinook stocks, 6.4% Southeast Alaska/Gulf Coast, 2.3% Cook Inlet and 2.6% Kodiak stocks.
- Late (July 6-August 5):51.5% British Columbia Chinook stocks, 39.5% West Coast US stocks, 1.3% Southeast Alaska/Gulf Coast stocks, 3.8% Cook Inlet and 2.8% Kodiak stocks.

Southwest Kodiak and Alitak Districts (Statistical Areas: 255, 256 and 257)

- Early (June 1-July 5): 67.1% British Columbia, 24.6% West Coast US stocks, 3.1% Southeast Alaska/Gulf Coast, 1.4% Cook Inlet and 2.9% Kodiak stocks.
- Late (July 6-August 5): 69.2% British Columbia stocks, 24.7% West Coast US, 1.8% Southeast Alaska, 2.5% Cook Inlet stocks and 1.1% Kodiak Chinook stocks.

Mainland District (Statistical Area 262)

- Early (June 1-July 5): 46.6% British Columbia stocks, 44.1% West Coast US, 3.6% Southeast Alaska and Gulf Coast, 1.9% Cook Inlet and 0.3% Kodiak stocks.

- Late (July 6-August 5):54.1% British Columbia Chinook stocks, 37.1% West Coast US, 5.1% Southeast Alaska and Gulf Coast, 2.5% Cook Inlet and no contribution from Kodiak Chinook stocks to the harvest.

A direct comparison of the presented information and contribution estimates to the KMA Chinook harvest is difficult because of specific requirements related to CWT estimates and those generated using GSI. For generating reliable harvest estimates using CWT data, a large marking fraction (number of fish marked/total released) combined with a recommended 20% sampling fraction (number of fish sampled from the total catch) is statistically necessary. In the case of both the Kodiak and Cook Inlet Chinook stocks for the years 1994 and 1997-1999, the number of marked fish from the various hatchery releases was small and when combined with low numbers of recoveries, the harvest estimates were uncertain or informative at best. For these reasons, the comparisons of the CWT contributions with those generated using GSI are completed using a simple percent contribution to the overall sampled harvest (Table 1). In reviewing the data, the overall stock contributions are reasonably consistent: British Columbia stocks consistently contribute greater than 50% to the sampled harvest, followed by Washington and Oregon stocks and to a lesser extent Southeast Alaska with minor contributions from either Kodiak or Cook Inlet stocks.

Summary and Recommendations

- During all years and sampling periods regardless of the commercial salmon fishery district sampled, British Columbia Chinook salmon stocks dominated the stock composition of the harvest. Estimates of the percent contribution ranged from a low of 30% to a high of 70%, representing harvests of several hundred to several thousand fish.

- Consistently, contributions from stocks originating in Washington and Oregon (Western US stocks) to the commercial harvests ranged from a low of 7.3% to a high of 37% and averaged 28% of the estimated harvest.

- Contributions from Southeast Alaska/North Gulf Coast were in most cases higher than the combined contributions from both Kodiak and Cook Inlet. These contributions also seem to be reflective of periods of higher and lower abundance when comparing contributions from 1997-1999 (higher abundance) to those from 2014-2016 which was a period of lower Southeast Alaska stock abundance.

- The capability of any marine salmon fisheries sampling program to consistently estimate the harvest in a timely manner, of at most several hundred fish over a commercial fishing season within the geographic scope of the Kodiak Management Area, is untenable.

- Given the stock status of both the Kodiak and Cook Inlet Chinook salmon stocks a regime such as that outlined in Proposal 37 is unwarranted. Both the Kodiak (0%-4.5%) and Cook Inlet (2.6%-4.5%) stock contributions to the Chinook harvest are minor.

- It should be noted that for the Cook Inlet stocks harvested within the Kodiak Management area, a majority are hatchery fish produced for marine or in river sport fisheries. A specific brood stock selection (similar life history and migration traits to the wild stock) and marking program are required for a hatchery stock to be employed as a proxy for wild stocks, therefore the Cook Inlet tag recoveries and rates should not be applied to Cook Inlet wild Chinook salmon stocks.

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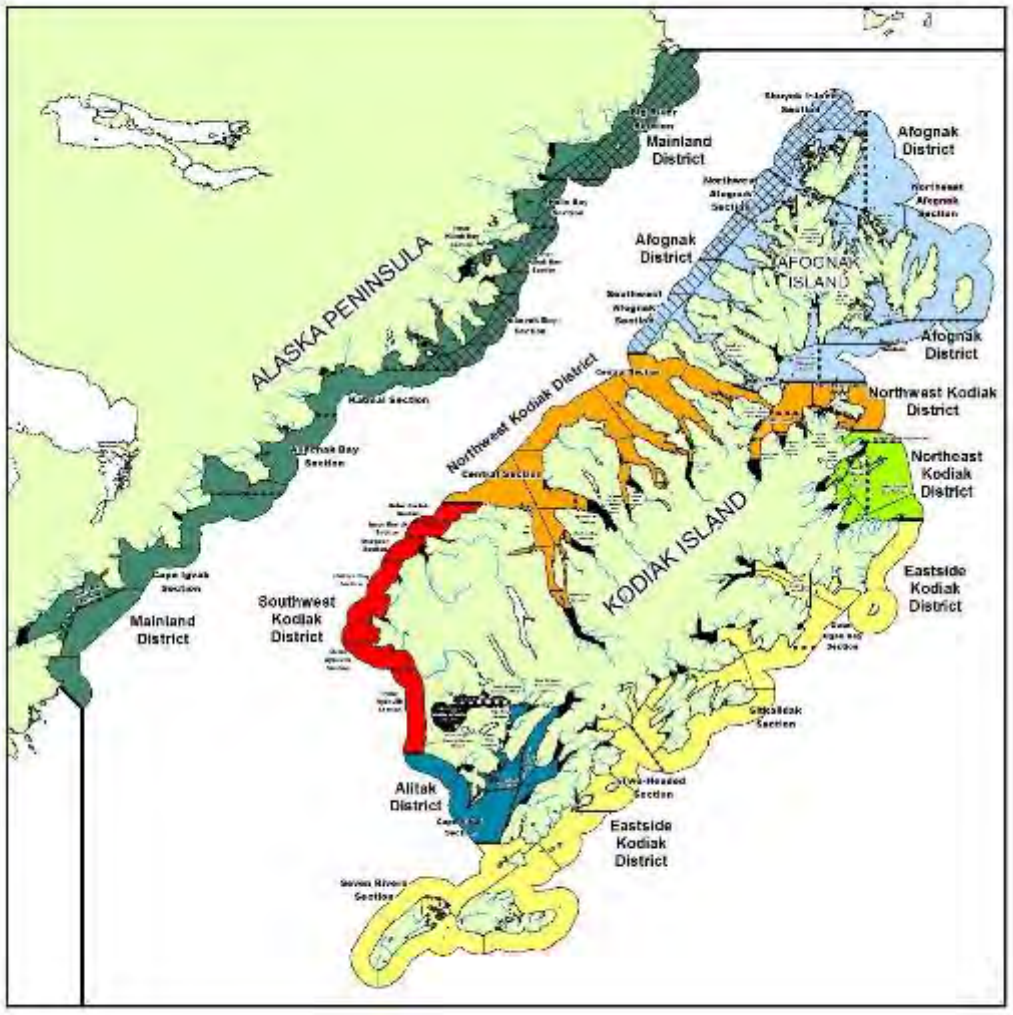
Table 1. Summary of Chinook Stock Group Harvest Percentages in the Kodiak Management Area.

	Calendar Year						
	1994	1997	1998	1999	2014	2015	2016
Sample size	5,089	6,015	9,191	7,940	3,050	2,775	3,189
Stock Group							
British Columbia	83%	72%	49%	31%	56%	52%	57%
Washington &Oregon	7%	15%	20%	37%	34%	34%	31%
SE Alaska/Gulf Coast	10%	13%	31%	32%	3%	5%	6%
Cook Inlet	0%	present[1]	present[1]	present[1]	2%	2%	4%
Kodiak	0%	n/a[2]	n/a[2]	n/a[2]	1%	1%	1%

[1] CWTs were recovered however insufficient totals to estimate a harvest proportion

[2] no CWTs recovered from fishery sampling

December 2019



An

Overview and Contrast of Management Plans and Harvests of Sockeye Salmon Destined for Upper Cook Inlet, 2014-2016.

By the Kodiak Salmon Work Group

The following is germane to addressing **Alaska Board of Fisheries Proposals 64, 65 and 66** which seek to severely curtail fishing time within traditional Kodiak Management Area (KMA) districts because of identified harvests of Upper Cook Inlet (UCI) sockeye salmon during the years 2014-2016.

EXECUTIVE SUMMARY

- The complexity within the existing UCI salmon management plans guiding management of the numerous fisheries far exceeds the quality, quantity and timeliness of the information available.

- Harvest estimates have far less uncertainty than do the variety of in season run strength projections and numerous escapement monitoring programs, especially the Susitna River escapement component.

- The Off-shore Test Fishery (OTF) run projections have errors around the estimates which are alarming (over projecting the actual run by 60%) given the reliance on this in-season tool within several prominent UCI management plans.

- Any proposed regulatory change to long established salmon fishery management plans must be able to demonstrate a measurable benefit; given poor data quality for specific UCI escapements or for certain in river run projections (Kenai R.), the information system currently in place is incapable of this task.

- When considering a system like the Susitna River, including the longstanding documented problems with estimating escapements, it is not prudent to affect adjacent management areas (e.g., Kodiak) with unnecessary changes.

- Considering the focus on coho salmon within the last three UCI board meetings (2011, 2014, 2017) and the conservative stipulations within the Northern District Management plan, if all of the sockeye incidentally caught in Kodiak were inserted into the UCI fishery mix, it would not have resulted in any benefit to Northern District coho stocks nor in-river users.

- Evaluating the commercial harvest of UCI stocks using a harvest rate metric would not be appropriate because of the uncertainty surrounding the escapement estimates of the Susitna River, Yentna River and other unassessed sockeye stocks.

Introduction

The identification and sporadic estimation of non-local stocks of sockeye salmon contributing to the sockeye harvest within the Kodiak Management Area has been completed using a variety of quantitative (scale pattern analyses and Genetic Stock Identification) and less quantitative (average weight and age proportions) techniques over the last 30 years. There does not appear to be temporal or spatial patterns or abundance-based trends of the contributing stocks, which suggests that the contributions are more random in nature (influenced more by environmental conditions: current, sea surface temperatures or broad scale climatic conditions). A common

acceptance is that fishing time in the various areas surrounding the Kodiak Archipelago targeting local stocks of sockeye, pink and chum salmon also contribute to these events. In a variety of ways one can characterize the Kodiak salmon fishery as a pass-through type fishery and the Upper Cook Inlet salmon fishery more of a gauntlet, where fish traverse through a variety of fisheries and gear types before reaching their natal streams or rivers.

Kodiak Fisheries Management plans

Area description

The Kodiak management area (KMA) includes all inland and marine waters (inside of 3 miles) south of Cape Douglas to Kilokak Rocks on the Alaska Peninsula and includes all islands within the Kodiak Archipelago. Within the area are 7 districts and 52 sections along with numerous subsections and terminal closed water areas. There are approximately 800 streams identified that have supported salmon spawning or rearing (Anadromous Waters Catalog), of which about 440 streams have been referenced as supporting measurable salmon production on an annual or biannual basis. Of the 440 systems, all support pink salmon, about 150 support chum salmon, 39 support sockeye salmon and about 175 support coho salmon populations (Clark et al. 2000). There are 593 Commercial Fisheries Entry Commission (CFEC) limited entry permits issued for the Kodiak area: 375 purse seine; 188 set gillnet; and 30 beach seine. Activity for each gear type fluctuates by year, with participation statistics for 2019 including 176 purse seine, 3 beach seine, and 148 set net permits having made at least one landing during the season.

Fishery Description

The Kodiak salmon fishery can be best described as a pass-through fishery, similar to Southeast Alaska fisheries. Pass through fisheries allow fish to reach terminal areas on their way to natal streams, where any type of fishery conducted is called a terminal fishery. Gear types participating in a pass-through fishery include set gillnet (fixed gear) and purse seine (mobile), which capture fish along their nearshore migration routes. Over time, and with the vigilance of salmon area management staff, fishing patterns, harvest magnitudes, and timing can be qualified and quantified with the goal of building information relative to run strength and migration timing by species and in many cases by specific stocks that contribute to the catch. The overall key to success of this salmon fishery management system is having specific, fixed geographic reference points, long standing accurate catch or harvest accounting, and an escapement enumeration and monitoring program for the major sockeye salmon producing systems that is conducted annually.

Management Plans

There are currently 10 salmon fishery management plans codified in regulation which prescribe how salmon fishing in each of the various districts, patterned after salmon species timing and historical fishing patterns, will be accorded. Two plans, including the Cape Igvak salmon management plan (effective prior to 1985; 5 AAC 18.360; Chignik Bound Sockeye) and the North Shelikof Strait Sockeye salmon management plan (effective 1990; 5 AAC 18.363: Upper Cook Inlet bound Sockeye), are tailored around sockeye salmon stocks destined for adjacent management areas (Chignik and Cook Inlet). The North Shelikof Strait plan was codified in 1990 following an out of cycle board of fisheries meeting that was specifically scheduled to address the unusual harvest of Cook Inlet Bound sockeye that occurred during 1988.

The remaining plans (Alitak District, Westside District, Eastside Afognak, Eastside, North Afognak/Shuyak Island and Mainland District) have been and are tailored towards meeting escapement objectives for each species using run timing and historical commercial fishing patterns, gear and areas. Other management tools include the use of subsections and a variety of

closed water areas around spawning streams (expanded or contracted) based on harvest numbers, aerial survey indices of abundance, and observed build ups of pre-spawning fish in marine staging areas. A multitude of fishery dependent and independent information is typically integrated into the inseason fishery management decision making process and in some cases these are daily decisions. As noted elsewhere, many of these management plans or the management philosophy contained within has been in existence since the late 1970s, and were systematically codified after numerous discussions within ADF&G and with commercial fishermen, processors, advisory committees, and finally with the Alaska Board of Fisheries during regularly scheduled meetings.

Upper Cook Inlet Fisheries Management Plans

Area Description

The Upper Cook Inlet (UCI) commercial salmon fishery management area comprises inland and marine waters of Cook Inlet north of Anchor Point Light. The area includes two districts (Central and Northern) with the Central District being 75 miles in length, 32 miles in width and divided into 6 subdistricts. The contemporary commercial fishing gear types allowed within the UCI are drift and set gillnet. There are approximately 1,300 commercial fishery entry permits within the UCI area, of which 570 are drift gillnet. Depending on a number of factors, the number of drift permit holders making landings in any given year ranges from 396-539 permits, which includes secondary permit holders operating in dual permit fishing operations (Farrington 2014). There are about 745 set gillnet permits issued for the area with about 500 permits making landings within any given year. Approximately 40-60 set gillnet permit holders are active within the Northern District set gillnet fishery.

Salmon fisheries management plans

There are 17 different plans that cover salmon fishing activities either directly or indirectly within the Upper Cook Inlet management area. Of the 17 plans, one deals with invasive northern pike within the Kenai R., two deal with riparian habitat protections; several govern subsistence (state or federal) fishing activities, and one that is novel to Cook Inlet: the personal use fishery management plan which is germane to fishing for sockeye salmon primarily on the Kenai and Kasilof Rivers. Graphical depictions of these complex and interdependent management plans are described during the 2008, 2011, 2014 and 2017 Alaska Board of Fisheries meetings, and can be found at the Board Support section of the ADF&G web page under the Board of Fisheries heading: www.adfg.alaska.gov/index.cfm?adfg=fisheriesboard.meetinginfo

Fishing Periods

In the Northern and Central Districts set gillnet fishery, two weekly 12 hour fishing periods are permitted on Mondays and Thursdays; in the drift gillnet fishery salmon may be taken within two weekly 12 hour fishing periods also on Mondays and Thursdays.

Central District Drift Gillnet Fishery Management Plan (5 AAC 21.353)

The stated purpose of this plan is to ensure adequate escapement into the Northern District drainages and offer management guidance to the department. The Board of Fisheries directs management of the drift fleet to minimize harvest of Northern District and Kenai River coho salmon, to provide sport and guided sport fishermen a reasonable opportunity to harvest these salmon stocks over the entire run, as measured by the frequency of in-river restrictions. In order to accomplish this task, from July 9-15 during the first and second regular fishing periods, drift fishing is restricted to the Expanded Kenai and Expanded Kasilof sections of the Upper Subdistrict and Drift Gillnet area 1. At run strengths greater than 2.3 million sockeye salmon to

the Kenai River, the commissioner may by emergency order open one additional 12 hour fishing period within the Expanded Kenai and Expanded Kasilof Sections of the Upper Subdistrict and Drift Gillnet Area 1; additional fishing time is only allowed in the Expanded Kenai and Expanded Kasilof Subsections of the Upper Subdistrict. From July 16-31 at Kenai River sockeye run strengths of less than 2.3 million, fishing during all regularly scheduled fishing periods will be restricted to the Expanded Kenai and Expanded Kasilof Sections of the Upper Subdistrict; at run strengths of 2.3-4.6 million sockeye salmon to the Kenai River, fishing during one regular 12 hr. fishing period will be restricted to one or more of the following sections or areas:… At run strengths greater than 4.6 million sockeye salmon to the Kenai River, one regular 12 hour fishing period per week will be restricted to the Expanded Kenai, Kasilof and Anchor Point Sections. From August 1-15, there are no mandatory area restrictions to the regular fishing periods with several caveats related to coho salmon destined for the Kenai River (see 5 AAC 21.353; p.347).

Northern District Salmon Management Plan (5 AAC 21.358)

The purpose of the Northern District Salmon management plan is to minimize harvests of coho salmon bound for the Norther District of UCI and to provide the department direction for management of salmon stocks. The department shall manage the chum, pink and sockeye salmon stocks primarily for commercial uses, to provide commercial fishermen with an economic yield from the harvest of these salmon resources based on abundance. The department shall also manage the chum, pink and sockeye salmon stocks to minimize the harvest of Northern District coho salmon, to provide sport and guided sport fishermen a reasonable opportunity to harvest these salmon resources over the entire run, as measured by the frequency of inriver restrictions. The department shall manage the Northern District commercial salmon fisheries based on the abundance of sockeye salmon counted through the weirs on Larson, Chelatna, and Judd Lakes or other salmon abundance indices as the department deems appropriate.

Kenai River Late-Run Sockeye Salmon Management Plan (5 AAC 21.360)

The department shall manage the Kenai River late-run sockeye stocks primarily for commercial uses based on abundance. The department shall also manage the commercial fisheries to minimize the harvest of Northern District coho, late-run Kenai king and coho salmon stocks to provide personal use, sport, and guided sport fishermen with a reasonable harvest opportunity.. The Kenai River late-run sockeye salmon commercial, sport and personal use fisheries shall be managed to meet an optimum escapement goal (OEG) range of 700,000-1,400,000 late-run sockeye salmon, achieve in-river goals as established by the board and measured at the Kenai River sonar counter located at river mile 19, and distribute the escapement evenly within the OEG range, in proportion to the size of the run.

Based on preseason forecasts and in-season evaluations of the total Kenai River late-run sockeye return during the fishing season, the run will be managed according to different run strength levels. At run strengths of less than 2,300,000 sockeye salmon, the department shall manage for an inriver goal range of 900,000-1,100,000 sockeye salmon past the sonar counter at river mile 19; subject to provisions of other management plans, the Upper Subdistrict set gillnet fishery will fish regular weekly fishing periods as specified in 5 AAC 21.320, through July 20, unless the department determines that the minimum in-river goal will not be met, at which time the fishery shall be closed or restricted as necessary; the commissioner may by emergency order, allow extra fishing periods of no more than 24 hours per week or per provisions in 5 AAC 21.365;

At run strengths of 2,300,000-4,600,000 sockeye salmon, the department shall manage for an inriver goal range of 1,000,000-1,200,000 sockeye salmon past the sonar counter at river mile 19; subject to provisions of other management plans, the Upper Subdistrict set gillnet fishery will

fish regular weekly fishing periods as specified in 5 AAC 21.320 through July 20, until the department makes a determination of run strength, whichever occurs first.
At run strengths greater than 4,600,000 sockeye salmon, the department shall manage for an inriver goal range of 1,100,000-1,350,000 sockeye salmon past the sonar counter at river mile 19; subject to provisions of other management plans, the Upper Subdistrict set gillnet fishery will fish regular weekly periods as specified in 5 AAC 21.320 through July 20, or until the department makes a determination of run strength, whichever comes first; if the department determines that the minimum in-river goal will not be met, the fishery shall be closed or restricted as necessary; the commissioner may, by emergency order, allow extra fishing periods of no more than 84 hours per week, except as provided in 5 AAC.21.365; and the Upper Subdistrict set gillnet fishery will be closed for one continuous 36-hour period per week, beginning between 7:00 p.m. Thursday and 7:00 a.m. Friday. The remaining elements of the plan relate to the inriver personal use and sport fishery.

Kasilof River Salmon Management Plan (5 AAC 21.365)

The bulk of this plan deals specifically with guidance on managing the commercial fishery for meeting the escapement goal as specified within the plan, however there are several sections that intersect with the Kenai River sockeye salmon: after July 15, if the department determines that the Kenai River late-run sockeye salmon run strength is projected to be less than 2,300,000 fish and the 390,000 optimal escapement goal for the Kasilof River sockeye salmon may be exceeded, the commissioner may, by emergency order, open fishing for an additional 24 hours per week in the Kasilof Section within one-half mile of shore and as specified in 5 AAC 21.360(c).

Additional Commercial Fishery Management Plans: *Cook Inlet Pink Salmon Management Plan (5 AAC 21.354); Kenai River Late-Run King Salmon Management Plan (5 AAC 21.359);Upper Cook Inlet Salmon Management Plan (5 AAC 21.363); Northern District King Salmon Management Plan (5 AAC 21.366).*

Sport Fishery Management Plans: *Russian River Sockeye Salmon Management Plan (5 AAC 57.150)***;** *Kenai River and Kasilof River Early-run King Salmon Management Plan (5 AAC 57.160);Kenai River Coho Salmon Management Plan (5 AAC 57.170); and the Upper Cook Inlet Personal Use Salmon Fishery Management Plan (5 AAC 77.540).*

Fishery Management Complexity

When comparing a number of fishery related metrics, complexity can be characterized by geographic scope, species richness, multiple overlapping objectives, and numbers of users/gear types/permits (human participation) which overlap a large geographic area, and in Cook Inlet, where most of the area is road or boat accessible and fishing occurs in either freshwater or marine waters. It could also be characterized by the number of regulatory proposals submitted to the Board of Fisheries' three-year regulatory cycle and emergency orders issued by the department each year. Determining a measure that captures allocative related issues such as regulatory proposals or agenda change requests (ACRs) is difficult, but there are many allocative elements interwoven within the Upper Cook Inlet fisheries and imbedded within the various salmon management plans.

Personal Use Fishery

Subsistence and personal use fisheries have undergone substantial changes within the Cook Inlet area over the last 20 plus years. There are four personal use fisheries that target primarily

sockeye salmon and collectively make up the bulk of the regulations embedded within the Personal Use management plan. The two major personal use fisheries operate adjacent to the Kasilof River, and adjacent to and within the lower portion of the Kenai River. Regarding the Kenai, retention of Chinook or king salmon has been prohibited for a number of years, owing to low production and concerns for meeting escapement goals. These two fisheries collectively are the largest participation fishery in Alaska. Over the last five years over 30,000 household permits have been issued and in several years the number of permits issued exceeds 35,000. During the years 2013-2015, average participation has been 27,850 household permits fished with an average sockeye salmon harvest of 494,115 per year (Dunker, 2018); the harvests of Kenai R. personal use sockeye salmon in 2014 and 2015 were 506,047 and 521,985 fish respectively. In 2016 the personal use fishery harvest was 264,900 sockeye salmon.

Kenai River Sport/Recreational Fishery

This fishery is arguably the largest sport/recreational fishery in Alaska with participation statistics, measured in angler days, ranging from 365,000-485,000 days annually. Sport fishing effort is spread throughout the drainage; however, a majority of the effort is concentrated below the Soldotna Bridge to tidewater. The annual recreational harvest of sockeye salmon occurs both above the sonar counting station at river mile 19 and below with an average of 20% of the harvest occurring below the counting station. The average (2011-2015) annual harvest of sockeye salmon is 422,480, of which 86,920 fish are harvested below the escapement enumeration or sonar site. The 2014 sockeye salmon harvest was 380,055 and for 2015 it was 392,116 fish (Begich et al. 2017). The recreational harvest for 2016 was 342,446 sockeye salmon.

When combined (personal use and in-river sport), the harvests have averaged 688,676 sockeye salmon annually (2014-2017; ADF&G personal communication). The Kenai River sockeye salmon escapement over these years has ranged from 1,400,047 in 2015 to 1,073,290 fish in 2017 and averaged 1,203,125 fish (Table 1.)

Fishery Management Data Sources

Escapement monitoring

Escapement has been assessed using side-scan sonar for a lengthy time period for the Kenai and Kasilof rivers and has incorporated modern gear (Bendix to DIDSON to now ARIS technology). The counts are generated daily and employed to evaluate escapement relative to fishery management decisions. There have not been any independent verifications of either the Kenai or Kasilof sonar escapement estimates. When converting to modern technology, the Bendix and DIDSON sonar systems were determined to offer almost identical escapement passage estimates for the Kasilof River, but that the Bendix system for the Kenai system generated escapement estimates that were substantially less that the estimates generated by the DIDSON system. This was also the case for the Yentna River (Maxwell et al. 2011). This information was integrated into a conversion from BENDIX to DIDSON units for the Kenai River sockeye salmon escapement, such that historical and contemporary escapement numbers were consistent.

For the Yentna River, the use of sonar to enumerate escapement was discontinued in 2008 due to the considerable uncertainty associated with the estimates (Fair et al. 2009). The current escapement monitoring program consists of counting weirs on Chelatna and Judd lakes. Similarly, for the Sustina River, a counting weir at Larson Lake is employed as an index of the Susitna River mainstem escapement. Fair et al. (2009), as a means to estimate total drainage wide escapement for the Yentna and Susitna rivers sockeye salmon stocks, employed the relationship between weir counts and a series of mark-recapture estimates to expand the weir

counts into drainage wide estimates. The identified relationships include Larson Lake weir counts accounting for 50-54% of the drainage wide mark-recapture estimates generated for 2006-2008. For the Yentna River, the relationship between the weir counts and the mark-recapture estimates ranged from 41-44% for Chelatna and Judd lakes combined. This approach certainly seems reasonable, however there is quite a bit of uncertainty about carrying this relationship forward to estimate total escapement for these drainages, especially when accounting for differential productivity that can occur with sockeye salmon populations between adjacent years, and also employing mark-recapture estimates which have their own set of assumptions and challenges.

There are numerous sockeye producing systems within Cook Inlet that have no monitoring programs, but that production contributes to the overall harvest. Shields (2010), within the annual management report, cites that the contribution of these unmonitored systems was projected to contribute upwards of 13% (835,000 fish from a total run of 6,404,000) to the Upper Cook Inlet harvest with an unknown level of escapement.

Barclay (2017) reported that for the years 2014-2016 that the unreported harvest (catch that could not be assigned to one of the predetermined sockeye stock groupings within UCI) represented 9.5% (223,106; 2014), 5.2% (138,826 fish) for 2015 and <0.1% (15,518 fish) in 2016. These findings are not uncommon with mixed stock analyses when dealing with many stocks and in most cases for small stocks. Shedd et al. (2016) aptly discusses this routine challenge by stating “Additionally, it is necessary to recognize that even with fishery samples of 380 fish per stratum, it is challenging to estimate small proportions in a mixture”. Based on these recognized analytical difficulties, and the stated uncertainties regarding escapements for several Upper Cook Inlet sockeye stocks, the most prudent way to evaluate estimates of non-local stock harvest is to compare harvest or proportions of the harvest. The harvest, whether it is commercial (fish ticket receipts), recreational (Statewide Harvest survey) or personal use (household permit record) is likely the most certain source of data that managers have available to them.

Offshore Test Fishery (OTF; 2014-2017)

One of the most important data sources for UCI in-season management, given the wide array of objectives dictated by regulations promulgated by the Alaska Board of Fisheries within the last 10 years, is the offshore test fishery (OTF) which was initiated in 1979. Many of the plans and subsequent regulation changes have requirements specifically related to inseason abundance estimates. These projections are employed to make in-season management decisions attempting to meet escapement objectives for Susitna bound sockeye stocks, and for sockeye destined for the Kenai and Kasilof rivers as well. The Kenai River late-run sockeye salmon management plan and attendant prescribed fishing times for the drift and set gillnet fisheries rely heavily on this estimate, based on a multi layered tier system.

2014

The midpoint of the 2014 sockeye salmon run at the OTF occurred on July 16 (point at which 50% of the run is projected to be past the OTF). There were two formal inseason estimates of the 2014 run size made on July 21 and 23; the 23 July analysis predicted a total run of 5.8-9.1 million sockeye salmon. The best fit total run estimate deviated from the actual run of 5.28 million fish by 72% or a difference of 3.82 million fish. The best fit Kenai river total run estimate from this analysis (5.65 million) differed from the actual total run of 3.28 million fish also by 72%, representing a difference of 1.83 million fish (Dupuis et al. 2016).

2015
The midpoint of the 2015 sockeye salmon run at the OTF occurred on July 25. A formal in-season estimate of run size was made on July 27 and predicted a total run to Upper Cook Inlet of 5.9 million sockeye salmon. The best-fit total run estimate deviated from the estimated total run of 6.30 million by 6.5% (400,000 fish). An in-season estimate was also made for the Kenai River sockeye salmon run on July 27; the analysis predicted a total run to the Kenai River ranging between 2.20-3.53 million sockeye salmon. The best-fit total run estimate of Kenai River sockeye salmon was 3.53 million which deviated from the estimated total run of 3.89 million fish by 9.3% (360,000 fish; Dupuis and Willette, 2016).
2016
The midpoint of the 2016 sockeye salmon run at the OTF occurred on July 18. An in-season estimate of the 2016 run was generated on July 25 and predicted a total run to Upper Cook Inlet (UCI) of 6.83 million sockeye salmon. The best-fit model estimate varied from the total run estimate of 5.11 million by 33.7% or 1.72 million fish. The inseason estimate for Kenai River sockeye salmon was made on July 25 with an estimate of 3.53-5.57 million fish with a post season estimate of 3.55 million sockeye. Managers employed a run estimate of 4.6 million fish, an overestimate of 29.5% (1,050,000 fish; Dupuis and Willette 2018).
2017
The midpoint of the sockeye salmon run in 2017 at the OTF was July 20; a formal estimate of the run was generated on July 24 with a prediction of 7.11 million fish. The first best-fit total run prediction was 54.2% higher than the actual total run of 3.85 million (difference of 3.26 million fish). An in-season estimate for the Kenai River sockeye run was made on July 24 resulting in an estimate of 1.6-4.3 million sockeye (actual post season estimate was: 2.89 million or 44.5% (1.29 million fish below actual), or conversely 48.7% higher than actual. Regardless of which direction the error is evaluated, it was substantial (about 1.3 million fish; Frothingham and Willette 2018).

Synthesis of information

- Using an average 2014-2016 Kenai R. commercial harvest rate (catch/catch+escapement) of 57.1%, the following would be the fate of 75,000 hypothetical sockeye that enter UCI destined for the Susitna/Yentna Rivers combined: 23,982 fish would become drift gillnet harvest, 18,843 fish would become set net harvest, 3,854 harvested fish would be assigned to an unreported stock group, 9,750 sockeye would escape to unmonitored streams, and 18,571 fish would make it to the Susitna/Yentna Rivers, of which a total of 9,000 sockeye would be potentially counted at Judd, Chelatna or Larson lake weirs. The potential benefits (escapement or harvest to UCI users) would be undetectable amidst the large total harvests and monitored escapements in Upper Cook Inlet.

- The complexity of existing UCI salmon management plans far exceeds the quality, quantity and timeliness of the information available. Management staff in the department do a surprisingly successful job managing these fisheries and meeting escapement goals and objectives given the data available and estimate uncertainty.

- Estimates of harvest have far less uncertainty than do the variety of in season run strength projections or data from the numerous escapement monitoring programs,

especially the Susitna River escapement component. Therefore, the harvest estimates for UCI bound sockeye that were incidentally taken in Kodiak should be compared to the total harvest of UCI sockeye.

- In 2014, there were an estimated 58,506 sockeye salmon harvested within the KMA of Cook Inlet origin (Kenai and Susitna stocks) from a total UCI harvest of 3,360,383 or 1.7%;
- In 2015, an estimated 438,433 Kenai and Susitna fish were harvested in the KMA versus the total harvest of 3,694,270 sockeye in the UCI or 11.8%;
- In 2016, 309,497 UCI (Kenai and Susitna stocks) sockeye were identified within the Kodiak catch compared to a total UCI sockeye harvest of 3,095,833, or 10.0%.

- The OTF run projections have errors around the estimates that are alarming (over projecting the actual run by 60%) given the reliance on this in-season tool within several prominent management plans; the Kenai R. sockeye run projection placed the run in the wrong management tier 2 out of 4 years (2014, 2016) thus allowing for increased fishing time for the drift gillnet fleet.

- Any proposed regulatory change to long established salmon fishery management plans must be numerically measurable. Given poor data quality for specific escapements or to certain in-river-runs (Kenai R.) the information system currently in place is incapable of this task, even if harvests within the KMA were twice those that are currently estimated.

- Certainly, for a system such as the Susitna River with all of its documented longstanding problems in obtaining reliable and annual escapement estimates, is it not prudent to reach out and affect an adjacent management area. Currently, in order to generate Susitna River escapement estimates, the weir count (known escapement numbers) is multiplied by a constant derived from a mark-recapture study conducted for 3 three years that is now over 10 years old. Because of this unreliable method, the Susitna and Yentna Rivers escapement estimates should be treated as informative but certainly not known.

- Given the focus on coho salmon within the last three UCI board meetings (2011,2014, 2017), and the conservative stipulations within the Northern District management plan, if all of the sockeye incidentally caught in Kodiak were inserted into the UCI fishery mix, it would not have resulted in any beneficial impact to Northern District coho stocks nor in-river users. Coho salmon run strength is based on fishery performance (commercial and in-river sport) and not demonstrable escapement estimates.

- Evaluating the commercial harvest of UCI stocks using a harvest rate metric would likely be erroneous, owing to the uncertainty surrounding the escapement estimates of

the Susitna River, Yentna River and other unassessed sockeye stocks. These stocks contribute to the harvest, but escapement to these systems is unknown or indexed, not counted.

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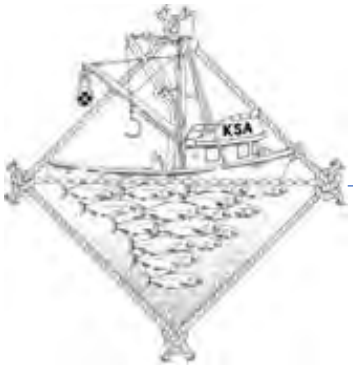
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December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: **Oppose Proposal 64**

Dear Chairman Morisky and Board of Fish Members:

Thank you for the opportunity to comment on **Proposal 64**. The Kodiak Seiners Association (KSA) respectfully requests you **oppose proposal 64**, which intends to impose onerous and arbitrary restrictions to our commercial fishery through the creation of "seaward" and "shoreward" harvest zones in the mainland district of Kodiak.

This proposal represents and perpetuates an amalgamation of misconceptions concerning the salmon fishery in the Kodiak Management Area (KMA). First and foremast is the implication that Kodiak currently bears no burden of conservation of Cook Inlet (CI) stocks and that we are essentially operating in the absence of regulations that substantially restrict harvest. The North Shelikof Straight Management Plan was established with the intention of annually limiting the harvest Cook Inlet bound sockeye regardless of run strength. This means that on years of abundant CI stocks higher harvest rates trigger early closures of the seaward zones which then remain closed until July 25th, depriving the fleet of substantial fishing opportunity in an effort to conserve a fishery that is chronically under-harvested while also inhibiting the harvest of our local stocks.

Additionally, the Mainland District, which includes the Cape Igvak section, is the most stringently managed area in the KMA during the time of consideration for this proposal. Kodiak fishermen are only allowed a maximum of four 57-hour openings in the mainland district before August 1st. These openings cannot be extended regardless of the abundance of local and non-local stocks. The Wide Bay section does not open before July 25th, and it is not unusual for the Cape Igvak section to remain closed until July 25th as well, long after the peak of the late Chignik and Cook Inlet sockeye runs. There is no other district in the KMA that is so rigidly managed during this time frame, and the current management structure already provides insufficient opportunity to harvest local stocks.

The Board should also consider that the structure of the Cape Igvak management plan inherently acts to conserve CI stocks on the rare occasion that they are harvested there. Although the harvest

allocation for Igvak is set according to measures of abundance in Chignik, the harvest of any stocks counts against that allocation and will trigger a closure. Consider the anomalously high harvest rates of 2016. An abundance of what we now know were Cook Inlet stocks that were perplexingly swimming westward led to unusually high harvest rates, quickly triggering a closure of the Cape Igvak area which then remained closed for the rest of the season. Kodiak fishermen are always operating under strictly imposed harvest quotas at Igvak and these harvest caps apply regardless of the stock composition. For that reason, Igvak especially and the rest of the mainland in general are currently managed under a structure that provides maximum safeguards to CI stocks and minimal opportunities to harvest local stocks while prosecuting our traditional fishery.

Another glaring falsehood stated in this proposal is the claim that the KMA only has 7 streams with sockeye present. Kodiak has, in fact, 15 un-enhanced streams that are common sources of commercial harvest in addition to 4 major enhancement systems with associated terminal harvest areas. There are additionally numerous other minor wild systems and subsistence enhancement projects that contribute to mixed stock sockeye harvest in the KMA. A list of important sockeye systems that contribute to mixed stock harvest throughout the KMA is provided below:

Non-Enhanced (Wild) Systems	**Enhanced Systems**
1) Karluk 2) Ayakulik 3) Frazer 4) Upper Station 5) Dog Salmon 6) Saltery 7) Pasagshak 8) Buskin 9) Litnik 10) Pauls Bay 11) Discovery Bay 12) Thorsheim 13) Malina Creek 14) Uganik 15) Kaflia	1) Spiridon 2) Kitoi 3) Foul Bay 4) Waterfall Bay

Typical aggregate escapement numbers for these systems exceeds 1.5 million sockeye annually, and enhancement projects can contribute hundreds of thousands additional sockeye for harvest. These fish are widely distributed in the KMA both geographically and temporally, and sockeye bound for KMA systems are harvested throughout the season and in all districts, including the mainland district. It is unclear how the proposer concluded that Kodiak has only 7 sockeye runs only 2 of which are "of minor production status." In reality, 9 of Kodiak's rivers have weirs counting sockeye, and aerial surveys are common for numerous other systems, like Uganik.

It is our hope that the Board understands that the majority of sockeye harvested in Kodiak are of local origin and that our fisheries are responsibly prosecuted as directed harvest of local stocks of sockeye, chum, pink, and coho salmon along with our historical and traditional harvest allocation at Igvak.

One of the most frustrating gaps in the greater public understanding of the mixed stock fishery in Kodiak is that we are prosecuting a mixed-stock, multi-species fishery. The recent publication of the genetic stock assessment focused public attention exclusively on the sockeye component of commercial harvest, while neglecting to provide harvest figures for the non-sockeye portion, which comprises the vast majority of fish harvested in Kodiak. For example, sockeye made up only about 6% of the fish harvested in the KMA in 2019, and even in July, during the period of concern for this proposal, Kodiak harvest was overwhelmingly pink and chum salmon. Efforts to curtail the harvest of sockeye in Kodiak, especially CI stocks which exhibit no predictable migration patterns in the KMA, would inevitably result in significant collateral damage in the form of lost harvest of local, pink, chum, and coho stocks that are largely the focus of our directed fishery.

This very situation highlights the fundamental reason why the Alaska Board of Fisheries adopted a mixed stock fisheries policy. Migrating salmon do not conveniently segregate themselves by species and stocks of origin, and they do not embark on predictable migration paths far away from their natal streams. As a result, non-local mixed stock harvest of salmon is inevitable in all Alaskan waters and attempts to manage our fisheries in order to somehow distill out non-local components will inevitably result in sub-optimal use of the resource.

The Mixed Stock Fisheries policy and its associated findings resulted from the acceptance that Alaska must manage its fisheries in a way that best complies with Article VIII of the Alaska state constitution which declares that, "Wherever occurring in the their natural state, fish…are reserved to the people for common use" and that fishery resources be "utilized, developed and maintained on the sustained yield principle" and finally that uses of the resource is available for "maximum use" and for the "maximum benefit" of Alaskans.

The purely allocative proposals offered to the Alaska Board of Fisheries for this meeting would inevitably result in reduced yields of local stocks in addition to massive disruption of a long-established traditional fishery. If the Board were to apply the same reasoning presented in this proposal to management regimes throughout the state, then the net result would be to forsake the sustained yield principle as well as other constitutional statutes and Board policies. The uniform application of the reasoning found in Proposal 64 would inflict substantial economic losses for the state and most acutely for Alaska's coastal fishing communities. Ultimately, managing our fisheries for the maximum benefit and sustained yield standards means that we must accept that the unpredictable nature of salmon migration negates the unrealistic standard of purely localized harvest.

Although some user groups may lament the faraway harvest of what they consider to be *their stocks,* the policies that allow for this harvest were crafted with immense consideration of how to develop consistent management plans that when universally applied maximize the use of the resource and the benefit conveyed to Alaskans. Although it may seem intuitive to some that it is somehow inherently unfair for Kodiak fisherman to harvest Cook Inlet stocks, the Board should consider whether it would be fair for those same fishermen to sacrifice the harvest of hundreds of local fish

in order to potentially provide Cook Inlet waters with a single additional salmon from chronically under-harvested stocks.

Ultimately, Alaska's fisheries are dedicated for common use, and wholesale regional entitlement, which is asserted in this proposal, would violate the very foundational principles of our constitution. Although KSA strongly believes that subsistence users should be granted ultimate priority, there would be no value conveyed to the state by attempting to disrupt a historical fishery just to alter the geographic location of commercial harvest. There are no Board policies or legal statutes that direct managers to ensure commercial harvest be focused exclusively in the region of natal streams. As long as an established commercial fishery alone does not intrinsically threaten the biological sustainability of stocks or the ability to provide subsistence harvest opportunities, then that fishery should not be disrupted simply to regionally reallocate commercial harvest.

Additionally, the Board should consider the importance of consistency in the application of their policies. Currently, Kodiak fishermen bear the sole burden of conservation of KMA stocks despite the documentation of substantial harvest of "East of WASSIP" stocks in Chignik and further south. While KSA is strongly ideologically opposed to meddling in the management of fisheries in adjacent areas, we also believe that whatever standards are applied *to* our fishermen must also be applied *for* our fishermen so that any further restrictions on harvest in the KMA designed to prevent the catch of non-local stocks must be coupled with restrictions to the south designed to prevent the unregulated harvest of KMA and Cook Inlet bound stocks in the Chignik management area and wherever else these fish may be present. After all, the legitimacy of the Board's reasoning is critically and inextricably dependent on the consistency with which its policies are applied.

KSA respectfully requests that you **oppose proposal 64** and support the responsible application of the Mixed Stock Fisheries Policy in Kodiak. We believe that adopting this proposal would result in substantial and irreversible economic harm to our fleet and the economy of communities of Kodiak and that the spirit and intent of the proposal are in complete violation of the state constitution and other adopted Board policies.

Kodiak Seiners Association represents 157 members, including the majority of actively fishing SO1K seine permit holders, Kodiak and Homer-based businesses, and individual crewmembers. Our focus is advocacy for our membership through positive interactions with ADF&G, the Board of Fisheries, and our State Legislature.

Sincerely,

Nate Rose
KSA President

December 24, 2019

Matthew Alward

60082 Clarice Way

Homer, AK 99603

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Opposition to proposal 64

Dear Chairman Morisky and board of fisheries members,

I reside in Homer, AK and support our family fishing our own boat in the Kodiak salmon seine fishery and I oppose proposal 64 which would create new time and area restrictions in the mainland district. I raised our kids on the back deck and an important part of that was the mainland fishery.

Proposal 64 seeks to create "seaward" and "shorward" zones in the mainland district with the seaward zone restricted to two 12 hour fishing periods per week form June 28th to July 25th. The justification stated for this proposal is that "a recent genetic study exposed some incorrect assumptions on Sockeye stock composition in the Kodiak Management Area". The Kodiak Sockeye genetic stock composition study that the proposer is referring to in fact did not take any samples from the mainland district north of the Cape Igvak section and only sampled one year in Cape Igvak section so there is no data that could of exposed incorrect assumptions on sockeye stock composition in over two thirds of the mainland district. This proposal simply makes assumptions with no data to back them up and asked to create prescriptive time and area closures based on those assumptions.

During July there is many local chum and pink salmon runs in the mainland district and if enacted this proposal would make it hard for managers to manage the harvest of these local stocks. This proposal is assuming that the mainland district fishery is a sockeye only fishery when in fact it is a mixed salmon species stock fishery as well and gives no regard of this fact.

In closing given the fact that there is no sockeye harvest genetic data for over two thirds of the mainland district as well as the fact that there is also chum and pink salmon stocks present I respectively ask that you don't create prescriptive management restrictions and oppose proposal 64.

Sincerely,

Matthew Alward

Michelle Rittenhouse
PO Box KWP
Kodiak, AK 99697

December 18, 2019

Chairman Reed Morisky
Alaska Board of Fisheries
Board Support Section
PO Box 115526
Juneau, AK 99811-5526

RE: Proposal #64

Dear Chairman Reed Morisky and Board of Fish Members:

I am a 3rd generation commercial fisherman from Kodiak, AK. I have been an active participant in Kodiak's salmon fishery for 23 of my 32 years, working alongside my family as crew until I purchased my own vessel, which I have been operating since 2013. As a young business owner heavily invested in especially the Kodiak salmon fishery, and whose livelihood is solely based on fishing, I consider this proposal a serious threat to my ability at making a living. I respectfully ask that the Board reject proposal #64.

The Kodiak management plan has a longstanding history for being tried and true. It has been well-constructed to prevent conservation issues to other fishing areas and salmon stocks of non-local origin. It is a known fact that salmon runs are cyclical in nature, experiencing highs and lows in returns, and to blame Kodiak fishermen for the lack of salmon returns to other areas is a baseless argument with negligible evidence to support it. My reliance on getting as much fishing time as possible during the salmon season in Kodiak continues to grow heavier, as other options I explore, such as longlining for halibut and Pacific gray cod fisheries continue to diminish in stock. It is difficult enough to survive the normal ups and downs our fisheries, much less make changes to Kodiak's management plan that will forever negatively impact my ability to pay off my fishing operation. Commercial fishing is not only my livelihood, but also my passion, and I would like to continue doing it for many years to come.

Again, I respectfully request that the Board of Fish reject Proposal #64. Thank you for giving me the opportunity to comment, and for your time. I hope the Board continues to apply consistency in its application of the guiding policies such as the Mixed Stock Fisheries Policy and the Sustainable Fisheries Policy.

Most sincerely,
Michelle Rittenhouse

Mike Ferris
F/V Cally Rose
12/13/2019 10:27 PM AKST

RE: PROPOSAL 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 based on those zones

Hello my name is mike Ferris born & raised Kodiak resident & commercial fisherman, I've been involved in Kodiak salmon since 1987 when I was 10yrs old I ran my first seiner on my own in 1999. Took a few years off of skippering but have been active none the less have run tenders & crewed. This proposal is not only out of line but totally be devastating to Kodiak as a community As a whole the current laws in place are proven to be effective & more than efficient proven for 30 yrs no change is needed! Please don't change a working and in place management plan. Thank you Mike Ferris Kodiak Ak,

Nicholas Hoffman
PO Box 1212
Kodiak, AK 99615

12/24/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Oppose Proposal 64

Dear Chairman Morisky and Board of Fish members:

I'm a young Kodiak salmon fisherman. I have been running a seine boat since 2011 as well as participating in Kodiak halibut, sea cumber, cod jig, and tanner crab fisheries. I respectfully request the Board reject Proposal 64.

This proposal is based on extremely limited data. The data is from only a few days in 2016. This was a fluke year when weather patterns pushed fish around in a huge storm. If fishing regulations are to be rewritten, the changes should be based on thorough studies using multiple years of data, not based solely on one exceptional year. Even this limited study showed nothing new, only confirmed something everyone already knows: Cook Inlet bound fish swim through Kodiak waters. According to the Constitution of the State of Alaska, Article 8, Section 3, “fish, wildlife, and waters are reserved to the people for common use.” This proposal seeks to favor one area over another demanding that Kodiak be limited in favor of Cook Inlet which is several hundred miles away. This is not a conservation issue, but simply Cook Inlet's fishermen trying to limit a neighboring fishery.

The Kodiak Management Plan is a solid mixed stock management plan that works well to balance the needs of the different species of salmon in Kodiak and already has controlled safeguards for the interception of Cook Inlet fish in the North Shelikof Strait Management Plan.

This is an allocation issue for Cook Inlet that if allowed to go forward would limit Kodiak's ability to fish our local stocks.

I see no reason for the Board to make any changes to the Kodiak Salmon Management plan. Thank you for the opportunity to comment on the proposals and the chance for my voice to be heard. I look forward to the Board of Fish members getting to spend time in Kodiak and learn more about our town and fishing community.

I humbly request the Board reject Proposal 64.

Sincerely,

Nicholas Hoffman
F/V Relentless

Oliver Holm
self
12/27/2019 03:26 PM AKST

RE: PROPOSAL 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 based on those zones

I oppose this proposal because it pretends that the only reason to be fishing on the mainland side of the straights is for sockeye. In July there are significant local stocks of chum and pinks to be caught. The presence of Cook Inlet sockeye in July is highly sporadic and there isn't a valid reason to adjust the existing fishery to avoid them. The board of fish has already addressed what was an expanded effort in the north Shelikof and extending it south and arbitrarily changing the seaward zone times is not justified under the Board's mixed stock fisheries policy or the allocation policy.

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 64

Dear Chairman Morisky and Board of Fisheries Members,

I am Richard Roth, Kodiak salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife three children and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Tzar. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

The author of this proposal is citing a genetic study showing nothing new, simply a confirmation of something already known – that Cook Inlet origin sockeye sometimes swim through Kodiak waters. There are measures already in place (such as the North Shelikof Management Plan) that address this, to ensure that the vast majority of Cook Inlet- bound sockeye that do swim the Shelikof, make it through. Placing a cape to cape line on the mainland would keep Kodiak-area managers from maintaining the stability of local pink, silver, and chum salmon and raise serious concerns and precedents about the underlying foundation of common property fisheries in the State of Alaska.

Instead of an attempt to restructure the fisheries in a neighboring region, the Board's time would be better spent investigating the number of years the Kenai and Kasilof rivers have exceeded their escapement, and yet Cook Inlet drift-gillnetters and set-gillnetters still have minimal fishing time when in other regions there would be emergency openings to maintain the health of fish stocks and the rivers. For example, 2019 was a banner year, and yet commercial fishermen were forced to sit on their hands while the Kenai and Kasilof rivers were over-escaped by the hundreds of thousands.

The Kodiak Management Plan is a solid plan that has a proven working track record. The author appears to have little care for the success and sustainability of the management plan in our region and how it allows for the harvesting of local sockeye, pinks, silvers and chums.

I wish all the best to the user-groups of the Cook Inlet Region and hope that in the near future the user groups and management will be able to work together for more peaceful fisheries and sustainable and strong runs in that region.

I strongly encourage the Board to reject this proposal.

Thank you for your careful consideration,

Richard, Amanda, Stephanie, Noah, and Ranger Roth
F/V Sea Tzar
Homer, AK

December 19, 2019

Robert Fellows

266 E Bayview Ave.

Homer, AK. 99603

Alaska Board of Fisheries

Board Support Section

PO Box 115526

Juneau, Ak. 99811-5526

RE: Opposition to proposal 64

Dear chairman Morisky and Board of Fisheries members,

I am a Homer resident who makes a living for my family and crewmembers in the Kodiak commercial salmon fishery. My family, crewmembers, and their families depend on this fishery for the majority of our yearly income. I have commercially fished salmon in the Kodiak area for 29 years. This proposal would drastically affect my ability to continue making a living fishing for salmon. I respectfully request the Board reject proposal #64

The events that led to the harvest percentages that showed up in the 2016 genetic study were unusual. This in turn led to those harvest percentages being an anomaly, not the norm. This proposer is trying to say that there is a problem of Cook Inlet bound sockeye being harvested in the Kodiak management area. The information cited in this proposal came out of a genetic study done in 2016. The proposer is taking that information out of context. That study only indicates what the harvest make-up was in that particular year and only on the dates sampling took place. To be scientifically valid the study would have to be conducted over several years in a row to show any kind of trend in harvest make-up. The study shows nothing new. Occasionally Cook Inlet bound sockeye salmon are harvested in the Kodiak area as they swim through.

Placing a cape to cape line in the mainland district would extremely limit the ability of Kodiak fishermen to harvest local pink and chum salmon runs. It would hamper the departments ability to properly manage these local runs. The Kodiak area management plan is long standing with a good working track record. Targeted harvest of Cook Inlet bound sockeye salmon ended in 1989 with the creation of the North Shelikof Sockeye management plan. The proposer has no understanding of how the current management plan works and allows for harvest of local sockeye, pink, and chum salmon runs. The proposer is making a huge false assumption that the unusual harvest of Cook Inlet sockeye salmon that occurred in 2016 happens every year. What the proposer doesn't mention is the documented over escapement into the Kenai river system that does occur every year. The proposer is grasping at any idea that they think might put more fish into the Cook Inlet management area. It appears that those surplus fish have already been getting there and they end up in the Kenai River.

Sincerely,

Robert Fellows

Steven Roth

12/27/2019 02:00 PM AKST

RE: PROPOSAL 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 based on those zones

December 24, 2019 Alaska Board of Fisheries Board Support Section P.O. Box 115526 Juneau, AK 99811-5526 Re: Opposition to Proposal 64 Dear Chairman Morisky and Board of Fisheries Members, I am Steve Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Grace. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures. ? The author of this proposal is citing a genetic study showing nothing new, simply a confirmation of something already known – that Cook Inlet origin sockeye sometimes swim through Kodiak waters. There are measures already in place (such as the North Shelikof Management Plan) that address this, to ensure that the vast majority of Cook Inlet- bound sockeye that do swim the Shelikof, make it through. Placing a cape to cape line on the mainland would keep Kodiak-area managers from maintaining the stability of local pink, silver, and chum salmon and raise serious concerns and precedents about the underlying foundation of common property fisheries in the State of Alaska. Instead of an attempt to restructure the fisheries in a neighboring region, the Board’s time would be better spent investigating the number of years the Kenai and Kasilof rivers have exceeded their escapement, and yet Cook Inlet drift-gillnetters and set-gillnetters still have minimal fishing time when in other regions there would be emergency openings to maintain the health of fish stocks and the rivers. For example, 2019 was a banner year, and yet commercial fishermen were forced to sit on their hands while the Kenai and Kasilof rivers were over-escaped by the hundreds of thousands. The Kodiak Management Plan is a solid plan that has a proven working track record. The author appears to have little care for the success and sustainability of the management plan in our region and how it allows for the harvesting of local sockeye, pinks, silvers and chums. I wish all the best to the user-groups of the Cook Inlet Region and hope that in the near future the user groups and management will be able to work together for more peaceful fisheries and sustainable and strong runs in that region. I strongly encourage the Board to reject this proposal. Thank you for your careful consideration, Steve and Jenny Roth? F/V Sea Grace Homer, AK

Tyler-Rose Hoffman
PO Box 1212
Kodiak, AK 99615

12/24/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: **Oppose Proposal 64**

Dear Chairman Morisky and Board of Fish members:

I live in Kodiak and my husband and I operate a commercial fishing business. We rely on salmon for the bulk of our income, though we also participate in halibut, sea cucumber, and cod fisheries. Our ability to stay in Kodiak depends on the health of the Kodiak salmon fishery. I respectfully request the Board reject Proposal 64.

This proposal seeks to regulate Kodiak's fisheries for the benefit of another area in ways that show little understanding of how Kodiak's mixed-stock fisheries work and are currently regulated. While limiting Kodiak's commercial fishery might bring a few more sockeye home to Cook Inlet's rivers, it would force Kodiak fishermen to sacrifice the potential harvest of our other stocks and cause over-escapement of other species up the river.

It also seems to assume that Kodiak currently bears no burden for conservation of Cook Inlet stocks. However, the North Shelikof Sockeye Management Plan has already been successfully established and limits the harvest of Cook Inlet bound Sockeye.

The Kodiak Salmon Management plan is good as it is and I see no need for any changes to it. Thank you for the opportunity to comment on the proposals before the meeting. As always, I look forward to visitors getting to enjoy our great down and vibrant fishing community.

I humbly request the Board reject Proposal 64.

Sincerely,

Tyler-Rose Hoffman
F/V Relentless

Corina Watt Kodiak Setnet Commercial Salmon Fisherman
Trap Pt/ Moser Bay Fisheries, Alitak District with sites in Olga, Moser & Alitak Bays
12/25/2019 09:10 PM AKST

RE: PROPOSAL 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 based on those zones

I support proposal 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 for the following reasons: 1) It will increase the quality and viability of many local Kodiak sockeye salmon systems. 2) It will support a return to higher escapements for local sockeye systems including early and late Upper Station runs and Dog Salmon in the Alitak District of Kodiak. 3) It will support long term sustainability Kodiak sockeye salmon systems.

Ed Fisher, Kodiak Setnet Commercial Salmon Fisherman
Trap Pt/ Moser Bay Fisheries
12/25/2019 10:36 PM AKST

RE: PROPOSAL 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 based on those zones

I support proposal 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 for the following reasons: 1) It will increase the quality and viability of many local Kodiak sockeye salmon systems. 2) It will support a return to higher escapements for local sockeye systems including early and late Upper Station runs and Dog Salmon in the Alitak District of Kodiak. 3) It will support long term sustainability Kodiak sockeye salmon systems.

Jason Watt Kodiak Setnet Commercial Fisherman
Trap Pt/ Moser Bay Fisheries: Alitak District with sites in Olga, Moser & Alitak Bays
12/25/2019 09:11 PM AKST

RE: PROPOSAL 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 based on those zones

I support proposal 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 for the following reasons: 1) It will increase the quality and viability of many local Kodiak sockeye salmon systems. 2) It will support a return to higher escapements for local sockeye systems including early and late Upper Station runs and Dog Salmon in the Alitak District of Kodiak. 3) It will support long term sustainability Kodiak sockeye salmon systems.

Judy Fisher, Kodiak Setnet Commercial Salmon Fisher
Trap Pt/ Moser Bay Fisheries
12/25/2019 10:38 PM AKST

RE: PROPOSAL 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 based on those zones

I support proposal 64 Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 28–July 25 for the following reasons: 1) It will increase the quality and viability of many local Kodiak sockeye salmon systems. 2) It will support a return to higher escapements for local sockeye systems including early and late Upper Station runs and Dog Salmon in the Alitak District of Kodiak. 3) It will support long term sustainability Kodiak sockeye salmon systems.

Aaren Ellsworth

12/28/2019 12:54 AM AKST

RE: PROPOSAL 65 Close the Katmai, Alinchak, and Cape Igvak Sections to commercial salmon fishing June 28–July 25

I oppose this proposal. First of all, the Alinchak and Katmai Bay Sections were not sampled during the 2014-2016 genetic study, so it seems unfounded to include those sections in this proposal. Second, Cook Inlet-bound sockeye are harvested incidentally all along the coast of Kodiak Island and the Mainland District. As was experienced with the North Shelikof plan, closing any one area to conserve Cook Inlet bound sockeye does not inhibit those fish from being caught elsewhere, and the closed areas would likely intensify fishing effort in the remaining open areas. Consequently, when Cook Inlet fish become available, more will be caught in the areas that remain open/ In short, given the magnitude of inner-annual variability and random migration patterns of Cook Inlet sockeye in the Kodiak Management Area, the entire area would have to be closed to have an impact on Cook Inlet's sockeye availability.

Aaron Nevin

12/27/2019 09:20 PM AKST

RE: PROPOSAL 65 Close the Katmai, Alinchak, and Cape Igvak Sections to commercial salmon fishing June 28–July 25

The Cape Igvak section is already managed in an overly conservative way. My name is Aaron Nevin. Being born in Kodiak to a commercial fisherman father I grew up fishing salmon on his seiner. I have continued on in my currently twenty year long career to buy a permit and run his boat after retirement. The seining season usually accounts for the majority of my annual income and is incredibly important to my family.

Adam Barker
Kashvik Fisheries LLC
12/27/2019 12:47 AM AKST

RE: PROPOSAL 65 Close the Katmai, Alinchak, and Cape Igvak Sections to commercial salmon fishing June 28–July 25

Adam Barker 41584 Manson Dr Homer, AK 99603 December 26th 2019 Chairman Reed Morisky Alaska Board of Fisheries-Board support section PO Box 115526 Juneau, AK 99811-5526 RE: prop # 65 Dear Chairman Moriskey and Board of Fish Members: My name is Adam Barker and I have been fishing in Kodiak since 1988, I'm a third generation fisherman. I bought into Kodiak Salmon seine in 1999 as a owner operator and now I take my two children out fishing, I also fish Tanner crab and will be doing that fishery in January. I respectfully request the board reject prop # 65. I oppose the Prop # 65 as trying to bolster an ailing Cook Inlet Gillnet fishery, by over-escaping the local Katmai, Alinchak and Cape Igvak areas. It doesn't make any sense to declare a stop fishing in these historic areas that has been well managed and contain numerous wild runs and multi species of salmonoids. Declaring a preferential fishery while ignoring current scientific facts is not a sustainable way to manage wild salmon stocks. Please reject Prop # 65 as unsound and not conducive to furthering commercial fishing. I thank you for the opportunity to comment. I hope the board continues to apply consistency in its application of the guiding policies such as the mixed stock fisheries policy and the sustainable fisheries policy. Sincerely, Adam Barker

Adelia Myrick

12/26/2019 10:22 AM AKST

RE: PROPOSAL 65 Close the Katmai, Alinchak, and Cape Igvak Sections to commercial salmon fishing June 28–July 25

Dear Board of Fish members: I am writing in opposition to proposal 65 for many reasons. As a 2nd generation setnetter, I have grave concerns about a blanked closure of these mainland areas. While at first glance it seems that it wouldn't affect me since it refers to sections where setnetters are not allowed to fish, it would actually drastically affect me because it would increase fishing pressure in our already crowded central section of the NW Kodiak District and would cause economic difficulties. My opposition isn't just personal, though. I am really concerned that a blanket closure like this is arbitrary and completely unjustified, not based on science. These fisheries are already managed based on Cape Igvak management and local stocks, and are managed, like ALL non-terminal Alaska salmon fisheries, with the stated recognition that there may be non-local stocks appearing from time to time. This is the common property principle. If you start amending these management plans, you are setting a dangerous precedent about mixed stock fisheries. I'm aware that Cook Inlet fishermen are eager to protect their fisheries and obtain more fish, but please, as a board, remember that whatever pressures and arguments are given need to be based in verifiable science and data and not an overwrought reading of a study that wasn't even designed to be used in this manner. Don't discount the work of previous generations of boards and fishermen that have worked so hard to craft management plans for this incredibly complex fishery. Thank you for your consideration, Adelia Myrick Uganik Bay setnetter

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 65

Dear Chairman Morisky and Board of Fisheries Members,

I am Alex Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Wandering Star. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

This proposal appears to be in response to an anomaly that occurred in fish migration patterns during 2016, and the proposer wants to bring up the genetic study as justification as need for change. Kodiak's North Shelikof Management Plan was created so that Kodiak fishermen would share the "conservation burden" with Cook Inlet by limiting fishing in that area so the goal of UCIDA's proposal is already addressed in current management. The genetic sockeye identification study undertaken in the Kodiak Management Area from 2014-16 really does not provide "new" information relative to the presence of Cook Inlet sockeye in the KMA, and is completely taken out of context because it only looked at sockeye rather than the full suite of salmon species that we fish for in Kodiak. This proposal would restrain fishing allowed during times of the Cape Igvak Management, which would make it difficult to reach Kodiak's traditional and historical 15% allocation which the Chignik proposals claim belong to Chignik, and Cook Inlet proposals, on the contrary, claim as their own. It would also prevent the ability to fish some areas as directed chum and early pink fisheries for Kodiak fishermen resulting in lost revenue and opportunity for our region.

Instead of an attempt to restructure the fisheries in a neighboring region, the Board's time would be better spent investigating the number of years the Kenai and Kasilof rivers have exceeded their escapement, and yet Cook Inlet drift-gillnetters and set-gillnetters still have minimal fishing time when in other regions there would be emergency openings to maintain the health of fish stocks and the rivers. For example, 2019 was a banner year, and yet commercial fishermen were forced to sit on their hands while the Kenai and Kasilof rivers were over-escaped by the hundreds of thousands.

I strongly encourage the Board to reject this proposal.

Alex and Jaime Roth
F/V Wandering Star
Homer, AK

Bo Calhoun

12/26/2019 10:38 PM AKST

RE: PROPOSAL 65 Close the Katmai, Alinchak, and Cape Igvak Sections to commercial salmon fishing June 28–July 25

Bo Calhoun 57177 Zulu Ct. Homer, AK 99603 12/26/19 RE: Opposition to Proposal #65 Dear Chairman Morisky and Board of Fish members: I'm a third generation Kodiak salmon seiner. I was born in Homer, raised in Port Lions and Homer, and continue to live in Homer. My wife and I hope to raise our two sons on our family seine boat in a healthy Kodiak salmon fishery. I respectfully request you reject Proposal #65. The wholesale closure of a traditionally fished area for almost a month based on one anomalous and incomplete genetic study is unjustified. This proposal would unnecessarily inhibit management and catch of local pink and chum salmon stocks. Please reject proposal #65. Thank you for taking the time to read public comments. Sincerely, Bo Calhoun

Brad and Kay Underwood

12/24/2019 10:07 AM AKST

RE: PROPOSAL 65 Close the Katmai, Alinchak, and Cape Igvak Sections to commercial salmon fishing June 28–July 25

Vote no on Proposal 65 The foundation of this proposal rests on a 3 year-study to determine the genetic composition of the Kodiak salmon harvest. This could provide the department with additional insight as how to best manage commercial fishing periods to achieve optimal salmon escapement targets. The problem with this study lies with its duration. Salmon migration compositions can vary significantly on a year-by-year basis. For a study of this nature to be statistically significant, it would have to take place over a much longer timeline. The degree of fluctuation possible in this 3-year analysis is probably high. The short duration of this study renders it unusable for implementing management changes. It is common knowledge that Kodiak is a mixed stock fishery. To have any relevance as a salmon management tool, this study would need to take in a much longer time frame of 20 years or more. To make allocative changes relying on data from such a short period of time is not scientifically sound. It would be irresponsible to base decisions on incomplete data. Kodiak has a long-established traditional salmon fishery and nothing in this proposal meets the allocation criteria as determined by the Board of Fish. The only sensible decision to be made at this time is to vote no on proposal 65. Brad and Kay Underwood

Brad Marden
PO Box 2856
Homer, AK 99603

December 23, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: **opposition to Proposal 65**

Dear Chairman Morisky and Board of Fish members:

I first participated in the Kodiak seine fishery for salmon in 2004. Since then, I've worked as a deckhand in various salmon, halibut, and herring fisheries throughout the state, before buying my own boat in 2012, followed by a Kodiak seine permit in 2013. Since then I have exclusively fished in Kodiak waters. I respectfully request the Board **reject Proposal 65**.

This proposal is a misguided attempt to conserve Cook Inlet-bound sockeye, but the major affects would all be negative: consolidation and crowding of the Kodiak fleet, over-escapement of local pink and chum stocks, and foregone revenue. Furthermore, the positive, intended effects would be negligible, for there is very little evidence that CI-bound sockeye frequent the southern mainland shoreline in any numbers. The anomalous stormy weather in July 2016 is one notable exception to this. The first three weeks of July are an important time for Kodiak fishermen to be able to spread out over the KMA and target local mixed stocks. Closing Katmai, Alinchak, and Igvak would be costly to all Kodiak fishermen, with negligible benefit to fishermen or fish stocks of concern in Cook Inlet or elsewhere.

The Board no doubt grows weary of endless testimony claiming that the fish of concern are "our fish being stolen by those guys over there". It seems that in my 15 years of commercial fishing in Alaskan waters, Kodiak salmon fishermen are often on the defensive. Rather than retaliate with countering proposals of our own, I ask that we maintain status quo and keep historical allocations and fishing opportunity. For this reason, I ask that you **reject Proposal 65**. Thank you for your service and I hope the Board continues to apply consistency in upholding Mixed Stock Fisheries Policy, and the Sustainable Fisheries Policy.

Sincerely,

Brad Marden

Brian Mcwethy
KSA
12/23/2019 09:32 AM AKST

RE: PROPOSAL 65 Close the Katmai, Alinchak, and Cape Igvak Sections to commercial salmon fishing June 28–July 25

My name is Brian Mcwethy. I was born and raised in kodiak. I live in kodiak with my family and we all depend on my income. I fished with my father on his seiner growing up and now I own and operate a seiner. Salmon seining and tanner crab fishing in kodiak are currently our only sources of income. I plan to try and continue to fish the kodiak waters and possible my children will have the opportunity to. I hope the current and historical areas we fish aren't taken from us and the future generations of kodiak. This proposal would seriously decrease the ability of kodiak fishermen to harvest local Kodiak salmon. My ability to provide for my family would potentially be taken away from me. I strongly oppose this proposal.

Charles and Theresa Peterson
1850 Three Sisters Way
Kodiak, AK 99615

December 26, 2019

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE**: Oppose Proposal 65**

Dear Chairman Morisky and Board of Fish members:

We moved to Kodiak in the 1980's to pursue the opportunity for a livelihood in commercial fishing. We found what we were looking for, a chance to make a living off the sea and stayed, raising three children and developing deep relationships in our island home. Kodiak is a community built on fish and the size of the fleet, the processing infrastructure, the support services and the overall health of our coastal community is dependent on sustainable fisheries. Salmon fishing is the mainstay of our commercial fishing business and without it we would not have the financial means to stay in Kodiak, maintain a vessel and prosecute other fisheries. We own a 42', shallow draft seine vessel that primarily operates in the Alitak district. Our son now runs the boat and Charles and I run a setnet site in Alitak Bay. We choose to diversify our salmon fishing with participation in both the seine and setnet fishery so our son can run the boat with his crew and the rest of the family can prosecute the fishery from a shore-based operation.

We are opposed to proposal 65. The proposal seeks to implement a significant change in the Cape Igvak and Mainland district management plans based on limited genetic data. The proposal lacks comprehensive science-based information to base sound decisions for fisheries management The genetic study referenced in the proposal was not intended to influence major management decisions. The genetic study covers an 18-month period and does not factor in the ocean changes experienced in the Gulf of Alaska from 2014-2016. As structured, the proposal would restrict fishing time in the Cape Igvak Management for a period which would make it difficult to harvest Kodiak's 15% allocation of the Chignik run.

Sincerely,

Charles and Theresa Peterson

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 65

Dear Chairman Morisky and Board of Fisheries Members,

My name is Chris Johnson and I am a second-generation fisherman in Kodiak, Alaska. I grew up fishing on my dad's boat and got my first crew job working for someone else two weeks after I graduated high school. I haven't missed a salmon season since. I bought into the fishing industry in 2011 with the purchase of a 25-foot jig boat that I worked for two years in the winter and spring months while I still crewed for salmon in the summer. Access to the jig fisheries focusing on cod and rockfish was the only way that I could afford to move into the salmon fleet with a 38-footer in 2013. After the recent cod collapse, I now primarily rely on salmon seining and live here year-round with my wife.

This proposal appears to be in response to an anomaly that occurred in "lightning strike" fish migration patterns during 2016, and the proposer wants to bring up the genetic study as justification as need for change. Kodiak's North Shelikof Management Plan was created so that Kodiak fishermen would share the "conservation burden" with Cook Inlet by limiting fishing in that area so the goal of UCIDA's proposal is already addressed in current management. Furthermore, the genetic sockeye identification study undertaken in the Kodiak Management Area from 2014-16 really does not provide "new" information relative to the presence of Cook Inlet sockeye in the KMA, was never intended to inform management decisions, and is completely taken out of context because it only looked at sockeye rather than the full suite of salmon species that we fish for in Kodiak. This proposal would restrain fishing allowed during times of the Cape Igvak Management, which would make it difficult to reach Kodiak's traditional and historical 15% allocation. It would also the prevent ability to fish some areas as directed chum and early pink fisheries for Kodiak fishermen resulting in lost revenue and opportunity for our region.

Taking away any fishing opportunity from Kodiak fishermen, particularly from the small boat fleet, would have a direct negative impact on new entrants trying to gain a foothold in this industry, fishing families trying to get by, and fishing support businesses in our region. I'm proud to call Kodiak home and am working to protect our fishing way of life.

Sincerely,
Chris Johnson
F/V North Star

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 65

Dear Chairman Morisky and Board of Fisheries Members,

My name is Danielle Ringer and I appreciate the opportunity to comment on proposals before the Board in writing and in person for the Kodiak finfish meeting. I live in Kodiak with my husband and we own and operate the 38-foot F/V North Star. We chiefly rely on salmon seining and cod and rockfish jigging to maintain our fishing way of life and ability to live on Kodiak Island. I grew up in Homer learning to harvest and process fish from my parents in Kachemak Bay and dipnetting on the Kenai River. I hold a Master's degree from the University of Alaska Fairbanks in Political Ecology of Fisheries and was one of the researchers on the *Graying of the Fleet in Alaska's Fisheries: Defining the Problem and Assessing Alternatives* study in the Kodiak region.

This proposal appears to be in response to an anomaly that occurred in "lightning strike" fish migration patterns during 2016, and the proposer wants to bring up the genetic study as justification as need for change. Kodiak's North Shelikof Management Plan was created so that Kodiak fishermen would share the "conservation burden" with Cook Inlet by limiting fishing in that area so the goal of UCIDA's proposal is already addressed in current management. Furthermore, the genetic sockeye identification study undertaken in the Kodiak Management Area from 2014-16 really does not provide "new" information relative to the presence of Cook Inlet sockeye in the KMA, was never intended to inform management decisions, and is completely taken out of context because it only looked at sockeye rather than the full suite of salmon species that we fish for in Kodiak. This proposal would restrain fishing allowed during times of the Cape Igvak Management, which would make it difficult to reach Kodiak's traditional and historical 15% allocation. It would also the prevent ability to fish some areas as directed chum and early pink fisheries for Kodiak fishermen resulting in lost revenue and opportunity for our region.

I see no biological, scientific, historical, economic, nor sociocultural reasons that could justify the Board making any changes to the salmon management plans in the Kodiak Management Area, which would create ripple effects negatively impacting Kodiak fishermen, processing workers, and community businesses. Thank you for your consideration of my comments and I look forward Board of Fisheries members spending time in our fishing community during the Kodiak meeting.

I humbly request the Board to reject this proposal.

Respectfully,
Danielle Ringer, M.A., F/V North Star

Dave Kubiak
F/V Lara Lee
12/21/2019 02:48 PM AKST

RE: PROPOSAL 65 Close the Katmai, Alinchak, and Cape Igvak Sections to commercial salmon fishing June 28–July 25

This is another Draconian solution for a non-existent problem. Nearly all fisheries in Alaska have incidental intercept catches of stocks bound for other areas. Salmon are free roaming and subject to the vagaries of wind and tide. To implement this proposal would interfere not only with the Cape Igvak Management Plan but would also prevent the harvest of pink and chum stocks along the mainland. This is an unnecessary and indefensible attack on Kodiak commercial salmon fishermen.

Donald Lawhead

12/26/2019 11:06 PM AKST

RE: PROPOSAL 65 Close the Katmai, Alinchak, and Cape Igvak Sections to commercial salmon fishing June 28–July 25

The mangement plans in place have worked for many years. Closing hundreds of miles of the Kodiak mangement area would cost fisherman millions of dollars. Commercial fishing is a hard living. You have to survive the bad seasons to get to the good ones.

Fred Stager

F/V Lady Lu

December 12, 2019

Alaska Board of Fisheries Board Support Section

P.O. Box 115526 Juneau, AK 99811-5526

RE: Opposition to Proposal 65

Dear Chairman Morisky and Board of Fish Members:

I am writing to express **opposition to proposal 65,** which will eliminate a long-standing traditional fishery.

The Alaska Board of Fisheries is obligated to use the best available science to make management decisions, and KSA understands that this standard means that the genetic stock assessment of sockeye salmon harvests in the Kodiak Management Area (KMA) can be used in its analysis. Nevertheless, if the Board is going to use this study and its scientific basis then the principle conclusions of the study cannot be ignored. Among the primary findings is that the harvest of nonlocal stocks is highly variable and unpredictable, and that harvest data cannot be extrapolated temporally or geographically. The proposal projects conclusions onto areas for which no data is available, on the results of a genetic study done in 2016 which was a year of bizarre and unheard of ocean conditions. Indeed, the results of 2015 stand in direct opposition to the results of the following year.

The unpredictability of salmon migrations and the need to preserve historical fishing communities while providing opportunities to harvest

local stocks is the very reason why the Board long-ago adopted the Mixed Stock Fisheries Policy. This proposal is asking the Board to entirely ignore the Mixed Stock Policy, discard the best available science, disregard and discount the preponderance of local stocks, and violate virtually every basic guiding principle and policy, including constitutional mandates on the utilization of fishery resources. This proposal would inflict certain and severe economic hardship on KMA fishermen, upend decades of responsible fishery management, and entirely erode confidence in the regulation of our fishery. It would do all of this simply and speculatively to provide more fish to a region that currently appears incapable of fully exploiting their local stocks.

Please reject proposal 65.

Thank You- Fred Stager

garrett kavanaugh

12/27/2019 05:21 PM AKST

RE: PROPOSAL 65 Close the Katmai, Alinchak, and Cape Igvak Sections to commercial salmon fishing June 28–July 25

Dear Chairman and Members of the Board, As a young fishermen who is working their way into the Kodiak Salmon fishery this proposal will cause Kodiak fishermen to lose a substantial amount of their catch. I have been investing into the Kodiak salmon fishery as much as possible, in 2019 I purchased a Kodiak salmon permit. I ran a seiner for the month of august. I plan on running the same boat for the entire 2020 salmon season in Kodiak. When I was younger I remember testifying against proposals similar to these. These proposals are re-allocations of Kodiak historical catch. Kodiak has always had intercept fisheries and we already have management plans in place that have been effective for the Kodiak salmon fishery. Please help ensure the future for young fishermen entering into the Kodiak Salmon fishery, and the people who have been investing and are established in the fishery. Thank you for considering these comments, Garrett Kavanaugh

Iver Holm

12/28/2019 12:30 AM AKST

RE: PROPOSAL 65 Close the Katmai, Alinchak, and Cape Igvak Sections to commercial salmon fishing June 28–July 25

Dear Chairman Morisky and Board of Fish members: I am 31 years old and a life long resident of Kodiak. I grew up set netting in Uganik on the west side of the island with my mother until i was 14. I then started seining with my father until I was able to buy my own Kodiak seine operational the age of 27. Please oppose proposal 65. thank you for your time sincerely
Iver Holm

James Calhoun

12/26/2019 04:07 PM AKST

RE: PROPOSAL 65 Close the Katmai, Alinchak, and Cape Igvak Sections to commercial salmon fishing June 28–July 25

I have been intimately involved in the Kodiak seine fishery since 1968 to present. Presently my son is fishing the Kodiak area and it is my desire to have my grandsons be able to participate in a healthy Kodiak fishery if they so desire. Throughout my career I have come to the conclusion that the ADF&G management for Kodiak has been stellar and has kept the stocks in Kodiak healthy overall with the current management plan. Local chum and pink stocks are harvested in this area. Please oppose proposal 65.Thank you.

Jamin Hall

12/27/2019 10:52 PM AKST

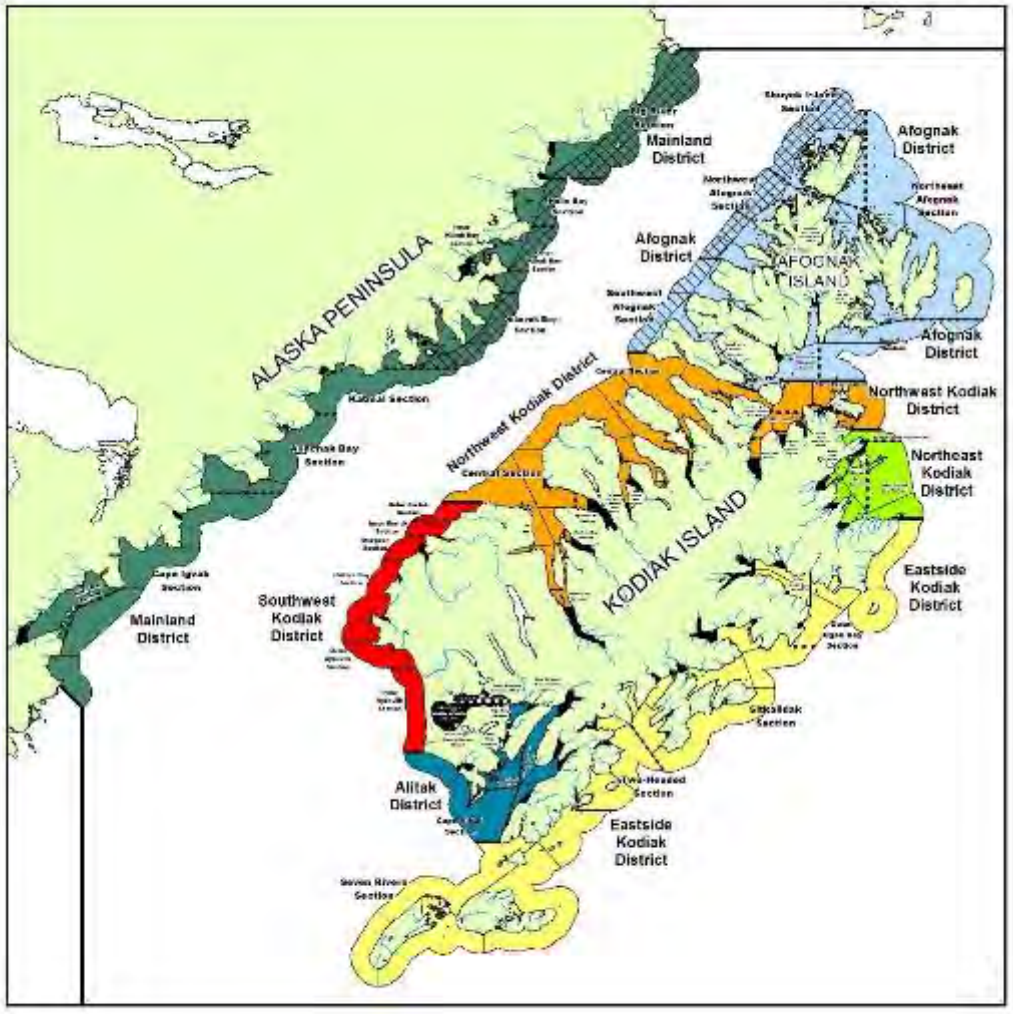
RE: PROPOSAL 65 Close the Katmai, Alinchak, and Cape Igvak Sections to commercial salmon fishing June 28–July 25

My name is Jamin Hall, my wife and I have a set net site in Uganik Bay. I am writing in opposition to proposal 65. This proposal claims to not affect setnet fishermen, but in fact we would be more impacted because of the stationary nature of our fishery. All the seiners that would be displaced by the blanket closure of Kodiak's mainland fishing areas will migrate to the island and would put more intense pressure on areas where set net sites are located. When lineups at traditional sets get too long seiners go looking for new sets, and frequently cork setnet sites that have no ability to move. The Kodiak Management plan has been used and refined over a 30+ year period, taking into account all of the information that has been presented. Thank you for giving me the chance to voice my opposition.

Ken Christiansen
F/V Mary Ann
12/26/2019 03:56 PM AKST

RE: PROPOSAL 65 Close the Katmai, Alinchak, and Cape Igvak Sections to commercial salmon fishing June 28–July 25

The Author's reason for the proposal references the genetic study done in 2016 which was an anomaly. It was simply a snapshot of one point in time and does not reflect a pattern. I was one of the boats that happened to be fishing in the area during the time the fish were caught for that study, I have never, in more than 30 years of fishing in the Cape Igvak Section, seen fish go by like they did that year, and don't expect to ever see it again.



Economic Analysis Proposal 65

Kodiak Salmon Workgroup

Key Findings

- Overall, proposed changes from Proposal 65 would result in an economic loss in the Kodiak Borough of almost $730,000 a year.
- Restrictions would result 100% of the current sockeye catch being eliminated and an average loss per fisherman of more than $28,000 a year.

- Direct loss of foregone sockeye harvest per year ranges from $34,000 to $1.95 million over the time period examined (1998-2019). Mean foregone sockeye harvest is valued at $518,000 per year, using each year's prices.

$728 Thousand Dollars Yearly Direct Loss to Fishermen

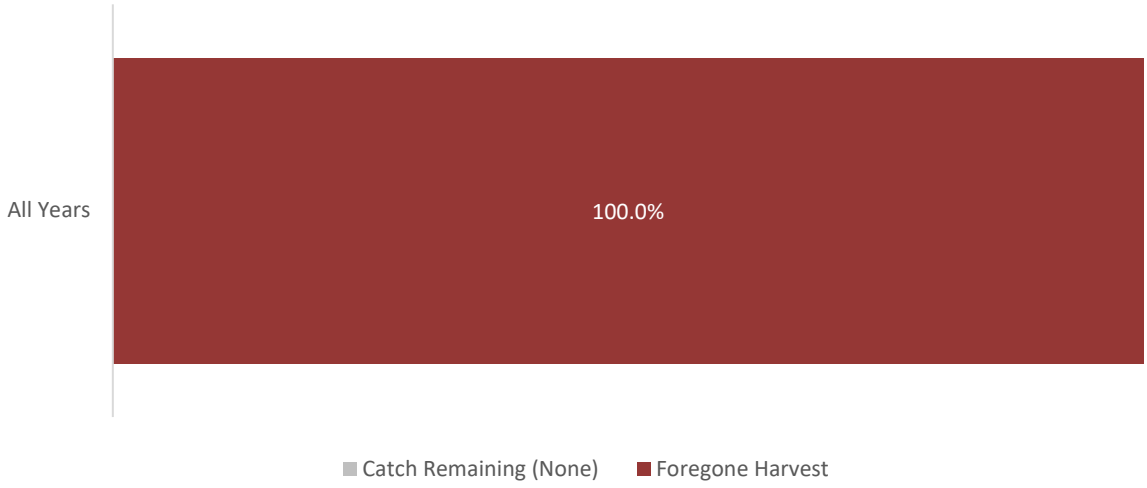
- Sockeye loss per permit holder affected ranges from $2,500 to $77,000 per year (mean $19,000), depending on the number of affected fisherman and the count of the foregone sockeye harvest.

$1.09 Million Dollars Annual Economic Loss in the Kodiak Borough

- Total foregone harvest among all species is estimated to be 892,000 pounds per year worth an average of $728,000 per year, using each year's prices. The average loss per affected permit holder is estimated to be $28,000 per year.

- Species specific foregone harvest is estimated to range between $13 (chinook) to $1.95 million (sockeye) per year.

Average Revenue Loss Per Year



Methodology and Data Sources

Background

The 2019-2020 Board of Fish, Kodiak Finfish Proposal 65 proposes to amend the Cape Igvak Management Plan and the Mainland District Management Plan by closing all commercial salmon fishing from June 28 through July 25.

Proposal 65 will impact three harvest areas in the Mainland District: Cape Igvak, Alinchak Bay, and Katmai sections.

Link to Proposal:
https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2019-2020/proposals/65.pdf

Data Sources

Foregone harvest days count and pound data was provided by the State of Alaska, Department of Fish and Game daily harvest reports. Price data for 1998-2018 was provided from the State of Alaska, Department of Fish and Game *Commercial Operator's Annual Reports* (COAR). 2019 price data was not available through the COAR report at the time of this analysis. 2019 price data is estimated from the five-year average of the reported 2014-2018 price per pound per species (see methods below). Multipliers for indirect and induced economic impact were commissioned from the US Department of Commerce, Bureau of Economic Analysis specifically for the Alaska commercial fishing industry. Inflation rates are provided from the US Department of Labor, Consumer Price Index. Tax information is from the State of Alaska, Department of Revenue and the Kodiak Borough.

Data Methods

Economic impact is estimated using historical harvest data from 1998-2019. Proposal 65 applies to all gear types and all gear harvest totals used in estimating impact.

The total harvest counts in the affected areas were aggregated across days of closure and sections for each year. The value of foregone harvest is calculated as species-specific foregone harvest pounds multiplied by species-specific Kodiak area price per pound for each year. Foregone harvest counts and economic impact are calculated for the affected sections as a whole.

The number of permit holders affected by proposal 65 is calculated as the maximum number of unique permits during the closure period in harvest records.

Species specific prices per pound for each year between 1998-2018 were obtained from the Fish Game COAR for each individual year. The total net weight in the Kodiak area for each species for each season is divided by the respective net value.
Final 2019 COAR price per species data is not available. Species specific price for 2019 was estimated as a five-year average of available COAR data (2014-2018). Verification of 2019 data with the KSWG provided spreadsheets using Icicle, Ocean Beauty, and Pacific season prices for 2017-2019 compared to COAR for 2017, 2018. The spreadsheet values varied from published COAR by both higher and lower values up to 20%. The five-year average was much closer to 2017 and 2018 prices than the spreadsheet averages and weighted averages for respective years. The sockeye 2019 season price per pound estimate may be biased downwards given the processor spreadsheet; the COAR numbers were up to 20% lower than provided spreadsheet, and the five-year average is 16% lower than 2019 processor spreadsheet.

Indirect and induced economic loss was calculated from Regional Input-Output Modeling System (RIMS II) type I and type II multipliers. These take into account increase (in this case local loss) in

regional economic activity due to change in industry specific earnings. For this report, the fisheries industry specific multipliers were used. Selected industry multipliers are specific to Alaska.

All values are adjusted for inflation and shown in 2019 dollar values.

Results & Data Tables

Direct Losses

All years between 1998-2019 are affected by Proposal 65. 100% of the current catch would be restricted. Overall, these changes would result in an economic loss to the Borough of more than one million dollars a year.

$728 Thousand Dollars Yearly Direct Loss to Fishermen

$1.09 Million Dollars Annual Economic Loss in the Kodiak Borough

Direct revenue lost to the Kodiak Borough per year:

Direct loss per affected year: $728 Thousand
Loss from sockeye fishery: $518 Thousand

Fisheries employment impact: 6.4 jobs per year
All employment impact: 8.1 jobs per year
Indirect community loss: $151,091
Induced community loss: $212,881

Total Annual Borough Loss: $1,091,771

Proposal 65 would have impacts throughout the Kodiak Borough. The direct loss to fishermen would be $728,000 per year. Of the total loss to the fishery, the limitations on the sockeye fishery comprise the majority of the impact, accounting for $518,000 of the loss with $210,000 of the total loss distributed among other salmon species.

The direct impact of this proposal will result in a loss of 6.4 fisheries specific jobs and a total of 8.1 jobs overall in the Kodiak Borough per year. In addition to the direct loss impact of $728k, there is a further indirect loss of $151k as a result of lost business to business economic activity for the community from purchases such as fuel, gear, and supplies. There is an additional $212k of induced loss in the community resulting from the lost direct and indirect economic activity (total $879k) and reduced labor market. This impact results in a total loss to the community from direct, indirect, and induced losses of $1.09 million dollars per year.

Fisheries Loss

Proposal 65 results in fisheries restrictions in all years studied. There would be a 100% restriction during the affected years and would result in 100% revenue loss due to the entire catch being eliminated.

Chart 1: Average Revenue Loss Per Year

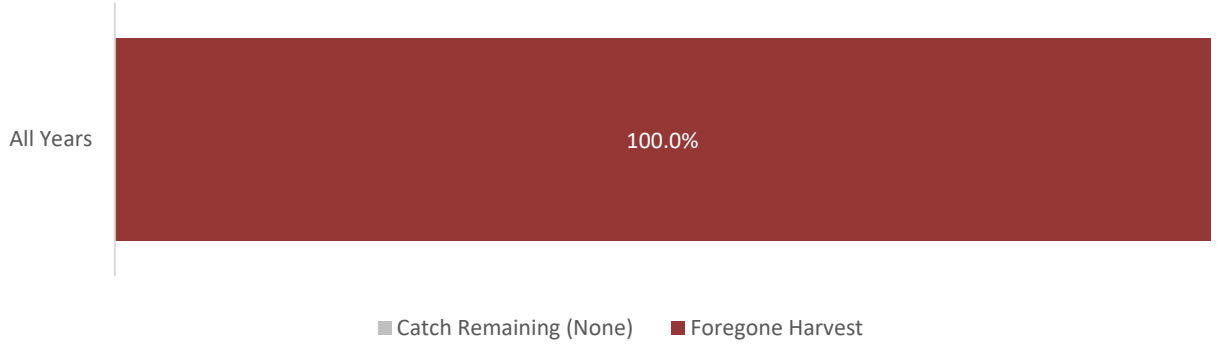
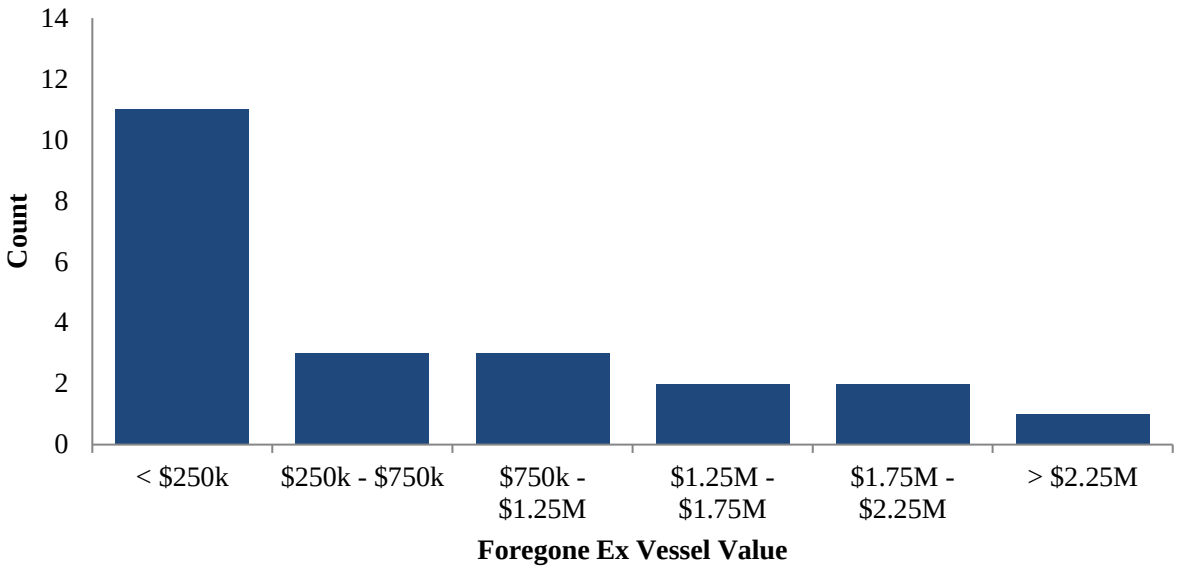


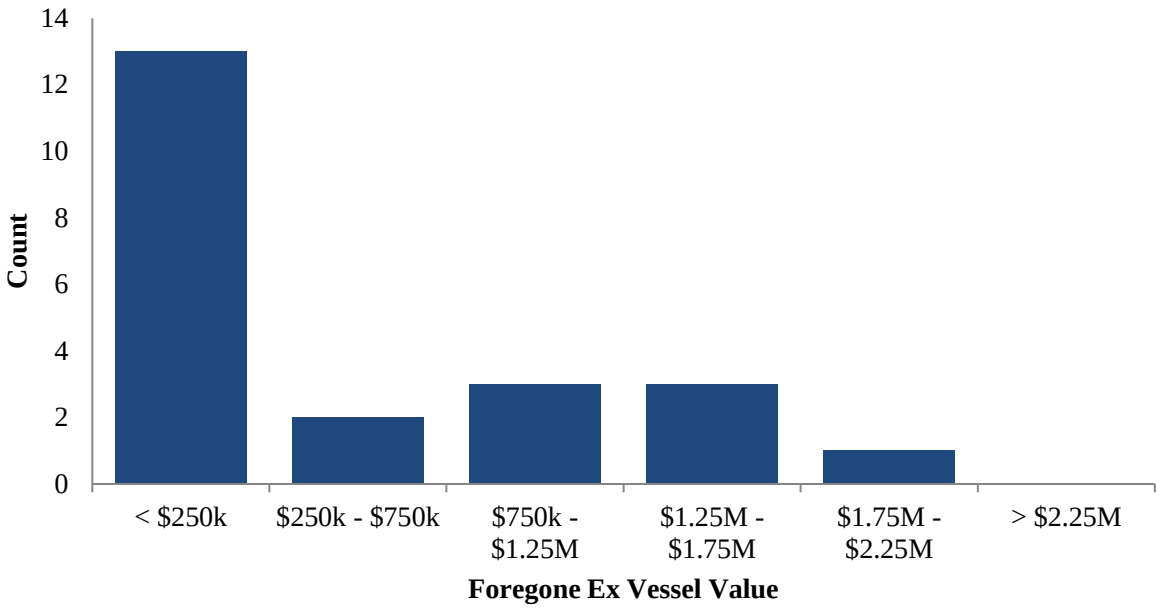
Chart 2: Total Fishery Loss 1998-2019



Over the last 22 years 1998-2019, there have been 11 years where the fisheries losses from the increased restrictions would result in a loss of more than $250k of foregone ex vessel value to the fishery. Fishing was severely restricted in 2018 due to historically low run returns.

The sockeye fishery would experience ex vessel losses of more than $250k for nine of the 22 affected years.

Chart 3: Total Sockeye Loss



The mean direct loss for all species per year is $727,799 with a median loss of $270,383. If these restrictions were in place the greatest impact would have been in 1999 with a loss of $2,397,827 and the least impact would have been in 2007 with a loss of $67,939.

Table 1: Direct Loss of Proposal 65 Implementation

Year	Direct Loss All Species	Direct Loss Sockeye
1998	$146,816	$104,543
1999	$2,397,827	$1,945,993
2000	$1,223,520	$814,025
2001	$1,233,843	$778,495
2002	$207,807	$158,458
2003	$138,032	$112,164
2004	$91,157	$39,187
2005	$165,479	$152,909
2006	$541,229	$161,965
2007	$67,939	$51,689
2008	$230,015	$92,087
2009	$2,073,829	$1,403,105
2010	$966,491	$468,127
2011	$75,711	$61,582
2012	$1,289,219	$1,064,664
2013	$2,125,020	$1,648,160

2014	$705,754	$653,833
2015	$120,382	$37,504
2016	$1,683,996	$1,463,957
2017	$310,751	$79,689
2018	$122,220	$33,855
2019	$94,534	$78,309
Mean	**$727,799**	**$518,377**
Median	**$270,383**	**$155,684**
Min	**$67,939**	**$33,855**
Max	**$2,397,827**	**$1,945,993**

Table 2: Direct Loss of Proposal 65 Implementation Per Fishermen

	Average Loss Per Fishermen – All Species	Average Loss Per Fishermen – Sockeye Only
Mean	**$28,507**	**$19,127**
Median	**$22,002**	**$11,614**
Min	**$7,549**	**$2,500**
Max	**$88,631**	**$77,050**

Based on the number of active permits per year, individual fishermen would experience a mean direct loss for all species per year of $28,507 with a median loss of $22,002. If these restrictions were in place the greatest impact would have been in 2016 with a loss of $88,631 per fishermen with the least impact in 2007 with an average loss of $7,549.

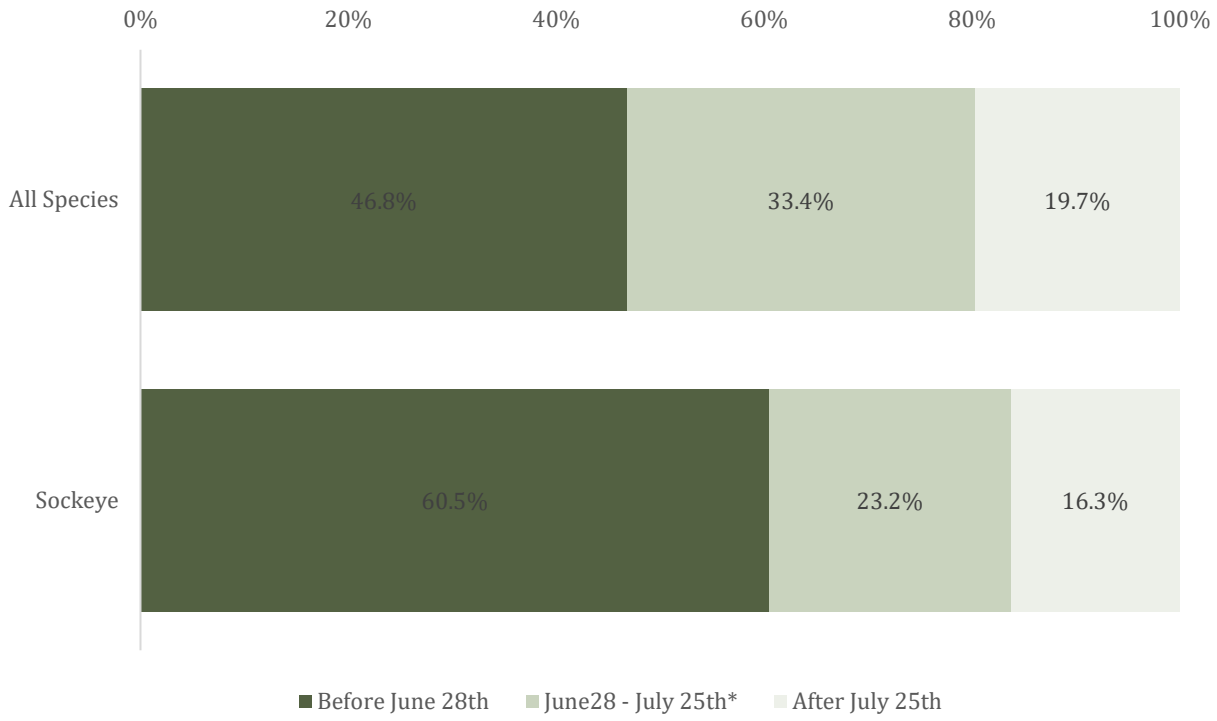
Table 3: Loss Per Affected Permit Holder

Year	Permits	Loss per Permit	Total Value Foregone Harvest	2019 Inflation Adjustment
1998	11	$13,347	$93,040	$146,816
1999	88	$27,248	$1,552,997	$2,397,827
2000	71	$17,233	$818,956	$1,223,520
2001	65	$18,982	$849,169	$1,233,843
2002	23	$9,035	$145,320	$207,807
2003	15	$9,202	$98,736	$138,032
2004	8	$11,395	$66,929	$91,157
2005	13	$12,729	$125,649	$165,479
2006	21	$25,773	$424,160	$541,229
2007	9	$7,549	$54,746	$67,939
2008	5	$46,003	$192,481	$230,015
2009	31	$66,898	$1,729,632	$2,073,829
2010	37	$26,121	$819,060	$966,491
2011	6	$12,618	$66,239	$75,711
2012	24	$53,717	$1,151,089	$1,289,219
2013	42	$50,596	$1,924,837	$2,125,020
2014	18	$39,209	$649,866	$705,754

2015	15	$8,025	$110,951	$120,382
2016	19	$88,631	$1,570,892	$1,683,996
2017	8	$38,844	$296,236	$310,751
2018	6	$20,370	$119,355	$122,220
2019	4	$23,634	$94,534	$94,534
Average		**$28,507**	**$588,858**	**$727,799**

On average, the majority of sockeye and almost half of total catch (by weight) in Cape Igvak for each season is caught before June 28th. For this reason, the impact of proposal 58 (total closure of Cape Igvak before July 8th) is much higher than the impact of proposal 65 (closure between 6/28 and 7/25). Of note, no fishing occurred in Cape Igvak during any year (1998-2019) between June 28th and July 8th.

Chart 4: Average Total Weight Caught During the Season in Cape Igvak by Time Period



Tables 4 and 5 show the percentage of foregone revenue that can be attributed to the closure of the Cape Igvak fishery in the proposal. The average foregone revenue due to the Cape Igvak closure over all years is almost 70% of the total Proposal 65 impact. For sockeye specific harvests, the average foregone revenue in Cape Igvak represents over 70% of the total impact of proposal 65.

Table 4: Total Percentage of Cape Igvak Loss

Year	Cape Igvak Loss	Total Propsal 65 Loss	Percentage of Proposal 65 Loss in Cape Igvak
1998	$132,121	$146,816	90.0%
1999	$2,111,372	$2,397,827	88.1%
2000	$736,588	$1,223,520	60.2%
2001	$1,023,480	$1,233,843	83.0%
2002	$61,545	$207,807	29.6%
2003	$101,686	$138,032	73.7%
2004	$0	$91,157	0.0%
2005	$0	$165,479	0.0%
2006	$360,153	$541,229	66.5%
2007	$0	$67,939	0.0%
2008	$0	$230,015	0.0%
2009	$1,732,055	$2,073,829	83.5%
2010	$609,942	$966,491	63.1%
2011	$0	$75,711	0.0%
2012	$1,075,452	$1,289,219	83.4%
2013	$1,659,823	$2,125,020	78.1%
2014	$0	$705,754	0.0%
2015	$88,829	$120,382	73.8%
2016	$1,495,056	$1,683,996	88.8%
2017	$0	$310,751	0.0%
2018	$0	$122,220	0.0%
2019	$0	$94,534	0.0%
Total	**$11,188,102**	**$16,011,573**	**69.9%**

Table 5: Total Percent of Cape Igvak Sockeye

Year	Cape Igvak Loss	Sockeye Propsal 65 Loss	Percentage of Proposal 65 Loss in Cape Igvak
1998	$91,646	$104,543	87.7%
1999	$1,706,015	$1,945,993	87.7%
2000	$507,833	$814,025	62.4%
2001	$678,098	$778,495	87.1%
2002	$41,398	$158,458	26.1%
2003	$89,455	$112,164	79.8%
2004	$0	$39,187	0.0%
2005	$0	$152,909	0.0%
2006	$101,706	$161,965	62.8%
2007	$0	$51,689	0.0%
2008	$0	$92,087	0.0%
2009	$1,183,727	$1,403,105	84.4%
2010	$251,614	$468,127	53.7%
2011	$0	$61,582	0.0%
2012	$895,887	$1,064,664	84.1%
2013	$1,257,994	$1,648,160	76.3%
2014	$0	$653,833	0.0%
2015	$25,292	$37,504	67.4%
2016	$1,303,468	$1,463,957	89.0%
2017	$0	$79,689	0.0%
2018	$0	$33,855	0.0%
2019	$0	$78,309	0.0%
Total	**$8,134,133**	**$11,404,301**	**71.3%**

Foregone Tax Revenue

The foregone harvest due to proposal 65 implementation would have tax implications for state, borough, and city budgets. The state implements two relevant taxes in the region: the fisheries business tax (which is shared with local governments) and the salmon enhancement tax (SET). Fisheries business tax rates vary by type of processing activity and the proportion of each is estimated from the State of Alaska's Annual Tax Report for FY18. The salmon enhancement tax rate is 2% in the Kodiak region. The Borough implements a resource severance tax of 1.075% and receives a share of the fisheries business tax from the state. The local city governments also receive a share of the fisheries business tax from the State of Alaska. Borough and city shares of the fisheries business tax estimated from the Borough's FY18 annual tax report.

The implementation of proposal 65 would result in average yearly tax losses of $26,201 to the State of Alaska, $11,542 to the Kodiak Borough, and $3,465 to Kodiak City.

State Taxes	
Fisheries Business Tax (50% Share)	$11,645
SET Tax	$14,556
Total	**$26,201**

Borough	
Resource Severance Tax	$7,824
Fisheries Business Tax (Share of 50%)	$3,719
Total	**$11,542**

Cities (Share of Fisheries Business Tax)	
Akhiok	$868
Kodiak	**$3,465**
Larsen Bay	$867
Old Harbor	$931
Ouzinkie	$900
Port Lions	$895
Total	**$7,926**

Loss by Species

Table 6: Sockeye Foregone Harvest

Year	Foregone Harvest - lbs	Sockeye Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	55,800	$1.19	$66,251	$104,543
1999	1,166,503	$1.08	$1,260,358	$1,945,993
2000	609,230	$0.89	$544,863	$814,025
2001	763,415	$0.70	$535,785	$778,495
2002	180,293	$0.61	$110,810	$158,458
2003	133,000	$0.60	$80,232	$112,164
2004	44,024	$0.65	$28,772	$39,187
2005	144,708	$0.80	$116,104	$152,909
2006	151,257	$0.84	$126,932	$161,965
2007	41,707	$1.00	$41,651	$51,689
2008	64,537	$1.19	$77,060	$92,087
2009	1,040,967	$1.12	$1,170,230	$1,403,105
2010	279,880	$1.42	$396,718	$468,127
2011	35,304	$1.53	$53,877	$61,582
2012	645,522	$1.47	$950,593	$1,064,664
2013	820,177	$1.82	$1,492,898	$1,648,160
2014	329,061	$1.83	$602,056	$653,833
2015	37,243	$0.93	$34,565	$37,504
2016	1,070,735	$1.28	$1,365,632	$1,463,957
2017	50,218	$1.51	$75,966	$79,689
2018	18,346	$1.80	$33,061	$33,855
2019	53,286	$1.47	$78,309	$78,309
Total	**7,735,214**		**$9,242,724**	**$11,404,301**

Table 7: Chum Foregone Harvest

Year	Foregone Harvest - lbs	Chum Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	20,271	$0.19	$3,856	$6,085
1999	910,698	$0.19	$169,023	$260,971
2000	794,870	$0.22	$172,605	$257,872
2001	740,149	$0.32	$236,219	$343,226
2002	85,122	$0.16	$13,758	$19,674
2003	55,954	$0.14	$7,791	$10,891

2004	140,533	$0.12	$17,258	$23,505
2005	18,862	$0.20	$3,810	$5,018
2006	386,085	$0.33	$129,049	$164,667
2007	7,421	$0.35	$2,612	$3,242
2008	160,362	$0.50	$80,562	$96,272
2009	516,758	$0.44	$226,457	$271,522
2010	530,747	$0.56	$297,336	$350,856
2011	10,089	$0.69	$6,962	$7,958
2012	223,269	$0.60	$134,478	$150,615
2013	461,053	$0.25	$117,089	$129,266
2014	22,366	$0.53	$11,836	$12,853
2015	42,520	$0.38	$16,217	$17,595
2016	160,443	$0.34	$54,092	$57,986
2017	341,331	$0.57	$195,797	$205,391
2018	102,689	$0.66	$67,990	$69,622
2019	7,628	$0.50	$3,789	$3,789
Total	**5,739,219**		**$1,968,585**	**$2,468,877**

Table 8: Pink Foregone Harvest

Year	Foregone Harvest - lbs	Pink Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	135,874	$0.15	$20,461	$32,287
1999	584,663	$0.14	$82,411	$127,243
2000	202,081	$0.14	$29,054	$43,406
2001	409,715	$0.12	$48,629	$70,659
2002	199,244	$0.09	$17,132	$24,499
2003	100,905	$0.09	$8,860	$12,387
2004	185,986	$0.10	$17,839	$24,297
2005	27,314	$0.12	$3,280	$4,320
2006	850,847	$0.16	$139,219	$177,644
2007	28,513	$0.18	$5,143	$6,383
2008	87,350	$0.37	$31,963	$38,196
2009	1,118,713	$0.26	$287,838	$345,118
2010	153,039	$0.44	$66,575	$78,559
2011	7,125	$0.47	$3,316	$3,790
2012	107,543	$0.48	$51,294	$57,450
2013	550,599	$0.42	$232,986	$257,216
2014	70,834	$0.33	$23,475	$25,494
2015	224,346	$0.25	$55,126	$59,811

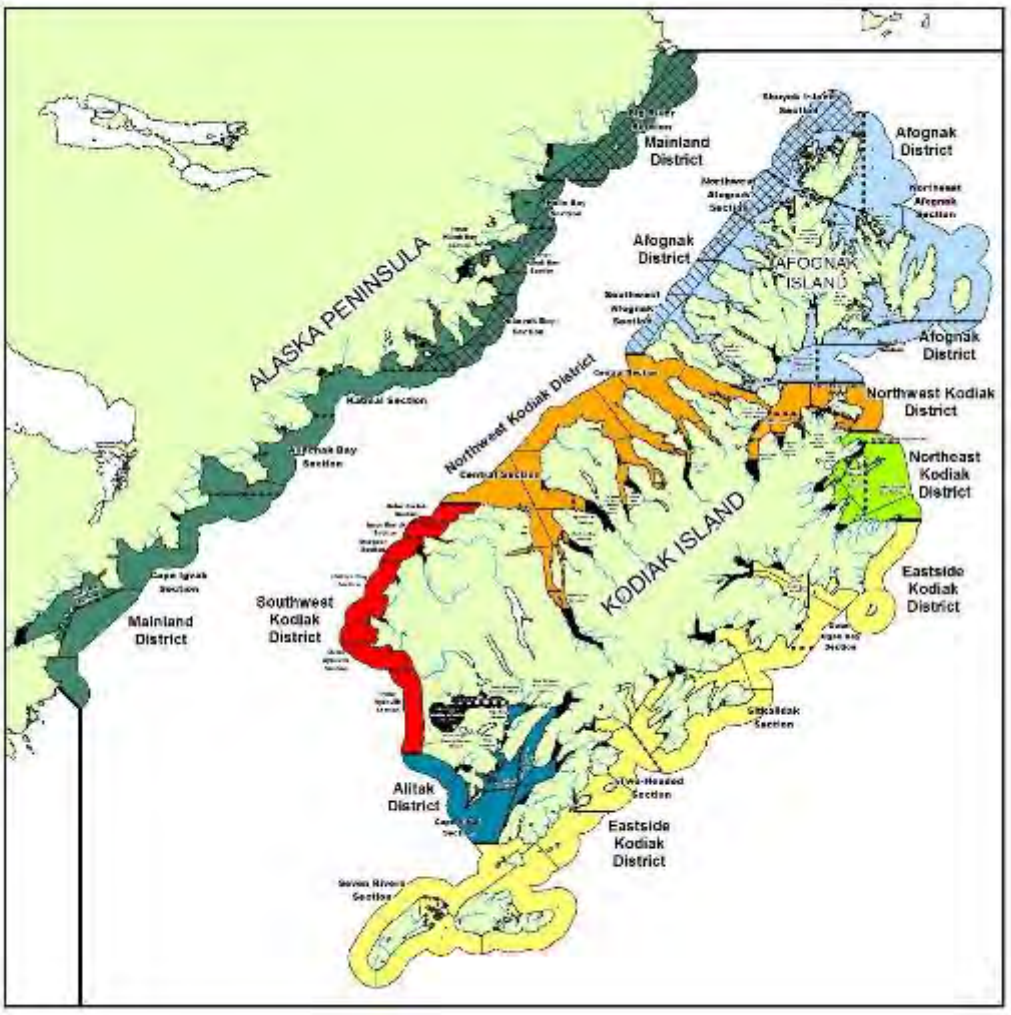
2016	180,458	$0.47	$85,178	$91,311
2017	53,278	$0.43	$22,817	$23,935
2018	28,395	$0.49	$13,905	$14,239
2019	25,534	$0.39	$10,046	$10,046
Total	**5,332,356**		**$1,256,550**	**$1,528,290**

Table 9: Coho Foregone Harvest

Year	Foregone Harvest - lbs	Coho Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	5,009	$0.37	$1,851	$2,921
1999	70,545	$0.41	$28,624	$44,195
2000	138,459	$0.49	$67,506	$100,853
2001	32,609	$0.24	$7,834	$11,383
2002	13,470	$0.18	$2,393	$3,422
2003	8,160	$0.20	$1,631	$2,280
2004	9,843	$0.27	$2,667	$3,633
2005	2,039	$0.42	$857	$1,129
2006	22,374	$0.66	$14,807	$18,894
2007	6,379	$0.60	$3,812	$4,731
2008	1,696	$1.20	$2,034	$2,431
2009	56,982	$0.61	$34,699	$41,605
2010	64,269	$0.80	$51,217	$60,435
2011	2,288	$0.82	$1,870	$2,137
2012	7,634	$0.77	$5,885	$6,592
2013	77,138	$0.72	$55,214	$60,956
2014	17,624	$0.67	$11,864	$12,884
2015	13,084	$0.38	$5,031	$5,459
2016	75,101	$0.78	$58,815	$63,050
2017	663	$0.84	$554	$582
2018	3,540	$1.10	$3,903	$3,997
2019	1,693	$0.76	$1,279	$1,279
Total	**630,599**		**$364,349**	**$454,848**

Table 10: Chinook Foregone Harvest

Year	Foregone Harvest - lbs	Chinook Price	Foregone Harvest Value	2019 Inflation Adjustment
1998	876	$0.71	$620	$979
1999	18,479	$0.68	$12,581	$19,424
2000	7,440	$0.66	$4,929	$7,363
2001	28,771	$0.72	$20,703	$30,081
2002	3,330	$0.37	$1,226	$1,754
2003	625	$0.35	$222	$310
2004	763	$0.51	$393	$535
2005	2,099	$0.76	$1,597	$2,103
2006	15,099	$0.94	$14,153	$18,059
2007	1,713	$0.89	$1,527	$1,894
2008	859	$1.00	$861	$1,029
2009	15,211	$0.68	$10,408	$12,479
2010	11,192	$0.64	$7,214	$8,513
2011	238	$0.90	$213	$244
2012	14,551	$0.61	$8,839	$9,899
2013	46,327	$0.58	$26,651	$29,422
2014	661	$0.96	$636	$690
2015	18	$0.68	$12	$13
2016	7,921	$0.91	$7,176	$7,693
2017	1,438	$0.77	$1,101	$1,155
2018	641	$0.77	$495	$507
2019	1,359	$0.82	$1,111	$1,111
Total	**179,610**		**$122,665**	**$351,601**



Review of Genetic Studies of Sockeye Salmon Harvests in the Kodiak Management Area

Kodiak Salmon Working Group

Executive Summary

- Recent genetic analyses in Kodiak Management Area provide accurate and precise estimates of sockeye salmon stock proportions and harvest numbers in targeted Westside Kodiak fisheries, during monthly (June, July, August) time periods in 2014-2016. Very limited sampling occurred at Cape Igvak.

- The study was not designed to understand migratory patterns of sockeye salmon through KMA, nor to address finer temporal patterns of non-local stock distribution which might describe rapidly changing abundance of migrating stocks in specific areas. WASSIP results showed that proportions of one non-local reporting group varied by as much as eight fold in weekly samples of Shumagin Island and Dolgoi June fisheries harvests, 2007-2008.

- Harvests of Cook Inlet sockeye in KMA fisheries varied by an order of magnitude between study years and between monthly samples within a year. Incidental harvests in 2015 were particularly divergent, especially for July harvests, during an exceptionally large pink salmon run. The widely divergent harvest proportions of Cook Inlet fish in this three year study suggest no reliable patterns upon which to base specific management actions.

- Susitna bound fish overall represented the smallest component of Cook Inlet stocks incidentally harvested in KMA and accounted for less than 2.5% of total KMA sockeye harvest in 2014-2016 and less than 4.5% of

annual harvests in the sampled areas. Due to high estimated harvest rates of Susitna fish in Cook Inlet fisheries (average 38% 2006-2015) and large uncertainties in Susitna escapement estimates, it is unlikely that effects of any “savings” of these stocks in KMA fisheries could be measured with any confidence.

- In 2014-2016, estimated harvest of Susitna fish in Upper Cook Inlet fisheries was 3 fold to more than 40 fold greater than in KMA. Any conservation efforts for Susitna fish should be addressed in Cook Inlet fisheries.

- Data from Cape Igvak is limited to harvests in three temporal periods from two years. Incidental harvest of Cook Inlet fish varies by two orders of magnitude (50 fold) among those strata.

- Evidence suggests that management plans in KMA are working well, as all key sockeye stocks on the Westside are achieving their escapement goals and odd year pink salmon goals are consistently met.

Study Purpose and Design

The purpose of Shedd et al. (2016) was to use Genetic Stock Identification (GSI) methods to estimate temporal stock contribution to select Kodiak Management Area (KMA) sockeye fisheries during 2014-2016 by sampling major sockeye fisheries where significant harvest of salmon occurs (Foster and Dann, 2014, 2015). At its inception, the study intended to meet multiple information needs. Some local fishermen were

interested in a sampling program that could identify particular stocks in area fisheries, especially Alitak-bound fish harvested in Westside fisheries. Fisheries interests outside of Kodiak desired a better understanding of harvests of “non-local” sockeye salmon in Kodiak area fisheries; and area biologists who sought to understand production dynamics of area stocks wanted better stock-specific harvest information for improvement of brood tables, run-reconstructions, and escapement goals for local stocks. Funding constraints resulted in a limited geographic scope for the study.

The work provided accurate and precise estimates of stock-specific harvests for six Westside fishery areas within the KMA over approximately monthly time periods (June,July, August), during the years 2014-2016. Much more limited sampling occurred in Igvak fisheries. Within this scope, it is a robust study which uses state of the art analytic and statistical approaches to generate estimates for sampled areas and times. It has contributed to brood table improvement for area sockeye stocks, especially Karluk and Ayakulik (ADFG, pers. comm).

As the author notes, the study was not designed to understand migratory patterns of sockeye salmon through KMA (Shedd et al., 2016). The design also does not address finer temporal scale patterns of non-local stock distribution which might describe rapidly changing abundance of migrating stocks in specific areas, or address broader questions about sockeye migratory characteristics in and around Kodiak Island outside of sampled areas. Both are important to inform policy debate on allocating harvests from one management area to another.

Finally, there is no information provided on harvest rates to provide context for actual impacts of non-local stock harvest in Kodiak area fisheries. An understanding of stock-specific harvests with respect to run

sizes (i.e., harvest rates) for those non-local stocks is essential for discussing perceived conservation issues (Habicht et al., 2012).

Sampling

Samples for genetic analyses were gathered at fish processing facilities in Kodiak, Larsen Bay and Alitak. Through close communication with processors, samplers could be in place at facilities when deliveries occurred. Efforts were made to ensure samples only represented fishing in one of the management areas intended for sampling and were taken only from deliveries that could be attributed to the intended area. Deliveries from multiple study areas were not sampled. In Uganik/Kupreanof portion of the NW Kodiak district, where both set gillnet and purse seine vessels contributed to harvests, most samples were taken from set gillnet harvests because seine vessels often had mixed loads (ADFG, pers. com.). Brennan et al., (2017, this volume) point out that gillnets used there are selective for larger fish and sampling from mostly this gear group in Uganik/Kupreanof could bias samples towards Cook Inlet harvests because Cook Inlet sockeye are typically larger fish than Karluk Lake sockeye.

Samples from specific area harvests were collected a number of times, often weekly or more often, throughout the monthly sampling stratum when fish were delivered (Shedd at al., 2016 and ADF&G pers. comm.). Samples were taken on specific dates from fish available on that date. It is not completely clear how samples were randomized within a delivery, but generally, the target sample number (100-400) was taken from the delivery and placed in a separate tote for sampling. These samples represented a bulk sample of tissues from fish for that date. Typically, at least four bulk samples were acquired during monthly periods for each area. Each sample

represents the group of fish delivered on a one or two day period (see Shedd et al. 2016, Appendix B for details).

Post-season, samples for genetic analyses were selected from date-specific bulk samples in proportion to daily harvests for that month, and combined to generate a monthly stock contribution estimate. Previous reviewers of the study have found the general approach of stratified random sampling, sampling in proportion to the harvest and sample sizes to be defensible (Geiger and Quinn, 2017, this volume). To summarize the sampling approach:

- Sampling was adequate for generating monthly estimates of stock-specific sockeye harvest in targeted areas. Samples were collected periodically through the month, and care was taken to ensure that sampled deliveries were from intended fishery areas. Samples selected for analysis were taken from all bulk samples in proportion to the harvest for the month.

- Sampling was not designed to identify times and areas where non-local stocks are most prevalent in KMA or to provide comprehensive information on migration patterns. The study estimated stock proportions and harvests from targeted areas in select Westside fisheries and Igvak using monthly time periods.

- Spatial resolution was limited to major Westside KMA fisheries including Uganik/Kupreanof, Uyak, Karluk/Halibut Bay, Ayakulik/Sturgeon and Alitak, and Cape Igvak in the Mainland District. There are no comprehensive mixed stock analyses for fisheries in Afognak, Eastside District, Olga Bay, Special Harvest

Areas, nor for harvest after August 29, presumed to be mainly local stocks. Authors estimate that sampled areas represented 47-62% of Kodiak sockeye harvest in 2014-2016.

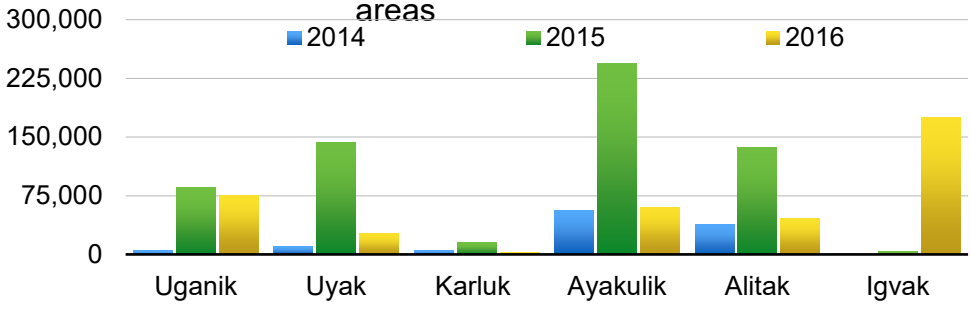
- Temporal resolution was limited to stock compositions for June, July, and August. The periods roughly coincide with fishery management approaches during each period, where early sockeye stocks are harvested in the early stratum (June), pink salmon and sockeye stocks in the middle stratum (July), and late sockeye and pink salmon in the late stratum (August). Harvest stock composition within the monthly periods was not examined.

Results: Variation within and between years

Cook Inlet Stocks

There are very large inter-annual differences among sampled areas in KMA for harvest of Cook Inlet genetic reporting group. Annual estimates of Cook Inlet harvest numbers for all sampled KMA fisheries varied by an

Figure 1. Annual harvests of Cook Inlet bound sockeye salmon within individual Kodiak Management sub-areas



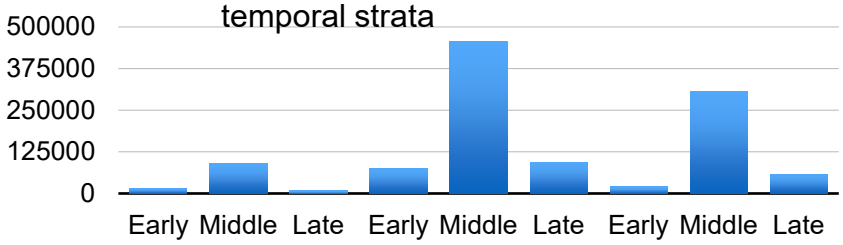
order of magnitude between years, especially evident for Uyak, Ayakulik/Sturgeon, and Alitak, where 2015 estimates far exceeded either adjacent year. Uganik/Kupreanof harvests of Cook Inlet fish in 2016 were

comparable to those in 2015 and Igvak had a single, large catch of Cook Inlet stocks in July 2016. Estimated harvests of Cook Inlet reporting group in 2014 were uniformly small for all sampled areas (Figure 1).

It is also clear that incidental harvest of Cook Inlet sockeye stocks in July (middle stratum) were dramatically larger than early or late strata in 2015 and 2016 (Figure 2). This is particularly pronounced for Alitak and Ayakulik/Halibut Bay harvests. For the Alitak District, harvests of Cook Inlet stocks in July (middle stratum) were an order of magnitude higher than early or late strata in all years. Harvests were more than three times larger in 2015 than middle strata in 2014 or 2016 (Figure 3). July (middle stratum) harvests of Cook Inlet stocks in Ayakulik/Halibut Bay were also highest in all years, and much higher in 2015 (Figure 3).

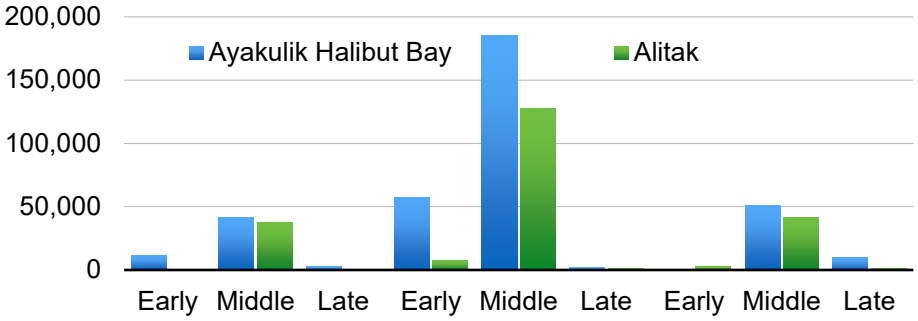
Higher incidental harvest of non-local sockeye in 2015 are likely associated with a very large pink salmon run. At 33 million, pink salmon harvest in 2015 was more than 3 fold larger than 2014 and roughly ten times greater than 2016 (Anderson et al. 2016). The large abundance of pink salmon in 2015 resulted in management actions to increase fishing time. Westside commercial fishing periods in 2015 were extended twice in July and many were open for the majority of August (Anderson et al., 2016). Larger incidental harvests of Cook Inlet sockeye in Westside

Figure 2. Harvests of Cook Inlet bound sockeye salmon in Kodiak Management Area among all sampled areas and years, by temporal strata



isheries during 2015 may partially be explained by pink salmon bundance, reflecting management actions in complex, multi-species fisheries.

Figure 3. Harvest of Cook Inlet bound sockeye salmon by temporal strata, over all years, in Ayakulik/Halibut Bay and Alitak sub-areas of KMA.



While Shedd et al. (2016) is the first genetic stock identification study to focus on KMA, it is modeled after the large WASSIP study which also revealed wide variation in stock specific harvests between and within sampling years, especially for those fisheries known to harvest a mixture of stocks on the South Alaska Peninsula (Dann et al., 2012). The East of WASSIP (EOW) reporting group in that study is a good example. It represents mixed stock analysis assignments made to stock groups beyond Chignik, the Eastern boundary of WASSIP. Specific stock composition of EOW reporting group is unknown, but it likely contains significant and variable proportions of Kodiak, Chignik and Cook Inlet stocks.

- For the Western and Perryville Districts within Chignik Management Area, samples from the same 10 day time interval in July (7/20-7/31) showed EOW reporting group harvest proportions more than twice as high in 2007 (38.8%) as 2008 (14.9%).

- For the Shumagin Islands June fishery, large differences were also observed for the EOW reporting group proportions among years and within weekly sampling periods. In 2006, among three sampled strata in June, EOW proportions ranged from 18.6% to 43.6%. In 2007, proportions for the same weekly strata ranged between 4.9% and 16.5%. For comparable strata sampled in 2008, the range was 9.4% to 10.6%. Over the three year period, harvest proportions for EOW reporting group in Shumagin June fisheries varied nearly nine fold within the month of June.

- For Dolgoi Area June fisheries, among weekly strata, proportions of EOW reporting group ranged from 17.1% to 39.5% in 2006, 35.8% to 56.2% in 2007, and 7.4% to 27.4% in 2008. EOW proportions varied by nearly 8 fold in Dolgoi within and among years in the WASSIP study (Dann et al., 2012).

Both WASSIP investigators and Shedd et al. (2016) express pointed caution about making inferences beyond their three year study periods. Like any GSI study, the data represent environmental and fishery conditions during those years and changes in relative proportions of reporting groups will be influenced by prosecution of fisheries and ocean conditions (physical and biological) which affect fish migrations. The wide

variation observed in WASSIP between weekly sampling intervals among years demonstrates how much stock specific harvests may change within a monthly period. The broad inter-annual variation in WASSIP and the recent KMA study should emphasize the inherent uncertainty in our understanding of stock vulnerability to commercial fisheries from year to year and within a fishing season.

Results: Measuring Impacts

Shedd et al., (2016) showed that over a three year study period, highly variable numbers of Cook Inlet sockeye salmon were harvested in KMA at some locations and times. However, these data alone provide little insight into impacts of these non-local harvests on Cook Inlet runs. Fishery stakeholders in the WASSIP study, from Area L to AYK, insisted that reporting of stock proportions be accompanied by harvest rates, so that stock-specific harvests could be assessed in relation to their respective run sizes (Habicht et al., 2012). The importance of this exercise is clearly demonstrated by WASSIP data for Outer Port Heiden (OPH) harvests during 2007-2008. Among six sampled time strata for OPH fisheries in 2007-2008, Bristol Bay stocks represented 65%-90% of the sample, while harvest rates on Bristol Bay fish for the same two years were less than 1% (Dann et al., 2012, Habicht et al., 2012). Significant numbers of sockeye bound for Bristol Bay were harvested in OPH, with negligible effect on the overall run.

Though no harvest rates were reported, Shedd et al. (2016) produced analyses to distinguish among four different genetic reporting groups within broader Cook Inlet harvests, including Susitna River, a currently designated stock of concern (Shedd et al., 2017). Overall, Susitna fish represented the

smallest component of incidental Cook Inlet harvests in KMA, representing 0.3% to 4.4% of KMA commercial sockeye harvests in sampled fisheries during 2014-2016 (Shedd et al., 2017). They represented only 0.1% to 2.4% of the total KMA sockeye harvest for study years 2014-2016.

Having dispensed with a biased sonar program (Fair et al., 2009), assessment of escapement for Susitna sockeye is now made by three weirs on Judd, Chelatna and Larson Lakes. Based on mark-recapture experiments in 2006-2008, Fair et al. (2009) estimated that combined Chelatna and Judd Lake escapements represent about 42% of Yenta drainage escapements and Larson Lake represents roughly 52% of mainstem Susitna escapement. Escapement goals for these lakes were established in 2017. Over the last decade, goals for Chelatna have always been met or exceeded, Judd was below goal in a single year, and Larson missed three goals by less than 20% (Munro, 2019). Escapements to these index lakes by themselves do not suggest a concern for conservation of Susitna fish. Other Lakes, such as Shell, once estimated to account for 10% of Susitna drainage sockeye production, have been severely impacted by pike predation and Beaver dams, and produce far fewer sockeye than in the past (Shields and Frothingham, 2018).

If management actions were taken to reduce harvest of Susitna bound sockeye in KMA, it is important to consider the fate of these “savings” and how we could evaluate effects of these actions. Any incidental harvest of Cook Inlet stocks avoided in KMA fisheries would be subject to a variety of harvest and natural mortalities before reaching spawning grounds, as they pass through fisheries in Lower and Upper Cook Inlet. Recent estimates of harvest rates on Susitna origin sockeye in Upper Cook Inlet fisheries range widely, but average 38%, 2006-2015

(Erickson, 2017, ADF&G report to Board of Fisheries). A large proportion of these fish would be harvested in Cook Inlet fisheries before reaching their natal streams and lakes.

Importantly, impacts of Susitna bound sockeye harvest in KMA on annual Susitna runs probably cannot be measured with confidence for two reasons. First, Shedd et al. (2017) used a genetic baseline that includes populations throughout the Susitna/Yentna drainage but does not distinguish fish which may be destined for Judd, Chelatna and Larson Lakes. The lake stocks can be justified as a separate JCL reporting group in Cook Inlet genetic studies (Barclay, 2018). As a result, the relationship between KMA harvest of Susitna reporting group and goals established to index Susitna escapement is unknown because KMA harvests of Susitna stocks cannot be attributed to any of these lakes.

Also, recent mark recapture studies suggest large uncertainties with estimating drainage wide escapements to Susitna drainage (Yanusz et al., 2007). Results from 2006-2008 studies revealed wide 95% confidence intervals (2006, 335,448 - 500,946; 2007, 292,867 - 362,597; 2008, 320,763 - 398,317) for escapements of sockeye to Yenta and Susitna Rivers combined (Erickson, ADFG report to Board of Fisheries). The highest estimated catch for Susitna fish in any KMA stratum, without accounting for additional harvest and predation in Cook Inlet, falls within those confidence intervals. It is unlikely that effects of reducing harvest of Susitna fish in KMA could be detected in Susitna run estimates.

In 2014-2016, estimated harvest of Susitna fish in Upper Cook Inlet fisheries was 3 fold to more than 40 fold greater than in KMA (Barclay, 2018, Shedd et al., 2016). Attempts to conserve Susitna fish must primarily

include Cook Inlet fisheries, where savings are more efficiently realized and can be measured.

Cape Igvak

The management plan for Cape Igvak has been in place since 1978. The Cape Igvak fishery is one of only two areas in the state (the other is Southeast District Mainland) in which harvest and escapement triggers from an adjacent management area (both Area L-Chignik) must be met before the fishery can open. For this study, no Igvak samples were taken in 2014 because low Chignik harvest numbers kept the area closed to commercial harvest. In 2015, only the July stratum (middle) was sampled as Igvak was again closed at first due to inadequate harvests in Chignik. Harvest of Chignik fish in Igvak was estimated as 2,059 fish. In both 2014 and 2015, the management plan had its intended effect of keeping Igvak closed or limited when Chignik harvests were low. In 2016, with a stronger Chignik run, an estimated 114,412 Chignik sockeye were harvested in the early (June) stratum. A little more than 10,006 Chignik fish were harvested in July. With only three temporal strata sampled over a three year period, there is no new information on harvest patterns of Chignik fish at Igvak that would support changes to the management plan. While it is clear that some Chignik fish are captured at Igvak (which is reason for the management plan), one data point an order of magnitude greater than the other two reveals dramatic swings in non-local stock abundance. There is no data in this study that supports the presumption in the management plan that 90% of sockeye salmon harvests in Igvak are Chignik bound fish.

Management Plans

The management of KMA fisheries is guided by a number of management plans including the Westside Management plan (5AAC 18.362) and the Alitak District Management plan (5AAC 18.361), most relevant to this genetics study. While each has very specific management direction for date ranges and particular areas, the central theme is prosecution of traditional fisheries to sustainably harvest early and late runs of sockeye salmon to Karluk, Ayakulik, Upper Station and Frazer Rivers, as well as harvest pink, chum and coho salmon to a variety of locations in July, August and September. The plans have an odd year emphasis for pink salmon management as these are typically larger than even year runs in KMA.

From a biological perspective, successful fisheries management in Alaska is measured through achievement of escapement goals. The Alaska Board of Fisheries pays careful attention to escapement goal performance as a yardstick for sustainable management. For Karluk early sockeye, goals have been achieved or exceeded every year since 2012, and for the late run, since 2010. For early and late sockeye runs to Ayakulik , goals have been achieved every year since 2010. For early Upper Station stock, goals were achieved in 2017 and 2018 and for late Upper Station, goals have been met every year since 2010. For Frazer Lake sockeye, goals have been met every year since 2010. Odd year pink salmon goals in the Kodiak Archipelago have been met or exceeded every year since 2011 (Munro, 2019). Recognizing that scientifically defensible escapement goals are foundational for maximizing yields in future years, it seems clear that

KMA fisheries management has been successful and that these management plans are working well.

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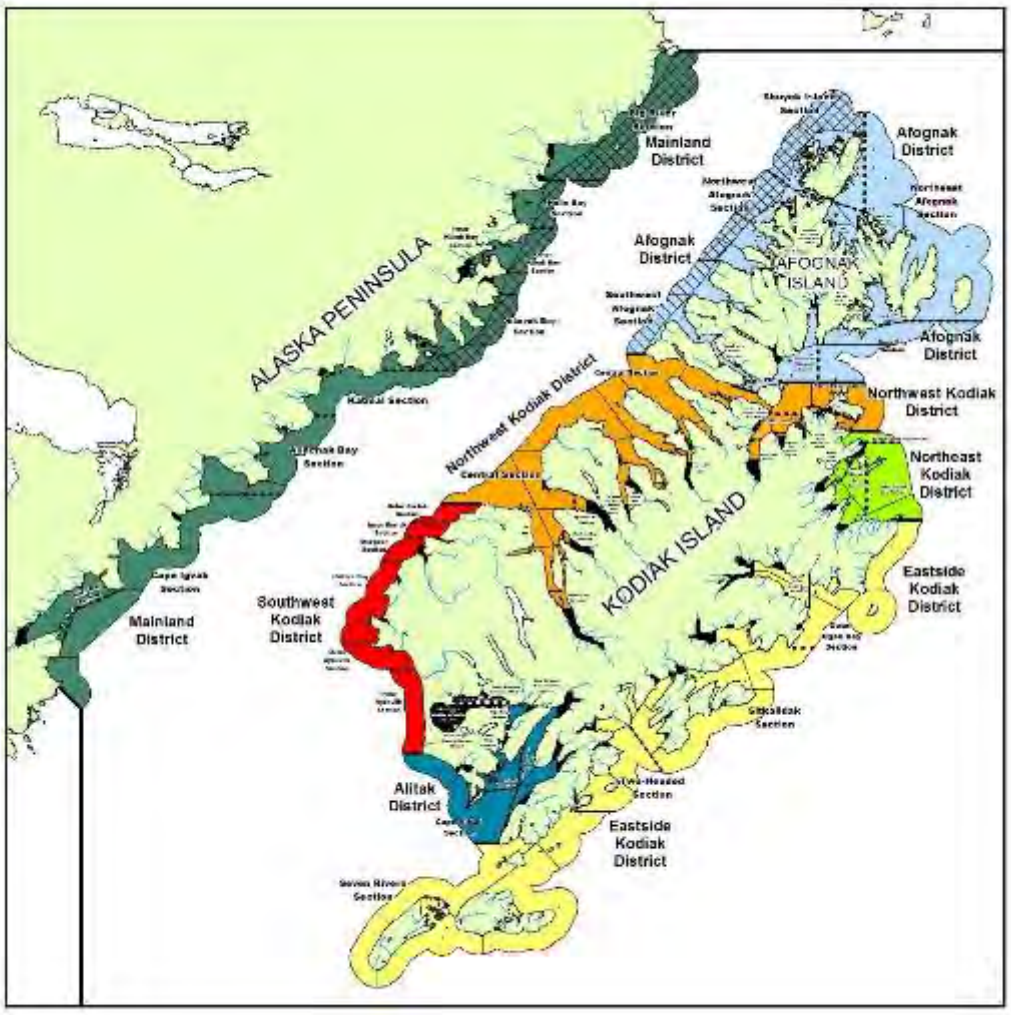
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Review of Shedd et al. (2016): *Genetic Stock Composition of the Commercial Harvest of Sockeye Salmon in Kodiak Management Area, 2014-2016*

Report to the Kodiak Salmon Workgroup

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September 11, 2017

Executive Summary

The Kodiak Salmon Workgroup contracted us[1] to provide a scientific review of the report by Shedd et al. (2016) entitled *Genetic Stock Composition of the Commercial Harvest of Sockeye Salmon in Kodiak Management Area, 2014-2016*. This review consists of an examination of the scientific merit of the study, its utility compared to previous studies, an interpretation of how the results should be viewed in terms of the magnitude of interceptions of Cook Inlet sockeye salmon in the Kodiak Management Area's commercial fisheries, and thoughts about further investigations that may shed additional insight into Kodiak and Cook Inlet stock compositions of sockeye salmon.

Our primary findings:

1. From the point of view of fishery policy, the most important statistic is the *stock-specific harvest rate*, which is not reported in the Shedd et al. (2016) document for stocks outside the Kodiak Management Area. What is reported is the *stock-specific contribution rate*. Stock composition estimates represent the proportions of a catch that was made by various stocks in a particular spatial and temporal stratum or groups of strata. In contrast, the harvest rate describes the proportion of an annual return that was harvested in a fishery or group of fisheries. Consequently, a fishery may show a large contribution rate for a stock, but the total effect on that stock may be quite small. We illustrate this phenomenon below.
2. The new genetic stock composition approach used in this study is superior to other approaches used in the past, because the real stock composition is estimated rather than inferred from less reliable measurements (e.g., length composition). The use of a Bayesian modeling approach to estimate stock composition is state-of-the-art and allows for the appropriate treatment of random variability due to both random error caused by sampling the fishery mixture and also from the sampling of the contributing stocks.
3. The stratified sampling design used is appropriate with respect to accuracy and precision of stock composition (relative and absolute). It is clear that the authors devoted substantial attention to implementing the sampling design with the intent of obtaining a random or representative sample within combinations of major regional and temporal strata. Further information would be desirable about how the implementation was conducted on finer spatial and temporal scales to justify the assumption of a random or representative sample. For example, how was an individual fish selected for genetic sampling and were there protocols established to prevent selecting fish with particular physical characteristics, such as size?
4. Similar to past studies, results from the study revealed substantial variability in stock composition across years, among spatial strata, and among temporal strata. Further study may be desirable to determine if there are consistent patterns in this variability across years, spatial strata, and temporal strata. Continued genetic sampling and analysis in the future would thus be desirable.

Introduction and Overview

We were asked to provide a scientific review of the Shedd et al. (2016) titled *Genetic Stock Composition of the Commercial Harvest of Sockeye Salmon in Kodiak Management Area*. This

[1] See brief biographical statement in Appendix A

complex 154-page report describes an extensive genetic analysis followed by a statistical analysis of the genetic data for Kodiak area fisheries in catch years 2014, 2015, and 2016. The principal genetic tools that were used for this study were the single nucleotide polymorphism, or SNP, approach. Here we will comment on scientific criticisms of the study that appear relevant, we will briefly comment on the various methods and techniques that were used, and we will offer a broad assessment of the significance of the major findings. As we will explain in more detail below, the study appears to have been carefully conducted and the numerical estimates appear to be well crafted and reliable.

The Alaska Department of Fish and Game had previously tried to use scale pattern analysis and an analysis of fish size to estimate the proportion of non-local stocks in the Kodiak Management Area. For various technical reasons neither of these techniques were very successful. In one of the last reports on the attempts to use fish size for this purpose, Vining (1996) wrote, "As the 1995 analysis indicates, this methodology continues to generate only rough estimates, some with little confidence." It is the opinion of Vining that "other techniques, such as genetic stock identification, tagging or scale pattern analysis should be evaluated for use in the future, if more precise estimates of stock composition for sockeye salmon caught within the [Kodiak Management Area] are desired." This leads us to the present genetic study by Shedd et al. (2016).

The genetic analysis of stock mixtures rests on several assumptions. The analysis starts with the definition of a *catch mixture*, because the catch is presumably made up of a mix of stocks. Importantly, the number of contributing stocks must be known, they all must be sampled, and the genetic character of each stock must be established. Next, a representative sample of the catch mixture must be drawn and the genetic character of each specimen in the catch sample must also be established. Finally, a complicated statistical algorithm can then be used to produce an estimate of the proportion of each of the stocks in the mixture by comparing the genetic characterizations of each fish in the catch mixture to the previously established genetic characterization of the contributing stocks.

A complete analysis must include a study of both the accuracy and the precision of the estimates. In this context, *accuracy* refers to the absence of any statistical bias or other kinds of systematic errors that would consistently cause specific stock estimates to be too high or low. Here *precision* refers to errors that are caused by using only a sample from the stock of origin and the catch mixture, rather than an examination of every single fish in the fishery and every single fish in the spawning stocks. Generally, accuracy is harder to study, detect, and control, while precision can generally be controlled by increasing the sample size. Also, precision is usually studied by looking at the variation from one specimen to another in the samples. Precision measures are usually offered in the form of confidence intervals, standard errors, or coefficients of variations.

Sampling Design

The goal of the study by Shedd et al. (2016) is to determine stock compositions of sockeye salmon within the Kodiak Management Area. Consequently, sampling was restricted to the Kodiak Management Area, rather than to the overall range of sockeye salmon in the western Gulf of Alaska. The authors defined six Kodiak spatial strata of interest (called subregional sampling groups) for *sampling* genetic tissues, comprised of (1) Uganik-Kupreanof, (2) Uyak, (3) Karluk-Sturgeon, (4) Ayakulik-Halibut Bay, (5) Alitak, and (6) Igvak. The first five are located around Kodiak Island, while Igvak is part of the mainland district. The Chignik

regional reporting group had combined estimates from subregions Black Lake and Chignik Lake. Four other regional spatial strata outside of Kodiak and Chignik were West of Chignik, Cook Inlet, Prince William Sound, and South of Cape Suckling. The report did not contain justification for this particular choice of spatial strata, but suggests that considerations included areas with active management and those that are used in run reconstructions to aid management.

One confusing area is that several spatial scales are referred to in the report. For *reporting* purposes (instead of *sampling*), there are a total of 14 subregional *reporting groups* listed on page 2 that constitute the entire western Alaska area. The report designates ten of these groups as *subregional reporting groups* within the Kodiak (8 subregions) or Chignik (2 subregions) *regional reporting groups*. Six regional reporting groups including those outside of Kodiak and Chignik are listed in the tables, with subregional breakdowns for the 8 Kodiak subregions and the 2 Chignik subregions. In the end the system does seem to be consistent; however, we recommend a simpler and clearer description of spatial divisions. *These definitions of spatial strata must be understood to understand the tables and figures of results, which include both regional reporting groups and subregional reporting groups.*

The report indicates that temporal strata are also considered in combination with the spatial subregional strata: Early, Middle, and Late (see page 3 in the Shedd et al. (2016) report. The temporal strata are consistent with patterns that have been observed in past studies.

The sample size goal was to extract 380 tissue samples from each time-area stratum; no reference was provided for this number. The sampling within temporal strata was intended to be proportional to daily abundance. When this was not possible, the total sample size was obtained by sampling days with sufficient additional samples at random until the total of 380 was achieved, a reasonable approach.

We could not determine if sampling was representative within spatial strata, although the intent of the authors appears to be sampling proportional to harvest, a reasonable goal. It would be helpful to have a brief description elaborating the protocol used to achieve this goal.

The sampling design most appropriate for multiple strata with high variation among strata, to obtain high precision and accuracy, is stratified random sampling (Thompson 2016). In the future it would be desirable to show that high variation is present and the improvement in precision by using stratification over simple random sampling. One advantage to using a proportional allocation of sample size with respect to within stratum variation is that different choices for strata are not likely to produce inaccurate estimates. Nevertheless, it is not necessary to use proportional sampling to justify the use of stratified sampling in terms of accuracy, as long as a representative sample is obtained within each stratum. In particular, the use of a fixed sample size of 380 for all spatio-temporal strata is completely acceptable. (Although it may not be the most efficient allocation scheme, it does not induce estimation bias.)

The use of stratified random sampling also has a desirable product in that both relative and absolute stock compositions can be estimated both for individual strata and for combinations of strata, including that portion of the entire Kodiak Management Area that was sampled (not every single fishery was sampled). The main reason for this ability is that catches are known for all spatio-temporal strata. This is one fundamental principle that

makes estimation across strata intuitive, accurate, and precise, because relative stock compositions are projected to the total catch to get absolute stock compositions by strata that can then simply be summed across a set of strata of interest.

An additional feature of the sampling design is a set of data quality control procedures regarding the genetic data to avoid the inclusion of erroneous data into the analysis (pages 8–9). Thus, we were unable to uncover any appreciable flaws in sampling, genetic data processing, or genetic analyses in the study.

In summary, we believe that the overall sampling design of using stratified random sampling is appropriate for the genetic analysis of estimating stock composition of sockeye salmon in the Kodiak Management Area. Further studies should be done to consider alternative stratification choices both within space and time and to justify the sample size goal of 380 samples per stratum.

Policy Issues and Stated Goals for the Study

In the introduction of the Shedd et al. (2016) report, the reader finds that the stated purpose of the study was to "sample the major sockeye salmon commercial fisheries in marine waters of [the Kodiak Management Area] from June through the end of August and use genetic mixed stock analysis (MSA) to estimate stock compositions and stock-specific harvests." Later in the report, the reader finds this statement about the goal of the project: "The overall goal of this project is to provide information that will be useful for reconstructing runs, building accurate brood tables to define escapement goals, and refining management by identifying spatial and temporal harvest patterns of *local* and *nonlocal* stocks (emphasis in the original)." Later, the reader finds four stated objectives, including "report [genetic mixed stock analysis] results of stock-specific harvests of sockeye salmon sampled from *selected* commercial fisheries in [the Kodiak Management Area], 2014—2016 (emphasis added)," and "characterize where stocks were harvested from *select* commercial fisheries (again, emphasis added)." This report did not have the express purpose of making arguments regarding allocation decisions by the Alaska Board of Fisheries.

Regardless, the study does conclusively demonstrate that sockeye salmon bound for Cook Inlet were caught in some times and in some areas in the fishing years studied. In the case of the Kodiak Area, there really was no reason to believe that the commercial harvest was made up of only single stocks that originated in the Kodiak Management Area. That is, a finding of rich stock mixtures in at least some times and areas should not have been surprising. There have been many long-standing questions about the degree to which stocks are mixed in the Kodiak Management Area. Summarizing historical tagging studies, Barrett and Swanton (1991) report that sockeye harvests in the North Shelikof Strait in the 1940s, 1970s, and 1980s ranged from 30% to 100% Kodiak fish and 0% to 59% Cook Inlet-origin fish. Moreover, Barrett and Swanton concluded there were large numbers of Cook Inlet bound fish in the North Shelikof Strait fishery in July of 1990.

Contribution Rate Versus Harvest Rate

There are two important rates or proportions that can be derived from stock composition analysis and discussed before policy-making bodies, such as the Alaska Board of Fisheries:

the *contribution rate* and the *harvest rate*. These two statistics have very different significance to management. These two rates have often been confused in conversations among fishermen, in testimony before the Alaska Board of Fisheries, and in conversations with members of the press. The percentage that each stock makes up in a mixture of stocks is called the *contribution rate* (or sometimes the *stock proportion*). For example a fishery may have harvested 50 fish, and 40 of those fish might be from Stock A, with 10 fish from Stock B. Then the *contribution rate* of Stock A is 80%=(40/50)100%. For the purposes of management that could be either high or low. But if the contribution rate was 80%, then this does *not* mean that 80% of the stock was harvested; a harvest rate can be estimated only with abundance or run-size information for the stock of interest.

A large number for the contribution rate is not necessarily important to management, but it could be. If the original size of Stock A was 10,000 fish before this harvest, then the *harvest rate* on Stock A in the catch mixture would be 40/10,000 = 0.4%—which may be considered insignificant. Alternatively, if the original size of stock A was only 150 fish before the harvest, then the harvest rate would be 40/ 250 = 27%—which would usually be considered significant from a management perspective. Although moderate-to-large contribution rate statistics can lead to misplaced anxiety or even outrage, the most important statistic for management policy is the harvest rate, which is the rate that is most clearly related to the population dynamics of a stock.

Technical Comments on Bayesian Analysis and Uncertainty Measures

The statistical analysis was carried out using the Bayesian method of Pella and Masuda (2001). We contend that this method is a reasonable approach with several advantages over the more traditional *maximum likelihood* approach. As this is a Bayesian approach, there are some differences between the interpretations of the measurements that may be confusing and unnecessarily tedious to some readers of the Shedd et al. (2016) report. In the method of Pella and Masuda (2001), the unknown contribution rates (or stock mixing proportions, as they call them) are treated as unknown random variables rather than constant and unknown parameters in the maximum likelihood approach. The analysis proceeds by simulating the probability distributions of these random quantities, with the genetic data used to help develop these distributions.

In a Bayesian analysis, uncertainty in stock contribution rates is frequently displayed by the use of *credible intervals* rather than *confidence intervals*. For example, in Table 3 of the Shedd et al. (2016) report, for the Kodiak reporting group the 90% credible interval runs from 80.9% to 88.1%. The correct interpretation of this interval is that given all of the stated assumptions, *the probability is* 90% that the true value is found between 80.9% and 88.1%, given a list of assumptions. Many people, incorrectly, think this is exactly what a 90% confidence interval is, but this is a mistake for some technical, statistical reasons. For the purposes of readers of this report, we note that the Bayesian results will often closely approximate the more traditional results (Pella and Masuda 2001), so that there should be no harm in simply interpreting the Shedd et al. (2016) credible intervals as the more familiar 90% confidence intervals to investigate uncertainty in the stock composition estimates. While every one of the assumptions that underpin the analysis is probably not strictly true, these intervals do seem to be a very reasonable guide to the precision in the estimates. Based on the reported credible intervals and based on the assumptions stated in the report,

the Shedd et al. (2016) estimates appear to be both accurate and precise enough for the purposes of the study.

The Results

In trying to understand the results of the analysis, readers of the Shedd et al. (2016) report may find Figures 8 through 19 helpful, especially when paired with the maps provided in Figures 1–7. Figures 8, 10, 12, etc. (the even-numbered figures) show the estimated contribution rates (or stock mixing rates) for stocks using two levels of detail for the authors' *subregional* and *regional reporting groups* mentioned above. These estimates are then reported by specific time-area catch strata. At the highest level of aggregation there are six regional reporting groups, or what might be considered stocks in the broadest sense: (1) West of Chignik, (2) Chignik, (3) Kodiak, (4) Cook Inlet, (5) Prince William Sound, and (6) South of Cape Suckling. These groups may be the most useful for discussions about fishery management policy. Additionally there are estimates for 10 specific subregional reporting groups, or what might be considered stocks in a more narrow sense, in the Westward Region, and these estimates may be more useful for actual managers or to look at the reasonableness of some of the estimates. Similarly, the odd-numbered figures (Figures 9, 11, 13, etc. in Shedd et al. (2016)) have the stock contribution rates re-expressed as the stock-specific *number of fish harvested* (compared to rates in the previously mentioned figures) in the mixtures.

The usual pattern in these figures is that the majority of the fish harvested in each time-area grouping originated in the Kodiak management area. There are some notable exceptions, especially in 2015. For example, in the Ayakulik-Halibut Bay area, a large fraction of the fish were classified to be of Cook Inlet origin, especially in 2015 during the July 4 to August 1 period (Figure 14 in the report by Shedd et al. (2016)). When viewed in terms of numbers of fish, rather than proportions, the effect looks even stronger (Figure 15). In the Alitak district the catches of fish classified to Cook Inlet exceed the number of fish classified to the Kodiak area in two years: 2015 and 2016. Here too, the effect looks even stronger when views as the number of fish harvested 2015 (Figure 17). However, when summing over time and area, in all study years fish of Kodiak area origin dominate the catch, although catches of Cook Inlet-origin fish increased in 2015, and to a lesser extent, remained high in 2016, when compared to 2014 (Figure 20 in Shedd et al. (2016)).

Questions about why the harvest of Cook Inlet fish might be higher or lower in specific times or areas are beyond the scope of this review. One obvious question is could this variation in the proportion of Cook Inlet-origin fish be due to variation in the sizes of sockeye salmon runs in Cook Inlet?

To get at this question we simply ignored Lower Cook Inlet and brought together run size estimates for Upper Cook Inlet (Alaska Department of Fish and Game, retrieved August 17, 2017), together with the Shedd et al. (2016) estimates of the harvest of Cook Inlet bound fish in the Kodiak Management Area (taken by eye from Figure 20 or from Tables 67–69). As a point of reference, Stopha (2017) projected that approximately 0.3 million sockeye salmon would be returning to hatcheries in Lower Cook Inlet 2017. We assume that the times and areas sampled by Shedd et al. (2016) represent areas where interceptions of Cook Inlet fish would have been considered to be most likely, although we do not know that is true. Here again, as a point of reference, the total fish accounted for by the six Regional Reporting

Groups in Tables 67–69 was about 50%–60% of the total reported harvest for the Kodiak Management Area for the three study years (catch numbers from Munro 2015 and later reports in this series). Even though not all times and areas in Kodiak Management Area were sampled and even though there was some sockeye salmon production in Lower Cook Inlet, we expect that the Shedd et al. sockeye salmon catch estimates of Cook Inlet bound fish caught in the Kodiak Management Area divided by the estimated Upper Cook Inlet run size to provide a crudely reasonable—even if slightly too low—approximation to the harvest rate on Cook Inlet-origin fish harvested in the Kodiak Management Area (Table 1).

Although there are only three years available for comparison, it does not appear that changes in run size explain the difference in harvest rates on the Cook Inlet stocks. The highest harvest rate on Cook Inlet stocks was in 2015, the year with the highest in-Inlet run size among the three study years, but the second highest harvest rate is on the year with the lowest run size (Table 1 below).

Table 1. Upper Cook Inlet run size in millions of sockeye salmon **(A)** (from ADF&G), the estimated harvest of Cook Inlet-origin sockeye salmon caught in the Kodiak Management area in millions of fish **(B)** (From 67–69 in the Shedd et al. (2016) report), and the approximate harvest rate (estimated harvest in the Kodiak Management Area divided by the in-Inlet run size plus the harvest in the Kodiak Management Area) on Cook Inlet-origin sockeye salmon in the Kodiak Management Area **(C)**.

	(A) Cook Inlet run size	**(B)** Cook Inlet catch in KMA	**(C)** Approximate harvest rate
Year	(millions)	(millions)	in KMA
2010	5.71		
2011	8.68		
2012	6.46		
2013	5.74		
2014	5.54	0.1	2%
2015	6.29	0.6	9%
2016	5.04	0.4	7%

Another important question: were the harvests of Cook Inlet-bound sockeye salmon excessive? Though this is a policy judgment, rather than a scientific question, we note that in the years 2014-2016, the estimated *harvest rate* ranged from 2% to 9%, and did not reach or exceed 10% in any year in the study (Table 1). Some might point out that the way we calculated the harvest rate under-represents its true magnitude—and the estimates in Table 1 very well may be too low. Even so, it would be highly unlikely we have underestimated it by a factor of 2, meaning that the median harvest rate over the three study years would have been almost surely less than 15%, and probably considerably less.

Are there areas where the proportion or numbers of Cook Inlet-origin sockeye salmon are higher than in other areas? Figures 22, 23, and 24 in the Shedd et al. (2016) report are useful for speculating about this question—although it is really impossible to establish a trend with only three years of data. Notice that the area with the highest number of Cook Inlet-origin fish was Ayakulik-Halibut Bay in 2014 and again in 2015. However, in 2016 the number of Cook Inlet-origin fish in this district was much reduced from the previous year, and a larger number of Cook Inlet-bound sockeye salmon was caught in the Igvak area—which had previously been an area with very few Cook Inlet-origin fish harvested.

When time is brought into the discussion the situation also appears murky. The proportion of Cook Inlet-origin fish caught in the Uyak area is relatively low in all sampling periods in 2014 (Tables 15, 16, and 17 in the Shedd et al. (2016) report, yet the proportion rises to relatively high levels (54% and 32%) in the second and third sampling periods in 2015 (Tables 20 and 21). Then in 2016, the proportion was much reduced, with over 80% of the fish harvested in each period in this catch area belonging to the Kodiak reporting group (Tables 23, 24, and 25). This observed variation shows the danger in looking at just three years and thinking that one sees a trend. Further sampling and study is warranted to understand patterns of temporal variation.

The proportion of Cook Inlet-origin fish in the Ayakulik-Halibut Bay area is relatively low (less than 8%) in the first sampling period (June 1 to June 27) in 2014, but that this rises to 24% in the second period (June28 – July 25) of that year, and then falls to about 5% in the last sampling period of that year (Tables 39, 40, and 41). However, in the next year this proportion starts high in the first period (28%), rises to 48% in the second period, and then drops to less than 10% in the last period (Tables 43, 44, and 45). In 2016, the first period contains essentially all fish originating from the Kodiak Management Area (>99%; Table 47), but the proportion of Cook Inlet-origin fish again rises in the second period to nearly 42%, and remains high at 28% in the third period (Tables 47, 48, and 49). A person focusing on the similarities would note that the second sampling period for this district was consistently high in all three sampled years, and that is correct. However, someone focusing on the large year-to-year variation in the proportion of Cook Inlet-origin fish would correctly point out that with three data points it is premature to speculate that this pattern will continue into the future.

Final Comments

The Shedd et al. (2016) report is generally well written, organized, and it offers a reasonable amount of specific details about the actual genetic and statistical analyses. While it is impossible to judge the care, attention to detail, and technical skill that actually went into actual genetic analysis from the written page, the report demonstrates a great deal of

technical sophistication. The sections on "Laboratory Quality Control" appears to demonstrate that the authors did take reasonable care to detect and report on obvious mistakes. The Alaska Department of Fish and Game's Gene Conservation Lab has an excellent reputation for this kind of work. It would be extremely surprising to find that many, if any, outright mistakes were made in either the genetic or the statistical analyses.

The estimates in the Shedd et al. (2016) report seem quite reasonable. Catches were generally dominated by fish that originated within the Kodiak Management Area. Although there are some exceptions, a finer-scale examination shows catches were generally dominated by stocks that originated near the area of harvest. The Shedd et al. (2016) report is technically sophisticated and it contains features that we have found are indicative of a study that is carefully conducted. We found no reason to think that there were any large inaccuracies in the study, and the reported measures of precision provide evidence that the reported estimates are trustworthy and suitable for their intended purposes.

Finally, we note that the estimated harvest rate on Cook Inlet-bound sockeye salmon were below 10% in each year, and substantially below 10% in one year. These harvest rates generally agree with what previous, less accurate studies, have suggested. However, with only three years of measurements, with a large fraction of the catch not sampled, and with large annual variation in those measurements (much larger than the error obtained from the credible intervals), it is very hard to conclude that these results bracket the range of what to expect if the study were to be repeated, or to conclude that these results represent what would happen in a "typical year" (if there ever is such a thing). We recommend that the genetic analyses in this study be conducted to better understand the apparently real variation in stock contribution estimates (both rates and harvests).

These estimates in Shedd et al. would have been more useful for policy discussions if they could be recast in terms of harvest rate rather than contribution rate. In fairness, we note that this was not one of the stated goals for the study, but this appears to be a subject that needs to be addressed in the future. We have tried to crudely approximate the harvest rate using information that was easily accessible to us. While our specific harvest rate estimates can be easily criticized, it is clear that the harvest rate was probably much less than 10% in most study years and almost surely less than about 15% in each year of the study. In the future, we recommend sampling in some of the time and area strata that were not sampled in 2014–2016, or else we recommend some discussion of why specific time-area strata can be assumed to have very low contribution rates for stocks outside the Kodiak Management Area.

Acknowledgments

We thank Heather McCarty for her help in proposing this review and guidance into the scientific and management issues involved.

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Appendix A – Biographical Statements for the Authors

Harold J. Geiger is the chief scientist for the St. Hubert Research Group, a small consulting company in Juneau, Alaska. He previously worked for the Alaska Department of Fish and Game, holding several positions on the salmon research staff of the Division of Commercial Fisheries before retiring in 2007. He held the position of Chief Biometrician in the late 1990s and was the Salmon Research Supervisor for the Southeast Region in the early 2000s. He holds a Master's degree in Statistics from Oregon State University and a PhD from the College of Fisheries and Ocean Sciences at the University of Alaska Fairbanks.

Terrance J. Quinn II, Ph.D. has been Professor of Fish Population Dynamics in the Fisheries Department, College of Fisheries and Ocean Sciences, University of Alaska Fairbanks for 32 years. He obtained his Ph.D. in Biomathematics from the University of Washington in 1980. Dr. Quinn's research focuses on fish population dynamics; estimation of fish and whale abundance; sampling theory; and renewable resource management systems. He is the co-author or co-editor of 4 books and over 100 scientific publications and has shepherded about 40 students through their post-graduate careers. He has been a member of the Statistical and Scientific Committee of the North Pacific Fishery Management Council since 1986 and was a former chair of that body. He is a former member of the Ocean Studies Board of the National Academy of Sciences and served on five of their committees, including two as chair or co-chair. He is an Associate Editor of the Canadian Journal of Fisheries and Aquatic Sciences.

Appendix B: Some Comments on Stock Mixture Analysis

The earliest techniques for developing these estimates were based on simply capturing migrating salmon, tagging them with a visible tag, and then looking for the tags on spawning fish. By comparison, this is a crude technique as it is hard or even impossible to control for how much effort went into looking for tags. That is, a stock with a small contribution to the mixture could result in a large fraction of the recovered tags if, for example, there was a counting weir on the spawning stream of that stock.

A technique that is somewhat more sophisticated is based on an analysis of scale patterns, and this technique was used extensively in the 1980s and 1990s. The technique was based on the assumption that fish originating from different systems had different growth patterns,

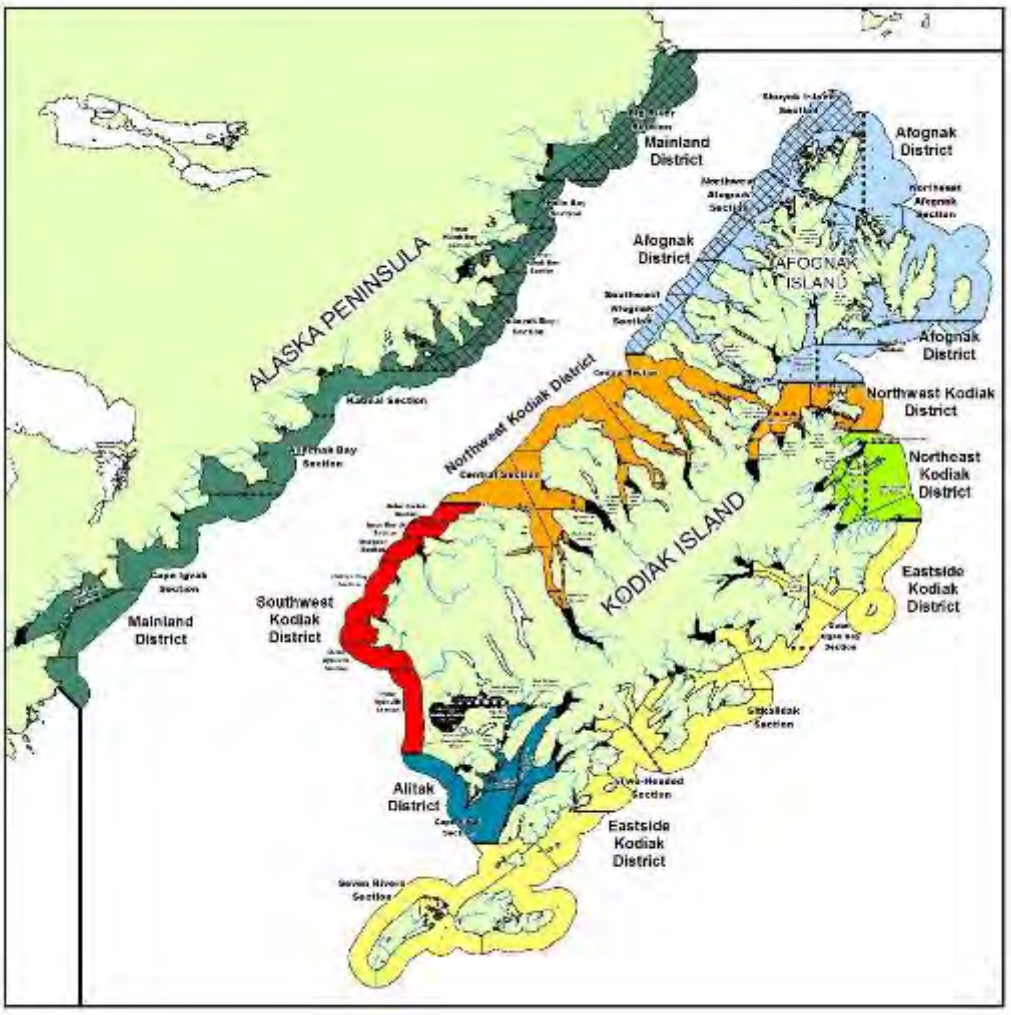
which would be represented on the scales of the fish. A large sample of scales needed to be collected for each stock, each year. Then a very large (often over 100 measurements) can be used to characterize the scale pattern for that stock, as the growing conditions that affect the scale patterns change from year to year. A complex statistical algorithm (called a linear discriminate function) is used to look for the specific measurements that show the most differences among stocks. The results from this discriminate function can then be used to classify fish in the fishery mixture to the stock that most likely produced it.

In Lynn Canal in Southeast Alaska, scale patterns were used to estimate the proportions of Chilkat and Chilkoot Lake sockeye salmon in a mixture to both actively manage a gillnet fishery during the fishing season and to study the productivity of the stocks after the fishing season. This was an ideal situation as the number of stocks was small and the patterns were quite different. As the number of stock in the mixture increased beyond just a few, or as the growing conditions among the stocks were more similar, scale pattern analysis estimates become uncontrollably imprecise, and the accuracy of the estimates would also degrade.

In the 1990s, genetic tools showed obvious advantages over other techniques. The first genetic techniques are sometimes called the allozyme techniques. Although these were time consuming and expensive, one of the main advantages was the individual stocks no longer needed to be characterized each year, as the genetic character of the stock changed slowly, if at all. Later, microsatellite techniques replaced allozyme techniques for a number of technical reasons. Finally, the SNP (Seeb et al. 2011) approach, used in this study, is usually thought of as the current state of the art and most cost-effective method of conducting a complex stock mixture analysis.

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Gulf of Alaska Climate Conditions and Sockeye Salmon

Run Timing During 2014-2016

Report to the Kodiak Salmon Work Group

Michael A. Litzow, PhD

Executive Summary

During 2014-2016, staff from the Alaska Department of Fish and Game sampled sockeye salmon in Kodiak Management Area commercial catches to estimate stock-specific contribution rates to the fishery (Shedd et al. 2016). The authors of that report cautioned that "these analyses represent environmental and fishery conditions during a specific period of time…caution must be exercised when extrapolating the results to years, areas, and temporal periods not analyzed because changes in relative abundance among reporting groups, prosecution of fisheries, or migratory behavior due to ocean conditions very likely affect distribution of stock-specific harvests among fisheries" (p. 23).

The current report[2] evaluates the conditions during the years of the genetics study (2014-2016) in order to summarize how well that study may represent "typical" conditions for Gulf of Alaska sockeye runs. The specific goals of this report are to 1) review the state of ocean climate conditions during 2014-2016, 2) evaluate the evidence for effects on sockeye salmon migration and run timing during these years, and 3) summarize implications for applying the findings of the Shedd et al. (2016) genetics study as justification for making changes to sockeye salmon fisheries management in future years.

The primary findings of this work are as follows:

1. **The "Warm Blob" climate event dramatically affected ocean physics across the North Pacific during 2014-2016.** These years were characterized by unprecedented climate conditions in the Gulf of Alaska. Sea surface temperatures and air temperatures were at or beyond previously-observed maxima. River temperatures in South Central Alaska were also higher than ever observed, and river flow volumes were unusually low. Summer sea level pressure was unusually high, which led to reduced wind mixing of ocean water.
2. **Many unusual ecosystem responses were observed in the Gulf of Alaska during 2014-2016**, highlighting the strong effects that unusual climate conditions had on populations and communities at all taxonomic levels, from plankton to fish, seabirds, and marine mammals.
3. **Sockeye salmon showed unusual run timing during 2014-2016.** Catches and escapement were later than usual in many areas, both in Kodiak and Upper Cook Inlet. At the same time, some runs, such Kasilof River sockeye, were earlier than usual. Since no data on at-sea migration patterns of sockeye salmon are available for these years, these findings provide the best available information concerning sockeye salmon migration during 2014-2016, and suggest the possibility for unusual patterns of stock mixing.
4. **Unusual sockeye run timing is directly linked to unusual climate conditions.** The link between climate conditions and run timing is highly nonlinear and accelerating. In general, warmer conditions and increased atmospheric pressure during 2014-2106 were directly related to a tendency towards later overall run timing in sockeye salmon, although some runs were also unusually early.
5. **The rate of physical and biological change currently occurring in the Gulf of Alaska is unprecedented, and suggests the need for caution when re-evaluating long-standing management practices based on a few years of data.** Biological responses to climate disturbance are complex and often time-lagged. The trajectory of fisheries change in the Gulf

[2] See Appendix A – Biographical Statement

of Alaska is therefore impossible to predict, but given the size of the ongoing climate disturbance, the full range of fisheries responses has likely not yet played out. Data from 2014-2016 are likely to be a snapshot of a rapidly changing system, and given the potential impacts of physical conditions on stock mixing, are likely to quickly become outdated as unusual climate conditions continue.

Conclusion: The Gulf of Alaska is currently undergoing rapid change outside the envelope of historical conditions. In this situation, the ability of data from 2014-2016 to serve as a reliable guide for future conditions is highly questionable. These considerations are exactly in line with the caution provided by Shedd et al. (2016) concerning the use of their data in situations materially different from those under which the study took place, and suggests the need for a precautionary approach to possible management changes based on these results.

Background

Unprecedented high atmospheric pressure over large areas of the North Pacific in winter 2013-14 led to reduced wind mixing and Ekman transport, so that normal ocean cooling at the end of summer failed to occur. This event persisted into 2016, and became known as the "Warm Blob" (Bond et al. 2015). In terms of duration, size of area affected, and degree of warming involved, this event became the strongest marine heatwave ever observed globally (Di Lorenzo and Mantua 2016, Hobday et al. 2018). In the Gulf of Alaska, temperatures during 2014-2016 were by far the highest in the historical record (Fig. 1). After a hiatus in 2017, unusually warm temperatures returned in 2018-2019, and warm temperatures are expected to intensify over coming decades (Walsh et al. 2018). The best scientific understanding is therefore that the Gulf of Alaska is entering a period of persistent change.

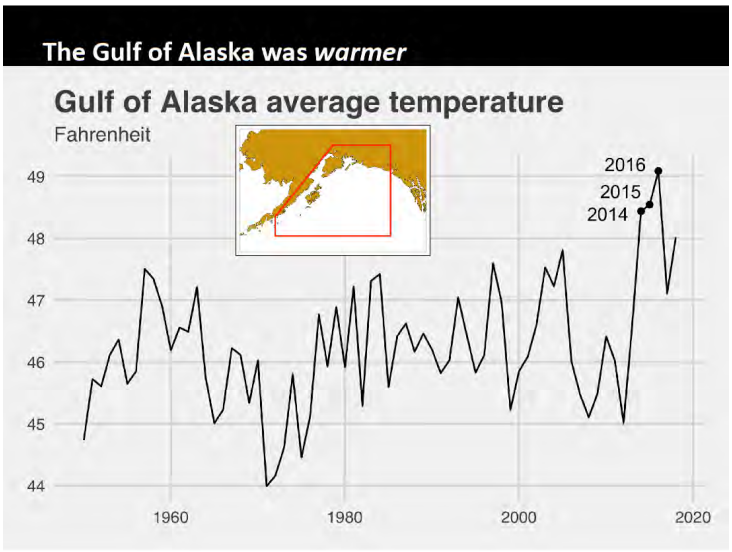


Fig. 1. Gulf of Alaska sea surface temperature (annual means), 1950-2018. Data from NOAA Extended Reconstructed SST v5.

A suite of other highly unusual climate conditions also occurred during 2014-2016 in the Gulf of Alaska. These included air temperatures and river temperatures that were at or above previous historical record high values (Fig. 2). And, in line with the high atmospheric pressure that was the immediate cause of the Warm Blob event across the North Pacific, atmospheric pressure at sea level was generally elevated over the Gulf of Alaska during 2014-2016 (Fig. 3). This high atmospheric pressure was associated with unusually weak wind mixing and wind-driven currents in the Gulf of Alaska ecosystem.

Salmon migration patterns are known to be highly sensitive to physical factors such as ocean temperature, ocean currents, river volume and river temperature (Quinn and Adams 1996, Hodgson and Quinn 2002, Hodgson et al. 2006). Sockeye runs in Cook Inlet are particularly prone to shared patterns of variability in run timing – in other words, unusual migration behavior tends to affect runs across Cook Inlet as a group (Hodgson et al 2006). Given the known sensitivity of salmon migration behavior to physical conditions, the climate event in the Gulf of Alaska has important potential implications for changing patterns of stock mixing in sockeye salmon.

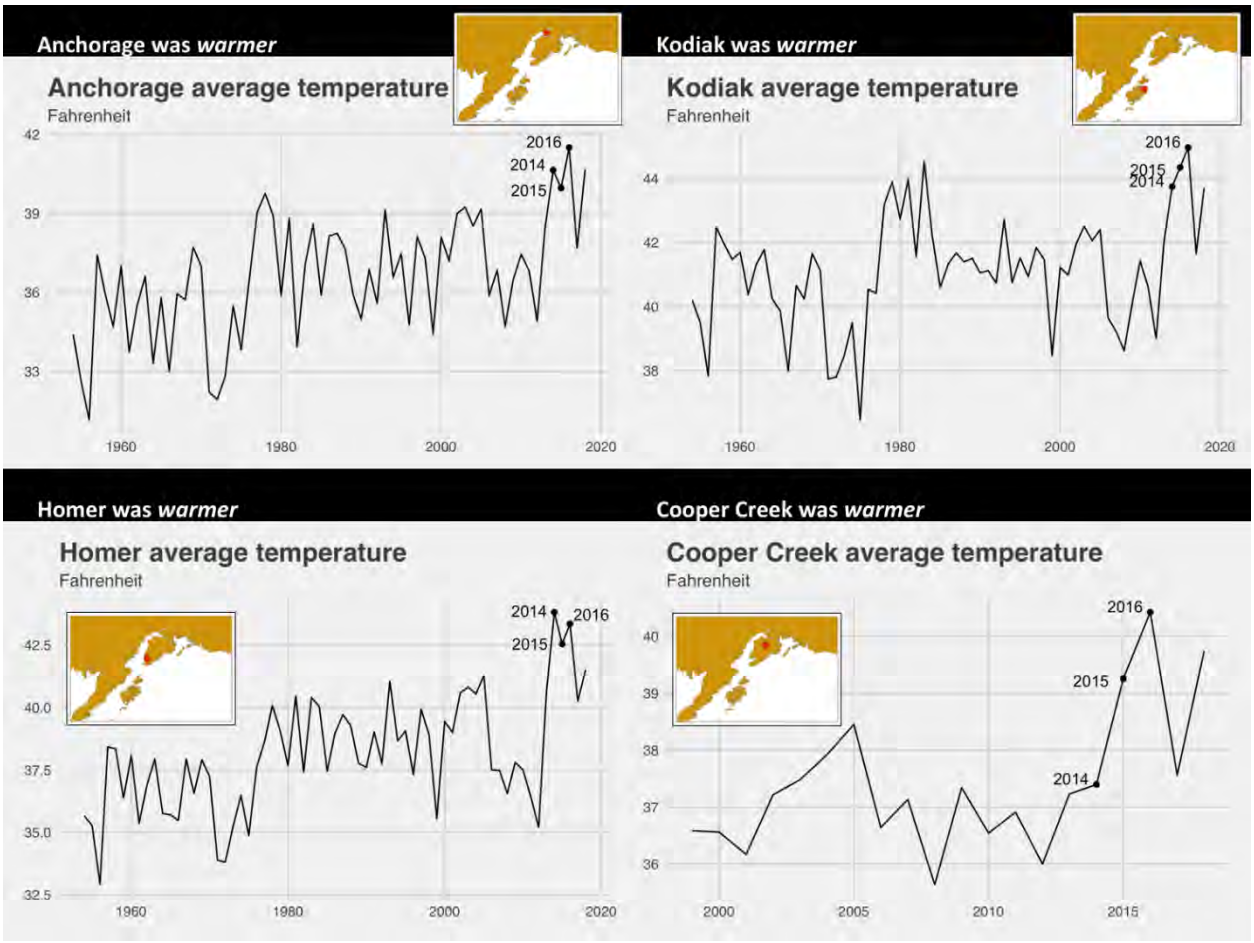


Fig. 2. Unusual air and river temperatures in Southcentral Alaska during 2014-2016.

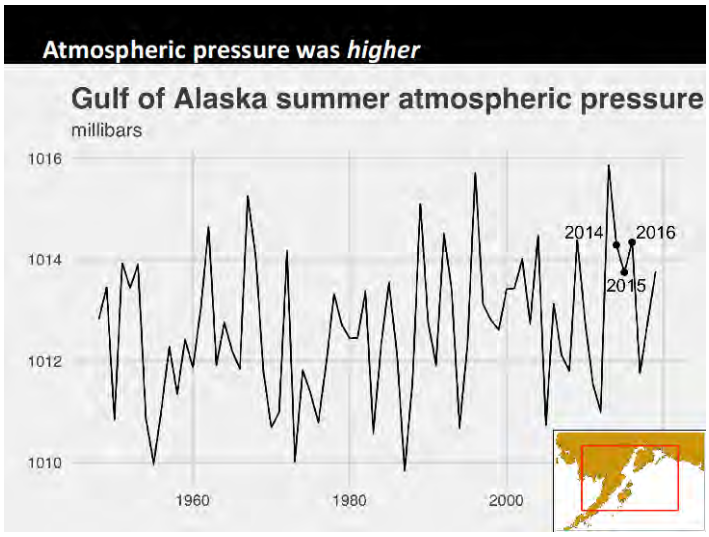


Fig. 3. Summer atmospheric pressure over the Gulf of Alaska, 1950-2018.

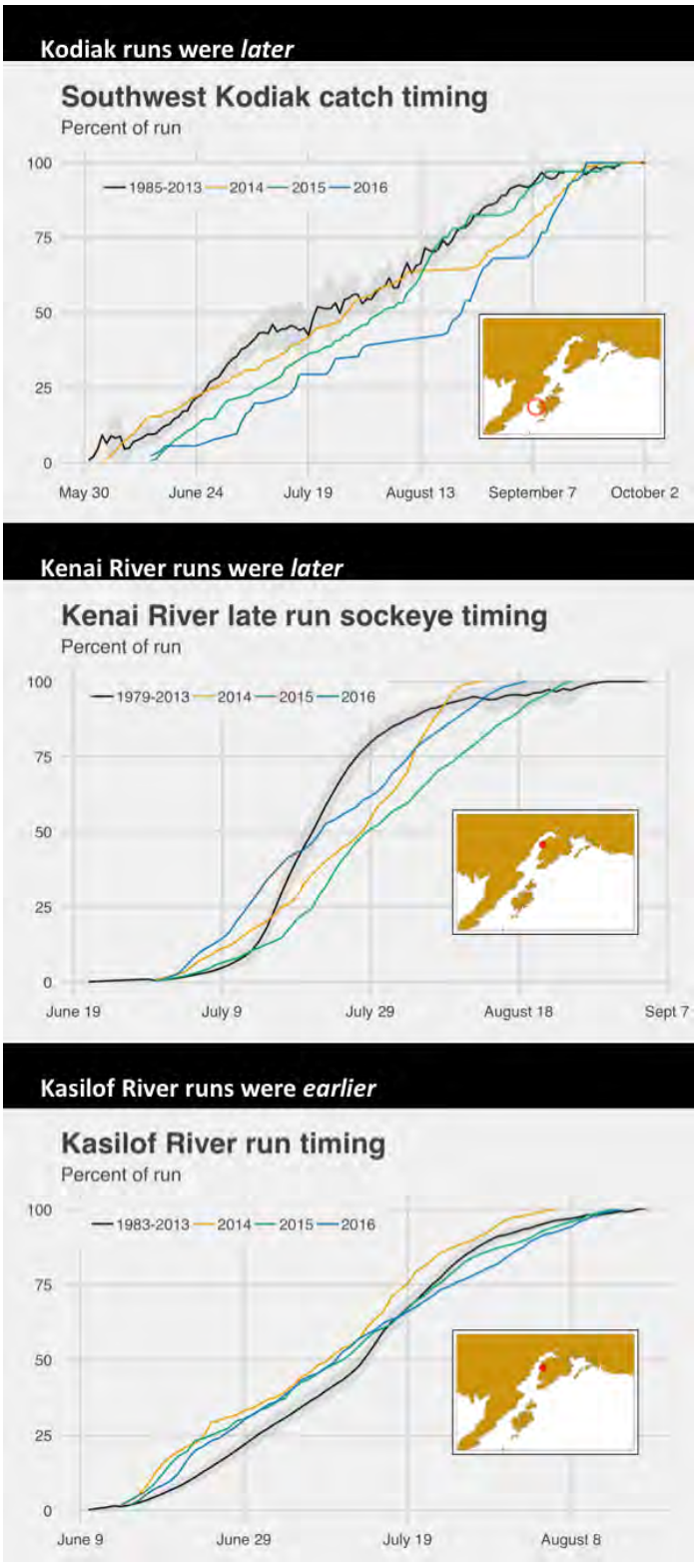


Fig. 4. Run timing of Southwest Kodiak, Kenai River, and Kasilof River sockeye salmon during 2014-2016 compared to long-term means.

Linking Ocean Temperate and Sockeye Run Timing

At-sea migration patterns in salmon remain poorly understood, and no data are available concerning the distribution and timing of Gulf of Alaska sockeye salmon returning to natal rivers during the period of interest. However, extensive records are available for the timing of commercial catches and escapement for important stocks, and these data provide the best available information for understanding recent changes in sockeye migration. Sockeye salmon run timing was estimated for this report with data on both escapement from a variety of Gulf of Alaska runs, as well as commercial catch data from both Upper Cook Inlet and the Kodiak Management Area (details in Data Sources and Methods). Several important sockeye runs showed run timing during 2014-2016 that was highly unusual when compared to long-term means (Fig. 4), suggesting that the unusual climate conditions during these years affected sockeye migration patterns.

In order to formally analyze the relationship between climate conditions and run timing, data were standardized across different long-term time series by calculating the day of the year in which 50% of the total run (catch or escapement) had occurred in each year (Quinn and Adams 1996). A Dynamic Factor Analysis (DFA) model was then used to summarize variability across the many different run timing information sources (Zuur et al. 2003). This DFA model showed evidence of shared variability (positive loadings) for Southwest Kodiak catches and Kasilof and Kenai River escapement. A variety of other data sources had weaker loadings on the shared trend (Fig. 5). The shared trend of variability in run timing showed an increasing trend since the early 2000s, with a further step increase beginning around 2014 (Fig. 6). Positive values in this

shared trend indicate a change towards later runs in time series with positive loadings, and earlier runs in time series with negative loadings.

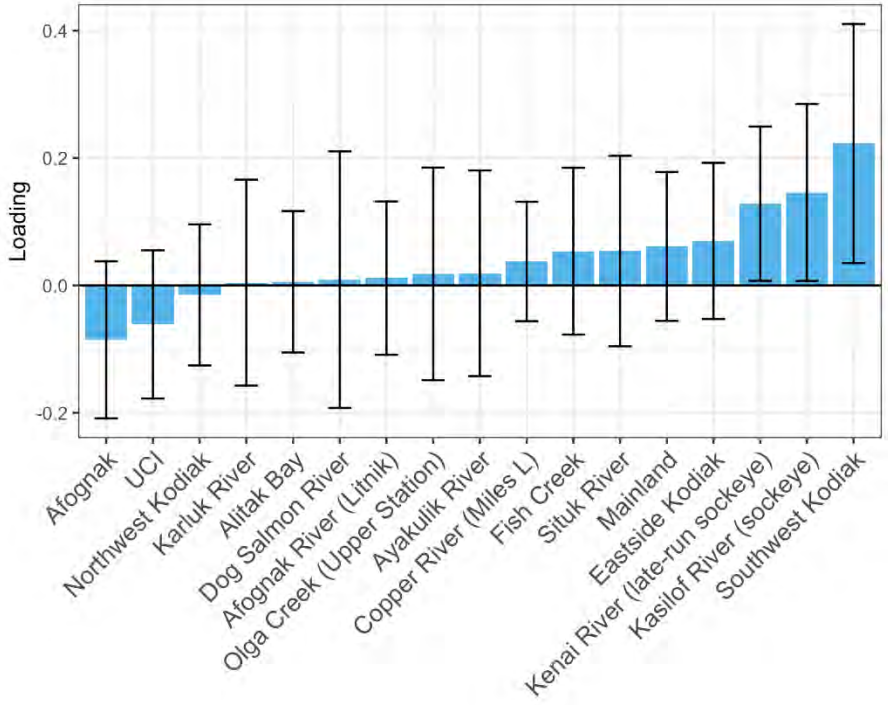


Fig. 5. Dynamic Factor Analysis summary of Gulf of Alaska sockeye salmon run timing, 1978-2019. Loadings on individual escapement and catch time series (day of year when 50% of run has occurred in each year, estimates with 95% confidence intervals). Time series with positive loadings are later when shared trend goes up; time series with negative trends are earlier when the shared trend goes up. UCI = = Upper Cook Inlet total commercial catch.

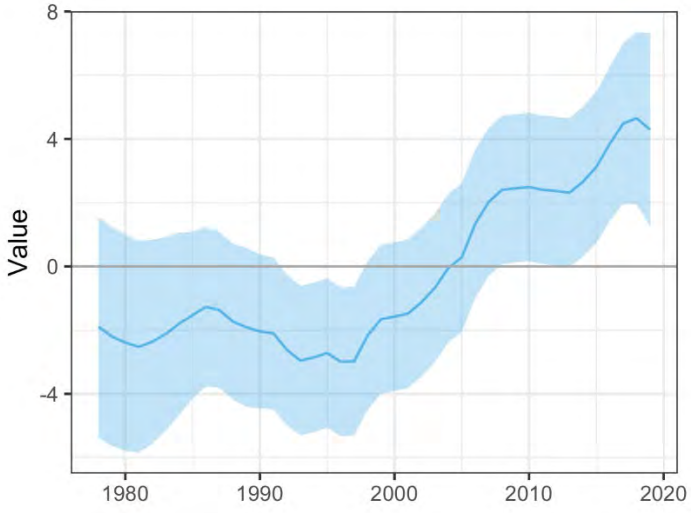


Fig. 6. Shared trend in sockeye run timing (estimate and 95% confidence interval) from DFA model. Value of 0 indicates average overall timing.

A variety of different Gulf of Alaska climate variables may influence sockeye salmon run timing, including sea surface temperature, sea level atmospheric pressure, river temperature, and river flow. A DFA model was again used to summarize variability across these different climate variables. This DFA model summarized overall climate variability as a combination of positive loadings for a range

of air, sea, and river temperature time series, and negative loadings for stream flow in Cooper Creek (Kenai River drainage) and Willow Creek (Susitna River Drainage; Fig. 7). In other words the model captures the tendency for temperatures at different sites to vary together, and for stream flow at those two Southcentral Alaska sites to decline in warm conditions. The shared trend of climate variability from this DFA model clearly shows the transition to extreme conditions since 2014 (Fig. 8).

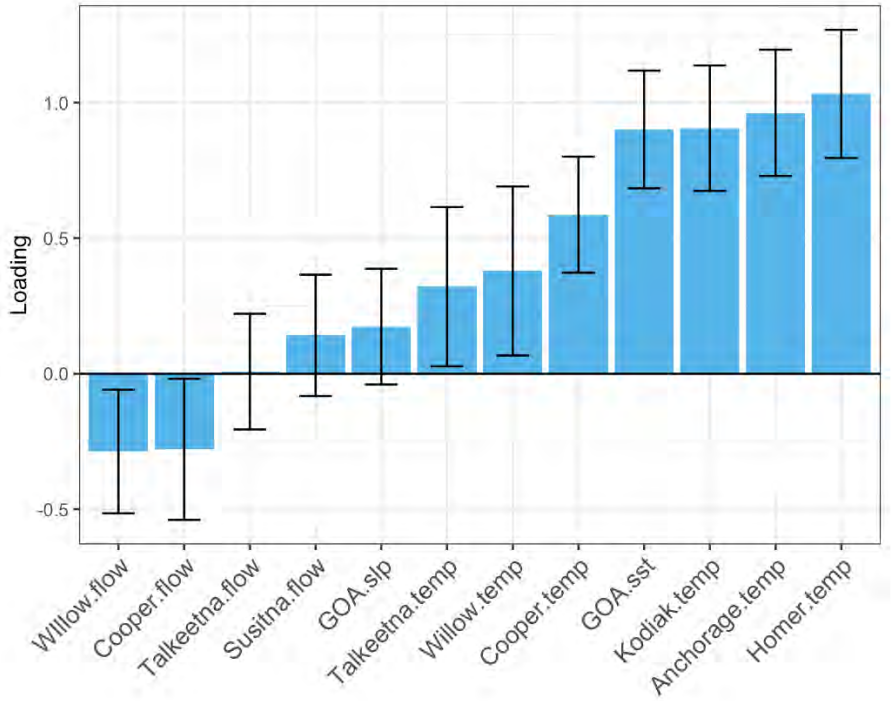


Fig. 7. Dynamic Factor Analysis summary of Gulf of Alaska and South-Central climate, 1978-2019. Loadings on individual climate time series (estimates with 95% confidence intervals). Time series with positive loadings go up when the shared trend goes up; time series with negative trends go down when the shared trend goes up. GOA.slp = Gulf of Alaska sea level atmospheric pressure, GOA.sst = Gulf of Alaska sea surface temperature.

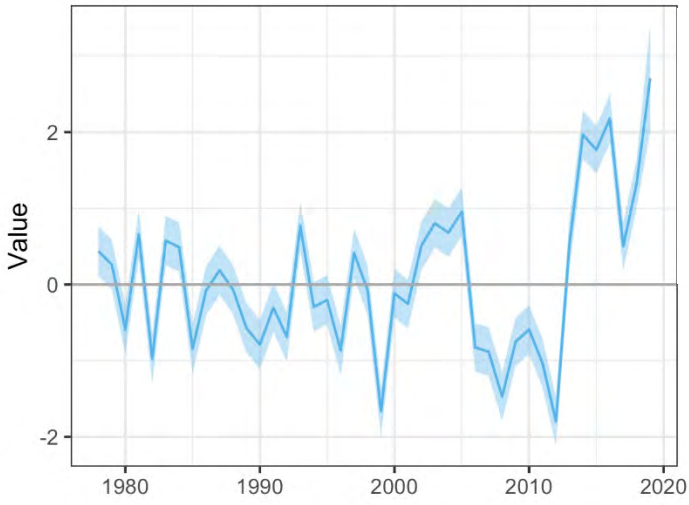


Fig. 8. Shared trend in climate variability (estimate and 95% confidence interval) from DFA model. Value of 0 indicates average conditions.

These results confirm that overall trends in both overall sockeye run timing (Fig. 6) and overall climate conditions for sockeye (Fig. 8) have been at unprecedented levels since 2014. The next step of the analysis is to evaluate the evidence that the two trends are related. An initial examination of possible driver-response relationships with a scatter plot of annual values in the climate trend and the sockeye run timing trend suggests a highly nonlinear relationship, with two distinct clusters of observations in the 1978-2019 time period (Fig. 9). This initial result suggests the possibility of two overlapping mathematical functions describing climate effects on salmon, occupying different parts of the time series. This kind of complex driver-response relationship, sometimes referred to as "alternative stable states" is a common feature of ecosystems experiencing disturbance from external factors such as climate change (Scheffer et al. 2012, Litzow and Hunsicker 2016). *This scatter plot also illustrates the highly unusual nature of the 2014-2016 period for both climate conditions and sockeye run timing: both quantities were at unprecedented levels in 2014-2016.*

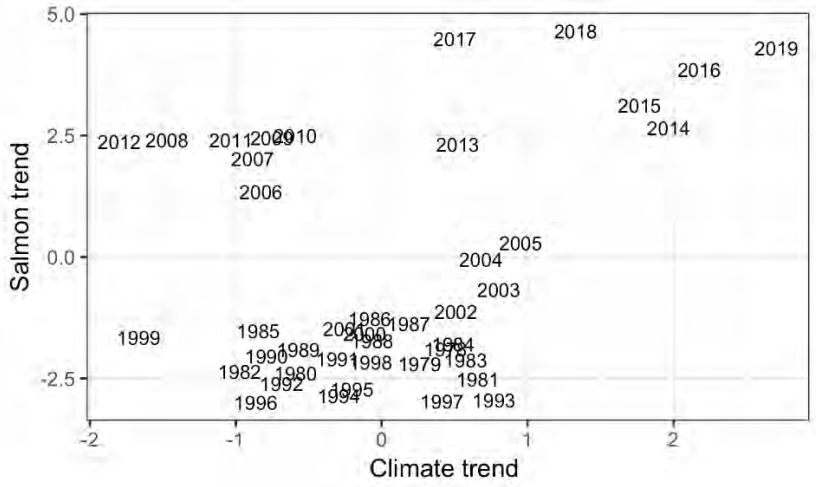


Fig. 9. Time series of climate conditions (shared trend from climate DFA model; driver variable) and sockeye run timing (shared trend from salmon DFA model; response variable).

The next step in this analysis was to test for meaningful relationships between sockeye run timing and climate state. This part of the analysis answers the question of whether there is evidence that run timing is responding to changes in the climate. This analysis used Bayesian linear regression models to determine if the slope of sockeye run timing on the shared climate trend (unit change in run timing per unit change in climate) is different from zero. These models do support the hypothesis of a meaningful relationship between climate state and run timing with an estimated slope that is clearly different from zero. These models also indicate that the relationship is strengthening over time (increasing intercept since the early 2000s (Fig. 10).

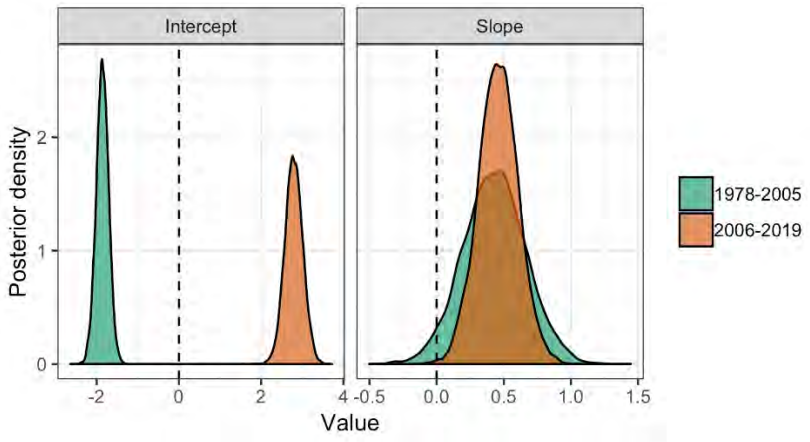


Fig. 10. Era-specific relationships between shared climate trend and shared trend in sockeye salmon run timing: posterior distributions for intercept and slope from Bayesian linear regression fit separately to data from 1978-2005 and 2006-2019.

As noted earlier, this kind of time-dependent driver-response relationship is a common feature of ecosystems experiencing external forcing (Scheffer et al. 2012), especially in instances of changing climate variables (Wolkovich et al. 2014). However, the causes of this kind of complex, nonlinear relationship are typically very difficult to determine, and understanding the apparent jump in sockeye response to climate forcing is beyond the scope of this report. What is apparent is the effect of the simultaneous change in run timing and climate: 2019 was the most extreme year on record for the climate trend, and 2017-2019 were the most unusual years on record for the shared trend in sockeye run timing, with 2014-2016 close behind (Fig. 9). In addition, a sensitivity analysis shows that similar results were obtained when only escapement time series were analyzed, indicating that management changes to catch timing do not explain changing run timing in recent years (results not shown).

Ecosystem Context

In addition to the unusual sockeye run timing noted above, a wide range of ecosystem responses to unusual climate conditions have been noted since 2014 in the Gulf of Alaska. These include the largest-ever observed mass mortality event for common murres and a variety of other chronic seabird mass mortality events; acute and chronic production of neurotoxins by harmful algal blooms (McCabe et al. 2016, Roggatz et al. 2019); significant mortality in humpback whales; unprecedented irruptions of pelagic colonial tunicates (*Pyrosoma* sp.); fisheries failures for Pacific cod and pink salmon; unusual patterns of primary productivity (spring blooms that are unusually early and small; Litzow et al. in prep), and shifts in zooplankton abundance and community structure (Litzow et al. in prep.). Taken together, these responses underscore the unusual nature of both the initial 2014-2016 Warm Blob and subsequent years, and the potential for continuing ecological change as long as the current warming event lasts.

Implications for Management

A very high degree of uncertainty currently attends ecosystem status in the Gulf of Alaska, both for the specific question of sockeye run timing and stock mixing, and for broader questions of stability in the ecosystem and fisheries. While the 2014-2016 return years were highly unusual for sockeye run timing as measured by the shared trend of run timing variability, even these extreme values have been exceeded during 2017-2019 (Fig. 3b). Given that biological responses to ecosystem perturbations such as climate forcing are complex and often lagged in time (Frank et al. 2011, Hughes et al. 2013), and that climate conditions have again returned to levels commensurate with those seen in 2016, the full scope of biological consequences of the current climate event has likely not yet become apparent. *In this situation of rapid change outside the envelope of historical conditions, the ability of data from 2014-2016 to serve as a reliable guide for future conditions is highly questionable*. The speed of change currently occurring in the Gulf of Alaska underscores the caution provided by Shedd et al. (2016) concerning the use of their data in situations materially different from those under which the study took place, and suggests the need for a precautionary approach to possible management changes based on these results.

Data Sources and Methods

Sea surface temperature data were extracted from the NOAA Extended Reconstructed Sea Surface Temperature data set (ncdc.noaa.gov). Sea level pressure data come from the NCEP/NCAR Reanalysis (esrl.noaa.gov). River temperature and river flow data come from the US Geological Survey (waterdata.usgs.gov). Air temperature data come from the Alaska Climate Research Center (climate.gi.alaska.edu). Data on sockeye run timing come both from escapement counts and commercial catch data obtained from ADF&G (adfg.alaska.gov). DFA models were fit following the recommendations of Holmes et al. (2018). Bayesian regression models were fit following the recommendations of Gelman et al. (2014).

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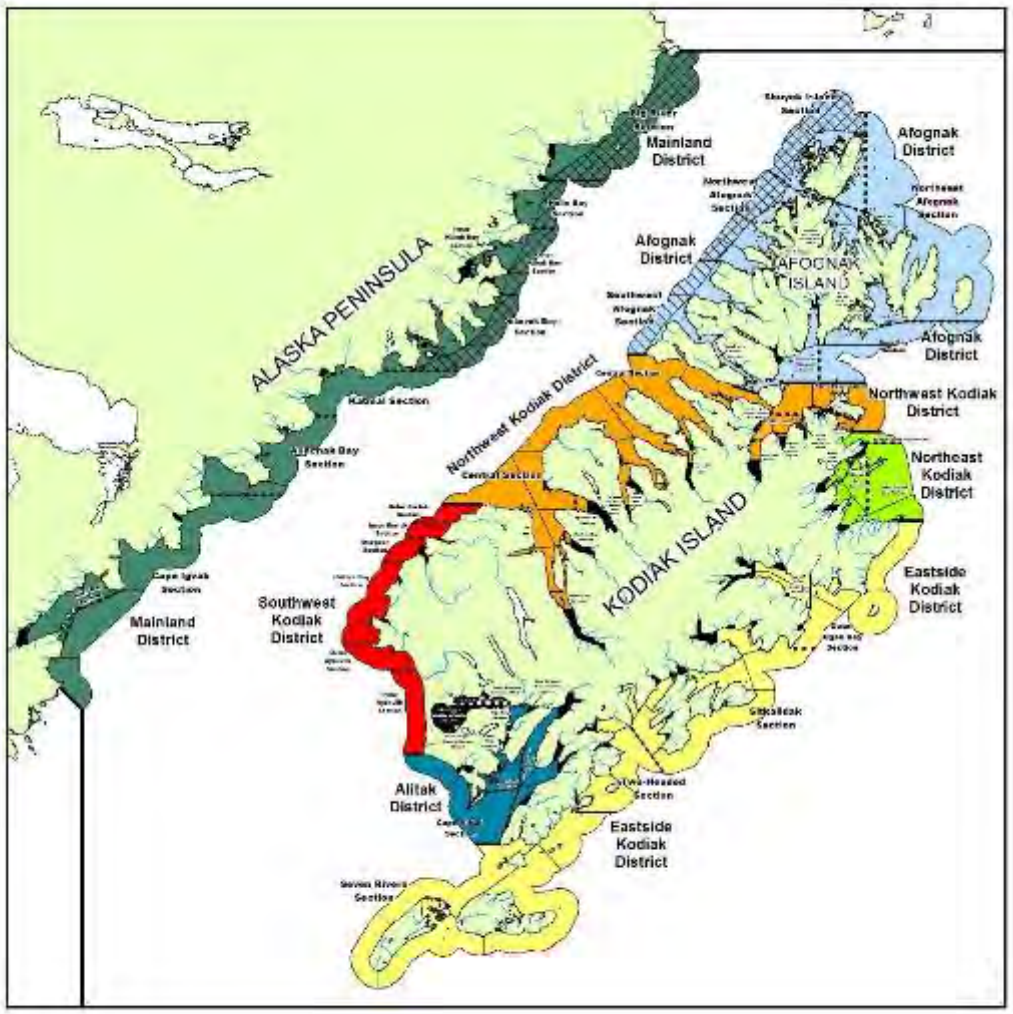
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Appendix A – Author's Biographical Statement

Dr. Michael Litzow is a fisheries oceanographer who studies the impacts of climate variability and climate change on commercially important fish stocks in Alaska. He obtained his B.S. in Biological Sciences from the University of Alaska, Fairbanks, his M.S. in Marine Science from the University of California, Santa Cruz, and his Ph.D. in Ocean Sciences from the University of Tasmania, Australia. Dr. Litzow's recent research has focused on the effects of changing ocean climate on Gulf of Alaska salmon stocks. His previous research has involved a variety of taxa, including groundfish, crabs, shrimp, herring, other forage fish, and seabirds, and he is the author of thirty peer-reviewed papers. Dr. Litzow is the owner of Blue World Research, a private consulting firm, and until recently was a research faculty member at the University of Alaska, College of Fisheries and Ocean Sciences.

December 2019



Synthesis of Chinook Salmon Stock Contribution Estimates within the Kodiak Management Area **Commercial Salmon Fisheries (Proposals 63 & 37)**

Kodiak Salmon Work Group

EXECUTIVE SUMMARY

- During all years and sampling periods regardless of the commercial salmon fishery district sampled, British Columbia (hatchery stocks) Chinook salmon dominated the

stock composition of the harvest. Estimates of contribution ranged from a low of 30% to a high of 70% with respective harvests of several hundred to several thousand fish.

- Consistently, contributions from Washington and Oregon Chinook stocks (Western US stocks) to the KMA commercial harvest ranged from 7.3% to 37% and averaged 28%.

- Contributions from Southeast Alaska/North Gulf Coast were in most cases higher than the combined contributions from both Kodiak and Cook Inlet. The estimates generally seemed to be reflective of periods of higher (1997-1999) and lower abundance (2014-2016) for Southeast Alaska stocks.

- The capability of any marine salmon fisheries sampling program to consistently estimate the harvest, in a timely manner, of at most several hundred fish over a commercial fishing season within the geographic scope of the Kodiak Management Area is untenable. Given the current status of both the Kodiak and Cook Inlet Chinook salmon stocks at present, the actions suggested by Proposal 37 are unwarranted.

- It should be noted that for the Cook Inlet stocks harvested within the Kodiak Management Area, a majority are hatchery fish produced for marine or in-river sport fisheries.

- The Chinook salmon stocks contributing to the Kodiak Management Area commercial fishery are similar to those contributing to most of the marine commercial and recreational fisheries from Yakutat to Adak, or coastwide.

INTRODUCTION

The Kodiak Management Area and the associated salmon fisheries has a long and storied history of sustainable fisheries management success. A foundational feature for this success is the escapement enumeration program using weirs and counting individual fish as they migrate upstream. This program has largely been in place since the early 1900s with weirs operated annually on the Karluk, Ayakulik and Frazer lake systems. Daily and cumulative escapement counts are relayed to the area management office for each system and when combined with other sources of data: harvests, aerial survey index counts (for systems without weirs), fishing effort along with additional biological data (timing, migration patterns, age composition) are all sourced into fishery management decisions and emergency orders to open or close districts, sections and subsections of fishing areas throughout the salmon fishing season. An additional vital feature of this program is the inclusion of enclosures or “traps” that allow for live sampling of the escapement, specifically for sockeye and Chinook salmon and the collection of biological attribute data (age, sex, length) which is imperative for building brood tables which in turn are employed for establishing and evaluating biological escapement goals and generating pre-season forecasts.

An additional prominent feature of the Kodiak Management Area salmon fisheries are the 7 management plans which guide management of the salmon stocks and species during the salmon

fishing season which commences in early to mid-June and extends into late September. The management planning process was largely initiated in the mid to late 1970s which was a period of extremely poor salmon production throughout the entire Kodiak Archipelago and was cause for multiple years of limited commercial fishing by all gear groups with the overall objective of rebuilding wild salmon stocks. These management plans were the result of extensive efforts by ADF&G management and research biologists, commercial fishermen, the local fish and game advisory committee and ultimately the Alaska Board of Fisheries over multiple triannual meetings (Malloy, 1988).

Description of Kodiak Chinook Salmon Fishery

The Kodiak Island area has two wild chinook salmon stocks (Karluk and Ayakulik Rivers) and one introduced run which originates in the Dog Salmon River. There have also been several hatchery produced chinook release sites permitted that promote road accessible shore/boat recreational fisheries. The commercial seine and set gillnet fisheries harvest Chinook salmon incidentally while targeting local sockeye, chum and pink salmon stocks along nearshore migration pathways. The harvests typically occur during June and July and at times the harvests can consist of immature or feeder Chinook that are traversing well established commercial fishing areas in the Westside, Southwest and Alitak Districts. The record commercial harvest of 42,000 fish in 1993 consisted of large numbers of immature/feeder kings and stimulated concern from the recreational sector within the Cook Inlet area that large numbers of the harvested fish were of Cook Inlet origin. The harvest during 1993 was almost twice the previous high estimate of 24,000 fish, which occurred in 1992. As a back drop to this concern, several chinook salmon stocks within Cook Inlet were experiencing poor production (Deshka and Early Run Kenai R.) while simultaneously there was a serge in production from stocks originating in British Columbia, Washington and Oregon which were largely of hatchery origin; a portion of these hatchery fish were marked with a coded wire tag and missing the adipose fin (Swanton, 1997). There are several hatchery stocks in Cook Inlet that were marked and could thereby serve for detecting the presence of these stocks in the Kodiak Fishery. A pilot commercial catch sampling program was initiated in 1994 (Swanton 1997) and was followed by a focused interdivisional sampling and harvest estimation program for the years 1997-1999 (Clark and Nelson 2001). A more contemporary and comprehensive genetic stock identification (GSI) program was conducted for the years 2014-2016 and generally corroborated previous results (Shedd et al. 2016).

North American Chinook salmon Ocean Migrations

There are literally hundreds of Chinook Salmon stocks spanning the Coastline from Oregon, Washington, British Columbia and throughout Alaska from Southeast and along the Alaska Peninsula; these stocks are often referenced as far north migrating stocks, as opposed to stocks that have more localized or truncated ocean migrations. With the advent of Coded Wire Tagging (early 1970s) coupled with extensive High Seas Tagging (conducted throughout the North Pacific) and scale pattern analyses efforts conducted by the University of Washington much insight was gleaned regarding migration patterns along coastal and open ocean migration routes. Substantial increases in hatchery production of Chinook salmon in Oregon, Washington and British Columbia occurred in the early 1990s which resulted in a surge in coastwide abundance. Much of the increased hatchery production was in response to poor production from wild stocks, compensation for habitat destruction, tribal agreements, hydroelectric dam impacts or mitigation owing to wild stock endangered species act (ESA) listings.

Coastwide abundance of feeding/rearing Chinook increased markedly and harvests of Chinook increased both within Alaska's commercial and recreational coastal marine fisheries as well as bycatch of chinook in federal fisheries operating in the Gulf of Alaska. The Pacific Salmon Treaty between the United States and Canada governs harvests of these stocks throughout Southeast Alaska (Ketchikan to Yakutat) where jurisdiction between the parties ends. The harvest of these stocks throughout the remainder of the Gulf of Alaska is viewed with recognition that they originate in other states or British Columbia and harvest should be limited or constrained where appropriate. This has been the policy direction followed by both ADF&G and the Alaska Board of Fisheries certainly within the last 10-15 years and pertains to Kodiak, Kachemak Bay and Homer spring and winter recreational fisheries and both commercial and recreational fisheries prosecuted in Prince William Sound.

Data Summaries by Year

(Swanton, 1997) Caution is suggested relative to these estimates owing to low marking fractions and less than optimum temporal and spatial sampling coverage**.**

1994

The two Kodiak commercial fishing areas where CWT sampling occurred (Westside and Alitak Districts) experienced a commercial harvest of 5,089 Chinook salmon (80% CI 2,927-7,253 fish) from marked cohorts which represented 32.5% of the sampled harvest. The stock groupings represented by the tag recoveries were: 9.7% Southeast Alaska; 83% from British Columbia; 4.9% from Washington state and 2.4% from Oregon.

From the Westside Kodiak area most of the marked cohorts were of British Columbia origin with marked fish from Southeast Alaska, Washington and Oregon also detected in lower numbers. There was an apparent temporal change in stock contribution from the week of June 12-18 which were more varied, as compared to the period June 19-25 when only British Columbia and Southeast Alaska stocks were detected. The marked cohort contribution estimates for this area spanning 12 June through 30 July was 4,655 fish (80% CI 2,517-6,793 fish) from a total catch of 14,619 fish or 31.8%.

Within the Alitak Bay District all marked fish recoveries were of British Columbia origin and represented 435 Chinook out of a total catch of 640 fish. This represented 68% of the catch during the period off sampling.

(Clark and Nelson 2001)

1997

During the 1997 Kodiak commercial salmon fishing season there were 18,728 Chinook salmon harvested with 89% of the harvest occurring during the CWT sampling period of 9 June-8 August; a majority 67% of this harvest (about 11,000 fish) took place within the Westside area. The study plan designated a sampling fraction of inspecting 20% of the observed catch for CWT's which is consistent with Coastwide sampling programs sanctioned by the Pacific Salmon Commission.

The number of Chinook salmon inspected for a missing adipose fin in1997 was 6,015 or 36% of the harvest during the sampling period; 37% of the harvest was inspected within the Westside District catch; 60% within the Alitak Bay District; sampling within the Eastside District exceeded 20% and an additional 24% (792 fish) were inspected from harvests within the Mainland fishing District.

The general stock composition from the sampled harvest was: 13% from Alaska stocks, 72% from British Columbia, 7% from Washington and 8% from Oregon Chinook stocks. The 18 tag recoveries from Alaska stocks was further broken down to include 11 recoveries from Cook Inlet: two Kenai River, three Ship Creek, three Ninilchik River, one from Deception Cr., one from Crooked R. and one from Homer Spit.

1998

In 1998 there were 17,341 Chinook harvested commercially during the sampling period 9 June-8 August with approximately 93% occurring within the Westside (including the Southwest Afognak Section and Northwest Kodiak District), Alitak Bay and Eastside Kodiak Districts. There was 53% of this harvest sampled: 45% in the Westside District, 50% in the Alitak District and 43% within the Eastside District. No samples were collected from the Mainland District as the overall catch was 393 fish.

The identified tagged fish were represented as follows: 31% (79) were Alaska stocks; 49% (125) were from British Columbia; 15% from Washington and 5% from Oregon. The Alaskan stocks originating in Cook Inlet (46 tag recoveries) were three from Resurrection Bay; 5 from Seldovia Harbor; 10 from Homer Spit; 5 from Halibut Cove; 6 from Ninilchik R., 13 from Deception Cr., one from Crooked Cr. and two from the Kenai R. The additional Alaskan stock recoveries were 9 from Southeast Alaska and 24 from the Buskin River.

1999

During the 1999 commercial salmon fishery there were 18,299 Chinook harvested which represented 94% of the harvest that occurred during the June 9-August 8 sampling time frame. About three quarters (73%) of the harvest was realized within the aforementioned fishing areas, and similar to previous years, a majority of the harvest was realized within the Westside Kodiak District. There was 46% of the harvest (7,940 fish) inspected for CWT via a missing adipose fin. Similar to the previous years 45% of the catch was from the Westside District, 41% of the Alitak Bay District. No sampling results were reported for the Eastside District, however 12% of the Mainland District (356 fish) harvest was opportunistically sampled.

There were 201 tag recoveries from the 1999 sampling effort, 124 were from the Westside Kodiak District, 10 from the Mainland District, 20 from the Eastside and three from the Alitak Bay District. There were 32% (64 tagged fish recovered) from Alaska stocks, 31% from British Columbia, 13% from Washington and 24% that originated from Oregon. There were 21 tagged fish recovered that originated from Cook Inlet stocks with distribution by area similar to 1998. The authors after consulting with fishery management staff, suggested that if any non-local stock or stock grouping was estimated to have a 10-15% exploitation rate (harvest rate applied over the entire brood year) imposed by fisheries within the Kodiak Management Area that this would be cause for concern. In addressing this, Clark and Nelson (2001) stated " Therefore, publication of imprecise, but consistently small harvests of Cook Inlet hatchery cohorts in the KMA fishery provided the best indication of the lack of importance of the KMA fishery in influencing production of chinook salmon bound for Cook Inlet."

(Shedd et al. 2016)

This study employed genetic stock identification techniques to generate stock contribution estimates for chinook salmon harvested within both the commercial and recreational fisheries throughout the Westward Region (Kodiak, Chignik and the Alaska Peninsula Management areas). The information summarized below is only for the commercial fishery within the Kodiak

Management Area to maintain consistency in comparing other information presented within this summary. This study focused on 4 Districts/reporting areas and two temporal strata (Early: 1 June-5 July; Late: 6 July-5 August).

2014

Overall, there were 8,382 fish commercially harvested of which 3,050 fish were sampled (sampling fraction of 36.4%) for all areas and time strata. The results of GSI for the entire time and area strata were: 55.6% British Columbia, 34% West Coast US (Washington and Oregon stocks combined), 3.4% Southeast Alaska and Northeast Gulf of Alaska stocks(Southeast Alaska/Gulf Coast, 2.6% Cook Inlet, 1.9% Kodiak and 1.6% referred to as the Eastern Bering Sea stock grouping. The following are the aggregate stock composition estimates broken down by geographical and temporal strata:

Northwest Kodiak District and Afognak(Statistical Areas: 251, 253 and 254)

- Early (1 June-July 5) 72.1% British Columbia stocks, 15.7% West Coast US, 4.3% Kodiak, 2.7% Cook Inlet and 2.4% Southeast Alaska/North Gulf Coast Alaska.
- Late (July 6-August 5) 56.0% British Columbia stocks, 34.7% West Coast US, 4.6% Southeast Alaska/Gulf Coast, 2.2% Cook Inlet and 1.2% Kodiak Stocks.

Eastside Kodiak and Afognak District (Statistical Areas: 258, 259 and 252)

- Early (1 June-July 5): 51.2% British Columbia Chinook stocks, 35.3% West Coast US, 4.2% Southeast Alaska/Gulf Coast, 0.3% Cook Inlet and 4.2% Kodiak stocks.
- Late (July 6- August 5):51.7% British Columbia stocks, 37.5% West Coast US, 2.6% Southeast Alaska/Gulf Coast, 4.0% Cook Inlet and 0.1% Kodiak Chinook salmon stocks.

Southwest Kodiak Alitak Districts (Statistical Areas: 255, 256 and 257)

- Early (June 1-July 5): 51.2% British Columbia stocks, 30.8% West Coast US, 6.1% Southeast Alaska and Gulf Coast, 1.1 % Cook Inlet and 10.0% Kodiak Stocks.
- Late (July 6-August 5): 54.5% British Columbia, 39.0% West Coast US, 2.9% Southeast Alaska/Gulf Coast, 1.4% Cook Inlet and 1.0% Kodiak stocks.

Mainland District (Statistical Area 262) There was no sampling conducted for the "Early" strata during 2014.

- Late: July 6-August 5): 51.2% British Columbia Stocks, 39.5% West Coast US stocks, 4.8% Southeast Alaska/Gulf Coast, 1.5% Cook Inlet and 0.9% Kodiak stocks.

2015

During 2015 the Chinook harvest was 8,087 of which 2,775 fish were sampled resulting in a 34% sampling fraction. The estimated stock contributions for this commercial fishing season were: 51.6% British Columbia, 33.9% West Coast US, 4.9% Southeast Alaska/Gulf Coast, 4.5% Cook Inlet and 4.5% Kodiak.

Northwest Kodiak District and Afognak(Statistical Areas: 251, 253 and 254)

- Early (June 1-July 5): 54.8% British Columbia, 24.3% West Coast US, 8.5% Southeast Alaska/Gulf Coast, 6.4% Cook Inlet and 4.5% Kodiak.
- Late (July 6-August 5):52.1% British Columbia, 34.9% West Coast US, 4.9% Southeast Alaska and Gulf Coast, 4.3% Cook Inlet and 3.2% Kodiak.

Eastside Kodiak and Afognak District (Statistical Areas: 258, 259 and 252)

- Early (June 1-July 5):36.4% British Columbia stocks, 46.8 West Coast US stocks, 4.8% Southeast Alaska and Gulf Coast stocks, 7.8% Cook Inlet and 3.1% Kodiak Chinook Stocks.
- Late (July 6-August 5):49.4% British Columbia stocks, 40.7 West Coast US stocks, 3.5% Southeast Alaska and Gulf Coast, 1.3% Cook Inlet and 4.3% Kodiak Chinook stocks.

Southwest Kodiak and Alitak Districts (Statistical Areas: 255, 256 and 257)

- Early (June 1- July 5): 33.8% British Columbia stocks, 35.2% West Coast US, 3.2% Southeast Alaska/Gulf Coast stocks, 2.5% Cook Inlet and 24.9% Kodiak Stocks.
- Late (July 6-August 5):63.1% British Columbia stocks, 30.3% West Coast US, 3.4% Southeast Alaska and Gulf Coast stocks, 1.4% Cook Inlet and 1.2% Kodiak Chinook stock contributions.

Mainland District (Statistical Area 262) Similar to 2014, there was no sampling conducted during 2015 within the period June 1- July 5 for this district.

- Late (July 6-August 5): 64% British Columbia stocks, 19.6% West Coast US, 3.0% Southeast Alaska/Gulf Coast, 12.8% Cook Inlet stocks and no contribution from Kodiak Chinook stocks.

2016

The harvest during 2016 was only 7,471 Chinook of which 3,189 fish were sampled, which represented a 43% sampling fraction. The various stock contributions to the commercial harvest for 2016 were: 56.5% British Columbia, 30.6% West Coast US, 6.2% Southeast Alaska/Gulf Coast, 3.8% Cook Inlet and 1.3% Kodiak stocks.

Northwest Kodiak District and Afognak (Statistical Areas: 251, 253 and 254)

- Early (June 1-July 5): 59.6% British Columbia stocks, 15.0% West Coast US, 12.7% Southeast Alaska and Gulf Coast, 7.8% Cook Inlet and 3.2% Kodiak stocks.
- Late (July 6-August 5):61.8% British Columbia stocks, 17.3% West Coast US, 11.5% Southeast Alaska and Gulf Coast, 6.7% Cook Inlet stocks and 1.6% Kodiak stocks.

Eastside Kodiak and Afognak District (Statistical Areas: 258, 259 and 252)

- Early (June 1- July 5): 57% British Columbia stocks, 27.4% West Coast US Chinook stocks, 6.4% Southeast Alaska/Gulf Coast, 2.3% Cook Inlet and 2.6% Kodiak stocks.
- Late (July 6-August 5):51.5% British Columbia Chinook stocks, 39.5% West Coast US stocks, 1.3% Southeast Alaska/Gulf Coast stocks, 3.8% Cook Inlet and 2.8% Kodiak stocks.

Southwest Kodiak and Alitak Districts (Statistical Areas: 255, 256 and 257)

- Early (June 1-July 5): 67.1% British Columbia, 24.6% West Coast US stocks, 3.1% Southeast Alaska/Gulf Coast, 1.4% Cook Inlet and 2.9% Kodiak stocks.
- Late (July 6-August 5): 69.2% British Columbia stocks, 24.7% West Coast US, 1.8% Southeast Alaska, 2.5% Cook Inlet stocks and 1.1% Kodiak Chinook stocks.

Mainland District (Statistical Area 262)

- Early (June 1-July 5): 46.6% British Columbia stocks, 44.1% West Coast US, 3.6% Southeast Alaska and Gulf Coast, 1.9% Cook Inlet and 0.3% Kodiak stocks.

- Late (July 6-August 5):54.1% British Columbia Chinook stocks, 37.1% West Coast US, 5.1% Southeast Alaska and Gulf Coast, 2.5% Cook Inlet and no contribution from Kodiak Chinook stocks to the harvest.

A direct comparison of the presented information and contribution estimates to the KMA Chinook harvest is difficult because of specific requirements related to CWT estimates and those generated using GSI. For generating reliable harvest estimates using CWT data, a large marking fraction (number of fish marked/total released) combined with a recommended 20% sampling fraction (number of fish sampled from the total catch) is statistically necessary. In the case of both the Kodiak and Cook Inlet Chinook stocks for the years 1994 and 1997-1999, the number of marked fish from the various hatchery releases was small and when combined with low numbers of recoveries, the harvest estimates were uncertain or informative at best. For these reasons, the comparisons of the CWT contributions with those generated using GSI are completed using a simple percent contribution to the overall sampled harvest (Table 1). In reviewing the data, the overall stock contributions are reasonably consistent: British Columbia stocks consistently contribute greater than 50% to the sampled harvest, followed by Washington and Oregon stocks and to a lesser extent Southeast Alaska with minor contributions from either Kodiak or Cook Inlet stocks.

Summary and Recommendations

- During all years and sampling periods regardless of the commercial salmon fishery district sampled, British Columbia Chinook salmon stocks dominated the stock composition of the harvest. Estimates of the percent contribution ranged from a low of 30% to a high of 70%, representing harvests of several hundred to several thousand fish.

- Consistently, contributions from stocks originating in Washington and Oregon (Western US stocks) to the commercial harvests ranged from a low of 7.3% to a high of 37% and averaged 28% of the estimated harvest.

- Contributions from Southeast Alaska/North Gulf Coast were in most cases higher than the combined contributions from both Kodiak and Cook Inlet. These contributions also seem to be reflective of periods of higher and lower abundance when comparing contributions from 1997-1999 (higher abundance) to those from 2014-2016 which was a period of lower Southeast Alaska stock abundance.

- The capability of any marine salmon fisheries sampling program to consistently estimate the harvest in a timely manner, of at most several hundred fish over a commercial fishing season within the geographic scope of the Kodiak Management Area, is untenable.

- Given the stock status of both the Kodiak and Cook Inlet Chinook salmon stocks a regime such as that outlined in Proposal 37 is unwarranted. Both the Kodiak (0%-4.5%) and Cook Inlet (2.6%-4.5%) stock contributions to the Chinook harvest are minor.

- It should be noted that for the Cook Inlet stocks harvested within the Kodiak Management area, a majority are hatchery fish produced for marine or in river sport fisheries. A specific brood stock selection (similar life history and migration traits to the wild stock) and marking program are required for a hatchery stock to be employed as a proxy for wild stocks, therefore the Cook Inlet tag recoveries and rates should not be applied to Cook Inlet wild Chinook salmon stocks.

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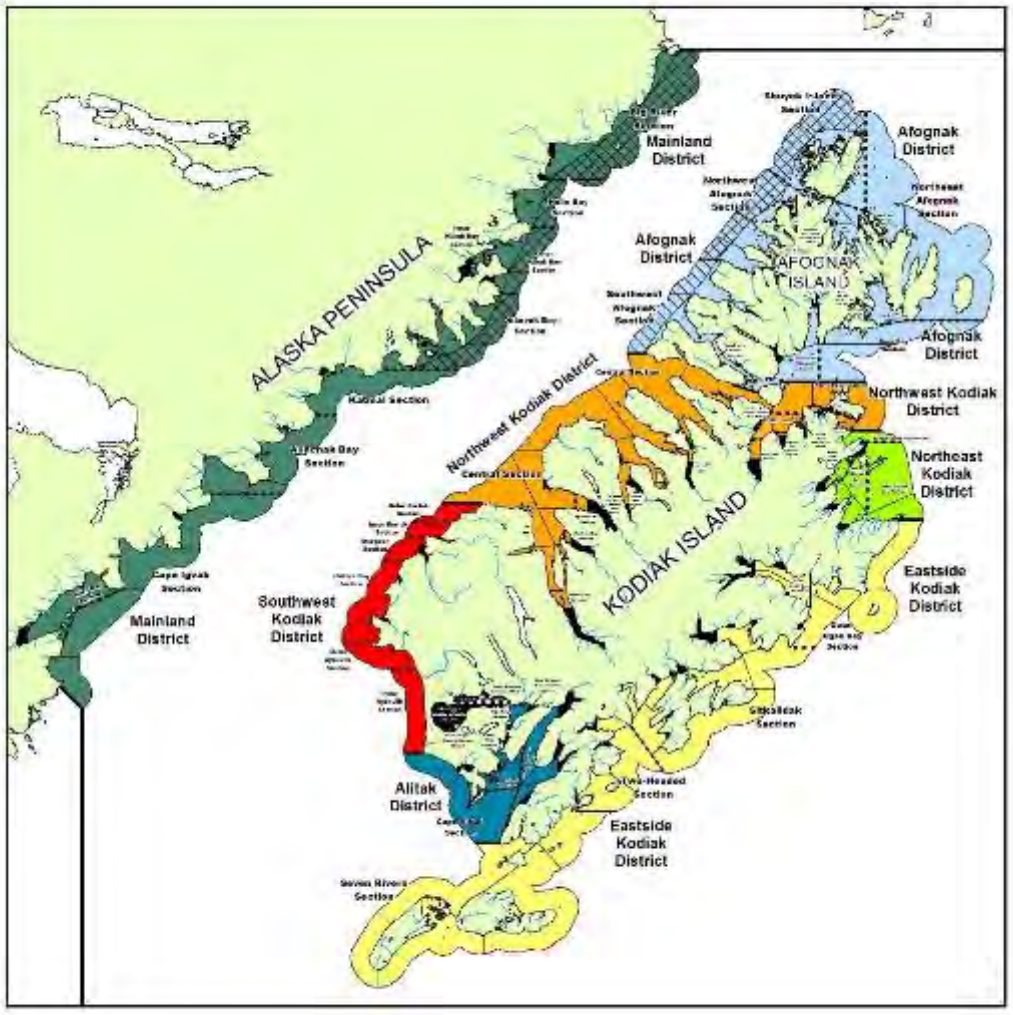
Table 1. Summary of Chinook Stock Group Harvest Percentages in the Kodiak Management Area.

	Calendar Year						
	1994	1997	1998	1999	2014	2015	2016
Sample size	5,089	6,015	9,191	7,940	3,050	2,775	3,189
Stock Group							
British Columbia	83%	72%	49%	31%	56%	52%	57%
Washington &Oregon	7%	15%	20%	37%	34%	34%	31%
SE Alaska/Gulf Coast	10%	13%	31%	32%	3%	5%	6%
Cook Inlet	0%	present[1]	present[1]	present[1]	2%	2%	4%
Kodiak	0%	n/a[2]	n/a[2]	n/a[2]	1%	1%	1%

[1] CWTs were recovered however insufficient totals to estimate a harvest proportion

[2] no CWTs recovered from fishery sampling

December 2019



An

Overview and Contrast of Management Plans and Harvests of Sockeye Salmon Destined for Upper Cook Inlet, 2014-2016.

By the Kodiak Salmon Work Group

The following is germane to addressing **Alaska Board of Fisheries Proposals 64, 65 and 66** which seek to severely curtail fishing time within traditional Kodiak Management Area (KMA) districts because of identified harvests of Upper Cook Inlet (UCI) sockeye salmon during the years 2014-2016.

EXECUTIVE SUMMARY

- The complexity within the existing UCI salmon management plans guiding management of the numerous fisheries far exceeds the quality, quantity and timeliness of the information available.

- Harvest estimates have far less uncertainty than do the variety of in season run strength projections and numerous escapement monitoring programs, especially the Susitna River escapement component.

- The Off-shore Test Fishery (OTF) run projections have errors around the estimates which are alarming (over projecting the actual run by 60%) given the reliance on this in-season tool within several prominent UCI management plans.

- Any proposed regulatory change to long established salmon fishery management plans must be able to demonstrate a measurable benefit; given poor data quality for specific UCI escapements or for certain in river run projections (Kenai R.), the information system currently in place is incapable of this task.

- When considering a system like the Susitna River, including the longstanding documented problems with estimating escapements, it is not prudent to affect adjacent management areas (e.g., Kodiak) with unnecessary changes.

- Considering the focus on coho salmon within the last three UCI board meetings (2011, 2014, 2017) and the conservative stipulations within the Northern District Management plan, if all of the sockeye incidentally caught in Kodiak were inserted into the UCI fishery mix, it would not have resulted in any benefit to Northern District coho stocks nor in-river users.

- Evaluating the commercial harvest of UCI stocks using a harvest rate metric would not be appropriate because of the uncertainty surrounding the escapement estimates of the Susitna River, Yentna River and other unassessed sockeye stocks.

Introduction

The identification and sporadic estimation of non-local stocks of sockeye salmon contributing to the sockeye harvest within the Kodiak Management Area has been completed using a variety of quantitative (scale pattern analyses and Genetic Stock Identification) and less quantitative (average weight and age proportions) techniques over the last 30 years. There does not appear to be temporal or spatial patterns or abundance-based trends of the contributing stocks, which suggests that the contributions are more random in nature (influenced more by environmental conditions: current, sea surface temperatures or broad scale climatic conditions). A common

acceptance is that fishing time in the various areas surrounding the Kodiak Archipelago targeting local stocks of sockeye, pink and chum salmon also contribute to these events. In a variety of ways one can characterize the Kodiak salmon fishery as a pass-through type fishery and the Upper Cook Inlet salmon fishery more of a gauntlet, where fish traverse through a variety of fisheries and gear types before reaching their natal streams or rivers.

Kodiak Fisheries Management plans

Area description

The Kodiak management area (KMA) includes all inland and marine waters (inside of 3 miles) south of Cape Douglas to Kilokak Rocks on the Alaska Peninsula and includes all islands within the Kodiak Archipelago. Within the area are 7 districts and 52 sections along with numerous subsections and terminal closed water areas. There are approximately 800 streams identified that have supported salmon spawning or rearing (Anadromous Waters Catalog), of which about 440 streams have been referenced as supporting measurable salmon production on an annual or biannual basis. Of the 440 systems, all support pink salmon, about 150 support chum salmon, 39 support sockeye salmon and about 175 support coho salmon populations (Clark et al. 2000). There are 593 Commercial Fisheries Entry Commission (CFEC) limited entry permits issued for the Kodiak area: 375 purse seine; 188 set gillnet; and 30 beach seine. Activity for each gear type fluctuates by year, with participation statistics for 2019 including 176 purse seine, 3 beach seine, and 148 set net permits having made at least one landing during the season.

Fishery Description

The Kodiak salmon fishery can be best described as a pass-through fishery, similar to Southeast Alaska fisheries. Pass through fisheries allow fish to reach terminal areas on their way to natal streams, where any type of fishery conducted is called a terminal fishery. Gear types participating in a pass-through fishery include set gillnet (fixed gear) and purse seine (mobile), which capture fish along their nearshore migration routes. Over time, and with the vigilance of salmon area management staff, fishing patterns, harvest magnitudes, and timing can be qualified and quantified with the goal of building information relative to run strength and migration timing by species and in many cases by specific stocks that contribute to the catch. The overall key to success of this salmon fishery management system is having specific, fixed geographic reference points, long standing accurate catch or harvest accounting, and an escapement enumeration and monitoring program for the major sockeye salmon producing systems that is conducted annually.

Management Plans

There are currently 10 salmon fishery management plans codified in regulation which prescribe how salmon fishing in each of the various districts, patterned after salmon species timing and historical fishing patterns, will be accorded. Two plans, including the Cape Igvak salmon management plan (effective prior to 1985; 5 AAC 18.360; Chignik Bound Sockeye) and the North Shelikof Strait Sockeye salmon management plan (effective 1990; 5 AAC 18.363: Upper Cook Inlet bound Sockeye), are tailored around sockeye salmon stocks destined for adjacent management areas (Chignik and Cook Inlet). The North Shelikof Strait plan was codified in 1990 following an out of cycle board of fisheries meeting that was specifically scheduled to address the unusual harvest of Cook Inlet Bound sockeye that occurred during 1988.

The remaining plans (Alitak District, Westside District, Eastside Afognak, Eastside, North Afognak/Shuyak Island and Mainland District) have been and are tailored towards meeting escapement objectives for each species using run timing and historical commercial fishing patterns, gear and areas. Other management tools include the use of subsections and a variety of

closed water areas around spawning streams (expanded or contracted) based on harvest numbers, aerial survey indices of abundance, and observed build ups of pre-spawning fish in marine staging areas. A multitude of fishery dependent and independent information is typically integrated into the inseason fishery management decision making process and in some cases these are daily decisions. As noted elsewhere, many of these management plans or the management philosophy contained within has been in existence since the late 1970s, and were systematically codified after numerous discussions within ADF&G and with commercial fishermen, processors, advisory committees, and finally with the Alaska Board of Fisheries during regularly scheduled meetings.

Upper Cook Inlet Fisheries Management Plans

Area Description

The Upper Cook Inlet (UCI) commercial salmon fishery management area comprises inland and marine waters of Cook Inlet north of Anchor Point Light. The area includes two districts (Central and Northern) with the Central District being 75 miles in length, 32 miles in width and divided into 6 subdistricts. The contemporary commercial fishing gear types allowed within the UCI are drift and set gillnet. There are approximately 1,300 commercial fishery entry permits within the UCI area, of which 570 are drift gillnet. Depending on a number of factors, the number of drift permit holders making landings in any given year ranges from 396-539 permits, which includes secondary permit holders operating in dual permit fishing operations (Farrington 2014). There are about 745 set gillnet permits issued for the area with about 500 permits making landings within any given year. Approximately 40-60 set gillnet permit holders are active within the Northern District set gillnet fishery.

Salmon fisheries management plans

There are 17 different plans that cover salmon fishing activities either directly or indirectly within the Upper Cook Inlet management area. Of the 17 plans, one deals with invasive northern pike within the Kenai R., two deal with riparian habitat protections; several govern subsistence (state or federal) fishing activities, and one that is novel to Cook Inlet: the personal use fishery management plan which is germane to fishing for sockeye salmon primarily on the Kenai and Kasilof Rivers. Graphical depictions of these complex and interdependent management plans are described during the 2008, 2011, 2014 and 2017 Alaska Board of Fisheries meetings, and can be found at the Board Support section of the ADF&G web page under the Board of Fisheries heading: www.adfg.alaska.gov/index.cfm?adfg=fisheriesboard.meetinginfo

Fishing Periods

In the Northern and Central Districts set gillnet fishery, two weekly 12 hour fishing periods are permitted on Mondays and Thursdays; in the drift gillnet fishery salmon may be taken within two weekly 12 hour fishing periods also on Mondays and Thursdays.

Central District Drift Gillnet Fishery Management Plan (5 AAC 21.353)

The stated purpose of this plan is to ensure adequate escapement into the Northern District drainages and offer management guidance to the department. The Board of Fisheries directs management of the drift fleet to minimize harvest of Northern District and Kenai River coho salmon, to provide sport and guided sport fishermen a reasonable opportunity to harvest these salmon stocks over the entire run, as measured by the frequency of in-river restrictions. In order to accomplish this task, from July 9-15 during the first and second regular fishing periods, drift fishing is restricted to the Expanded Kenai and Expanded Kasilof sections of the Upper Subdistrict and Drift Gillnet area 1. At run strengths greater than 2.3 million sockeye salmon to

the Kenai River, the commissioner may by emergency order open one additional 12 hour fishing period within the Expanded Kenai and Expanded Kasilof Sections of the Upper Subdistrict and Drift Gillnet Area 1; additional fishing time is only allowed in the Expanded Kenai and Expanded Kasilof Subsections of the Upper Subdistrict. From July 16-31 at Kenai River sockeye run strengths of less than 2.3 million, fishing during all regularly scheduled fishing periods will be restricted to the Expanded Kenai and Expanded Kasilof Sections of the Upper Subdistrict; at run strengths of 2.3-4.6 million sockeye salmon to the Kenai River, fishing during one regular 12 hr. fishing period will be restricted to one or more of the following sections or areas:… At run strengths greater than 4.6 million sockeye salmon to the Kenai River, one regular 12 hour fishing period per week will be restricted to the Expanded Kenai, Kasilof and Anchor Point Sections. From August 1-15, there are no mandatory area restrictions to the regular fishing periods with several caveats related to coho salmon destined for the Kenai River (see 5 AAC 21.353; p.347).

Northern District Salmon Management Plan (5 AAC 21.358)

The purpose of the Northern District Salmon management plan is to minimize harvests of coho salmon bound for the Norther District of UCI and to provide the department direction for management of salmon stocks. The department shall manage the chum, pink and sockeye salmon stocks primarily for commercial uses, to provide commercial fishermen with an economic yield from the harvest of these salmon resources based on abundance. The department shall also manage the chum, pink and sockeye salmon stocks to minimize the harvest of Northern District coho salmon, to provide sport and guided sport fishermen a reasonable opportunity to harvest these salmon resources over the entire run, as measured by the frequency of inriver restrictions. The department shall manage the Northern District commercial salmon fisheries based on the abundance of sockeye salmon counted through the weirs on Larson, Chelatna, and Judd Lakes or other salmon abundance indices as the department deems appropriate.

Kenai River Late-Run Sockeye Salmon Management Plan (5 AAC 21.360)

The department shall manage the Kenai River late-run sockeye stocks primarily for commercial uses based on abundance. The department shall also manage the commercial fisheries to minimize the harvest of Northern District coho, late-run Kenai king and coho salmon stocks to provide personal use, sport, and guided sport fishermen with a reasonable harvest opportunity.. The Kenai River late-run sockeye salmon commercial, sport and personal use fisheries shall be managed to meet an optimum escapement goal (OEG) range of 700,000-1,400,000 late-run sockeye salmon, achieve in-river goals as established by the board and measured at the Kenai River sonar counter located at river mile 19, and distribute the escapement evenly within the OEG range, in proportion to the size of the run.

Based on preseason forecasts and in-season evaluations of the total Kenai River late-run sockeye return during the fishing season, the run will be managed according to different run strength levels. At run strengths of less than 2,300,000 sockeye salmon, the department shall manage for an inriver goal range of 900,000-1,100,000 sockeye salmon past the sonar counter at river mile 19; subject to provisions of other management plans, the Upper Subdistrict set gillnet fishery will fish regular weekly fishing periods as specified in 5 AAC 21.320, through July 20, unless the department determines that the minimum in-river goal will not be met, at which time the fishery shall be closed or restricted as necessary; the commissioner may by emergency order, allow extra fishing periods of no more than 24 hours per week or per provisions in 5 AAC 21.365;

At run strengths of 2,300,000-4,600,000 sockeye salmon, the department shall manage for an inriver goal range of 1,000,000-1,200,000 sockeye salmon past the sonar counter at river mile 19; subject to provisions of other management plans, the Upper Subdistrict set gillnet fishery will

fish regular weekly fishing periods as specified in 5 AAC 21.320 through July 20, until the department makes a determination of run strength, whichever occurs first.
At run strengths greater than 4,600,000 sockeye salmon, the department shall manage for an inriver goal range of 1,100,000-1,350,000 sockeye salmon past the sonar counter at river mile 19; subject to provisions of other management plans, the Upper Subdistrict set gillnet fishery will fish regular weekly periods as specified in 5 AAC 21.320 through July 20, or until the department makes a determination of run strength, whichever comes first; if the department determines that the minimum in-river goal will not be met, the fishery shall be closed or restricted as necessary; the commissioner may, by emergency order, allow extra fishing periods of no more than 84 hours per week, except as provided in 5 AAC.21.365; and the Upper Subdistrict set gillnet fishery will be closed for one continuous 36-hour period per week, beginning between 7:00 p.m. Thursday and 7:00 a.m. Friday. The remaining elements of the plan relate to the inriver personal use and sport fishery.

Kasilof River Salmon Management Plan (5 AAC 21.365)

The bulk of this plan deals specifically with guidance on managing the commercial fishery for meeting the escapement goal as specified within the plan, however there are several sections that intersect with the Kenai River sockeye salmon: after July 15, if the department determines that the Kenai River late-run sockeye salmon run strength is projected to be less than 2,300,000 fish and the 390,000 optimal escapement goal for the Kasilof River sockeye salmon may be exceeded, the commissioner may, by emergency order, open fishing for an additional 24 hours per week in the Kasilof Section within one-half mile of shore and as specified in 5 AAC 21.360(c).

Additional Commercial Fishery Management Plans: *Cook Inlet Pink Salmon Management Plan (5 AAC 21.354); Kenai River Late-Run King Salmon Management Plan (5 AAC 21.359);Upper Cook Inlet Salmon Management Plan (5 AAC 21.363); Northern District King Salmon Management Plan (5 AAC 21.366).*

Sport Fishery Management Plans: *Russian River Sockeye Salmon Management Plan (5 AAC 57.150)***;** *Kenai River and Kasilof River Early-run King Salmon Management Plan (5 AAC 57.160);Kenai River Coho Salmon Management Plan (5 AAC 57.170); and the Upper Cook Inlet Personal Use Salmon Fishery Management Plan (5 AAC 77.540).*

Fishery Management Complexity

When comparing a number of fishery related metrics, complexity can be characterized by geographic scope, species richness, multiple overlapping objectives, and numbers of users/gear types/permits (human participation) which overlap a large geographic area, and in Cook Inlet, where most of the area is road or boat accessible and fishing occurs in either freshwater or marine waters. It could also be characterized by the number of regulatory proposals submitted to the Board of Fisheries' three-year regulatory cycle and emergency orders issued by the department each year. Determining a measure that captures allocative related issues such as regulatory proposals or agenda change requests (ACRs) is difficult, but there are many allocative elements interwoven within the Upper Cook Inlet fisheries and imbedded within the various salmon management plans.

Personal Use Fishery

Subsistence and personal use fisheries have undergone substantial changes within the Cook Inlet area over the last 20 plus years. There are four personal use fisheries that target primarily

sockeye salmon and collectively make up the bulk of the regulations embedded within the Personal Use management plan. The two major personal use fisheries operate adjacent to the Kasilof River, and adjacent to and within the lower portion of the Kenai River. Regarding the Kenai, retention of Chinook or king salmon has been prohibited for a number of years, owing to low production and concerns for meeting escapement goals. These two fisheries collectively are the largest participation fishery in Alaska. Over the last five years over 30,000 household permits have been issued and in several years the number of permits issued exceeds 35,000. During the years 2013-2015, average participation has been 27,850 household permits fished with an average sockeye salmon harvest of 494,115 per year (Dunker, 2018); the harvests of Kenai R. personal use sockeye salmon in 2014 and 2015 were 506,047 and 521,985 fish respectively. In 2016 the personal use fishery harvest was 264,900 sockeye salmon.

Kenai River Sport/Recreational Fishery

This fishery is arguably the largest sport/recreational fishery in Alaska with participation statistics, measured in angler days, ranging from 365,000-485,000 days annually. Sport fishing effort is spread throughout the drainage; however, a majority of the effort is concentrated below the Soldotna Bridge to tidewater. The annual recreational harvest of sockeye salmon occurs both above the sonar counting station at river mile 19 and below with an average of 20% of the harvest occurring below the counting station. The average (2011-2015) annual harvest of sockeye salmon is 422,480, of which 86,920 fish are harvested below the escapement enumeration or sonar site. The 2014 sockeye salmon harvest was 380,055 and for 2015 it was 392,116 fish (Begich et al. 2017). The recreational harvest for 2016 was 342,446 sockeye salmon.

When combined (personal use and in-river sport), the harvests have averaged 688,676 sockeye salmon annually (2014-2017; ADF&G personal communication). The Kenai River sockeye salmon escapement over these years has ranged from 1,400,047 in 2015 to 1,073,290 fish in 2017 and averaged 1,203,125 fish (Table 1.)

Fishery Management Data Sources

Escapement monitoring

Escapement has been assessed using side-scan sonar for a lengthy time period for the Kenai and Kasilof rivers and has incorporated modern gear (Bendix to DIDSON to now ARIS technology). The counts are generated daily and employed to evaluate escapement relative to fishery management decisions. There have not been any independent verifications of either the Kenai or Kasilof sonar escapement estimates. When converting to modern technology, the Bendix and DIDSON sonar systems were determined to offer almost identical escapement passage estimates for the Kasilof River, but that the Bendix system for the Kenai system generated escapement estimates that were substantially less that the estimates generated by the DIDSON system. This was also the case for the Yentna River (Maxwell et al. 2011). This information was integrated into a conversion from BENDIX to DIDSON units for the Kenai River sockeye salmon escapement, such that historical and contemporary escapement numbers were consistent.

For the Yentna River, the use of sonar to enumerate escapement was discontinued in 2008 due to the considerable uncertainty associated with the estimates (Fair et al. 2009). The current escapement monitoring program consists of counting weirs on Chelatna and Judd lakes. Similarly, for the Sustina River, a counting weir at Larson Lake is employed as an index of the Susitna River mainstem escapement. Fair et al. (2009), as a means to estimate total drainage wide escapement for the Yentna and Susitna rivers sockeye salmon stocks, employed the relationship between weir counts and a series of mark-recapture estimates to expand the weir

counts into drainage wide estimates. The identified relationships include Larson Lake weir counts accounting for 50-54% of the drainage wide mark-recapture estimates generated for 2006-2008. For the Yentna River, the relationship between the weir counts and the mark-recapture estimates ranged from 41-44% for Chelatna and Judd lakes combined. This approach certainly seems reasonable, however there is quite a bit of uncertainty about carrying this relationship forward to estimate total escapement for these drainages, especially when accounting for differential productivity that can occur with sockeye salmon populations between adjacent years, and also employing mark-recapture estimates which have their own set of assumptions and challenges.

There are numerous sockeye producing systems within Cook Inlet that have no monitoring programs, but that production contributes to the overall harvest. Shields (2010), within the annual management report, cites that the contribution of these unmonitored systems was projected to contribute upwards of 13% (835,000 fish from a total run of 6,404,000) to the Upper Cook Inlet harvest with an unknown level of escapement.

Barclay (2017) reported that for the years 2014-2016 that the unreported harvest (catch that could not be assigned to one of the predetermined sockeye stock groupings within UCI) represented 9.5% (223,106; 2014), 5.2% (138,826 fish) for 2015 and <0.1% (15,518 fish) in 2016. These findings are not uncommon with mixed stock analyses when dealing with many stocks and in most cases for small stocks. Shedd et al. (2016) aptly discusses this routine challenge by stating “Additionally, it is necessary to recognize that even with fishery samples of 380 fish per stratum, it is challenging to estimate small proportions in a mixture”. Based on these recognized analytical difficulties, and the stated uncertainties regarding escapements for several Upper Cook Inlet sockeye stocks, the most prudent way to evaluate estimates of non-local stock harvest is to compare harvest or proportions of the harvest. The harvest, whether it is commercial (fish ticket receipts), recreational (Statewide Harvest survey) or personal use (household permit record) is likely the most certain source of data that managers have available to them.

Offshore Test Fishery (OTF; 2014-2017)

One of the most important data sources for UCI in-season management, given the wide array of objectives dictated by regulations promulgated by the Alaska Board of Fisheries within the last 10 years, is the offshore test fishery (OTF) which was initiated in 1979. Many of the plans and subsequent regulation changes have requirements specifically related to inseason abundance estimates. These projections are employed to make in-season management decisions attempting to meet escapement objectives for Susitna bound sockeye stocks, and for sockeye destined for the Kenai and Kasilof rivers as well. The Kenai River late-run sockeye salmon management plan and attendant prescribed fishing times for the drift and set gillnet fisheries rely heavily on this estimate, based on a multi layered tier system.

2014

The midpoint of the 2014 sockeye salmon run at the OTF occurred on July 16 (point at which 50% of the run is projected to be past the OTF). There were two formal inseason estimates of the 2014 run size made on July 21 and 23; the 23 July analysis predicted a total run of 5.8-9.1 million sockeye salmon. The best fit total run estimate deviated from the actual run of 5.28 million fish by 72% or a difference of 3.82 million fish. The best fit Kenai river total run estimate from this analysis (5.65 million) differed from the actual total run of 3.28 million fish also by 72%, representing a difference of 1.83 million fish (Dupuis et al. 2016).

2015

The midpoint of the 2015 sockeye salmon run at the OTF occurred on July 25. A formal in-season estimate of run size was made on July 27 and predicted a total run to Upper Cook Inlet of 5.9 million sockeye salmon. The best-fit total run estimate deviated from the estimated total run of 6.30 million by 6.5% (400,000 fish). An in-season estimate was also made for the Kenai River sockeye salmon run on July 27; the analysis predicted a total run to the Kenai River ranging between 2.20-3.53 million sockeye salmon. The best-fit total run estimate of Kenai River sockeye salmon was 3.53 million which deviated from the estimated total run of 3.89 million fish by 9.3% (360,000 fish; Dupuis and Willette, 2016).

2016

The midpoint of the 2016 sockeye salmon run at the OTF occurred on July 18. An in-season estimate of the 2016 run was generated on July 25 and predicted a total run to Upper Cook Inlet (UCI) of 6.83 million sockeye salmon. The best-fit model estimate varied from the total run estimate of 5.11 million by 33.7% or 1.72 million fish. The inseason estimate for Kenai River sockeye salmon was made on July 25 with an estimate of 3.53-5.57 million fish with a post season estimate of 3.55 million sockeye. Managers employed a run estimate of 4.6 million fish, an overestimate of 29.5% (1,050,000 fish; Dupuis and Willette 2018).

2017

The midpoint of the sockeye salmon run in 2017 at the OTF was July 20; a formal estimate of the run was generated on July 24 with a prediction of 7.11 million fish. The first best-fit total run prediction was 54.2% higher than the actual total run of 3.85 million (difference of 3.26 million fish). An in-season estimate for the Kenai River sockeye run was made on July 24 resulting in an estimate of 1.6-4.3 million sockeye (actual post season estimate was: 2.89 million or 44.5% (1.29 million fish below actual), or conversely 48.7% higher than actual. Regardless of which direction the error is evaluated, it was substantial (about 1.3 million fish; Frothingham and Willette 2018).

Synthesis of information

- Using an average 2014-2016 Kenai R. commercial harvest rate (catch/catch+escapement) of 57.1%, the following would be the fate of 75,000 hypothetical sockeye that enter UCI destined for the Susitna/Yentna Rivers combined: 23,982 fish would become drift gillnet harvest, 18,843 fish would become set net harvest, 3,854 harvested fish would be assigned to an unreported stock group, 9,750 sockeye would escape to unmonitored streams, and 18,571 fish would make it to the Susitna/Yentna Rivers, of which a total of 9,000 sockeye would be potentially counted at Judd, Chelatna or Larson lake weirs. The potential benefits (escapement or harvest to UCI users) would be undetectable amidst the large total harvests and monitored escapements in Upper Cook Inlet.

- The complexity of existing UCI salmon management plans far exceeds the quality, quantity and timeliness of the information available. Management staff in the department do a surprisingly successful job managing these fisheries and meeting escapement goals and objectives given the data available and estimate uncertainty.

- Estimates of harvest have far less uncertainty than do the variety of in season run strength projections or data from the numerous escapement monitoring programs,

especially the Susitna River escapement component. Therefore, the harvest estimates for UCI bound sockeye that were incidentally taken in Kodiak should be compared to the total harvest of UCI sockeye.

- In 2014, there were an estimated 58,506 sockeye salmon harvested within the KMA of Cook Inlet origin (Kenai and Susitna stocks) from a total UCI harvest of 3,360,383 or 1.7%;
- In 2015, an estimated 438,433 Kenai and Susitna fish were harvested in the KMA versus the total harvest of 3,694,270 sockeye in the UCI or 11.8%;
- In 2016, 309,497 UCI (Kenai and Susitna stocks) sockeye were identified within the Kodiak catch compared to a total UCI sockeye harvest of 3,095,833, or 10.0%.

- The OTF run projections have errors around the estimates that are alarming (over projecting the actual run by 60%) given the reliance on this in-season tool within several prominent management plans; the Kenai R. sockeye run projection placed the run in the wrong management tier 2 out of 4 years (2014, 2016) thus allowing for increased fishing time for the drift gillnet fleet.

- Any proposed regulatory change to long established salmon fishery management plans must be numerically measurable. Given poor data quality for specific escapements or to certain in-river-runs (Kenai R.) the information system currently in place is incapable of this task, even if harvests within the KMA were twice those that are currently estimated.

- Certainly, for a system such as the Susitna River with all of its documented longstanding problems in obtaining reliable and annual escapement estimates, is it not prudent to reach out and affect an adjacent management area. Currently, in order to generate Susitna River escapement estimates, the weir count (known escapement numbers) is multiplied by a constant derived from a mark-recapture study conducted for 3 three years that is now over 10 years old. Because of this unreliable method, the Susitna and Yentna Rivers escapement estimates should be treated as informative but certainly not known.

- Given the focus on coho salmon within the last three UCI board meetings (2011,2014, 2017), and the conservative stipulations within the Northern District management plan, if all of the sockeye incidentally caught in Kodiak were inserted into the UCI fishery mix, it would not have resulted in any beneficial impact to Northern District coho stocks nor in-river users. Coho salmon run strength is based on fishery performance (commercial and in-river sport) and not demonstrable escapement estimates.

- Evaluating the commercial harvest of UCI stocks using a harvest rate metric would likely be erroneous, owing to the uncertainty surrounding the escapement estimates of

the Susitna River, Yentna River and other unassessed sockeye stocks. These stocks contribute to the harvest, but escapement to these systems is unknown or indexed, not counted.

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Kodiak Seiners Association
PO Box 8835
Kodiak, AK 99615

December 12, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: **Opposition to Proposal 65**

Dear Chairman Morisky and Board of Fish Members:

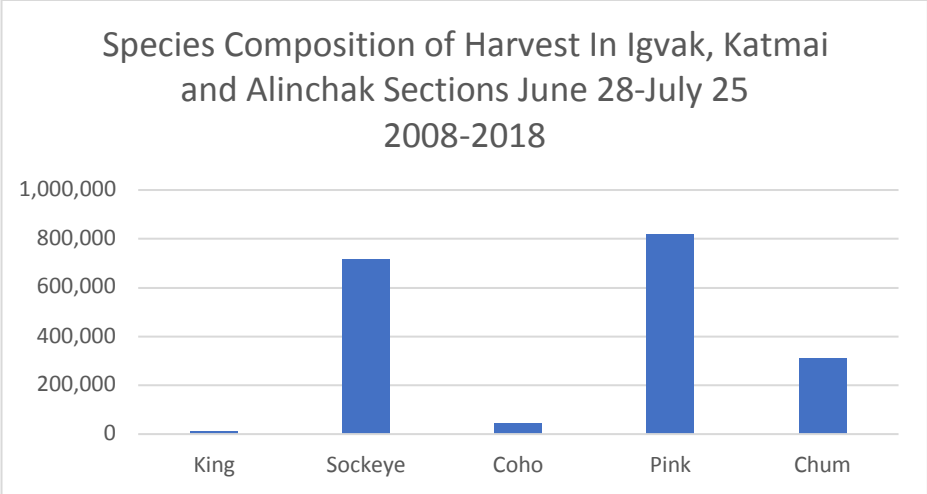
The Kodiak Seiners Association (KSA) is writing to express our **opposition to proposal 65**, which is designed to eliminate long-standing, traditional fisheries in the southern portion of mainland district of the Kodiak Management Area (KMA).

This proposal intends to eliminate a fishery that is already the most restrictively managed in the Kodiak area. While the proposal applies to the time period from June 28 to July 25th the Board should be aware that there is no fishery prosecuted in this area from June 28th until July 6th when the first of a maximum of four 57-hour openers occur in the Katmai and Alinchak bay sections of the mainland district. During this period other districts on the island are traditionally permitted 105-hour extendible fishing periods, while the mainland district cannot be extended regardless of local stock abundance. The Board should be aware that predominantly local pink and chum salmon are harvested in the area of concern for proposal 65 during the period of time that the proposal would apply.

Some of the most prolific pink and chum runs in the mainland district are located here, and the current restrictions in the management plan already provide insufficient opportunity to harvest these stocks. The chart below shows the cumulative harvest of each species in the Cape Igvak, Alinchak Bay, and Katmai bay sections[1] of the mainland district from 2008-2018. Pink and Chum salmon account for roughly 60% of fish harvested in the region during dates under consideration, while sockeye harvest only amounted to 36% of the total. During some years, harvest of pink and chum salmon, all likely of local origin, comprised up to 73% of the catch in this area. The Cape Igvak section, which is managed exclusively for Chignik bound sockeye during this period, only produced a sockeye harvest rate of 37%. Because the genetic stock analysis focused exclusively on sockeye salmon, the resulting public response to it neglected to account for the multispecies nature of our

[1] On some years fewer than 3 vessels made deliveries in some districts, so that data is confidential and not included in the tabulation.

fishery and the prevalence of pink, chum, and silver runs in the southern portions of the mainland district.



The Alaska Board of Fisheries is obligated to use the best available science to make management decisions, and KSA understands that this standard means that the genetic stock assessment of sockeye salmon harvests in the Kodiak Management Area (KMA) can be used in its analysis. Nevertheless, if the Board is going to use this study and its scientific basis then the principle conclusions of the study cannot be ignored. Among the primary findings is that the harvest of nonlocal stocks is highly variable and unpredictable, and that harvest data cannot be extrapolated temporally or geographically.

This proposal makes the mistake of projecting conclusions onto areas for which no data is available. Additionally, the proposer confusingly argues that the lack of local sockeye streams in the area means that KMA stocks of origin aren't caught here, while simultaneously and contradictorily asserting that CI stocks, which also obviously do not originate from streams in the south mainland district, are the only source of sockeye harvest in the region. The Board should be aware that no genetic data is available in this region outside of the Cape Igvak area, and that local stocks, especially late Karluk stocks, are known to migrate north up the mainland district before crossing the north Shelikof straight and heading south back down to Karluk.

The genetic stock assessment at Cape Igvak is the most limited of all areas sampled during the middle strata. There was no fishery conducted in the area in 2014, and harvests were limited in 2015 when an estimate of a mere 3560 CI sockeye taken in the Igvak section. Harvest rates in 2016 were abnormally high, and should not be considered as representative of typical fishing patterns. In fact, the contrast between harvests in 2015 and 2016 should give the Board plenty of pause before drawing any conclusions about the predictability of sockeye migration paths the KMA.

Although the harvest of CI sockeye in the Kodiak area in 2015 was by far highest of the three years covered in the genetic survey, these fish were almost entirely absent from the Cape Igvak area this year. The following year's unusual harvest of CI stocks in the Cape Igvak area demonstrates the extraordinary unpredictability of these fish. There is clearly no demonstrable harvest pattern of CI stocks, and the catch of 2016 is definitively an anomalous event that should only be taken as a

cautionary tale about the erratic uncertainty of CI sockeye migration paths. In other words, the harvest at Cape Igvak that year is indicative of what *can* happen with CI stocks at any place or any time in the KMA, and it *just so happened* to occur at Igvak that year. Igvak is already managed under strict harvest caps so that the high harvest rates immediately led to a closure of the area and thus the direct conservation of these stocks, indicating a responsibly functioning management plan that we currently have in place.

The unpredictability of salmon migrations and the need to preserve historical fishing communities while providing opportunities to harvest local stocks is the very reason why the Board long-ago adopted the Mixed Stock Fisheries Policy. It is understandable that some groups may believe that the harvest of CI fish in Kodiak is somehow unfair, however, the attempt to characterize our fishery entirely based on the CI component of our harvest is both dangerous and misguided. This proposal is asking the Board to entirely ignore the Mixed Stock Policy, discard the best available science, disregard and discount the preponderance of local stocks, and violate virtually every basic guiding principle and policy, including constitutional mandates on the utilization of fishery resources. This proposal would inflict certain and severe economic hardship on KMA fishermen, upend decades of responsible fishery management, and entirely erode confidence in the regulation of our fishery. It would do all of this simply and speculatively to provide more fish to a region that currently appears incapable of fully exploiting their local stocks.

KSA respectfully requests the Board to reject **proposal 65**. We thank you for the opportunity to comment on behalf of the membership of KSA. We appreciate the scientific and factual creation of regulations regarding our fisheries and trust that the Board continue to apply consistency in designing regulation changes while applying the guiding BOF policies, such as the Management for Mixed Stock Salmon Fisheries.

Kodiak Seiners Association represents 157 members, including the majority of actively fishing SO1K seine permit holders, Kodiak and Homer-based businesses, and individual crewmembers. Our focus is advocacy for our membership through positive interactions with ADF&G, the Board of Fisheries, and our State Legislature.

Respectfully,



Nate Rose
KSA President

December 24, 2019

Matthew Alward

60082 Clarice Way

Homer, AK 99603

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Opposition to proposal 65

Dear Chairman Morisky and board of fisheries members,

I live in Homer, AK and operate my own Kodiak salmon seiner and I oppose proposal 65 which would close the Katimai, Alinchak, and Cape Igvak sections of the mainland from June 28th through July 25th. I raised our kids on the back deck of our seiner and they have spent some of that upbringing fishing in these sections during that time period.

This proposal is claiming that because of sockeye genetic stock data (Shedd et al ADF&G 2016) that Kodiak should be required to share in the burden of conservation of Upper Cook Inlet sockeye salmon stocks. It is also claiming that there is no "basis for Kodiak to have an UCI fishery harvest entitlement".

While there was samples taken from one tender load in the Cape Igvak section, there was none taken in the Katmai or Alinchack sections so the proposer is making assumptions for two thirds of the area that this proposal is seeking to close. This proposal also does not at all take into consideration the fact that there is quite a few local chum and pinks salmon runs in these sections during the time period that it is being asked to close. If this proposal was adopted it would force the department to over escape the local chum salmon runs creating much forgone harvest based on assumptions of UCI sockeye stocks that are not based on any data.

The claim that Kodiak needs to have part of our traditional fishery closed to "share in the burden of conservation" is false and unfounded. The Kenai and Kasilof rivers have been over escaped many of the last years and the Susitna system sockeye stocks have reached escapement goals in many of the recent years. In fact the department has recommended that the Susitna sockeye "stock of yield concern" be removed at the Upper Cook Inlet board of fisheries meeting this upcoming February. Since the major systems in UCI have been either meeting or exceeding sockeye escapement goals there is no conservation burden of the UCI sockeye stocks necessary and thus to base this large proposed closure on a sharing of burden of conservation that is nonexistent is not justification for this proposal.

This proposal also claims Kodiak has no basis for UCI sockeye harvest entitlement. The North Shelikof management plan that went into effect in 1990 is an allocative management plan with UCI that restricted the long-standing Kodiak harvest of UCI sockeye while recognizing the historical Kodiak harvest of those fish. This fact alone is evidence of Kodiak's basis for some UCI sockeye harvest entitlement.

In closing given the fact that this proposal seeks to make a large area closure based on a very limited set of data, claims that Kodiak has to share in the burden of conversation when there is no conservation burden to share, and claims that Kodiak has no basis for some UCI sockeye harvest when in fact there is over a hundred years of historical harvest, I respectively ask that you do not close a large traditional fishery and oppose proposal 65.

Sincerely,

Matthew Alward

Naomi Hall

12/27/2019 09:31 PM AKST

RE: PROPOSAL 65 Close the Katmai, Alinchak, and Cape Igvak Sections to commercial salmon fishing June 28–July 25

My name is Naomi Hall, my husband and I setnet in Uganik Bay. I am writing because I am opposed to proposal 65. Closure of the Katmai, Alinchak, and Cape Igvak Sections of the Mainland District to commercial salmon fishing from June 28-July 25 will place additional pressures on the Kodiak Area as it would consolidate the seine fleet into a smaller area. This consolidation will place pressure on the setnetters and the seine fleet as everyone vies for a piece of the pie in a smaller area. The Mainland District Salmon Management Plan was developed with the understanding that some nonlocal salmon will be harvested. Setnetters will directly feel the impact of this closure due to the stationary nature of our fishery as seiners drive around looking for new areas to fish.

Nicholas Hoffman
PO Box 1212
Kodiak, AK 99615

12/24/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Oppose Proposal 65

Dear Chairman Morisky and Board of Fish members:

I'm a young Kodiak salmon fisherman. I have been running a seine boat since 2011 as well as participating in Kodiak halibut, sea cumber, cod jig, and tanner crab fisheries. I respectfully request the Board reject Proposal 65.

This proposal is based on extremely limited data. The data is from only a few days in 2016. This was a fluke year when weather patterns pushed fish around in a huge storm. If fishing regulations are to be rewritten, the changes should be based on thorough studies using multiple years of data, not based solely on one exceptional year. Even this limited study showed nothing new, only confirmed something everyone already knows: Cook Inlet bound fish swim through Kodiak waters. According to the Constitution of the State of Alaska, Article 8, Section 3, "fish, wildlife, and waters are reserved to the people for common use." This proposal seeks to favor one area over another demanding that Kodiak be limited in favor of Cook Inlet which is several hundred miles away. This is not a conservation issue, but simply Cook Inlet's fishermen trying to limit a neighboring fishery.

The Kodiak Management Plan is a solid mixed stock management plan that works well to balance the needs of the different species of salmon in Kodiak and already has controlled safeguards for the interception of Cook Inlet fish in the North Shelikof Strait Management Plan.

This is an allocation issue for Cook Inlet that if allowed to go forward would limit Kodiak's ability to fish our local stocks including our Igvak allocation of Chignik bound sockeye.

I see no reason for the Board to make any changes to the Kodiak Salmon Management plan. Thank you for the opportunity to comment on the proposals and the chance for my voice to be heard. I look forward to the Board of Fish members getting to spend time in Kodiak and learn more about our town and fishing community.

I humbly request the Board reject Proposal 65.

Sincerely,

Nicholas Hoffman
F/V Relentless

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 65

Dear Chairman Morisky and Board of Fisheries Members,

I am Richard Roth, Kodiak salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife, three children and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Tzar. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

This proposal appears to be in response to an anomaly that occurred in fish migration patterns during 2016, and the proposer wants to bring up the genetic study as justification as need for change. Kodiak's North Shelikof Management Plan was created so that Kodiak fishermen would share the "conservation burden" with Cook Inlet by limiting fishing in that area so the goal of UCIDA's proposal is already addressed in current management. The genetic sockeye identification study undertaken in the Kodiak Management Area from 2014-16 really does not provide "new" information relative to the presence of Cook Inlet sockeye in the KMA, and is completely taken out of context because it only looked at sockeye rather than the full suite of salmon species that we fish for in Kodiak. This proposal would restrain fishing allowed during times of the Cape Igvak Management, which would make it difficult to reach Kodiak's traditional and historical 15% allocation which the Chignik proposals claim belong to Chignik, and Cook Inlet proposals, on the contrary, claim as their own. It would also prevent the ability to fish some areas as directed chum and early pink fisheries for Kodiak fishermen resulting in lost revenue and opportunity for our region.

Instead of an attempt to restructure the fisheries in a neighboring region, the Board's time would be better spent investigating the number of years the Kenai and Kasilof rivers have exceeded their escapement, and yet Cook Inlet drift-gillnetters and set-gillnetters still have minimal fishing time when in other regions there would be emergency openings to maintain the health of fish stocks and the rivers. For example, 2019 was a banner year, and yet commercial fishermen were forced to sit on their hands while the Kenai and Kasilof rivers were over-escaped by the hundreds of thousands.

I strongly encourage the Board to reject this proposal.

Richard, Amanda, Stephanie, Noah, and Ranger Roth
F/V Sea Tzar
Homer, AK

December 19, 2019

Robert Fellows

266 E Bayview Ave.

Homer, AK. 99603

Alaska Board of Fisheries

Board Support Section

PO Box 115526

Juneau, Ak. 99811-5526

RE: Opposition to proposal 65

Dear chairman Morisky and Board of Fisheries members,

I am a commercial fisherman who has fished salmon in the Kodiak management area for 29 years. My family depends on the Kodiak salmon fishery for most of our yearly income. This proposal would drastically affect my ability to make a living for my family and my crew. I respectfully request the Board reject proposal #65.

This proposal is in response to an anomaly that occurred in fish migration patterns in 2016 which showed up in a one-time genetic study conducted for a small time that same year. This proposal would prevent the Kodiak fish and game department from being able to manage local salmon returns at that time of year. It would prevent directed fishing for local stocks as well as the historical harvest of a small amount of Chignik bound sockeye.

The proposer references the genetic study done in the Kodiak area in part of 2016. This study only shows a harvest from a small point in time under specific weather conditions. It does not indicate a trend. It only represents a single point of data.

Sincerely,

Robert Fellows

RE: PROPOSAL 65 Close the Katmai, Alinchak, and Cape Igvak Sections to commercial salmon fishing June 28–July 25

December 24, 2019 Alaska Board of Fisheries Board Support Section P.O. Box 115526 Juneau, AK 99811-5526 Re: Opposition to Proposal 65 Dear Chairman Morisky and Board of Fisheries Members, I am Steve Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Grace. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures. This proposal appears to be in response to an anomaly that occurred in fish migration patterns during 2016, and the proposer wants to bring up the genetic study as justification as need for change. Kodiak's North Shelikof Management Plan was created so that Kodiak fishermen would share the "conservation burden" with Cook Inlet by limiting fishing in that area so the goal of UCIDA's proposal is already addressed in current management. The genetic sockeye identification study undertaken in the Kodiak Management Area from 2014-16 really does not provide "new" information relative to the presence of Cook Inlet sockeye in the KMA, and is completely taken out of context because it only looked at sockeye rather than the full suite of salmon species that we fish for in Kodiak. This proposal would restrain fishing allowed during times of the Cape Igvak Management, which would make it difficult to reach Kodiak's traditional and historical 15% allocation which the Chignik proposals claim belong to Chignik, and Cook Inlet proposals, on the contrary, claim as their own. It would also prevent the ability to fish some areas as directed chum and early pink fisheries for Kodiak fishermen resulting in lost revenue and opportunity for our region. Instead of an attempt to restructure the fisheries in a neighboring region, the Board's time would be better spent investigating the number of years the Kenai and Kasilof rivers have exceeded their escapement, and yet Cook Inlet drift-gillnetters and set-gillnetters still have minimal fishing time when in other regions there would be emergency openings to maintain the health of fish stocks and the rivers. For example, 2019 was a banner year, and yet commercial fishermen were forced to sit on their hands while the Kenai and Kasilof rivers were over-escaped by the hundreds of thousands. I strongly encourage the Board to reject this proposal. Steve and Jenny Roth F/V Sea Grace Homer, AK

Tollef Monson

12/25/2019 06:56 PM AKST

RE: PROPOSAL 65 Close the Katmai, Alinchak, and Cape Igvak Sections to commercial salmon fishing June 28–July 25

reference unsound data

Adelia Myrick

12/25/2019 06:16 PM AKST

RE: PROPOSAL 37 Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries

Dear Board of Fish members, I am a second-generation Kodiak fisherman. My father started salmon fishing here in 1967, and I have setnetted since I was a toddler with my family, for my whole life. I took over the permit from my dad several years ago, and in 2016 finally bought the setnet operation from my parents outright. I am opposed to this proposal because, the way it is written, it seems like it would harm al users. Before creating a comprehensive Gulf chinook management plan, I think we need much more study on genetics, where the chinook actually are, and where they are bound. This is because assessments from trawl bycatch show that up to 90% or more of the chinook are originating from the west coast and other areas. If we curtail ourselves, it would be to the detriment of all fishers without necessarily actually helping local stocks. I am in favor of conservation and managing the fishery for sustainability in perpetuity, but it should be based on hard science, not speculation. We need more information to make these kinds of decisions. Thank you for your consideration, Adelia Myrick

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 37

Dear Chairman Morisky and Board of Fisheries Members,

I am Alex Roth, Kodiak salmon purse seine and Lower Cook Inlet salmon purse seine permit holder and thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak mainly. I own and operate the F/V Wandering Star. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

I oppose proposal 37 because it works from an assumption that Kodiak does not have its own Chinook stocks and existing Chinook restrictions. It also ignores Cook Inlet and Kodiak sportfish harvests of Chinook salmon. This proposal asks to shut down a significant portion of Kodiak's historical commercial salmon fishery that has a successful and complex biology-based management plan in order to possibly save 250-270 fish versus the tens of thousands of fish from local sockeye, pink, coho and chum stocks. This proposal could have devastating impact on the sustainability of Kodiak stocks, statewide fishing businesses and the Kodiak communities in which the majority of these fish are landed and processed. I would also like to *remind the Board and the author of this proposal that Kodiak's commercial salmon fishery already has a non-retention policy for Chinooks 28 inches or greater in length.*

I see no reason that could justify the Board making any changes to Kodiak's salmon management plans and ask that you reject proposal 37.

Thank you for your careful consideration of this matter,

Alex and Jaime Roth
Homer, AK

RE: PROPOSAL 37 Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries

Bo Calhoun 57177 Zulu Ct. Homer, AK 99603 12/26/19 RE: Opposition to Proposal #37 Dear Chairman Morisky and Board of Fish members: I'm a third generation Kodiak salmon seiner. I was born in Homer, raised in Port Lions and Homer, and continue to live in Homer. My wife and I hope to raise our two sons on our family seine boat in a healthy Kodiak salmon fishery. I respectfully request the Board reject Proposal #37. The very few Cook Inlet chinook that would be protected by this proposal does not justify the harm it would do the Kodiak salmon fishery. Please reject proposal #37. Thank you for taking the time to read public comments. Sincerely, Bo Calhoun

Brian mcwethy
KSA
12/23/2019 07:56 AM AKST

RE: PROPOSAL 37 Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries

My name is Brian Mcwethy. I was born and raised in kodiak. I live in kodiak with my family and we all depend on my income. I fished with my father on his seiner growing up and now I own and operate a seiner. Salmon seining and tanner crab fishing in kodiak are currently our only sources of income. I plan to try and continue to fish the kodiak waters and possible my children will have the opportunity to. I hope the current and historical areas we fish aren't taken from us and the future generations of kodiak. That is why I oppose this amendment.

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 37

Dear Chairman Morisky and Board of Fisheries Members,

My name is Chris Johnson and I am a second-generation fisherman in Kodiak, Alaska. I grew up fishing on my dad's boat and got my first crew job working for someone else two weeks after I graduated high school. I haven't missed a salmon season since. I bought into the fishing industry in 2011 with the purchase of a 25-foot jig boat that I worked for two years in the winter and spring months while I still crewed for salmon in the summer. Access to the jig fisheries focusing on cod and rockfish was the only way that I could afford to move into the salmon fleet with a 38-footer in 2013. After the recent cod collapse I now primarily rely on salmon seining and live here year-round with my wife.

I oppose proposal 37 because it 1) is extremely vague and provides no regulatory language to comment on; 2) ignores Cook Inlet and Kodiak sportfish harvests of Chinook salmon; 4) presumes there are no Kodiak Chinook stocks; 5) asks to shut down without justification a significant portion of Kodiak's long-standing historical fishery that has a concrete and highly complex management plan and; 6) lastly the Kodiak commercial salmon fishery already has a non-retention policy in place for Chinooks 28 inches or greater in length.

Chinook stocks are depressed across the Gulf of Alaska. Reducing Kodiak's salmon fishery because of Chinook concerns is unlikely to impact southcentral Alaska Chinook resources as suggested by the author of this proposal and would instead cause devastating economic impacts in the Kodiak commercial salmon fishery due to lost opportunity to harvest sockeye, pink, silver, and chum salmon. Furthermore, I feel that Kodiak as a regional community stands to lose the most from anything resulting from this proposal and it does not seem like the best public process to hold the final deliberation at the UCI meeting where it will be very difficult for Kodiak community members to attend and participate.

Taking away any fishing opportunity from Kodiak fishermen, particularly from the small boat fleet, would have a direct negative impact on new entrants trying to gain a foothold in this industry, fishing families trying to get by, and fishing support businesses in our region. I'm proud to call Kodiak home and am working to protect our fishing way of life.

Sincerely,
Chris Johnson
F/V North Star

Cole C Christiansen
F/V Mary Ann
12/23/2019 11:30 AM AKST

RE: PROPOSAL 37 Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries

Pairing Kodiaks management plan with Cook Inlet would shut down Kodiak at times when our management plan needs pinks and sockeye caught so that our systems are not over escaped. Furthermore the best way to encourage fishermen to save the king salmon would be to incentivise them instead of restricting them.

Corina Watt, Commercial Kodiak Salmon Setnet Fisherman
Trap Point/ Moser Bay Fisheries: Fish in the Alitak District with sites in Olga, Moser and Alitak Bays
12/25/2019 08:31 PM AKST

RE: PROPOSAL 37 Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries

I oppose PROPOSAL 37 5 AAC 18.XXX. To create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries for the following reasons: Managing Kodiak for non-local salmon stocks creates the following: 1) It increases gear conflict and creates reallocation scenarios. 2) It reduces the quality and viability of more than a dozen Kodiak sockeye systems. 3) It reduces harvest opportunities of local stocks creating economic hardships for Kodiak fishers. 4) It may create biological concerns threatening the Kodiak sockeye systems.

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 37

Dear Chairman Morisky and Board of Fisheries Members,

My name is Danielle Ringer and I appreciate the opportunity to comment on proposals before the Board in writing and in person for the Kodiak finfish meeting. I live in Kodiak with my husband and we own and operate the 38-foot F/V North Star. We chiefly rely on salmon seining and cod and rockfish jigging to maintain our fishing way of life and ability to live on Kodiak Island. I grew up in Homer learning to harvest and process fish from my parents in Kachemak Bay and dipnetting on the Kenai River. I hold a Master's degree from the University of Alaska Fairbanks in Political Ecology of Fisheries and was one of the researchers on the *Graying of the Fleet in Alaska's Fisheries: Defining the Problem and Assessing Alternatives* study in the Kodiak region.

I oppose proposal 37 because it 1) is extremely vague and provides absolutely no regulatory language to comment on; 2) ignores Cook Inlet and Kodiak sportfish harvests of Chinook salmon; 4) presumes incorrectly that there are no Kodiak Chinook stocks; 5) asks to shut down without justification a significant portion of Kodiak's long-standing commercial historical fishery that has a concrete and highly complex management plan and; 6) lastly the Kodiak commercial salmon fishery already has a non-retention policy in place for Chinooks 28 inches or greater in length.

Chinook stocks are depressed across the Gulf of Alaska. Reducing Kodiak's salmon fishery because of Chinook concerns is unlikely to impact southcentral Alaska Chinook resources as suggested by the author of this proposal and would instead cause devastating economic impacts in the Kodiak commercial salmon fishery due to lost opportunity to harvest sockeye, pink, coho, and chum salmon. Furthermore, I feel that Kodiak as a regional community stands to lose the most from anything resulting from this proposal and it does not seem like the best public process to hold the final deliberation at the UCI meeting where it will be very difficult for Kodiak community members to attend and participate.

I see no biological, scientific, historical, economic, nor sociocultural reasons that could justify the Board making any changes to Kodiak's salmon management plans. Thank you for your consideration of my comments and I look forward Board of Fisheries members spending time in our fishing community during the Kodiak meeting.

I humbly request the Board to reject this proposal.
Respectfully,
Danielle Ringer, M.A.
F/V North Star

Dave Kubiak
F/V Lara Lee
12/21/2019 02:54 PM AKST

RE: PROPOSAL 37 Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries

This proposal would shut down a significant portion of our salmon fishery during June and July. This interferes with our well established and well crafted salmon management plan.

Donald Lawhead

12/26/2019 11:08 PM AKST

RE: PROPOSAL 37 Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries

Creating new mangement plans for chinook salmon would further burden the ADFG with shrinking budgets.

Ed Fisher, Kodiak Salmon Setnet Commercial Fisherman
Trap Pt/ Moser Bay Fisheries: Alitak District with sites across Olga, Moser and Alitak Bays
12/25/2019 10:23 PM AKST

RE: PROPOSAL 37 Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries

I am opposed to PROPOSAL 37 5 AAC 18.XXX. New section. Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries, for the following reasons: 1) It increases gear conflict and creates reallocation scenarios. 2) It reduces the quality and viability of more than a dozen Kodiak sockeye systems. 3) It reduces harvest opportunities of local stocks creating economic hardships for Kodiak fishers. 4) It may create biological concerns threatening the Kodiak sockeye systems.

Iver Holm

12/28/2019 12:31 AM AKST

RE: PROPOSAL 37 Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries

Dear Chairman Morisky and Board of Fish members: I am 31 years old and a life long resident of Kodiak. I grew up set netting in Uganik on the west side of the island with my mother until i was 14. I then started seining with my father until I was able to buy my own Kodiak seine operational the age of 27. Please oppose proposal 37. thank you for your time sincerely
Iver Holm

Jamin Hall

12/27/2019 10:54 PM AKST

RE: PROPOSAL 37 Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries

My name is Jamin Hall, my wife and I have a set net site in Uganik Bay. I am writing in opposition to proposal 37. It seems to be an outlandish proposal with no basis in fact. The only information I know of is from gulf trawl fisheries bycatch studies which indicate over 90% of the kings in the gulf are from British Columbia and the US west coast. If this is correct, then fisheries in both Kodiak and Cook Inlet would suffer and the local kings would not be helped more than fractionally.

Jason Watt, Kodiak Salmon Setnet Commercial Fisherman
Trap Pt/ Moser Bay Fisheries: Alitak District with sites in Olga, Moser & Alitak Bays
12/25/2019 08:37 PM AKST

RE: PROPOSAL 37 Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries

I oppose PROPOSAL 37 5 AAC 18. To create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries for the following reasons: Managing Kodiak for non-local salmon stocks creates the following: 1) It increases gear conflict and creates reallocation scenarios. 2) It reduces the quality and viability of more than a dozen Kodiak sockeye systems. 3) It reduces harvest opportunities of local stocks creating economic hardships for Kodiak fishers. 4) It may create biological concerns threatening the Kodiak sockeye systems.

Jonathan Edwards

12/27/2019 09:03 AM AKST

RE: PROPOSAL 37 Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries

I am a gill netter on the Westside of Kodiak Island. While it is a well established fact of the travel patterns and incidental catch of Cook Inlet bound sockeye in the KMA, there is no data I know of supporting pairing King restrictions of the Cook Inlet commercial fisheries. The King catch data of the KMA is there, but it is pretty much meaningless in this situation. This data includes Kings originating from Kodiak, as well as the rest of Alaska and Canada and the US west coast. On top of that, travel patterns of the King salmon do not mimic the Cook Inlet bound sockeye. Where are the Cook Inlet kings coming from? West, east, or south. Where's the data on this. This proposal is backed up by nothing. I can testify to one thing on this issue. i catch very few kings through out my salmon season. They are scattered out pretty evenly through my salmon season. I have never witnessed anything resembling a King run, and I have been doing this for 40 years.

Judy Fisher, Kodiak Setnet Salmon Commercial Fisherman
Trap Pt/ Moser Bay Fisheries: Alitak District with sites across Olga, Moser & Alitak Bays
12/25/2019 10:25 PM AKST

RE: PROPOSAL 37 Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries

I am opposed to PROPOSAL 37: 5 AAC 18.XXX. New section. Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries, for the following reasons: 1) It increases gear conflict and creates reallocation scenarios. 2) It reduces the quality and viability of more than a dozen Kodiak sockeye systems. 3) It reduces harvest opportunities of local stocks creating economic hardships for Kodiak fishers. 4) It may create biological concerns threatening the Kodiak sockeye systems.

Ken Christiansen
F/V Mary Ann
12/26/2019 01:34 PM AKST

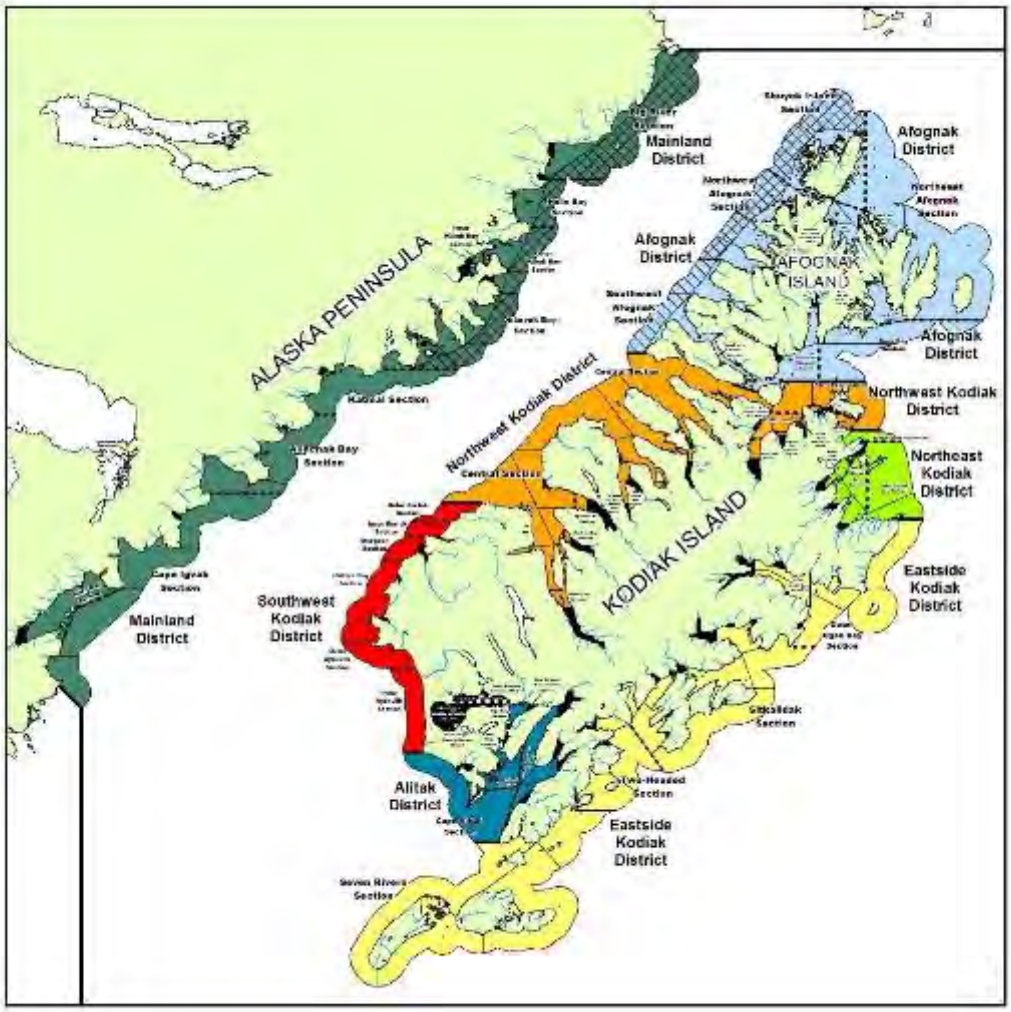
RE: PROPOSAL 37 Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries

The relatively few Kings that might be saved (250-270) do not justify closing down Kodiak's long standing historical fishery with a concrete and complex management plan.why would we close down the entire fishery for a couple of Kings, that makes no sense to me, very counter productive.

Kevin Fisher
Alitak District Setnet Fisherman
12/27/2019 08:39 PM AKST

RE: PROPOSAL 37 Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries

I can't see how this proposal solves or serves any conservation issues. It is simply trying to limit one fishery for the benefit of another. Further more the proposal suggests a problem where none exists.



Comments on Proposal 37 and RC 09, an Amendment to Proposal 37

by the Kodiak Salmon Work Group
December 2019

Comment:

We have only recently become aware that a potentially sweeping and devastating proposal to overhaul salmon fishery management plans in the Kodiak management area (KMA) has been put out for public comment. This is what is called RC 09, which was submitted by the public at the end of the Board of Fisheries meeting earlier this month for Lower Cook Inlet. It apparently is to be considered an amendment to Proposal 37, which had been submitted by a different member of the public prior to the proposal deadline for this 2019-2020 board cycle last April.

Our initial focus is on the extremely poor public process used in putting RC 09 out for public comment. At the recent meeting of the board, in Lower Cook Inlet, RC 09 was submitted as an amendment to Proposal 37, by someone other than the original proposer. With great hubris, the United Cook Inlet Drift Association stated that, "If proposal 37 is revised as indicated below, UCIDA may support such a plan…" and then UCIDA completely overwrote Proposal 37 to include even more management areas, more species, and more fisheries with an apparent presumption that if UCIDA, a single stakeholder group, were to "support" the plan then it would have credibility and merit the Board's submission as substitute language. At the behest of a single board member, RC 09 was then put out for public comment.

The request and opportunity for the public to comment on RC 09 was posted on the board's public comment page on December 14, a mere 13 days before the public comment deadline for the Kodiak board meeting. Worse still, the invitation to comment is listed solely on a portion of the board's website that is accessible only if a person knows already that they wish to make a public comment; RC 09 is not acknowledged or listed as a proposal or a report on the webpage that applies to the Kodiak meeting, so most members of the public would not even become aware of its existence.

Proposal 37

Regarding the substance, Proposal 37 itself is of dubious merit and because of its vagueness lacks any utility. It is meant to apply to two separate management areas (Cook Inlet and Kodiak) yet it provides no proposed regulatory language nor any specific guidance on how each or both management areas should be regulated. Rather, it provides a single, general sentence that both areas should "be managed under a single comprehensive king salmon conservation plan which functions to conserve kings in both locations." This isn't a meaningful

proposal for regulatory change; rather it is goal statement with no set of objectives nor any thoughtful mechanism for how to attain the stated goal. Proposal 37 shows a minimum of effort on the part of the proposer, but would require huge amounts of effort on the part of the board and regulators to craft possible language, and then even larger amounts of effort on the part of affected fishermen to debate, support, or oppose any such comprehensive management plan.

Adding to the difficulty of considering the original Proposal 37 is that it was scheduled to be heard at three different board meetings (LCI, Kodiak, and UCI), but any real deliberation or action would occur at the Upper Cook Inlet meeting even though any such action would affect Kodiak area fisheries moreso than any of the others. Under previous board process, any proposal that was so sweeping and encompassed more than one management area would be fleshed out in much more detail and would have been available for much more substantial opportunities for public comment and debate. Because proposal 37 is without substance, would require great effort on the part of the department and the board to develop and does not provide enough detail for stakeholders to adequately comment, Proposal 37 does not deserve serious consideration by the board.

RC 09

But, adding considerable insult to injury, the board itself has now embarked upon a path far beyond Proposal 37 which only amplified Proposal 37's lack of substance and inadequate public notice. Even if members of the public become aware of RC 09, it is not clear what we should make of it. Why is it needed? What problem did the board have in mind? Who will develop the detail for a new "multi-area" management plan? By including sockeye, coho, chum and pink salmon does the proposal envision that salmon species will be managed independently or inter-dependently. If the plan is intended to be comprehensive, why is all the regulatory language that follows focused only on the Kodiak area? With these immediate questions and a host of related issues, the public is left with no position but opposition.

The language in RC 09 is overly-broad, and unnecessarily repeats directives embedded in other regulations such as the Mixed Stock Salmon Fisheries Policy, the Sustainable Salmon Fisheries Policy, various subsistence requirements and as well as emergency order authorizations. It also purports to alter KMA management plans in order to support and protect "salmon stocks and species" in Area L-Chignik, Area H-Cook Inlet, and Area K-Kodiak but

provides no proposed mechanism to do so. In essence, RC 09 appears to be a proposed mini-Mixed Stock policy that would apply to one management area with criteria derived from stock status, habitat quality, and assorted fisheries in other management areas.

Summary

RC 09 proposes a substantial departure from current or established practice in Alaska salmon management without providing any indication on how it would achieve its poorly stated objectives.

For the board to put forward for public comment such an awkward, sweeping, and poorly developed amendment submitted by one segment of the public to someone else's proposal, on the basis of the desire of a single board member, less than two weeks before the close of public comments for a board meeting on the affected fisheries, and posted solely in a section of the board's webpage that many constituents will not know to access … is irresponsible.

RC 09, and Proposal 37, should be rejected. And, the Board of Fisheries should make a substantial public commitment to the effect that only thoroughly thought-out, well-articulated proposals will be considered in the future, especially if the intent is to substantially effect change in longstanding fisheries; all such proposals need to be made readily available, and for significant amounts of time, for public comment and board deliberation.

December 24, 2019

Matthew Alward

60082 Clarice Way

Homer, AK 99603

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Opposition to proposal 37

Dear Chairman Morisky and board of fisheries members,

I live in Homer, AK and run my own boat in the Kodiak salmon seine fishery and I oppose proposal 37 that would create a new Kodiak management plan with paired restrictions tied with Upper Cook Inlet king salmon abundance. I raised our kids on the back deck of our family seiner and support the family in this fishery and if enacted this proposal would create very negative consequences for the Kodiak salmon fishery.

The proposer claims that Kodiak salmon fishermen are "slaughtering Cook Inlet origin king salmon". According to Fishery Manuscript Series No. 16-11 titled "Genetic Stock Composition of the Commercial and Sport Harvest of Chinook Salmon in Westward Region, 2014-2016" tables 41, 42, and 43, of the total Kodiak king salmon harvest only 3.6% annually are from Cook Inlet origin stocks which works out to an average of 260 Cook Inlet origin king salmon per year. I light of the fact that only 260 Cook Inlet king salmon a year are harvested in Kodiak I would say that the accusation that we are "slaughtering Cook Inlet origin salmon" is quite false.

To throw away the almost 50 year old Kodiak management plans in order to try to pass 260 kings a year towards Cook Inlet I believe would be irresponsible salmon management. Kodiak has numerous sockeye, chum, pink, and coho salmon systems with quite variable run timings that the management plans account for in order to harvest local Kodiak stocks. These plans are very complex and proposal 37 asks to replace them to protect 260 king salmon but gives no suggested language to accomplish this goal. If the board chose to adopt this proposal there would be substantial work for department staff to create a new management plan.

In closing I ask that you do not upend decades old management plans that are working well for the management objectives that they are designed for and do not adopt proposal 37.

Sincerely,

Matthew Alward

Nicholas Hoffman
PO Box 1212
Kodiak, AK 99615

12/24/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: **Oppose Proposal 37**

Dear Chairman Morisky and Board of Fish members:

I'm a young Kodiak salmon fisherman. I have been running a seine boat since 2011 as well as participating in Kodiak halibut, sea cumber, cod jig, and tanner crab fisheries. I respectfully request the Board reject Proposal 37

I oppose this proposal because it would shut down a significant portion of our fishery during June and July. Kodiak already has non-retention of kings which has significantly reduced the king catch in the Kodiak area. The few hundred kings that could possibly be saved by this proposal aren't worth risking over-escapeing streams in the rest of the Kodiak area.

I see no reason for the Board to make any changes to the Kodiak Salmon Management plan. Thank you for the opportunity to comment on the proposals and the chance for my voice to be heard. I look forward to the Board of Fish members getting to spend time in Kodiak and learn more about our town and fishing community.

I humbly request the Board reject Proposal 37.

Sincerely,

Nicholas Hoffman
F/V Relentless

Oliver Holm
self
12/27/2019 12:43 PM AKST

RE: PROPOSAL 37 Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries

There is no equivalence between the Upper Cook Inlet commercial fishery chinook catches and the chinook caught in the Kodiak commercial harvest. The chinook caught in Upper Cook Inlet are predominately adults returning to spawn in Inlet drainages. The chinook incidentally caught in the Kodiak commercial fisheries are primarily feeders many of which are of hatchery origin from Canada, Washington and Oregon. Very few originate from Cook Inlet rivers. This is known because of coded wire recoveries and genetic sampling. The Kodiak area salt water sport fish catches are also of this same composition.

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 37

Dear Chairman Morisky and Board of Fisheries Members,

I am Richard Roth, Kodiak salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife three children and I reside in Homer, but fish in Kodiak. I owned and operated the F/V Kelly Girl which I sold this winter and Purchased the F/V Sea Tzar which i will be fishing in Kodiak for the forseeable future. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

I oppose proposal 37 because it works from an assumption that Kodiak does not have its own Chinook stocks and existing Chinook restrictions. It also ignores Cook Inlet and Kodiak sportfish harvests of Chinook salmon. This proposal asks to shut down a significant portion of Kodiak's historical commercial salmon fishery that has a successful and complex biology-based management plan in order to possibly save 250-270 fish versus the tens of thousands of fish from local sockeye, pink, coho and chum stocks. This proposal could have devastating impact on the sustainability of Kodiak stocks, statewide fishing businesses and the Kodiak communities in which the majority of these fish are landed and processed. I would also like to *remind the Board and the author of this proposal that Kodiak's commercial salmon fishery already has a non-retention policy for Chinooks 28 inches or greater in length*.

I see no reason that could justify the Board making any changes to Kodiak's salmon management plans and ask that you reject proposal 37.

Thank you for your careful consideration of this matter,

Richard, Amanda, Stephanie, Noah and Ranger Roth
F/V Sea Tzar
Homer, AK

December 19, 2019

Robert Fellows

266 E Bayview Ave.

Homer, AK. 99603

Alaska Board of Fisheries

Board Support Section

PO Box 115526

Juneau, Ak. 99811-5526

RE: Opposition to proposal 37

Dear Chairman Morisky and Board of Fisheries members,

I am a commercial fisherman who resides in Homer and depends on the Kodiak area commercial salmon fishery to support my family. I have commercially fished salmon in the Kodiak area for 29 years and hope to continue to do so. My crewmembers also reside in Homer and depend on this fishery for their income. This proposal would drastically affect my ability to continue to make a living commercial fishing. I respectfully request the Board reject proposal #37

This proposal, if passed, would drastically restrict fishing time in the Kodiak management area in June and July. This would prohibit the ability of the Kodiak Fish and Game staff to properly manage local stocks. Kodiak commercial salmon fishermen are already required to release king salmon over 28 inches. Kodiak has a long standing, comprehensive, well-functioning management plan for salmon. I am a commercial fisherman who resides in Homer and depends on the Kodiak area commercial salmon fishery to support my family. My crewmembers also reside in Homer and depend on this fishery for their income. This proposal would drastically affect my ability to continue to make a living commercial fishing.

Sincerely,

Robert Fellows

Ron Kavanaugh
self
12/28/2019 12:59 AM AKST

RE: PROPOSAL 37 Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries

These two management plans have nothing in common. Pairing them would have unknown unintended consequences that could impair management for local stocks.

Sam Haughey

12/27/2019 10:38 PM AKST

RE: PROPOSAL 37 Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries

I oppose this proposal. It is very vague and leaves a wide margin for interpretation that does not necessarily benefit the chinook run. This is a traveling fish and to expect all fish swimming in one area to be solely from that area is not the way salmon work. Kodiak is so far from Cook Inlet that it does not seem right to try to regulate one third of the Kodiak season around the possibility that some chinooks are traveling that way.

Steven Roth

12/27/2019 06:33 AM AKST

RE: PROPOSAL 37 Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries

December 24, 2019 Alaska Board of Fisheries Board Support Section P.O. Box 115526 Juneau, AK 99811-5526 Re: Opposition to Proposal 37 Dear Chairman Morisky and Board of Fisheries Members, I am Steve Roth, Kodiak salmon purse seine and Lower Cook Inlet salmon purse seine permit holder and thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak mainly. I own and operate the F/V Sea Grace. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures. I oppose proposal 37 because it works from an assumption that Kodiak does not have its own Chinook stocks and existing Chinook restrictions. It also ignores Cook Inlet and Kodiak sportfish harvests of Chinook salmon. This proposal asks to shut down a significant portion of Kodiak's historical commercial salmon fishery that has a successful and complex biology-based management plan in order to possibly save 250-270 fish versus the tens of thousands of fish from local sockeye, pink, coho and chum stocks. This proposal could have devastating impact on the sustainability of Kodiak stocks, statewide fishing businesses and the Kodiak communities in which the majority of these fish are landed and processed. I would also like to remind the Board and the author of this proposal that Kodiak's commercial salmon fishery already has a non-retention policy for Chinooks 28 inches or greater in length. I see no reason that could justify the Board making any changes to Kodiak's salmon management plans and ask that you reject proposal 37. Thank you for your careful consideration of this matter, Steven & Jenny Roth F/V Sea Grace Homer, AK

Tollef Monson

12/25/2019 06:41 PM AKST

RE: PROPOSAL 37 Create a king salmon management plan with paired restrictions in Kodiak and Cook Inlet commercial fisheries

The KMA is the most complex area to manage and this proposal if allowed would greatly hamper ADFG's ability to manage and conserve our own systems. Kodiak is an island and tradition is what Alaska is built upon. if this were to be enacted then we would lose access to our own fish and many fisherman who are barely viable would not get the days we need to make a living. I am particularly vulnerable to given that I am a bush Alaska, one of those traditional types who choose to live year round off the grid and relying only on a blue water economy. I don't own a big boat or other permits to fish nor have another full time job in town or else where. Summer Kodiak salmon is what my bones are built on. Please don't spoil the carefully crafted ADFG management plan and the culture of traditional living in remote Alaska that is going extinct. Thank you

Tyler-Rose Hoffman
PO Box 1212
Kodiak, AK 99615

12/24/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Oppose Proposal 37

Dear Chairman Morisky and Board of Fish members:

I live in Kodiak and my husband and I operate a commercial fishing business. We rely on salmon for the bulk of our income, though we also participate in halibut, sea cucumber, and cod fisheries. Our ability to stay in Kodiak depends on the health of the Kodiak salmon fishery. I respectfully request the Board reject Proposal 37.

I oppose this proposal because it would shut down a significant portion of Kodiak's fishery to protect a specific salmon species. Kodiak already has a management plan in place to protect king salmon. The few king salmon saved would have no measurable conservation affect, but a huge impact on our livelihood. The few additional kings that might be saved aren't worth endangering the rest of the salmon fishery.

The Kodiak Salmon Management plan is good as it is and I see no need for any changes to it. Thank you for the opportunity to comment on the proposals before the meeting. As always, I look forward to visitors getting to enjoy our great town and vibrant fishing community.

I humbly request the Board reject Proposal 37.

Sincerely,

Tyler-Rose Hoffman
F/V Relentless

Donald Lawhead

12/26/2019 11:25 PM AKST

RE: Proposed amended language for proposal 37 (submitted at the Lower Cook Inlet meeting as RC9 by request of Board Member Wood)

Creating a new management plan will further burden the ADFG. The budget cuts have made it difficult to mange the plans we have now.

Jamin Hall

12/27/2019 10:56 PM AKST

RE: Proposed amended language for proposal 37 (submitted at the Lower Cook Inlet meeting as RC9 by request of Board Member Wood)

My name is Jamin Hall, my wife and I have a set net site in Uganik Bay. I am writing in opposition to proposal 37, including with the amended language. It seems to be an outlandish proposal with no basis in fact. The only information I know of is from gulf trawl fisheries bycatch studies which indicate over 90% of the kings in the gulf are from British Columbia and the US west coast. If this is correct, then fisheries in both Kodiak and Cook Inlet would suffer and the local kings would not be helped more than fractionally

Mariel Ellingson

12/27/2019 10:32 PM AKST

RE: Proposed amended language for proposal 37 (submitted at the Lower Cook Inlet meeting as RC9 by request of Board Member Wood)

My name is Mariel Ellingson, I'm 30 years old and I grew up set netting In kodiak. I live in kodiak and was fortunate to participate in this years salmon seine season. These are not conservation proposal.

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to RC 09 as substitute language for Proposal 37

Dear Chairman Morisky and Board of Fisheries members,

I Live in Homer, AK and support our family by operating our own boat in the Kodiak salmon seine fishery. I oppose both the board recommended alternate language to proposal 37 (RC9 from the LCI board meeting) and the very poor public process that enabled this late proposal to be accepted.

At the Lower Cook Inlet (LCI) meeting in Seward, testifying in opposition to proposal 37 (a chinook salmon "paired restrictions" proposal affecting Lower Cook Inlet, Kodiak, and Upper Cook Inlet), United Cook Inlet Drifters Association (UCIDA) attacked Kodiak again by submitting a proposed amendment (RC 09) that highjacked proposal 37 entirely so that only Kodiak fisheries would be adversely affected, and broadening chinook salmon to all salmon. If I was not in attendance at the LCI board meeting I would not of even know that the board accepted the RC 09 language to be included with proposal 37. RC 09 has not been added to the list of proposals seeking public comment on the Kodiak board meeting page and is only found on the "submit comment" page making it very difficult for the general public to even know that RC 09 is open for public comment.

Since the original proposal 37 would not be taken up until the Upper Cook Inlet meeting in February, the board did not deliberate proposal 37. Nor did they take up UCIDA's "amendment" in RC 09 that makes proposal 37 an odious Kodiak salmon management plan that bears

no relationship to and shares no language with proposal 37. RC 09 is a new proposal circumventing the regular process.

Then in the last hour of the Lower Cook Inlet meeting, a board member asked the Executive Director to put UCIDA's proposed amendment (RC 09) out for public comment, despite knowing it was less than 30 days before the Kodiak meeting, and many months past the proposal deadline for the Kodiak meeting.

This irregular action raises some serious questions:

1 Did the action to seek public comment on a public comment make the suggested amendment a board generated proposal?
2 The language bears no resemblance with original proposal 37. If RC 09 is intended to be a real amendment to proposal 37, what happens to the original proposal 37?
3 Since it only affects Kodiak, will the amendment still be deliberated in Upper Cook Inlet rather than in Kodiak? If so, why?
4 Why were no other RC's put out for public comment, only one highly allocative comment

involving Kodiak? Has this ever been done in the past? Will the board now start allowing late proposals into the process if they are identified as "amendments"?

5 Why is a board member pushing a highly allocative proposal that is identified as an amendment to a proposal that it commandeers?

6 Why wasn't the proposed amendment submitted as a regular proposal months ago?

7 How will the public and staff have sufficient time to learn about and absorb the objectionable impacts of the proposed plan on Kodiak's fishery?

8 Why isn't there a justification with the proposed action as is required on all other proposals that are timely submitted?

9 The suggested management plan in RC 09 never states a problem that needs addressing. Why would a board member think considering this matter is good public policy?

10 If it is good public policy, why the last-minute subterfuge in putting the amendment into the record out of area on a proposal that would be deliberated out of area?

The board now owns the irregular amendment. The board's best option is to not give RC 09 the light of day. It is a huge divergence from the normal public process. It doesn't state a problem, contains no justification, is several months late, and makes the board look biased before a meeting. Any action to move RC 09 taints the process, taints the board, and sets a dangerous precedent.

I respectively ask that the board does not support poor public process by creating a board generated proposal and rejects adopting RC 09 as amended language for proposal 37.

Sincerely,

Matthew Alward

Oliver Holm
self
12/27/2019 09:59 PM AKST

RE: Proposed amended language for proposal 37 (submitted at the Lower Cook Inlet meeting as RC9 by request of Board Member Wood)

The commercialized sport fishery has been allowed to expand to unsustainable levels. Millions of hatchery kings are released to the Gulf of Alaska to compete directly with wild kings and now we see a proposal to interfere with the Kodiak food fishery which produces millions of pounds of food. It is known that only a very small proportion of kings caught around Kodiak are of Cook Inlet origin. While this proposal could create many problems for Kodiak's fishery it would have very little positive impact on kings returning to Cook Inlet.

Adam Barker
Kashvik Fisheries LLC F/V Allie B
12/27/2019 01:51 AM AKST

RE: PROPOSAL 66 Create a Kodiak Area Salmon Management Plan

Adam Barker 41584 Manson drive Homer AK 99603 12/26/19 Chairman Reed Moriskey Alaska Board of Fisheries Board Support Section PO Box 115526 Juneau, AK 99811-5526 RE: Proposal 66 Dear Chairman Morisky and Board of Fish Members: My name is Adam Barker, Im 42 years old and have been fishing in Kodiak since 1988, while my home residance has been Homer since 1981. I grew up on the back deck of my dads boat in Kodiak until I graduated high school in 1995 and whent to Chignik to make the big money. I bought my own Kodiak seine opperation in 1995 (only area i could afford) where i continue to fish today raising my two kids on the back deck. I strongly advise the board to reject proposal 66. this proposal is a slap in the face to fish and game, saying they are not doing a good job and need to re write the management plan. This proposal is a prime example of UCIDA trying to shut us down because of all the restrictions they have been facing with allocation issues with different user groups in Cook Inlet. I was told by a UCIDA member "We have been suffering from the sport fisherman taking more from us, so its time for us to take from you." Meanwhile they over escape the Kenai river with sockeye every year theirs a decent run. I strongly advise the Board to reject this extreme proposal written by a group of extremest. The Kodiak Management Plan has been in affect for over 40 years and is proven to work as Kodiak stocks thrive. please do not make changes because the Cook Inlet Driffters are blaming Kodiak seiners for their miss managed fishery. Thank you for giving me the opportunity to comment . I hope the Board continues to apply consistency in its application of the guiding policies such as the mixed stock fisheries policy, and the sustainable fisheries policy. Sincerely, Adam Barker

Adelia Myrick

12/26/2019 10:33 AM AKST

RE: PROPOSAL 66 Create a Kodiak Area Salmon Management Plan

Dear Board of Fish members: I am writing in opposition to proposal 66 for many reasons. As a 2nd generation setnetter, I have grave concerns about this complex and arbitrary proposal. The basis of this proposal is UCIDA's reference to a genetic stock study of Kodiak area sockeye in the years 2014-2016. However, I wish to emphasize that this study is not new information. Over the past 30 years the management plan for Kodiak and all its complex systems and users and species run timing have been developed with appropriate adjustments made to take into account the fact that our location places us in the path of other salmon from time to time. The point is that these plans have been made carefully and with a lot of input. To base an entire re-writing of the management plan on one study which itself states that it is not to be used as a management tool would be the epitome of bad science. If the proposal were put into affect it would create economic problems not just for seiners but for all of us who fish in Kodiak and are impacted by more crowded fishing areas. If we are indeed shut down, and the proposal states that inner bays can be fished to prevent over-escapement, I emphasize that that completely shuts out the setnetters because we are not allowed in the inner bays. We have a limited area in which we can fish. I urge you as a board to take into account how incredibly complex the Kodiak management system is and the many many years of crafting that have gone into our management plans. The study presents no new information and so it is clear that there it would be a knee-jerk reaction to make any changes. Thank you for your consideration, Adelia Myrick Uganik Bay Setnetter

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 66

Dear Chairman Morisky and Board of Fisheries Members,

I am Alex Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Wandering Star. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

The author of this proposal is citing a genetic study showing nothing new, simply a confirmation of something already known – that Cook Inlet origin sockeye sometimes swim through Kodiak waters. There are measures already in place (such as the North Shelikof Management Plan) that address this, to ensure that the vast majority of Cook Inlet- bound sockeye that do swim the Shelikof, make it through. Placing a cape to cape line on the mainland would keep Kodiak-area managers from maintaining the stability of local pink, silver, and chum salmon and raise serious concerns and precedents about the underlying foundation of common property fisheries in the State of Alaska.

Instead of an attempt to restructure the fisheries in a neighboring region, the Board's time would be better spent investigating the number of years the Kenai and Kasilof rivers have exceeded their escapement, and yet Cook Inlet drift-gillnetters and set-gillnetters still have minimal fishing time when in other regions there would be emergency openings to maintain the health of fish stocks and the rivers. For example, 2019 was a banner year, and yet commercial fishermen were forced to sit on their hands while the Kenai and Kasilof rivers were over-escaped by the hundreds of thousands.

The Kodiak Management Plan is a solid plan that has a proven working track record. The author appears to have little care for the success and sustainability of the management plan in our region and how it allows for the harvesting of local sockeye, pinks, silvers and chums.

I wish all the best to the user-groups of the Cook Inlet Region and hope that in the near future the user groups and management will be able to work together for more peaceful fisheries and sustainable and strong runs in that region.

I strongly encourage the Board to reject proposal #66.

Thank you for your careful consideration,

Alex and Jaime Roth
F/V Wandering Star
Homer, AK

Anitra Winkler

12/26/2019 11:01 AM AKST

RE: PROPOSAL 66 Create a Kodiak Area Salmon Management Plan

Hello Board of Fish Members, I am writing in regards to proposal 66 but really all the anti-Kodiak proposals. I grew up in remote interior Alaska, my parents were trappers. When I got to be highschool aged we moved to the small town of Cantwell and I went to the school and got into dog mushing, competing in Jr. Iditarod four times. Immediately after graduating from highschool I got a job as a setnet crew in Kodiak. I didn't know anything about fishing or the water but I loved the environment and had a great time. Fast forwarding I kept fishing in the summer all through college (I went to UAS in Juneau) and after graduating I bought a setnet site myself. I am now 26 and have had my site for three years and while not without its challenges I've enjoyed it. Setnetting is not a high volume fishery to begin with, so far I've been able to make enough from it to make my payments and cover my expenses and then I fish halibut as a crewmember and work various other jobs in the winter to make ends meet. If these proposals were to go through, either affecting me by limiting my fishing time or by increasing seine fleet pressure, the fishery would become unviable particularly for a young person. It is already difficult to make things work on the even years it would take very little to upset the applecart so to speak. I won't write a long thing as I think and hope that there are lots of letters to read, so don't assume length has a correlation to commitment. I feel it would be wrong to ruin one fishery to marginally help another one, as well as a terrible precedent. Thank you for your time, Anitra Winkler

RE: PROPOSAL 66 Create a Kodiak Area Salmon Management Plan

Bo Calhoun 57177 Zulu Ct. Homer, AK 99603 12/26/19 RE: Opposition to Proposal #66 Dear Chairman Morisky and Board of Fish members: I'm a third generation Kodiak salmon seiner. I was born in Homer, raised in Port Lions and Homer, and continue to live in Homer. My wife and I hope to raise our two sons on our family seine boat in a healthy Kodiak salmon fishery. I respectfully request you reject Proposal #66. The current Kodiak Management Plan has evolved over decades and is working as intended to promote responsible harvest of local stocks, while also limiting harvest of Cook Inlet sockeye (North Shelikof Straight Management Plan) and Chignik sockeye (Cape Igvak Management Plan). This proposal would create significant difficulty in management, regulation, and enforcement of the Kodiak fishery. Please reject proposal #66. Thank you for taking the time to read public comments. Sincerely, Bo Calhoun

Brad and Kay Underwood

12/24/2019 10:09 AM AKST

RE: PROPOSAL 66 Create a Kodiak Area Salmon Management Plan

Vote no on Proposal 66 The foundation of this proposal rests on a 3 year-study to determine the genetic composition of the Kodiak salmon harvest. This could provide the department with additional insight as how to best manage commercial fishing periods to achieve optimal salmon escapement targets. The problem with this study lies with its duration. Salmon migration compositions can vary significantly on a year-by-year basis. For a study of this nature to be statistically significant, it would have to take place over a much longer timeline. The degree of fluctuation possible in this 3-year analysis is probably high. The short duration of this study renders it unusable for implementing management changes. It is common knowledge that Kodiak is a mixed stock fishery. To have any relevance as a salmon management tool, this study would need to take in a much longer timeframe of 20 years or more. To make allocative changes relying on data from such a short period of time is not scientifically sound. It would be irresponsible to base decisions on incomplete data. Kodiak has a long-established traditional salmon fishery and nothing in this proposal meets the allocation criteria as determined by the Board of Fish. The only sensible decision to be made at this time is to vote no on proposal 66. Brad and Kay Underwood

Brian Mcwethy
KSA
12/23/2019 09:38 AM AKST

RE: PROPOSAL 66 Create a Kodiak Area Salmon Management Plan

My name is Brian Mcwethy. I was born and raised in kodiak. I live in kodiak with my family and we all depend on my income. I fished with my father on his seiner growing up and now I own and operate a seiner. Salmon seining and tanner crab fishing in kodiak are currently our only sources of income. I plan to try and continue to fish the kodiak waters and possible my children will have the opportunity to. I hope the current and historical areas we fish aren't taken from us and the future generations of kodiak. I oppose proposal 66. This would take away an unprecedented amount of fishing area that kodiak fishermen have historically fished in. This would seriously affect the kodiak seiners and setnetters as it would consolidate more gear to setnet areas. All area k fishermen would be affected and not be able to fish historical areas.

Charles and Theresa Peterson
1850 Three Sisters Way
Kodiak, AK 99615

December 26, 2019

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE**: Oppose Proposal 66**

Dear Chairman Morisky and Board of Fish members:

We moved to Kodiak in the 1980's to pursue the opportunity for a livelihood in commercial fishing. We found what we were looking for, a chance to make a living off the sea and stayed, raising three children and developing deep relationships in our island home. Kodiak is a community built on fish and the size of the fleet, the processing infrastructure, the support services and the overall health of our coastal community is dependent on sustainable fisheries. Salmon fishing is the mainstay of our commercial fishing business and without it we would not have the financial means to stay in Kodiak, maintain a vessel and prosecute other fisheries. We own a 42', shallow draft seine vessel that primarily operates in the Alitak district. Our son now runs the boat and Charles and I run a setnet site in Alitak Bay. We choose to diversify our salmon fishing with participation in both the seine and setnet fishery so our son can run the boat with his crew and the rest of the family can prosecute the fishery from a shore-based operation.

We are opposed to proposal 66 and in reading through the proposed caps there is little to no understanding of the salmon fishery around Kodiak Island. The current Kodiak salmon management Plan provides for the harvest of local stocks in addition to local pink and chum salmon. The harvest triggers are unrealistic and arbitrary. Kodiak based fishermen would reach the caps on local stocks alone and be prevented from harvesting pink and chum salmon. The thesis for the proposal references the genetic study and uses the limited study for the basis of a major management change for which the study was not intended. The limited genetic study was focused on sockeye yet the proposed closure time would severely curtail pink and chum harvests. The magnitude of the impacts to Kodiak area salmon fisheries is concerning to say the least: seiners would be forced into bays with hopes of avoiding over escapement, terminal fisheries would open to mitigate over escapement resulting in less quality, gear conflicts would between user groups, small seiners who tend to operate in the bays would be marginalized by an action to move larger seine vessels in, fishing patterns that have been in place for decades would change, the list goes on for unknown gains to a region 400 miles away.

The State of Alaska clearly benefits from local area management plans and area managers must have the ability to manage.

Sincerely,

Charles and Theresa Peterson

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 66

Dear Chairman Morisky and Board of Fisheries Members,

My name is Chris Johnson and I am a second-generation fisherman in Kodiak, Alaska. I grew up fishing on my dad's boat and got my first crew job working for someone else two weeks after I graduated high school. I haven't missed a salmon season since. I bought into the fishing industry in 2011 with the purchase of a 25-foot jig boat that I worked for two years in the winter and spring months while I still crewed for salmon in the summer. Access to the jig fisheries focusing on cod and rockfish was the only way that I could afford to move into the salmon fleet with a 38-footer in 2013. After the recent cod collapse, I now primarily rely on salmon seining and live here year-round with my wife.

The proposed Kodiak Area Salmon Management Plan and harvest triggers are completely unrealistic. Kodiak fishermen would reach harvest caps incredibly quickly and this plan would decimate the Kodiak salmon fishery that is economically and culturally so valuable for our region and for the State of Alaska. UCIDA is grasping at a solution for a proposed problem that they are saying can be supported by the 2014-2016 genetic study. However, the genetic sockeye identification study undertaken in the Kodiak Management Area really does not provide "new" information. The study merely confirmed what was already known about the presence of Cook Inlet sockeye in the Kodiak area and demonstrated that amounts vary greatly from year to year. There is no basis for additional restrictions on Kodiak's salmon fishery because the presence of Cook Inlet sockeye in the Kodiak Management Area has already been accounted for in current management. Kodiak's North Shelikof Management Plan was created so that Kodiak fishermen would share the "conservation burden" with Cook Inlet by limiting fishing in that area.

Taking away any fishing opportunity from Kodiak fishermen, particularly from the small boat fleet, would have a direct negative impact on new entrants trying to gain a foothold in this industry, fishing families trying to get by, and fishing support businesses in our region. I'm proud to call Kodiak home and am working to protect our fishing way of life.

Sincerely,
Chris Johnson
F/V North Star

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 66

Dear Chairman Morisky and Board of Fisheries Members,

My name is Danielle Ringer and I appreciate the opportunity to comment on proposals before the Board in writing and in person for the Kodiak finfish meeting. I live in Kodiak with my husband and we own and operate the 38-foot F/V North Star. We chiefly rely on salmon seining and cod and rockfish jigging to maintain our fishing way of life and ability to live on Kodiak Island. I grew up in Homer learning to harvest and process fish from my parents in Kachemak Bay and dipnetting on the Kenai River. I hold a Master's degree from the University of Alaska Fairbanks in Political Ecology of Fisheries and was one of the researchers on the *Graying of the Fleet in Alaska's Fisheries: Defining the Problem and Assessing Alternatives* study in the Kodiak region.

The proposed Kodiak Area Salmon Management Plan and harvest triggers are completely unrealistic. Kodiak fishermen would reach harvest caps incredibly quickly and I believe this plan would decimate the Kodiak salmon fishery that is economically and culturally so valuable for our region and for the State of Alaska. UCIDA is grasping at a solution for a proposed problem that they are saying can be supported by the 2014-2016 genetic study. However, the genetic sockeye identification study undertaken in the Kodiak Management Area really does not provide "new" information. The study merely confirmed what was already known about the presence of Cook Inlet sockeye in the Kodiak area and demonstrated that amounts vary greatly from year to year. There is no basis for additional restrictions on Kodiak's salmon fishery because the presence of Cook Inlet sockeye in the Kodiak Management Area has already been accounted for in current management. Kodiak's North Shelikof Managment Plan was created so that Kodiak fishermen would share the "conservation burden" with Cook Inlet by limiting fishing in that area.

I see no biological, scientific, historical, economic, nor sociocultural reasons that could justify the Board making any changes to the salmon management plans in the Kodiak Management Area, which would create ripple effects negatively impacting Kodiak fishermen, processing workers, and community businesses. Thank you for your consideration of my comments and I look forward Board of Fisheries members spending time in our fishing community during the Kodiak meeting.

I humbly request the Board to reject this proposal.

Respectfully,
Danielle Ringer, M.A.
F/V North Star

December 22, 2019
Darren Platt (FV Agnes Sabine)
10708 Birch Cir
Kodiak, AK 99615

Alaska Board of Fisheries
Board Support Section
PO Box 115526
Juneau, AK 99811-5526

RE: **Oppose Proposal 66**

The members of the Alaska Board of Fisheries,

I'm writing in **opposition to proposal 66**. This proposal would put countless fishermen out of business in the Kodiak area and impose severe economic harm to the region and industry.

I'm a resident of Kodiak and the owner/operator of a 42-foot commercial fishing vessel. I participate in the local salmon, tanner crab, and herring fisheries.

Thank you,
Darren Platt

Dave Kubiak
F/V Lara Lee
12/27/2019 10:37 PM AKST

RE: PROPOSAL 66 Create a Kodiak Area Salmon Management Plan

I have been participating in Kodiak salmon fisheries since 1965, when I fished for Ole Harder running a gill net at Cape Ugat on the westside of Kodiak when I was 16 years old. I bought my first SO1K salmon seine permit in 1987. Like all these anti-Kodiak proposals, this one is clutching at straws. It seems to me that now that Kodiak has had a couple of decent salmon seasons, the other areas, Cook Inlet and Chignik especially, who are having a rough go lately have decided Kodiak is to blame. I remain hopeful that the Board of Fish will do their duty to due diligence and recognize these proposals for what they are, a misguided attempt to put the blame on Kodiak salmon fishers for problems of cyclical run strength, ocean survival, and other natural phenomena. The policies currently in effect have been carefully crafted over many years to take into consideration the issues of mixed stocks and good management. We have plowed this ground so many times before, it is time to give it a rest. Thank you.

Dave Kubiak
F/V Lara Lee
12/21/2019 03:05 PM AKST

RE: PROPOSAL 66 Create a Kodiak Area Salmon Management Plan

Unrealistic. Triggers would be reached by the catching of local stocks which would constraining the catching of local stocks. Again we have a proposal of a Draconian solution for a non-existent problem.

Donald Lawhead

12/26/2019 11:29 PM AKST

RE: PROPOSAL 66 Create a Kodiak Area Salmon Management Plan

Creating a new mangement plan would further burden the ADFG. The current budget cuts have made it hard for the ADFG to mange the plans currently in place.

Fred Stager

F/V Lady Lu

December 12, 2019

Alaska Board of Fisheries Board Support Section

P.O. Box 115526 Juneau, AK 99811-5526

RE: Opposition to Proposal 66

Dear Chairman Morisky and Board of Fish Members:

This proposal is a joke and the Kodiak fleet (as usual) is the punchline. The harvest caps on local sockeye alone would trigger a shutdown off the fishery. It disregards the historic validity of our fishery and the Fish Boards Mixed Stock policy, fantastically recommending the Board eliminate the decades of work and compromise which involve the Kodiak Salmon Management Plan, and throw it all away so the fishery can be run for the benefit of the Cook Inlet Drift Fleet. **Please reject proposal 66.**
Thank You- Fred Stager

Garrett kavanaugh

12/27/2019 05:27 PM AKST

RE: PROPOSAL 66 Create a Kodiak Area Salmon Management Plan

Dear Chairman and Members of the Board, As a young fishermen who is working their way into the Kodiak Salmon fishery this proposal will cause Kodiak fishermen to lose a substantial amount of their catch. I have been investing into the Kodiak salmon fishery as much as possible, in 2019 I purchased a Kodiak salmon permit. I ran a seiner for the month of august. I plan on running the same boat for the entire 2020 salmon season in Kodiak.This proposal will make me reconfigure my entire plan. I am a cape fishermen and the boat i have acquired is a boat to fish the capes. It is not shallow and the net we have is built for the way we have historically fished in Kodiak. (on the capes This proposal would make my boat unrealistic to fish in Kodiak and the way i have grown up learning how to fish Kodiak obsolete . These proposals are re-allocations of Kodiak historical catch. Kodiak has always had intercept fisheries and we already have management plans in place that have been effective for the Kodiak salmon fishery. Please help ensure the future for young fishermen entering into the Kodiak Salmon fishery, and the people who have been investing and are established in the fishery. Thank you for considering these comments, Garrett Kavanaugh

Iver Holm

12/28/2019 12:33 AM AKST

RE: PROPOSAL 66 Create a Kodiak Area Salmon Management Plan

Dear Chairman Morisky and Board of Fish members: I am 31 years old and a life long resident of Kodiak. I grew up set netting in Uganik on the west side of the island with my mother until i was 14. I then started seining with my father until I was able to buy my own Kodiak seine operational the age of 27. Please oppose proposal 66. thank you for your time sincerely
Iver Holm

James Calhoun

12/26/2019 04:47 PM AKST

RE: PROPOSAL 66 Create a Kodiak Area Salmon Management Plan

I have been intimately involved in the Kodiak seine fishery since 1968 to present. Presently my son is fishing the Kodiak area and it is my desire to have my grandsons be able to participate in a healthy Kodiak fishery if they so desire. Throughout my career I have come to the conclusion that the ADF&G management for Kodiak has been stellar and has kept the stocks in Kodiak healthy overall with the current management plan. Proposal 66 shows a complete lack of understanding of the complexity of the Kodiak fishery. The present management plan has evolved over decades. The Cape Igvak plan protects Chignik's runs when they are weak. The North Shelikof management plans minimizes Cook Inlet stock catches. The management plan also provides opportunity to harvest local stocks which remain heathly because of the management plan. Roughly half of Kodiak seine permits are not used and are relatively cheap pointing out that it is not easy to make a living in Kodiak. Please oppose proposal 66 . thank you

Jamin Hall

12/27/2019 10:57 PM AKST

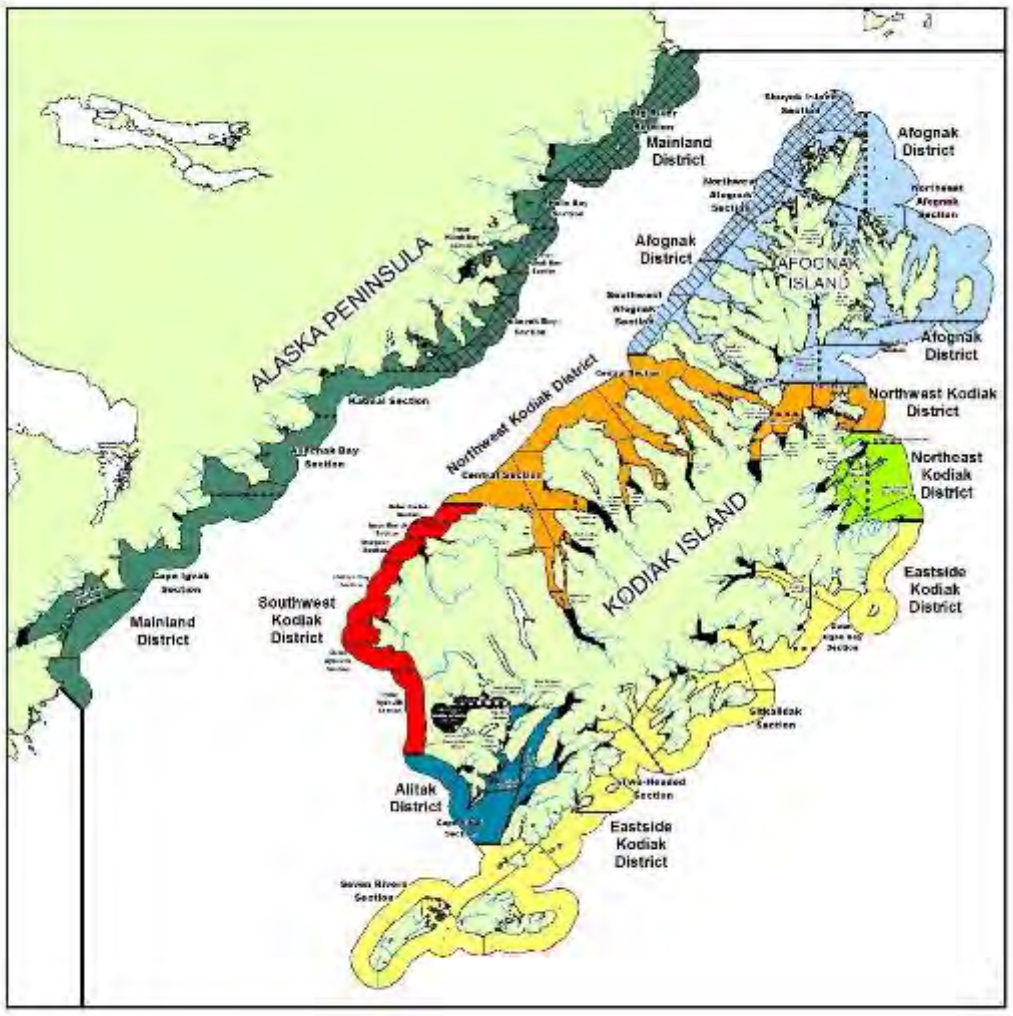
RE: PROPOSAL 66 Create a Kodiak Area Salmon Management Plan

My name is Jamin Hall, my wife and I have a set net site in Uganik Bay. I am writing in opposition to proposal 66. I believe this proposal is based upon a study which was very narrow in scope and not intended to be used as support for such a far-reaching proposal. This proposal if approved will have disastrous effects on the Kodiak salmon fishery in general, and may cause some fishermen, possibly myself and my family, to have to quit the fishery. I have fished for salmon in Kodiak since 2005, and have owned our setnet site on Kodiak's west side since 2014. My wife grew up setnetting in Uganik, and now we are raising our son and (soon a second child) as Kodiak fishermen. Fishing throughout the summer in Kodiak is integral to our way of life, and has financially sustained us.

ken Christiansen
F/V Mary Ann
12/26/2019 09:03 PM AKST

RE: PROPOSAL 66 Create a Kodiak Area Salmon Management Plan

Targeted interception of Cook Inlet bound sockeye ended in 1989 with creation of North Shelikof Sockeye Management plan Any change to a management plan should be based on scientific reason. Outcry from one user group to take from another is simply a knee-jerk reaction with a sense of immediate gratification but not necessarily improved results.



Economic Analysis Proposal 66

Kodiak Salmon Workgroup

Key Findings

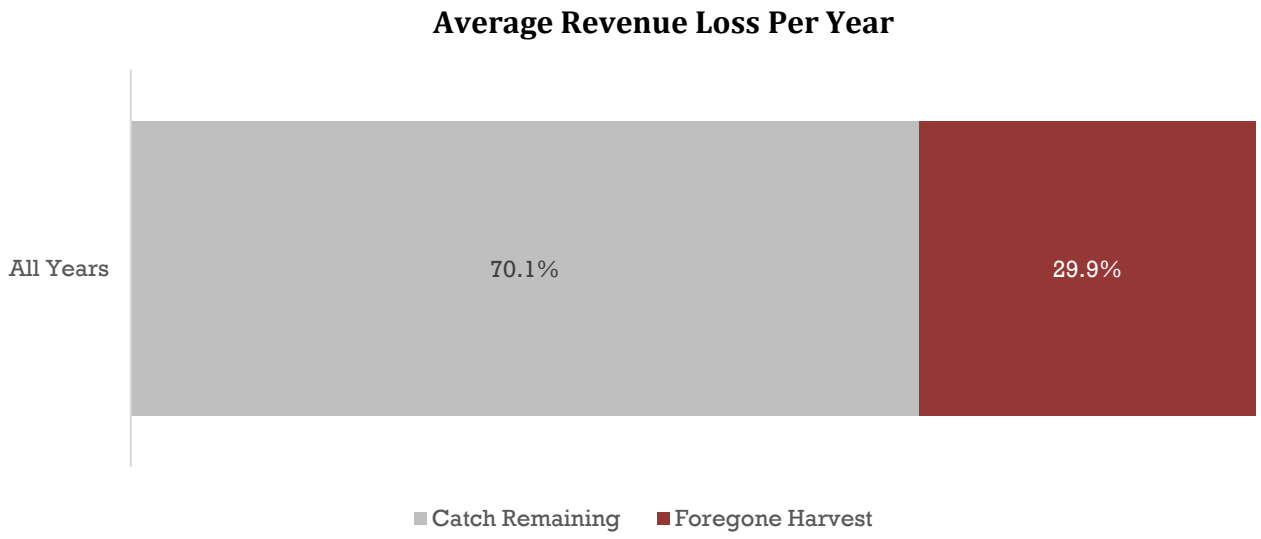
- Overall, proposed changes from Proposal 66 would result in an annual economic loss in the Kodiak Borough of more than $4.5 million dollars.
- On average, restrictions to the Westside would result in more than 50% of the current sockeye catch being eliminated.
- The complete implementation of proposal 66 (Cape Alitak, Westside, and Eastside area restricted fishing) would result in an average foregone harvest worth $3.12 million ex vessel price per year among affected fisherman.

$3.12 Million Dollars Yearly Direct Loss to Fishermen

- Loss per permit holder affected ranges from $23,600 to $76,100 per year (average $44,600, median $36,500), depending on number of affected fisherman and number of closure days in six-year study period (2014-2019).

$4.67 Million Dollars Annual Economic Loss in the Kodiak Borough

- Sockeye foregone harvest is estimated to be 1.5 million pounds per year worth an average of $1.83 million per year, using yearly prices.
- Species specific foregone harvest estimated to range between $9,500 (chinook) to $3.2 million (sockeye) per year.



Background

The 2019-2020 Board of Fish, Kodiak Finfish Proposal 66 will limit the number of harvestable sockeye salmon in the Kodiak-Area by creating a new Kodiak Area Management Umbrella Plan. Kodiak Finfish Proposal 66 seeks additional weekly and seasonal catch limits for the seine sockeye salmon fishery in the Eastside Kodiak, Alitak District, and Westside Kodiak districts during the last week of June and four weeks in July.

The proposed plan requires fishing to cease or be restricted to a specified region inside bays and headlands when the weekly harvest or catch limit is projected or achieved. When the catch limit is met, the department will restrict the fishery by emergency order to .5 nm inside a headland to headland line or terminal harvest area.

Weekly catch limits of salmon will apply to the total seasonal catch limits. When 85% or more of the seasonal harvest has been met, all fishing will be limited to inside bays or headland lines.

There are three impacted harvest areas defined by proposal 66: Alitak, Westside, and Eastside. These correspond to existing management areas Alitak District, Southwest and Northwest Kodiak Districts, and Eastside Kodiak District. Southwest Afognak District is occasionally included in "Westside Kodiak" harvest reporting but is excluded from this analysis as it is not included in proposal 66.

Link to Proposal:
https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2019-2020/proposals/66.pdf

Data Sources

Foregone harvest days count and pound data was provided by the State of Alaska, Department of Fish and Game daily harvest reports. Price data for 2014-2018 was provided from the State of Alaska, Department of Fish and Game *Commercial Operator's Annual Reports* (COAR). 2019 price data was not available through the COAR report at the time of this analysis. 2019 price data is estimated from the five-year average of the reported 2014-2018 price per pound per species (see methods below). Multipliers for indirect and induced economic impact were commissioned from the US Department of Commerce, Bureau of Economic Analysis specifically for the Alaska commercial fishing industry. Inflation rates are provided from the US Department of Labor, Consumer Price Index. Tax information is from the State of Alaska, Department of Revenue and the Kodiak Borough.

Data Methods

Economic impact is estimated using historical harvest data, between 2014-2019. Proposed closures only impact the seine fishery; all data used for closure dates and foregone harvest reflects only seine gear.

Proposal 66 defines specific weeks that catch limits would be imposed for 2017-2019. For data analysis in prior years, applicable time period was developed based on language in the proposal and guidance from Kodiak Salmon Working Group members. Table 1 shows the full list of affected weeks considered:

Table 1: Proposal 66 Weekly Closures by Year

2019	
Week 1:	June 23 thru June 29
Week 2:	June 30 thru July 6
Week 3:	July 7 thru July 13
Week 4:	July 14 thru July 20
Week 5:	July 21 thru July 27

2018	
Week 1:	June 24 thru June 30
Week 2:	July 1 thru July 7
Week 3:	July 8 thru July 14
Week 4:	July 15 thru July 21
Week 5:	July 22 thru July 28

2017	
Week 1:	June 25 thru July 1
Week 2:	July 2 thru July 8
Week 3:	July 9 thru July 15
Week 4:	July 16 thru July 22
Week 5:	July 23 thru July 29

2016	
Week 1:	June 26 thru July 2
Week 2:	July 3 thru July 9
Week 3:	July 10 thru July 16
Week 4:	July 17 thru July 23
Week 5:	July 24 thru July 30

2015	
Week 1:	June 21 thru June 27
Week 2:	June 28 thru July 4
Week 3:	July 5 thru July 11
Week 4:	July 12 thru July 18
Week 5	July 19 thru July 25

2014	
Week 1:	June 22 thru June 28
Week 2:	June 29 thru July 5
Week 3:	July 6 thru July 12
Week 4:	July 13 thru July 19
Week 5:	July 20 thru July 26

Daily harvest counts were analyzed to determine closure dates in each affected area for year, 2014-2019, if proposal 66 limits had been in effect. Each affected area was then examined to determine the SOA Fish and Game statistical areas that would be affected by the closures .5nm inland from headland to headland. KSWG helped develop a list of stat areas and estimated percentage of foregone harvest in each particular stat area based on local expertise and experience. Percentage of foregone harvest for each stat area was applied to all species harvested during the closure period.

Table 2: Estimated Percent of Foregone Harvest by Stat Area

Management District	Stat Area	Section	Percent loss under Proposal 66
Alitak	25710	Cape Alitak	**100%**
	25720	Cape Alitak	**100%**
Southwest Kodiak	25520	Outer Karluk	**100%**

	25510	Inner Karluk	**100%**
	25640	Sturgeon	**100%**
	25630	Halibut Bay	**100%**
	25625	Halibut Bay	**100%**
	25620	Outer Ayakulik	**100%**
	25615	Inner Ayakulik	**100%**
	25610	Inner Ayakulik	**100%**
Northwest Kodiak	25939	North Cape	**100%**
	25938	North Cape	**100%**
	25933	Central	**100%**
	25311	Central	**80%**
	25331	Central	**75%**
	25314	Central	**75%**
	25410	Central	**75%**
	25440	Central	**60%**
Eastside Kodiak	25890	Seven Rivers	**100%**
	25885	Seven Rivers	**100%**
	25880	Seven Rivers	**100%**
	25870	Seven Rivers	**100%**
	25840	Sitkalidak	**100%**
	25810	Sitkalidak	**100%**
	25945	Outer Ugak Bay	**100%**
	25946	Outer Ugak Bay	**100%**
	25940	Outer Ugak Bay	**100%**
	25860	Two-Headed	**75%**
	25944	Outer Ugak Bay	**75%**
	25855	Two-Headed	**60%**
	25830	Sitkalidak	**60%**

Foregone harvest is calculated as percentage adjusted sum of all species harvested during the potential closure dates in the affected stat areas. Foregone harvest counts and economic impact are stratified by area (Cape Alitak, Westside, and Eastside) and year.

The number of permit holders affected by proposal 66 is calculated as the maximum number of unique permits during the closure period in daily harvest records. As active permit data is de-identified, it is impossible to deduplicate permit records over the course of the season. This method likely undercounts the number of permit holders affected over the season by a small amount: some permit holders affected by the closure dates throughout the season may not have been actively harvesting during the peak days of the season.

Species specific prices per pound for each year between 2014-2018 were obtained from the Fish Game COAR for each individual year. The total net weight in the Kodiak area for each species for each season is divided by the respective net value.

Final 2019 COAR price per species data is not available. Species specific price for 2019 was estimated as a five-year average of available COAR data (2014-2018). Verification of 2019 data with

the KSWG provided spreadsheets using Icicle, Ocean Beauty, and Pacific season prices for 2017-2019 compared to COAR for 2017, 2018. The spreadsheet values varied from published COAR by both higher and lower values up to 20%. The five-year average was much closer to 2017 and 2018 prices than the spreadsheet averages and weighted averages for respective years. The sockeye 2019 season price per pound estimate may be biased downwards given the processor spreadsheet; the COAR numbers were up to 20% lower than provided spreadsheet, and the five-year average is 16% lower than 2019 processor spreadsheet.

Indirect and induced economic loss was calculated from Regional Input-Output Modeling System (RIMS II) type I and type II multipliers. These take into account increase (in this case local loss) in regional economic activity due to change in industry specific earnings. For this report, the fisheries industry specific multipliers were used. Selected industry multipliers are specific to Alaska.

All values are adjusted for inflation and shown in 2019 dollar values.

All Areas Results & Data Tables

Direct Losses – All Areas

All years examined, 2014-2019, will be affected by Proposal 66 resulting in almost 30% of the current catch being restricted. Overall, these changes would result in an economic loss to the Borough of almost 4.7 million dollars a year.

$3.12 Million Dollars Yearly Direct Loss to Fishermen

$4.67 Million Dollars Annual Economic Loss in the Kodiak Borough

Direct revenue lost to the Kodiak Borough per year:

Direct loss per affected year:	**$3.12 Million**
Loss from sockeye fishery:	$1.83 Million
Fisheries employment impact:	27.5 jobs per year
All employment impact:	34.5 jobs per year
Indirect community loss:	$646,892
Induced community loss:	$911,444

Total Annual Borough Loss: $4,674,383

Proposal 66 would have impacts throughout the Kodiak Borough. The direct loss to fishermen would be $3.12 million per year. Of the total loss to the fishery, the limitation on the sockeye fishery comprise the majority of the impact, accounting for $1.83 million of the loss with $1.29 million of the total loss distributed among other salmon species.

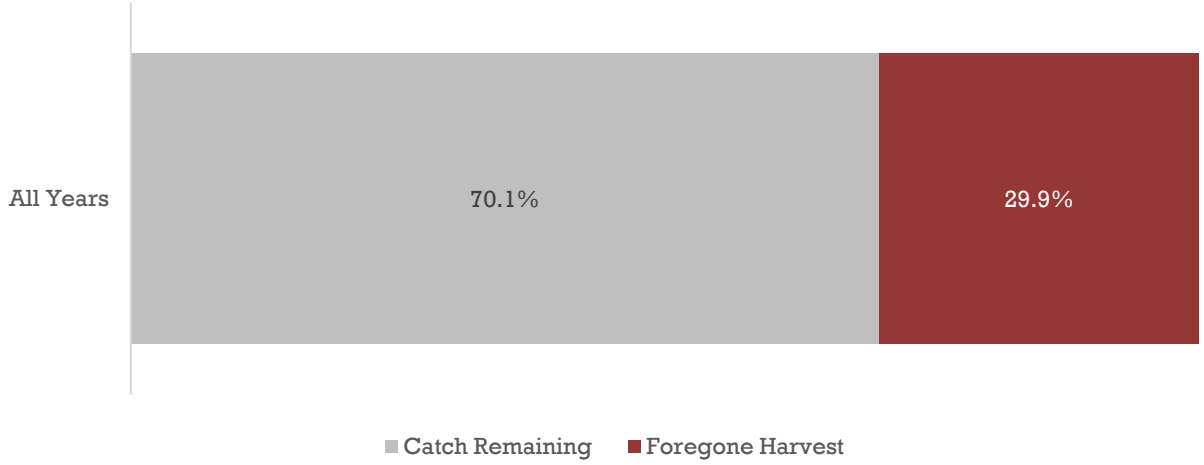
The direct impact of this proposal will result in a loss of 27.5 fisheries specific jobs and a total of 34.5 jobs overall in the Kodiak Borough per year. In addition to the direct loss impact of $3.12 million, there is a further indirect loss of $647k as a result of lost business to business economic activity for the community from purchases such as fuel, gear, and supplies. There is an additional

$911k of induced loss in the community resulting from the lost direct and indirect economic activity (total $3.76 million) and reduced labor market. This impact results in a total loss to the community from direct, indirect, and induced losses of $4.67 million dollars per year.

Fisheries Loss – All Areas

On average, restrictions of all areas during the effected years would result in almost 30% of the current catch being eliminated.

Chart 1: Average Revenue Loss Per Year



Over the last 6 years 2014-2019, there have been four years where the fisheries losses from these increased restrictions would result in a loss of more than $2 million of foregone ex vessel value to the fishery.

The sockeye fishery would experience ex vessel losses of more than $2 million for three of the affected years.

Chart 2: Total Fishery Loss 2014-2019

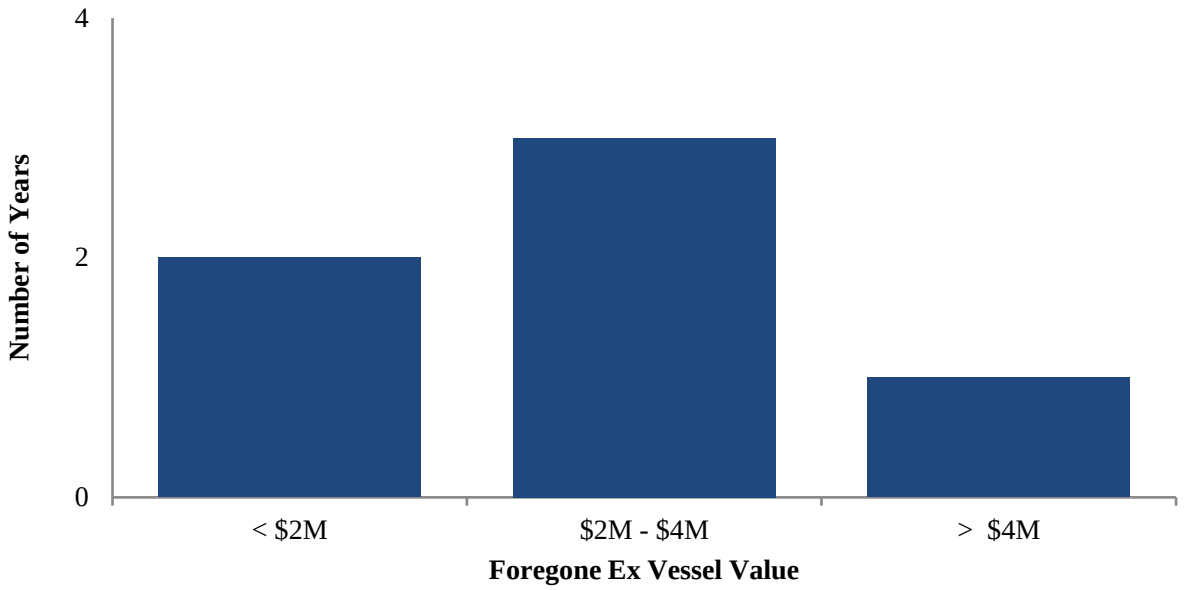
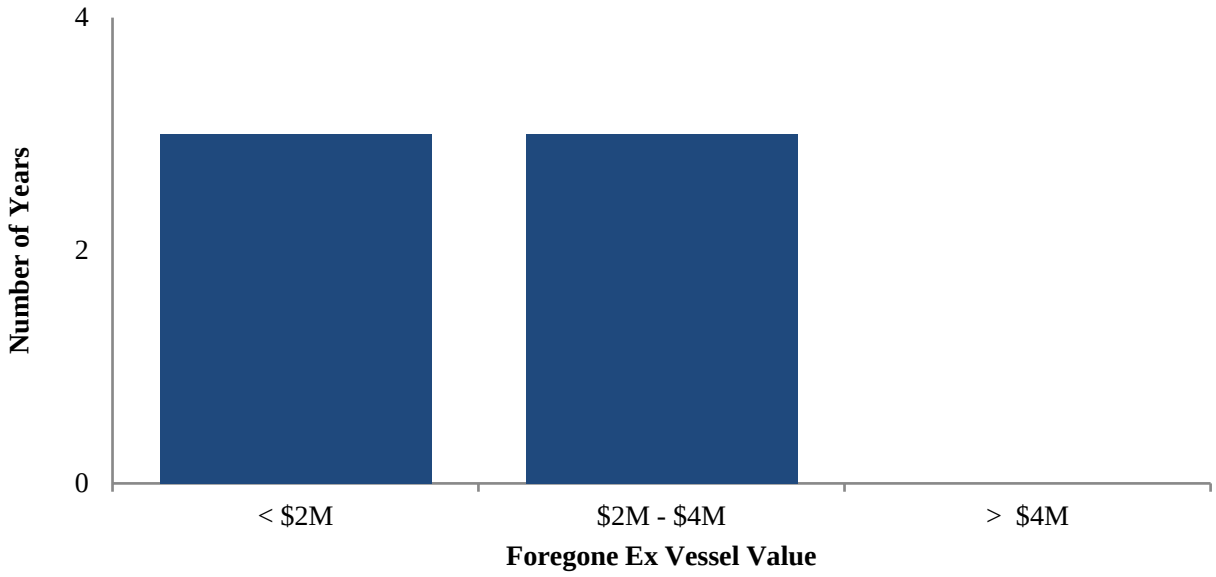


Chart 3: Total Sockeye Loss



The mean direct loss for all species per year is $3,116,048 with a median loss of $3,643,687. If these restrictions were in place the greatest impact would have been in 2019 with a loss of $4,571,609 and the least impact would have been in 2018 with a loss of $1,111,439.

Table 3: Direct Loss of Proposal 66 Implementation

Year	Direct Loss All Species	Direct Loss Sockeye
2014	$3,991,471	$3,263,981
2015	$3,805,036	$2,356,085
2016	$1,734,395	$1,379,175
2017	$3,482,337	$921,411
2018	$1,111,439	$845,043
2019	$4,571,609	$2,228,179
Mean	**$3,116,048**	**$1,832,312**
Median	**$3,643,687**	**$1,803,677**
Min	**$1,111,439**	**$845,043**
Max	**$4,571,609**	**$3,263,981**

Table 4: Direct Loss of Proposal 66 Implementation Per Fishermen

	Average Loss Per Fishermen – All Species	Average Loss Per Fishermen – Sockeye Only
Mean	**$44,620**	**$25,066**
Median	**$36,485**	**$23,721**
Min	**$23,648**	**$16,454**
Max	**$76,193**	**$37,136**

Based on the number of active permits per year, individual fishermen would experience a mean direct loss for all species per year of $44,620 with a median loss of $36,485. If these restrictions were in place the greatest impact would have been in 2019 with a loss of $76,193 per fishermen with the least impact in 2018 with an average loss of $23,648.

Table 5: Loss Per Affected Permit Holder

Year	Permits	Loss per Permit	Total Value Foregone Harvest	2019 Inflation Adjustment
2014	104	$38,380	$3,675,388	$3,991,471
2015	110	$34,591	$3,506,945	$3,805,036
2016	53	$32,724	$1,617,906	$1,734,395
2017	56	$62,185	$3,319,673	$3,482,337
2018	47	$23,648	$1,085,389	$1,111,439
2019	60	$76,193	$4,571,609	$4,571,609
Average		**$44,620**	**$3,555,382**	**$3,116,048**

Foregone Tax Revenue – All Areas

State Taxes	
Fisheries Business Tax (50% Share)	$49,857
SET Tax	$62,321
Total	**$112,178**
Borough	
Resource Severance Tax	$33,498
Fisheries Business Tax (Share of 50%)	$15,921
Total	**$49,419**

Cities (Share of Fisheries Business Tax)	
Akhiok	$3,715
Kodiak	**$14,837**
Larsen Bay	$3,713
Old Harbor	$3,986
Ouzinkie	$3,853
Port Lions	$3,831
Total	**$33,936**

The foregone harvest due to proposal 66 implementation would have tax implications for state, borough, and city budgets. The state implements two relevant taxes in the region: the fisheries business tax (which is shared with local governments) and the salmon enhancement tax (SET). Fisheries business tax rates vary by type of processing activity and the proportion of each is estimated from the State of Alaska's Annual Tax Report for FY18. The salmon enhancement tax rate is 2% in the Kodiak region. The Borough implements a resource severance tax of 1.075% and receives a share of the fisheries business tax from the state. The local city governments also receive a share of the fisheries business tax from the State of Alaska. Borough and city shares of the fisheries business tax estimated from the Borough's FY18 annual tax report.

The implementation of proposal 58 would result in average yearly tax losses of $112,178 to the State of Alaska, $49,419 to the Kodiak Borough, and $14,837 to Kodiak City.

Loss by Species – All Areas

Table 6: Sockeye Foregone Harvest

Year	Foregone Harvest - lbs	Sockeye Price	Foregone Harvest Value	2019 Inflation Adjustment
2014	1,642,696	$1.83	$3,005,507	$3,263,981
2015	2,339,730	$0.93	$2,171,507	$2,356,085
2016	1,008,726	$1.28	$1,286,544	$1,379,175
2017	580,650	$1.51	$878,371	$921,411
2018	457,932	$1.80	$825,238	$845,043
2019	1,516,187	$1.47	$2,228,179	$2,228,179
Total	**7,545,920**		**$10,395,346**	**$10,993,874**

Table 7: Chum Foregone Harvest

Year	Foregone Harvest - lbs	Chum Price	Foregone Harvest Value	2019 Inflation Adjustment
2014	309,123	$0.53	$163,580	$177,648
2015	559,333	$0.38	$213,325	$231,457
2016	137,215	$0.34	$46,261	$49,592
2017	2,291,226	$0.57	$1,314,315	$1,378,717
2018	215,205	$0.66	$142,487	$145,906
2019	253,158	$0.50	$125,740	$125,740
Total	**3,765,260**		**$2,005,707**	**$2,109,060**

Table 8: Pink Foregone Harvest

Year	Foregone Harvest - lbs	Pink Price	Foregone Harvest Value	2019 Inflation Adjustment
2014	1,283,874	$0.33	$425,484	$462,075
2015	4,083,889	$0.25	$1,003,482	$1,088,778
2016	441,843	$0.47	$208,554	$223,570
2017	2,399,904	$0.43	$1,027,773	$1,078,134
2018	191,367	$0.49	$93,714	$95,963
2019	5,477,262	$0.39	$2,154,860	$2,154,860
Total	**13,878,140**		**$4,913,867**	**$5,103,380**

Table 9: Coho Foregone Harvest

Year	Foregone Harvest - lbs	Coho Price	Foregone Harvest Value	2019 Inflation Adjustment
2014	104,630	$0.67	$70,432	$76,489
2015	269,498	$0.38	$103,625	$112,433
2016	92,663	$0.78	$72,568	$77,793
2017	111,963	$0.84	$93,598	$98,184
2018	20,018	$1.10	$22,074	$22,604
2019	69,152	$0.76	$52,271	$52,271
Total	**667,925**		**$414,568**	**$439,774**

Table 10: Chinook Foregone Harvest

Year	Foregone Harvest - lbs	Chinook Price	Foregone Harvest Value	2019 Inflation Adjustment
2014	10,800	$0.96	$10,385	$11,278
2015	22,038	$0.68	$15,007	$16,283
2016	4,392	$0.91	$3,979	$4,265
2017	7,334	$0.77	$5,616	$5,891
2018	2,429	$0.77	$1,877	$1,922
2019	12,918	$0.82	$10,559	$10,559
Total	**59,911**		**$47,424**	**$50,199**

Cape Alitak Results & Data Tables

Direct Losses – Cape Alitak

All years examined, 2014-2019, will be affected by Cape Alitak provisions in Proposal 66 resulting in more than 15% of the current catch being restricted. Overall, these changes would result in an economic loss to the Borough of $770 thousand per year.

$514 Thousand Dollars Yearly Direct Loss to Fishermen

$770 Thousand Dollars Annual Economic Loss in the Kodiak Borough

Direct revenue lost to the Kodiak Borough per year:

Direct loss per affected year:	**$514 Thousand**
Loss from sockeye fishery:	$347 Thousand
Fisheries employment impact:	4.5 jobs per year
All employment impact:	5.7 jobs per year
Indirect community loss:	$106,690
Induced community loss:	$150,322
Total Annual Borough Loss:	**$770,933**

The Cape Alitak provisions of Proposal 66 would have impacts throughout the Kodiak Borough. The direct loss to fishermen would be $514k per year. Of the total loss to the fishery, the limitation on the sockeye fishery comprise the majority of the impact, accounting for $347k of the loss with $167k of the total loss distributed among other salmon species.

The direct impact of this proposal will result in a loss of 4.5 fisheries specific jobs and a total of 5.7 jobs overall in the Kodiak Borough per year. In addition to the direct loss impact of $514k, there is a further indirect loss of $107k as a result of lost business to business economic activity for the community from purchases such as fuel, gear, and supplies. There is an additional $150k of induced loss in the community resulting from the lost direct and indirect economic activity (total $620k)

and reduced labor market. This impact results in a total loss to the community from direct, indirect, and induced losses of $770 thousand per year.

Foregone Tax Revenue – Cape Alitak

The foregone harvest due to proposal 66 Cape Alitak changes would have tax implications for state, borough, and city budgets. The state implements two relevant taxes in the region: the fisheries business tax (which is shared with local governments) and the salmon enhancement tax (SET). Fisheries business tax rates vary by type of processing activity and the proportion of each is estimated from the State of Alaska's Annual Tax Report for FY18. The salmon enhancement tax rate is 2% in the Kodiak region. The Borough implements a resource severance tax of 1.075% and receives a share of the fisheries business tax from the state. The local city governments also receive a share of the fisheries business tax from the State of Alaska. Borough and city shares of the fisheries business tax estimated from the Borough's FY18 annual tax report.

The implementation of the Cape Alitak section of proposal 66 would result in average yearly tax losses of $18,501 to the State of Alaska, $8,150 to the Kodiak Borough, and $2,447 to Kodiak City.

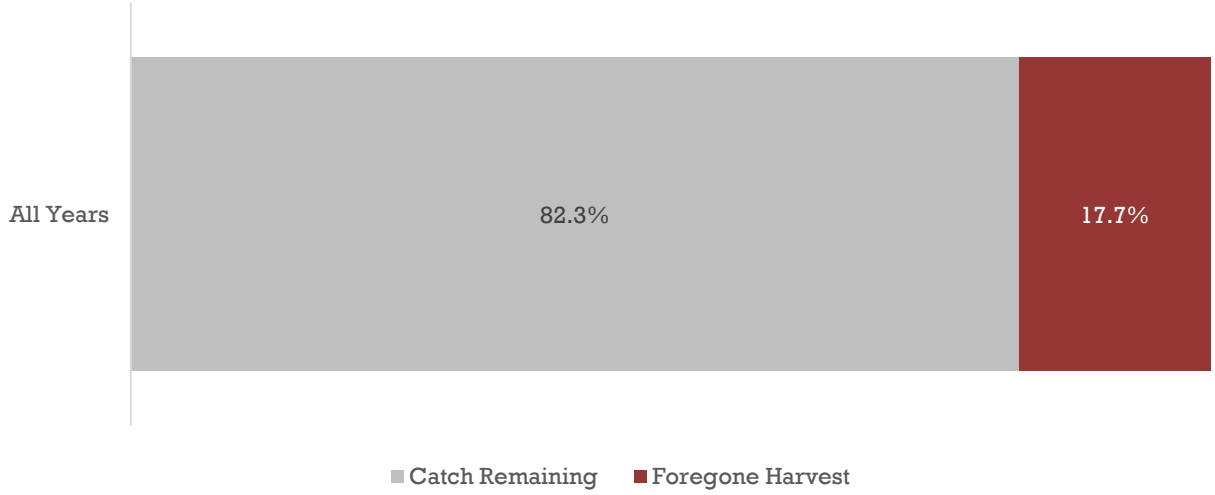
State Taxes	
Fisheries Business Tax (50% Share)	$8,223
SET Tax	$10,278
Total	**$18,501**
Borough	
Resource Severance Tax	$5,525
Fisheries Business Tax (Share of 50%)	$2,626
Total	**$8,150**

Cities (Share of Fisheries Business Tax)	
Akhiok	$613
Kodiak	**$2,447**
Larsen Bay	$612
Old Harbor	$657
Ouzinkie	$636
Port Lions	$632
Total	**$5,597**

Fisheries Loss – Cape Alitak

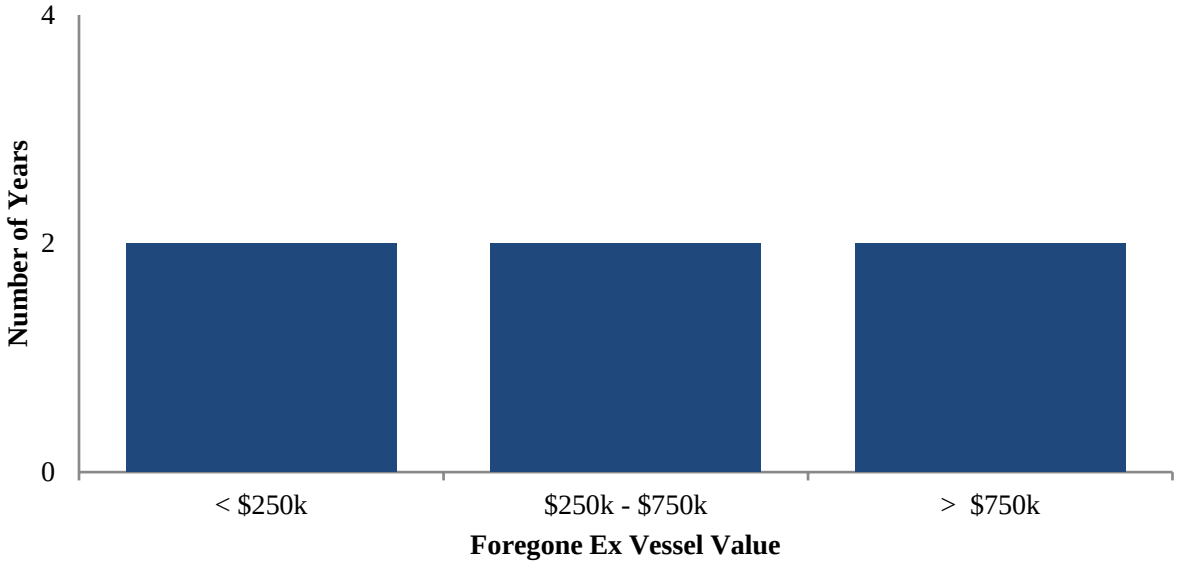
On average, restrictions of the Cape Alitak district during the effected years would result in more than 15% of the current catch being eliminated.

Chart 4: Alitak Average Revenue Loss Per Year



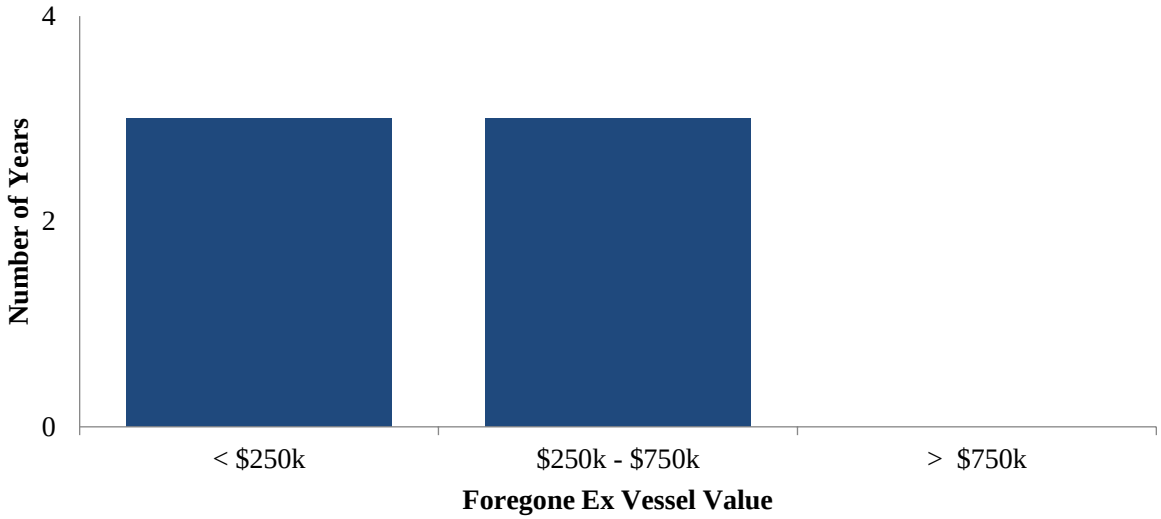
Over the last 6 years, 2014-2019, there have been four years where the fisheries losses from these increased restrictions would result in a loss of more than $250k of foregone ex vessel value to the fishery.

Chart 5: Cape Alitak Total Fishery Loss 2014-2019



The sockeye fishery would experience ex vessel losses of more than $250k for three of the affected years.

Chart 6: Cape Alitak Total Sockeye Loss



The mean direct loss for all species per year is $513,921 with a median loss of $537,986. If these restrictions were in place the greatest impact would have been in 2015 with a loss of $944,348 and the least impact would have been in 2017 with a loss of $70,310.

Table 11: Direct Loss of Proposal 66 Cape Alitak Implementation

Year	Direct Loss All Species	Direct Loss Sockeye
2014	$630,676	$533,683
2015	$944,348	$467,790
2016	$191,045	$171,290
2017	$70,310	$10,913
2018	$445,295	$343,377
2019	$801,852	$553,047
Mean	**$513,921**	**$346,683**
Median	**$537,986**	**$405,584**
Min	**$70,310**	**$10,913**
Max	**$944,348**	**$553,047**

Table 12: Direct Loss of Proposal 66 Cape Alitak Implementation Per Fishermen

	Average Loss Per Fishermen – All Species	Average Loss Per Fishermen – Sockeye Only
Mean	**$18,841**	**$11,912**
Median	**$16,904**	**$14,133**
Min	**$11,132**	**$2,183**
Max	**$30,463**	**$16,266**

Based on the number of active permits per year, individual fishermen would experience a mean direct loss for all species per year of $18,841 with a median loss of $16,904. If these restrictions

were in place the greatest impact would have been in 2015 with a loss of $30,463 per fishermen with the least impact in 2018 with an average loss of $11,132.

Table 13: Cape Alitak Closures

Year	Total Number of Days Fished	Total Days Regulated by Proposal 66	Number of Days Closed Under Proposal 66	Percentage of Regulated Days Closed Under Proposal 66
2014	31	11	9	82%
2015	59	16	13	81%
2016	27	11	7	64%
2017	56	8	2	25%
2018	44	14	11	79%
2019	60	16	15	94%
Total	**277**	**76**	**57**	**75%**

Eastside Results & Data Tables

Direct Losses – Eastside

All years examined, 2014-2019, will be affected by Eastside provisions Proposal 66 resulting in more than 15% of the current catch being restricted. Overall, these changes would result in an economic loss to the Borough of $880 thousand per year.

$587 Thousand Dollars Yearly Direct Loss to Fishermen

$880 Thousand Dollars Annual Economic Loss in the Kodiak Borough

Direct revenue lost to the Kodiak Borough per year:

Direct loss per affected year:	**$587 Thousand**
Loss from sockeye fishery:	$228 Thousand
Fisheries employment impact:	5.2 jobs per year
All employment impact:	6.5 jobs per year
Indirect community loss:	$121,880
Induced community loss:	$171,724
Total Annual Borough Loss:	**$880,697**

The Eastside provisions of Proposal 66 would have impacts throughout the Kodiak Borough. The direct loss to fishermen would be $587k per year. Of the total loss to the fishery, the limitations on non-sockeye species comprise the majority of the impact, accounting for $359k of the loss with $228k of the total loss being attributed to the sockeye salmon fishery.

The direct impact of this proposal will result in a loss of 5.2 fisheries specific jobs and a total of 6.5 jobs overall in the Kodiak Borough per year. In addition to the direct loss impact of $587k, there is a

further indirect loss of $122k as a result of lost business to business economic activity for the community from purchases such as fuel, gear, and supplies. There is an additional $171k of induced loss in the community resulting from the lost direct and indirect economic activity (total $709k) and reduced labor market. This impact results in a total loss to the community from direct, indirect, and induced losses of $880 thousand dollars per year.

Foregone Tax Revenue – Eastside

The foregone harvest due to proposal 66 Eastside changes would have tax implications for state, borough, and city budgets. The state implements two relevant taxes in the region: the fisheries business tax (which is shared with local governments) and the salmon enhancement tax (SET). Fisheries business tax rates vary by type of processing activity and the proportion of each is estimated from the State of Alaska's Annual Tax Report for FY18. The salmon enhancement tax rate is 2% in the Kodiak region. The Borough implements a resource severance tax of 1.075% and receives a share of the fisheries business tax from the state. The local city governments also receive a share of the fisheries business tax from the State of Alaska. Borough and city shares of the fisheries business tax estimated from the Borough's FY18 annual tax report.

The implementation of the Eastside section of proposal 66 would result in average yearly tax losses of $21,135 to the State of Alaska, $9,311 to the Kodiak Borough, and $2,796 to Kodiak City.

State Taxes	
Fisheries Business Tax (50% Share)	$9,393
SET Tax	$11,742
Total	**$21,135**

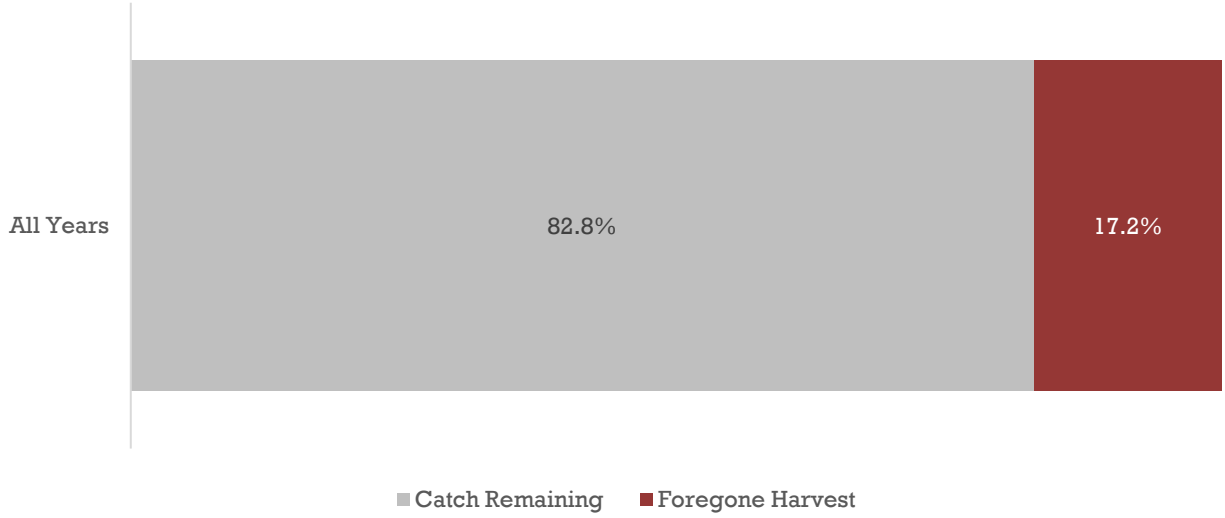
Borough	
Resource Severance Tax	$6,311
Fisheries Business Tax (Share of 50%)	$3,000
Total	**$9,311**

Cities (Share of Fisheries Business Tax)	
Akhiok	$700
Kodiak	**$2,796**
Larsen Bay	$700
Old Harbor	$751
Ouzinkie	$726
Port Lions	$722
Total	**$6,394**

Fisheries Loss – Eastside

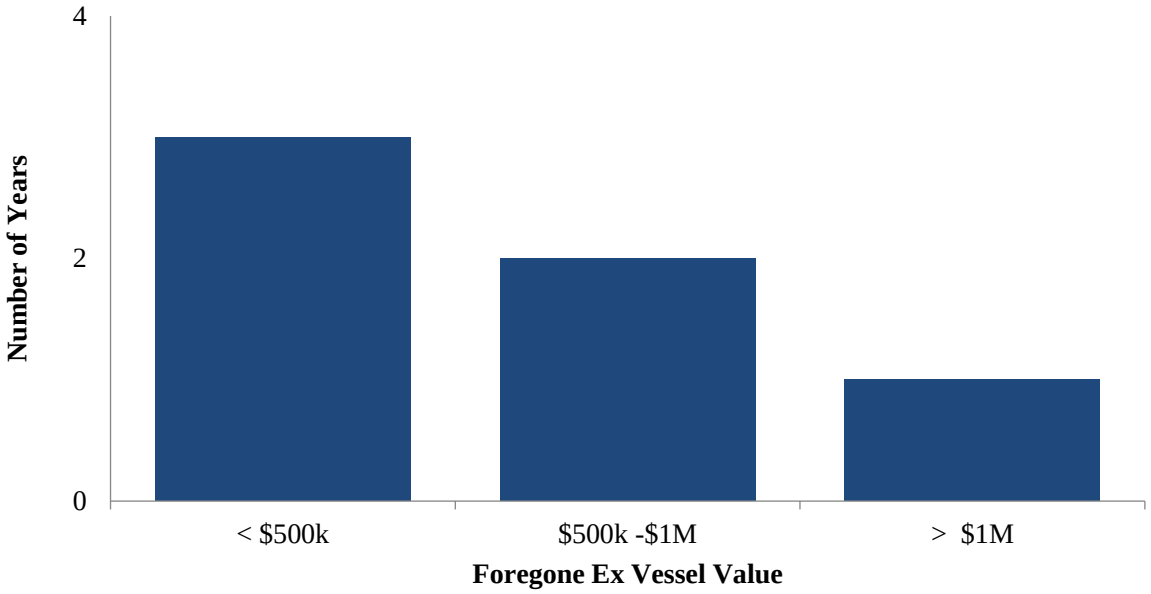
On average, restrictions of the Eastside district during the effected years would result in more than 15% of the current catch being eliminated.

Chart 7: Eastside Average Revenue Loss Per Year



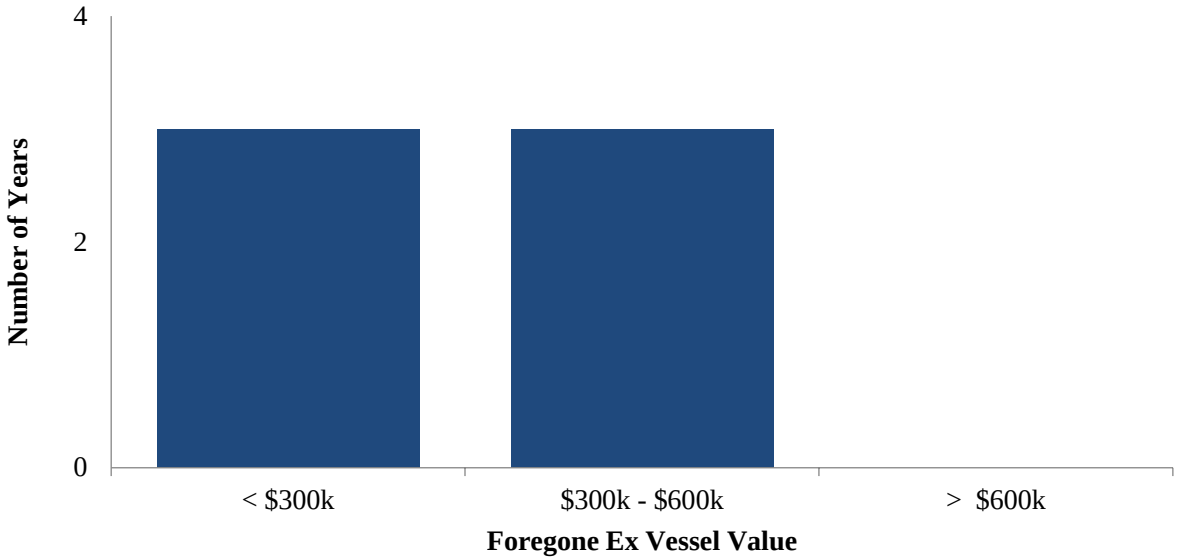
Over the last 6 years, 2014-2019, there have been three years where the fisheries losses from these increased restrictions would result in a loss of more than $500k of foregone ex vessel value to the fishery.

Chart 8: Eastside Total Fishery Loss 2014-2019



The sockeye fishery would experience ex vessel losses of more than $300k for three of the affected years.

Chart 9: Eastside Total Sockeye Loss



The mean direct loss for all species per year is $587,092 with a median loss of $484,679. If these restrictions were in place the greatest impact would have been in 2017 with a loss of $1,882,258 and the least impact would have been in 2018 with a loss of $9,653.

Table 14: Eastside Loss of Proposal 66 Implementation

Year	Direct Loss All Species	Direct Loss Sockeye
2014	$641,645	$364,260
2015	$19,638	$13,821
2016	$584,653	$472,207
2017	$1,882,258	$309,608
2018	$9,653	$2,118
2019	$384,705	$207,415
Mean	**$587,092**	**$228,238**
Median	**$484,679**	**$258,511**
Min	**$9,653**	**$2,118**
Max	**$1,882,258**	**$472,207**

Table 15: Eastside Loss of Proposal 66 Implementation Per Fishermen

	Average Loss Per Fishermen – All Species	Average Loss Per Fishermen – Sockeye Only
Mean	**$17,898**	**$8,056**
Median	**$17,067**	**$8,300**
Min	**$3,218**	**$706**
Max	**$37,645**	**$14,815**

Based on the number of active permits per year, individual fishermen would experience a mean direct loss for all species per year of $17,898 with a median loss of $17,067. If these restrictions were in place the greatest impact would have been in 2017 with a loss of $37,645 per fishermen with the least impact in 2018 with an average loss of $3,218.

Table 16: Eastside Closures

Year	Total Number of Days Fished	Total Days Regulated by Proposal 66	Number of Days Closed Under Proposal 66	Percentage of Regulated Days Closed Under Proposal 66
2014	34	21	15	71%
2015	55	15	2	13%
2016	33	23	16	70%
2017	57	18	16	89%
2018	24	9	1	11%
2019	16	12	8	67%
Total	**219**	**98**	**58**	**59%**

Westside Results & Data Tables

Direct Losses – Westside

All years examined, 2014-2019, will be affected by Proposal 66 resulting in more than 50% of the current catch being restricted. Overall, these changes would result in an economic loss to the Borough of $3.02 million per year.

$2.02 Million Dollars Yearly Direct Loss to Fishermen

$3.02 Million Dollars Annual Economic Loss in the Kodiak Borough

Direct revenue lost to the Kodiak Borough per year:

Direct loss per affected year:	**$2.02 Million**
Loss from sockeye fishery:	$1.26 Million
Fisheries employment impact:	17.8 jobs per year
All employment impact:	22.3 jobs per year
Indirect community loss:	$418,321
Induced community loss:	$589,398
Total Annual Borough Loss:	**$3,022,753**

The Westside provisions of Proposal 66 would have impacts throughout the Kodiak Borough. The direct loss to fishermen would be $2.02 million per year. Of the total loss to the fishery, the limitations on the sockeye fishery would comprise the majority of the impact, accounting for $1.26 million of the loss with $760k of the total being attributed to other salmon fisheries.

The direct impact of this proposal will result in a loss of 17.8 fisheries specific jobs and a total of 22.3 jobs overall in the Kodiak Borough per year. In addition to the direct loss impact of $2.02 million, there is a further indirect loss of $418k as a result of lost business to business economic activity for the community from purchases such as fuel, gear, and supplies. There is an additional $589k of induced loss in the community resulting from the lost direct and indirect economic activity (total $2.43 million) and reduced labor market. This impact results in a total loss to the community from direct, indirect, and induced losses of $3.02 million dollars per year.

Foregone Tax Revenue – Westside

The foregone harvest due to proposal 66 Westside changes would have tax implications for state, borough, and city budgets. The state implements two relevant taxes in the region: the fisheries business tax (which is shared with local governments) and the salmon enhancement tax (SET). Fisheries business tax rates vary by type of processing activity and the proportion of each is estimated from the State of Alaska's Annual Tax Report for FY18. The salmon enhancement tax rate is 2% in the Kodiak region. The Borough implements a resource severance tax of 1.075% and receives a share of the fisheries business tax from the state. The local city governments also receive a share of the fisheries business tax from the State of Alaska. Borough and city shares of the fisheries business tax estimated from the Borough's FY18 annual tax report.

The implementation of the Westside section of proposal 66 would result in average yearly tax losses of $72,541 to the State of Alaska, $31,957 to the Kodiak Borough, and $9,595 to Kodiak City.

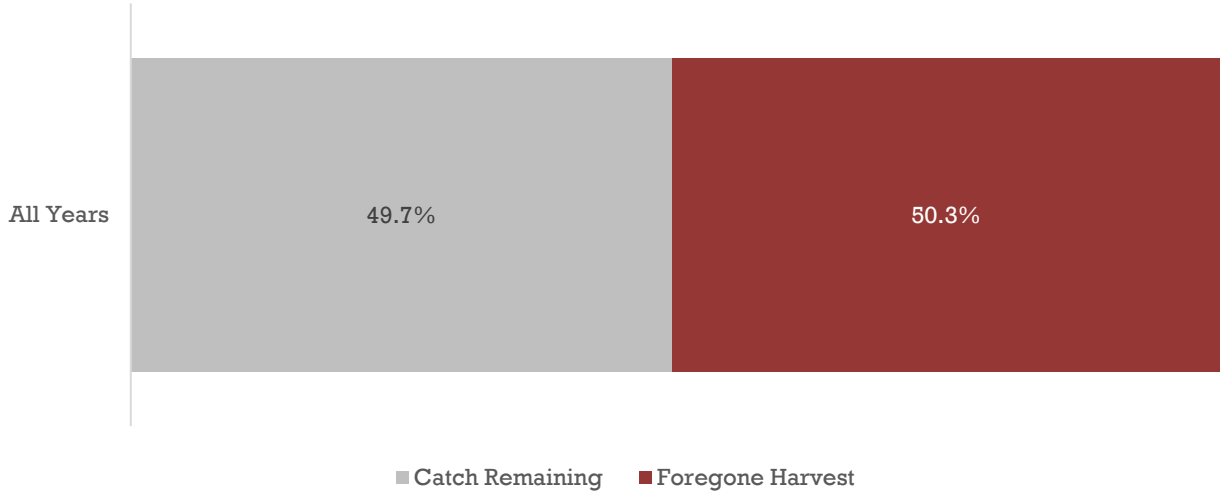
State Taxes	
Fisheries Business Tax (50% Share)	$32,241
SET Tax	$40,301
Total	**$72,541**
Borough	
Resource Severance Tax	$21,662
Fisheries Business Tax (Share of 50%)	$10,296
Total	**$31,957**

Cities (Share of Fisheries Business Tax)	
Akhiok	$2,402
Kodiak	**$9,595**
Larsen Bay	$2,401
Old Harbor	$2,578
Ouzinkie	$2,492
Port Lions	$2,477
Total	**$21,945**

Fisheries Loss – Westside

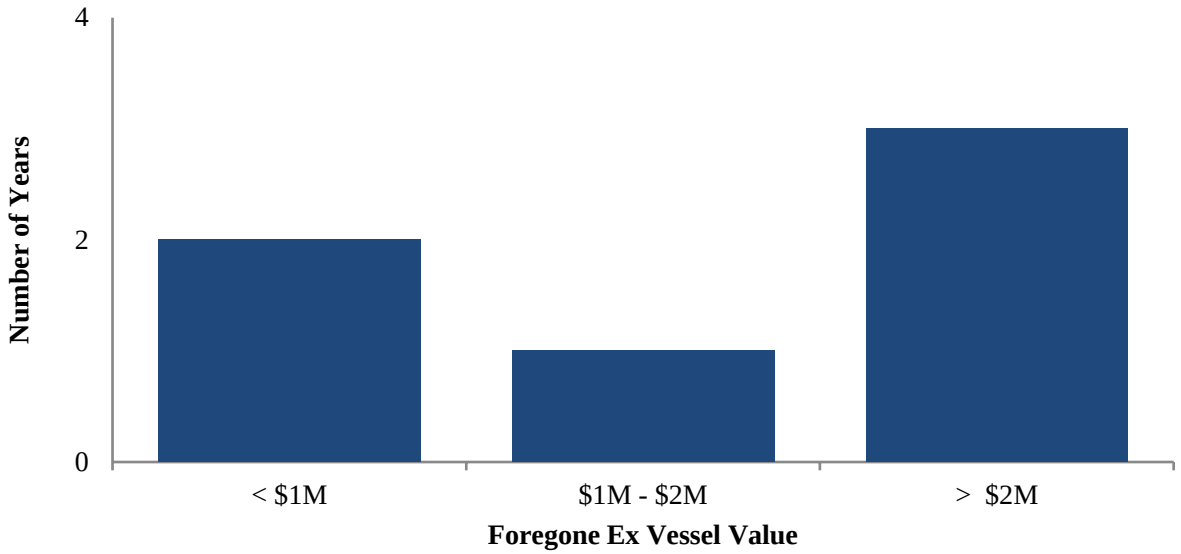
On average, restrictions of the Westside district during the effected years would result in more than 50% of the current catch being eliminated.

Chart 9: Eastside Average Revenue Loss Per Year



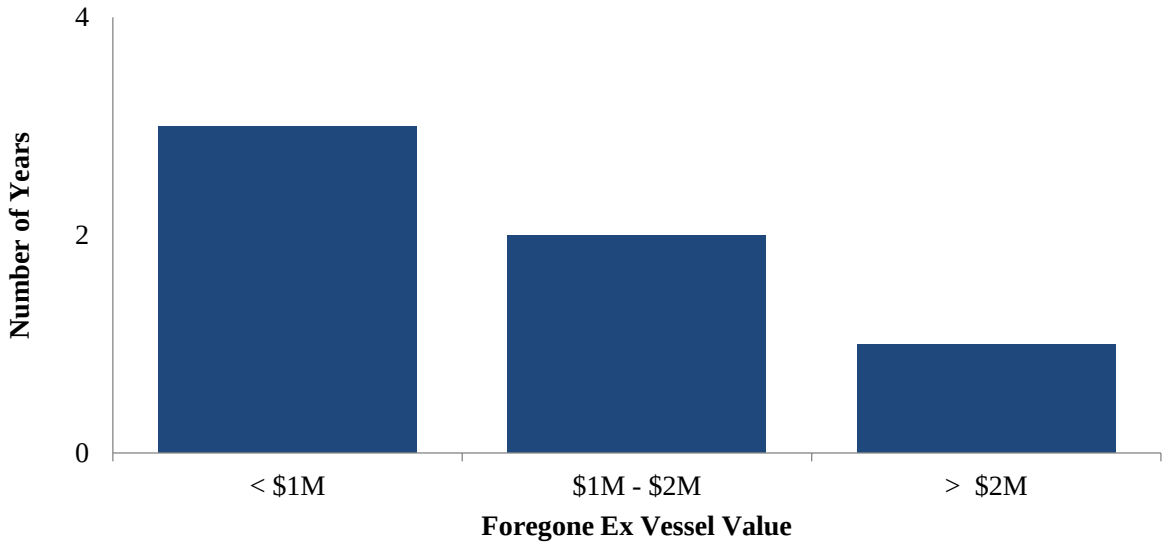
Over the last 6 years, 2014-2019, there have been four years where the fisheries losses from these increased restrictions would result in a loss of more than $1 million of foregone ex vessel value to the fishery.

Chart 10: Westside Total Fishery Loss 2014-2019



The sockeye fishery would experience ex vessel losses of more than $1 million for three of the affected years.

Chart 11: Westside Total Sockeye Loss



The mean direct loss for all species per year is $2,015,035 with a median loss of $2,124,459. If these restrictions were in place the greatest impact would have been in 2019 with a loss of $3,385,052 and the least impact would have been in 2018 with a loss of $656,491.

Table 17: Westside Loss of Proposal 66 Implementation

Year	Direct Loss All Species	Direct Loss Sockeye
2014	$2,719,150	$2,366,038
2015	$2,841,050	$1,874,474
2016	$958,696	$735,678
2017	$1,529,769	$600,891
2018	$656,491	$499,548
2019	$3,385,052	$1,467,717
Mean	**$2,015,035**	**$1,257,391**
Median	**$2,124,459**	**$1,101,698**
Min	**$656,491**	**$499,548**
Max	**$3,385,052**	**$2,366,038**

Table 18: Westside Loss of Proposal 66 Implementation Per Fishermen

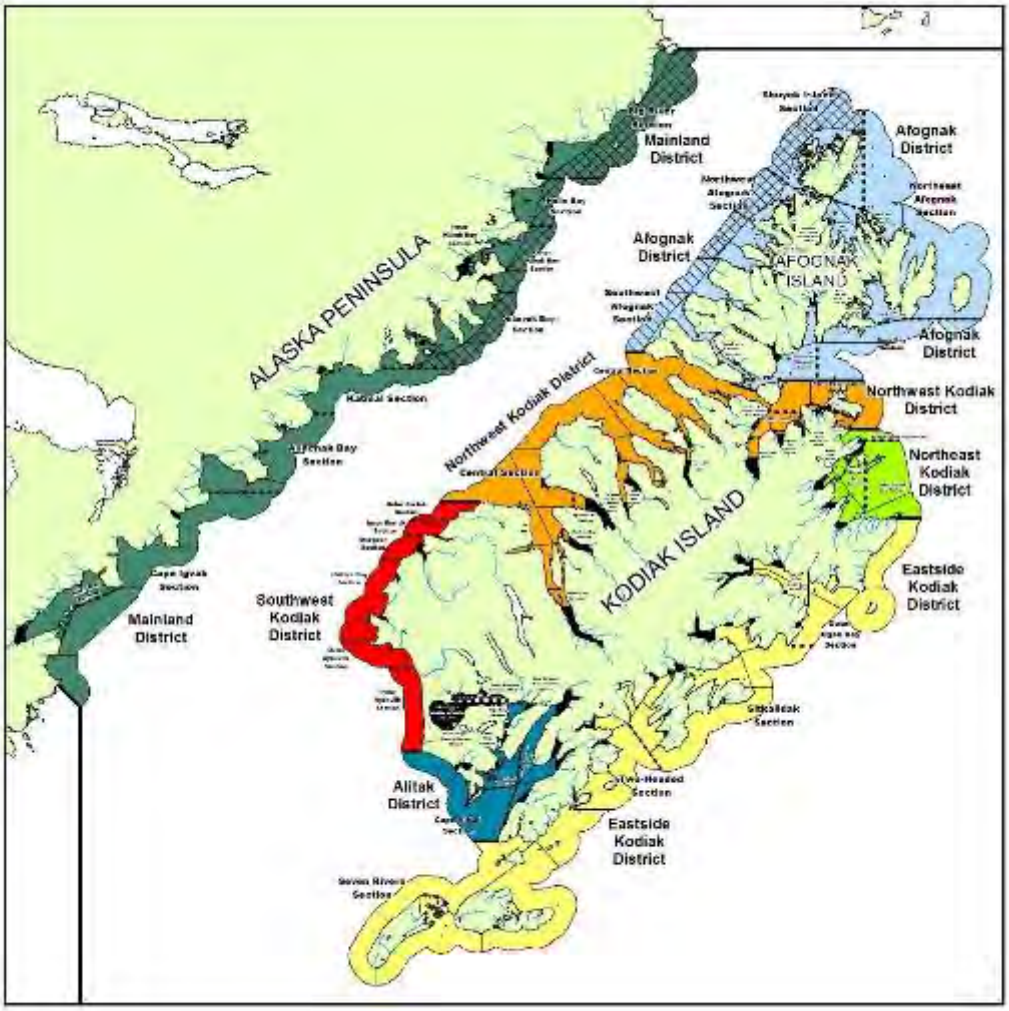
	Average Loss Per Fishermen – All Species	Average Loss Per Fishermen – Sockeye Only
Mean	**$27,961**	**$16,582**
Median	**$25,987**	**$15,461**
Min	**$13,968**	**$10,629**
Max	**$56,418**	**$24,462**

Based on the number of active permits per year, individual fishermen would experience a mean direct loss for all species per year of $27,961 with a median loss of $25,987. If these restrictions

were in place the greatest impact would have been in 2019 with a loss of $56,418 per fishermen with the least impact in 2018 with an average loss of $13,968.

Table 19: Westside Closures

Year	Total Number of Days Fished	Total Days Regulated by Proposal 66	Number of Days Closed Under Proposal 66	Percentage of Regulated Days Closed Under Proposal 66
2014	94	24	19	79%
2015	106	24	19	79%
2016	83	17	10	59%
2017	110	24	18	75%
2018	76	14	7	50%
2019	83	14	11	79%
Total	**552**	**117**	**84**	**72%**



Review of Genetic Studies of Sockeye Salmon Harvests in the Kodiak Management Area

Kodiak Salmon Working Group

Executive Summary

- Recent genetic analyses in Kodiak Management Area provide accurate and precise estimates of sockeye salmon stock proportions and harvest numbers in targeted Westside Kodiak fisheries, during monthly (June, July, August) time periods in 2014-2016. Very limited sampling occurred at Cape Igvak.

- The study was not designed to understand migratory patterns of sockeye salmon through KMA, nor to address finer temporal patterns of non-local stock distribution which might describe rapidly changing abundance of migrating stocks in specific areas. WASSIP results showed that proportions of one non-local reporting group varied by as much as eight fold in weekly samples of Shumagin Island and Dolgoi June fisheries harvests, 2007-2008.

- Harvests of Cook Inlet sockeye in KMA fisheries varied by an order of magnitude between study years and between monthly samples within a year. Incidental harvests in 2015 were particularly divergent, especially for July harvests, during an exceptionally large pink salmon run. The widely divergent harvest proportions of Cook Inlet fish in this three year study suggest no reliable patterns upon which to base specific management actions.

- Susitna bound fish overall represented the smallest component of Cook Inlet stocks incidentally harvested in KMA and accounted for less than 2.5% of total KMA sockeye harvest in 2014-2016 and less than 4.5% of

annual harvests in the sampled areas. Due to high estimated harvest rates of Susitna fish in Cook Inlet fisheries (average 38% 2006-2015) and large uncertainties in Susitna escapement estimates, it is unlikely that effects of any “savings” of these stocks in KMA fisheries could be measured with any confidence.

- In 2014-2016, estimated harvest of Susitna fish in Upper Cook Inlet fisheries was 3 fold to more than 40 fold greater than in KMA. Any conservation efforts for Susitna fish should be addressed in Cook Inlet fisheries.

- Data from Cape Igvak is limited to harvests in three temporal periods from two years. Incidental harvest of Cook Inlet fish varies by two orders of magnitude (50 fold) among those strata.

- Evidence suggests that management plans in KMA are working well, as all key sockeye stocks on the Westside are achieving their escapement goals and odd year pink salmon goals are consistently met.

Study Purpose and Design

The purpose of Shedd et al. (2016) was to use Genetic Stock Identification (GSI) methods to estimate temporal stock contribution to select Kodiak Management Area (KMA) sockeye fisheries during 2014-2016 by sampling major sockeye fisheries where significant harvest of salmon occurs (Foster and Dann, 2014, 2015). At its inception, the study intended to meet multiple information needs. Some local fishermen were

interested in a sampling program that could identify particular stocks in area fisheries, especially Alitak-bound fish harvested in Westside fisheries. Fisheries interests outside of Kodiak desired a better understanding of harvests of “non-local” sockeye salmon in Kodiak area fisheries; and area biologists who sought to understand production dynamics of area stocks wanted better stock-specific harvest information for improvement of brood tables, run-reconstructions, and escapement goals for local stocks. Funding constraints resulted in a limited geographic scope for the study.

The work provided accurate and precise estimates of stock-specific harvests for six Westside fishery areas within the KMA over approximately monthly time periods (June,July, August), during the years 2014-2016. Much more limited sampling occurred in Igvak fisheries. Within this scope, it is a robust study which uses state of the art analytic and statistical approaches to generate estimates for sampled areas and times. It has contributed to brood table improvement for area sockeye stocks, especially Karluk and Ayakulik (ADFG, pers. comm).

As the author notes, the study was not designed to understand migratory patterns of sockeye salmon through KMA (Shedd et al., 2016). The design also does not address finer temporal scale patterns of non-local stock distribution which might describe rapidly changing abundance of migrating stocks in specific areas, or address broader questions about sockeye migratory characteristics in and around Kodiak Island outside of sampled areas. Both are important to inform policy debate on allocating harvests from one management area to another.

Finally, there is no information provided on harvest rates to provide context for actual impacts of non-local stock harvest in Kodiak area fisheries. An understanding of stock-specific harvests with respect to run

sizes (i.e., harvest rates) for those non-local stocks is essential for discussing perceived conservation issues (Habicht et al., 2012).

Sampling

Samples for genetic analyses were gathered at fish processing facilities in Kodiak, Larsen Bay and Alitak. Through close communication with processors, samplers could be in place at facilities when deliveries occurred. Efforts were made to ensure samples only represented fishing in one of the management areas intended for sampling and were taken only from deliveries that could be attributed to the intended area. Deliveries from multiple study areas were not sampled. In Uganik/Kupreanof portion of the NW Kodiak district, where both set gillnet and purse seine vessels contributed to harvests, most samples were taken from set gillnet harvests because seine vessels often had mixed loads (ADFG, pers. com.). Brennan et al., (2017, this volume) point out that gillnets used there are selective for larger fish and sampling from mostly this gear group in Uganik/Kupreanof could bias samples towards Cook Inlet harvests because Cook Inlet sockeye are typically larger fish than Karluk Lake sockeye.

Samples from specific area harvests were collected a number of times, often weekly or more often, throughout the monthly sampling stratum when fish were delivered (Shedd at al., 2016 and ADF&G pers. comm.). Samples were taken on specific dates from fish available on that date. It is not completely clear how samples were randomized within a delivery, but generally, the target sample number (100-400) was taken from the delivery and placed in a separate tote for sampling. These samples represented a bulk sample of tissues from fish for that date. Typically, at least four bulk samples were acquired during monthly periods for each area. Each sample

represents the group of fish delivered on a one or two day period (see Shedd et al. 2016, Appendix B for details).

Post-season, samples for genetic analyses were selected from date-specific bulk samples in proportion to daily harvests for that month, and combined to generate a monthly stock contribution estimate. Previous reviewers of the study have found the general approach of stratified random sampling, sampling in proportion to the harvest and sample sizes to be defensible (Geiger and Quinn, 2017, this volume). To summarize the sampling approach:

- Sampling was adequate for generating monthly estimates of stock-specific sockeye harvest in targeted areas. Samples were collected periodically through the month, and care was taken to ensure that sampled deliveries were from intended fishery areas. Samples selected for analysis were taken from all bulk samples in proportion to the harvest for the month.

- Sampling was not designed to identify times and areas where non-local stocks are most prevalent in KMA or to provide comprehensive information on migration patterns. The study estimated stock proportions and harvests from targeted areas in select Westside fisheries and Igvak using monthly time periods.

- Spatial resolution was limited to major Westside KMA fisheries including Uganik/Kupreanof, Uyak, Karluk/Halibut Bay, Ayakulik/Sturgeon and Alitak, and Cape Igvak in the Mainland District. There are no comprehensive mixed stock analyses for fisheries in Afognak, Eastside District, Olga Bay, Special Harvest

Areas, nor for harvest after August 29, presumed to be mainly local stocks. Authors estimate that sampled areas represented 47-62% of Kodiak sockeye harvest in 2014-2016.

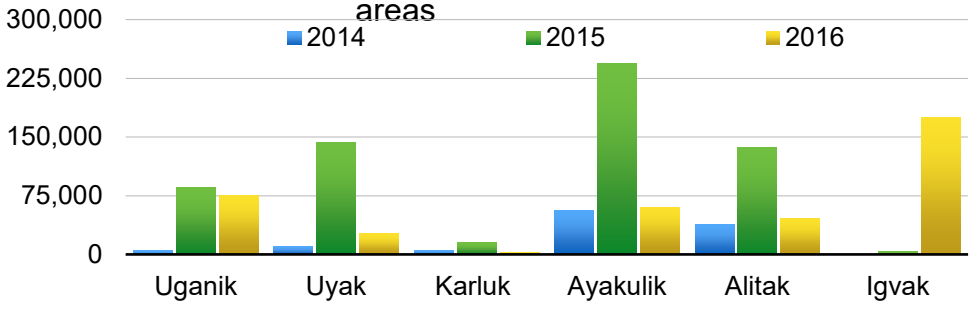
- Temporal resolution was limited to stock compositions for June, July, and August. The periods roughly coincide with fishery management approaches during each period, where early sockeye stocks are harvested in the early stratum (June), pink salmon and sockeye stocks in the middle stratum (July), and late sockeye and pink salmon in the late stratum (August). Harvest stock composition within the monthly periods was not examined.

Results: Variation within and between years

Cook Inlet Stocks

There are very large inter-annual differences among sampled areas in KMA for harvest of Cook Inlet genetic reporting group. Annual estimates of Cook Inlet harvest numbers for all sampled KMA fisheries varied by an

Figure 1. Annual harvests of Cook Inlet bound sockeye salmon within individual Kodiak Management sub-areas



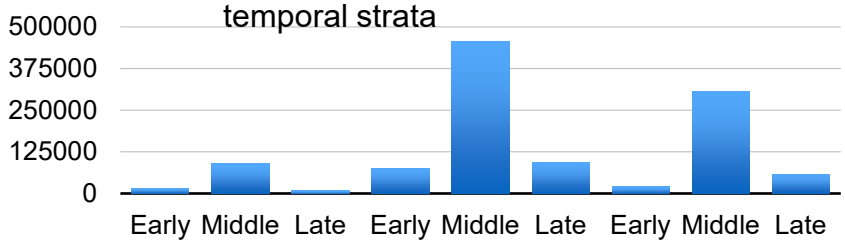
order of magnitude between years, especially evident for Uyak, Ayakulik/Sturgeon, and Alitak, where 2015 estimates far exceeded either adjacent year. Uganik/Kupreanof harvests of Cook Inlet fish in 2016 were

comparable to those in 2015 and Igvak had a single, large catch of Cook Inlet stocks in July 2016. Estimated harvests of Cook Inlet reporting group in 2014 were uniformly small for all sampled areas (Figure 1).

It is also clear that incidental harvest of Cook Inlet sockeye stocks in July (middle stratum) were dramatically larger than early or late strata in 2015 and 2016 (Figure 2). This is particularly pronounced for Alitak and Ayakulik/Halibut Bay harvests. For the Alitak District, harvests of Cook Inlet stocks in July (middle stratum) were an order of magnitude higher than early or late strata in all years. Harvests were more than three times larger in 2015 than middle strata in 2014 or 2016 (Figure 3). July (middle stratum) harvests of Cook Inlet stocks in Ayakulik/Halibut Bay were also highest in all years, and much higher in 2015 (Figure 3).

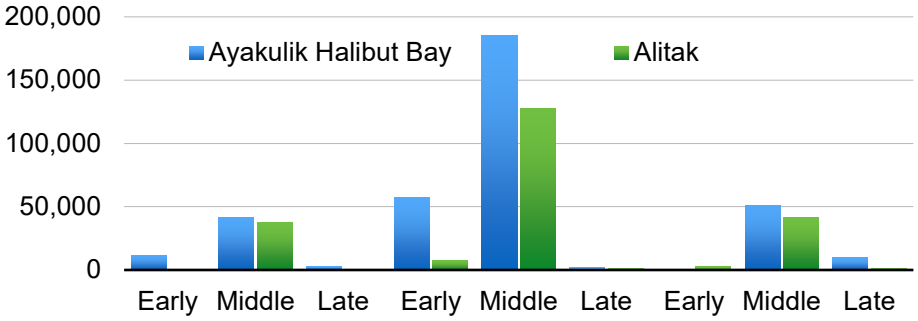
Higher incidental harvest of non-local sockeye in 2015 are likely associated with a very large pink salmon run. At 33 million, pink salmon harvest in 2015 was more than 3 fold larger than 2014 and roughly ten times greater than 2016 (Anderson et al. 2016). The large abundance of pink salmon in 2015 resulted in management actions to increase fishing time. Westside commercial fishing periods in 2015 were extended twice in July and many were open for the majority of August (Anderson et al., 2016). Larger incidental harvests of Cook Inlet sockeye in Westside

Figure 2. Harvests of Cook Inlet bound sockeye salmon in Kodiak Management Area among all sampled areas and years, by temporal strata



isheries during 2015 may partially be explained by pink salmon bundance, reflecting management actions in complex, multi-species fisheries.

Figure 3. Harvest of Cook Inlet bound sockeye salmon by temporal strata, over all years, in Ayakulik/Halibut Bay and Alitak sub-areas of KMA.



While Shedd et al. (2016) is the first genetic stock identification study to focus on KMA, it is modeled after the large WASSIP study which also revealed wide variation in stock specific harvests between and within sampling years, especially for those fisheries known to harvest a mixture of stocks on the South Alaska Peninsula (Dann et al., 2012). The East of WASSIP (EOW) reporting group in that study is a good example. It represents mixed stock analysis assignments made to stock groups beyond Chignik, the Eastern boundary of WASSIP. Specific stock composition of EOW reporting group is unknown, but it likely contains significant and variable proportions of Kodiak, Chignik and Cook Inlet stocks.

- For the Western and Perryville Districts within Chignik Management Area, samples from the same 10 day time interval in July (7/20-7/31) showed EOW reporting group harvest proportions more than twice as high in 2007 (38.8%) as 2008 (14.9%).

- For the Shumagin Islands June fishery, large differences were also observed for the EOW reporting group proportions among years and within weekly sampling periods. In 2006, among three sampled strata in June, EOW proportions ranged from 18.6% to 43.6%. In 2007, proportions for the same weekly strata ranged between 4.9% and 16.5%. For comparable strata sampled in 2008, the range was 9.4% to 10.6%. Over the three year period, harvest proportions for EOW reporting group in Shumagin June fisheries varied nearly nine fold within the month of June.

- For Dolgoi Area June fisheries, among weekly strata, proportions of EOW reporting group ranged from 17.1% to 39.5% in 2006, 35.8% to 56.2% in 2007, and 7.4% to 27.4% in 2008. EOW proportions varied by nearly 8 fold in Dolgoi within and among years in the WASSIP study (Dann et al., 2012).

Both WASSIP investigators and Shedd et al. (2016) express pointed caution about making inferences beyond their three year study periods. Like any GSI study, the data represent environmental and fishery conditions during those years and changes in relative proportions of reporting groups will be influenced by prosecution of fisheries and ocean conditions (physical and biological) which affect fish migrations. The wide

variation observed in WASSIP between weekly sampling intervals among years demonstrates how much stock specific harvests may change within a monthly period. The broad inter-annual variation in WASSIP and the recent KMA study should emphasize the inherent uncertainty in our understanding of stock vulnerability to commercial fisheries from year to year and within a fishing season.

Results: Measuring Impacts

Shedd et al., (2016) showed that over a three year study period, highly variable numbers of Cook Inlet sockeye salmon were harvested in KMA at some locations and times. However, these data alone provide little insight into impacts of these non-local harvests on Cook Inlet runs. Fishery stakeholders in the WASSIP study, from Area L to AYK, insisted that reporting of stock proportions be accompanied by harvest rates, so that stock-specific harvests could be assessed in relation to their respective run sizes (Habicht et al., 2012). The importance of this exercise is clearly demonstrated by WASSIP data for Outer Port Heiden (OPH) harvests during 2007-2008. Among six sampled time strata for OPH fisheries in 2007-2008, Bristol Bay stocks represented 65%-90% of the sample, while harvest rates on Bristol Bay fish for the same two years were less than 1% (Dann et al., 2012, Habicht et al., 2012). Significant numbers of sockeye bound for Bristol Bay were harvested in OPH, with negligible effect on the overall run.

Though no harvest rates were reported, Shedd et al. (2016) produced analyses to distinguish among four different genetic reporting groups within broader Cook Inlet harvests, including Susitna River, a currently designated stock of concern (Shedd et al., 2017). Overall, Susitna fish represented the

smallest component of incidental Cook Inlet harvests in KMA, representing 0.3% to 4.4% of KMA commercial sockeye harvests in sampled fisheries during 2014-2016 (Shedd et al., 2017). They represented only 0.1% to 2.4% of the total KMA sockeye harvest for study years 2014-2016.

Having dispensed with a biased sonar program (Fair et al., 2009), assessment of escapement for Susitna sockeye is now made by three weirs on Judd, Chelatna and Larson Lakes. Based on mark-recapture experiments in 2006-2008, Fair et al. (2009) estimated that combined Chelatna and Judd Lake escapements represent about 42% of Yenta drainage escapements and Larson Lake represents roughly 52% of mainstem Susitna escapement. Escapement goals for these lakes were established in 2017. Over the last decade, goals for Chelatna have always been met or exceeded, Judd was below goal in a single year, and Larson missed three goals by less than 20% (Munro, 2019). Escapements to these index lakes by themselves do not suggest a concern for conservation of Susitna fish. Other Lakes, such as Shell, once estimated to account for 10% of Susitna drainage sockeye production, have been severely impacted by pike predation and Beaver dams, and produce far fewer sockeye than in the past (Shields and Frothingham, 2018).

If management actions were taken to reduce harvest of Susitna bound sockeye in KMA, it is important to consider the fate of these “savings” and how we could evaluate effects of these actions. Any incidental harvest of Cook Inlet stocks avoided in KMA fisheries would be subject to a variety of harvest and natural mortalities before reaching spawning grounds, as they pass through fisheries in Lower and Upper Cook Inlet. Recent estimates of harvest rates on Susitna origin sockeye in Upper Cook Inlet fisheries range widely, but average 38%, 2006-2015

(Erickson, 2017, ADF&G report to Board of Fisheries). A large proportion of these fish would be harvested in Cook Inlet fisheries before reaching their natal streams and lakes.

Importantly, impacts of Susitna bound sockeye harvest in KMA on annual Susitna runs probably cannot be measured with confidence for two reasons. First, Shedd et al. (2017) used a genetic baseline that includes populations throughout the Susitna/Yentna drainage but does not distinguish fish which may be destined for Judd, Chelatna and Larson Lakes. The lake stocks can be justified as a separate JCL reporting group in Cook Inlet genetic studies (Barclay, 2018). As a result, the relationship between KMA harvest of Susitna reporting group and goals established to index Susitna escapement is unknown because KMA harvests of Susitna stocks cannot be attributed to any of these lakes.

Also, recent mark recapture studies suggest large uncertainties with estimating drainage wide escapements to Susitna drainage (Yanusz et al., 2007). Results from 2006-2008 studies revealed wide 95% confidence intervals (2006, 335,448 - 500,946; 2007, 292,867 - 362,597; 2008, 320,763 - 398,317) for escapements of sockeye to Yenta and Susitna Rivers combined (Erickson, ADFG report to Board of Fisheries). The highest estimated catch for Susitna fish in any KMA stratum, without accounting for additional harvest and predation in Cook Inlet, falls within those confidence intervals. It is unlikely that effects of reducing harvest of Susitna fish in KMA could be detected in Susitna run estimates.

In 2014-2016, estimated harvest of Susitna fish in Upper Cook Inlet fisheries was 3 fold to more than 40 fold greater than in KMA (Barclay, 2018, Shedd et al., 2016). Attempts to conserve Susitna fish must primarily

include Cook Inlet fisheries, where savings are more efficiently realized and can be measured.

Cape Igvak

The management plan for Cape Igvak has been in place since 1978. The Cape Igvak fishery is one of only two areas in the state (the other is Southeast District Mainland) in which harvest and escapement triggers from an adjacent management area (both Area L-Chignik) must be met before the fishery can open. For this study, no Igvak samples were taken in 2014 because low Chignik harvest numbers kept the area closed to commercial harvest. In 2015, only the July stratum (middle) was sampled as Igvak was again closed at first due to inadequate harvests in Chignik. Harvest of Chignik fish in Igvak was estimated as 2,059 fish. In both 2014 and 2015, the management plan had its intended effect of keeping Igvak closed or limited when Chignik harvests were low. In 2016, with a stronger Chignik run, an estimated 114,412 Chignik sockeye were harvested in the early (June) stratum. A little more than 10,006 Chignik fish were harvested in July. With only three temporal strata sampled over a three year period, there is no new information on harvest patterns of Chignik fish at Igvak that would support changes to the management plan. While it is clear that some Chignik fish are captured at Igvak (which is reason for the management plan), one data point an order of magnitude greater than the other two reveals dramatic swings in non-local stock abundance. There is no data in this study that supports the presumption in the management plan that 90% of sockeye salmon harvests in Igvak are Chignik bound fish.

Management Plans

The management of KMA fisheries is guided by a number of management plans including the Westside Management plan (5AAC 18.362) and the Alitak District Management plan (5AAC 18.361), most relevant to this genetics study. While each has very specific management direction for date ranges and particular areas, the central theme is prosecution of traditional fisheries to sustainably harvest early and late runs of sockeye salmon to Karluk, Ayakulik, Upper Station and Frazer Rivers, as well as harvest pink, chum and coho salmon to a variety of locations in July, August and September. The plans have an odd year emphasis for pink salmon management as these are typically larger than even year runs in KMA.

From a biological perspective, successful fisheries management in Alaska is measured through achievement of escapement goals. The Alaska Board of Fisheries pays careful attention to escapement goal performance as a yardstick for sustainable management. For Karluk early sockeye, goals have been achieved or exceeded every year since 2012, and for the late run, since 2010. For early and late sockeye runs to Ayakulik , goals have been achieved every year since 2010. For early Upper Station stock, goals were achieved in 2017 and 2018 and for late Upper Station, goals have been met every year since 2010. For Frazer Lake sockeye, goals have been met every year since 2010. Odd year pink salmon goals in the Kodiak Archipelago have been met or exceeded every year since 2011 (Munro, 2019). Recognizing that scientifically defensible escapement goals are foundational for maximizing yields in future years, it seems clear that

KMA fisheries management has been successful and that these management plans are working well.

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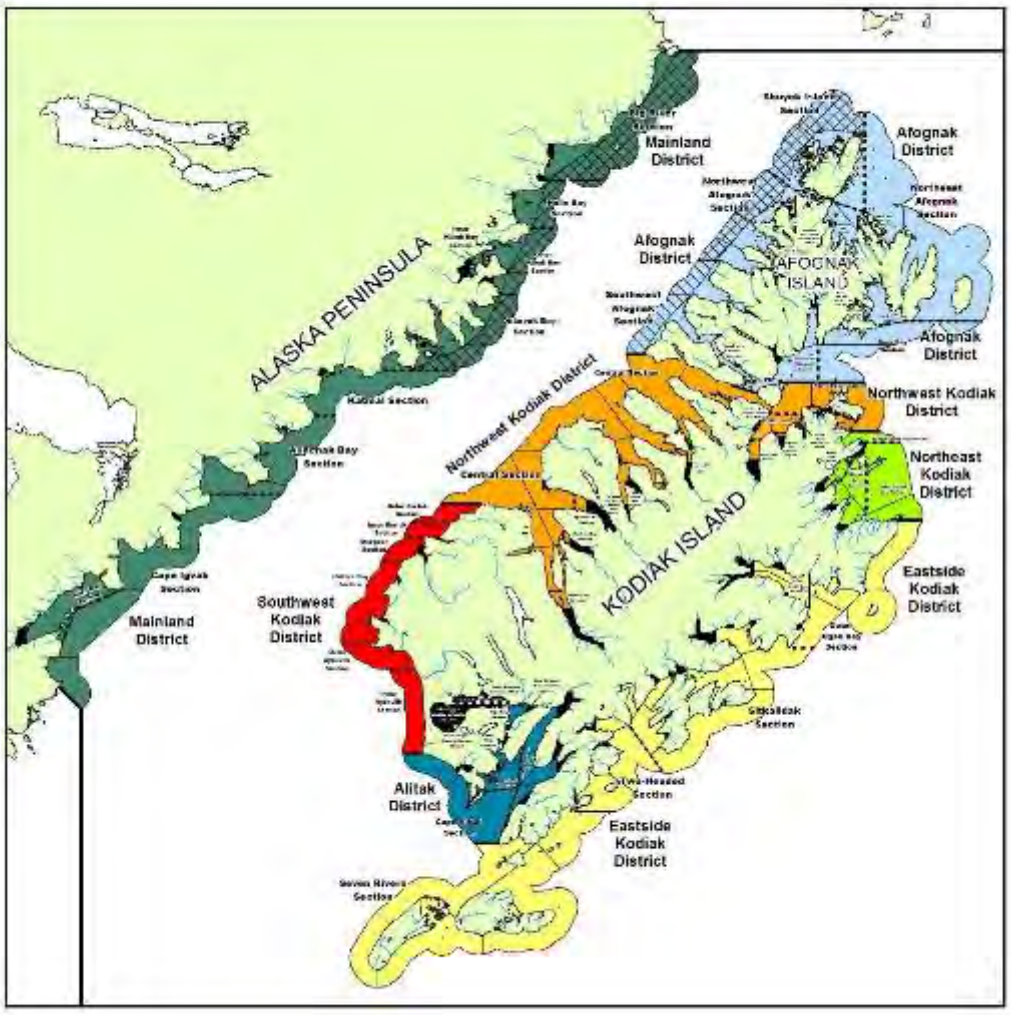
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Review of Shedd et al. (2016): *Genetic Stock Composition of the Commercial Harvest of Sockeye Salmon in Kodiak Management Area, 2014-2016*

Report to the Kodiak Salmon Workgroup

Harold J. Geiger
Terrance J. Quinn II

September 11, 2017

Executive Summary

The Kodiak Salmon Workgroup contracted us[1] to provide a scientific review of the report by Shedd et al. (2016) entitled *Genetic Stock Composition of the Commercial Harvest of Sockeye Salmon in Kodiak Management Area, 2014-2016*. This review consists of an examination of the scientific merit of the study, its utility compared to previous studies, an interpretation of how the results should be viewed in terms of the magnitude of interceptions of Cook Inlet sockeye salmon in the Kodiak Management Area's commercial fisheries, and thoughts about further investigations that may shed additional insight into Kodiak and Cook Inlet stock compositions of sockeye salmon.

Our primary findings:

1. From the point of view of fishery policy, the most important statistic is the *stock-specific harvest rate*, which is not reported in the Shedd et al. (2016) document for stocks outside the Kodiak Management Area. What is reported is the *stock-specific contribution rate*. Stock composition estimates represent the proportions of a catch that was made by various stocks in a particular spatial and temporal stratum or groups of strata. In contrast, the harvest rate describes the proportion of an annual return that was harvested in a fishery or group of fisheries. Consequently, a fishery may show a large contribution rate for a stock, but the total effect on that stock may be quite small. We illustrate this phenomenon below.
2. The new genetic stock composition approach used in this study is superior to other approaches used in the past, because the real stock composition is estimated rather than inferred from less reliable measurements (e.g., length composition). The use of a Bayesian modeling approach to estimate stock composition is state-of-the-art and allows for the appropriate treatment of random variability due to both random error caused by sampling the fishery mixture and also from the sampling of the contributing stocks.
3. The stratified sampling design used is appropriate with respect to accuracy and precision of stock composition (relative and absolute). It is clear that the authors devoted substantial attention to implementing the sampling design with the intent of obtaining a random or representative sample within combinations of major regional and temporal strata. Further information would be desirable about how the implementation was conducted on finer spatial and temporal scales to justify the assumption of a random or representative sample. For example, how was an individual fish selected for genetic sampling and were there protocols established to prevent selecting fish with particular physical characteristics, such as size?
4. Similar to past studies, results from the study revealed substantial variability in stock composition across years, among spatial strata, and among temporal strata. Further study may be desirable to determine if there are consistent patterns in this variability across years, spatial strata, and temporal strata. Continued genetic sampling and analysis in the future would thus be desirable.

Introduction and Overview

We were asked to provide a scientific review of the Shedd et al. (2016) titled *Genetic Stock Composition of the Commercial Harvest of Sockeye Salmon in Kodiak Management Area*. This

[1] See brief biographical statement in Appendix A

complex 154-page report describes an extensive genetic analysis followed by a statistical analysis of the genetic data for Kodiak area fisheries in catch years 2014, 2015, and 2016. The principal genetic tools that were used for this study were the single nucleotide polymorphism, or SNP, approach. Here we will comment on scientific criticisms of the study that appear relevant, we will briefly comment on the various methods and techniques that were used, and we will offer a broad assessment of the significance of the major findings. As we will explain in more detail below, the study appears to have been carefully conducted and the numerical estimates appear to be well crafted and reliable.

The Alaska Department of Fish and Game had previously tried to use scale pattern analysis and an analysis of fish size to estimate the proportion of non-local stocks in the Kodiak Management Area. For various technical reasons neither of these techniques were very successful. In one of the last reports on the attempts to use fish size for this purpose, Vining (1996) wrote, "As the 1995 analysis indicates, this methodology continues to generate only rough estimates, some with little confidence." It is the opinion of Vining that "other techniques, such as genetic stock identification, tagging or scale pattern analysis should be evaluated for use in the future, if more precise estimates of stock composition for sockeye salmon caught within the [Kodiak Management Area] are desired." This leads us to the present genetic study by Shedd et al. (2016).

The genetic analysis of stock mixtures rests on several assumptions. The analysis starts with the definition of a *catch mixture*, because the catch is presumably made up of a mix of stocks. Importantly, the number of contributing stocks must be known, they all must be sampled, and the genetic character of each stock must be established. Next, a representative sample of the catch mixture must be drawn and the genetic character of each specimen in the catch sample must also be established. Finally, a complicated statistical algorithm can then be used to produce an estimate of the proportion of each of the stocks in the mixture by comparing the genetic characterizations of each fish in the catch mixture to the previously established genetic characterization of the contributing stocks.

A complete analysis must include a study of both the accuracy and the precision of the estimates. In this context, *accuracy* refers to the absence of any statistical bias or other kinds of systematic errors that would consistently cause specific stock estimates to be too high or low. Here *precision* refers to errors that are caused by using only a sample from the stock of origin and the catch mixture, rather than an examination of every single fish in the fishery and every single fish in the spawning stocks. Generally, accuracy is harder to study, detect, and control, while precision can generally be controlled by increasing the sample size. Also, precision is usually studied by looking at the variation from one specimen to another in the samples. Precision measures are usually offered in the form of confidence intervals, standard errors, or coefficients of variations.

Sampling Design

The goal of the study by Shedd et al. (2016) is to determine stock compositions of sockeye salmon within the Kodiak Management Area. Consequently, sampling was restricted to the Kodiak Management Area, rather than to the overall range of sockeye salmon in the western Gulf of Alaska. The authors defined six Kodiak spatial strata of interest (called subregional sampling groups) for *sampling* genetic tissues, comprised of (1) Uganik-Kupreanof, (2) Uyak, (3) Karluk-Sturgeon, (4) Ayakulik-Halibut Bay, (5) Alitak, and (6) Igvak. The first five are located around Kodiak Island, while Igvak is part of the mainland district. The Chignik

regional reporting group had combined estimates from subregions Black Lake and Chignik Lake. Four other regional spatial strata outside of Kodiak and Chignik were West of Chignik, Cook Inlet, Prince William Sound, and South of Cape Suckling. The report did not contain justification for this particular choice of spatial strata, but suggests that considerations included areas with active management and those that are used in run reconstructions to aid management.

One confusing area is that several spatial scales are referred to in the report. For *reporting* purposes (instead of *sampling*), there are a total of 14 subregional *reporting groups* listed on page 2 that constitute the entire western Alaska area. The report designates ten of these groups as *subregional reporting groups* within the Kodiak (8 subregions) or Chignik (2 subregions) *regional reporting groups*. Six regional reporting groups including those outside of Kodiak and Chignik are listed in the tables, with subregional breakdowns for the 8 Kodiak subregions and the 2 Chignik subregions. In the end the system does seem to be consistent; however, we recommend a simpler and clearer description of spatial divisions. *These definitions of spatial strata must be understood to understand the tables and figures of results, which include both regional reporting groups and subregional reporting groups.*

The report indicates that temporal strata are also considered in combination with the spatial subregional strata: Early, Middle, and Late (see page 3 in the Shedd et al. (2016) report. The temporal strata are consistent with patterns that have been observed in past studies.

The sample size goal was to extract 380 tissue samples from each time-area stratum; no reference was provided for this number. The sampling within temporal strata was intended to be proportional to daily abundance. When this was not possible, the total sample size was obtained by sampling days with sufficient additional samples at random until the total of 380 was achieved, a reasonable approach.

We could not determine if sampling was representative within spatial strata, although the intent of the authors appears to be sampling proportional to harvest, a reasonable goal. It would be helpful to have a brief description elaborating the protocol used to achieve this goal.

The sampling design most appropriate for multiple strata with high variation among strata, to obtain high precision and accuracy, is stratified random sampling (Thompson 2016). In the future it would be desirable to show that high variation is present and the improvement in precision by using stratification over simple random sampling. One advantage to using a proportional allocation of sample size with respect to within stratum variation is that different choices for strata are not likely to produce inaccurate estimates. Nevertheless, it is not necessary to use proportional sampling to justify the use of stratified sampling in terms of accuracy, as long as a representative sample is obtained within each stratum. In particular, the use of a fixed sample size of 380 for all spatio-temporal strata is completely acceptable. (Although it may not be the most efficient allocation scheme, it does not induce estimation bias.)

The use of stratified random sampling also has a desirable product in that both relative and absolute stock compositions can be estimated both for individual strata and for combinations of strata, including that portion of the entire Kodiak Management Area that was sampled (not every single fishery was sampled). The main reason for this ability is that catches are known for all spatio-temporal strata. This is one fundamental principle that

makes estimation across strata intuitive, accurate, and precise, because relative stock compositions are projected to the total catch to get absolute stock compositions by strata that can then simply be summed across a set of strata of interest.

An additional feature of the sampling design is a set of data quality control procedures regarding the genetic data to avoid the inclusion of erroneous data into the analysis (pages 8–9). Thus, we were unable to uncover any appreciable flaws in sampling, genetic data processing, or genetic analyses in the study.

In summary, we believe that the overall sampling design of using stratified random sampling is appropriate for the genetic analysis of estimating stock composition of sockeye salmon in the Kodiak Management Area. Further studies should be done to consider alternative stratification choices both within space and time and to justify the sample size goal of 380 samples per stratum.

Policy Issues and Stated Goals for the Study

In the introduction of the Shedd et al. (2016) report, the reader finds that the stated purpose of the study was to "sample the major sockeye salmon commercial fisheries in marine waters of [the Kodiak Management Area] from June through the end of August and use genetic mixed stock analysis (MSA) to estimate stock compositions and stock-specific harvests." Later in the report, the reader finds this statement about the goal of the project: "The overall goal of this project is to provide information that will be useful for reconstructing runs, building accurate brood tables to define escapement goals, and refining management by identifying spatial and temporal harvest patterns of *local* and *nonlocal* stocks (emphasis in the original)." Later, the reader finds four stated objectives, including "report [genetic mixed stock analysis] results of stock-specific harvests of sockeye salmon sampled from *selected* commercial fisheries in [the Kodiak Management Area], 2014—2016 (emphasis added)," and "characterize where stocks were harvested from *select* commercial fisheries (again, emphasis added)." This report did not have the express purpose of making arguments regarding allocation decisions by the Alaska Board of Fisheries.

Regardless, the study does conclusively demonstrate that sockeye salmon bound for Cook Inlet were caught in some times and in some areas in the fishing years studied. In the case of the Kodiak Area, there really was no reason to believe that the commercial harvest was made up of only single stocks that originated in the Kodiak Management Area. That is, a finding of rich stock mixtures in at least some times and areas should not have been surprising. There have been many long-standing questions about the degree to which stocks are mixed in the Kodiak Management Area. Summarizing historical tagging studies, Barrett and Swanton (1991) report that sockeye harvests in the North Shelikof Strait in the 1940s, 1970s, and 1980s ranged from 30% to 100% Kodiak fish and 0% to 59% Cook Inlet-origin fish. Moreover, Barrett and Swanton concluded there were large numbers of Cook Inlet bound fish in the North Shelikof Strait fishery in July of 1990.

Contribution Rate Versus Harvest Rate

There are two important rates or proportions that can be derived from stock composition analysis and discussed before policy-making bodies, such as the Alaska Board of Fisheries:

the *contribution rate* and the *harvest rate*. These two statistics have very different significance to management. These two rates have often been confused in conversations among fishermen, in testimony before the Alaska Board of Fisheries, and in conversations with members of the press. The percentage that each stock makes up in a mixture of stocks is called the *contribution rate* (or sometimes the *stock proportion*). For example a fishery may have harvested 50 fish, and 40 of those fish might be from Stock A, with 10 fish from Stock B. Then the *contribution rate* of Stock A is 80%=(40/50)100%. For the purposes of management that could be either high or low. But if the contribution rate was 80%, then this does *not* mean that 80% of the stock was harvested; a harvest rate can be estimated only with abundance or run-size information for the stock of interest.

A large number for the contribution rate is not necessarily important to management, but it could be. If the original size of Stock A was 10,000 fish before this harvest, then the *harvest rate* on Stock A in the catch mixture would be 40/10,000 = 0.4%—which may be considered insignificant. Alternatively, if the original size of stock A was only 150 fish before the harvest, then the harvest rate would be 40/ 250 = 27%—which would usually be considered significant from a management perspective. Although moderate-to-large contribution rate statistics can lead to misplaced anxiety or even outrage, the most important statistic for management policy is the harvest rate, which is the rate that is most clearly related to the population dynamics of a stock.

Technical Comments on Bayesian Analysis and Uncertainty Measures

The statistical analysis was carried out using the Bayesian method of Pella and Masuda (2001). We contend that this method is a reasonable approach with several advantages over the more traditional *maximum likelihood* approach. As this is a Bayesian approach, there are some differences between the interpretations of the measurements that may be confusing and unnecessarily tedious to some readers of the Shedd et al. (2016) report. In the method of Pella and Masuda (2001), the unknown contribution rates (or stock mixing proportions, as they call them) are treated as unknown random variables rather than constant and unknown parameters in the maximum likelihood approach. The analysis proceeds by simulating the probability distributions of these random quantities, with the genetic data used to help develop these distributions.

In a Bayesian analysis, uncertainty in stock contribution rates is frequently displayed by the use of *credible intervals* rather than *confidence intervals*. For example, in Table 3 of the Shedd et al. (2016) report, for the Kodiak reporting group the 90% credible interval runs from 80.9% to 88.1%. The correct interpretation of this interval is that given all of the stated assumptions, *the probability is* 90% that the true value is found between 80.9% and 88.1%, given a list of assumptions. Many people, incorrectly, think this is exactly what a 90% confidence interval is, but this is a mistake for some technical, statistical reasons. For the purposes of readers of this report, we note that the Bayesian results will often closely approximate the more traditional results (Pella and Masuda 2001), so that there should be no harm in simply interpreting the Shedd et al. (2016) credible intervals as the more familiar 90% confidence intervals to investigate uncertainty in the stock composition estimates. While every one of the assumptions that underpin the analysis is probably not strictly true, these intervals do seem to be a very reasonable guide to the precision in the estimates. Based on the reported credible intervals and based on the assumptions stated in the report,

the Shedd et al. (2016) estimates appear to be both accurate and precise enough for the purposes of the study.

The Results

In trying to understand the results of the analysis, readers of the Shedd et al. (2016) report may find Figures 8 through 19 helpful, especially when paired with the maps provided in Figures 1–7. Figures 8, 10, 12, etc. (the even-numbered figures) show the estimated contribution rates (or stock mixing rates) for stocks using two levels of detail for the authors' *subregional* and *regional reporting groups* mentioned above. These estimates are then reported by specific time-area catch strata. At the highest level of aggregation there are six regional reporting groups, or what might be considered stocks in the broadest sense: (1) West of Chignik, (2) Chignik, (3) Kodiak, (4) Cook Inlet, (5) Prince William Sound, and (6) South of Cape Suckling. These groups may be the most useful for discussions about fishery management policy. Additionally there are estimates for 10 specific subregional reporting groups, or what might be considered stocks in a more narrow sense, in the Westward Region, and these estimates may be more useful for actual managers or to look at the reasonableness of some of the estimates. Similarly, the odd-numbered figures (Figures 9, 11, 13, etc. in Shedd et al. (2016)) have the stock contribution rates re-expressed as the stock-specific *number of fish harvested* (compared to rates in the previously mentioned figures) in the mixtures.

The usual pattern in these figures is that the majority of the fish harvested in each time-area grouping originated in the Kodiak management area. There are some notable exceptions, especially in 2015. For example, in the Ayakulik-Halibut Bay area, a large fraction of the fish were classified to be of Cook Inlet origin, especially in 2015 during the July 4 to August 1 period (Figure 14 in the report by Shedd et al. (2016)). When viewed in terms of numbers of fish, rather than proportions, the effect looks even stronger (Figure 15). In the Alitak district the catches of fish classified to Cook Inlet exceed the number of fish classified to the Kodiak area in two years: 2015 and 2016. Here too, the effect looks even stronger when views as the number of fish harvested 2015 (Figure 17). However, when summing over time and area, in all study years fish of Kodiak area origin dominate the catch, although catches of Cook Inlet-origin fish increased in 2015, and to a lesser extent, remained high in 2016, when compared to 2014 (Figure 20 in Shedd et al. (2016)).

Questions about why the harvest of Cook Inlet fish might be higher or lower in specific times or areas are beyond the scope of this review. One obvious question is could this variation in the proportion of Cook Inlet-origin fish be due to variation in the sizes of sockeye salmon runs in Cook Inlet?

To get at this question we simply ignored Lower Cook Inlet and brought together run size estimates for Upper Cook Inlet (Alaska Department of Fish and Game, retrieved August 17, 2017), together with the Shedd et al. (2016) estimates of the harvest of Cook Inlet bound fish in the Kodiak Management Area (taken by eye from Figure 20 or from Tables 67–69). As a point of reference, Stopha (2017) projected that approximately 0.3 million sockeye salmon would be returning to hatcheries in Lower Cook Inlet 2017. We assume that the times and areas sampled by Shedd et al. (2016) represent areas where interceptions of Cook Inlet fish would have been considered to be most likely, although we do not know that is true. Here again, as a point of reference, the total fish accounted for by the six Regional Reporting

Groups in Tables 67–69 was about 50%–60% of the total reported harvest for the Kodiak Management Area for the three study years (catch numbers from Munro 2015 and later reports in this series). Even though not all times and areas in Kodiak Management Area were sampled and even though there was some sockeye salmon production in Lower Cook Inlet, we expect that the Shedd et al. sockeye salmon catch estimates of Cook Inlet bound fish caught in the Kodiak Management Area divided by the estimated Upper Cook Inlet run size to provide a crudely reasonable—even if slightly too low—approximation to the harvest rate on Cook Inlet-origin fish harvested in the Kodiak Management Area (Table 1).

Although there are only three years available for comparison, it does not appear that changes in run size explain the difference in harvest rates on the Cook Inlet stocks. The highest harvest rate on Cook Inlet stocks was in 2015, the year with the highest in-Inlet run size among the three study years, but the second highest harvest rate is on the year with the lowest run size (Table 1 below).

Table 1. Upper Cook Inlet run size in millions of sockeye salmon **(A)** (from ADF&G), the estimated harvest of Cook Inlet-origin sockeye salmon caught in the Kodiak Management area in millions of fish **(B)** (From 67–69 in the Shedd et al. (2016) report), and the approximate harvest rate (estimated harvest in the Kodiak Management Area divided by the in-Inlet run size plus the harvest in the Kodiak Management Area) on Cook Inlet-origin sockeye salmon in the Kodiak Management Area **(C)**.

	(A) Cook Inlet run size	**(B)** Cook Inlet catch in KMA	**(C)** Approximate harvest rate
Year	(millions)	(millions)	in KMA
2010	5.71		
2011	8.68		
2012	6.46		
2013	5.74		
2014	5.54	0.1	2%
2015	6.29	0.6	9%
2016	5.04	0.4	7%

Another important question: were the harvests of Cook Inlet-bound sockeye salmon excessive? Though this is a policy judgment, rather than a scientific question, we note that in the years 2014-2016, the estimated *harvest rate* ranged from 2% to 9%, and did not reach or exceed 10% in any year in the study (Table 1). Some might point out that the way we calculated the harvest rate under-represents its true magnitude—and the estimates in Table 1 very well may be too low. Even so, it would be highly unlikely we have underestimated it by a factor of 2, meaning that the median harvest rate over the three study years would have been almost surely less than 15%, and probably considerably less.

Are there areas where the proportion or numbers of Cook Inlet-origin sockeye salmon are higher than in other areas? Figures 22, 23, and 24 in the Shedd et al. (2016) report are useful for speculating about this question—although it is really impossible to establish a trend with only three years of data. Notice that the area with the highest number of Cook Inlet-origin fish was Ayakulik-Halibut Bay in 2014 and again in 2015. However, in 2016 the number of Cook Inlet-origin fish in this district was much reduced from the previous year, and a larger number of Cook Inlet-bound sockeye salmon was caught in the Igvak area—which had previously been an area with very few Cook Inlet-origin fish harvested.

When time is brought into the discussion the situation also appears murky. The proportion of Cook Inlet-origin fish caught in the Uyak area is relatively low in all sampling periods in 2014 (Tables 15, 16, and 17 in the Shedd et al. (2016) report, yet the proportion rises to relatively high levels (54% and 32%) in the second and third sampling periods in 2015 (Tables 20 and 21). Then in 2016, the proportion was much reduced, with over 80% of the fish harvested in each period in this catch area belonging to the Kodiak reporting group (Tables 23, 24, and 25). This observed variation shows the danger in looking at just three years and thinking that one sees a trend. Further sampling and study is warranted to understand patterns of temporal variation.

The proportion of Cook Inlet-origin fish in the Ayakulik-Halibut Bay area is relatively low (less than 8%) in the first sampling period (June 1 to June 27) in 2014, but that this rises to 24% in the second period (June28 – July 25) of that year, and then falls to about 5% in the last sampling period of that year (Tables 39, 40, and 41). However, in the next year this proportion starts high in the first period (28%), rises to 48% in the second period, and then drops to less than 10% in the last period (Tables 43, 44, and 45). In 2016, the first period contains essentially all fish originating from the Kodiak Management Area (>99%; Table 47), but the proportion of Cook Inlet-origin fish again rises in the second period to nearly 42%, and remains high at 28% in the third period (Tables 47, 48, and 49). A person focusing on the similarities would note that the second sampling period for this district was consistently high in all three sampled years, and that is correct. However, someone focusing on the large year-to-year variation in the proportion of Cook Inlet-origin fish would correctly point out that with three data points it is premature to speculate that this pattern will continue into the future.

Final Comments

The Shedd et al. (2016) report is generally well written, organized, and it offers a reasonable amount of specific details about the actual genetic and statistical analyses. While it is impossible to judge the care, attention to detail, and technical skill that actually went into actual genetic analysis from the written page, the report demonstrates a great deal of

technical sophistication. The sections on "Laboratory Quality Control" appears to demonstrate that the authors did take reasonable care to detect and report on obvious mistakes. The Alaska Department of Fish and Game's Gene Conservation Lab has an excellent reputation for this kind of work. It would be extremely surprising to find that many, if any, outright mistakes were made in either the genetic or the statistical analyses.

The estimates in the Shedd et al. (2016) report seem quite reasonable. Catches were generally dominated by fish that originated within the Kodiak Management Area. Although there are some exceptions, a finer-scale examination shows catches were generally dominated by stocks that originated near the area of harvest. The Shedd et al. (2016) report is technically sophisticated and it contains features that we have found are indicative of a study that is carefully conducted. We found no reason to think that there were any large inaccuracies in the study, and the reported measures of precision provide evidence that the reported estimates are trustworthy and suitable for their intended purposes.

Finally, we note that the estimated harvest rate on Cook Inlet-bound sockeye salmon were below 10% in each year, and substantially below 10% in one year. These harvest rates generally agree with what previous, less accurate studies, have suggested. However, with only three years of measurements, with a large fraction of the catch not sampled, and with large annual variation in those measurements (much larger than the error obtained from the credible intervals), it is very hard to conclude that these results bracket the range of what to expect if the study were to be repeated, or to conclude that these results represent what would happen in a "typical year" (if there ever is such a thing). We recommend that the genetic analyses in this study be conducted to better understand the apparently real variation in stock contribution estimates (both rates and harvests).

These estimates in Shedd et al. would have been more useful for policy discussions if they could be recast in terms of harvest rate rather than contribution rate. In fairness, we note that this was not one of the stated goals for the study, but this appears to be a subject that needs to be addressed in the future. We have tried to crudely approximate the harvest rate using information that was easily accessible to us. While our specific harvest rate estimates can be easily criticized, it is clear that the harvest rate was probably much less than 10% in most study years and almost surely less than about 15% in each year of the study. In the future, we recommend sampling in some of the time and area strata that were not sampled in 2014–2016, or else we recommend some discussion of why specific time-area strata can be assumed to have very low contribution rates for stocks outside the Kodiak Management Area.

Acknowledgments

We thank Heather McCarty for her help in proposing this review and guidance into the scientific and management issues involved.

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Appendix A – Biographical Statements for the Authors

Harold J. Geiger is the chief scientist for the St. Hubert Research Group, a small consulting company in Juneau, Alaska. He previously worked for the Alaska Department of Fish and Game, holding several positions on the salmon research staff of the Division of Commercial Fisheries before retiring in 2007. He held the position of Chief Biometrician in the late 1990s and was the Salmon Research Supervisor for the Southeast Region in the early 2000s. He holds a Master's degree in Statistics from Oregon State University and a PhD from the College of Fisheries and Ocean Sciences at the University of Alaska Fairbanks.

Terrance J. Quinn II, Ph.D. has been Professor of Fish Population Dynamics in the Fisheries Department, College of Fisheries and Ocean Sciences, University of Alaska Fairbanks for 32 years. He obtained his Ph.D. in Biomathematics from the University of Washington in 1980. Dr. Quinn's research focuses on fish population dynamics; estimation of fish and whale abundance; sampling theory; and renewable resource management systems. He is the co-author or co-editor of 4 books and over 100 scientific publications and has shepherded about 40 students through their post-graduate careers. He has been a member of the Statistical and Scientific Committee of the North Pacific Fishery Management Council since 1986 and was a former chair of that body. He is a former member of the Ocean Studies Board of the National Academy of Sciences and served on five of their committees, including two as chair or co-chair. He is an Associate Editor of the Canadian Journal of Fisheries and Aquatic Sciences.

Appendix B: Some Comments on Stock Mixture Analysis

The earliest techniques for developing these estimates were based on simply capturing migrating salmon, tagging them with a visible tag, and then looking for the tags on spawning fish. By comparison, this is a crude technique as it is hard or even impossible to control for how much effort went into looking for tags. That is, a stock with a small contribution to the mixture could result in a large fraction of the recovered tags if, for example, there was a counting weir on the spawning stream of that stock.

A technique that is somewhat more sophisticated is based on an analysis of scale patterns, and this technique was used extensively in the 1980s and 1990s. The technique was based on the assumption that fish originating from different systems had different growth patterns,

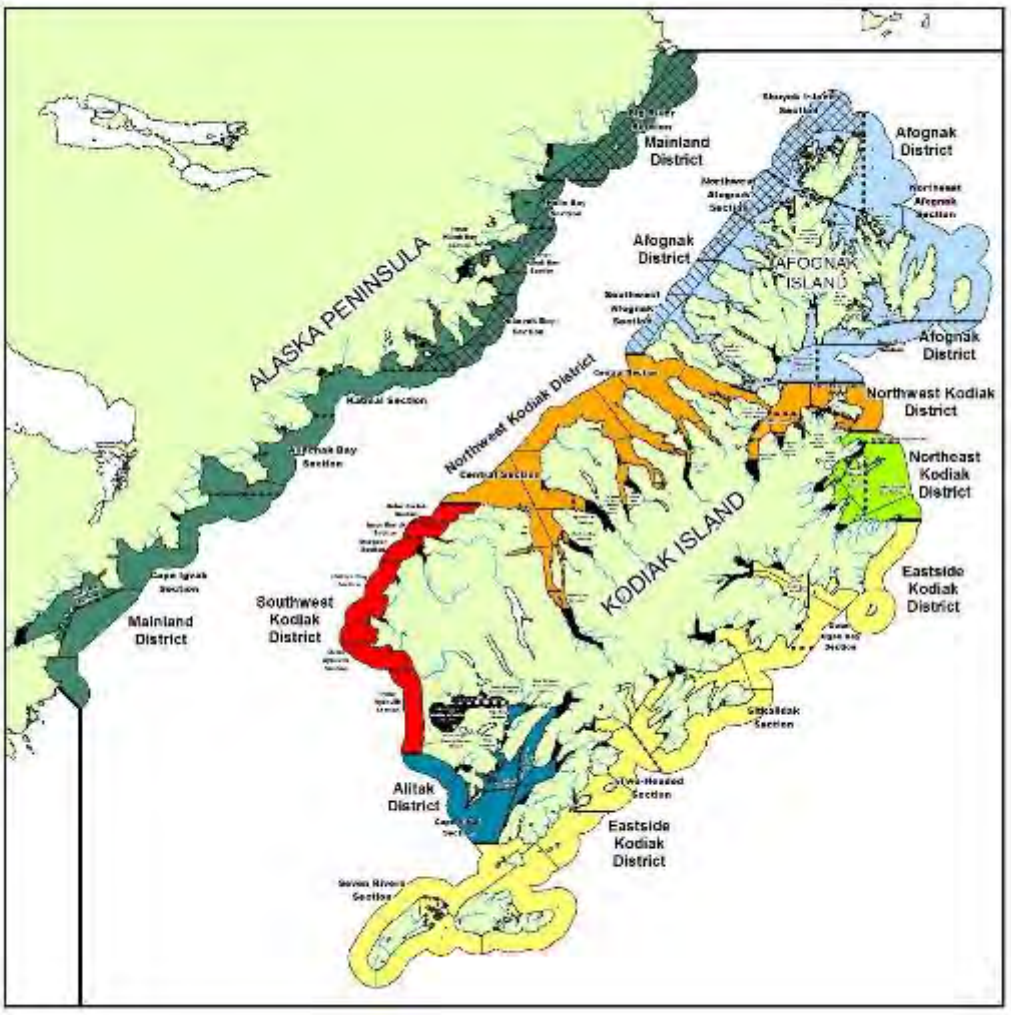
which would be represented on the scales of the fish. A large sample of scales needed to be collected for each stock, each year. Then a very large (often over 100 measurements) can be used to characterize the scale pattern for that stock, as the growing conditions that affect the scale patterns change from year to year. A complex statistical algorithm (called a linear discriminate function) is used to look for the specific measurements that show the most differences among stocks. The results from this discriminate function can then be used to classify fish in the fishery mixture to the stock that most likely produced it.

In Lynn Canal in Southeast Alaska, scale patterns were used to estimate the proportions of Chilkat and Chilkoot Lake sockeye salmon in a mixture to both actively manage a gillnet fishery during the fishing season and to study the productivity of the stocks after the fishing season. This was an ideal situation as the number of stocks was small and the patterns were quite different. As the number of stock in the mixture increased beyond just a few, or as the growing conditions among the stocks were more similar, scale pattern analysis estimates become uncontrollably imprecise, and the accuracy of the estimates would also degrade.

In the 1990s, genetic tools showed obvious advantages over other techniques. The first genetic techniques are sometimes called the allozyme techniques. Although these were time consuming and expensive, one of the main advantages was the individual stocks no longer needed to be characterized each year, as the genetic character of the stock changed slowly, if at all. Later, microsatellite techniques replaced allozyme techniques for a number of technical reasons. Finally, the SNP (Seeb et al. 2011) approach, used in this study, is usually thought of as the current state of the art and most cost-effective method of conducting a complex stock mixture analysis.

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Gulf of Alaska Climate Conditions and Sockeye Salmon

Run Timing During 2014-2016

Report to the Kodiak Salmon Work Group

Michael A. Litzow, PhD

Executive Summary

During 2014-2016, staff from the Alaska Department of Fish and Game sampled sockeye salmon in Kodiak Management Area commercial catches to estimate stock-specific contribution rates to the fishery (Shedd et al. 2016). The authors of that report cautioned that "these analyses represent environmental and fishery conditions during a specific period of time…caution must be exercised when extrapolating the results to years, areas, and temporal periods not analyzed because changes in relative abundance among reporting groups, prosecution of fisheries, or migratory behavior due to ocean conditions very likely affect distribution of stock-specific harvests among fisheries" (p. 23).

The current report[2] evaluates the conditions during the years of the genetics study (2014-2016) in order to summarize how well that study may represent "typical" conditions for Gulf of Alaska sockeye runs. The specific goals of this report are to 1) review the state of ocean climate conditions during 2014-2016, 2) evaluate the evidence for effects on sockeye salmon migration and run timing during these years, and 3) summarize implications for applying the findings of the Shedd et al. (2016) genetics study as justification for making changes to sockeye salmon fisheries management in future years.

The primary findings of this work are as follows:

1. **The "Warm Blob" climate event dramatically affected ocean physics across the North Pacific during 2014-2016.** These years were characterized by unprecedented climate conditions in the Gulf of Alaska. Sea surface temperatures and air temperatures were at or beyond previously-observed maxima. River temperatures in South Central Alaska were also higher than ever observed, and river flow volumes were unusually low. Summer sea level pressure was unusually high, which led to reduced wind mixing of ocean water.
2. **Many unusual ecosystem responses were observed in the Gulf of Alaska during 2014-2016**, highlighting the strong effects that unusual climate conditions had on populations and communities at all taxonomic levels, from plankton to fish, seabirds, and marine mammals.
3. **Sockeye salmon showed unusual run timing during 2014-2016.** Catches and escapement were later than usual in many areas, both in Kodiak and Upper Cook Inlet. At the same time, some runs, such Kasilof River sockeye, were earlier than usual. Since no data on at-sea migration patterns of sockeye salmon are available for these years, these findings provide the best available information concerning sockeye salmon migration during 2014-2016, and suggest the possibility for unusual patterns of stock mixing.
4. **Unusual sockeye run timing is directly linked to unusual climate conditions.** The link between climate conditions and run timing is highly nonlinear and accelerating. In general, warmer conditions and increased atmospheric pressure during 2014-2106 were directly related to a tendency towards later overall run timing in sockeye salmon, although some runs were also unusually early.
5. **The rate of physical and biological change currently occurring in the Gulf of Alaska is unprecedented, and suggests the need for caution when re-evaluating long-standing management practices based on a few years of data.** Biological responses to climate disturbance are complex and often time-lagged. The trajectory of fisheries change in the Gulf

[2] See Appendix A – Biographical Statement

of Alaska is therefore impossible to predict, but given the size of the ongoing climate disturbance, the full range of fisheries responses has likely not yet played out. Data from 2014-2016 are likely to be a snapshot of a rapidly changing system, and given the potential impacts of physical conditions on stock mixing, are likely to quickly become outdated as unusual climate conditions continue.

Conclusion: The Gulf of Alaska is currently undergoing rapid change outside the envelope of historical conditions. In this situation, the ability of data from 2014-2016 to serve as a reliable guide for future conditions is highly questionable. These considerations are exactly in line with the caution provided by Shedd et al. (2016) concerning the use of their data in situations materially different from those under which the study took place, and suggests the need for a precautionary approach to possible management changes based on these results.

Background

Unprecedented high atmospheric pressure over large areas of the North Pacific in winter 2013-14 led to reduced wind mixing and Ekman transport, so that normal ocean cooling at the end of summer failed to occur. This event persisted into 2016, and became known as the "Warm Blob" (Bond et al. 2015). In terms of duration, size of area affected, and degree of warming involved, this event became the strongest marine heatwave ever observed globally (Di Lorenzo and Mantua 2016, Hobday et al. 2018). In the Gulf of Alaska, temperatures during 2014-2016 were by far the highest in the historical record (Fig. 1). After a hiatus in 2017, unusually warm temperatures returned in 2018-2019, and warm temperatures are expected to intensify over coming decades (Walsh et al. 2018). The best scientific understanding is therefore that the Gulf of Alaska is entering a period of persistent change.

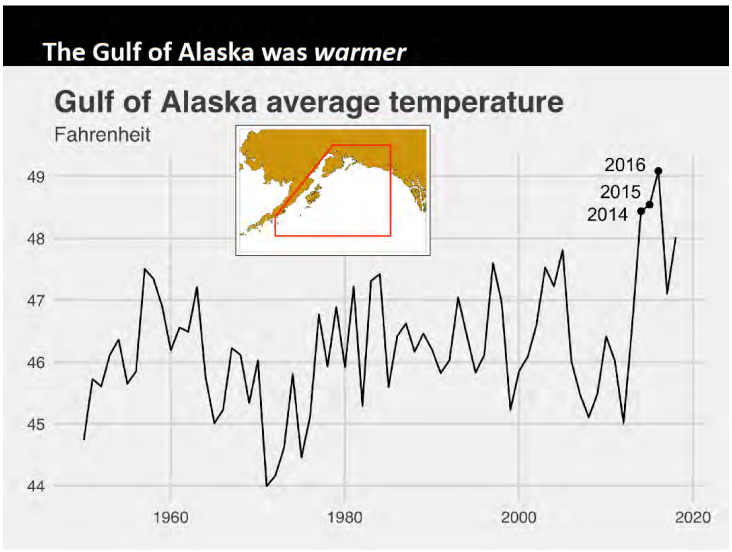


Fig. 1. Gulf of Alaska sea surface temperature (annual means), 1950-2018. Data from NOAA Extended Reconstructed SST v5.

A suite of other highly unusual climate conditions also occurred during 2014-2016 in the Gulf of Alaska. These included air temperatures and river temperatures that were at or above previous historical record high values (Fig. 2). And, in line with the high atmospheric pressure that was the immediate cause of the Warm Blob event across the North Pacific, atmospheric pressure at sea level was generally elevated over the Gulf of Alaska during 2014-2016 (Fig. 3). This high atmospheric pressure was associated with unusually weak wind mixing and wind-driven currents in the Gulf of Alaska ecosystem.

Salmon migration patterns are known to be highly sensitive to physical factors such as ocean temperature, ocean currents, river volume and river temperature (Quinn and Adams 1996, Hodgson and Quinn 2002, Hodgson et al. 2006). Sockeye runs in Cook Inlet are particularly prone to shared patterns of variability in run timing – in other words, unusual migration behavior tends to affect runs across Cook Inlet as a group (Hodgson et al 2006). Given the known sensitivity of salmon migration behavior to physical conditions, the climate event in the Gulf of Alaska has important potential implications for changing patterns of stock mixing in sockeye salmon.

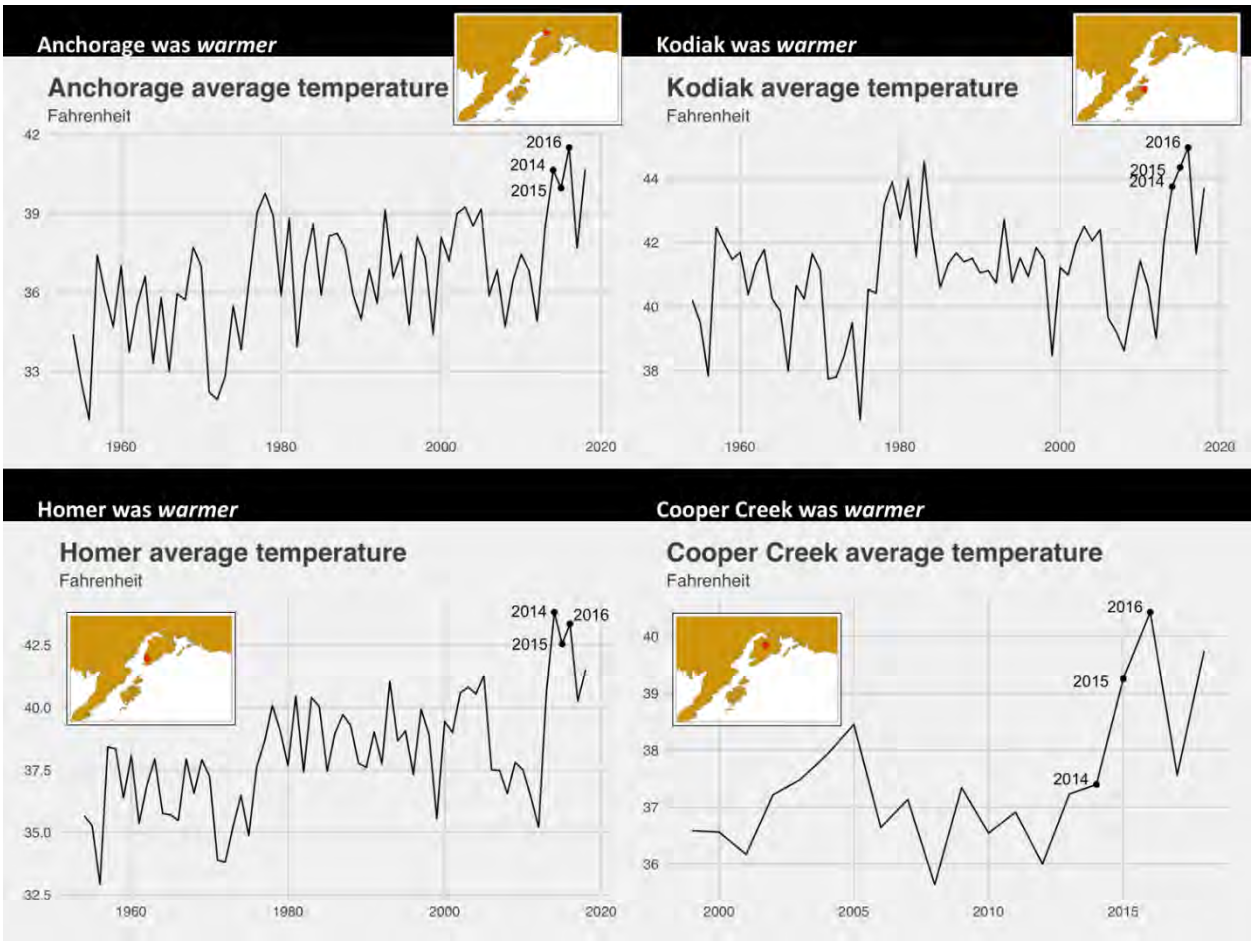


Fig. 2. Unusual air and river temperatures in Southcentral Alaska during 2014-2016.

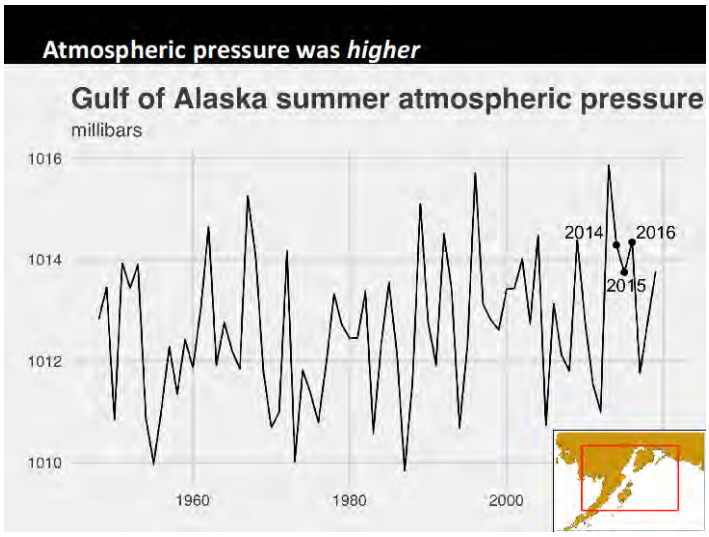


Fig. 3. Summer atmospheric pressure over the Gulf of Alaska, 1950-2018.

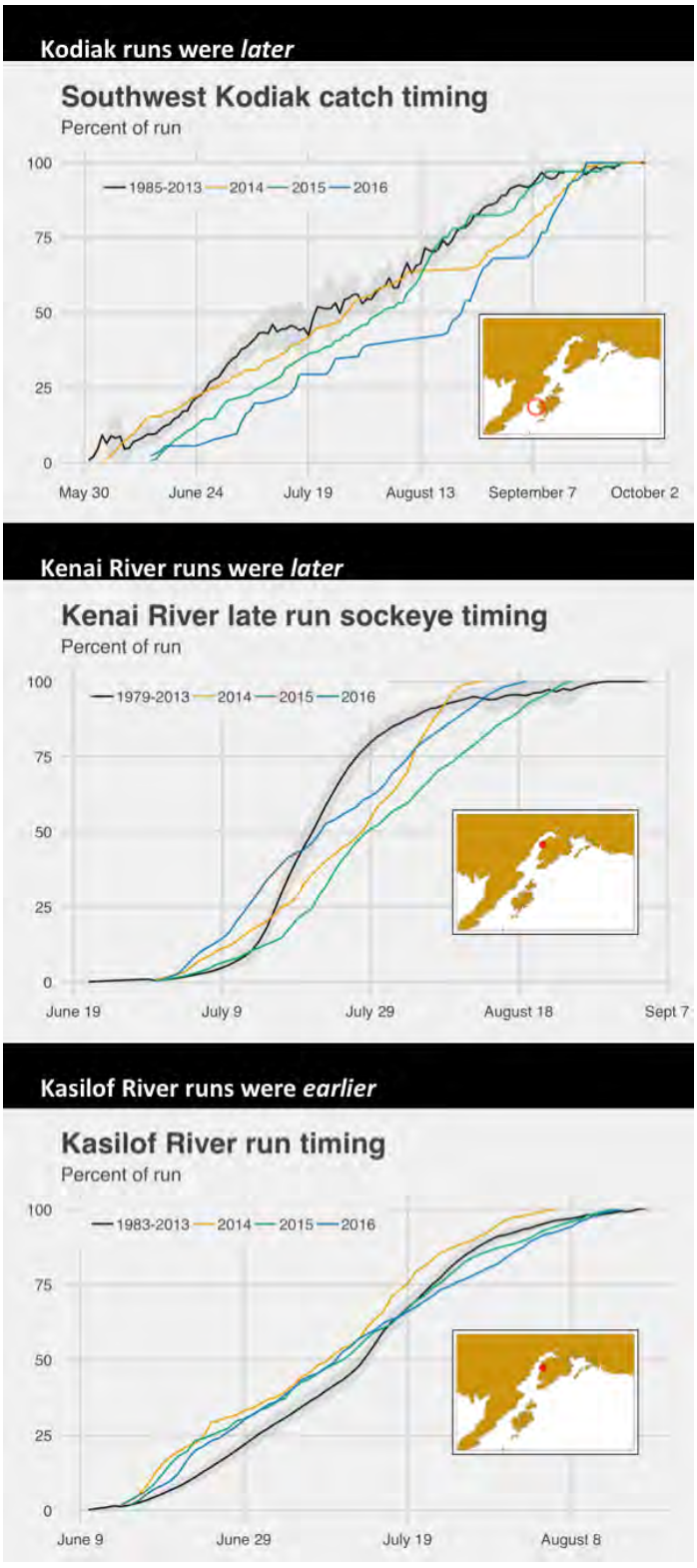


Fig. 4. Run timing of Southwest Kodiak, Kenai River, and Kasilof River sockeye salmon during 2014-2016 compared to long-term means.

Linking Ocean Temperate and Sockeye Run Timing

At-sea migration patterns in salmon remain poorly understood, and no data are available concerning the distribution and timing of Gulf of Alaska sockeye salmon returning to natal rivers during the period of interest. However, extensive records are available for the timing of commercial catches and escapement for important stocks, and these data provide the best available information for understanding recent changes in sockeye migration. Sockeye salmon run timing was estimated for this report with data on both escapement from a variety of Gulf of Alaska runs, as well as commercial catch data from both Upper Cook Inlet and the Kodiak Management Area (details in Data Sources and Methods). Several important sockeye runs showed run timing during 2014-2016 that was highly unusual when compared to long-term means (Fig. 4), suggesting that the unusual climate conditions during these years affected sockeye migration patterns.

In order to formally analyze the relationship between climate conditions and run timing, data were standardized across different long-term time series by calculating the day of the year in which 50% of the total run (catch or escapement) had occurred in each year (Quinn and Adams 1996). A Dynamic Factor Analysis (DFA) model was then used to summarize variability across the many different run timing information sources (Zuur et al. 2003). This DFA model showed evidence of shared variability (positive loadings) for Southwest Kodiak catches and Kasilof and Kenai River escapement. A variety of other data sources had weaker loadings on the shared trend (Fig. 5). The shared trend of variability in run timing showed an increasing trend since the early 2000s, with a further step increase beginning around 2014 (Fig. 6). Positive values in this

shared trend indicate a change towards later runs in time series with positive loadings, and earlier runs in time series with negative loadings.

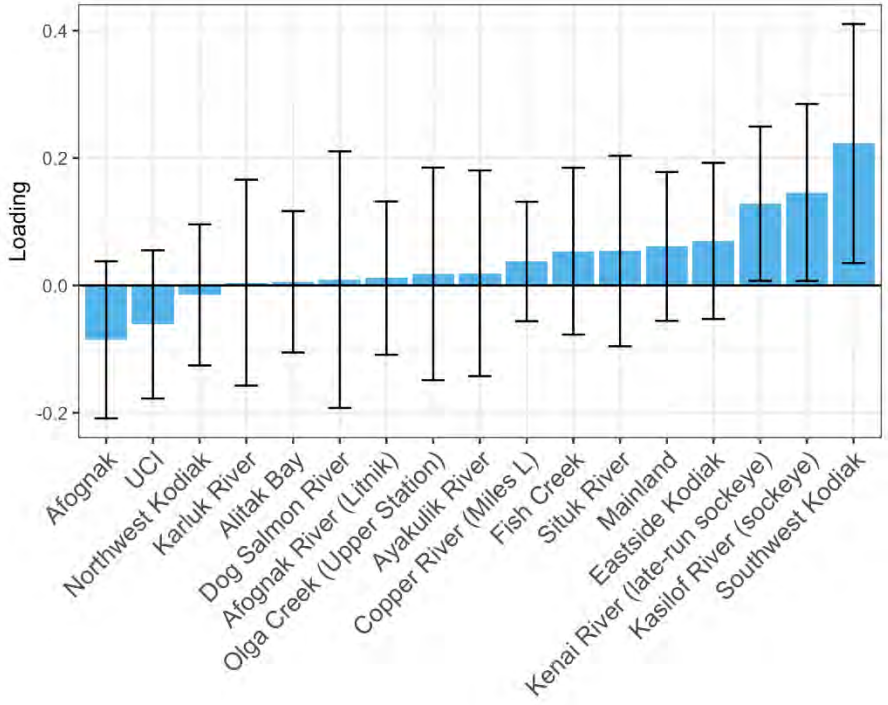


Fig. 5. Dynamic Factor Analysis summary of Gulf of Alaska sockeye salmon run timing, 1978-2019. Loadings on individual escapement and catch time series (day of year when 50% of run has occurred in each year, estimates with 95% confidence intervals). Time series with positive loadings are later when shared trend goes up; time series with negative trends are earlier when the shared trend goes up. UCI = = Upper Cook Inlet total commercial catch.

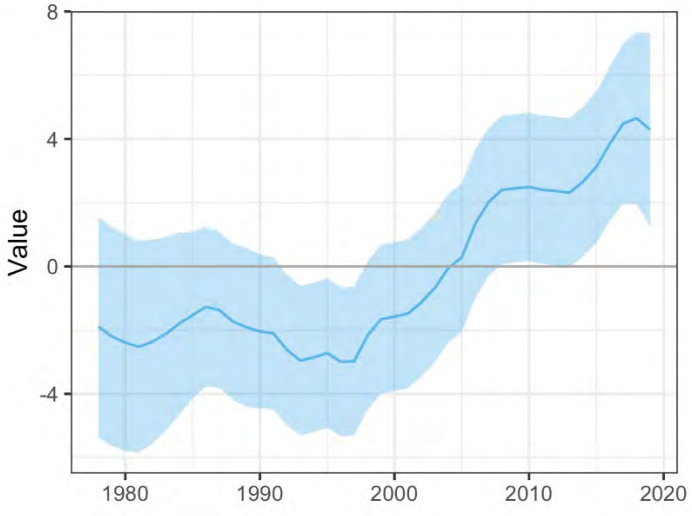


Fig. 6. Shared trend in sockeye run timing (estimate and 95% confidence interval) from DFA model. Value of 0 indicates average overall timing.

A variety of different Gulf of Alaska climate variables may influence sockeye salmon run timing, including sea surface temperature, sea level atmospheric pressure, river temperature, and river flow. A DFA model was again used to summarize variability across these different climate variables. This DFA model summarized overall climate variability as a combination of positive loadings for a range

of air, sea, and river temperature time series, and negative loadings for stream flow in Cooper Creek (Kenai River drainage) and Willow Creek (Susitna River Drainage; Fig. 7). In other words the model captures the tendency for temperatures at different sites to vary together, and for stream flow at those two Southcentral Alaska sites to decline in warm conditions. The shared trend of climate variability from this DFA model clearly shows the transition to extreme conditions since 2014 (Fig. 8).

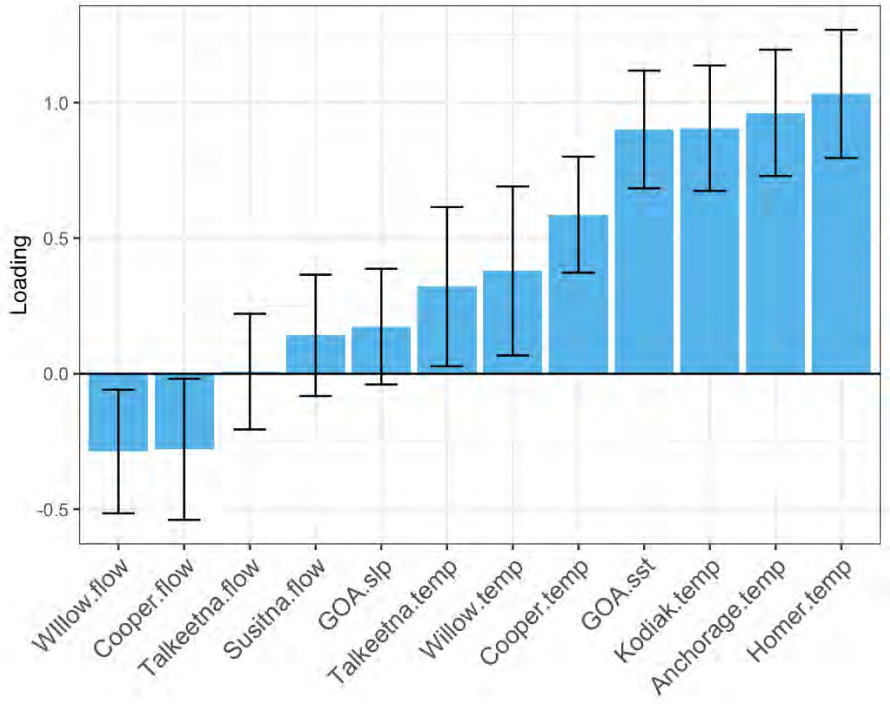


Fig. 7. Dynamic Factor Analysis summary of Gulf of Alaska and South-Central climate, 1978-2019. Loadings on individual climate time series (estimates with 95% confidence intervals). Time series with positive loadings go up when the shared trend goes up; time series with negative trends go down when the shared trend goes up. GOA.slp = Gulf of Alaska sea level atmospheric pressure, GOA.sst = Gulf of Alaska sea surface temperature.

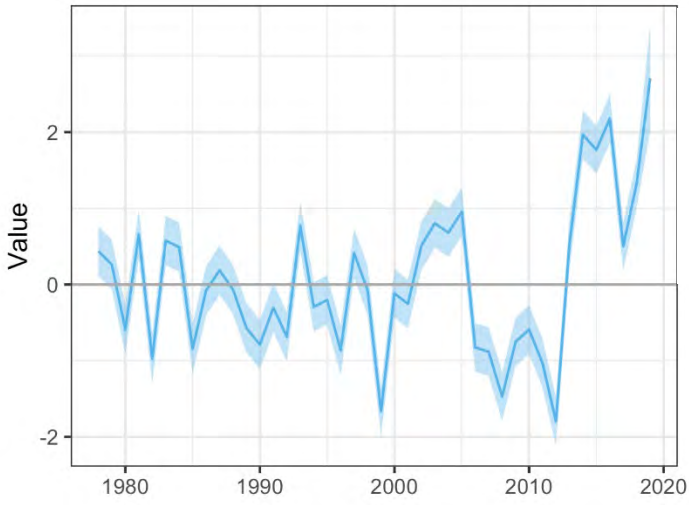


Fig. 8. Shared trend in climate variability (estimate and 95% confidence interval) from DFA model. Value of 0 indicates average conditions.

These results confirm that overall trends in both overall sockeye run timing (Fig. 6) and overall climate conditions for sockeye (Fig. 8) have been at unprecedented levels since 2014. The next step of the analysis is to evaluate the evidence that the two trends are related. An initial examination of possible driver-response relationships with a scatter plot of annual values in the climate trend and the sockeye run timing trend suggests a highly nonlinear relationship, with two distinct clusters of observations in the 1978-2019 time period (Fig. 9). This initial result suggests the possibility of two overlapping mathematical functions describing climate effects on salmon, occupying different parts of the time series. This kind of complex driver-response relationship, sometimes referred to as "alternative stable states" is a common feature of ecosystems experiencing disturbance from external factors such as climate change (Scheffer et al. 2012, Litzow and Hunsicker 2016). *This scatter plot also illustrates the highly unusual nature of the 2014-2016 period for both climate conditions and sockeye run timing: both quantities were at unprecedented levels in 2014-2016.*

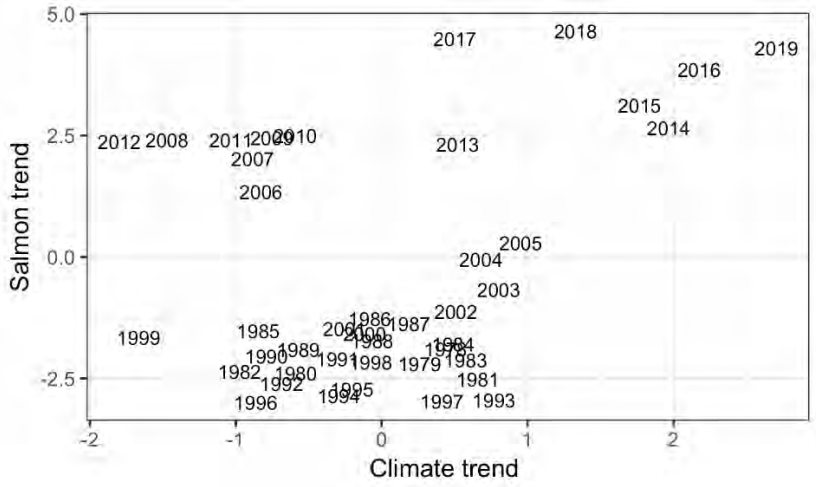


Fig. 9. Time series of climate conditions (shared trend from climate DFA model; driver variable) and sockeye run timing (shared trend from salmon DFA model; response variable).

The next step in this analysis was to test for meaningful relationships between sockeye run timing and climate state. This part of the analysis answers the question of whether there is evidence that run timing is responding to changes in the climate. This analysis used Bayesian linear regression models to determine if the slope of sockeye run timing on the shared climate trend (unit change in run timing per unit change in climate) is different from zero. These models do support the hypothesis of a meaningful relationship between climate state and run timing with an estimated slope that is clearly different from zero. These models also indicate that the relationship is strengthening over time (increasing intercept since the early 2000s (Fig. 10).

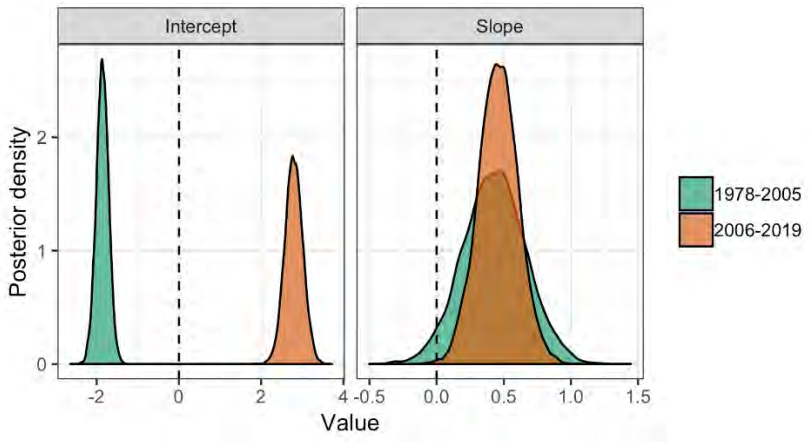


Fig. 10. Era-specific relationships between shared climate trend and shared trend in sockeye salmon run timing: posterior distributions for intercept and slope from Bayesian linear regression fit separately to data from 1978-2005 and 2006-2019.

As noted earlier, this kind of time-dependent driver-response relationship is a common feature of ecosystems experiencing external forcing (Scheffer et al. 2012), especially in instances of changing climate variables (Wolkovich et al. 2014). However, the causes of this kind of complex, nonlinear relationship are typically very difficult to determine, and understanding the apparent jump in sockeye response to climate forcing is beyond the scope of this report. What is apparent is the effect of the simultaneous change in run timing and climate: 2019 was the most extreme year on record for the climate trend, and 2017-2019 were the most unusual years on record for the shared trend in sockeye run timing, with 2014-2016 close behind (Fig. 9). In addition, a sensitivity analysis shows that similar results were obtained when only escapement time series were analyzed, indicating that management changes to catch timing do not explain changing run timing in recent years (results not shown).

Ecosystem Context

In addition to the unusual sockeye run timing noted above, a wide range of ecosystem responses to unusual climate conditions have been noted since 2014 in the Gulf of Alaska. These include the largest-ever observed mass mortality event for common murres and a variety of other chronic seabird mass mortality events; acute and chronic production of neurotoxins by harmful algal blooms (McCabe et al. 2016, Roggatz et al. 2019); significant mortality in humpback whales; unprecedented irruptions of pelagic colonial tunicates (*Pyrosoma* sp.); fisheries failures for Pacific cod and pink salmon; unusual patterns of primary productivity (spring blooms that are unusually early and small; Litzow et al. in prep), and shifts in zooplankton abundance and community structure (Litzow et al. in prep.). Taken together, these responses underscore the unusual nature of both the initial 2014-2016 Warm Blob and subsequent years, and the potential for continuing ecological change as long as the current warming event lasts.

Implications for Management

A very high degree of uncertainty currently attends ecosystem status in the Gulf of Alaska, both for the specific question of sockeye run timing and stock mixing, and for broader questions of stability in the ecosystem and fisheries. While the 2014-2016 return years were highly unusual for sockeye run timing as measured by the shared trend of run timing variability, even these extreme values have been exceeded during 2017-2019 (Fig. 3b). Given that biological responses to ecosystem perturbations such as climate forcing are complex and often lagged in time (Frank et al. 2011, Hughes et al. 2013), and that climate conditions have again returned to levels commensurate with those seen in 2016, the full scope of biological consequences of the current climate event has likely not yet become apparent. *In this situation of rapid change outside the envelope of historical conditions, the ability of data from 2014-2016 to serve as a reliable guide for future conditions is highly questionable*. The speed of change currently occurring in the Gulf of Alaska underscores the caution provided by Shedd et al. (2016) concerning the use of their data in situations materially different from those under which the study took place, and suggests the need for a precautionary approach to possible management changes based on these results.

Data Sources and Methods

Sea surface temperature data were extracted from the NOAA Extended Reconstructed Sea Surface Temperature data set (ncdc.noaa.gov). Sea level pressure data come from the NCEP/NCAR Reanalysis (esrl.noaa.gov). River temperature and river flow data come from the US Geological Survey (waterdata.usgs.gov). Air temperature data come from the Alaska Climate Research Center (climate.gi.alaska.edu). Data on sockeye run timing come both from escapement counts and commercial catch data obtained from ADF&G (adfg.alaska.gov). DFA models were fit following the recommendations of Holmes et al. (2018). Bayesian regression models were fit following the recommendations of Gelman et al. (2014).

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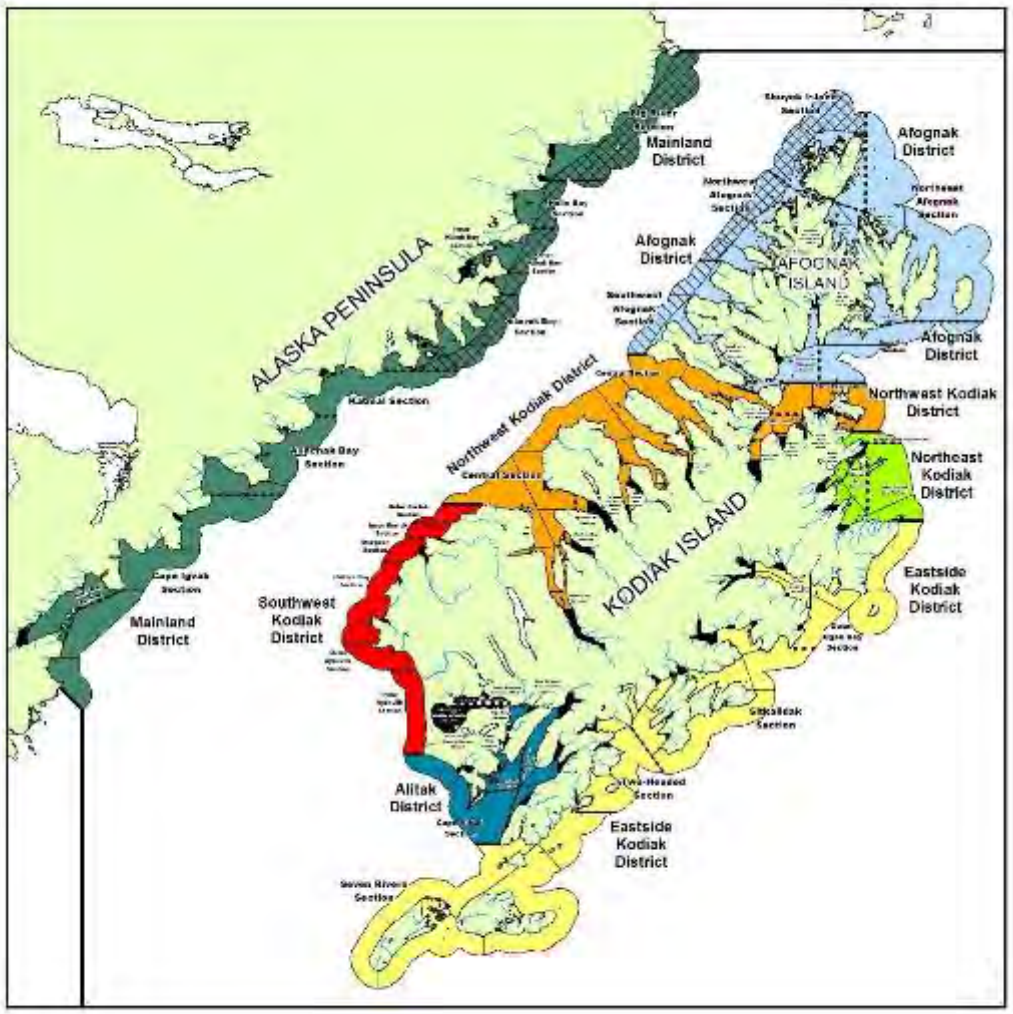
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Appendix A – Author's Biographical Statement

Dr. Michael Litzow is a fisheries oceanographer who studies the impacts of climate variability and climate change on commercially important fish stocks in Alaska. He obtained his B.S. in Biological Sciences from the University of Alaska, Fairbanks, his M.S. in Marine Science from the University of California, Santa Cruz, and his Ph.D. in Ocean Sciences from the University of Tasmania, Australia. Dr. Litzow's recent research has focused on the effects of changing ocean climate on Gulf of Alaska salmon stocks. His previous research has involved a variety of taxa, including groundfish, crabs, shrimp, herring, other forage fish, and seabirds, and he is the author of thirty peer-reviewed papers. Dr. Litzow is the owner of Blue World Research, a private consulting firm, and until recently was a research faculty member at the University of Alaska, College of Fisheries and Ocean Sciences.

December 2019



Synthesis of Chinook Salmon Stock Contribution Estimates within the Kodiak Management Area **Commercial Salmon Fisheries (Proposals 63 & 37)**

Kodiak Salmon Work Group

EXECUTIVE SUMMARY

- During all years and sampling periods regardless of the commercial salmon fishery district sampled, British Columbia (hatchery stocks) Chinook salmon dominated the

stock composition of the harvest. Estimates of contribution ranged from a low of 30% to a high of 70% with respective harvests of several hundred to several thousand fish.

- Consistently, contributions from Washington and Oregon Chinook stocks (Western US stocks) to the KMA commercial harvest ranged from 7.3% to 37% and averaged 28%.

- Contributions from Southeast Alaska/North Gulf Coast were in most cases higher than the combined contributions from both Kodiak and Cook Inlet. The estimates generally seemed to be reflective of periods of higher (1997-1999) and lower abundance (2014-2016) for Southeast Alaska stocks.

- The capability of any marine salmon fisheries sampling program to consistently estimate the harvest, in a timely manner, of at most several hundred fish over a commercial fishing season within the geographic scope of the Kodiak Management Area is untenable. Given the current status of both the Kodiak and Cook Inlet Chinook salmon stocks at present, the actions suggested by Proposal 37 are unwarranted.

- It should be noted that for the Cook Inlet stocks harvested within the Kodiak Management Area, a majority are hatchery fish produced for marine or in-river sport fisheries.

- The Chinook salmon stocks contributing to the Kodiak Management Area commercial fishery are similar to those contributing to most of the marine commercial and recreational fisheries from Yakutat to Adak, or coastwide.

INTRODUCTION

The Kodiak Management Area and the associated salmon fisheries has a long and storied history of sustainable fisheries management success. A foundational feature for this success is the escapement enumeration program using weirs and counting individual fish as they migrate upstream. This program has largely been in place since the early 1900s with weirs operated annually on the Karluk, Ayakulik and Frazer lake systems. Daily and cumulative escapement counts are relayed to the area management office for each system and when combined with other sources of data: harvests, aerial survey index counts (for systems without weirs), fishing effort along with additional biological data (timing, migration patterns, age composition) are all sourced into fishery management decisions and emergency orders to open or close districts, sections and subsections of fishing areas throughout the salmon fishing season. An additional vital feature of this program is the inclusion of enclosures or “traps” that allow for live sampling of the escapement, specifically for sockeye and Chinook salmon and the collection of biological attribute data (age, sex, length) which is imperative for building brood tables which in turn are employed for establishing and evaluating biological escapement goals and generating pre-season forecasts.

An additional prominent feature of the Kodiak Management Area salmon fisheries are the 7 management plans which guide management of the salmon stocks and species during the salmon

fishing season which commences in early to mid-June and extends into late September. The management planning process was largely initiated in the mid to late 1970s which was a period of extremely poor salmon production throughout the entire Kodiak Archipelago and was cause for multiple years of limited commercial fishing by all gear groups with the overall objective of rebuilding wild salmon stocks. These management plans were the result of extensive efforts by ADF&G management and research biologists, commercial fishermen, the local fish and game advisory committee and ultimately the Alaska Board of Fisheries over multiple triannual meetings (Malloy, 1988).

Description of Kodiak Chinook Salmon Fishery

The Kodiak Island area has two wild chinook salmon stocks (Karluk and Ayakulik Rivers) and one introduced run which originates in the Dog Salmon River. There have also been several hatchery produced chinook release sites permitted that promote road accessible shore/boat recreational fisheries. The commercial seine and set gillnet fisheries harvest Chinook salmon incidentally while targeting local sockeye, chum and pink salmon stocks along nearshore migration pathways. The harvests typically occur during June and July and at times the harvests can consist of immature or feeder Chinook that are traversing well established commercial fishing areas in the Westside, Southwest and Alitak Districts. The record commercial harvest of 42,000 fish in 1993 consisted of large numbers of immature/feeder kings and stimulated concern from the recreational sector within the Cook Inlet area that large numbers of the harvested fish were of Cook Inlet origin. The harvest during 1993 was almost twice the previous high estimate of 24,000 fish, which occurred in 1992. As a back drop to this concern, several chinook salmon stocks within Cook Inlet were experiencing poor production (Deshka and Early Run Kenai R.) while simultaneously there was a serge in production from stocks originating in British Columbia, Washington and Oregon which were largely of hatchery origin; a portion of these hatchery fish were marked with a coded wire tag and missing the adipose fin (Swanton, 1997). There are several hatchery stocks in Cook Inlet that were marked and could thereby serve for detecting the presence of these stocks in the Kodiak Fishery. A pilot commercial catch sampling program was initiated in 1994 (Swanton 1997) and was followed by a focused interdivisional sampling and harvest estimation program for the years 1997-1999 (Clark and Nelson 2001). A more contemporary and comprehensive genetic stock identification (GSI) program was conducted for the years 2014-2016 and generally corroborated previous results (Shedd et al. 2016).

North American Chinook salmon Ocean Migrations

There are literally hundreds of Chinook Salmon stocks spanning the Coastline from Oregon, Washington, British Columbia and throughout Alaska from Southeast and along the Alaska Peninsula; these stocks are often referenced as far north migrating stocks, as opposed to stocks that have more localized or truncated ocean migrations. With the advent of Coded Wire Tagging (early 1970s) coupled with extensive High Seas Tagging (conducted throughout the North Pacific) and scale pattern analyses efforts conducted by the University of Washington much insight was gleaned regarding migration patterns along coastal and open ocean migration routes. Substantial increases in hatchery production of Chinook salmon in Oregon, Washington and British Columbia occurred in the early 1990s which resulted in a surge in coastwide abundance. Much of the increased hatchery production was in response to poor production from wild stocks, compensation for habitat destruction, tribal agreements, hydroelectric dam impacts or mitigation owing to wild stock endangered species act (ESA) listings.

Coastwide abundance of feeding/rearing Chinook increased markedly and harvests of Chinook increased both within Alaska's commercial and recreational coastal marine fisheries as well as bycatch of chinook in federal fisheries operating in the Gulf of Alaska. The Pacific Salmon Treaty between the United States and Canada governs harvests of these stocks throughout Southeast Alaska (Ketchikan to Yakutat) where jurisdiction between the parties ends. The harvest of these stocks throughout the remainder of the Gulf of Alaska is viewed with recognition that they originate in other states or British Columbia and harvest should be limited or constrained where appropriate. This has been the policy direction followed by both ADF&G and the Alaska Board of Fisheries certainly within the last 10-15 years and pertains to Kodiak, Kachemak Bay and Homer spring and winter recreational fisheries and both commercial and recreational fisheries prosecuted in Prince William Sound.

Data Summaries by Year

(Swanton, 1997) Caution is suggested relative to these estimates owing to low marking fractions and less than optimum temporal and spatial sampling coverage**.**

1994

The two Kodiak commercial fishing areas where CWT sampling occurred (Westside and Alitak Districts) experienced a commercial harvest of 5,089 Chinook salmon (80% CI 2,927-7,253 fish) from marked cohorts which represented 32.5% of the sampled harvest. The stock groupings represented by the tag recoveries were: 9.7% Southeast Alaska; 83% from British Columbia; 4.9% from Washington state and 2.4% from Oregon.

From the Westside Kodiak area most of the marked cohorts were of British Columbia origin with marked fish from Southeast Alaska, Washington and Oregon also detected in lower numbers. There was an apparent temporal change in stock contribution from the week of June 12-18 which were more varied, as compared to the period June 19-25 when only British Columbia and Southeast Alaska stocks were detected. The marked cohort contribution estimates for this area spanning 12 June through 30 July was 4,655 fish (80% CI 2,517-6,793 fish) from a total catch of 14,619 fish or 31.8%.

Within the Alitak Bay District all marked fish recoveries were of British Columbia origin and represented 435 Chinook out of a total catch of 640 fish. This represented 68% of the catch during the period off sampling.

(Clark and Nelson 2001)

1997

During the 1997 Kodiak commercial salmon fishing season there were 18,728 Chinook salmon harvested with 89% of the harvest occurring during the CWT sampling period of 9 June-8 August; a majority 67% of this harvest (about 11,000 fish) took place within the Westside area. The study plan designated a sampling fraction of inspecting 20% of the observed catch for CWT's which is consistent with Coastwide sampling programs sanctioned by the Pacific Salmon Commission.

The number of Chinook salmon inspected for a missing adipose fin in1997 was 6,015 or 36% of the harvest during the sampling period; 37% of the harvest was inspected within the Westside District catch; 60% within the Alitak Bay District; sampling within the Eastside District exceeded 20% and an additional 24% (792 fish) were inspected from harvests within the Mainland fishing District.

The general stock composition from the sampled harvest was: 13% from Alaska stocks, 72% from British Columbia, 7% from Washington and 8% from Oregon Chinook stocks. The 18 tag recoveries from Alaska stocks was further broken down to include 11 recoveries from Cook Inlet: two Kenai River, three Ship Creek, three Ninilchik River, one from Deception Cr., one from Crooked R. and one from Homer Spit.

1998

In 1998 there were 17,341 Chinook harvested commercially during the sampling period 9 June-8 August with approximately 93% occurring within the Westside (including the Southwest Afognak Section and Northwest Kodiak District), Alitak Bay and Eastside Kodiak Districts. There was 53% of this harvest sampled: 45% in the Westside District, 50% in the Alitak District and 43% within the Eastside District. No samples were collected from the Mainland District as the overall catch was 393 fish.

The identified tagged fish were represented as follows: 31% (79) were Alaska stocks; 49% (125) were from British Columbia; 15% from Washington and 5% from Oregon. The Alaskan stocks originating in Cook Inlet (46 tag recoveries) were three from Resurrection Bay; 5 from Seldovia Harbor; 10 from Homer Spit; 5 from Halibut Cove; 6 from Ninilchik R., 13 from Deception Cr., one from Crooked Cr. and two from the Kenai R. The additional Alaskan stock recoveries were 9 from Southeast Alaska and 24 from the Buskin River.

1999

During the 1999 commercial salmon fishery there were 18,299 Chinook harvested which represented 94% of the harvest that occurred during the June 9-August 8 sampling time frame. About three quarters (73%) of the harvest was realized within the aforementioned fishing areas, and similar to previous years, a majority of the harvest was realized within the Westside Kodiak District. There was 46% of the harvest (7,940 fish) inspected for CWT via a missing adipose fin. Similar to the previous years 45% of the catch was from the Westside District, 41% of the Alitak Bay District. No sampling results were reported for the Eastside District, however 12% of the Mainland District (356 fish) harvest was opportunistically sampled.

There were 201 tag recoveries from the 1999 sampling effort, 124 were from the Westside Kodiak District, 10 from the Mainland District, 20 from the Eastside and three from the Alitak Bay District. There were 32% (64 tagged fish recovered) from Alaska stocks, 31% from British Columbia, 13% from Washington and 24% that originated from Oregon. There were 21 tagged fish recovered that originated from Cook Inlet stocks with distribution by area similar to 1998. The authors after consulting with fishery management staff, suggested that if any non-local stock or stock grouping was estimated to have a 10-15% exploitation rate (harvest rate applied over the entire brood year) imposed by fisheries within the Kodiak Management Area that this would be cause for concern. In addressing this, Clark and Nelson (2001) stated " Therefore, publication of imprecise, but consistently small harvests of Cook Inlet hatchery cohorts in the KMA fishery provided the best indication of the lack of importance of the KMA fishery in influencing production of chinook salmon bound for Cook Inlet."

(Shedd et al. 2016)

This study employed genetic stock identification techniques to generate stock contribution estimates for chinook salmon harvested within both the commercial and recreational fisheries throughout the Westward Region (Kodiak, Chignik and the Alaska Peninsula Management areas). The information summarized below is only for the commercial fishery within the Kodiak

Management Area to maintain consistency in comparing other information presented within this summary. This study focused on 4 Districts/reporting areas and two temporal strata (Early: 1 June-5 July; Late: 6 July-5 August).

2014

Overall, there were 8,382 fish commercially harvested of which 3,050 fish were sampled (sampling fraction of 36.4%) for all areas and time strata. The results of GSI for the entire time and area strata were: 55.6% British Columbia, 34% West Coast US (Washington and Oregon stocks combined), 3.4% Southeast Alaska and Northeast Gulf of Alaska stocks(Southeast Alaska/Gulf Coast, 2.6% Cook Inlet, 1.9% Kodiak and 1.6% referred to as the Eastern Bering Sea stock grouping. The following are the aggregate stock composition estimates broken down by geographical and temporal strata:

Northwest Kodiak District and Afognak(Statistical Areas: 251, 253 and 254)

- Early (1 June-July 5) 72.1% British Columbia stocks, 15.7% West Coast US, 4.3% Kodiak, 2.7% Cook Inlet and 2.4% Southeast Alaska/North Gulf Coast Alaska.
- Late (July 6-August 5) 56.0% British Columbia stocks, 34.7% West Coast US, 4.6% Southeast Alaska/Gulf Coast, 2.2% Cook Inlet and 1.2% Kodiak Stocks.

Eastside Kodiak and Afognak District (Statistical Areas: 258, 259 and 252)

- Early (1 June-July 5): 51.2% British Columbia Chinook stocks, 35.3% West Coast US, 4.2% Southeast Alaska/Gulf Coast, 0.3% Cook Inlet and 4.2% Kodiak stocks.
- Late (July 6- August 5):51.7% British Columbia stocks, 37.5% West Coast US, 2.6% Southeast Alaska/Gulf Coast, 4.0% Cook Inlet and 0.1% Kodiak Chinook salmon stocks.

Southwest Kodiak Alitak Districts (Statistical Areas: 255, 256 and 257)

- Early (June 1-July 5): 51.2% British Columbia stocks, 30.8% West Coast US, 6.1% Southeast Alaska and Gulf Coast, 1.1 % Cook Inlet and 10.0% Kodiak Stocks.
- Late (July 6-August 5): 54.5% British Columbia, 39.0% West Coast US, 2.9% Southeast Alaska/Gulf Coast, 1.4% Cook Inlet and 1.0% Kodiak stocks.

Mainland District (Statistical Area 262) There was no sampling conducted for the “Early” strata during 2014.

- Late: July 6-August 5): 51.2% British Columbia Stocks, 39.5% West Coast US stocks, 4.8% Southeast Alaska/Gulf Coast, 1.5% Cook Inlet and 0.9% Kodiak stocks.

2015

During 2015 the Chinook harvest was 8,087 of which 2,775 fish were sampled resulting in a 34% sampling fraction. The estimated stock contributions for this commercial fishing season were: 51.6% British Columbia, 33.9% West Coast US, 4.9% Southeast Alaska/Gulf Coast, 4.5% Cook Inlet and 4.5% Kodiak.

Northwest Kodiak District and Afognak(Statistical Areas: 251, 253 and 254)

- Early (June 1-July 5): 54.8% British Columbia, 24.3% West Coast US, 8.5% Southeast Alaska/Gulf Coast, 6.4% Cook Inlet and 4.5% Kodiak.
- Late (July 6-August 5):52.1% British Columbia, 34.9% West Coast US, 4.9% Southeast Alaska and Gulf Coast, 4.3% Cook Inlet and 3.2% Kodiak.

Eastside Kodiak and Afognak District (Statistical Areas: 258, 259 and 252)

- Early (June 1-July 5):36.4% British Columbia stocks, 46.8 West Coast US stocks, 4.8% Southeast Alaska and Gulf Coast stocks, 7.8% Cook Inlet and 3.1% Kodiak Chinook Stocks.
- Late (July 6-August 5):49.4% British Columbia stocks, 40.7 West Coast US stocks, 3.5% Southeast Alaska and Gulf Coast, 1.3% Cook Inlet and 4.3% Kodiak Chinook stocks.

Southwest Kodiak and Alitak Districts (Statistical Areas: 255, 256 and 257)

- Early (June 1- July 5): 33.8% British Columbia stocks, 35.2% West Coast US, 3.2% Southeast Alaska/Gulf Coast stocks, 2.5% Cook Inlet and 24.9% Kodiak Stocks.
- Late (July 6-August 5):63.1% British Columbia stocks, 30.3% West Coast US, 3.4% Southeast Alaska and Gulf Coast stocks, 1.4% Cook Inlet and 1.2% Kodiak Chinook stock contributions.

Mainland District (Statistical Area 262) Similar to 2014, there was no sampling conducted during 2015 within the period June 1- July 5 for this district.

- Late (July 6-August 5): 64% British Columbia stocks, 19.6% West Coast US, 3.0% Southeast Alaska/Gulf Coast, 12.8% Cook Inlet stocks and no contribution from Kodiak Chinook stocks.

2016

The harvest during 2016 was only 7,471 Chinook of which 3,189 fish were sampled, which represented a 43% sampling fraction. The various stock contributions to the commercial harvest for 2016 were: 56.5% British Columbia, 30.6% West Coast US, 6.2% Southeast Alaska/Gulf Coast, 3.8% Cook Inlet and 1.3% Kodiak stocks.

Northwest Kodiak District and Afognak (Statistical Areas: 251, 253 and 254)

- Early (June 1-July 5): 59.6% British Columbia stocks, 15.0% West Coast US, 12.7% Southeast Alaska and Gulf Coast, 7.8% Cook Inlet and 3.2% Kodiak stocks.
- Late (July 6-August 5):61.8% British Columbia stocks, 17.3% West Coast US, 11.5% Southeast Alaska and Gulf Coast, 6.7% Cook Inlet stocks and 1.6% Kodiak stocks.

Eastside Kodiak and Afognak District (Statistical Areas: 258, 259 and 252)

- Early (June 1- July 5): 57% British Columbia stocks, 27.4% West Coast US Chinook stocks, 6.4% Southeast Alaska/Gulf Coast, 2.3% Cook Inlet and 2.6% Kodiak stocks.
- Late (July 6-August 5):51.5% British Columbia Chinook stocks, 39.5% West Coast US stocks, 1.3% Southeast Alaska/Gulf Coast stocks, 3.8% Cook Inlet and 2.8% Kodiak stocks.

Southwest Kodiak and Alitak Districts (Statistical Areas: 255, 256 and 257)

- Early (June 1-July 5): 67.1% British Columbia, 24.6% West Coast US stocks, 3.1% Southeast Alaska/Gulf Coast, 1.4% Cook Inlet and 2.9% Kodiak stocks.
- Late (July 6-August 5): 69.2% British Columbia stocks, 24.7% West Coast US, 1.8% Southeast Alaska, 2.5% Cook Inlet stocks and 1.1% Kodiak Chinook stocks.

Mainland District (Statistical Area 262)

- Early (June 1-July 5): 46.6% British Columbia stocks, 44.1% West Coast US, 3.6% Southeast Alaska and Gulf Coast, 1.9% Cook Inlet and 0.3% Kodiak stocks.

- Late (July 6-August 5):54.1% British Columbia Chinook stocks, 37.1% West Coast US, 5.1% Southeast Alaska and Gulf Coast, 2.5% Cook Inlet and no contribution from Kodiak Chinook stocks to the harvest.

A direct comparison of the presented information and contribution estimates to the KMA Chinook harvest is difficult because of specific requirements related to CWT estimates and those generated using GSI. For generating reliable harvest estimates using CWT data, a large marking fraction (number of fish marked/total released) combined with a recommended 20% sampling fraction (number of fish sampled from the total catch) is statistically necessary. In the case of both the Kodiak and Cook Inlet Chinook stocks for the years 1994 and 1997-1999, the number of marked fish from the various hatchery releases was small and when combined with low numbers of recoveries, the harvest estimates were uncertain or informative at best. For these reasons, the comparisons of the CWT contributions with those generated using GSI are completed using a simple percent contribution to the overall sampled harvest (Table 1). In reviewing the data, the overall stock contributions are reasonably consistent: British Columbia stocks consistently contribute greater than 50% to the sampled harvest, followed by Washington and Oregon stocks and to a lesser extent Southeast Alaska with minor contributions from either Kodiak or Cook Inlet stocks.

Summary and Recommendations

- During all years and sampling periods regardless of the commercial salmon fishery district sampled, British Columbia Chinook salmon stocks dominated the stock composition of the harvest. Estimates of the percent contribution ranged from a low of 30% to a high of 70%, representing harvests of several hundred to several thousand fish.

- Consistently, contributions from stocks originating in Washington and Oregon (Western US stocks) to the commercial harvests ranged from a low of 7.3% to a high of 37% and averaged 28% of the estimated harvest.

- Contributions from Southeast Alaska/North Gulf Coast were in most cases higher than the combined contributions from both Kodiak and Cook Inlet. These contributions also seem to be reflective of periods of higher and lower abundance when comparing contributions from 1997-1999 (higher abundance) to those from 2014-2016 which was a period of lower Southeast Alaska stock abundance.

- The capability of any marine salmon fisheries sampling program to consistently estimate the harvest in a timely manner, of at most several hundred fish over a commercial fishing season within the geographic scope of the Kodiak Management Area, is untenable.

- Given the stock status of both the Kodiak and Cook Inlet Chinook salmon stocks a regime such as that outlined in Proposal 37 is unwarranted. Both the Kodiak (0%-4.5%) and Cook Inlet (2.6%-4.5%) stock contributions to the Chinook harvest are minor.

- It should be noted that for the Cook Inlet stocks harvested within the Kodiak Management area, a majority are hatchery fish produced for marine or in river sport fisheries. A specific brood stock selection (similar life history and migration traits to the wild stock) and marking program are required for a hatchery stock to be employed as a proxy for wild stocks, therefore the Cook Inlet tag recoveries and rates should not be applied to Cook Inlet wild Chinook salmon stocks.

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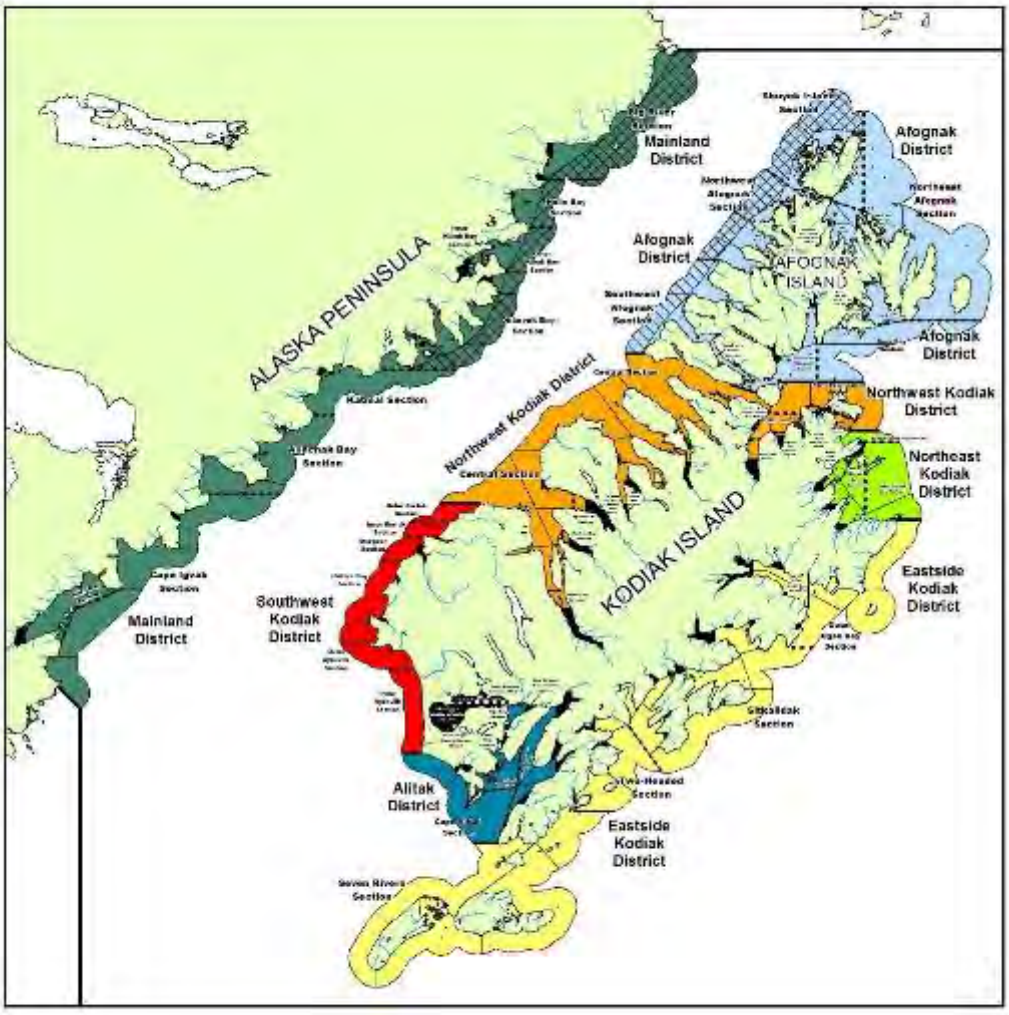
Table 1. Summary of Chinook Stock Group Harvest Percentages in the Kodiak Management Area.

	Calendar Year						
	1994	1997	1998	1999	2014	2015	2016
Sample size	5,089	6,015	9,191	7,940	3,050	2,775	3,189
Stock Group							
British Columbia	83%	72%	49%	31%	56%	52%	57%
Washington &Oregon	7%	15%	20%	37%	34%	34%	31%
SE Alaska/Gulf Coast	10%	13%	31%	32%	3%	5%	6%
Cook Inlet	0%	present[1]	present[1]	present[1]	2%	2%	4%
Kodiak	0%	n/a[2]	n/a[2]	n/a[2]	1%	1%	1%

[1] CWTs were recovered however insufficient totals to estimate a harvest proportion

[2] no CWTs recovered from fishery sampling

December 2019



An

Overview and Contrast of Management Plans and Harvests of Sockeye Salmon Destined for Upper Cook Inlet, 2014-2016.

By the Kodiak Salmon Work Group

The following is germane to addressing **Alaska Board of Fisheries Proposals 64, 65 and 66** which seek to severely curtail fishing time within traditional Kodiak Management Area (KMA) districts because of identified harvests of Upper Cook Inlet (UCI) sockeye salmon during the years 2014-2016.

EXECUTIVE SUMMARY

- The complexity within the existing UCI salmon management plans guiding management of the numerous fisheries far exceeds the quality, quantity and timeliness of the information available.

- Harvest estimates have far less uncertainty than do the variety of in season run strength projections and numerous escapement monitoring programs, especially the Susitna River escapement component.

- The Off-shore Test Fishery (OTF) run projections have errors around the estimates which are alarming (over projecting the actual run by 60%) given the reliance on this in-season tool within several prominent UCI management plans.

- Any proposed regulatory change to long established salmon fishery management plans must be able to demonstrate a measurable benefit; given poor data quality for specific UCI escapements or for certain in river run projections (Kenai R.), the information system currently in place is incapable of this task.

- When considering a system like the Susitna River, including the longstanding documented problems with estimating escapements, it is not prudent to affect adjacent management areas (e.g., Kodiak) with unnecessary changes.

- Considering the focus on coho salmon within the last three UCI board meetings (2011, 2014, 2017) and the conservative stipulations within the Northern District Management plan, if all of the sockeye incidentally caught in Kodiak were inserted into the UCI fishery mix, it would not have resulted in any benefit to Northern District coho stocks nor in-river users.

- Evaluating the commercial harvest of UCI stocks using a harvest rate metric would not be appropriate because of the uncertainty surrounding the escapement estimates of the Susitna River, Yentna River and other unassessed sockeye stocks.

Introduction

The identification and sporadic estimation of non-local stocks of sockeye salmon contributing to the sockeye harvest within the Kodiak Management Area has been completed using a variety of quantitative (scale pattern analyses and Genetic Stock Identification) and less quantitative (average weight and age proportions) techniques over the last 30 years. There does not appear to be temporal or spatial patterns or abundance-based trends of the contributing stocks, which suggests that the contributions are more random in nature (influenced more by environmental conditions: current, sea surface temperatures or broad scale climatic conditions). A common

acceptance is that fishing time in the various areas surrounding the Kodiak Archipelago targeting local stocks of sockeye, pink and chum salmon also contribute to these events. In a variety of ways one can characterize the Kodiak salmon fishery as a pass-through type fishery and the Upper Cook Inlet salmon fishery more of a gauntlet, where fish traverse through a variety of fisheries and gear types before reaching their natal streams or rivers.

Kodiak Fisheries Management plans

Area description

The Kodiak management area (KMA) includes all inland and marine waters (inside of 3 miles) south of Cape Douglas to Kilokak Rocks on the Alaska Peninsula and includes all islands within the Kodiak Archipelago. Within the area are 7 districts and 52 sections along with numerous subsections and terminal closed water areas. There are approximately 800 streams identified that have supported salmon spawning or rearing (Anadromous Waters Catalog), of which about 440 streams have been referenced as supporting measurable salmon production on an annual or biannual basis. Of the 440 systems, all support pink salmon, about 150 support chum salmon, 39 support sockeye salmon and about 175 support coho salmon populations (Clark et al. 2000). There are 593 Commercial Fisheries Entry Commission (CFEC) limited entry permits issued for the Kodiak area: 375 purse seine; 188 set gillnet; and 30 beach seine. Activity for each gear type fluctuates by year, with participation statistics for 2019 including 176 purse seine, 3 beach seine, and 148 set net permits having made at least one landing during the season.

Fishery Description

The Kodiak salmon fishery can be best described as a pass-through fishery, similar to Southeast Alaska fisheries. Pass through fisheries allow fish to reach terminal areas on their way to natal streams, where any type of fishery conducted is called a terminal fishery. Gear types participating in a pass-through fishery include set gillnet (fixed gear) and purse seine (mobile), which capture fish along their nearshore migration routes. Over time, and with the vigilance of salmon area management staff, fishing patterns, harvest magnitudes, and timing can be qualified and quantified with the goal of building information relative to run strength and migration timing by species and in many cases by specific stocks that contribute to the catch. The overall key to success of this salmon fishery management system is having specific, fixed geographic reference points, long standing accurate catch or harvest accounting, and an escapement enumeration and monitoring program for the major sockeye salmon producing systems that is conducted annually.

Management Plans

There are currently 10 salmon fishery management plans codified in regulation which prescribe how salmon fishing in each of the various districts, patterned after salmon species timing and historical fishing patterns, will be accorded. Two plans, including the Cape Igvak salmon management plan (effective prior to 1985; 5 AAC 18.360; Chignik Bound Sockeye) and the North Shelikof Strait Sockeye salmon management plan (effective 1990; 5 AAC 18.363: Upper Cook Inlet bound Sockeye), are tailored around sockeye salmon stocks destined for adjacent management areas (Chignik and Cook Inlet). The North Shelikof Strait plan was codified in 1990 following an out of cycle board of fisheries meeting that was specifically scheduled to address the unusual harvest of Cook Inlet Bound sockeye that occurred during 1988.

The remaining plans (Alitak District, Westside District, Eastside Afognak, Eastside, North Afognak/Shuyak Island and Mainland District) have been and are tailored towards meeting escapement objectives for each species using run timing and historical commercial fishing patterns, gear and areas. Other management tools include the use of subsections and a variety of

closed water areas around spawning streams (expanded or contracted) based on harvest numbers, aerial survey indices of abundance, and observed build ups of pre-spawning fish in marine staging areas. A multitude of fishery dependent and independent information is typically integrated into the inseason fishery management decision making process and in some cases these are daily decisions. As noted elsewhere, many of these management plans or the management philosophy contained within has been in existence since the late 1970s, and were systematically codified after numerous discussions within ADF&G and with commercial fishermen, processors, advisory committees, and finally with the Alaska Board of Fisheries during regularly scheduled meetings.

Upper Cook Inlet Fisheries Management Plans

Area Description

The Upper Cook Inlet (UCI) commercial salmon fishery management area comprises inland and marine waters of Cook Inlet north of Anchor Point Light. The area includes two districts (Central and Northern) with the Central District being 75 miles in length, 32 miles in width and divided into 6 subdistricts. The contemporary commercial fishing gear types allowed within the UCI are drift and set gillnet. There are approximately 1,300 commercial fishery entry permits within the UCI area, of which 570 are drift gillnet. Depending on a number of factors, the number of drift permit holders making landings in any given year ranges from 396-539 permits, which includes secondary permit holders operating in dual permit fishing operations (Farrington 2014). There are about 745 set gillnet permits issued for the area with about 500 permits making landings within any given year. Approximately 40-60 set gillnet permit holders are active within the Northern District set gillnet fishery.

Salmon fisheries management plans

There are 17 different plans that cover salmon fishing activities either directly or indirectly within the Upper Cook Inlet management area. Of the 17 plans, one deals with invasive northern pike within the Kenai R., two deal with riparian habitat protections; several govern subsistence (state or federal) fishing activities, and one that is novel to Cook Inlet: the personal use fishery management plan which is germane to fishing for sockeye salmon primarily on the Kenai and Kasilof Rivers. Graphical depictions of these complex and interdependent management plans are described during the 2008, 2011, 2014 and 2017 Alaska Board of Fisheries meetings, and can be found at the Board Support section of the ADF&G web page under the Board of Fisheries heading: www.adfg.alaska.gov/index.cfm?adfg=fisheriesboard.meetinginfo

Fishing Periods

In the Northern and Central Districts set gillnet fishery, two weekly 12 hour fishing periods are permitted on Mondays and Thursdays; in the drift gillnet fishery salmon may be taken within two weekly 12 hour fishing periods also on Mondays and Thursdays.

Central District Drift Gillnet Fishery Management Plan (5 AAC 21.353)

The stated purpose of this plan is to ensure adequate escapement into the Northern District drainages and offer management guidance to the department. The Board of Fisheries directs management of the drift fleet to minimize harvest of Northern District and Kenai River coho salmon, to provide sport and guided sport fishermen a reasonable opportunity to harvest these salmon stocks over the entire run, as measured by the frequency of in-river restrictions. In order to accomplish this task, from July 9-15 during the first and second regular fishing periods, drift fishing is restricted to the Expanded Kenai and Expanded Kasilof sections of the Upper Subdistrict and Drift Gillnet area 1. At run strengths greater than 2.3 million sockeye salmon to

the Kenai River, the commissioner may by emergency order open one additional 12 hour fishing period within the Expanded Kenai and Expanded Kasilof Sections of the Upper Subdistrict and Drift Gillnet Area 1; additional fishing time is only allowed in the Expanded Kenai and Expanded Kasilof Subsections of the Upper Subdistrict. From July 16-31 at Kenai River sockeye run strengths of less than 2.3 million, fishing during all regularly scheduled fishing periods will be restricted to the Expanded Kenai and Expanded Kasilof Sections of the Upper Subdistrict; at run strengths of 2.3-4.6 million sockeye salmon to the Kenai River, fishing during one regular 12 hr. fishing period will be restricted to one or more of the following sections or areas:… At run strengths greater than 4.6 million sockeye salmon to the Kenai River, one regular 12 hour fishing period per week will be restricted to the Expanded Kenai, Kasilof and Anchor Point Sections. From August 1-15, there are no mandatory area restrictions to the regular fishing periods with several caveats related to coho salmon destined for the Kenai River (see 5 AAC 21.353; p.347).

Northern District Salmon Management Plan (5 AAC 21.358)

The purpose of the Northern District Salmon management plan is to minimize harvests of coho salmon bound for the Norther District of UCI and to provide the department direction for management of salmon stocks. The department shall manage the chum, pink and sockeye salmon stocks primarily for commercial uses, to provide commercial fishermen with an economic yield from the harvest of these salmon resources based on abundance. The department shall also manage the chum, pink and sockeye salmon stocks to minimize the harvest of Northern District coho salmon, to provide sport and guided sport fishermen a reasonable opportunity to harvest these salmon resources over the entire run, as measured by the frequency of inriver restrictions. The department shall manage the Northern District commercial salmon fisheries based on the abundance of sockeye salmon counted through the weirs on Larson, Chelatna, and Judd Lakes or other salmon abundance indices as the department deems appropriate.

Kenai River Late-Run Sockeye Salmon Management Plan (5 AAC 21.360)

The department shall manage the Kenai River late-run sockeye stocks primarily for commercial uses based on abundance. The department shall also manage the commercial fisheries to minimize the harvest of Northern District coho, late-run Kenai king and coho salmon stocks to provide personal use, sport, and guided sport fishermen with a reasonable harvest opportunity.. The Kenai River late-run sockeye salmon commercial, sport and personal use fisheries shall be managed to meet an optimum escapement goal (OEG) range of 700,000-1,400,000 late-run sockeye salmon, achieve in-river goals as established by the board and measured at the Kenai River sonar counter located at river mile 19, and distribute the escapement evenly within the OEG range, in proportion to the size of the run.

Based on preseason forecasts and in-season evaluations of the total Kenai River late-run sockeye return during the fishing season, the run will be managed according to different run strength levels. At run strengths of less than 2,300,000 sockeye salmon, the department shall manage for an inriver goal range of 900,000-1,100,000 sockeye salmon past the sonar counter at river mile 19; subject to provisions of other management plans, the Upper Subdistrict set gillnet fishery will fish regular weekly fishing periods as specified in 5 AAC 21.320, through July 20, unless the department determines that the minimum in-river goal will not be met, at which time the fishery shall be closed or restricted as necessary; the commissioner may by emergency order, allow extra fishing periods of no more than 24 hours per week or per provisions in 5 AAC 21.365;

At run strengths of 2,300,000-4,600,000 sockeye salmon, the department shall manage for an inriver goal range of 1,000,000-1,200,000 sockeye salmon past the sonar counter at river mile 19; subject to provisions of other management plans, the Upper Subdistrict set gillnet fishery will

fish regular weekly fishing periods as specified in 5 AAC 21.320 through July 20, until the department makes a determination of run strength, whichever occurs first.
At run strengths greater than 4,600,000 sockeye salmon, the department shall manage for an inriver goal range of 1,100,000-1,350,000 sockeye salmon past the sonar counter at river mile 19; subject to provisions of other management plans, the Upper Subdistrict set gillnet fishery will fish regular weekly periods as specified in 5 AAC 21.320 through July 20, or until the department makes a determination of run strength, whichever comes first; if the department determines that the minimum in-river goal will not be met, the fishery shall be closed or restricted as necessary; the commissioner may, by emergency order, allow extra fishing periods of no more than 84 hours per week, except as provided in 5 AAC.21.365; and the Upper Subdistrict set gillnet fishery will be closed for one continuous 36-hour period per week, beginning between 7:00 p.m. Thursday and 7:00 a.m. Friday. The remaining elements of the plan relate to the inriver personal use and sport fishery.

Kasilof River Salmon Management Plan (5 AAC 21.365)

The bulk of this plan deals specifically with guidance on managing the commercial fishery for meeting the escapement goal as specified within the plan, however there are several sections that intersect with the Kenai River sockeye salmon: after July 15, if the department determines that the Kenai River late-run sockeye salmon run strength is projected to be less than 2,300,000 fish and the 390,000 optimal escapement goal for the Kasilof River sockeye salmon may be exceeded, the commissioner may, by emergency order, open fishing for an additional 24 hours per week in the Kasilof Section within one-half mile of shore and as specified in 5 AAC 21.360(c).

Additional Commercial Fishery Management Plans: *Cook Inlet Pink Salmon Management Plan (5 AAC 21.354); Kenai River Late-Run King Salmon Management Plan (5 AAC 21.359);Upper Cook Inlet Salmon Management Plan (5 AAC 21.363); Northern District King Salmon Management Plan (5 AAC 21.366).*

Sport Fishery Management Plans: *Russian River Sockeye Salmon Management Plan (5 AAC 57.150)***;** *Kenai River and Kasilof River Early-run King Salmon Management Plan (5 AAC 57.160);Kenai River Coho Salmon Management Plan (5 AAC 57.170); and the Upper Cook Inlet Personal Use Salmon Fishery Management Plan (5 AAC 77.540).*

Fishery Management Complexity

When comparing a number of fishery related metrics, complexity can be characterized by geographic scope, species richness, multiple overlapping objectives, and numbers of users/gear types/permits (human participation) which overlap a large geographic area, and in Cook Inlet, where most of the area is road or boat accessible and fishing occurs in either freshwater or marine waters. It could also be characterized by the number of regulatory proposals submitted to the Board of Fisheries' three-year regulatory cycle and emergency orders issued by the department each year. Determining a measure that captures allocative related issues such as regulatory proposals or agenda change requests (ACRs) is difficult, but there are many allocative elements interwoven within the Upper Cook Inlet fisheries and imbedded within the various salmon management plans.

Personal Use Fishery

Subsistence and personal use fisheries have undergone substantial changes within the Cook Inlet area over the last 20 plus years. There are four personal use fisheries that target primarily

sockeye salmon and collectively make up the bulk of the regulations embedded within the Personal Use management plan. The two major personal use fisheries operate adjacent to the Kasilof River, and adjacent to and within the lower portion of the Kenai River. Regarding the Kenai, retention of Chinook or king salmon has been prohibited for a number of years, owing to low production and concerns for meeting escapement goals. These two fisheries collectively are the largest participation fishery in Alaska. Over the last five years over 30,000 household permits have been issued and in several years the number of permits issued exceeds 35,000. During the years 2013-2015, average participation has been 27,850 household permits fished with an average sockeye salmon harvest of 494,115 per year (Dunker, 2018); the harvests of Kenai R. personal use sockeye salmon in 2014 and 2015 were 506,047 and 521,985 fish respectively. In 2016 the personal use fishery harvest was 264,900 sockeye salmon.

Kenai River Sport/Recreational Fishery

This fishery is arguably the largest sport/recreational fishery in Alaska with participation statistics, measured in angler days, ranging from 365,000-485,000 days annually. Sport fishing effort is spread throughout the drainage; however, a majority of the effort is concentrated below the Soldotna Bridge to tidewater. The annual recreational harvest of sockeye salmon occurs both above the sonar counting station at river mile 19 and below with an average of 20% of the harvest occurring below the counting station. The average (2011-2015) annual harvest of sockeye salmon is 422,480, of which 86,920 fish are harvested below the escapement enumeration or sonar site. The 2014 sockeye salmon harvest was 380,055 and for 2015 it was 392,116 fish (Begich et al. 2017). The recreational harvest for 2016 was 342,446 sockeye salmon.

When combined (personal use and in-river sport), the harvests have averaged 688,676 sockeye salmon annually (2014-2017; ADF&G personal communication). The Kenai River sockeye salmon escapement over these years has ranged from 1,400,047 in 2015 to 1,073,290 fish in 2017 and averaged 1,203,125 fish (Table 1.)

Fishery Management Data Sources

Escapement monitoring

Escapement has been assessed using side-scan sonar for a lengthy time period for the Kenai and Kasilof rivers and has incorporated modern gear (Bendix to DIDSON to now ARIS technology). The counts are generated daily and employed to evaluate escapement relative to fishery management decisions. There have not been any independent verifications of either the Kenai or Kasilof sonar escapement estimates. When converting to modern technology, the Bendix and DIDSON sonar systems were determined to offer almost identical escapement passage estimates for the Kasilof River, but that the Bendix system for the Kenai system generated escapement estimates that were substantially less that the estimates generated by the DIDSON system. This was also the case for the Yentna River (Maxwell et al. 2011). This information was integrated into a conversion from BENDIX to DIDSON units for the Kenai River sockeye salmon escapement, such that historical and contemporary escapement numbers were consistent.

For the Yentna River, the use of sonar to enumerate escapement was discontinued in 2008 due to the considerable uncertainty associated with the estimates (Fair et al. 2009). The current escapement monitoring program consists of counting weirs on Chelatna and Judd lakes. Similarly, for the Sustina River, a counting weir at Larson Lake is employed as an index of the Susitna River mainstem escapement. Fair et al. (2009), as a means to estimate total drainage wide escapement for the Yentna and Susitna rivers sockeye salmon stocks, employed the relationship between weir counts and a series of mark-recapture estimates to expand the weir

counts into drainage wide estimates. The identified relationships include Larson Lake weir counts accounting for 50-54% of the drainage wide mark-recapture estimates generated for 2006-2008. For the Yentna River, the relationship between the weir counts and the mark-recapture estimates ranged from 41-44% for Chelatna and Judd lakes combined. This approach certainly seems reasonable, however there is quite a bit of uncertainty about carrying this relationship forward to estimate total escapement for these drainages, especially when accounting for differential productivity that can occur with sockeye salmon populations between adjacent years, and also employing mark-recapture estimates which have their own set of assumptions and challenges.

There are numerous sockeye producing systems within Cook Inlet that have no monitoring programs, but that production contributes to the overall harvest. Shields (2010), within the annual management report, cites that the contribution of these unmonitored systems was projected to contribute upwards of 13% (835,000 fish from a total run of 6,404,000) to the Upper Cook Inlet harvest with an unknown level of escapement.

Barclay (2017) reported that for the years 2014-2016 that the unreported harvest (catch that could not be assigned to one of the predetermined sockeye stock groupings within UCI) represented 9.5% (223,106; 2014), 5.2% (138,826 fish) for 2015 and <0.1% (15,518 fish) in 2016. These findings are not uncommon with mixed stock analyses when dealing with many stocks and in most cases for small stocks. Shedd et al. (2016) aptly discusses this routine challenge by stating “Additionally, it is necessary to recognize that even with fishery samples of 380 fish per stratum, it is challenging to estimate small proportions in a mixture”. Based on these recognized analytical difficulties, and the stated uncertainties regarding escapements for several Upper Cook Inlet sockeye stocks, the most prudent way to evaluate estimates of non-local stock harvest is to compare harvest or proportions of the harvest. The harvest, whether it is commercial (fish ticket receipts), recreational (Statewide Harvest survey) or personal use (household permit record) is likely the most certain source of data that managers have available to them.

Offshore Test Fishery (OTF; 2014-2017)

One of the most important data sources for UCI in-season management, given the wide array of objectives dictated by regulations promulgated by the Alaska Board of Fisheries within the last 10 years, is the offshore test fishery (OTF) which was initiated in 1979. Many of the plans and subsequent regulation changes have requirements specifically related to inseason abundance estimates. These projections are employed to make in-season management decisions attempting to meet escapement objectives for Susitna bound sockeye stocks, and for sockeye destined for the Kenai and Kasilof rivers as well. The Kenai River late-run sockeye salmon management plan and attendant prescribed fishing times for the drift and set gillnet fisheries rely heavily on this estimate, based on a multi layered tier system.

2014

The midpoint of the 2014 sockeye salmon run at the OTF occurred on July 16 (point at which 50% of the run is projected to be past the OTF). There were two formal inseason estimates of the 2014 run size made on July 21 and 23; the 23 July analysis predicted a total run of 5.8-9.1 million sockeye salmon. The best fit total run estimate deviated from the actual run of 5.28 million fish by 72% or a difference of 3.82 million fish. The best fit Kenai river total run estimate from this analysis (5.65 million) differed from the actual total run of 3.28 million fish also by 72%, representing a difference of 1.83 million fish (Dupuis et al. 2016).

2015
The midpoint of the 2015 sockeye salmon run at the OTF occurred on July 25. A formal in-season estimate of run size was made on July 27 and predicted a total run to Upper Cook Inlet of 5.9 million sockeye salmon. The best-fit total run estimate deviated from the estimated total run of 6.30 million by 6.5% (400,000 fish). An in-season estimate was also made for the Kenai River sockeye salmon run on July 27; the analysis predicted a total run to the Kenai River ranging between 2.20-3.53 million sockeye salmon. The best-fit total run estimate of Kenai River sockeye salmon was 3.53 million which deviated from the estimated total run of 3.89 million fish by 9.3% (360,000 fish; Dupuis and Willette, 2016).
2016
The midpoint of the 2016 sockeye salmon run at the OTF occurred on July 18. An in-season estimate of the 2016 run was generated on July 25 and predicted a total run to Upper Cook Inlet (UCI) of 6.83 million sockeye salmon. The best-fit model estimate varied from the total run estimate of 5.11 million by 33.7% or 1.72 million fish. The inseason estimate for Kenai River sockeye salmon was made on July 25 with an estimate of 3.53-5.57 million fish with a post season estimate of 3.55 million sockeye. Managers employed a run estimate of 4.6 million fish, an overestimate of 29.5% (1,050,000 fish; Dupuis and Willette 2018).
2017
The midpoint of the sockeye salmon run in 2017 at the OTF was July 20; a formal estimate of the run was generated on July 24 with a prediction of 7.11 million fish. The first best-fit total run prediction was 54.2% higher than the actual total run of 3.85 million (difference of 3.26 million fish). An in-season estimate for the Kenai River sockeye run was made on July 24 resulting in an estimate of 1.6-4.3 million sockeye (actual post season estimate was: 2.89 million or 44.5% (1.29 million fish below actual), or conversely 48.7% higher than actual. Regardless of which direction the error is evaluated, it was substantial (about 1.3 million fish; Frothingham and Willette 2018).

Synthesis of information

- Using an average 2014-2016 Kenai R. commercial harvest rate (catch/catch+escapement) of 57.1%, the following would be the fate of 75,000 hypothetical sockeye that enter UCI destined for the Susitna/Yentna Rivers combined: 23,982 fish would become drift gillnet harvest, 18,843 fish would become set net harvest, 3,854 harvested fish would be assigned to an unreported stock group, 9,750 sockeye would escape to unmonitored streams, and 18,571 fish would make it to the Susitna/Yentna Rivers, of which a total of 9,000 sockeye would be potentially counted at Judd, Chelatna or Larson lake weirs. The potential benefits (escapement or harvest to UCI users) would be undetectable amidst the large total harvests and monitored escapements in Upper Cook Inlet.

- The complexity of existing UCI salmon management plans far exceeds the quality, quantity and timeliness of the information available. Management staff in the department do a surprisingly successful job managing these fisheries and meeting escapement goals and objectives given the data available and estimate uncertainty.

- Estimates of harvest have far less uncertainty than do the variety of in season run strength projections or data from the numerous escapement monitoring programs,

especially the Susitna River escapement component. Therefore, the harvest estimates for UCI bound sockeye that were incidentally taken in Kodiak should be compared to the total harvest of UCI sockeye.

- In 2014, there were an estimated 58,506 sockeye salmon harvested within the KMA of Cook Inlet origin (Kenai and Susitna stocks) from a total UCI harvest of 3,360,383 or 1.7%;
- In 2015, an estimated 438,433 Kenai and Susitna fish were harvested in the KMA versus the total harvest of 3,694,270 sockeye in the UCI or 11.8%;
- In 2016, 309,497 UCI (Kenai and Susitna stocks) sockeye were identified within the Kodiak catch compared to a total UCI sockeye harvest of 3,095,833, or 10.0%.

- The OTF run projections have errors around the estimates that are alarming (over projecting the actual run by 60%) given the reliance on this in-season tool within several prominent management plans; the Kenai R. sockeye run projection placed the run in the wrong management tier 2 out of 4 years (2014, 2016) thus allowing for increased fishing time for the drift gillnet fleet.

- Any proposed regulatory change to long established salmon fishery management plans must be numerically measurable. Given poor data quality for specific escapements or to certain in-river-runs (Kenai R.) the information system currently in place is incapable of this task, even if harvests within the KMA were twice those that are currently estimated.

- Certainly, for a system such as the Susitna River with all of its documented longstanding problems in obtaining reliable and annual escapement estimates, is it not prudent to reach out and affect an adjacent management area. Currently, in order to generate Susitna River escapement estimates, the weir count (known escapement numbers) is multiplied by a constant derived from a mark-recapture study conducted for 3 three years that is now over 10 years old. Because of this unreliable method, the Susitna and Yentna Rivers escapement estimates should be treated as informative but certainly not known.

- Given the focus on coho salmon within the last three UCI board meetings (2011,2014, 2017), and the conservative stipulations within the Northern District management plan, if all of the sockeye incidentally caught in Kodiak were inserted into the UCI fishery mix, it would not have resulted in any beneficial impact to Northern District coho stocks nor in-river users. Coho salmon run strength is based on fishery performance (commercial and in-river sport) and not demonstrable escapement estimates.

- Evaluating the commercial harvest of UCI stocks using a harvest rate metric would likely be erroneous, owing to the uncertainty surrounding the escapement estimates of

the Susitna River, Yentna River and other unassessed sockeye stocks. These stocks contribute to the harvest, but escapement to these systems is unknown or indexed, not counted.

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Kodiak Seiners Association
PO Box 8835
Kodiak, AK 99615

December 12, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: **Oppose Proposal 66**

Dear Chairman Morisky and Board of Fish Members:

The Kodiak Seiners Association respectfully requests that you **reject proposal 66**, which intends to impose arbitrary, onerous, and draconian harvest caps on sockeye caught in the Kodiak fishery. This proposal clearly disregards the reality of our fishery and perpetuates a fantasy world in which the entire universe is to be regulated based on the demands of the Cook Inlet drift fleet. The adoption of the proposal would require the Board to essentially eliminate the Kodiak area management plan and to ignore virtually every guiding principle that is used to direct Board policy ranging from Article VIII of the Alaska state constitution to the sustainable salmon policy and the mixed stock fisheries policy. We do not consider this to be a serious proposal and we hope that the Board will succinctly reject it.

Please see our comments on other proposals addressing mixed stock harvest in Kodiak and concerns about the harvest of Cook Inlet stocks. Thank you for your time.

Kodiak Seiners Association represents 157 members, including the majority of actively fishing SO1K seine permit holders, Kodiak and Homer-based businesses, and individual crewmembers. Our focus is advocacy for our membership through positive interactions with ADF&G, the Board of Fisheries, and our State Legislature.

Sincerely,

Nate Rose
KSA President

Mark Beardsley
PO Box 8776
Kodiak, AK 99615

December 22, 2019

Alaska Board of Fisheries
Reed Morisky, Chair
Attn: Glen Haight, Executive Director
1255 W 8th Street
P.O. Box 115526
Juneau, AK 99811-5526

RE: Opposition to proposal 66

Dear Chairman Morisky and members of the Board of Fisheries,

Thank you for the opportunity to comment on proposal 66 in advance of the Board meeting for Kodiak. I request you oppose this proposal as it presents unnecessary change to an already fine-tuned and very complex management plan for the Kodiak Management Area (KMA) salmon fishery.

Proposal 66 suggests modifying a mixed stock fishery that has been running smoothly for 30+ years. The suggested weekly caps can realistically be achieved within 1 single day, based solely on Kodiak sockeye returning to local systems, potentially resulting in over escapement of local Kodiak stocks, significant foregone opportunities and the potential dismantling of the local Kodiak salmon fishery. This proposal is not based on new data, there has always been incidental catch of Cook Inlet bound salmon and it has been this way for hundreds of years. Additionally, the incidental harvest of Cook Inlet bound sockeye was dealt with back in 1989 and continues to be a functioning element of the KMA plan.

If this proposal passes it would also have a detrimental chain reaction to the Northwest setnet fleet, which in recent years, has been struggling. The passage of this proposal would ultimately push the seine fleet into the Central section of the Northwest District which is a mixed gear area already congested, resulting in further competition amongst our mixed gear groups and potentially put us out of business.

The KMA salmon plan is a very complex fishery that is managed for local Kodiak stocks, includes mechanisms addressing incidental catch and currently provides corridors for passage of salmon. I respectfully ask the Board to reject proposal 66.

Sincerely,

Mark Beardsley

December 24, 2019

Matthew Alward

60082 Clarice Way

Homer, AK 99603

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Opposition to proposal 66

Dear Chairman Morisky and board of fisheries members,

I'm from Homer, AK and I operate my own salmon seine boat in Kodiak, and I oppose proposal 66 witch if enacted would create massive economic loss to the Kodiak community and salmon fishermen and lost revenue to the state of Alaska. I raised our kids on the back deck of our family fishing boat and they have all spent months of their lives fishing in the regulatory areas that would see a considerable loss of fishing time as a result of this proposal passing.

Proposal 66 seeks to create a new Kodiak management plan that would alter the Alitak, Westside, and Eastside areas from the beginning of the last week of June and four weeks of July. It seeks to put in place weekly and seasonal sockeye harvest caps that when the sockeye harvests in those sections reach within 15% of either of the caps the seine fishery would be limited to a line one half mile inside of the headlands of bays. The current management plans for these areas have been in place for nearly 50 years, encompass 6 districts and 36 sections, and are based on local Kodiak Sockeye, Chum, Pink, and Silver salmon runs. There are multiple overlapping runs of all salmon species that these three management plans take into account in a complex and adaptive manner and this proposal with throw all of that out and just manage for a set sockeye harvest each week. The justification for this proposal is a claim that we now know much more than we did in 1989, when the North Shelikof management plan was enacted, about the timing, locations, extent and magnitude of the harvests of the Cook Inlet origin salmon stocks.

The Westside management area is comprised of the north and south sections which contain the Karluk and Ayakulik rivers respectively both of which have historically considerably sized sockeye runs which daily weir escapement numbers show are ongoing during the period of the last week of June through four weeks of July. The North West region also contains the Telrod Cove enhanced sockeye run that is a known portion of the Westside sockeye harvest during the proposed time frame. Proposal 66 would create a 12,500 weekly sockeye harvest cap for the entire Westside area which some years is a fraction of the weekly sockeye escapement numbers let alone the Karluk, Ayakulik and Telrod sockeye harvests. There can also be considerable chum and pink salmon harvests in the Westside area occurring at the same time as sockeye are harvested. The central section of the Westside area is also a set net fishery that is managed with the same management plan as the seine fishery and this action would create two separate plans with different management goals for the same fishery. The Alitak section has several

sockeye runs occurring during the time frame that this management plan would cover with weekly weir escapement numbers and local sockeye harvests that far exceed the 5,000 fish harvest cap that is proposed. There also can be considerable chum and pink salmon harvests during this time period. The Eastside has a large chum and sometimes pink salmon harvest during this time frame along with sockeye harvests that usually far exceed the proposed 5,000 sockeye weekly harvest allowed during this time frame. If this proposal was adopted it would cause massive lost harvest opportunity on local sockeye, chum, and pink salmon stocks and risk over escaping some of the Kodiak systems.

In closing I ask that you keep the complex multi species management plans that have been working well for decades in place and do not adopt proposal 66.

Sincerely,

Matthew Alward

Mike Ferris
F/V Cally Rose
12/13/2019 11:11 PM AKST

RE: PROPOSAL 66 Create a Kodiak Area Salmon Management Plan

I have been involved & am a salmon permit holder & active participant in the Kodiak area salmon seine fishery for over 30 years & believe there is no change needed in a effect & proven management plan that has been in place for 30 years.

Naomi Hall

12/27/2019 09:33 PM AKST

RE: PROPOSAL 66 Create a Kodiak Area Salmon Management Plan

My name is Naomi Hall, I am writing because I am opposed to proposal 66. Language in the proposal claims it will "apply to the seine fishery;" however, it also states that if adopted it will "create a new Kodiak Area Management (umbrella) Plan." This would not apply just to the seine fishery, but to the set gillnet fishery on the island as well. I grew up setnetting on the Westside of Kodiak Island; today, my husband and I own a site where we are raising our young family. The potential restrictions to fishing time outlined in proposal 66 would result in setnetting not being a reliable source of income for my family. The Kodiak Area Management Plan is complex and has been developed over the last 30+ years taking into account these same outside pressures and requests. Please think about the detrimental impacts this proposal would have to the Kodiak area and the cost of implementing, executing, and managing this complex proposal.

Nicholas Hoffman
PO Box 1212
Kodiak, AK 99615

12/24/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Oppose Proposal 66

Dear Chairman Morisky and Board of Fish members:

I'm a young Kodiak salmon fisherman. I have been running a seine boat since 2011 as well as participating in Kodiak halibut, sea cumber, cod jig, and tanner crab fisheries. I respectfully request the Board reject Proposal 66.

This proposal is based on extremely limited data. Data from only a few days in 2016 and also some collected from setnets rather than seiners. Even this limited study showed nothing new, only confirmed something everyone already knows: Cook Inlet bound fish swim through Kodiak waters. According to the Constitution of the State of Alaska, Article 8, Section 3, "fish, wildlife, and waters are reserved to the people for common use." This proposal seeks to favor one area over another demanding that Kodiak be limited in favor of Cook Inlet which is several hundred miles away. This is not a conservation issue, but simply Cook Inlet's fishermen trying to limit a neighboring fishery.

This proposal is not based on any kind of reality of how salmon fishing in Kodiak works. A significant number of our multi-species producing rivers are on capes and not in the bays. The sockeye caps would be exceeded by our own local sockeye runs alone forcing a non-conservation related closure which could cause over-escapement of pink and chum salmon endangering the entire fishery.

The Kodiak Management Plan is a solid mixed stock management plan that works well to balance the needs of the different species of salmon in Kodiak and already has controlled safeguards for the interception of Cook Inlet fish in the North Shelikof Strait Management Plan.

If allowed to go forward would become a disastrous conservation issue for Kodiak.

I see no reason for the Board to make any changes to the Kodiak Salmon Management plan. Thank you for the opportunity to comment on the proposals and the chance for my voice to be heard. I look forward to the Board of Fish members getting to spend time in Kodiak and learn more about our town and fishing community.

I humbly request the Board reject Proposal 66.

Sincerely,

Nicholas Hoffman
F/V Relentless

Oliver Holm
self
12/27/2019 04:22 PM AKST

RE: PROPOSAL 66 Create a Kodiak Area Salmon Management Plan

This proposal if adopted would place a tremendous burden on the department's management team as well as create havoc in our fishery. It has been well known for decades that Cook Inlet sockeye are sometimes present in Kodiak catches. These catches have occurred for at least one hundred years here. They are sporadic and hard to predict and are often a tiny fraction of the catch. The weekly catch limits are often lower than the demonstrated catch of local sockeye and ignore the reality that through much of July in many areas the bulk of the catches are Kodiak pink and chum salmon. There is a presumption in the proposal that Cook Inlet sockeye are mostly present offshore in the three mile zone that we are restricted to. This is often not the case. They can show up in the most unlikely places. Places that Kodiak sockeye, pinks and chums are usually the dominant catch. The limited entry system did not grant ownership of salmon originating in each region to the region's permit holders. The permits are a right to fish in a specific region. In 1989 the BOF dealt with an unusual fishing pattern on the mainland when a 10 million plus return of Kenai sockeye occurred. Under the mixed stock fish policy and the allocation policy there is no reason to change our management plans due to Cook Inlet salmon. Changes to our management plans for seiners would lead to extended conflicts between seiners and set netters. Salmon production in July and August is not limited to the larger bays as salmon streams emptying out to outside waters occur all around the islands. The Kodiak Salmon Work Group has a map from ADF&G showing the areas within five N. Miles of our salmon streams. There are very few areas in state waters that aren't within this distance of local salmon streams.

Peter Danelski Jr.

12/28/2019 12:27 AM AKST

RE: PROPOSAL 66 Create a Kodiak Area Salmon Management Plan

This comment is in reference to multiple proposals. I oppose proposals 37, 58,59,60,61,62,63,64, 65 and 66. Outside interests have put forth proposals to open up Kodiak's management plan to sweeping changes that will greatly decrease Kodiak's ability to manage it's own salmon fishing periods, and have no assurance of actually fixing any problems anywhere else. I could go into great detail about our fine-tuned and complex existing management plan, the long history of Kodiak salmon fishing areas, incidental catch of Kodiak bound fish in other areas, and the danger of using very incomplete and potentially misleading data to form conclusions, but I'm sure that will all be covered many times in testimony and discussion. I would like to cover more personal issues. Often the biggest outcomes of board of fish decisions are not directly related to the issue and can change the trajectory of whole communities and lives. I grew up setnetting in Uyak Bay on the west side of Kodiak. I went away to college and got a biology degree but I could never bring myself to give up fishing and I made it my career. My wife and I built a cabin near the site I grew up at and we have 3 kids under the age of 12 now who spend the summers at the site. My parents continue to fish and it is one big family operation. We live in Kodiak during the winter, and I make my first trip out to the site by the first week of May. I don't close it up until the middle of October. It ends up being a six-month season. Kodiak salmon is the majority of our income and a huge part of our lives. We fish in the Central Section of the Northwest Kodiak District, along with about 100 other Kodiak setnet permits, and at times, most of the seine fleet. I don't fish on the mainland or off shore but I compete with those who do. Lately our catch has been proportionally smaller than it used to be. It is difficult to conclude why, but I'm certain shrinking the area and time of the whole Kodiak fleet would be further detrimental to our livelihood. It might even make it economically unviable. I can't go anywhere else, it's crowded and it would get more crowded if Kodiak fishermen could not fish their traditional grounds. As spring rolls around every year, our two sons and their younger sister look forward to the move to "the cabin" Liam, our oldest has started coming out with me for the first trip out after the winter. He helps take boards off the windows, sets up running lines and watches the water for the first "jumper". I've always been proud of the way I make a living. With minor environmental impact, we harvest very high quality food while living with nature. My parents started our operation, I grew up doing it and now the third generation pulls the skiff in and gets out on the water every day. Please consider that the Kodiak management plan is more than just a document. It is people who have poured their whole lives into the Kodiak salmon fishery and it shouldn't be messed with from miles away with inconclusive and misleading arguments. Thank you for considering my comments. I have included a picture of my son in the skiff and him unloading Salmon with his grandfather who started our business in 1972.


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December 25, 2019

Quinn Alward

60082 Clarice Way

Homer, AK 99603

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Opposition to proposal 66

Dear Chairman Morisky and board of fisheries members,

My name is Quinn Alward and I grew up fishing in the waters of Kodiak on my father's seiner since I was 10. I am now turning 22 and seining on the Westside of Kodiak Island and the surrounding areas has made me the person I am today. It has given me the opportunity to go to college, to have enough money to give back to my hometown of Homer, Alaska and to meet some of the most important people in my life.

I oppose proposal 66 because if passed it will cause economic loss to not only the fisherman like myself who rely on the salmon fishery of Kodiak, but also to the communities that this money goes back into like Kodiak town, villages in the Kodiak Archipelago, the towns and cities of the Kenai Peninsula and areas beyond these as well.

Proposal 66 intends to replace the current Westside and Alitak management plans for the Kodiak area that have been in place for almost 50 years with one that ignores the local Pink, Chum and Coho runs just so they can set a weekly and seasonal Sockeye harvest limit. Over the last 11 years of fishing in the waters of the Westside of Kodiak island I have seen just how sporadic the harvest of not only Sockeye but all salmon in Kodiak can be on a week to week basis. The current management plans which has been working for almost half a century are complex and focused on all salmon species in the area, and it has been designed to minimize negative impacts on the salmon runs while optimizing fishing opportunities for us fishermen.

Proposal 66 would create a 12,500 weekly sockeye harvest cap for the entire Westside area, and I know that this will affect the smaller family-owned fishing boats out of the area the most. The Westside of Kodiak is known for its nautical weather rolling through Shelikof Strait, and a lot of local fishing families on the Westside of Kodiak wait out those storms to go out and fish. On the other hand there are fisherman on the Island who fish in any weather, and these few boats who can work in almost any conditions will be catching the entire weekly quota of Sockeye leaving the smaller family owned operations to not be making any money and seeing smaller and smaller profit margins.

Finally, I do plan to continue in the commercial fishing industry of Alaska, and more specifically the Kodiak area. Fishing those waters is a part of who I am and to run my own boat and someday support a family of my own through the Kodiak fishery is a dream of mine. But proposals like this do make me worry more and more about the future of the industry and makes my dream seem less achievable.

To conclude, I implore you to keep managing the Kodiak salmon run with the complex multi-species management plans already in place and to not adopt proposal 66.

Sincerely,

Quinn Alward

December 24, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 66

Dear Chairman Morisky and Board of Fisheries Members,

I am Richard Roth, Kodiak salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife three children and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea tzar. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

The author of this proposal is citing a genetic study showing nothing new, simply a confirmation of something already known – that Cook Inlet origin sockeye sometimes swim through Kodiak waters. There are measures already in place (such as the North Shelikof Management Plan) that address this, to ensure that the vast majority of Cook Inlet- bound sockeye that do swim the Shelikof, make it through. Placing a cape to cape line on the mainland would keep Kodiak-area managers from maintaining the stability of local pink, silver, and chum salmon and raise serious concerns and precedents about the underlying foundation of common property fisheries in the State of Alaska.

Instead of an attempt to restructure the fisheries in a neighboring region, the Board's time would be better spent investigating the number of years the Kenai and Kasilof rivers have exceeded their escapement, and yet Cook Inlet drift-gillnetters and set-gillnetters still have minimal fishing time when in other regions there would be emergency openings to maintain the health of fish stocks and the rivers. For example, 2019 was a banner year, and yet commercial fishermen were forced to sit on their hands while the Kenai and Kasilof rivers were over-escaped by the hundreds of thousands.

The Kodiak Management Plan is a solid plan that has a proven working track record. The author appears to have little care for the success and sustainability of the management plan in our region and how it allows for the harvesting of local sockeye, pinks, silvers and chums.

I wish all the best to the user-groups of the Cook Inlet Region and hope that in the near future the user groups and management will be able to work together for more peaceful fisheries and sustainable and strong runs in that region.

I strongly encourage the Board to reject proposal #66.

Thank you for your careful consideration,

Richard, Amanda, Stephanie, Noah, and Ranger Roth
F/V Sea Tzar
Homer, AK

December 19, 2019

Robert Fellows

266 E Bayview Ave.

Homer, AK. 99603

Alaska Board of Fisheries

Board Support Section

PO Box 115526

Juneau, Ak. 99811-5526

RE: Opposition to proposal 66

Dear Chairman Morisky and Board of Fisheries members,

I am a commercial salmon fisherman in the Kodiak management area. I have been participating in that fishery and supporting my family from that fishery for 29 years. Restrictions under this proposal would make it extremely hard to harvest local stocks. This in turn would make it impossible for me to continue to make a living for my family and crew. I respectfully request the Board reject proposal #66.

An umbrella sockeye management plan for the Kodiak are is ridiculous. It would prevent proper management of local pink, chum, and sockeye stocks. The genetic data used by the proposer was taken from setnet harvests only and so it has no relevance to the seine harvest.

There is already a management plan in place that addresses harvest of Cook Inlet bound sockeye in the Kodiak management area. The existing management plan is already very restrictive, and, in many years, closures are triggered from harvest of local sockeye alone. The Kodiak area has been under this restrictive plan since 1989 and does not need further restrictions.

The proposer is trying to create more Cook Inlet sockeye where most of the time there are none. This Cook Inlet group would find far more fish in addressing issues within their own area. Such as the gross over escapement into the Kenai River on a yearly basis. It is not Kodiaks fault that management practices in the Cook Inlet area have changed since 1989.

Sincerely,

Robert Fellows

RE: PROPOSAL 66 Create a Kodiak Area Salmon Management Plan

December 24, 2019 Alaska Board of Fisheries Board Support Section P.O. Box 115526 Juneau, AK 99811-5526 Re: Opposition to Proposal 66 Dear Chairman Morisky and Board of Fisheries Members, I am Steve Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Grace. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures. ? The author of this proposal is citing a genetic study showing nothing new, simply a confirmation of something already known – that Cook Inlet origin sockeye sometimes swim through Kodiak waters. There are measures already in place (such as the North Shelikof Management Plan) that address this, to ensure that the vast majority of Cook Inlet- bound sockeye that do swim the Shelikof, make it through. Placing a cape to cape line on the mainland would keep Kodiak-area managers from maintaining the stability of local pink, silver, and chum salmon and raise serious concerns and precedents about the underlying foundation of common property fisheries in the State of Alaska. Instead of an attempt to restructure the fisheries in a neighboring region, the Board's time would be better spent investigating the number of years the Kenai and Kasilof rivers have exceeded their escapement, and yet Cook Inlet drift-gillnetters and set-gillnetters still have minimal fishing time when in other regions there would be emergency openings to maintain the health of fish stocks and the rivers. For example, 2019 was a banner year, and yet commercial fishermen were forced to sit on their hands while the Kenai and Kasilof rivers were over-escaped by the hundreds of thousands. The Kodiak Management Plan is a solid plan that has a proven working track record. The author appears to have little care for the success and sustainability of the management plan in our region and how it allows for the harvesting of local sockeye, pinks, silvers and chums. I wish all the best to the user-groups of the Cook Inlet Region and hope that in the near future the user groups and management will be able to work together for more peaceful fisheries and sustainable and strong runs in that region. I strongly encourage the Board to reject proposal #66. Thank you for your careful consideration, Steve and Jenny Roth? F/V Sea Grace Homer, AK

Tyler-Rose Hoffman
PO Box 1212
Kodiak, AK 99615

12/24/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: **Oppose Proposal 66**

Dear Chairman Morisky and Board of Fish members:

I live in Kodiak and my husband and I operate a commercial fishing business. We rely on salmon for the bulk of our income, though we also participate in halibut, sea cucumber, and cod fisheries. Our ability to stay in Kodiak depends on the health of the Kodiak salmon fishery. I respectfully request the Board reject Proposal 66.

This proposal would inflict entirely unrealistic and unfair restrictions on Kodiak fishermen. The caps would be reached by local stock alone preventing the harvest of pinks and chums. Instituting this proposal would require the Board to disregard most of their guiding principles including Article VIII of the Alaska state constitution and other management principles.

The Kodiak Salmon Management plan is good as it is and I see no need for any changes to it. Thank you for the opportunity to comment on the proposals before the meeting. As always, I look forward to visitors getting to enjoy our great town and vibrant fishing community.

I humbly request the Board reject Proposal 66.

Sincerely,

Tyler-Rose Hoffman
F/V Relentless

Oliver Holm
self
12/27/2019 03:33 PM AKST

RE: PROPOSAL 67 Allow the use of single filament mesh web in a set gillnet in the Kodiak Area

Monofilament web may address the slime issue but will probably increase the drop out rate and thus create some loss to the fishery. It will likely increase the efficiency of gill net gear for pinks, chum, and coho if not for sockeye. If this proposal is adopted, seiners should be allowed to replace the 7 inch lead web for standard seine web for sewn on leads as has been done in other areas.

December 22, 2019
Darren Platt (FV Agnes Sabine)
10708 Birch Cir
Kodiak, AK 99615

Alaska Board of Fisheries
Board Support Section
PO Box 115526
Juneau, AK 99811-5526

RE: **Proposal 67**

To the members of the Alaska Board of Fisheries,

I'm writing in **support to proposal 67** if and only if a **3-year sunset clause** be placed on the proposal to give the collective fishing community more time understand the impacts of the gear change. I'm a seiner in Kodiak, and I sympathize with setnet fishermen who in the past were plagued by slime, although it apparently wasn't an issue last year. I don't understand exactly how or if monofilament will solve this problem but I've been led to believe that mono would make gillnets more efficient but also potentially lead to more wasted and injured fish due to high rates of drop-out. Nevertheless, I think the setnet fleet should be granted a 3-year trial period and then we should evaluate the impacts during the next board cycle.

Thank you,
Darren Platt

Eric Taber

12/22/2019 02:50 PM AKST

RE: PROPOSAL 67 Allow the use of single filament mesh web in a set gillnet in the Kodiak Area

I oppose proposal 67, if nets were changed to single monofilament, they would less visible in the water, resulting in increased by catch. more birds, otter, porpoise and other animals would killed. the slime problem only lasts for 2 weeks, then its gone. Thank you.

Aaren Ellsworth

12/27/2019 11:53 PM AKST

RE: PROPOSAL 67 Allow the use of single filament mesh web in a set gillnet in the Kodiak Area

Dear Chairman Morisky and members of the Board of Fisheries, Thank you for the opportunity to comment on proposal 67.Our family has been setnetting in Uganik Bay on the westside of Kodiak since 1999. In a number of recent years, especially 2018, we saw a new type of algae/dinoflagellate slime appear in late summer. It is tenacious and virtually impossible to effectively remove from our multi-strand gill nets. When the nets are coated with the brown slime, our salmon catch goes virtually to zero. We'd really appreciate the opportunity to try single strand net which we believe may be easier to keep clean.

Adelia Myrick

12/26/2019 11:07 AM AKST

RE: PROPOSAL 67 Allow the use of single filament mesh web in a set gillnet in the Kodiak Area

Dear Board of Fish Members, I am writing in support of allowing single filament mesh web for setnetters in Kodiak. As a second generation fisherman who has been fishing since I was a toddler and took over from my parents a few years ago, I have seen how slime events can drastically shut down our fishery. I like a clean net and have both a volume pump and pressure washer that I use all the time, but when the slime hits no matter how often I wash the net, the fishing just dies. The pumps can't keep up with the slime that coats every single mesh to the point that it looks like a hairy chain link fence under water and weights an incredible amount. In 2017, which was the worst slime year in recent memory, when the slime hit, from one delivery to the next, I was down by 54%. This was August 14th. It is supposed to be just the start of our peak of pink fishing, which for my site is my bread and butter, but instead it basically ended. Of course every day is different, but even looking at it week by week, for the week prior to the slime event compared to the week when it first started, I was down by more than 70%! That is more than the normal varieties of salmon run timing and pulses would account for. That week should have still been very strong if not the strongest week of my fishing for the whole summer. It wasn't until the slime let off on August 28th that we started catching more fish again, which is the tail end of the season. In post season chats with our friends and neighbors who have seiners, we were complaining about the bad season and they said, "well, but weren't humpies pretty good?" No. And the reason is completely the slime. We were trying to wash our nets all the time but it would be dirty before we even finished washing. Single filament web has been tested by some setnetters and appears to hold promise as something that is more easily kept clean with our washing equipment in the even that we have slime in other years. It is something I would definitely like to be able to have as an option. I know it's allowed in other parts of the state and I think we could benefit from it here as another tool in our tool chests to try to salvage some fishing time in the event of slime events. Thank you for your consideration, Adelia Myrick Uganik Bay Setnetter

Anitra Winkler

12/26/2019 11:07 AM AKST

RE: PROPOSAL 67 Allow the use of single filament mesh web in a set gillnet in the Kodiak Area

There really is no reasonable reason to oppose this.

Corina Watt, Kodiak Setnet Commercial Fisherman
Trap Pt/ Moser Bay Fisheries: Alitak District with sites across Olga, Moser and Alitak Bays
12/25/2019 10:01 PM AKST

RE: PROPOSAL 67 Allow the use of single filament mesh web in a set gillnet in the Kodiak Area

I support proposal 67 PROPOSAL 67 5 AAC 18.331. Gillnet specifications and operations. Allow the use of single filament mesh web in a set gillnet in the Kodiak Area, as follows: Notwithstanding 5 AAC 39.250(c), in the Kodiak Area, a person may use single filament mesh web in a set gillnet. For the following reasons: 1) Single filament mesh will absorb and hold less slime during extreme slime events within Kodiak Setnet fishing periods. 2) This will prevent damage to Kodiak Setnet Salmon fishers gear during extreme slime events that occur during seasonal fishing periods. 3) This will prevent a loss of valuable fishing time and therefore harvest during productive Kodiak setnet salmon fishing periods.

Ed Fisher, Kodiak Setnet Commercial Salmon Fisherman
Trap Pt / Moser Bay Fisheries: Alitak District with sites across Olga, Moser & Alitak Bays
12/25/2019 10:44 PM AKST

RE: PROPOSAL 67 Allow the use of single filament mesh web in a set gillnet in the Kodiak Area

I support proposal 67 PROPOSAL 67 5 AAC 18.331. Gillnet specifications and operations. Allow the use of single filament mesh web in a set gillnet in the Kodiak Area, as follows: Notwithstanding 5 AAC 39.250(c), in the Kodiak Area, a person may use single filament mesh web in a set gillnet. For the following reasons: 1) Single filament mesh will absorb and hold less slime during extreme slime events within Kodiak Setnet fishing seasonal periods. 2) This will prevent damage to Kodiak Setnet Salmon fishers gear during extreme slime events that occur during seasonal fishing periods. 3) This will prevent a loss of valuable fishing time during productive Kodiak setnet salmon fishing periods.

Jamin Hall

12/27/2019 10:58 PM AKST

RE: PROPOSAL 67 Allow the use of single filament mesh web in a set gillnet in the Kodiak Area

My name is Jamin Hall, my wife and I have a set net site in Uganik Bay. I am writing in support of proposal 67. In 2017 and 2018 the west side of Kodiak experienced a massive “slime” event where brown slime stuck to nets. These events made catching fish nearly impossible. To combat this slime monofilament web would be very helpful in that it has far fewer facets and crevices for slime to catch on; and also making washing the net an easier, and less Sisyphean task. Monofilament is legal in many places, including various Alaska fisheries, so it would seem to be a non-issue.

Jane Petrich
Self/Family, Northwest Set Net
12/27/2019 11:25 AM AKST

RE: PROPOSAL 67 Allow the use of single filament mesh web in a set gillnet in the Kodiak Area

A proven strategy to combat the effects of climate change and support the historic set net fishery

Jason Watt Kodiak Setnet Commercial Fisherman
Trap Pt/ Moser Bay Fisheries: Alitak District with sites across Olga, Moser and Alitak Bays
12/25/2019 10:03 PM AKST

RE: PROPOSAL 67 Allow the use of single filament mesh web in a set gillnet in the Kodiak Area

I support proposal 67: 5 AAC 18.331. Gillnet specifications and operations. Allow the use of single filament mesh web in a set gillnet in the Kodiak Area, as follows: Notwithstanding 5 AAC 39.250(c), in the Kodiak Area, a person may use single filament mesh web in a set gillnet. For the following reasons: 1) Single filament mesh will absorb and hold less slime during extreme slime events within Kodiak Setnet fishing periods. 2) This will prevent damage to Kodiak Setnet Salmon fishers gear during extreme slime events that occur during seasonal fishing periods. 3) This will prevent a loss of valuable fishing time and therefore harvest during productive Kodiak setnet salmon fishing periods.

Jonathan Edwards

12/26/2019 11:16 AM AKST

RE: PROPOSAL 67 Allow the use of single filament mesh web in a set gillnet in the Kodiak Area

I have been a fisherman for 60 years and have used a number of different types of gill net webbing. The one that stays the cleanest is single strand nylon. this is of utmost importance to set netters in the Kodiak Management Area because, over recent years, we have been plagued by a thick gooey slime you can wash your net clean, and by the time you're done, it's slimed again. It totally stops your fishing. Single strand is one smooth strand, where as, what we fish now, is six or more strands twisted, a lot more crevices to stick to.

Judy Fisher, Kodiak Setnet Commercial Salmon Fisherman
Trap Pt/ Moser Bay Fisheries
12/25/2019 10:46 PM AKST

RE: PROPOSAL 67 Allow the use of single filament mesh web in a set gillnet in the Kodiak Area

I support proposal 67 PROPOSAL 67 5 AAC 18.331. Gillnet specifications and operations. Allow the use of single filament mesh web in a set gillnet in the Kodiak Area, as follows: Notwithstanding 5 AAC 39.250(c), in the Kodiak Area, a person may use single filament mesh web in a set gillnet. For the following reasons: 1) Single filament mesh will absorb and hold less slime during extreme slime events within Kodiak Setnet fishing seasonal periods. 2) This will prevent damage to Kodiak Setnet Salmon fishers gear during extreme slime events that occur during seasonal fishing periods. 3) This will prevent a loss of valuable fishing time during productive Kodiak setnet salmon fishing periods.

Kevin Fisher
Alitak District setnet Fisherman
12/27/2019 08:27 PM AKST

RE: PROPOSAL 67 Allow the use of single filament mesh web in a set gillnet in the Kodiak Area

I believe this proposal could help the setnet fleet on Kodiak , which are struggling to stay in business.

Mark Larsen

12/26/2019 01:44 PM AKST

RE: PROPOSAL 67 Allow the use of single filament mesh web in a set gillnet in the Kodiak Area

Dear Board of Fisheries Members, Thank you for your consideration of this proposal. Adopting it will allow set netters to deal with the increasing amounts of slime that are effectively shutting down our participation in the fishery at times. it also allows us to fish with gear allowed in other areas of the state. Sincerely, Mark Larsen

2020 Board of Fisheries Comment

Mikayla Fisher
Alitak District Set Gillnetter
Proposal 67 – Support

PROPOSAL 67: Allow the use of single filament mesh web in a set gillnet in the Kodiak Area.

I support Proposal 67.

As stated in the proposal, “extreme slime events” have plagued Kodiak set gillnetters. Being limited to multifilament web has been an issue as it is susceptible to capturing and retaining slime, more so than monofilament web.

This affects the cleanliness of the nets. Since dirty nets do not catch fish well they must be cleaned frequently. Increased slime retention as seen with multifilament web requires more passes with the pressure washer over the web to get it clean. Washing the web more frequently shortens the lifespan of the net. This translates to more frequent repairs and replacements over a short period of time which increases gear costs.

Allowing the use of single filament mesh (a.k.a. monofilament) gillnet gear in the Kodiak Area allows each gillnetter the opportunity to pursue new avenues to offset the cost associated with net building and repair, optimizing their operation to ultimately fit their specific needs.

Naomi Hall

12/27/2019 09:34 PM AKST

RE: PROPOSAL 67 Allow the use of single filament mesh web in a set gillnet in the Kodiak Area

My name is Naomi Hall, my husband and I setnet in Uganik Bay, I am writing in favor of proposal 67. Salmon set gillnetting is already a lot of work, I'll be the first person to admit that. The heavy slime events that occurred in 2017 and 2018 completely shut down our ability to catch fish and resulted in significantly more work as we tried futilely to keep our nets clean with the hope of catching a few fish. The slime was so thick and stuck in the net by the time you got done washing and went back to where you started it looked like you hadn't done anything, making it hard to not feel defeated and wonder why we were leaving our net in the water. Aside from the hope that one day it would finally go away and there would be a few fish. The ocean is changing, and no one knows what is coming from one year to the next as we experience record setting surface temperatures. Implementing this proposal would give setnetters a tool to use during slime events to help keep our gear fishing more effectively.

Northwest Setnetters Association
P.O. Box 870
Kodiak, AK 99615

December 21, 2019

Alaska Board of Fisheries
Reed Morisky, Chair
Attn: Glen Haight, Executive Director
1255 W 8th Street
P.O. Box 115526
Juneau, AK 99811-5526

RE: Approval of proposal 67

Dear Chairman Morisky and members of the Board of Fisheries,

Thank you for the opportunity to comment on proposal 67 in advance of the Board meeting. This proposal was put forth by the Northwest Setnetters Association (NWSA) and we request you approve this proposal. Our organization and its members have identified an area of concern we feel needs some attention within the Kodiak Management Area (KMA) with growing climate variability. We have deliberated this proposal idea within our organization, we have had discussions with the Department of Fish and Game, and we have voted unanimously within our Association to put forth this proposal.

Northwest Setnetters Association is comprised of over 100 active SO4K permit holders and crewmembers of which the vast majority have been family run operations for many years and passed down to family members through the generations. The majority of these permit holders in the Northwest District maintain a residence on Kodiak Island and contribute to the economics of Kodiak. Recently, the viability of our setnet fishery has increasingly become more difficult to maintain and we are approaching a situation of survival as a fishery.

Proposal 67 requests the allowance of the use of single filament mesh web. In recent years we have experienced severe slime events which have effectively shut down our fishery and is backed up by harvest data from Fish & Game (see attached graph). In early August 2017, represented on the attached graph, you will notice there was something that drastically reduced the catching ability of gillnets in the areas listed. This was directly correlated to a slime event experienced in these areas during this timeframe. There was an additional dramatic slime event in August of 2018 which occurred at the peak of the fishing season for many Westside setnetters. Some setnetters went from peak harvest days of the season to NOTHING in a matter of 2 days due to heavy slime on set nets. We also have numerous pictures available to you for reference of our struggles (a few pictures are attached to this comment). We feel single filament mesh may allow our nets to fish effectively, even during heavy slime events, which appear to be more frequent each year. Additionally, this type of gillnet will wash easier with our pressure washer pumps and remain clean a little longer than our multi-strand web, which seems to grab and hold onto the slime. We can wash our multi-strand web spotless and within 15 minutes or less, during slime events, the gear becomes

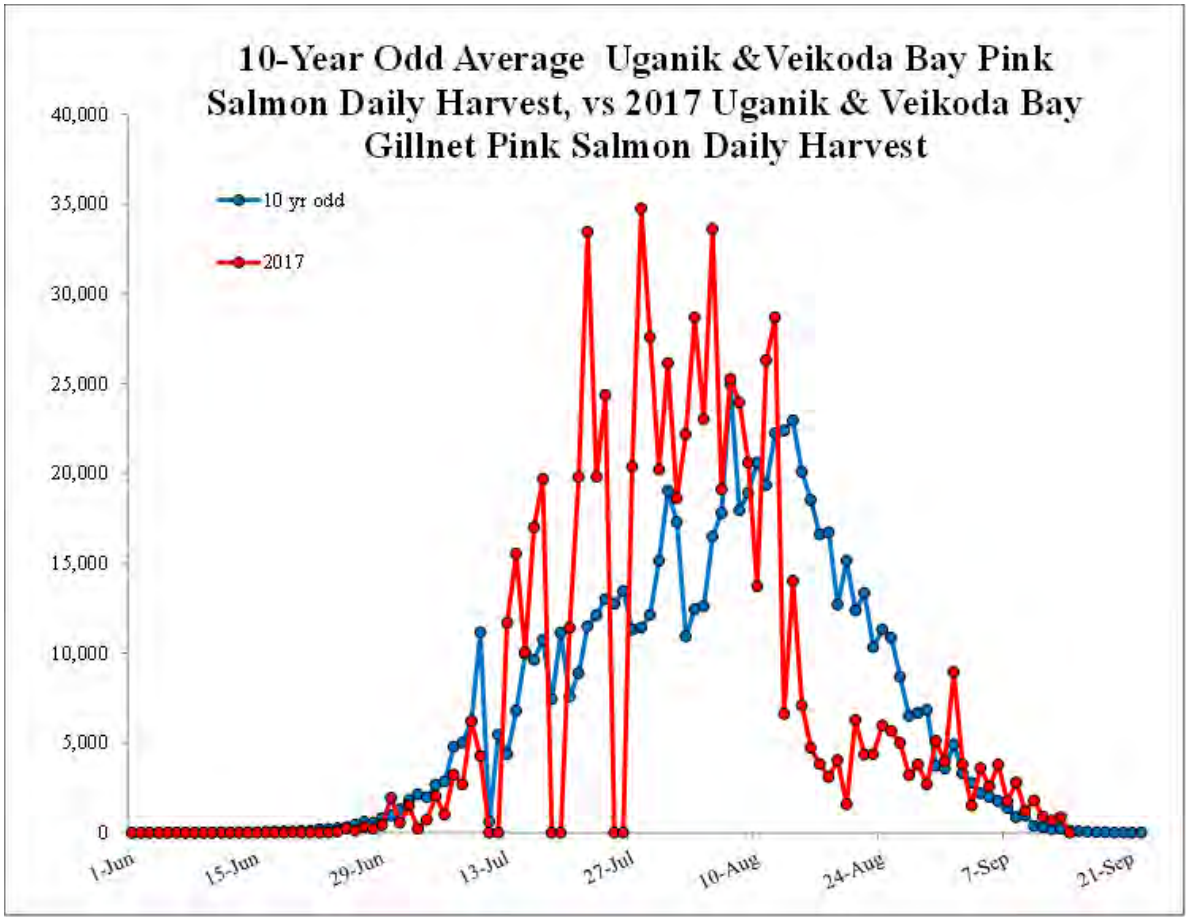
useless, as well as set lines breaking, due to the extreme drag the slime creates. Please consider approving this proposal to allow our fleet a gear alternative. This type of web is currently legal in Cook Inlet and provides us an alternative option during an ever-growing slime problem with rising ocean temperatures. After discussions at the Kodiak AC, this proposal was supported with 1disenting vote voicing concerns that setnet fishermen may be able to catch more pink salmon with the new web.

NWSA, after speaking with Kodiak Area salmon biologists at Fish & Game, received 4 Commissioner subsistence permits to test single filament in the 2019 season. Although we did not have any significant slime events, there was a new and different bright green mossy growth that was very difficult to remove from our nets. We were able to test the web and it did appear to be easier to clean.

This proposal will provide setnetters one additional tool to continue to pursue their livelihoods in a historic fishery for Kodiak families and future generations during an everchanging environment. We respectfully ask the Board to approve proposal 67.

Sincerely,

Mark Beardsley
President - Northwest Setnetters Association









Peter Danelski Jr.

12/28/2019 12:19 AM AKST

RE: PROPOSAL 67 Allow the use of single filament mesh web in a set gillnet in the Kodiak Area

I support allowing the use of monofilament gillnet in the Kodiak setnet fishery. I grew up setnetting on the west side of Kodiak, and my kids have started to participate too. They are the third generation. From a technological perspective we have not innovated much in the 30 years I have been fishing. Besides proper gloves, and roller skiffs, the high power pressure washer is our biggest breakthrough….and we use it FREQUENTLY - Often every pick through the gear when loose kelp and algae SLIME is present. Large blooms of algae have gotten more frequent. When we see the SLIME in the water column we know our catch is going down, and our work and use of resources is going up. When it's really bad, the reprieve from slime is very short lived even when we have pressure washers going. Our hope is that the smaller surface area of the single strand vs. 6 strand gillnet will be faster to clean and stay clean longer. Less trouble with SLIME will mean higher morale for crew and a greater likelihood of skilled crewmen returning. It would also mean less fuel and pollution as pressure washer time diminishes and we spend less time running around the nets. From firsthand knowledge from others, it sounds like monofilament gillnet, with it's lower strength, would not be suitable for everyday fishing, but in large SLIME events, it would be a tool we could use to help get by. Thank you for considering this proposal.

Rich Blanc
High Rock Fisheries
12/27/2019 05:38 PM AKST

RE: PROPOSAL 67 Allow the use of single filament mesh web in a set gillnet in the Kodiak Area

A lot of the time our nets look like chain link fences when the algae/slime builds up on them. A single use filament will be easier to maintain with a pressure washer and algae/slime will not be able to adhere to the net as easily as a multi strand net.

Sam Haughey

12/27/2019 11:04 PM AKST

RE: PROPOSAL 67 Allow the use of single filament mesh web in a set gillnet in the Kodiak Area

I support this proposal because it helps fisherman be productive in a changing ocean environment. We don't know what will happen in the future with the water temperature and all the effects it will have on the fish, and use of monofilament can ensure a more consistent production during these heavy algae cycles.

Thomas G Wischer
Northwest Setnetters Association
12/21/2019 06:57 PM AKST

RE: PROPOSAL 67 Allow the use of single filament mesh web in a set gillnet in the Kodiak Area

I have been a Kodiak gill net fishermen for 42 seasons in the same location. Our fishery has essentially remained unchanged with the exception of aluminum roller skiffs and bigger outboards. We have seen our percentage of the island wide harvest be eroded over time as the seine fleet has modernized and become much more efficient. That combined with the unrepresented ocean slime events in recent years, have further restricted our ability to harvest salmon needed to sustain our family businesses. Single filament mesh web has been shown to resist these slime events better and cleans up easier, thus allowing us to keep our gear in the water for the limited time we are allowed. This proposal would give gill net fishermen another tool to sustain the fishing opportunities we have. It has been allowed in other regions in the state and is a needed supplement to our current regulations.

Tollef Monson

12/25/2019 06:24 PM AKST

RE: PROPOSAL 67 Allow the use of single filament mesh web in a set gillnet in the Kodiak Area

I was one of the testers for the mono web in Uganik Bay, Kodiak 2019. I found it to be easier to clean slime from mono strand than multi strand web. I also found it had better resistance to slime adhering to it. This will be another tool in the tool box that help us manage a growing problem. I also think it will be tougher and keep used web out of the landfill. Thank you.

Virginia Adams
Northwest Setnetters Assoc
12/26/2019 10:02 AM AKST

RE: PROPOSAL 67 Allow the use of single filament mesh web in a set gillnet in the Kodiak Area

My name is Virginia Adams. I have fished my salmon set net site on Uganik Island, Kodiak for 40 years. Before fishing in Alaska I was a commercial gillnetter out of Montauk, NY. There I fished single filament gillnets in set nets as well as drift nets. I am very familiar with single filament, or commonly called mono filament,, as well as the multi strand we are required by law to fish presently in Kodiak. Set nets in Kodiak are experiencing extreme slime events over the past several years. It is my belief that single filament nets will be much easier to keep clean during these events. Our fishing essentially stops completely during these slime events. In 2018 we were in the height of our season when within 48 hours we were catching nothing, this lasted for almost 2 weeks, essentially losing our season. If we were able to fish single filament during these events there is a chance we could keep our nets fishing more efficiently. I believe the Board should allow Kodiak set netters the use of single filament mesh web, as they have done in Cook Inlet. This additional option will help Kodiak set netters stay viable during increasing slime and algae events which appear to be much more common with warming waters.

Charles and Theresa Peterson
1850 Three Sisters Way
Kodiak, AK 99615

December 26, 2019

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE**: Support Proposal 68**

Dear Chairman Morisky and Board of Fish members:

We moved to Kodiak in the 1980's to pursue the opportunity for a livelihood in commercial fishing. We found what we were looking for, a chance to make a living off the sea and stayed, raising three children and developing deep relationships in our island home. Kodiak is a community built on fish and the size of the fleet, the processing infrastructure, the support services and the overall health of our coastal community is dependent on sustainable fisheries. Salmon fishing is the mainstay of our commercial fishing business and without it we would not have the financial means to stay in Kodiak, maintain a vessel and prosecute other fisheries. We own a 42', shallow draft seine vessel that primarily operates in the Alitak district. Our son now runs the boat and Charles and I run a setnet site in Alitak Bay. We choose to diversify our salmon fishing with participation in both the seine and setnet fishery so our son can run the boat with his crew and the rest of the family can prosecute the fishery from a shore-based operation.

We support proposal 68 and see the chance to setnet in seine only areas after September 4th as a small but potentially meaningful opportunity for the South End based setnet fleet. We respected the sunset provision as an important step to determine if gear conflicts may arise between user groups and there have been no conflicts identified that we are aware of. Our setnet camp was the only site to utilize the provision and it did not amount to much. However, given the status of the South end setnet fleet and diminished fishing time and harvest opportunity, every day and each chance to catch fish is important. We support the regulatory lines restricting any set net activity outside the capes, such as Alitak beach as it was important to the seine fleet to reduce the potential of lost anchors in historical seine sets.

Sincerely,

Charles and Theresa Peterson

Corina Watt, Kodiak Setnet Salmon Fisherman
Trap Pt/ Moser Bay Fisheries: Alitak District with sites across Olga, Moser and Alitak Bays
12/25/2019 10:07 PM AKST

RE: PROPOSAL 68 Repeal the sunset date for the use of commercial set gillnets in the Alitak District

I support proposal 68: to 5 AAC 18.330. Gear. Repeal the sunset date for the use of commercial set gillnets in the Alitak District, for the following reasons: 1) Allows Alitak District Setnet fishers an opportunity to regain lost harvest on Alitak District systems due to current management restrictions prior to Sept 4th. 2) Affords harvest of local Alitak stocks/systems by Alitak setnet fishers with little or no impact to the health and sustainability of Alitak salmon systems. 3) Having been trialed during the 2017-18 Setnet salmon seasons there were no apparent gear conflicts.

Ed Fisher, Kodiak Setnet Commercial Salmon Fisherman
Trap Pt/ Moser Bay Fisheries
12/25/2019 10:49 PM AKST

RE: PROPOSAL 68 Repeal the sunset date for the use of commercial set gillnets in the Alitak District

I support proposal 68 to 5 AAC 18.330. Gear. Repeal the sunset date for the use of commercial set gillnets in the Alitak District, for the following reasons: 1) Allows Alitak District Setnet fishers an opportunity to regain lost harvest on Alitak District systems due to current management restrictions prior to Sept 4th. 2) Affords harvest of local Alitak stocks/systems by Alitak setnet fishers with little or no impact to the health and sustainability of Alitak salmon systems. 3) Having been trialed during the 2017-18 Setnet salmon seasons there were no apparent gear conflicts.

Judy Fisher, Kodiak Setnet Commercial Salmon Fisherman
Trap Pt / Moser Bay Fisheries
12/25/2019 10:52 PM AKST

RE: PROPOSAL 68 Repeal the sunset date for the use of commercial set gillnets in the Alitak District

I support proposal 68 to 5 AAC 18.330. Gear. Repeal the sunset date for the use of commercial set gillnets in the Alitak District, for the following reasons: 1) Allows Alitak District Setnet fishers an opportunity to regain lost harvest on Alitak District systems due to current management restrictions prior to Sept 4th. 2) Affords harvest of local Alitak stocks/systems by Alitak setnet fishers with little or no impact to the health and sustainability of Alitak salmon systems. 3) Having been trialed during the 2017-18 Setnet salmon seasons there were no apparent gear conflicts.

Kevin Fisher
Alitak District Setnet Fisherman
12/27/2019 08:33 PM AKST

RE: PROPOSAL 68 Repeal the sunset date for the use of commercial set gillnets in the Alitak District

I believe this proposal is going to help some fishermen in the Alitak district. It has not caused any problems or conflicts and as such has no reason to sunset

2020 Board of Fisheries Comment

Mikayla Fisher
Alitak District Set Gillnetter
Proposal 68 – Support

PROPOSAL 68: Repeal the sunset date for the use of commercial set gillnets in the Alitak District

I support Proposal 68.

Both the actual harvest as well as the projected harvest in the Alitak District have been steadily declining. This can be seen in the tables and graphs below. This obvious decline causes financial strain for set gillnet fishermen that return each year to the Alitak District.

One of the underlying factors contributing to the dramatic decline in seasonal yields is a lack of opportunity. Repealing the sunset date for the commercial set gillnets in the Alitak District will help alleviate the issue of opportunity. It will provide the set gillnetters, with the resolve and capability to do so, an opportunity to attempt recapturing season losses caused by outstanding restrictions.

Typically, the salmon season in the Alitak District is coming to a close by September 4th and accordingly minimal effort has been put forth by seiner or gillnetter during this period. To the best of my knowledge, no gear conflicts have occurred since this opportunity was provided via the 2016 Board of Fish cycle.

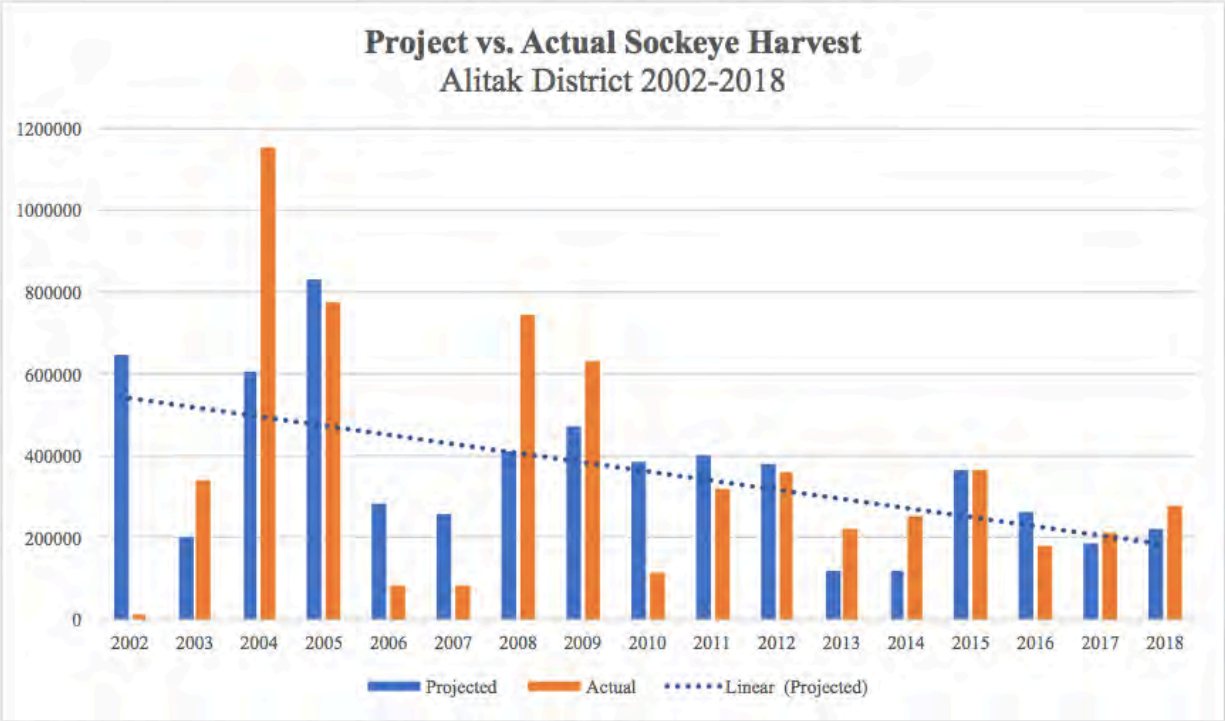
Alitak District Sockeye Harvest: Table 1 & Graph 1

Table 1 shows the decline in both project and actual sockeye harvest in the Alitak District. The discrepancy between the projected and actual harvest is also evident. Numbers represent the number of fish (not pounds).

Alitak District Sockeye Harvest		
Year	**Projected**	**Actual**
2002	648,000	14,600
2003	204,000	341,400
2004	605,000	1,157,000
2005	831,000	777,817
2006	286,000	86,286
2007	259,000	85,469
2008	412,000	743,052
2009	474,000	631,312
2010	389,000	115,938
2011	401,824	318,208
2012	383,331	359,890
2013	117,962	222,154
2014	117,962	254,600
2015	364,330	364,946
2016	262,000	183,295
2017	189,000	214,898
2018	223,000	277,528

Table 1. Alitak District Projected & Actual Sockeye Harvest. Data taken from Kodiak Area Management Harvest Strategies.

The blue dotted line is a linear trendline for the projected harvest of sockeye in the Alitak District. As you can see, the projections for Alitak District sockeye harvest have been declining.



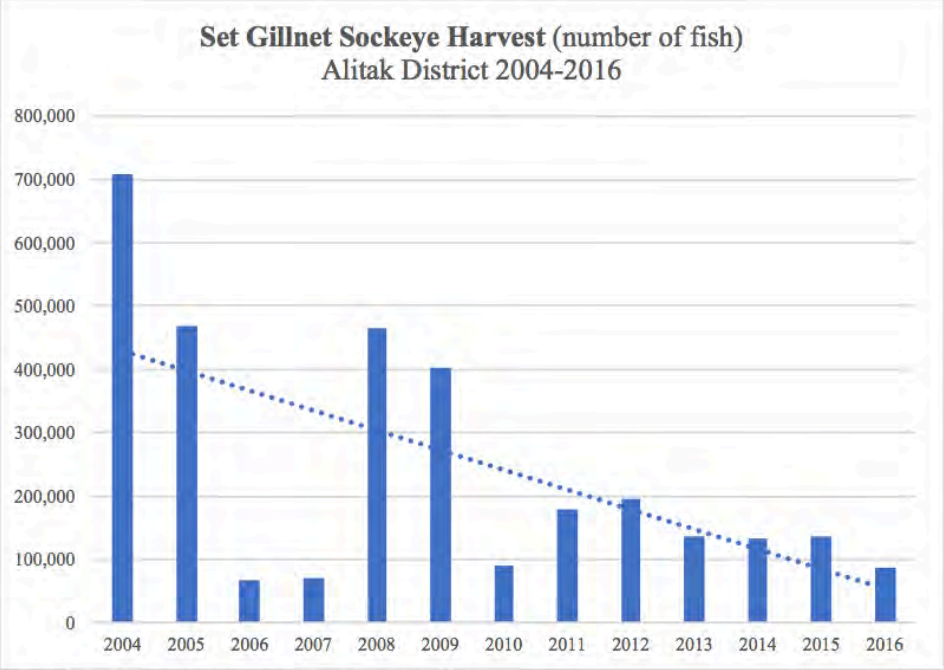
Graph 1. Alitak District Projected & Actual Sockeye Harvest. Data taken from Table 1.

Alitak District *Set Gillnet* Sockeye Harvest: Table 2 & Graph 2

The decline in set gillnet harvest specifically can be observed in both Table 2 and Graph 2.

Set Gillnet Sockeye Harvest	
Year	**Harvest** (number of fish)
2004	708,411
2005	469,511
2006	65,322
2007	68,640
2008	465,314
2009	402,400
2010	91,397
2011	178,186
2012	193,994
2013	134,758
2014	133,082
2015	136,487
2016	85,628

Table 2. Alitak District Set Gillnet Sockeye Harvest. Data taken from Kodiak Management Area Commercial Salmon Fishery Annual Management Reports.



Graph 2. Alitak District Set Gillnet Sockeye Harvest. Data taken from Table 2.

Rich Blanc
High Rock Fisheries
12/27/2019 05:40 PM AKST

RE: PROPOSAL 68 Repeal the sunset date for the use of commercial set gillnets in the Alitak District

This proposal would allow additional fishing opportunity to the already financially depleted set gillnet fishermen in the Alitak District.

Gmail

Chris Berns <chrisberns@gmail.com>

In regard to Kodiak proposal 69

3 messages

RECEIVED
DEC 16 2019
BOARDS

Chris Berns <chrisberns@gmail.com> Tue, Nov 19, 2019 at 11:37 AM
To: Chris Berns <chrisberns@gmail.com>

Chairman **Chervenak & advisory committee members,**

At the end of & after the 2018 season the Karluk pink escapement of 2,275,207 was the talk of the town from processors,harvesters to concerned citizens. The issue was over a million pinks went past the weir than were needed for escapement. I went to the ADFG office to see what was up. There was what some call "counter fatigue" in the office from explaining tto multiple individuals that the current regulations restrict what the department can do on harvesting Karluk bound pinks through the NW Kodiak district. This was new information to me so I crafted proposal 69 as a solution to the forgone harvest that occurred in 2018.

Looking at past even year escapements this foregone harvest of pink salmon was not a one off it has happened 4 times over the last 20 even years of a million ,one year 2 million past the weir over needed escapement goals. Other years less than a million but still foregone harvest or as is in ground fish terms "stranded quota".

What I am talking about is 1 million dollars of ex vessel value not including the multiplier of lost processing days ,tender fees etc.

This proposal may not capture all of the lost harvest but will give the dept an extra tool to access information on the Karluk pink return as it passes through the NW Kodiak district then act accordingly through management decisions.

Some of the years on the tables there was aggressive fishing some years not. I did not flesh that out.

In 2018 poor flying conditions & concerns that the low escapement of the parent year led to a long mid season closure of over a week. With the present economic state of the fisheries I think that any action that will reduce lost harvest opportunity to the fleet & local Kodiak economy should be seriously considered. Thank you Chris Berns

---

Chris Berns <chrisberns@gmail.com> Fri, Dec 13, 2019 at 12:49 PM
To: Chris Berns <chrisberns@gmail.com>

[Quoted text hidden]

Chris Berns <chrisberns@gmail.com> Fri, Dec 13, 2019 at 1:45 PM
To: Chris Berns <chrisberns@gmail.com>

Chairman Morisky & fellow BoF members,

This information is in regard to proposal 69 Kodiak fin fish in the 2019-2020 BoF proposal book. I am including materials presented to the Kodiak advisory committee on 11/19/2019 who unanimously supported proposal 69 with amendments to the wording ***shall changed to may & July 6 changed to July 31st.***

The changes were made to give ADFG managers flexibility to react to the Karluk even year pink salmon return which is if not the biggest single even year pink salmon system in the gulf of Alaska one of the biggest. As the author of proposal 69 I support the amendments made by the Kodiak advisory committee. Thank you for your consideration. Chris Berns ,Kodiak Alaska .

[Quoted text hidden]

Even YR

Karluk Pink Escapement

2018 2,275,207 ✓

[redacted]

2016 363,614

[redacted]

2014 585,360

[redacted]

2012 1,049,897

[redacted]

2010 1,324,368 ✓

[redacted]

2008 624,540

[redacted]

2006 1,019,283 ✓

[redacted]

2004 1,522,675 ✓

[redacted]

2002 1,694,513 ✓

[redacted]

2000 1,096,916 ✓

[redacted]

1998 1,135,439 ✓

[redacted]

1996 855,783

[redacted]

1994 438,991

[redacted]

1992 401,083

[redacted]

1990 3,423,969 ✓

[redacted]

1988 711,676

[redacted]

1986 668,297

[redacted]

1984 1,672,408 ✓

[redacted]

1982 2,326,674 ✓

[redacted]

1980 2,359,160 ✓

[redacted]

1978 1,380,792 ✓

800,00 - 1.6 mil

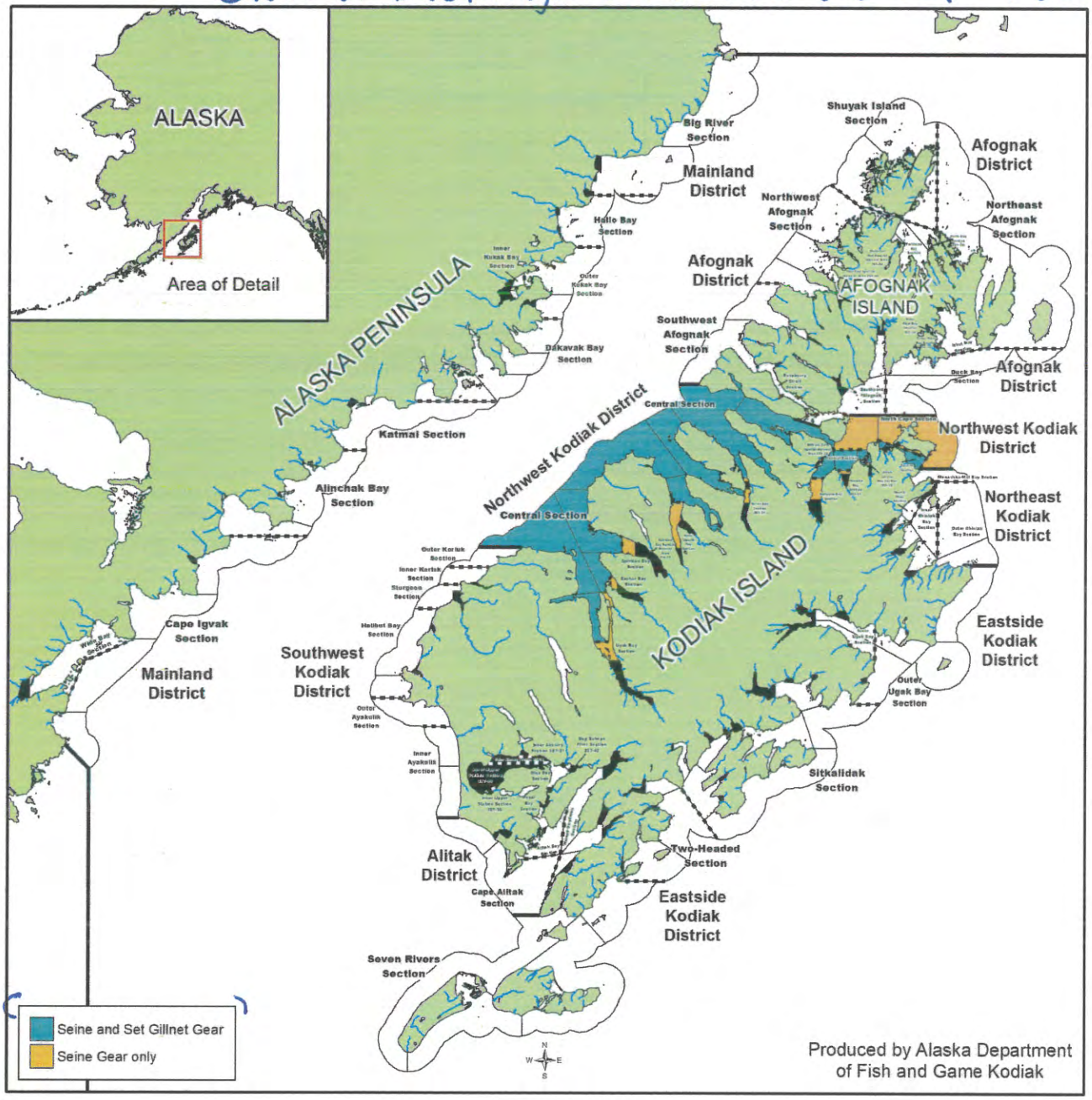
Even YEAR Esapement Range

Karluk River Pink Salmon Odd-Year Escapement

Year	Pink Escapement	Lower Escapement Objective	Upper Escapement Objective
1977	52,319	20,000	60,000
1979	81,473	20,000	60,000
1981	51,248	20,000	60,000
1983	38,902	20,000	60,000
1985	41,232	20,000	60,000
1987	24,222	20,000	60,000
1989	109,880	20,000	60,000
1991	116,329	20,000	60,000
1993	101,672	20,000	60,000
1995	111,066	20,000	60,000
1997	114,881	20,000	60,000
1999	89,160	20,000	60,000
2001	66,554	20,000	60,000
2003	140,794	20,000	60,000
2005	234,281	20,000	60,000
2007	249,704	20,000	60,000
2009	159,097	20,000	60,000
2011	158,740	20,000	60,000
2013	106,885	20,000	60,000
2015	319,143	20,000	60,000
2017	283,018	20,000	60,000
2019	433,673	20,000	60,000

PC400
4 of 4

Central section, N.W. Kodiak District - INDIE



Ken Christiansen
F/V Mary Ann
12/26/2019 09:14 PM AKST

RE: PROPOSAL 69 Amend the Westside Kodiak Salmon Management Plan to include even-year returns of pink salmon to the Karluk River in management of the Central and North Cape Sections

I'm in support of this proposal.with the following addition. From approximately July 6 through August 15, based on pink salmon returning to the major pink salmon systems in the Northwest Kodiak District, or After July 31st, may on even-year cycles based on pink salmon returning to the Karluk system.

Nicholas Hoffman
PO Box 1212
Kodiak, AK 99615

12/24/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Support Proposal 69

Dear Chairman Morisky and Board of Fish members:

I'm a young Kodiak salmon fisherman. I have been running a seine boat since 2011 as well as participating in Kodiak halibut, sea cumber, cod jig, and tanner crab fisheries. I respectfully request the Board support Proposal 69 with additional language.

Additional language should be added. "From approximately July 6 through August 15, based on pink salmon returning to the major pink salmon systems in the Northwest Kodiak District, **or After July 31st, may on even-year cycles based on pink salmon returning to the Karluk system.**" This substitute language provides protections for the river systems that make up the Central Section and the ADF&G more flexibility.

Thank you for the opportunity to comment on the proposals and the chance for my voice to be heard. I look forward to the Board of Fish members getting to spend time in Kodiak and learn more about our town and fishing community.

I humbly request the Board support Proposal 69.

Sincerely,

Nicholas Hoffman
F/V Relentless

December 25, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 70

Dear Chairman Morisky and Board of Fisheries Members,

I am Alex Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Wandering Star. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

I oppose this proposal because when the Central Section is strong, Karluk is weak, and vice versa depending on the odd or even year. It would be poor management to be pressured into opening the Central Section to fish on Karluk fish if Central Section systems are struggling to make escapements for some reason. The purpose of this proposal appears to run counter to proposal 71 submitted by the same authors. I cannot support either proposal.

I request that the Board reject this proposal.

Thank you for your time and consideration of these comments,

Alex and Jaime Roth
F/V Wandering Star
Homer, Alaska

Brian Mcwethy
KSA
12/23/2019 09:40 AM AKST

RE: PROPOSAL 70 Amend the Westside Kodiak Salmon Management Plan to include returns of pink salmon to the Karluk River

My name is Brian Mcwethy. I was born and raised in kodiak. I live in kodiak with my family and we all depend on my income. I fished with my father on his seiner growing up and now I own and operate a seiner. Salmon seining and tanner crab fishing in kodiak are currently our only sources of income. I plan to try and continue to fish the kodiak waters and possible my children will have the opportunity to. I hope the current and historical areas we fish aren't taken from us and the future generations of kodiak. I oppose this proposal.

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 70

Dear Chairman Morisky and Board of Fisheries Members,

My name is Chris Johnson and I am a second-generation fisherman in Kodiak, Alaska. I grew up fishing on my dad's boat and got my first crew job working for someone else two weeks after I graduated high school. I haven't missed a salmon season since. I bought into the fishing industry in 2011 with the purchase of a 25-foot jig boat that I worked for two years in the winter and spring months while I still crewed for salmon in the summer. Access to the jig fisheries focusing on cod and rockfish was the only way that I could afford to move into the salmon fleet with a 38-footer in 2013. After the recent cod collapse, I now primarily rely on salmon seining and live here year-round with my wife.

I oppose this proposal because it is not ecologically viable. Traditionally when the Central Section is strong, Karluk is weak, and vice versa depending on the odd or even year. It would be poor management to be pressured into opening the Central Section to fish on Karluk fish if Central Section systems are struggling to make escapements for some reason. The thesis behind this proposal also appears to run counter to proposal 71 submitted by the same authors. I cannot support either proposal.

Taking away any fishing opportunity from Kodiak fishermen, particularly from the small boat fleet, would have a direct negative impact on new entrants trying to gain a foothold in this industry, fishing families trying to get by, and fishing support businesses in our region. I'm proud to call Kodiak home and am working to protect our fishing way of life.

Sincerely,
Chris Johnson
F/V North Star

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 70

Dear Chairman Morisky and Board of Fisheries Members,

My name is Danielle Ringer and I appreciate the opportunity to comment on proposals before the Board in writing and in person for the Kodiak finfish meeting. I live in Kodiak with my husband and we own and operate the 38-foot F/V North Star. We chiefly rely on salmon seining and cod and rockfish jigging to maintain our fishing way of life and ability to live on Kodiak Island. I grew up in Homer learning to harvest and process fish from my parents in Kachemak Bay and dipnetting on the Kenai River. I hold a Master's degree from the University of Alaska Fairbanks in Political Ecology of Fisheries and was one of the researchers on the *Graying of the Fleet in Alaska's Fisheries: Defining the Problem and Assessing Alternatives* study in the Kodiak region.

I oppose this proposal because it is not ecologically viable. Traditionally when the Central Section is strong, Karluk is weak, and vice versa depending on the odd or even year. It would be poor management to be pressured into opening the Central Section to fish on Karluk fish if Central Section systems are struggling to make escapements for some reason. The thesis behind this proposal also appears to run counter to proposal 71 submitted by the same authors. I cannot support either proposal.

I see no biological, scientific, historical, economic, nor sociocultural reasons that could justify the Board making any changes to Kodiak's salmon management plans. Thank you for your consideration of my comments and I look forward Board of Fisheries members spending time in our fishing community during the Kodiak meeting.

I humbly request the Board to reject this proposal.

Respectfully,
Danielle Ringer, M.A.
F/V North Star

Fred Stager

F/V Lady Lu

December 12, 2019

Alaska Board of Fisheries Board Support Section

P.O. Box 115526 Juneau, AK 99811-5526

RE: Opposition to Proposal 70

Dear Chairman Morisky and Board of Fish Members:

I am writing to express my **opposition to proposal 70**, which modifies the Kodiak Westside Management Plan to include odd year Karluk pink salmon stocks in it's calibration. Odd years are traditionally dominated by non-Karluk stocks whose health is important to the fishery as a whole. How can it be deemed sensible to open a fishery based on Karluk alone if the other systems are struggling?

Please reject proposal 70. Thank You- Fred Stager

Iver Holm

12/28/2019 12:35 AM AKST

RE: PROPOSAL 70 Amend the Westside Kodiak Salmon Management Plan to include returns of pink salmon to the Karluk River

Dear Chairman Morisky and Board of Fish members: I am 31 years old and a life long resident of Kodiak. I grew up set netting in Uganik on the west side of the island with my mother until i was 14. I then started seining with my father until I was able to buy my own Kodiak seine operational the age of 27. Please oppose proposal 70. thank you for your time sincerely
Iver Holm

Ken Christiansen
F/V Mary Ann
12/26/2019 09:19 PM AKST

RE: PROPOSAL 70 Amend the Westside Kodiak Salmon Management Plan to include returns of pink salmon to the Karluk River

I'm opposing this proposal simply because it doesn't allow the department to do there jobs responsibly.

Nicholas Hoffman
PO Box 1212
Kodiak, AK 99615

12/24/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Oppose Proposal 70

Dear Chairman Morisky and Board of Fish members:

I'm a young Kodiak salmon fisherman. I have been running a seine boat since 2011 as well as participating in Kodiak halibut, sea cumber, cod jig, and tanner crab fisheries. I respectfully request the Board reject Proposal 70.

This proposal is not prudent during odd years when smaller systems within the Central Section are more dominant and Karluk is usually weaker. This proposal may cause a conservation issue by forcing the Department to open the Central Section even if some of the Central rivers are having a tough year based on Karluk runs alone.

I see no reason for the Board to make any changes to the Kodiak Salmon Management plan. Thank you for the opportunity to comment on the proposals and the chance for my voice to be heard. I look forward to the Board of Fish members getting to spend time in Kodiak and learn more about our town and fishing community.

I humbly request the Board reject Proposal 70.

Sincerely,

Nicholas Hoffman
F/V Relentless

Oliver Holm
self
12/27/2019 12:30 PM AKST

RE: PROPOSAL 70 Amend the Westside Kodiak Salmon Management Plan to include returns of pink salmon to the Karluk River

The central section of the NW Kodiak district is managed for a mix of pink salmon stocks in the NW Kodiak district. It is recognized that on even years Karluk contributes significant numbers of pinks to the catches in the district. The proposed change would seem to allow or direct managers to ignore low escapements to the streams in the NW Kodiak district to harvest Karluk pinks. This proposal isn't specific to even years. Karluk odd year pink production is very limited. This proposal applies to the entire pink season and only in the later part of the season would a disparity in returns between even year Karluk pink returns and NW Kodiak district returns be apparent. Management of the central section is always a balance of harvesting surplus pinks and achieving escapement of the many salmon streams in the district. I am concerned that this proposal may lead to not achieving escapement in the NW Kodiak district streams when Karluk pinks are unusually strong. Seiners would likely be shut out of the inside seine only areas more often.

December 25, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 70

Dear Chairman Morisky and Board of Fisheries Members,

I am Richard Roth, Kodiak salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife three children and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Tzar. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

I oppose this proposal because when the Central Section is strong, Karluk is weak, and vice versa depending on the odd or even year. It would be poor management to be pressured into opening the Central Section to fish on Karluk fish if Central Section systems are struggling to make escapements for some reason. The purpose of this proposal appears to run counter to proposal 71 submitted by the same authors. I cannot support either proposal.

I request that the Board reject this proposal.

Thank you for your time and consideration of these comments,

Richard, Amanda, Stephanie, Noah, and Ranger Roth
F/V Sea Tzar
Homer, Alaska

Steven Roth

12/27/2019 01:54 PM AKST

RE: PROPOSAL 70 Amend the Westside Kodiak Salmon Management Plan to include returns of pink salmon to the Karluk River

December 25, 2019 Alaska Board of Fisheries Board Support Section P.O. Box 115526 Juneau, AK 99811-5526 Re: Opposition to Proposal 70 Dear Chairman Morisky and Board of Fisheries Members, I am Steve Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Grace. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures. ? I oppose this proposal because when the Central Section is strong, Karluk is weak, and vice versa depending on the odd or even year. It would be poor management to be pressured into opening the Central Section to fish on Karluk fish if Central Section systems are struggling to make escapements for some reason. The purpose of this proposal appears to run counter to proposal 71 submitted by the same authors. I cannot support either proposal. I request that the Board reject this proposal. Thank you for your time and consideration of these comments, Steve and Jenny Roth F/V Sea Grace Homer, Alaska

December 25, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 70

Dear Chairman Morisky and Board of Fisheries Members,

I am William Roth, Captian of the F/V Sea Chantey. I own a Kodiak seine permit and have been fishing it for the lasat 5 years as well as working as crew since 2010, I rely mostly on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

I oppose this proposal because when the Central Section is strong, Karluk is weak, and vice versa depending on the odd or even year. It would be poor management to be pressured into opening the Central Section to fish on Karluk fish if Central Section systems are struggling to make escapements for some reason. The purpose of this proposal appears to run counter to proposal 71 submitted by the same authors. I cannot support either proposal.

I request that the Board reject this proposal.

Thank you for your time and consideration of these comments,

William and Kaytlen Roth
F/V Sea Chantey
PO BOX 1230
Homer AK
99603

Aaren Ellsworth

12/28/2019 12:00 AM AKST

RE: PROPOSAL 70 Amend the Westside Kodiak Salmon Management Plan to include returns of pink salmon to the Karluk River

Dear Chairman Morisky and members of the Board of Fisheries, Thank you for the opportunity to comment on proposal 67.Our family has been setnetting in Uganik Bay on the westside of Kodiak since 1999. This proposal is very similar to Proposal 69 and provides setnetters an opportunity on Karluk bound pink salmon during years of high abundance. On even years, the Karluk pink salmon run can at times be 4 times as large as all the major systems in the Northwest Kodiak District. By considering the Karluk pink run in the Central Section management, there could be more opportunity to both gillnetters and seineers and still protect weaker stocks in the Northwest Kodiak District.

Adelia Myrick

12/26/2019 11:15 AM AKST

RE: PROPOSAL 70 Amend the Westside Kodiak Salmon Management Plan to include returns of pink salmon to the Karluk River

Dear Board of Fish members: I am writing to support proposal 70. This one is very similar to proposal 69, except that this one doesn't limit to the even years only. As a setnetter in the central section of the NorthWest Kodiak District, we have been concerned in recent years that we have been shut down due to concerns over local pink escapement when in fact Karluk is having really strong escapement, and we believe that historically, Karluk escapements have been taken into account when managing this section. Adding this language will give the managers flexibility to manage openings so that all fishermen (this doesn't just benefit set-netters) would potentially have more opportunities to fish, and it would help prevent overe-scapement in that system in high Karluk pink years. Thank you for your consideration, Adelia Myrick Uganik Bay Setnetter

Jamin Hall

12/27/2019 11:00 PM AKST

RE: PROPOSAL 70 Amend the Westside Kodiak Salmon Management Plan to include returns of pink salmon to the Karluk River

My name is Jamin Hall, my wife and I have a set net site in Uganik Bay. I am writing in support of proposal 70. This proposal gives the Department of Fish and Game more management tools to effectively react to returning pink salmon in the Karluk system and the west side in general. This is a win-win scenario; if pink returns to the Karluk system are small or moderate management will be the same as it is now. If Pink returns to the Karluk system are huge then the Department will have the ability to give the Central and North Cape sections more fishing time. This proposal gives the Department more flexibility when managing pinks in the NW district and will give fishermen more fishing time when conditions warrant.

Jonathan Edwards

12/26/2019 10:26 AM AKST

RE: PROPOSAL 70 Amend the Westside Kodiak Salmon Management Plan to include returns of pink salmon to the Karluk River

My name is Jonathan Edwards,I have been salmon set netting on the Westside of Kodiak for 40 years. I have witnessed many years when small local pink systems have been weak, when, at the same time, Karluk River, THE major pink system on the Westside, has been huge, millions of pinks. Outside Westside fishermen have been unable to fish during pink season on these years, denying great opportunity. Most of the Karluk pinks on these years end up greatly exceeding escapement goals, and becoming a large revenue loss. These years, allowing fishing for pinks on the outer areas on the Westside makes good sense. The minor systems can be protected with enlarged sanctuary areas.

Northwest Setnetters Association
P.O. Box 870
Kodiak, AK 99615

December 21, 2019

Alaska Board of Fisheries
Reed Morisky, Chair
Attn: Glen Haight, Executive Director
1255 W 8th Street
P.O. Box 115526
Juneau, AK 99811-5526

RE: Approval of proposal 70

Dear Chairman Morisky and members of the Board of Fisheries,

Thank you for the opportunity to comment on proposal 70 in advance of the Board meeting. This proposal was put forth by the Northwest Setnetters Association and we request you approve this proposal. Our organization and its members identified this proposal as a possible solution to recent lost opportunities of the setnet fleet. Our membership has voted unanimously within our Association to put forth this proposal. It is very similar to Proposal 69 and provides setnetters an opportunity on Karluk bound pink salmon during abundant years.

Our proposal requests the inclusion of pink salmon escapement, into the Karluk system, be considered in the Department's management of the Central and North Cape Section. Our belief is the Karluk pink escapement numbers were originally intended to be part of the Westside pink salmon management plan and should continue to be an element of that plan providing all fishermen (seine & setnet) an opportunity to harvest these fish while traveling through the Central and North Cape Sections.

All Northwest setnetters are confined to the Central Section. If the Karluk pink salmon system, which can be very strong some years, is not considered, our belief is setnetters have lost a significant opportunity on these local pink salmon that were originally intended to be part of the Westside management plan and available to all Kodiak fisherman. With climate variability and natural cycles of change this proposal provides managers a tool to better manage the Westside salmon fishery for abundance of pinks in both even and odd years, whenever it may occur.

Additionally, we feel it is important to avoid over escapement of pinks into the Karluk system, which happened most recently in 2018. As a result, pinks were seen up in the Karluk lake watershed and its tributary streams. This proposal will provide managers the flexibility to react during large pink salmon abundance years in the Karluk while these fish are traveling through the North Cape and Central sections. The Karluk system typically has large even year returns of pink salmon to the system. This proposal allows for the flexibility of both even years and odd years if there appears to be large returns in any year. Variability in returning salmon runs is always a factor in the management process and this proposal provides flexibility for this.

We respectfully ask the Board to approve proposal 70 and provide all salmon fishermen, on the Westside, an opportunity to harvest pink salmon bound for the Karluk while traveling through the Central section.

Sincerely,

Mark Beardsley
President - Northwest Setnetters Association

Peter Danelski Jr.

12/28/2019 12:17 AM AKST

RE: PROPOSAL 70 Amend the Westside Kodiak Salmon Management Plan to include returns of pink salmon to the Karluk River

As a lifelong westside setnetter, I would like to see Karluk pinks included in the pink salmon management plan from early July through the middle of August. It is a small wording change in the management plan that would give management one more tool to properly manage Kodiak's Westside pink salmon harvest, and give a setnetter, as well as seiners a chance to harvest these fish in years of over-abundance. Thank you.

Sam Haughey

12/27/2019 10:56 PM AKST

RE: PROPOSAL 70 Amend the Westside Kodiak Salmon Management Plan to include returns of pink salmon to the Karluk River

I support this proposal. I have fished on the west side of Kodiak Islamd for 53 years. In my experience, the runs in Uyak and Uganik are big when Karluk pink runs are big, whether it is an even or odd year. It is possible that historical fish and game statistics can verify this, as well. The Karluk pink run should be included in the central section of the northwest district management plan, and whether technically correct or not, it seems to me it has been included in the past.

Tollef Monson

12/25/2019 06:27 PM AKST

RE: PROPOSAL 70 Amend the Westside Kodiak Salmon Management Plan to include returns of pink salmon to the Karluk River

I support this measure as it will allow the managers better flexibility in avoiding over escapement and general better harvest of pinks. Thank you

Aaron Nevin

12/27/2019 09:38 PM AKST

RE: PROPOSAL 71 Amend the Westside Kodiak Salmon Management Plan to close the Anton Larsen Bay, Sharatin Bay, Kizhuyak Bay, Terror Bay, Inner Uganik Bay, Spiridon Bay, Zachar Bay, and Uyak Bay Sections until escapement objectives are projected to be achieved

I think the current management plan is tried and true. As the operator of a small vessel this proposal would cripple me and many others chances to be at all productive in the early season. It would also be fixing a problem that doesn't exist

December 25, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 71

Dear Chairman Morisky and Board of Fisheries Members,

I am Alex Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Wandering Star. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

I oppose this proposal because when the Central Section is strong, Karluk is weak, and vice versa depending on the odd or even year. It would be poor management to be pressured into opening the Central Section to fish on Karluk fish if Central Section systems are struggling to make escapements for some reason. The purpose of this proposal appears to run counter to proposal 70 submitted by the same authors. I cannot support either proposal.

I request that the Board reject proposal 71.

Thank you for your time and consideration of these comments,

Alex and Jaime Roth
F/V Wandering Star
Homer, Alaska

RE: PROPOSAL 71 Amend the Westside Kodiak Salmon Management Plan to close the Anton Larsen Bay, Sharatin Bay, Kizhuyak Bay, Terror Bay, Inner Uganik Bay, Spiridon Bay, Zachar Bay, and Uyak Bay Sections until escapement objectives are projected to be achieved

Bo Calhoun 57177 Zulu Ct. Homer, AK 99603 12/26/19 RE: Opposition to Proposal #71 Dear Chairman Morisky and Board of Fish members: I'm a third generation Kodiak salmon seiner. I was born in Homer, raised in Port Lions and Homer, and continue to live in Homer. My wife and I hope to raise our two sons on our family seine boat in a healthy Kodiak salmon fishery. I respectfully request the Board reject Proposal #71. Proposal #71 would inhibit the ability of ADF&G to manage the Kodiak salmon fishery. The current management plan is working as intended to sufficiently protect inner bay runs, while allowing maximum fishing opportunity. Please reject proposal #71. Thank you for taking the time to read public comments. Sincerely, Bo Calhoun

Brian Mcwethy
KSA
12/23/2019 09:54 AM AKST

RE: PROPOSAL 71 Amend the Westside Kodiak Salmon Management Plan to close the Anton Larsen Bay, Sharatin Bay, Kizhuyak Bay, Terror Bay, Inner Uganik Bay, Spiridon Bay, Zachar Bay, and Uyak Bay Sections until escapement objectives are projected to be achieved

My name is Brian Mcwethy. I was born and raised in kodiak. I live in kodiak with my family and we all depend on my income. I fished with my father on his seiner growing up and now I own and operate a seiner. Salmon seining and tanner crab fishing in kodiak are currently our only sources of income. I plan to try and continue to fish the kodiak waters and possible my children will have the opportunity to. I hope the current and historical areas we fish aren't taken from us and the future generations of kodiak. I strongly oppose this proposal. This would seriously take away the ability of the swine fleet to harvest salmon. Especially for the smaller boats in the feet that fish in the bays where there is less weather and it is more safe to fish. This proposal would harm all Kodiak fishermen especially the smaller boats. Also it would make management much more difficult for adfg to manage the escapement numbers. I feel that we should support the small boats as they are typical people just getting into fishing or don't have as much capital as the larger boats and are more more dependent on fishing in the bays.

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 71

Dear Chairman Morisky and Board of Fisheries Members,

My name is Chris Johnson and I am a second-generation fisherman in Kodiak, Alaska. I grew up fishing on my dad's boat and got my first crew job working for someone else two weeks after I graduated high school. I haven't missed a salmon season since. I bought into the fishing industry in 2011 with the purchase of a 25-foot jig boat that I worked for two years in the winter and spring months while I still crewed for salmon in the summer. Access to the jig fisheries focusing on cod and rockfish was the only way that I could afford to move into the salmon fleet with a 38-footer in 2013. After the recent cod collapse, I now primarily rely on salmon seining and live here year-round with my wife.

I oppose proposal 71 for a number of reasons. I believe this proposal and underlying assumptions represent a perception problem, rather than a reality. It would remove an important tool from management at ADF&G to prevent over escapement. The inner bays are a seine only area that have large closed water areas to ensure escapement and adequate open waters to eliminate gear conflict. Furthermore, if escapement objectives are not being met there is no reason for the Central Section to be open at all as harvest in that section is on the same fish. The inner bays are also vital to the small boat fleet here in Kodiak; it is where the new entrants can come and learn as they hide from weather as well as providing important financial opportunities in traditional seine fishing areas. Our boat is as small as a seiner can be in the Kodiak fleet and still be competitive and taking away the inner bays would have a direct negative impact on our bottom line as we rely on these sheltered bays to keep the gear in the water when the outside is to dangerous for us to fish. The adoption of this proposal would disproportionately negatively impact Kodiak's small boat fleet, which represents a good amount of the new entrants trying to make their start in the industry.

Taking away any fishing opportunity from Kodiak fishermen, particularly from the small boat fleet, would have a direct negative impact on new entrants trying to gain a foothold in this industry, fishing families trying to get by, and fishing support businesses in our region. I'm proud to call Kodiak home and am working to protect our fishing way of life.

Sincerely,
Chris Johnson
F/V North Star

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 71

Dear Chairman Morisky and Board of Fisheries Members,

My name is Danielle Ringer and I appreciate the opportunity to comment on proposals before the Board in writing and in person for the Kodiak finfish meeting. I live in Kodiak with my husband and we own and operate the 38-foot F/V North Star. We chiefly rely on salmon seining and cod and rockfish jigging to maintain our fishing way of life and ability to live on Kodiak Island. I grew up in Homer learning to harvest and process fish from my parents in Kachemak Bay and dipnetting on the Kenai River. I hold a Master's degree from the University of Alaska Fairbanks in Political Ecology of Fisheries and was one of the researchers on the *Graying of the Fleet in Alaska's Fisheries: Defining the Problem and Assessing Alternatives* study in the Kodiak region.

I oppose proposal 71 for a number of reasons. I believe this proposal and underlying assumptions represent a perception problem, rather than a reality. It would remove an important tool from management at ADF&G to prevent over escapement. The inner bays are a seine only area that have large closed water areas to ensure escapement and adequate open waters to eliminate gear conflict. Furthermore, if escapement objectives are not being met there is no reason for the Central Section to be open at all as harvest in that section is on the same fish. The inner bays are also vital to the small boat fleet here in Kodiak; it is where the new entrants can come and learn as they hide from weather as well as providing important financial opportunities in traditional seine fishing areas. Our boat is as small as a seiner can be in the Kodiak fleet and still be competitive and taking away the inner bays would have a direct negative impact on our bottom line as we rely on these sheltered bays to keep the gear in the water when the outside is to dangerous for us to fish. The adoption of this proposal would disproportionately negatively impact Kodiak's small boat fleet, which represents a good amount of the new entrants trying to make their start in the industry.

I see no biological, scientific, historical, economic, nor sociocultural reasons that could justify the Board making any changes to the salmon management plans in the Kodiak Management Area, which would create ripple effects negatively impacting Kodiak fishermen, processing workers, and community businesses. Thank you for your consideration of my comments and I look forward Board of Fisheries members spending time in our fishing community during the Kodiak meeting.

I humbly request the Board to reject this proposal.

Respectfully,
Danielle Ringer, M.A., F/V North Star

December 22, 2019
Darren Platt (FV Agnes Sabine)
10708 Birch Cir
Kodiak, AK 99615

Alaska Board of Fisheries
Board Support Section
PO Box 115526
Juneau, AK 99811-5526

RE: **Oppose Proposal 71**

The members of the Alaska Board of Fisheries,

I'm writing in **opposition to proposal 71**. I'm a small-boat fisherman and rely on the inner bays for shelter from rough weather. This proposal would disproportionately impact the small-vessel fleet and would eliminate a productive fishery that already poses no threat to the pink and chum runs in the inner bays. The early tests fisheries occur long-before peak run time and allow the department to gauge run-strength in the individual systems within the bays. This is simply a bad proposal intending to correct a non-existing problem while reducing yields in the area.

I'm a resident of Kodiak and the owner/operator of a 42-foot commercial fishing vessel. I participate in the local salmon, tanner crab, and herring fisheries.

Thank you,
Darren Platt

Fred Stager

F/V Lady Lu

December 12, 2019

Alaska Board of Fisheries Board Support Section

P.O. Box 115526 Juneau, AK 99811-5526

RE: Opposition to Proposal 71

Dear Chairman Morisky and Board of Fish Members:

I'm writing to express **opposition to proposal 71.** Simply put, this proposal seeks to fix a problem which doesn't exist, by closing traditional seine-only areas and causing great harm and danger to the small boat component of our seine fleet. In addition, this proposal would cause a tremendous increase in local gear-conflict by forcing the entire seine fleet into the Central Section. The entire "cost" of this proposal would be carried by the seine fleet.

Early test fisheries conducted in the inner bays occur well before traditional peak run timing and provide accurate gauges of run strength without imperiling local stocks. Lack of fish in freshwater at this time means that test fisheries are the only viable way for the department to gauge run strength early in the season. This means that the requirement that the department be assured that escapement objectives will be achieved before *any* openings in these areas will preclude the prosecution of any of the traditional early fisheries in the inner bays. Additionally, early chum harvests in Terror, Uganik, Zachar, and Spiridon bays occur well before significant volumes of pink salmon have entered the streams and adoption of this proposal would all but eliminate these fisheries.

The Board should also consider that the inner bays provide seiners some respite from dangerous weather conditions in the outer areas of the central section. Inclement weather events are increasingly more frequent in Kodiak and the inner bay fisheries provide a critical safe harbor fishery for the fleet in areas free from gear conflict. The current management plan is effective and provides some opportunity for an early season safe harvest by the smaller seiners in the fleet. Please continue using science and not emotion in your fishery management, **reject proposal 71**.

Thank You- Fred Stager

Iver Holm

12/28/2019 12:37 AM AKST

RE: PROPOSAL 71 Amend the Westside Kodiak Salmon Management Plan to close the Anton Larsen Bay, Sharatin Bay, Kizhuyak Bay, Terror Bay, Inner Uganik Bay, Spiridon Bay, Zachar Bay, and Uyak Bay Sections until escapement objectives are projected to be achieved

Dear Chairman Morisky and Board of Fish members: I am 31 years old and a life long resident of Kodiak. I grew up set netting in Uganik on the west side of the island with my mother until i was 14. I then started seining with my father until I was able to buy my own Kodiak seine operational the age of 27. Please oppose proposal 71. thank you for your time sincerely
Iver Holm

James Calhoun

12/26/2019 05:49 PM AKST

RE: PROPOSAL 71 Amend the Westside Kodiak Salmon Management Plan to close the Anton Larsen Bay, Sharatin Bay, Kizhuyak Bay, Terror Bay, Inner Uganik Bay, Spiridon Bay, Zachar Bay, and Uyak Bay Sections until escapement objectives are projected to be achieved

I have been intimately involved in the Kodiak seine fishery since 1968 to present. Presently my son is fishing the Kodiak area and it is my desire to have my grandsons be able to participate in a healthy Kodiak fishery if they so desire. Throughout my career I have come to the conclusion that the ADF&G management for Kodiak has been stellar and has kept the stocks in Kodiak healthy overall with the current management plan. Inner bays are seine only exclusive areas designed with adequate open water to ensure escapements and to minimize gear conflicts. Closure would be a loss to seiners only If management has to keep inner bays closed to ensure escapement objectives are achieved, then there should be no reason Central section should be open as the harvest in Central section is the same fish. Proposal would tie the departments hands in ability to open to prevent over escapement. Multiple run timings with multiple species would result in foregone harvest to seiners of chums and early run pinks

Ken Christiansen
F/V Mary Ann
12/26/2019 09:25 PM AKST

RE: PROPOSAL 71 Amend the Westside Kodiak Salmon Management Plan to close the Anton Larsen Bay, Sharatin Bay, Kizhuyak Bay, Terror Bay, Inner Uganik Bay, Spiridon Bay, Zachar Bay, and Uyak Bay Sections until escapement objectives are projected to be achieved

Again i'm opposing this one because it hinders the departments ability to do their jobs.

Kodiak Seiners Association
PO Box 8835
Kodiak, AK 99615

December 12, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

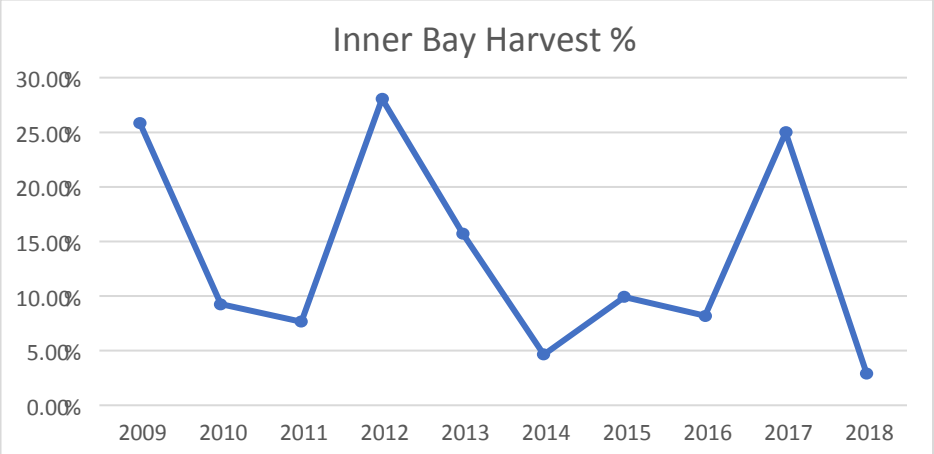
RE: **Oppose Proposal 71**

Dear Chairman Morisky and Board of Fish Members:

The Kodiak Seiners Association is writing to express our **opposition to proposal 71**, which would close traditional seine-only fishing areas, reduce overall yield in the Kodiak Management Area (KMA), entirely prevent the harvest of early chum stocks in the inner bays, and would disproportionately impact smaller seine vessels. This proposal would eliminate early season fishing opportunities in inner bays, which occur well before peak run timing but can nevertheless be very productive on years of strong runs.

The early test fisheries conducted in the inner bays occur well before traditional peak run timing and provide accurate gauges of run strength without imperiling local stocks. Typical openings on July 6 and 13 occur well before significant numbers of fish have entered the streams. Lack of fish in freshwater means that test fisheries are the only viable way for the department to gauge run strength early in the season. This means that the requirement that the department be assured that escapement objectives will be achieved before *any* openings in these areas will preclude the prosecution of any of the traditional early fisheries in the inner bays. Additionally, early chum harvests in Terror, Uganik, Zachar, and Spiridon bays occur well before significant volumes of pink salmon have entered the streams and adoption of this proposal would all but eliminate these fisheries.

There are currently no prevailing escapement problems that will be solved by the adoption of this proposal as the current management plan has proved sufficient at securing NW Kodiak district escapement through selective closures of the inner bays and the central section. On years of relatively low abundance of pink and chum salmon, such as 2014, 2016, 2018, negligible harvest occurs in these areas during the test fisheries. In fact, on these years, of the total harvest of pink salmon in the Northwest Kodiak District, an average of roughly 5% of fish caught came from the inner bays, and most of this harvest occurred during the peak portion of the run while the central section was also open. A graph below depicts the percent of pink salmon harvested in the inner bays as a total of the central section harvest.



This proposal would eliminate large early harvests of pink and chum salmon on years of high abundance such as 2012, 2017, and 2019. The primary outcome of this proposal would be to reduce yield in the KMA without providing any additional conservation benefits. This proposal will negatively impact harvest in the KMA without fixing any existing problems.

The Board should also consider that the inner bays provide seiners some respite from dangerous weather conditions in the outer areas of the central section. Inclement weather events are increasingly more frequent in Kodiak and the inner bay fisheries provide a critical safe harbor fishery for the fleet in areas free from gear conflict. Kodiak is not a super-seiner fishery like those found in Southeast Alaska and Prince William sound, and a very high percentage of vessels operating in the area are old, smaller seiners ill-equipped for rough weather conditions. The adoption of this proposal would disproportionately impact Kodiak's small boat fleet.

The current management plan has proved effective at ensuring adequate escapement in inner bays while providing for maximum sustained yield in the NW Kodiak district. KSA therefore respectfully requests the Board **reject proposal 71.** We thank you for the opportunity to comment on behalf of the membership of KSA. We appreciate the scientific and factual creation of regulations regarding our fisheries and trust that the Board continue to apply consistency in designing regulation changes while applying the guiding BOF policies, such as the Management for Mixed Stock Salmon Fisheries.

Kodiak Seiners Association represents 157 members, including the majority of actively fishing SO1K seine permit holders, Kodiak and Homer-based businesses, and individual crewmembers. Our focus is advocacy for our membership through positive interactions with ADF&G, the Board of Fisheries, and our State Legislature.

Respectfully,

Nate Rose
KSA President

December 24, 2019

Matthew Alward

60082 Clarice Way

Homer, AK 99603

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Opposition to proposal 71

Dear Chairman Morisky and board of fisheries members,

I reside in Homer, AK and operate my own seine boat in the Kodiak salmon fishery and I oppose proposal 71. I raised our kids on the back deck of our seiner and they have spent many days fishing in some of the sections that this proposal seeks to limit fishing time in.

Proposal 71 if enacted would not allow the department to open the inner bay sections unless it was determined that they would achieve the desired escapement goals. Currently the department can open these sections congruent with the central section to allow for pink and chum run strength test fisheries. According to department staff comments if they were restricted to keeping the inner bays closed until they achieve escapement goals that could cause over escapement of local pink, chum, coho, and sockeye stocks and they are opposed to those restrictions. They state that "the current management plan allows managers to protect Northwest Kodiak District sockeye, pink, chum, and coho salmon escapement."

When asked "what is the issue you would like to board to address and why" the proposers state that these areas exist as separate, unique sections intended specifically to preserve individual stocks. The department claims that the current plan gives then all the flexibility they need to protect those individual stocks. There have been many times in the past that the department has closed the inner bays while the central section is open to protect individual stocks, showing that under the current plan the department has the tools necessary to protect the stocks that this proposal is seeking to protect.

What is not stated in the reasoning for this proposal is that if adopted it would shift some of the fishing time from the inner bays which are seine only areas to the central section which is a set net and seine area thus causing an allocation shift from the seine fleet to the set net fleet. There is no reasoning or new data mentioned at all for why an allocation shift form the long-standing management plan is justified.

Since this proposal is really an allocation shift masked as seeking to protect individual salmon stocks and there is no data to show why an allocation shift is justified I ask that you keep the management tools that the department currently has in place and oppose proposal 71.

Sincerely,

Matthew Alward

Nicholas Hoffman
PO Box 1212
Kodiak, AK 99615

12/24/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Oppose Proposal 71

Dear Chairman Morisky and Board of Fish members:

I'm a young Kodiak salmon fisherman. I have been running a seine boat since 2011 as well as participating in Kodiak halibut, sea cumber, cod jig, and tanner crab fisheries. I respectfully request the Board reject Proposal 71.

This proposal would limit the Department's ability to open the inner bays and may cause a conservation issue by allowing an over-escapement of early run pinks when the bay is still unable to be opened for fishing. Also this proposal would cause more gear conflicts between seiners and setnetters due to limited available area during openers. The current inner bay sections already have ample closed waters near the head of the bay and the stream mouths to ensure escapements. This proposal doesn't allow for multi-species run timings which would result in lost harvest to seiners only.

I see no reason for the Board to make any changes to the Kodiak Salmon Management plan. Thank you for the opportunity to comment on the proposals and the chance for my voice to be heard. I look forward to the Board of Fish members getting to spend time in Kodiak and learn more about our town and fishing community.

I humbly request the Board reject Proposal 71.

Sincerely,

Nicholas Hoffman
F/V Relentless

Oliver Holm
self
12/27/2019 12:10 PM AKST

RE: PROPOSAL 71 Amend the Westside Kodiak Salmon Management Plan to close the Anton Larsen Bay, Sharatin Bay, Kizhuyak Bay, Terror Bay, Inner Uganik Bay, Spiridon Bay, Zachar Bay, and Uyak Bay Sections until escapement objectives are projected to be achieved

These seine only areas have been part of the NW Kodiak area fisheries for many decades and are an important part of the seine fishery. There are generous closed waters adjacent to these areas that have proven to provide a quality harvest while getting escapements. If they were closed until escapements were assured the escapement would be composed of a high percentage of males and be dominated by the early components of the runs. Pink salmon are returning from the beginning of July all the way to September. Set netters want these areas closed in the expectation that the central section of the NW Kodiak district where they fish would get more fishing time. There would be problems with this outcome aside from the reallocation towards set netters. The central section has 25 salmon streams that provide significant production if they get escapement and conditions are favorable. Increased central section fishing time would jeopardize getting adequate escapement to these systems. While set netters and seiners adamantly defend our right to fishing time under the west side management plan, it is not in our interests to try to increase fishing time with the controversy over Cook Inlet bound sockeye. While the proposals for restrictions are directed at seiners, set netters catch between 50% to 75% of the sockeye caught in the NW Kodiak district typically.

December 25, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 71

Dear Chairman Morisky and Board of Fisheries Members,

I am Richard Roth, Kodiak salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife three children and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Tzar. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

I oppose this proposal because when the Central Section is strong, Karluk is weak, and vice versa depending on the odd or even year. It would be poor management to be pressured into opening the Central Section to fish on Karluk fish if Central Section systems are struggling to make escapements for some reason. The purpose of this proposal appears to run counter to proposal 70 submitted by the same authors. I cannot support either proposal.

I request that the Board reject proposal 71.

Thank you for your time and consideration of these comments,

Richard, Amanda, Stephanie, Noah, and Ranger Roth
F/V Sea Tzar
Homer, Alaska

Steven Roth

12/27/2019 01:55 PM AKST

RE: PROPOSAL 71 Amend the Westside Kodiak Salmon Management Plan to close the Anton Larsen Bay, Sharatin Bay, Kizhuyak Bay, Terror Bay, Inner Uganik Bay, Spiridon Bay, Zachar Bay, and Uyak Bay Sections until escapement objectives are projected to be achieved

December 25, 2019 Alaska Board of Fisheries Board Support Section P.O. Box 115526 Juneau, AK 99811-5526 Re: Opposition to Proposal 71 Dear Chairman Morisky and Board of Fisheries Members, I am Steve Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Grace. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures. ? I oppose this proposal because when the Central Section is strong, Karluk is weak, and vice versa depending on the odd or even year. It would be poor management to be pressured into opening the Central Section to fish on Karluk fish if Central Section systems are struggling to make escapements for some reason. The purpose of this proposal appears to run counter to proposal 70 submitted by the same authors. I cannot support either proposal. I request that the Board reject proposal 71. Thank you for your time and consideration of these comments, Steve and Jenny Roth F/V Sea Grace Homer, Alaska

December 25, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 71

Dear Chairman Morisky and Board of Fisheries Members,

I am William Roth, Captian of the F/V Sea Chantey. I own a Kodiak seine permit and have been fishing it for the lasat 5 years as well as working as crew since 2010, I rely mostly on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

I oppose this proposal because when the Central Section is strong, Karluk is weak, and vice versa depending on the odd or even year. It would be poor management to be pressured into opening the Central Section to fish on Karluk fish if Central Section systems are struggling to make escapements for some reason. The purpose of this proposal appears to run counter to proposal 70 submitted by the same authors. I cannot support either proposal.

I request that the Board reject proposal 71.

Thank you for your time and consideration of these comments,

William and Kaytlen Roth
F/V Sea Chantey
PO BOX 1230
Homer AK
99603

Aaren Ellsworth

12/28/2019 12:28 AM AKST

RE: PROPOSAL 71 Amend the Westside Kodiak Salmon Management Plan to close the Anton Larsen Bay, Sharatin Bay, Kizhuyak Bay, Terror Bay, Inner Uganik Bay, Spiridon Bay, Zachar Bay, and Uyak Bay Sections until escapement objectives are projected to be achieved

Dear Chairman Morisky and members of the Board of Fisheries, Thank you for the opportunity to comment on proposal 71. Our family has been setnetting in Uganik Bay on the westside of Kodiak since 1999. I would like to clarify that the intent of the proposal is not to keep the inner bays closed until the midpoint of the escapement objective is achieved, but until it appears that interim escapement objectives will be achieved. Based on comments at the AC meeting, it seems the Department understands the proposal will cause inner bays to be closed in all except the years with the largest returns. This is definitely not the intention of the proposal. Many setnetters are concerned that the situation exists where high concentrations of pink salmon returning to, for example, Uganik River aggregate close to terminal areas where they are very efficiently targeted by seiners in seine-only waters. If that situation happens repeatedly early in the pink return on a year with a marginal run to that individual system, it can cause the entire Central Section to close down for days, or weeks, later in the season. We want to ensure equitable opportunity for harvest. We believe the Department needs to determine that pink runs to the minor systems of the Northwest District are individually reasonably robust before allowing the targeted harvest of those stocks close to terminal areas. The Northwest District at large is managed based on the overall return profile of pink salmon to all of the numerous pink salmon systems in the District. The catch of mixed-gear harvesters in the Central and North Cape Sections are dominated by fish returning to systems with robust returns. Because the management of the Central and North Cape Sections is based on the general health of the aggregate pink salmon return to the NW District, if directed harvest on near-terminal fish is allowed without assessment by ADF&G, it can tip the balance of management and cause long closures for all harvesters.

Adelia Myrick

12/26/2019 11:28 AM AKST

RE: PROPOSAL 71 Amend the Westside Kodiak Salmon Management Plan to close the Anton Larsen Bay, Sharatin Bay, Kizhuyak Bay, Terror Bay, Inner Uganik Bay, Spiridon Bay, Zachar Bay, and Uyak Bay Sections until escapement objectives are projected to be achieved

Dear Board of Fish members: As a 2nd generation setnetter, I support this proposal to add language to ensure that the local runs in the inner bays are protected from fishing until Fish and Game determines that the escapement goals are projected to be achieved. Perhaps it would result in 2 or so additional days of fishing over a 10-year time frame for us, since we are not allowed to fish in the inner bays, but it is important to us nonetheless because we struggle to stay in the game as fishermen these days. It really is just us as set-netters asking for one more common sense tool to help us stay in the game as fishermen, and one that could benefit the salmon runs to boot! Thank you for your consideration, Adelia Myrick Uganik Bay setnetter

Jamin Hall

12/27/2019 11:03 PM AKST

RE: PROPOSAL 71 Amend the Westside Kodiak Salmon Management Plan to close the Anton Larsen Bay, Sharatin Bay, Kizhuyak Bay, Terror Bay, Inner Uganik Bay, Spiridon Bay, Zachar Bay, and Uyak Bay Sections until escapement objectives are projected to be achieved

My name is Jamin Hall, my wife and I have a set net site in Uganik Bay. I am writing in support of proposal 71. This proposal allows more parity in fishing opportunities between the portion of the seine fleet who fish the inner bays and the rest of the salmon fleet. The inner bays are always closed to setnets, there are no opportunities for set net fishermen to fish there. However, the seiners are currently allowed to go into the inner bays and sweep up any fish there, whether they are local to that system or not, and this can happen even before mid season interim goals have been met. This results in missed fishing opportunities, for both set net fishermen and the many seiners who do not fish the inner bays. Keeping the inner bays closed until escapement merits opening the entire central section just makes good sense.

Jonathan Edwards

12/26/2019 10:59 AM AKST

RE: PROPOSAL 71 Amend the Westside Kodiak Salmon Management Plan to close the Anton Larsen Bay, Sharatin Bay, Kizhuyak Bay, Terror Bay, Inner Uganik Bay, Spiridon Bay, Zachar Bay, and Uyak Bay Sections until escapement objectives are projected to be achieved

I have set netted on the Westside of Kodiak (Central section) for 40 years. During the early part of the pink salmon fishery, we have had managers that, when the pink run was projected to be poor, they would enlarge the sanctuary areas in the inner bay openings, thereby, helping to ensure escapement goals are eventually met. This is not the case of the manager of the last ten years. The manager has put no added protection on the inner bay areas. On weak years, when the MAIN part of the pink run occurs, the whole Central Section (Westside) remains closed, hoping to get escapement goals in the inner bay systems. The escapement was harvested in inner bays at the beginning of the pink season. This is a disaster for outside fishermen. Escapement should be assured before aggressively harvesting the inner bays. As it stands, the seiners are fine with this scenario, because, if the Central Section is closed they just move on to other areas in the Kodiak Management Area.

Northwest Setnetters Association
P.O. Box 870
Kodiak, AK 99615

December 21, 2019

Alaska Board of Fisheries
Reed Morisky, Chair
Attn: Glen Haight, Executive Director
1255 W 8th Street
P.O. Box 115526
Juneau, AK 99811-5526

RE: Approval of proposal 71

Dear Chairman Morisky and members of the Board of Fisheries,

Thank you for the opportunity to comment on proposal 71 in advance of the Board meeting. This proposal was put forth by the Northwest Setnetters Association (NWSA) and we request you approve this proposal. We have had many discussions internally withing our organization in addition to meetings with the Department of Fish and Game on the management of Inner Bays. Our organization and its members unanimously approved submitting this proposal.

Northwest Setnetters Association is comprised of over 100 active SO4K permit holders and crewmembers of which the vast majority of these operations have been run by resident families of Kodiak for generations. Recently, the viability of our setnet fishery has increasingly become more difficult to maintain and we are approaching a situation of survival as a fishery. Therefore, we feel this proposal needs your attention.

Proposal 71 looks to assure “interim” pink salmon escapement goals are achieved in the terminal areas of the Inner bays of the Central Section before these areas would open for pink salmon harvest.

There may have been some miscommunication between our organization and the Department of Fish and Game about our intent of this proposal. For clarification, our main concern is the timing of the opening within these Inner bays and our desire to have interim escapement goals achieved. We feel that between roughly July 20th and August 10th early pink salmon returning to these areas should not be harvested until it appears interim escapement goals have been achieved for these dates. If in fact the Department of Fish and Game is confident these interim goals are being met by their aerial surveys these areas would open to seine harvest.

On occasions over the years, Inner bay openings have occurred before interim pink escapement has been achieved. This has sometimes resulted in areas of the Central Section, outside of these Inner Bay sections, to be closed. Because the Inner Bay areas are open only to seiners, the result has been lost fishing opportunity for both setnet fishermen, who cannot fish in the inner areas, and seine fishermen who do not usually fish inside these inner areas. NWSA believes it is in the interest of all Kodiak commercial salmon fishermen to allow salmon

returning to the Inner Bays, during late July to mid-August, to remain unharvested until interim escapement numbers have been achieved. This is not only a conservation measure but also a biologically diverse approach to ensuring the future health of local streams for all user groups.

We respectfully ask the Board to approve proposal 71 to provide the best possible long-term opportunity for all salmon fishermen.

Sincerely,

Mark Beardsley
President - Northwest Setnetters Association

Sam Haughey

12/27/2019 11:22 PM AKST

RE: PROPOSAL 71 Amend the Westside Kodiak Salmon Management Plan to close the Anton Larsen Bay, Sharatin Bay, Kizhuyak Bay, Terror Bay, Inner Uganik Bay, Spiridon Bay, Zachar Bay, and Uyak Bay Sections until escapement objectives are projected to be achieved

I support this proposal because these are smaller runs that can be more easily affected by overfishing early in the season. If you open up the inner bays early, you fish out the early part of the run which can change the pattern of the runs in the big picture.

Thomas G Wischer
Northwest Setnetters Association
12/21/2019 07:50 PM AKST

RE: PROPOSAL 71 Amend the Westside Kodiak Salmon Management Plan to close the Anton Larsen Bay, Sharatin Bay, Kizhuyak Bay, Terror Bay, Inner Uganik Bay, Spiridon Bay, Zachar Bay, and Uyak Bay Sections until escapement objectives are projected to be achieved

I am a 42 season veteran of the Kodiak west side gill net fishery. There have been many seasons when the Central and North Cape sections of the Northwest District have been closed due to inadequate pink salmon escapement in these inner bays. This has been caused by these terminal areas being opened before adequate escapement has been projected and the harvest in these seine only areas. This results in lost opportunity for the gill net fleet in the Central and North Cape Sections of the Northwest District.. The only time these inner bay sections must be opened is during the two pink test fisheries in July.

Tollef Monson

12/25/2019 06:31 PM AKST

RE: PROPOSAL 71 Amend the Westside Kodiak Salmon Management Plan to close the Anton Larsen Bay, Sharatin Bay, Kizhuyak Bay, Terror Bay, Inner Uganik Bay, Spiridon Bay, Zachar Bay, and Uyak Bay Sections until escapement objectives are projected to be achieved

I would like to see more conservation for the inner bays and not allowing one gear type single access to the inner bays while the outer bays are closed. In effect giving the managers more flexibility and better control as the Kodiak ADFG says they have to open inner bays at certain thresholds are met. Thank you

Virginia Adams
Northwest Setnetters Assoc
12/26/2019 10:35 AM AKST

RE: PROPOSAL 71 Amend the Westside Kodiak Salmon Management Plan to close the Anton Larsen Bay, Sharatin Bay, Kizhuyak Bay, Terror Bay, Inner Uganik Bay, Spiridon Bay, Zachar Bay, and Uyak Bay Sections until escapement objectives are projected to be achieved

My name is Virginia Adams. I have fished my set net operation on the West Side of Kodiak with my husband and son for 40 years, since 1980. I believe it is in the best interest of all Kodiak commercial salmon fishermen to allow salmon returning to the Inner Bays, during late July- mid August, to remain unharvested until interim escapement numbers have been achieved. There has been great frustration for west side set netters who watch the harvest of salmon build up in the Inner Bays by the seine fleet, and then experience long closures due to lack of escapement into the Inner Bay rivers and streams. Set netters have approached Fish & Game in regards to these concerns repeatedly and were in fact advised by Mr. Sagalkin of Kodiak ADF&G in 2016 to look for a Board of Fisheries management change as a solution to our concerns. Although I believe our proposal may have been presented in too broad a fashion, I strongly advocate for a thorough consideration of the issue being brought forward in this Inner Bay proposal. It is in the best interests of all West Side salmon fishermen, as well as in the best interest of the salmon resource, that the build up of salmon in the Inner Bays be left unharvested by the seine fleet until "interim" salmon escapement goals are achieved in these terminal areas.

Brian Mcwethy
KSA
12/23/2019 12:52 PM AKST

RE: PROPOSAL 72 Limit the Inner Ayakulik Section commercial salmon fishery to openings of not more than six consecutive hours June 10–July 15

My name is Brian Mcwethy. I was born and raised in kodiak. I live in kodiak with my family and we all depend on my income. I fished with my father on his seiner growing up and now I own and operate a seiner. Salmon seining and tanner crab fishing in kodiak are currently our only sources of income. I plan to try and continue to fish the kodiak waters and possible my children will have the opportunity to. I hope the current and historical areas we fish aren't taken from us and the future generations of kodiak. I oppose proposal 72. This could negatively effect all salmon in ayakulik. This area is a very effective tool to manage over escapement. That is why I oppose this proposal.

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 72

Dear Chairman Morisky and Board of Fisheries Members,

My name is Chris Johnson and I am a second-generation fisherman in Kodiak, Alaska. I grew up fishing on my dad's boat and got my first crew job working for someone else two weeks after I graduated high school. I haven't missed a salmon season since. I bought into the fishing industry in 2011 with the purchase of a 25-foot jig boat that I worked for two years in the winter and spring months while I still crewed for salmon in the summer. Access to the jig fisheries focusing on cod and rockfish was the only way that I could afford to move into the salmon fleet with a 38-footer in 2013. After the recent cod collapse, I now primarily rely on salmon seining and live here year-round with my wife.

I oppose this proposal because it would tie the ability of the ADF&G staff to manage for overescapement and I support the current management plan as written.

Taking away any fishing opportunity from Kodiak fishermen, particularly from the small boat fleet, would have a direct negative impact on new entrants trying to gain a foothold in this industry, fishing families trying to get by, and fishing support businesses in our region. I'm proud to call Kodiak home and am working to protect our fishing way of life.

Sincerely,
Chris Johnson
F/V North Star

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 72

Dear Chairman Morisky and Board of Fisheries Members,

My name is Danielle Ringer and I appreciate the opportunity to comment on proposals before the Board in writing and in person for the Kodiak finfish meeting. I live in Kodiak with my husband and we own and operate the 38-foot F/V North Star. We chiefly rely on salmon seining and cod and rockfish jigging to maintain our fishing way of life and ability to live on Kodiak Island. I grew up in Homer learning to harvest and process fish from my parents in Kachemak Bay and dipnetting on the Kenai River. I hold a Master's degree from the University of Alaska Fairbanks in Political Ecology of Fisheries and was one of the researchers on the *Graying of the Fleet in Alaska's Fisheries: Defining the Problem and Assessing Alternatives* study in the Kodiak region.

I oppose this proposal because it would tie the ability of the ADF&G staff to manage for overescapement and I support the current management plan as written.

I see no biological, scientific, historical, economic, nor sociocultural reasons that could justify the Board making any changes to the salmon management plans in the Kodiak Management Area, which would create ripple effects negatively impacting Kodiak fishermen, processing workers, and community businesses. Thank you for your consideration of my comments and I look forward Board of Fisheries members spending time in our fishing community during the Kodiak meeting.

I humbly request the Board to reject this proposal.

Respectfully,
Danielle Ringer, M.A.
F/V North Star

Iver Holm

12/28/2019 12:39 AM AKST

RE: PROPOSAL 72 Limit the Inner Ayakulik Section commercial salmon fishery to openings of not more than six consecutive hours June 10–July 15

Dear Chairman Morisky and Board of Fish members: I am 31 years old and a life long resident of Kodiak. I grew up set netting in Uganik on the west side of the island with my mother until i was 14. I then started seining with my father until I was able to buy my own Kodiak seine operational the age of 27. Please oppose proposal 72. thank you for your time sincerely
Iver Holm

James Calhoun

12/26/2019 05:54 PM AKST

RE: PROPOSAL 72 Limit the Inner Ayakulik Section commercial salmon fishery to openings of not more than six consecutive hours June 10–July 15

I have been intimately involved in the Kodiak seine fishery since 1968 to present. Presently my son is fishing the Kodiak area and it is my desire to have my grandsons be able to participate in a healthy Kodiak fishery if they so desire. Throughout my career I have come to the conclusion that the ADF&G management for Kodiak has been stellar and has kept the stocks in Kodiak healthy overall with the current management plan. Proposal might create concerns for over escapement of pinks and sockeye into Ayakulik river. Seiners don't retain kings over 28".

Ken Christiansen
F/V Mary Ann
12/26/2019 09:31 PM AKST

RE: PROPOSAL 72 Limit the Inner Ayakulik Section commercial salmon fishery to openings of not more than six consecutive hours June 10–July 15

our plan is sufficient. Proposal would tie ability of department to manage for overescapement.

Nicholas Hoffman
Two Fox Fisheries, LLC
12/27/2019 11:57 AM AKST

RE: PROPOSAL 72 Limit the Inner Ayakulik Section commercial salmon fishery to openings of not more than six consecutive hours June 10–July 15

I support the current language in the management plan for the Ayakulik section. This proposal would limit the ability of ADF&G to manage this area effectively and could result in over-escapement.

December 25, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposals 73, 74, 75, and 77

Dear Chairman Morisky and Board of Fisheries Members,

I am Alex Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Wandering Star. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

I oppose the following proposals (73, 74, 75, and 77) because I support the current management plan as written. Chinook are not a target species for commercial fishermen, there is already a non-retention policy for fish exceeding 28 inches

I ask that the Board reject these proposals.

Thank you for your time and consideration,

Alex and Jaime Roth
F/V Wandering Star
Homer, AK

Brian Mcwethy
KSA
12/23/2019 12:54 PM AKST

RE: PROPOSAL 73 Establish a closure in the Inner Ayakulik Section of at least 24 hours between commercial salmon fishing periods

My name is Brian Mcwethy. I was born and raised in kodiak. I live in kodiak with my family and we all depend on my income. I fished with my father on his seiner growing up and now I own and operate a seiner. Salmon seining and tanner crab fishing in kodiak are currently our only sources of income. I plan to try and continue to fish the kodiak waters and possible my children will have the opportunity to. I hope the current and historical areas we fish aren't taken from us and the future generations of kodiak. I oppose proposal 73.

Iver Holm

12/28/2019 12:40 AM AKST

RE: PROPOSAL 73 Establish a closure in the Inner Ayakulik Section of at least 24 hours between commercial salmon fishing periods

Dear Chairman Morisky and Board of Fish members: I am 31 years old and a life long resident of Kodiak. I grew up set netting in Uganik on the west side of the island with my mother until i was 14. I then started seining with my father until I was able to buy my own Kodiak seine operational the age of 27. Please oppose proposal 73. thank you for your time sincerely
Iver Holm

Ken Christiansen
F/V Mary Ann
12/26/2019 09:34 PM AKST

RE: PROPOSAL 73 Establish a closure in the Inner Ayakulik Section of at least 24 hours between commercial salmon fishing periods

This .should be left to the department to manage. They do a great job

Nicholas Hoffman
Two Fox Fisheries, LLC
12/27/2019 11:58 AM AKST

RE: PROPOSAL 73 Establish a closure in the Inner Ayakulik Section of at least 24 hours between commercial salmon fishing periods

This proposal would limit the department's ability to manage the Ayakulik River and prevent over-escapement. I support the Kodiak Salmon Management Plan as it is currently written.

December 25, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposals 73, 74, 75, and 77

Dear Chairman Morisky and Board of Fisheries Members,

I am Richard Roth, Kodiak salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife three children and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Tzar. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

I oppose the following proposals (73, 74, 75, and 77) because I support the current management plan as written. Chinook are not a target species for commercial fishermen, there is already a non-retention policy for fish exceeding 28 inches

I ask that the Board reject these proposals.

Thank you for your time and consideration,

Richard, Amanda, Stephanie, Noah, and Ranger Roth
F/V Sea Tzar
Homer, AK

William Roth
Sea Chantey Marine
12/27/2019 12:37 PM AKST

RE: PROPOSAL 73 Establish a closure in the Inner Ayakulik Section of at least 24 hours between commercial salmon fishing periods

LETS SEE FACTS NOT FEELINGS!

December 25, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposals 73, 74, 75, and 77

Dear Chairman Morisky and Board of Fisheries Members,

I am Alex Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Wandering Star. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

I oppose the following proposals (73, 74, 75, and 77) because I support the current management plan as written. Chinook are not a target species for commercial fishermen, there is already a non-retention policy for fish exceeding 28 inches

I ask that the Board reject these proposals.

Thank you for your time and consideration,

Alex and Jaime Roth
F/V Wandering Star
Homer, AK

Brian Mcwethy
KSA
12/23/2019 12:57 PM AKST

RE: PROPOSAL 74 Close waters within 500 yards of the terminus of the Ayakulik River to commercial salmon fishing June 10–July 15

My name is Brian Mcwethy. I was born and raised in kodiak. I live in kodiak with my family and we all depend on my income. I fished with my father on his seiner growing up and now I own and operate a seiner. Salmon seining and tanner crab fishing in kodiak are currently our only sources of income. I plan to try and continue to fish the kodiak waters and possible my children will have the opportunity to. I hope the current and historical areas we fish aren't taken from us and the future generations of kodiak. I oppose proposal 74. This would take away a tool from management to control over escaping this system. Over escaping can severely damage all salmon runs in this system.

December 22, 2019
Darren Platt (FV Agnes Sabine)
10708 Birch Cir
Kodiak, AK 99615

Alaska Board of Fisheries
Board Support Section
PO Box 115526
Juneau, AK 99811-5526

RE: **Oppose Proposals 74 and 75**

The members of the Alaska Board of Fisheries,

I'm writing in **opposition to proposals 74 and 75,** which establish a 500-yard closed water area at the terminus of the Ayakulik river. Inner Ayakulik openers are chaotic and frenzied, and the creation of an un-enforceable ambiguous closed water area will lead to fishermen frequently inadvertently harvesting fish in closed waters. The proposal is right to assert that more conservation measures are needed to conserve Kings in this area but those measures should limit fishing time, instead of area.

I'm a resident of Kodiak and the owner/operator of a 42-foot commercial fishing vessel. I participate in the local salmon, tanner crab, and herring fisheries.

Thank you,
Darren Platt

Iver Holm

12/28/2019 12:42 AM AKST

RE: PROPOSAL 74 Close waters within 500 yards of the terminus of the Ayakulik River to commercial salmon fishing June 10–July 15

Dear Chairman Morisky and Board of Fish members: I am 31 years old and a life long resident of Kodiak. I grew up set netting in Uganik on the west side of the island with my mother until i was 14. I then started seining with my father until I was able to buy my own Kodiak seine operational the age of 27. Please oppose proposal 74. thank you for your time sincerely
Iver Holm

Ken Christiansen
F/V Mary Ann
12/26/2019 09:40 PM AKST

RE: PROPOSAL 74 Close waters within 500 yards of the terminus of the Ayakulik River to commercial salmon fishing June 10–July 15

Let the department manage the area. The department should be able to go with the management plan which has been working.

Nicholas Hoffman
Two Fox Fisheries, LLC
12/27/2019 11:59 AM AKST

RE: PROPOSAL 74 Close waters within 500 yards of the terminus of the Ayakulik River to commercial salmon fishing June 10–July 15

This proposal would limit the department's ability to manage the Ayakulik River and prevent over-escapement. I support the Kodiak Salmon Management Plan as it is currently written.

December 25, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposals 73, 74, 75, and 77

Dear Chairman Morisky and Board of Fisheries Members,

I am Richard Roth, Kodiak salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife three children and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Tzar. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

I oppose the following proposals (73, 74, 75, and 77) because I support the current management plan as written. Chinook are not a target species for commercial fishermen, there is already a non-retention policy for fish exceeding 28 inches

I ask that the Board reject these proposals.

Thank you for your time and consideration,

Richard, Amanda, Stephanie, Noah, and Ranger Roth
F/V Sea Tzar
Homer, AK

William Roth
Sea Chantey Marine
12/27/2019 12:54 PM AKST

RE: PROPOSAL 74 Close waters within 500 yards of the terminus of the Ayakulik River to commercial salmon fishing June 10–July 15

Theres already rules in place to keep king stock happy.

Amy Fredette
Ayakulik Adventures
12/26/2019 09:23 AM AKST

RE: PROPOSAL 74 Close waters within 500 yards of the terminus of the Ayakulik River to commercial salmon fishing June 10–July 15

I support proposal #74 to close waters within 500 yards of the Ayakulik River terminus to commercial fishing June 10th through July 15th. Ayakulik River king salmon returns have been on a decline for years without meeting lower escapement goals. With Ayakulik River kings now being considered a Stock of Concern, it is now more than ever imperative to protect this species by all conservation means possible. Provisions of Closed Waters 5 AAC 39.290 should be applied to the Ayakulik River where a mixed stock fishery exist. Having the Ayakulik River terminus "CORKED" by commercial fishing boats should NOT be permitted at this time! Any king salmon caught and released during the commercial fishery at the mouth of the Ayakulik River is simply caught again within another seine net adding to the mortality risk and rate. Applying Closed Waters 5 ACC 39.290 is nothing new to the Ayakulik River. Provisions of Boundary Markers closing the river within 500 yards of the stream terminus once applied to this river system until 2011. Alaska Department of Fish and Game has weir personnel on the Ayakulik River late May until early September. Boundary markers could be placed and manned by personnel. With modern technology available now on the remote Ayakulik River, GPS coordinates could also be "called or texted in" with the Closed Water boundaries as the Ayakulik River mouth is sometimes known to move because of weather patterns. I thank the Board of Fisheries in advance for taking into account all possible conservation measures available for protecting a Stock of Concern candidate of the WILD Ayakulik River king salmon. Regards, Amy Fredette

PC472
2 of 2



Cole Christiansen
F/V Mary Ann
12/23/2019 11:45 AM AKST

RE: PROPOSAL 74 Close waters within 500 yards of the terminus of the Ayakulik River to commercial salmon fishing June 10–July 15

The fish should have a fair chance to make it into the stream. I support having a buffer zone around most major river systems.

December 25, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposals 73, 74, 75, and 77

Dear Chairman Morisky and Board of Fisheries Members,

I am Alex Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Wandering Star. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

I oppose the following proposals (73, 74, 75, and 77) because I support the current management plan as written. Chinook are not a target species for commercial fishermen, there is already a non-retention policy for fish exceeding 28 inches

I ask that the Board reject these proposals.

Thank you for your time and consideration,

Alex and Jaime Roth
F/V Wandering Star
Homer, AK

Brian Mcwethy
KSA
12/23/2019 01:00 PM AKST

RE: PROPOSAL 75 Post seasonal regulatory markers 500 yards from the terminus of the Ayakulik River

My name is Brian Mcwethy. I was born and raised in kodiak. I live in kodiak with my family and we all depend on my income. I fished with my father on his seiner growing up and now I own and operate a seiner. Salmon seining and tanner crab fishing in kodiak are currently our only sources of income. I plan to try and continue to fish the kodiak waters and possible my children will have the opportunity to. I hope the current and historical areas we fish aren't taken from us and the future generations of kodiak. I oppose this proposal. This could damage the system due to escapement. Management uses this area as a tool to avoid over escapement.

Iver Holm

12/28/2019 12:43 AM AKST

RE: PROPOSAL 75 Post seasonal regulatory markers 500 yards from the terminus of the Ayakulik River

Dear Chairman Morisky and Board of Fish members: I am 31 years old and a life long resident of Kodiak. I grew up set netting in Uganik on the west side of the island with my mother until i was 14. I then started seining with my father until I was able to buy my own Kodiak seine operational the age of 27. Please oppose proposal 63. thank you for your time sincerely
Iver Holm

Nicholas Hoffman
Two Fox Fisheries, LLC
12/27/2019 11:59 AM AKST

RE: PROPOSAL 75 Post seasonal regulatory markers 500 yards from the terminus of the Ayakulik River

This proposal would limit the department's ability to manage the Ayakulik River and prevent over-escapement. I support the Kodiak Salmon Management Plan as it is currently written.

December 25, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposals 73, 74, 75, and 77

Dear Chairman Morisky and Board of Fisheries Members,

I am Richard Roth, Kodiak salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife, three children and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Tzar. I also owned and operated the F/V Kelly Girl for the last nine years. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

I oppose the following proposals (73, 74, 75, and 77) because I support the current management plan as written. Chinook are not a target species for commercial fishermen, there is already a non-retention policy for fish exceeding 28 inches

I ask that the Board reject these proposals.

Thank you for your time and consideration,

Richard, Amanda, Stephanie, Noah, and Ranger Roth
F/V Sea Tzar
Homer, AK

December 25, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposals 73, 74, 75, and 77

Dear Chairman Morisky and Board of Fisheries Members,

I am William Roth, Captian of the F/V Sea Chantey. I own a Kodiak seine permit and have been fishing it for the lasat 5 years as well as working as crew since 2010, I rely mostly on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

I oppose the following proposals (73, 74, 75, and 77) because I support the current management plan as written. Chinook are not a target species for commercial fishermen, there is already a non-retention policy for fish exceeding 28 inches

I ask that the Board reject these proposals.

Thank you for your time and consideration,

William and Kaytlen Roth
F/V Sea Chantey
PO BOX 1230
Homer AK
99603

Amy Fredette
Ayakulik Adventures
12/26/2019 09:49 AM AKST

RE: PROPOSAL 75 Post seasonal regulatory markers 500 yards from the terminus of the Ayakulik River

I support proposal #75 to have Boundary Markers placed at the Ayakulik River terminus to set a 500 yard set back for commercial fishing. With the Ayakulik River king salmon being considered for a Stock of Concern, it is now more than imperative to apply all conservation measures available to help protect this ever declining species. Applying provisions of 5 ACC 39.290 Closed Waters to the terminus of the Ayakulik River should be implemented where there is a Mixed Stock Fishery to reduce the risk and rate of Incidental Mortality upon king salmon. Boundary Markers did exist at the Ayakulik River until 2011. Alaska Department of Fish and Game weir personnel are present on the Ayakulik River late May into early September. Boundary Markers could be placed and manned. With modern technology now available on the remote Ayakulik River, GPS coordinates could also be "called or texted in" to mark the boundaries as the Ayakulik River mouth can be known to move because of weather patterns. I thank to Board of Fisheries in advance for taking into consideration ALL conservation measures available in protecting a Stock of Concern candidate of the WILD Ayakulik River king salmon. Thank You and Regards Amy Fredette


PC480
2 of 2

December 25, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 76

Dear Chairman Morisky and Board of Fisheries Members,

I am Alex Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Wandering Star. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

I oppose this proposal because it would be taking away an important management tool from ADF&G staff for preventing over-escapement of the Karluk system which is distinct from Central Section. Inner Karluk provides management the ability to harvest excess sockeye when the upper escapement goal has been met and still keep the Central Section closed during the first few pink and chum openers in July.

I ask that the Board reject this proposal.

Alex and Jaime Roth
F/V Wandering Star
Homer, AK

Brian Mcwethy
KSA
12/23/2019 01:07 PM AKST

RE: PROPOSAL 76 Open the Outer Karluk and Central Sections concurrent with when the Inner Karluk Section is opened by emergency order

My name is Brian Mcwethy. I was born and raised in kodiak. I live in kodiak with my family and we all depend on my income. I fished with my father on his seiner growing up and now I own and operate a seiner. Salmon seining and tanner crab fishing in kodiak are currently our only sources of income. I plan to try and continue to fish the kodiak waters and possible my children will have the opportunity to. I hope the current and historical areas we fish aren't taken from us and the future generations of kodiak. This proposal would limit managements ability manage the karluk system without affecting other systems in the area. It could negatively impact chum, coho and pink salmon stocks in the area. That is why I oppose proposal 76.

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposals 76

Dear Chairman Morisky and Board of Fisheries Members,

My name is Chris Johnson and I am a second-generation fisherman in Kodiak, Alaska. I grew up fishing on my dad's boat and got my first crew job working for someone else two weeks after I graduated high school. I haven't missed a salmon season since. I bought into the fishing industry in 2011 with the purchase of a 25-foot jig boat that I worked for two years in the winter and spring months while I still crewed for salmon in the summer. Access to the jig fisheries focusing on cod and rockfish was the only way that I could afford to move into the salmon fleet with a 38-footer in 2013. After the recent cod collapse, I now primarily rely on salmon seining and live here year-round with my wife.

I oppose this proposal because it would be taking away an important management tool from ADF&G staff for curtailing overescapement of the Karluk system. Inner Karluk provides management the ability to harvest excess sockeye when the upper escapement goal has been met and still keep the Central Section closed during the first few pink and chum openers in July.

Taking away any fishing opportunity from Kodiak fishermen, particularly from the small boat fleet, would have a direct negative impact on new entrants trying to gain a foothold in this industry, fishing families trying to get by, and fishing support businesses in our region. I'm proud to call Kodiak home and am working to protect our fishing way of life.

Sincerely,
Chris Johnson
F/V North Star

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 76

Dear Chairman Morisky and Board of Fisheries Members,

My name is Danielle Ringer and I appreciate the opportunity to comment on proposals before the Board in writing and in person for the Kodiak finfish meeting. I live in Kodiak with my husband and we own and operate the 38-foot F/V North Star. We chiefly rely on salmon seining and cod and rockfish jigging to maintain our fishing way of life and ability to live on Kodiak Island. I grew up in Homer learning to harvest and process fish from my parents in Kachemak Bay and dipnetting on the Kenai River. I hold a Master's degree from the University of Alaska Fairbanks in Political Ecology of Fisheries and was one of the researchers on the *Graying of the Fleet in Alaska's Fisheries: Defining the Problem and Assessing Alternatives* study in the Kodiak region.

I oppose this proposal because it would be taking away an important management tool from ADF&G staff for curtailing overescapement of the Karluk system. Inner Karluk provides management the ability to harvest excess sockeye when the upper escapement goal has been met and still keep the Central Section closed during the first few pink and chum openers in July.

I see no biological, scientific, historical, economic, nor sociocultural reasons that could justify the Board making any changes to the salmon management plans in the Kodiak Management Area, which would create ripple effects negatively impacting Kodiak fishermen, processing workers, and community businesses. Thank you for your consideration of my comments and I look forward Board of Fisheries members spending time in our fishing community during the Kodiak meeting.

I humbly request the Board to reject this proposal.

Respectfully,
Danielle Ringer, M.A.
F/V North Star

Darren Platt

12/27/2019 05:16 PM AKST

RE: PROPOSAL 76 Open the Outer Karluk and Central Sections concurrent with when the Inner Karluk Section is opened by emergency order

This proposal takes away the department's ability to terminally manage the Karluk system, which is one of the only salmon systems in the Kodiak management that can be effectively managed at the terminus. If Karluk runs are strong, but other NW section runs are weak then the department should be allowed to open the Inner and Outer Karluk section without being required to also open the Central Section. In this scenario, opening the Central Section would put those depleted stocks at risk. This is a very dangerous proposal and it should be rejected.

Fred Stager

F/V Lady Lu

December 12, 2019

Alaska Board of Fisheries Board Support Section

P.O. Box 115526 Juneau, AK 99811-5526

RE: Opposition to Proposal 76

Dear Chairman Morisky and Board of Fish Members:

I'm writing to ask you to **reject proposal 76,** which calls for Outer Karluk and the entire Central Section to be open when the Inner Karluk Section is opened. This proposal is a biological disaster, it handcuffs ADFG from managing over escapement into the Karluk system while encouraging excessive harvest on early pink and chum runs. **Please reject proposal 76.** Thank You – Fred Stager

Iver Holm

12/28/2019 12:46 AM AKST

RE: PROPOSAL 76 Open the Outer Karluk and Central Sections concurrent with when the Inner Karluk Section is opened by emergency order

Dear Chairman Morisky and Board of Fish members: I am 31 years old and a life long resident of Kodiak. I grew up set netting in Uganik on the west side of the island with my mother until i was 14. I then started seining with my father until I was able to buy my own Kodiak seine operational the age of 27. Please oppose proposal 76. thank you for your time sincerely
Iver Holm

James Calhoun

12/26/2019 06:00 PM AKST

RE: PROPOSAL 76 Open the Outer Karluk and Central Sections concurrent with when the Inner Karluk Section is opened by emergency order

I have been intimately involved in the Kodiak seine fishery since 1968 to present. Presently my son is fishing the Kodiak area and it is my desire to have my grandsons be able to participate in a healthy Kodiak fishery if they so desire. Throughout my career I have come to the conclusion that the ADF&G management for Kodiak has been stellar and has kept the stocks in Kodiak healthy overall with the current management plan. Opening just Inner Karluk enables the dept to manage excess sockeye and still protect early chums and pinks inearly July in the central district. please oppose proposal 76. thank you.

Ken Christiansen
F/V Mary Ann
12/26/2019 09:53 PM AKST

RE: PROPOSAL 76 Open the Outer Karluk and Central Sections concurrent with when the Inner Karluk Section is opened by emergency order

Let the department do their jobs. Because sometimes too many fish can school up in front of the lagoon and they would be unable to manage the system properly.

Nicholas Hoffman
PO Box 1212
Kodiak, AK 99615

12/24/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Oppose Proposal 76

Dear Chairman Morisky and Board of Fish members:

I'm a young Kodiak salmon fisherman. I have been running a seine boat since 2011 as well as participating in Kodiak halibut, sea cumber, cod jig, and tanner crab fisheries. I respectfully request the Board reject Proposal 76.

Opening the Inner Karluk Section is a key management tactic to prevent over-escapement into the Karluk River and is a river specific opener. It doesn't necessarily mean there are strong runs in the rest of the West Side. Forcing the department to open the Central and Outer Karluk sections concurrently could pose a conservation issue to river systems in the Central Section.

I see no reason for the Board to make any changes to the Kodiak Salmon Management plan. Thank you for the opportunity to comment on the proposals and the chance for my voice to be heard. I look forward to the Board of Fish members getting to spend time in Kodiak and learn more about our town and fishing community.

I humbly request the Board reject Proposal 76.

Sincerely,

Nicholas Hoffman
F/V Relentless

Oliver Holm
self
12/27/2019 03:56 PM AKST

RE: PROPOSAL 76 Open the Outer Karluk and Central Sections concurrent with when the Inner Karluk Section is opened by emergency order

I was involved with the change to the management plan in 2017 along with set netter Duncan Fields and the area biologist. The previous language practically guaranteed over escapement on a strong early run sockeye return to Karluk. The new language allowed opening inner Karluk to seining when the mid point goal was assured to be met. After that point managers were unlikely to close the central section where the set netters fish until central section management switches to pink salmon management on the 6th of July. The first central section pink opening varies from 57 hours to 105 hours. That leaves a short window up to the 15th of July that seining might be allowed in Inner Karluk when the sockeye escapement is near or over the escapement goal for the early run. When I started fishing in the later 1960's, if what is now the central section was open to fishing, seiners could fish in inner Karluk. Recently seining in inner Karluk is often closed when the central section is open. The extra conservation burden placed on seiners in their traditional fishing area of inner Karluk should be rewarded when there is finally fish to be caught beyond escapement needs.

December 25, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 76

Dear Chairman Morisky and Board of Fisheries Members,

I am Richard Roth, Kodiak salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife Three Children and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Tzar. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

I oppose this proposal because it would be taking away an important management tool from ADF&G staff for preventing over-escapement of the Karluk system which is distinct from Central Section. Inner Karluk provides management the ability to harvest excess sockeye when the upper escapement goal has been met and still keep the Central Section closed during the first few pink and chum openers in July.

I ask that the Board reject this proposal.

Richard, Amanda, Stephanie, Noah, and Ranger Roth
F/V Sea Tzar
Homer, AK

Steven Roth

12/27/2019 01:57 PM AKST

RE: PROPOSAL 76 Open the Outer Karluk and Central Sections concurrent with when the Inner Karluk Section is opened by emergency order

December 25, 2019 Alaska Board of Fisheries Board Support Section P.O. Box 115526 Juneau, AK 99811-5526 Re: Opposition to Proposal 76 Dear Chairman Morisky and Board of Fisheries Members, I am Steve Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Grace. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures. ? I oppose this proposal because it would be taking away an important management tool from ADF&G staff for preventing over-escapement of the Karluk system which is distinct from Central Section. Inner Karluk provides management the ability to harvest excess sockeye when the upper escapement goal has been met and still keep the Central Section closed during the first few pink and chum openers in July. I ask that the Board reject this proposal. Steve and Jenny Roth F/V Sea Grace Homer, AK

December 25, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposal 76

Dear Chairman Morisky and Board of Fisheries Members,

I am William Roth, Captian of the F/V Sea Chantey. I own a Kodiak seine permit and have been fishing it for the lasat 5 years as well as working as crew since 2010, I rely mostly on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

I oppose this proposal because it would be taking away an important management tool from ADF&G staff for preventing over-escapement of the Karluk system which is distinct from Central Section. Inner Karluk provides management the ability to harvest excess sockeye when the upper escapement goal has been met and still keep the Central Section closed during the first few pink and chum openers in July.

I ask that the Board reject this proposal.

William and Kaytlen Roth
F/V Sea Chantey
PO BOX 1230
Homer AK
99603

December 25, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposals 73, 74, 75, and 77

Dear Chairman Morisky and Board of Fisheries Members,

I am Alex Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Wandering Star. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

I oppose the following proposals (73, 74, 75, and 77) because I support the current management plan as written. Chinook are not a target species for commercial fishermen, there is already a non-retention policy for fish exceeding 28 inches

I ask that the Board reject these proposals.

Thank you for your time and consideration,

Alex and Jaime Roth
F/V Wandering Star
Homer, AK

Brian Mcwethy
KSA
12/23/2019 01:03 PM AKST

RE: PROPOSAL 77 Close waters within 500 yards of the terminus of the Ayakulik River to commercial salmon fishing September 1–October 31

My name is Brian Mcwethy. I was born and raised in kodiak. I live in kodiak with my family and we all depend on my income. I fished with my father on his seiner growing up and now I own and operate a seiner. Salmon seining and tanner crab fishing in kodiak are currently our only sources of income. I plan to try and continue to fish the kodiak waters and possible my children will have the opportunity to. I hope the current and historical areas we fish aren't taken from us and the future generations of kodiak. I oppose proposal 77. This would reduce managements ability to stop over escaping this system.

December 22, 2019
Darren Platt (FV Agnes Sabine)
10708 Birch Cir
Kodiak, AK 99615

Alaska Board of Fisheries
Board Support Section
PO Box 115526
Juneau, AK 99811-5526

RE: **Oppose Proposal 77**

The members of the Alaska Board of Fisheries,

I'm writing in **opposition to proposal 77**, which would establish closed waters in the vicinity of the Ayakulik river during September. September openers in the inner Ayakulik are extremely rare and would only occur if there is observed abundance of coho and high weir counts. In the event that such an abundance exists, then there should be opportunities to harvest them. Although unusual, large coho harvests have occurred in the Inner Ayakulik Section, and they should be allowed to occur in the future. Current management practices are sufficient and additional safeguards are unwarranted.

I'm a resident of Kodiak and the owner/operator of a 42-foot commercial fishing vessel. I participate in the local salmon, tanner crab, and herring fisheries.

Thank you,
Darren Platt

Iver Holm

12/28/2019 12:47 AM AKST

RE: PROPOSAL 77 Close waters within 500 yards of the terminus of the Ayakulik River to commercial salmon fishing September 1–October 31

Dear Chairman Morisky and Board of Fish members: I am 31 years old and a life long resident of Kodiak. I grew up set netting in Uganik on the west side of the island with my mother until i was 14. I then started seining with my father until I was able to buy my own Kodiak seine operational the age of 27. Please oppose proposal 77. thank you for your time sincerely
Iver Holm

Ken Christiansen
F/V Mary Ann
12/26/2019 09:45 PM AKST

RE: PROPOSAL 77 Close waters within 500 yards of the terminus of the Ayakulik River to commercial salmon fishing September 1–October 31

This one should be left up to the department. To determine whether or not the river gets overescaped.

Nicholas Hoffman
Two Fox Fisheries, LLC
12/27/2019 12:00 PM AKST

RE: PROPOSAL 77 Close waters within 500 yards of the terminus of the Ayakulik River to commercial salmon fishing September 1–October 31

This proposal would limit the department's ability to manage the Ayakulik River and prevent over-escapement. I support the Kodiak Salmon Management Plan as it is currently written.

December 25, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposals 73, 74, 75, and 77

Dear Chairman Morisky and Board of Fisheries Members,

I am Richard Roth, Kodiak salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife three children and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Tzar. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures.

I oppose the following proposals (73, 74, 75, and 77) because I support the current management plan as written. Chinook are not a target species for commercial fishermen, there is already a non-retention policy for fish exceeding 28 inches

I ask that the Board reject these proposals.

Thank you for your time and consideration,

Richard Amanda, Stephanie, Noah, and Ranger Roth
F/V Sea Tzar
Homer, AK

William Roth
Sea Chantey Marine
12/27/2019 12:56 PM AKST

RE: PROPOSAL 77 Close waters within 500 yards of the terminus of the Ayakulik River to commercial salmon fishing September 1–October 31

Again lots of feelings and no facts.

Alisha Drabek
Afognak Native Corporation
12/27/2019 12:28 AM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

RE: Maintain Kodiak's Salmon Fishery & Oppose Proposals: 58, 59, 60, 61, 62, 63, 64, 65, 37 and 66. Dear Members of the Alaska Board of Fisheries: Afognak Native Corporation represents Shareholders living in Port Lions village and the City of Kodiak, both small, coastal communities within the Kodiak Archipelago, among nearly 1,200 Shareholders. Afognak has been able to provide strong economic and advocacy support to our Shareholder communities as the 7th largest revenue producing private corporation in the State of Alaska. However, in the face of proposed proposals scheduled to come before the Board regarding Kodiak's Salmon Fishery, we fear that our coastal communities stand to be severely impacted. Specifically, Afognak opposes Proposals 58, 59, 60, 61, 62, 63, 64, 65, 37 and 66. The Board of Fisheries and its decisions on fisheries management and allocation can have and has had tremendous impact on our communities. It is critical for the sustainability and viability of our Kodiak Island's village communities that Board of Fisheries members recognize and understand the impact that decisions have on these small, coastal, fishery-dependent communities. We are concerned about the motivation to change management plans when Kodiak fishermen have not done anything that would justify these changes. Our salmon fishery has not expanded; in fact, there are fewer permits fishing now than were fishing five and ten years ago. We don't see any "new" fisheries for Kodiak salmon developing. Kodiak's management plans cover the entire Island and the Mainland and they only allow fishery openings based on the presence of local stocks. These plans have been in place for more than 25 years and have precluded expansion of salmon fishing that is not based on the presence of local stocks. Further, the 2014-1016 genetic study authored by Kyle Shedd in not "new" information in the sense that the conclusions were not previously known. The genetic study only explores information and conclusions reached by the Department during the 1990-1995 timeframe. Namely, "The incidence of Cook Inlet sockeye in KMA fisheries varies widely. It is inconsistent as to area, annual timing, and between years." Moreover, the percentage of the Cook Inlet runs incidentally captured in the Kodiak fishery during 2014-16 are well within the ranges suggested by these earlier studies. The Cape Igvak Management Plan has been in place for 40 years. The reason for the plan was conservation—to protect Chignik's late run. Prior to the plan, Kodiak fished at Cape Igvak "day for day" when the Chignik fishery was open. While Chignik was fishing on the "early run", it was thought that Kodiak could be impacting the "late run". Consequently, the Cape Igvak management plan ensured both escapement into the Chignik system and an economic safety net for Chignik fishermen by limiting 300 Alimaq Drive Kodiak, Alaska 99615 Office: (907) 486-6014 Fax: (907) 486-2514 Kodiak. Kodiak's catch percentage of the Chignik run prior to the Cape Igvak Management Plan was about 15%. Under the plan, Kodiak has averaged about 12% (during years when fishing has occurred). Finally, the conservation aspects of the Cape Igvak Management plan were highlighted with Chignik's recent run failures. Yet, there was no fishing at Cape Igvak. Why change a balanced plan that is accomplishing its intended purposes? In summary, we request the Board of Fish support the survival of our small coastal communities such as Port Lions and Kodiak by taking no action on Proposals 58, 59, 60, 61, 62, 63, 64, 65, 37 and 66. Sincerely, Alisha Drabek, PhD Executive Vice President

Al Cratty III
P.O. Box 1
Old Harbor AK
99643

12/18/19

Chairman Reed Morisky
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Proposals 63, 64, 65, 66

Dear Chairman Morisky and Board of Fish members:

I am a resident and salmon fisherman from the village of Old Harbor on the Eastside of Kodiak island. I have been fishing salmon in the seine fishery in Kodiak since 1967. I grew up in the village, and have watched the decline in the number of permit holders and fisherman in the Old Harbor community with the changes in fishery management as a result of limited entry and the IFQ program. I respectfully request you **reject proposals 63, 64, 65, and 66**.

These proposals would economically put us out of business. It is increasingly more expensive to operate and this proposal takes away my ability to make a successful business model off of salmon. Our crews don't even want to fish anymore, because it's too expensive to think about getting into the industry, and the amount they make from salmon isn't enough to justify making a life as a salmon fisherman. The Kodiak fishery and incidental harvest of Cook Inlet sockeye varies from year to year as a result of where Kodiak is situated in the Gulf of Alaska.

My real concern is for the future generation. My son and grandchildren are currently involved in the fishery and these proposals create a potential hardship for them to continue the fishing livelihood they have started to create. The future generation doesn't have the access to fishing we grew up with, halibut abundance is down, cod stocks are depressed, crab stocks aren't good and the herring industry has no value. The salmon industry is our primary moneymaker and these proposals threatens the last economic driver for my business and my community.

Respectfully,



Al Cratty III

Al Cratty III
PO Box I
Old Harbor Ak

12/18/19

Chairman Reed Morisky
Alaska Board of Fisheries
Board Support Section
P.O. Box 1 15526
Juneau, AK 99811-5526

RE: Proposal 58,59,60,61,62

Dear Chairman Morisky and Board of Fish members:

I am a resident and salmon fisherman from the village of Old Harbor on the Eastside of Kodiak island. I have been fishing salmon in the seine fishery in Kodiak since 1967. I grew up in the village, and have watched the decline in the number of permit holders and fisherman in the Old Harbor community with the changes in fishery management as a result of limited entry and the IFQ program. I respectfully request you **reject** proposals 58, 59, 60, 61, and 62.

The Cape Igvak fishery takes pressure off south end. Old Harbor fisherman used to and still do fish the south end of Kodiak and Ayakulik sections and whenever Igvak opened fishing pressure from nonlocal boats would leave us alone. We used to make a large portion of our seasons during June on south-end stocks. ADFG is doing the job they are mandated to do. They are managing the fishery the way the management plan was designed and as a result the poor runs in Chignik have not been as a result of Kodiak fisherman. There are safeguards put in place to forever protect the Chignik runs, and because of those safeguards, we haven't fished in Igvak over the last 3 years.

Please leave the Cape Igvak fishery alone. Kodiak fisherman have fished over there since before limited entry and our historic harvest in the Igvak section provides economic benefit to my community and our fisherman.

Respectfully,



Al Cratty III

Alec Inga, Sr.
P.O. 83
Old Harbor, AK 99615

December 19, 2019

Alaska Board of Fisheries
P.O. Box 115526
Juneau, AK 99811

Re: Vote NO: Proposals 58,59,60,61,62,63,64,37,65,66

To whom it may concern:

I'm an Old Harbor fisherman and have been for most of my life. Fishing is very important for me and my community. Without fishing, I don't know how anyone could afford to live in Old Harbor. I want to see Old Harbor continue to have a fishing fleet. Right now, it's tough. Salmon is all we have. There is no money for herring these days and the cod are gone. It's sad to see all the boats in the harbor with nothing to do.

I oppose taking away the Cape Igvak fishery. Cape Igvak benefits Old Harbor in two ways. First, for the boats that go fish there it can be a good opportunity if the fish are running. Second, for the local boats that stay around Old Harbor when Igvak is open, there are far fewer boats competing for hauling spots. That's why Cape Igvak in a win-win for Old Harbor fishermen.

Regarding the Cook Inlet proposals to limit Kodiak's catch of Cook Inlet bound sockeye. You are not going to be able to control nature. Those Cook Inlet fish come by Kodiak some years and some years they don't. It's not just about sockeye here in Kodiak. Pink salmon and chum salmon are very important to our fishery, especially in the July period targeted by the Cook Inlet proposals. If the board were to close the mainland districts and then move west side fishing inside the capes, we'd have more than twice the boats currently fishing around Old Harbor trying to get a piece of the pie. So, I think closures for Cook Inlet bound fish would hurt Old Harbor and the other rural communities more than any gain by Inlet fishermen.

Most of my friends and family that fish in Old Harbor are just barely making a living. We have some very good fishermen here in Old Harbor and they are wondering if they can continue if the Board were to adopt one or more extreme proposals. I hear their worry and I'm concerned bout my crew job. I'm asking you not to adopt proposals 58,59, 60, 61,62,63,64,65,66.

Thank you for reading what I had to say.

Sincerely yours,
Alec Inga, Sr.

Allen Christiansen Sr.
PO Box 134
Old Harbor AK
99643

12/18/19

Chairman Reed Morisky
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 9981 1-5526

RE: Proposal 58, 59, 60, 61

I am a 59-year old resident of Old Harbor of Alaska, located on the Eastside of Kodiak Island. I grew up in a village of roughly 600 people, that is down to about 150 residents now and our primary moneymaker is commercial fishing. I am a new entrant to the salmon industry, as I just bought a 38-foot salmon seiner, however have been involved in salmon fishing my entire life crewing with family and friends. While I recognize that I am an older entrant, I am concerned with the future of our fisheries and our village, as I have 7 children between the ages of 14 and 40. I bought into the salmon industry to potentially give my kids a reason to come back to Old Harbor. The board needs to **reject proposals 58, 59, 60, and 61**.

The Cape Igvak fishery is a historic part of the Kodiak salmon fishery and has been since before limited entry. Over the years, I have fished the Cape Igvak fishery as a crewman and can say without it, nobody makes any money in June anymore. For the last few years, even the Igvak fishery has been closed as a result of weak runs to Chignik. The economic pinch is felt in our village the same as it is felt in the villages of the Chignik district. Salmon fishing is our primary source of revenue now, and the main supplier of jobs. The Board needs to remember that we are all trying to make a living off of salmon, and the run failures in Chignik are not because Kodiak fisherman are fishing and placing a burden on Chignik stocks. The management plan in the Igvak section doesn't allow us to go fishing until Chignik has already harvested 300,000 sockeye. The Chignik runs will rebound, as all runs always do, but you, the Board have the decision to economically harm the Kodiak fisherman by making changes to the Igvak management plan that has stood the test of time for over 40 years. Please consider leaving the Igvak fishery alone. Reject these proposals as previous boards have done in the past.

Sincerely, Allen Christiansen Sr

Allen Christiansen Sr.

Allen Christiansen Sr.
PO Box 134
Old Harbor AK
99643

12/18/19

Chairman Reed Morisky
Alaska Board of Fisheries
Board Support Section
P.O. Box 1 15526
Juneau, AK 99811-5526

RE: Proposals 63, 64, 65, and 66

I am a 59-year old resident of Old Harbor of Alaska, located on the eastside of Kodiak Island. I grew up in a village of roughly 600 people, that is down to about 150 residents now and our primary moneymaker is commercial fishing. I am a new entrant to the salmon industry, as I just bought a 38-foot salmon seiner, however have been involved in salmon fishing my entire life crewing with family and friends. While I recognize that I am an older entrant, I am concerned with the future of our fisheries and our village, as I have 7 children between the ages of 14 and 40. I bought into the salmon industry to potentially give my kids a reason to come back to Old Harbor. The board needs to **reject proposals 63, 64, 65, and 66**.

These proposals are trying to take away a historical part of the Kodiak salmon fishery. The proposal does not take into account the volume of pink and chum salmon harvested that make up the bulk of the Kodiak fishery. I bought into the industry because at current fishing prices I will be able to pay the bills on my small vessel on pink and chum salmon alone. These proposals will make it hard for me to do that, because it will severely limit the number of available sets for me to fish, and will push every seiner on top of one another. The Kodiak fishery is managed during July under a complex management plan that allows Kodiak fishermen to harvest sockeye, pinks and chums with all different run timings. The Kodiak management plan under changes proposed in these proposals would make it impossible for management to allow for harvest of these local stocks and needs to be rejected. Please leave the Kodiak fishery the way it is.

Sincerely, Allen Christiansen Sr

Allen Christiansen Sr.

ALUTIIQ TRIBE OF OLD HARBOR

PO Box 62, Old Harbor AK 99643
Phone: (907)286-2215 fax (907)286-2350

December 27, 2019

Alaska Board of Fisheries
1255 West 8th St.
P.O. Box 115526
Juneau, AK 99811

Re: Maintain Kodiak's Salmon Fishery
Oppose Proposals: 58,59,60,61,62,63,64,65,37 &66

Dear Alaska Board of Fisheries:

I am Conrad Peterson President of the Alutiiq Tribe of Old Harbor and I represent the community of Old Harbor. Our community's economy is entirely based on fishing and on Kodiak's salmon fishery in particular. Loss of salmon fishing opportunities will have a direct impact on Old Harbor.

We wonder what Kodiak fishermen have done that would justify changing our management plans. Our salmon fishery has not expanded, in fact there are fewer permits fishing now than were fishing five and ten years ago. We don't see any "new" fisheries for Kodiak salmon developing. Kodiak's management plans cover the entire Island and the Mainland and they only allow fishing openings based on the presence of local stocks. These plans have been in place for more than 25 years and have precluded expansion of salmon fishing that is not based on the presence of local stocks.

Regarding the proposals from Cook Inlet, the 2014-1016 genetic study authored by Kyle Shedd in not "new" information in the sense that the conclusions were not previously known. The genetic study provides additional snapshots of detail illustrating the information and conclusions reached by the Department during the 1990-1995 time-frame. Namely, **"The incidence of Cook Inlet sockeye in KMA fisheries varies widely. It is inconsistent as to area, annual timing, and between years."** Moreover, the percentage of the Cook Inlet run incidentally captured in the Kodiak fishery during the 2014-16 time period is well with the ranges suggested by these earlier studies.

The Cape Igvak Management Plan has been in place for 40 years. The reason for the plan was conservation --- to protect Chignik's late run. Prior to the plan, Kodiak fished at Cape Igvak "day for day" when the Chignik fishery was open. While Chignik was fishing on the "early run", it was thought that Kodiak could be impacting the "late run". Consequently, the Cape Igvak management plan insured both escapement into the Chignik system and an economic safety net for Chignik fishermen by limiting Kodiak. Kodiak's catch percentage of the Chignik run prior to the Cape Igvak Management Plan was about 15%. Under the plan, Kodiak has averaged about 12%. (During years when fishing has occurred.) Finally, the conservation aspects of the Cape Igvak Management plan were highlighted with Chignik's recent run failures. There was no fishing at Cape Igvak! Why change a balanced plan that is accomplishing its intended purposes?

In summary, the Alutiiq Tribe of Old Harbor requests that the Board of Fisheries take no action on Proposals 58, 59,60,61,62,63,64, 65, 37 & 66!

Sincerely,

Conrad Peterson, President

From: ann kendall
To: DFG, BOF Comments (DFG sponsored)
Subject: comments Kodiak finfish
Date: Friday, December 27, 2019 3:02:54 PM

Dear Board Members,

I am a west side setnetter; my family has gill-netted on the Viekoda Bay side of Kupreonof Peninsula since 1979. We are in the unique position to have observed the fishery for over forty years. Although there are patterns and recurring time-tables relating to salmon species in our waters, the most salient fact is that each year brings its own season and rewards.

I support the work of the Kodiak Area Salmon Work Group and urge the Board of Fisheries to read their positions and rationales carefully regarding the proposals coming up in 2020. Their information is reliable, well-researched, and reflects what we fishermen see on the grounds. As you consider these proposals, please be mindful that Alaska's fish, whatever their origin, are "common property" and cannot be managed as if they are "owned" by their river-of-origin fisherman.

NO on Proposals: 37 and 58, 59, 60, 61, 62, 63, 64, 65, and 66

I am especially concerned about proposed month-long closures during the supposed time-frame Cook Inlet bound sock-eye may travel Kodiak waters. The mixed stock nature of KMA salmon fisheries, including the incidental harvest of non-local, Cook Inlet sockeye stocks, has been known to biologists and fishermen alike for many years. The very transient and changing nature of this incidental harvest does not warrant large swaths of closure during Kodiak's prime fishing; BOF would be cutting our harvest days down by one third to possibly bring a theoretical number of fish to Cook Inlet, maybe. Commercial Cook Inlet fishermen would be well advised to look to curtailing the sports dip net fishery that often benefits Outside tourists. There are no conservation emergencies for salmon and salmon fisheries within the KMA, including non-local sockeye stocks bound for Cook Inlet.

Our own forty years of fish records show occasional and sporadic catches of Cook Inlet sockeye. Since it is impossible to pinpoint when and where and how the weather may affect these fish, is it any wonder the suggestion by the well-funded Cook Inlet sports fishing industry is to close Kodiak area to all salmon fishing for over a month? That is ridiculous. The supposed "data" and studies used to justify this proposal are spotty and incomplete, as the studies themselves state. Please vote NO on these proposals for fair fishery management.

Proposal # 67 5AAC 18:331 Gillnet Specifications and Operations Allow use of single filament mesh web in a set gillnet

Because of recent slime events, the use of single filament mesh web in a set gillnet will make keeping our nets clean and fishing more efficient. This type of gear is allowed in other

management areas, such Cook Inlet. Please support this proposal.

Proposal #70 5AAC 18:362 Westside Kodiak Salmon Management Plan Karluk Pink Proposal

Because of the large number of pink salmon that often traverse our waters, we need to be able to harvest some of them before there is over escapement in the rivers when the number of fish is high. Suppport for this proposal will enable fishery biologists to react appropriately.

Proposal #71 5AAC 18:362 Westside Kodiak Salmon Management Plan Inner Bay Proposal

It has been very uncomfortable to watch a closure designed to build up the numbers of fish in inner bays, only to see that build-up immediately caught by seiners allowed deep inside those bays and passes before the salmon have an opportunity to get up their home streams. Suddenly, the fishery is closed again for everyone. Please support this better management plan for the inner bays that will benefit both seiners and setnetters.

Thank you.

Ann Kendall
outletcape@gmail.com
907-398-7060

--
Annie Kendall
Outlet Cape, Viekoda Bay

Benjamin Allen
P.O. Box 84
Chignik, AK 99564

Alaska Board of Fisheries
Board Support Section 20
PO Box 115526
Juneau, AK 99811-5526

Mr. Chairman,and members of the Board,

Your protection of terminal fisheries is highly needed and cannot be stressed enough. The Department of Fish and game can not protect the the stocks let alone the fishery until after damage has been done because regulations supersede, and because these same regulations are the mandate and the default and they are inconsistent across borders.

My name is Benjamin Allen, a resident, fisherman, City Council member, and member of the AC in Chignik. I am writing this letter to bring attention to a situation that is ongoing throughout the salmon fisheries and support the proposals that will help terminal fisheries rebuild and recover, in specific, the Igvak proposals reducing interception of our first run 58-61.

In the inception of the Igvak management plan, the principal idea was to assist a struggling area that was low on their own stocks by giving them the ability to glean off an area with a substantial excess of fish. A 600,000 fish minimum was put into the plan guaranteeing Chignik would not have excessive load on lower years, but it was never foreseen that our stocks would deplete to the level that we would not be able to fish. I also do not believe that the creating boards intention was to put all of the Igvak effort on our first run. Though this plan may have had some merit, it was not the correct way to execute an appropriate fishery, allowing Igvak to fish on our first run at 15% of our total, equates in some years to up as high as 40% of our black lake run and therefore created an overburdening expanded interception fishery. If there were more fish in Chignik then should have been, then more permits or interim permits should’ve been issued by the CFEC in order to balance the overage. As hindsight is 20/20 the correction now must be made and the Igvak fishery should be dissolved. If stocks in Chignik return to their former glory then more permits should be issued for that area.

The Chignik fishery for the first time in state history in 2018 had no commercial fishery, though it was not the lowest escapement only because the fishermen were restricted from fishing that year, even though a known interception fishery was allowed to continue. Subsequently 2019 had a disastrous first run and a mediocre second run. Between 35 and 45 vessels were fishing at any given time which is a dramatic reduction from the standard 70 permits that are usually fished in Area L. Fishermen are leaving the area, finding new areas to lease or buy permits due to the instability of the fishery. The conservation and rebuilding of runs is coming on the backs of the permit holders in terminal areas. The other negative affect of interception fisheries in our area is that if we don't maintain escapement of our sockeye, then we don't have access to our mixed fish that is afforded to all other areas.

Until there is absolutely no fishing in Area L the ADF&G management can not take any measures to reduce fishing in its current management of Interception areas. Interception fisherman do not understand what is happening to the resource in Chignik as there is no consequential management until the resource heads to becoming a stock of concern. Though each side has the 600,000 harvest preference limitation, it does not afford room for repair while we still maintain a progressing fishery at that level, and needs to be raised. Most importantly these interception areas have other areas within their boundaries that they can prosecute fish; We do not! We have constantly asked the ADF&G to reduce fishing time in interception areas when Chignik is unable to fish due to lack of escapement, and their response has always been, "you must change the regulations in order for us to act, we understand what you are looking for but are bound to just following regulations". Please stop passing the buck between the department and the board. The regulations must be changed to allow the department to protect yield or at least restrict gleaning that reduces long term yield in the terminal area fisheries.

In closing, the load on Chignik bound stocks has now affected the yield that is produced in area L to the degree that the fishermen are having a difficult time surviving. In the meantime by supporting proposals 60 and 61, you will aid Chignik in its recovery.

Best regards,
Benjamin Allen

Brian Koozaata
P.O. 126
Old Harbor, AK 99615

December 18, 2019

Alaska Board of Fisheries
P.O. Box 115526
Juneau, AK 99811

Re: Opposition to Proposals 58,59,60,61,62,63,64,37,65,66

Dear Board:

I am a Kodiak salmon fishery crew member and I live in Old Harbor. I was 16 when I started fishing and I have fished each season since. Last year I fished with Travis Berns on a local Old Harbor vessel. Fishing is my primary income. I've been hearing that you may be changing some of the rules for the Kodiak salmon fishery. It's hard enough to live in Old Harbor on my fishing earnings, please don't make changes that will reduce what I can earn from fishing salmon.

There seems to be big concerns about catching Cook Inlet fish in the Kodiak area. I don't see that this is really an issue. From what I see, Cook Inlet sockeye are here some years and not here in other years. It's a hit a miss type of deal. Why would you close an area every year when Cook Inlet fish are only in that area occasionally?

My skipper will go fish at Cape Igvak sometimes when it is open. Recently, we haven't been over there because the Chignik run hasn't been so good. I think that's how it's suppose to work, when the Chignik run is weak we don't get to fish. So what's broken with the Igvak management plan that would make the Board change a plan that has been in place for 40 years?

I'm not the guy that understands all the technical stuff the Board goes through. I just know that the things the people say in the proposals from Chignik and Cook Inlet are not true. It's clear that they don't understand the Kodiak fishery or they are just saying things to justify a bad proposal.

Thank You,

Brian Koozaata

NW setnetter

From: BRIANA SPRINGER
To: DFG, BOF Comments (DFG sponsored)
Subject:
Date: Thursday, December 26, 2019 5:08:44 PM

Dear Chairman and BOF members,

As a 25+ year setnetter fisherman in the Central area of Kodiak I am worried and reject proposals 37, 58-66
I truly hope you look at the facts and concerns of my fellow NW setnetters and reject the proposals as well

I am very concerned with the Cook Inlet proposals 37, 58-66.
The umbrella concept and or 4 week blanket closures from June 25-July 28where 65-69% of our total income is caught would be devastating to our family! Not only personally, but our community would be facing catastrophic economic disaster! From processors to cannery workers, and all Kodiak businesses would be severely negatively impacted by proposals that have such limited substance to a historical fishery other than "I want more"!

Closures will force the seine fleet into already congested areas, and with NO regulations for the co-existence of seine/setnet, we as setnetters will lose even more than we do now. Already at various times due to other area closures we are "shut down" by seiners setting on both sides of our gear and at times double setting! That is almost 2/3 of a mile blocking off all fish to our 150 fathom net. The result of a forced increase in the seine fleet to our area due to the proposed Cook Inlet closures will be the END of our livelihood.

Forced closures will devastate our local runs from overescapement and the quality will plummet. As seiners are the only one allowed into the inner bays, all Westside setnetters will lose.

This is a terrible precedent to set. Salmon are considered "common property" and do not "belong to" the management area where they were born.
By disrupting one areas fishery to give the advantage to another area will have statewide repercussions as other areas jump on the "THEY'RE MINE" bandwagon!

Kodiak fisheries is a historical fishery. We are not fishing in any new areas. The same species come and go year after year. But every year is different! The Westside sees very few Cook Inlet fish when the wind blows easterly. There is no way to determine what the weather and run will be year after year.

Thank you for your considerations.

Briana Springer

NW setnetter

Sent from Briana's iPad

Charles and Theresa Peterson
1850 Three Sisters Way
Kodiak, AK 99615

December 26, 2019

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE**: Opposed to Proposals 58, 59, 60, 61**

Dear Chairman Morisky and Board of Fish members:

We moved to Kodiak in the 1980's to pursue the opportunity for a livelihood in commercial fishing. We found what we were looking for, a chance to make a living off the sea and stayed, raising three children and developing deep relationships in our island home. Kodiak is a community built on fish and the size of the fleet, the processing infrastructure, the support services and the overall health of our coastal community is dependent on sustainable fisheries. Salmon fishing is the mainstay of our commercial fishing business and without it we would not have the financial means to stay in Kodiak, maintain a vessel and prosecute other fisheries. We own a 42', shallow draft seine vessel that primarily operates in the Alitak district. Our son now runs the boat and Charles and I run a setnet site in Alitak Bay. We choose to diversify our salmon fishing with participation in both the seine and setnet fishery so our son can run the boat with his crew and the rest of the family can prosecute the fishery from a shore-based operation.

We are adamantly opposed to proposals 58, 59, 60 and 61 and encourage the board to vote this suite of proposals down and maintain the existing Cape Igvak Management Plan. The Cape Igvak Management Plan represents a forward-thinking management plan which has conservation measures for Chignik fisheries built into the plan. As structured, the plan only allows for harvest in the Cape Igvak region after a 300,000 fish escapement into Chignik. It is important to recognize that the run failures in the Chignik area in 2018 were not a result of harvest at Cape Igvak as the fishery did not open due to the conservation measure built in. On average, the Kodiak fleet harvests about 12.5% of the 15% allocation and the proposed proposals are purely allocative as they each seek to curtail this important harvest opportunity to a fleet four times the size of the Chignik fleet. This is not a new or expanding fishery, the fishery is managed to a percentage regardless of the number of boats and the strength and success of the mangment plan is evident in area managers ability to keep the harvest consistently within the allocation. To reiterate, the Cape Igvak Management Plan was designed to support Chignik reaching its escapements and is an example of a mixed stock fishery management plan working as intended.

Sincerely,

Charles and Theresa Peterson

Charles and Theresa Peterson
1850 Three Sisters Way
Kodiak, AK 99615

December 26, 2019

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE**: Opposed to Proposals 63, 64**

Dear Chairman Morisky and Board of Fish members:

We moved to Kodiak in the 1980's to pursue the opportunity for a livelihood in commercial fishing. We found what we were looking for, a chance to make a living off the sea and stayed, raising three children and developing deep relationships in our island home. Kodiak is a community built on fish and the size of the fleet, the processing infrastructure, the support services and the overall health of our coastal community is dependent on sustainable fisheries. Salmon fishing is the mainstay of our commercial fishing business and without it we would not have the financial means to stay in Kodiak, maintain a vessel and prosecute other fisheries. We own a 42', shallow draft seine vessel that primarily operates in the Alitak district. Our son now runs the boat and Charles and I run a setnet site in Alitak Bay. We choose to diversify our salmon fishing with participation in both the seine and setnet fishery so our son can run the boat with his crew and the rest of the family can prosecute the fishery from a shore-based operation.

We are adamantly opposed to proposals 63 and 64 and we encourage the board to vote these proposals down and maintain the existing management plans for Cape Igvak and the Mainland District. The proposals lack comprehensive science-based information to base sound decisions for fisheries management. In terms of proposal 63, establishing zones to protect Chinook salmon, there is no scientific information to demonstrate there would be savings to Chinook salmon with these restrictions and local knowledge suggest Chinook dive in deeper water. While the status of Chinook stocks throughout the Gulf of Alaska is concerning, restrictions to harvest in one district with hopes another area will benefit does not adhere to the mixed stock fish policy and the need to manage close to areas of concern. The proposals do not consider the unintended consequences to the Kodiak area when fishermen are targeting chum and pink salmon. The loss would be significant and the gains unknown. It is important to recognize the scope of the Kodiak salmon fisheries and the dependence of the harvesters on sockeye, chum and pink fisheries. When proposals such as these come forward there is a complete lack of understanding of lost harvest opportunity on local stocks. The Kodiak fleet has not been expanding and has a similar number of participants over the last decade. Fishing patterns are established and are limited by fishing grounds. There have always been Cook Inlet bound fish harvested around Kodiak by a fleet targeting local Kodiak stocks. It is inherent in sustainable fisheries management and consistent with the mixed stock management policy. In order to reduce potential targeting of Cook Inlet bound stocks, the North Shelikof Sockeye Management Plan was established in 1989 to address interception.

We encourage Board of Fisheries members to stay consistent and adhere to mixed stock fisheries policies which have been an integral component of sustainable fisheries management.

Sincerely,

Charles and Theresa Peterson

Charles P. Fogle

5722 Campbell Lake Road

Anacortes WA. 98221

12/26/2019

RE: Proposals 37, and 58-66

Dear Chairman Morisky and Board of Fish Members,

My name is Charles Fogle and I have been running a salmon boat in Kodiak 35 years. In that time I have upgraded my boat and gear several different times and now have several million dollars invested in my fishing operation. I have invested in the Kodiak area because it is a sustainable fishery with its current management tools in place. We have our good years and bad years like every other area throughout the state. The difference is that we don't blame other people when our local river systems fluxuate and sometimes even fail. The following proposals have zero historical, biological, scientifically and economical, factors that would justify the Board making changes to Kodiak's management plans.

I respectfully request the Board reject proposal #63, 64, and 65. These proposals are targeted at the Cape Igvak Fishery in Kodiak. These areas do not open if Chignik doesn't have minimum escapement and this plan has proved to be successful. When Chignik's run is low Kodiak doesn't get to fish in Igvak. This was evident this year as we did not fish at Igvak during June, and July. Recent run failures in Chignik have nothing to do with Kodiak Fishery. They have spawning problems in there lakes. This is a known fact that there lakes are getting silted in and other factors from Mother Nature are affecting their returns just like some of our systems in Kodiak have had complete run failures as well.

I urge you to decline proposals #58, 59, and 61 as well. No research or stock assessment justifies the reduction of Kodiak's Cape Igvak fishery to 5%. This is a fictitious number with no scientific justification. Kodiak's 15% allocation was an approximation of Kodiak's historical harvest in the years before the Cape Igvak fishery plan in 1978.Long time average is below the 15% allocation at only 1205% during the years we even get to fish cape igvak. Likewise, proposals for change to the start date and guarantee minimum catch for Chignik are arbitrary benchmarks seeking reallocation without any justification.

Please decline proposal #37 as well. Chinook stocks are depressed across the Gulf of Alaska. Kodiak is already returning most of the Chinook salmon alive. Moreover, the very small % of Chinook caught in Kodiak are in fact from our own local systems Karluk and Ayakulik. Reducing Kodiaks salmon

fishery is not going to benefit other areas Chinook resource. Our Chinook systems have declined on a parallel curve that is similar to the decline in other system throughout the state.

In closing, when looking at the Boards allocation criteria, there is simply isn't anything historically, or scientifically that would justify the Board making changes to Kodiak's management plan.

Thank you for your time

Charles P. Fogle

907-230-7977

December 27, 2019

George Anderson
Chignik Intertribal Coalition
PO Box 9, Chignik Lagoon, AK 99565

Alaska Board of Fisheries
Board Support Section
PO Box 115526
Juneau, AK 99811-5526

Subject: CFEC Report for Chignik

Dear Alaska Board of Fisheries,

Since CFEC will not be presenting the Board with a CFEC report on Chignik fisheries, and because the Cape Igvak plan naturally raises questions about how Chignik salmon fleet compares to the Kodiak fleet, attached is Chapter 1 of from CFEC Report Number 19-1N January, 2019. This CFEC report was presented during the Chignik/Area M meeting in February of 2019 so the report is the most recent available but obviously will not include any information about the 2019 season. Kodiak references will be from the 2017 Board meeting since the 2020 information is not yet available.

Chignik's average ex-vessel value for salmon species, 1975 - 2017 is 84.2% sockeye, 6.9% pink, 4.4% Coho, 4% chum, and 0.4% Chinook. The Kodiak seine fleet averages 39.9% of its ex-vessel value from sockeye with 45.6 percent dependence on pink salmon. Chignik is much more dependent on sockeye than Kodiak.

83.6% of the Chignik fleet are Alaska residents with more than half residents of the Chignik area. Kodiak is 82.4% Alaska resident with the majority being within the Kodiak Borough.

Chignik latency rates were virtually 0% during the eighties and the first half of the nineties but latency rates of 20% to 25% are now typical in recent years - except 2018 when the latency shot up to 93.3% because of the disastrous fishery. Latency rates in Kodiak during the eighties were typically in the 20% to 30% range (oil spill year 1989 being an exception) and latency rates in recent years are in the 50% go 60% range. In 2015 Chignik has 91 total permits issued while Kodiak had 372.

CFEC estimates average real earnings (i.e. adjusted for inflation) as $720,691 for Chignik and $220,277 for Kodiak in 1977 & 1978 when the Board instituted the Cape Igvak Management plan. In 2015, Chignik's 5-year-average average earnings was $267,158 and for Kodiak $243,952. So at the beginning of the Cape Igvak Management Plan (CIMP) the average Chignik fishermen were making well over triple Kodiak average, but by 2015 the fisheries are roughly on par with each other. This in itself would justify abolishing the Cape Igvak Management Plan, but in the light of what has happened to the Chignik fishery since 2015 wherein Chignik's early run has failed repeatedly, causing severe economic hardship in the Chignik salmon fishery and all five of the Chignik fishery-dependent villages, reducing the impact of the Cape Igvak Management Plan is well justified.

Attached is Chapter 1 of the Chignik CFEC report number 19-1 N January, 2019. The full report is online at https://www.adfg.alaska.gov/index.cfm?adfg=fisheriesboard.meetinginfo&date=02-21-2019&meeting=anchorage. And the Kodiak CFEC report is online at https://www.adfg.alaska.gov/index.cfm?adfg=fisheriesboard.meetinginfo&date=01-10-2017&meeting=kodiak

I have limited my comparisons between Kodiak and Chignik to the years available in the 2017 Kodiak CFEC report. The last few years have degraded Chignik's standing substantially to Kodiak's and expectedly this will be evident in a new CFEC report that will be available for your January 2020 Board of Fisheries meeting in Kodiak.

Sincerely,

George Anderson

Chignik Intertribal Coalition

Chapter 1 Chignik Salmon Purse Seine Fishery

S01L Permit Holdings

Limited entry permits for the Chignik salmon purse seine fishery (S01L permits) were issued starting in 1975. CFEC has issued 91 S01L permits. Table 1-1 indicates the initial distribution and historical net changes in permit holdings for the fishery. Of this total, Alaska Locals received 35.2% (32/91) of the permits, Nonlocal Alaskans received 44.0% (40/91) of the permits, and Nonresidents received 20.9% (19/91). Every permit issued in this fishery was a transferable permit.

Table 1-1. Initial Issuance and Year-end 2017 Totals of Chignik Salmon Purse Seine Permits, With Net Changes Due to Permit Transfers, Migrations, and Cancellations, by Resident Type

INITIAL ISSUE			TRANSFERS		MIGRATIONS		CANCELLED		2017 YEAR-END	
Residency	*Total*	*Percent*	*Change*	*Percent Change from Initial*	*Change*	*Percent Change from Initial*	*Change*	*Percent Change from Initial*	*Total*	*Percent*
Local	32	35.2%	2	6.3%	5	15.6%	0	0.0%	39	42.9%
Nonlocal	40	44.0%	10	25.0%	-13	-32.5%	0	0.0%	37	40.7%
Nonresident	19	20.9%	-12	-63.2%	8	42.1%	0	0.0%	15	16.5%
Total	***91***	***100.0%***	***0***	***0.0%***	***0***	***0.0%***	***0***	***0.0%***	***91***	***100.0%***

The number of permits held by each resident type can change for three reasons: permits can be transferred to other resident types (transfer); permit holders can move from one location to another (migration); or permits can be cancelled (such as when a permit holder does not pay the renewal fee for two consecutive). This table indicates the extent to which these factors have contributed to net changes in permit holdings in this fishery.

From 2002 to 2005, the majority of S01L permit holders participated in a cooperative as established in the Chignik Area Cooperative Purse Seine Salmon Fishery Management Plan. The cooperative was repealed prior to the start of the 2006 commercial salmon season. From 2002 to 2004, the cooperative resulted in fewer permits used in the fishery as the earnings were spread among members of the cooperative, some of whom received benefits without fishing their permits. In 2005, the cooperative required all of its members to physically participate in the fishery. Please refer to the Alaska Department of Fish Game Fishery Management Report No. 07-56 for more information pertaining to this cooperative.

Exceptionally poor conditions existed in the 2018 Chignik Fishery, and led to a declaration of economic disaster for the region local to the fishery[2]. When and where possible, this report provides summary statistics for the harvests and earnings made in 2018 in the fishery. Although the 2018 data are preliminary as of this writing, presenting the data serves to illustrate the exceptionally poor conditions found in the fishery in 2018 when compared to previous years of the fishery.

[2] State of Alaska Office of the Governor. Press Release 18-103, August 23, 2018.

Transfers of S01L Permits

Under the Limited Entry Act's terms of free transferability, permits may be sold, traded, given away, or inherited. CFEC requires the completion of a survey with each transfer.[3] The surveys provide information such as transfer acquisition methods, the relationship between individuals in the transaction, and the sale amount for instances when the permit is sold.

Table 1-2. Transfer Acquisition Methods for Chignik Salmon Purse Seine Permits, 1980-2017

Acquisition Method	Chignik Salmon Purse Seine		Statewide Salmon Purse Seine		All Fisheries Statewide	
	Count	Percent	Count	Percent	Count	Percent
Gift	85	41.9%	1,178	31.6%	13,825	36.5%
Sale	106	52.2%	2,352	63.1%	22,262	58.8%
Trade	1	0.5%	64	1.7%	520	1.4%
Other	11	5.4%	133	3.6%	1,225	3.2%
Total	***203***		***3,727***		***37,832***	

Table 1-2 compares and contrasts transfer acquisition methods for the S01L permits, statewide salmon purse seine permits, and all limited entry permits between 1980 and 2017. Just over a two-fifths of all S01L permit transfers were gifts (41.9% or 85/203), more than half of all transfers were sales (52.2%, or 106/203), and a smaller percentage were trades (0.5% or 1/203) or other (5.4% or 11/203). The annual acquisition methods for S01L permits can be viewed in a different publication.[4]

Table 1-3. Relationships of Transferor to Transfer Recipients for Chignik Salmon Purse Seine Permits, 1980-2017

Relationship	Chignik Salmon Purse Seine		Statewide Salmon Purse Seine		All Fisheries Statewide	
	Count	Percent	Count	Percent	Count	Percent
Business Partner/Friend	21	10.3%	672	18.0%	6,992	18.5%
Member of Immediate Family	102	50.2%	1,192	32.0%	12,802	33.8%
Other Relative	7	3.4%	146	3.9%	1,743	4.6%
Other	73	36.0%	1,717	46.1%	16,295	43.1%
Total	***203***		***3,727***		***37,832***	

Table 1-3 shows the relationships between transferors and transfer recipients for S01L permits, and compares S01L permit transfers with statewide salmon purse seine permits, and all limited entry permits from 1980 to 2017. Transfers within the family, both immediate family members and other relatives, total 53.7% (109/203) of all transfers. This compares to 35.9% (1,338/3,727) for statewide salmon purse seine permits, and 38.4% (14,545/37,832) for all limited entry permits statewide.

[3] CFEC implemented the transfer survey in 1980.
[4] See *Changes in the Distribution of Alaska's Commercial Fisheries Entry Permits, 1975-2017*, CFEC Report No. 18-2N.

Emergency Transfers of S01L Permits

Commercial landings can be made with either permanently-held permits or with permits held temporarily through emergency transfers. Emergency transfers (ET) of permits are granted if illness, disability, death, required military or government service, or other unavoidable hardship of a temporary, unexpected, and unforeseen nature prevents the permanent permit holder from participating in the fishery. "Hardship" does not include the results of a permit holder's own economic decisions, or the results of economic, biological or regulatory variables which are normally part of the risk of doing business as a fisherman. At the end of the year, ET permits automatically revert back to the permanent permit holder.

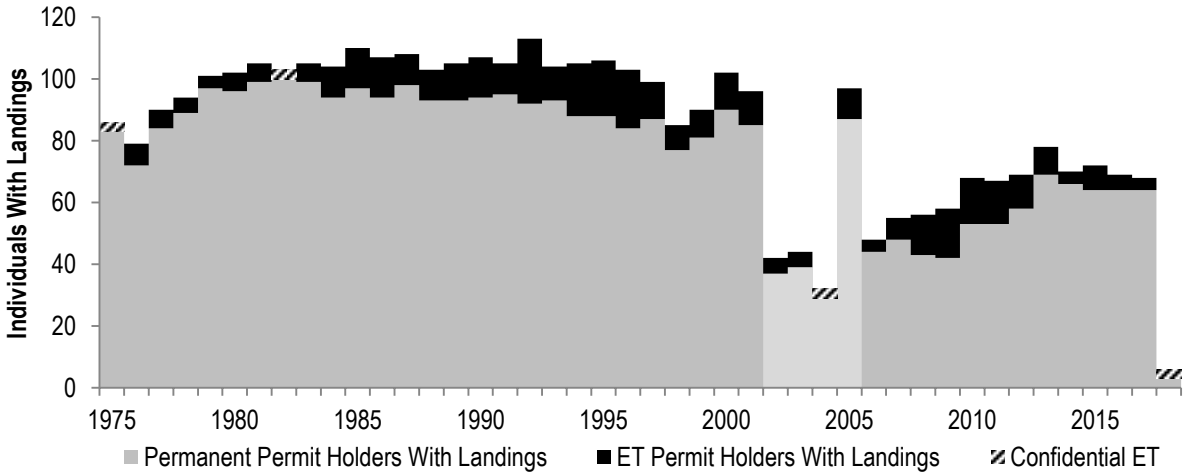
Table 1-4 and Figure 1-1 show the total number of individuals who recorded landings each year, and of that group, the number of individuals who made landings with ET permits. Some individuals who made landings with ET permits also made landings with permanent permits in the same year.

Table 1-4. Use of Emergency Transfer Permits in the Chignik Salmon Purse Seine Fishery, 1975-2018

Year	Individuals With Landings	ET Permit Holders With Landings	ET Rate
1975	86	1 to 3	-
1976	79	7	*8.9%*
1977	90	6	*6.7%*
1978	94	5	*5.3%*
1979	101	4	*4.0%*
1980	102	6	*5.9%*
1981	105	6	*5.7%*
1982	103	1 to 3	-
1983	105	6	*5.7%*
1984	104	10	*9.6%*
1985	110	13	*11.8%*
1986	107	13	*12.1%*
1987	108	10	*9.3%*
1988	103	10	*9.7%*
1989	105	12	*11.4%*
1990	107	13	*12.1%*
1991	105	10	*9.5%*
1992	113	21	*18.6%*
1993	104	11	*10.6%*
1994	105	17	*16.2%*
1995	106	18	*17.0%*
1996	103	19	*18.4%*
1997	99	12	*12.1%*
1998	85	8	*9.4%*
1999	90	9	*10.0%*
2000	102	12	*11.8%*
2001	96	11	*11.5%*
2002	42	5	*11.9%*
2003	44	5	*11.4%*
2004	32	1 to 3	-
2005	97	10	*10.3%*
2006	48	4	*8.3%*
2007	55	7	*12.7%*
2008	56	13	*23.2%*
2009	58	16	*27.6%*
2010	68	15	*22.1%*
2011	67	14	*20.9%*
2012	69	11	*15.9%*
2013	78	9	*11.5%*
2014	70	4	*5.7%*
2015	72	8	*11.1%*
2016	69	5	*7.2%*
2017	68	4	*5.9%*
2018*	6	1 to 3	-

- *From 2002 – 2005 the majority of S01L permit holders participated in a salmon cooperative. Some S01L permit holders benefited from the cooperative without using their permit from 2002 – 2004.*
- *2018 data is preliminary.*

Figure 1-1. Use of Emergency Transfer Permits in the Chignik Salmon Purse Seine Fishery, 1975-2018



Latent S01L Permits

CFEC regulations require individuals to renew their limited entry permits annually, regardless of whether they actually fish. Permits that are not used (don't record landings) in a given year are referred to herein as "latent" permits for that year.

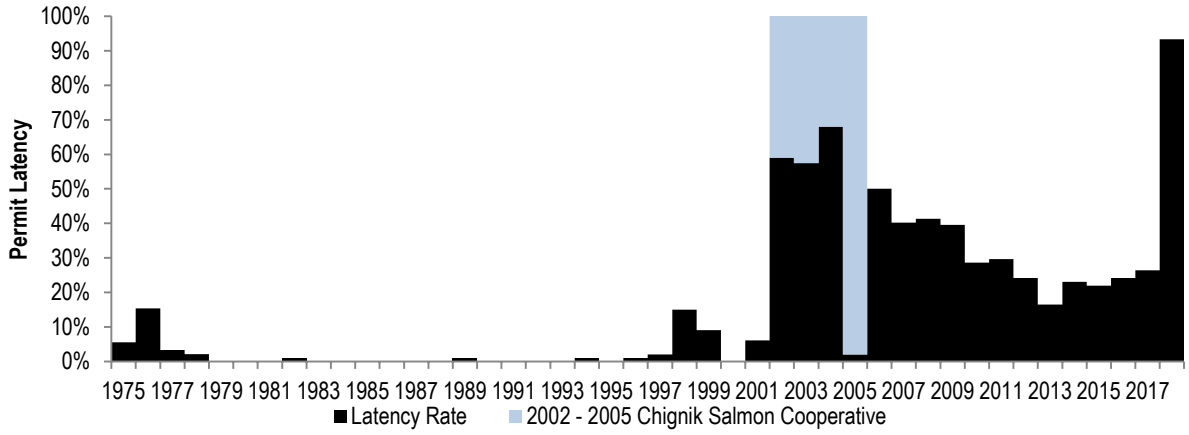
Table 1-5 indicates the total number of viable S01L permits issued each year, the number of permits fished (with commercial landings), and the rate of permit latency. Viable permits include both interim entry and permanent permits. Note that for this table, in years when a single individual held an interim-entry permit and was also issued a permanent permit, only the permanent permit is counted. The rate of latency is depicted in Figure 1-2. There are many reasons why an individual might not fish in any given year. This table and figure do not explain any of these reasons.

Table 1-5. Chignik Salmon Purse Seine Permit Latency, 1975-2018

1975	91	86	5.5%	1990	101	101	0.0%				
1976	91	77	15.4%	1991	101	101	0.0%	2006	96	48	50.0%
1978	95	93	2.1%	1993	102	102	0.0%	2008	92	54	41.3%
1979	101	101	0.0%	1994	100	99	1.0%	2009	91	55	39.6%
1981	102	102	0.0%	1996	101	100	1.0%	2011	91	64	29.7%
1982	102	101	1.0%	1997	100	98	2.0%	2012	91	69	24.2%
1984	100	100	0.0%	1999	99	90	9.1%	2014	91	70	23.1%
1985	101	101	0.0%	2000	99	99	0.0%	2015	91	71	22.0%
1987	102	102	0.0%					2017	91	67	26.4%
1988	101	101	0.0%					2018*	90	6	93.3%

- *When an individual with an interim-entry permit is issued a permanent permit in the same year, only the permanent permit is counted in the above table.*
- *'Permits Fished' is the number of CFEC permits that were used to record commercial landings in that year.*
- *From 2002 – 2005 the majority of S01L permit holders participated in a salmon cooperative. Some S01L permit holders benefited from the cooperative without using their permit from 2002 – 2004.*
- *2018 data is preliminary.*

Figure 1-2. Chignik Salmon Purse Seine Permit Latency Rate, 1975-2018



New Entrants into the Chignik Salmon Purse Seine Fishery

New entrants are defined herein as individuals who, for the first time, record a landing on a permanent S01L permit. It is important to note that initial permit holders are not considered new entrants because they needed a proven fishing history prior to 1975 in order to become an initial permit holder. Individuals who only make landings on an emergency transfer or interim-entry permit for any given year are not considered in this table.

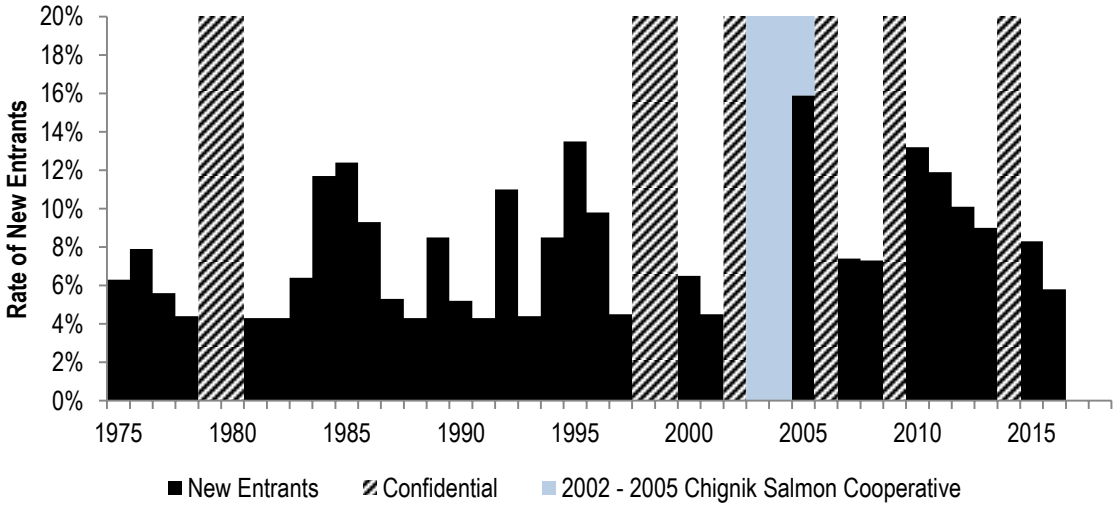
Table 1-6 and Figure 1-3 describe individuals rather than permits. An individual may hold up to two permits in this fishery, but can only fish one of them. An individual may hold one S01L permit one year, and then in subsequent years hold a different S01L permit. Likewise, individuals may enter and exit the fishery multiple times over the years. Individuals are only counted once as a new entrant and only in the year in which they made their first documented landing on a permanent permit.

Table 1-6. New Entrants into the Chignik Salmon Purse Seine Fishery, 1975-2018

Year	*Individuals w/Landings*	New Entrants Count	New Entrants Percent
1975	80	5	*6.3%*
1976	76	6	*7.9%*
1977	89	5	*5.6%*
1978	90	4	*4.4%*
1979	90	1 to 3	-
1980	91	1 to 3	-
1981	93	4	*4.3%*
1982	92	4	*4.3%*
1983	94	6	*6.4%*
1984	94	11	*11.7%*
1985	97	12	*12.4%*
1986	97	9	*9.3%*
1987	95	5	*5.3%*
1988	92	4	*4.3%*
1989	94	8	*8.5%*
1990	96	5	*5.2%*
1991	93	4	*4.3%*
1992	100	11	*11.0%*
1993	91	4	*4.4%*
1994	94	8	*8.5%*
1995	96	13	*13.5%*
1996	92	9	*9.8%*
1997	89	4	*4.5%*
1998	76	1 to 3	-
1999	82	1 to 3	-
2000	93	6	*6.5%*
2001	88	4	*4.5%*
2002	37	1 to 3	-
2003	39	0	*0.0%*
2004	29	0	*0.0%*
2005	88	14	*15.9%*
2006	45	1 to 3	-
2007	54	4	*7.4%*
2008	55	4	*7.3%*
2009	58	1 to 3	-
2010	68	9	*13.2%*
2011	67	8	*11.9%*
2012	69	7	*10.1%*
2013	78	7	*9.0%*
2014	70	1 to 3	-
2015	72	6	*8.3%*
2016	69	4	*5.8%*
2017	68	0	*0.0%*
*2018**	6	0	*0.0%*

- *This table excludes individuals with interim-entry and emergency transfer permits.*
- *Data is masked for confidentiality when fewer than four individuals are included in the count.*
- *From 2002 – 2005 the majority of S01L permit holders participated in a salmon cooperative. Some S01L permit holders benefited from the cooperative without using their permit from 2002 – 2004.*
- *2018 data is preliminary.*

Figure 1-3. Rate of New Entrants into the Chignik Salmon Purse Seine Fishery, 1975-2018



Age of S01L Permit Holders

Table 1-7. Mean Age of Select CFEC Permit Holders and the General Alaskan Population

Year	S01L	Statewide Salmon Purse Seine	Statewide All Permits	Mean AK Worker Age
1980	44.5	42.3	38.9	33.4
1981	44.5	42.4	39.9	33.5
1982	43.7	42.2	40.0	33.6
1983	44.5	41.9	40.2	33.7
1984	43.8	42.1	40.4	33.8
1985	43.8	42.6	40.8	34.0
1986	43.8	42.5	41.0	34.2
1987	44.8	42.5	40.9	34.5
1988	45.0	42.7	41.2	34.9
1989	44.1	42.8	41.5	35.3
1990	44.0	43.2	42.0	35.5
1991	43.9	43.5	42.5	35.9
1992	44.9	44.0	42.9	36.2
1993	43.7	44.6	43.5	36.5
1994	43.6	45.0	44.0	36.7
1995	43.4	45.4	44.4	37.0
1996	43.3	45.8	44.8	37.2
1997	43.5	46.4	45.1	37.4
1998	45.0	46.8	45.6	37.6
1999	46.0	47.2	46.0	37.8
2000	46.2	47.3	46.4	37.9
2001	47.3	48.0	46.9	38.1
2002	47.9	48.5	47.4	38.3
2003	49.1	49.4	47.9	38.4
2004	49.9	50.1	48.2	38.6
2005	50.4	50.6	48.4	38.7
2006	51.7	51.1	48.7	38.8
2007	52.6	51.5	48.9	38.9
2008	52.5	51.1	49.0	39.0
2009	53.2	51.3	49.3	39.1
2010	52.7	51.4	49.5	39.2
2011	52.1	51.3	49.6	39.4
2012	52.6	51.4	49.8	39.4
2013	51.4	51.2	50.0	39.5
2014	52.1	51.0	50.2	39.5
2015	53.0	51.4	50.6	39.5
2016	53.2	52.0	50.9	39.6
2017	53.6	52.4	51.3	39.6

- *Mean AK Worker Age is the annual average age of all Alaskans age 16-64 as reported by the Alaska Department of Labor and Workforce Development, Research and Analysis Section.*
- *Age data from the CFEC permit file is as of December 31st of each year.*

Table 1-7 shows the annual mean age of four different cohorts of people: 1) Chignik Salmon Purse Seine (S01L) permit holders; 2) statewide salmon purse seine permit holders 3) all CFEC limited entry permit holders; and 5) the Alaskan worker age population.

Note that these figures include ages of permit holders for both transferable and non-transferable permits; however, there were no non-transferable S01L permits issued. Some individuals hold permits in more than one fishery; in these cases, the age of the permit holder is counted once for each permit that he or she holds.

The mean age of the general Alaskan worker age population has increased 6.1 years between 1980 and 2017, which represents an 18.4% increase. The percent change in ages over the same period for all CFEC permit holders was 31.7% (12.4 years), and 23.7% (10.0 years) for the statewide salmon purse seine permit holders.

For S01L permit holders, the mean age increased 20.5% (9.1 years).

S01L Permit Value

Many permit transfers are non-monetary transactions (see Table 1-2). Table 1-8 considers solely arms-length market transactions where permits are sold. CFEC estimated values are expressed in both nominal and real (adjusted for inflation) terms.

Table 1-8. CFEC Estimated Value of Chignik Salmon Purse Seine Permits

	S01L Permit	Nominal		Real	
Year	Sales	Permit Value	Standard Deviation	Permit Value	Standard Deviation
1984	4	$322,500	-	$760,839	-
1985	3	$321,233	-	$731,790	-
1987	0	$315,667	-	$681,129	-
1988	2	$360,000	-	$745,927	-
1989	2	$371,667	-	$734,702	-
1990	2	$416,667	-	$781,434	-
1991	2	$409,400	$58,450	$736,800	$105,193
1992	2	$403,100	$11,450	$704,261	$20,004
1993	2	$349,800	$87,800	$593,377	$148,938
1994	3	$238,300	$58,650	$394,144	$97,006
1995	6	$228,300	$11,250	$367,197	$18,094
1996	4	$194,500	$5,250	$303,861	$8,202
1997	6	$188,300	$11,500	$287,577	$17,563
1998	0	$185,500	$12,800	$278,956	$19,249
1999	4	$158,800	$48,700	$233,644	$71,653
2000	3	$200,000	$46,900	$284,692	$66,760
2001	1	$185,800	$43,250	$257,161	$59,861
2002	1	$186,600	$37,500	$254,249	$51,095
2003	4	$179,500	$9,800	$239,125	$13,055
2004	1	$182,000	$4,950	$236,166	$6,423
2005	5	$159,600	$26,200	$200,313	$32,883
2006	3	$146,500	$28,150	$178,125	$34,227
2007	1	$131,500	$12,350	$155,459	$14,600
2008	3	$91,300	$22,500	$103,944	$25,616
2009	4	$70,800	$8,100	$80,893	$9,255
2010	8	$78,400	$11,150	$88,131	$12,534
2011	4	$95,100	$4,100	$103,632	$4,468
2012	2	$97,600	$2,750	$104,200	$2,936
2013	4	$186,300	$26,250	$196,027	$27,621
2014	4	$211,300	$22,500	$218,783	$23,297
2015	1	$227,500	$14,450	$235,278	$14,944
2016	3	$167,200	$55,450	$170,762	$56,631
2017	0	$167,200	$55,450	$167,200	$55,450
2018	1	$136,400	$21,800	$133,154	$21,281

- *Permit values represent averages of all arms-length sale transactions over the year. Beginning in 1991, additional data from recent months in the preceding year may be included until at least four observations can be averaged.*
- *The Standard Deviation was not calculated prior to 1991.*
- *Real permit values were calculated using the 2017 Consumer Price Index from the U.S. Bureau of Labor Statistics.*
- *From 2002 – 2005 the majority of S01L permit holders participated in a salmon cooperative. Some S01L permit holders benefited from the cooperative without using their permit from 2002 – 2004. Average Earnings will not properly reflect estimated earnings by permit holder or vessel for these years.*

Chignik Salmon Purse Seine Vessel Characteristics

Table 1-9 reports on various vessel characteristics of the Chignik salmon purse seine fleet since 1978. Reported in this table are the age, length, horsepower, hold refrigeration, and hold capacity. This data is from the vessel license file which includes voluntarily supplied information on vessels. The first column of each category is the count of vessels with the described characteristics; other statistics reported include the 25th percentile, median, and 75th percentile.

Table 1-9. Chignik Salmon Purse Seine Vessel Characteristics

	Vessel	Age				Length				Horsepower				Refrigeration			Hold Capacity			
Year	Count	Count	25%	Median	75%	Count	25%	Median	75%	Count	25%	Median	75%	Considered	Count	%	Count	25%	Median	75%
1978	*95*	91	1	6	15	*89*	33	35	38	*90*	110	200	270	85	0	0.0%	*32*	300	400	500
1979	*109*	101	1	6	14	*103*	33	36	38	*98*	120	210	280	93	0	0.0%	*34*	350	400	600
1980	*103*	93	2	3	9	*94*	34	38	40	*85*	150	230	290	85	1	1.2%	*32*	400	500	965
1981	*103*	96	2	4	9	*96*	35	38	42	*91*	190	250	300	90	2	2.2%	*33*	400	500	700
1982	*103*	98	3	4	8	*99*	36	38	42	*93*	210	260	300	94	3	3.2%	*33*	400	600	925
1983	*98*	95	4	5	10	*95*	36	38	42	*91*	210	260	307	89	2	2.2%	*34*	400	600	750
1984	*102*	101	5	6	11	*101*	36	38	42	*99*	200	260	307	97	4	4.1%	*41*	400	600	800
1985	*103*	100	6	7	12	*101*	36	38	42	*99*	210	260	330	97	4	4.1%	*41*	500	700	980
1986	*104*	103	6	8	12	*103*	36	38	42	*101*	210	270	325	99	5	5.1%	*39*	400	650	925
1987	*104*	104	7	9	12	*104*	38	39	42	*100*	213	278	343	102	4	3.9%	*42*	500	700	800
1988	*109*	108	7	10	13	*108*	38	41	44	*105*	230	280	343	105	4	3.8%	*45*	500	700	800
1989	*106*	106	8	10	12	*106*	38	42	46	*104*	230	300	395	101	6	5.9%	*44*	520	710	1,000
1990	*101*	101	8	11	13	*101*	38	42	46	*99*	238	310	453	97	5	5.2%	*45*	600	800	1,000
1991	*105*	105	6	12	14	*105*	38	42	47	*103*	250	326	540	101	11	10.9%	*46*	600	800	1,000
1992	*102*	102	6	13	15	*102*	38	42	47	*100*	259	335	545	97	11	11.3%	*46*	600	800	1,000
1993	*104*	104	7	14	16	*104*	38	42	47	*102*	270	340	550	100	15	15.0%	*50*	540	800	1,000
1994	*101*	101	8	14	16	*101*	38	42	47	*99*	270	340	550	94	17	18.1%	*46*	540	800	1,000
1995	*103*	103	7	15	17	*103*	38	42	48	*98*	250	326	550	93	23	24.7%	*49*	500	800	1,000
1996	*102*	102	8	16	18	*102*	40	44	48	*97*	258	350	550	91	24	26.4%	*47*	500	800	1,000
1997	*99*	99	9	17	19	*99*	40	44	48	*94*	258	347	585	88	23	26.1%	*45*	500	800	1,000
1998	*85*	85	13	19	21	*85*	38	42	47	*80*	250	326	550	75	15	20.0%	*33*	400	800	950
1999	*93*	92	13	20	21	*92*	38	43	48	*87*	250	340	550	82	21	25.6%	*40*	400	800	1,000
2000	*100*	100	13	20	22	*100*	41	46	50	*95*	270	350	585	90	27	30.0%	*47*	500	800	1,000
2001	*92*	92	15	22	23	*92*	40	45	48	*87*	275	343	550	82	23	28.0%	*43*	500	812	1,000
2002	*42*	42	16	22	24	*42*	40	44	48	*41*	280	350	550	39	8	20.5%	*16*	500	800	975
2003	*45*	45	19	24	25	*45*	40	44	47	*42*	270	338	550	40	6	15.0%	*14*	480	745	950
2004	*34*	34	19	24	26	*34*	40	42	47	*33*	260	330	550	33	6	18.2%	*15*	480	800	1,000
2005	*46*	46	20	25	26	*46*	38	42	46	*44*	268	335	525	42	10	23.8%	*21*	448	800	950
2006	*55*	55	20	27	28	*55*	38	46	48	*52*	255	358	625	51	15	29.4%	*26*	480	800	1,000
2007	*55*	54	20	27	29	*54*	41	46	48	*50*	275	350	600	48	14	29.2%	*20*	440	800	1,000
2008	*54*	54	23	28	30	*54*	38	44	48	*51*	240	340	550	50	17	34.0%	*21*	350	700	950
2009	*55*	55	24	30	32	*55*	40	44	48	*52*	230	335	525	51	17	33.3%	*19*	225	800	1,000
2010	*65*	65	25	31	33	*65*	40	44	48	*62*	240	342	500	61	24	39.3%	*27*	400	800	1,040
2011	*68*	68	26	32	34	*68*	39	44	48	*64*	240	347	493	65	30	46.2%	*26*	500	750	1,000
2012	*68*	68	29	33	35	*68*	40	44	48	*65*	240	340	480	65	30	46.2%	*28*	450	710	1,000
2013	*77*	77	28	34	36	*77*	40	44	48	*74*	270	355	480	74	42	56.8%	*34*	400	710	1,040
2014	*71*	71	29	35	37	*71*	38	44	49	*68*	249	350	525	68	40	58.8%	*31*	400	690	1,000
2015	*70*	70	29	35	37	*70*	40	46	54	*67*	270	365	600	67	42	62.7%	*30*	500	806	1,090
2016	*67*	67	29	36	38	*67*	42	46	54	*65*	280	400	620	65	43	66.2%	*30*	500	819	1,197
2017	*66*	66	31	38	39	*66*	40	46	50	*63*	280	370	600	63	40	63.5%	*29*	500	800	1,000
*2018**	*6*	6	31	34	41	*6*	47	48	48	*5*	400	480	1,000	6	5	83.3%	*2*	800	863	925
Total	***325***					***312***	**36**	**42**	**48**	***304***	**200**	**300**	**425**	**291**	**92**	**31.6%**	***151***	**400**	**700**	**1,000**

- *Total includes every vessel used in this fishery from 1978 to 2018.*
- *From 2002 – 2005 the majority of S01L permit holders participated in a salmon cooperative. Some S01L permit holders benefited from the cooperative without using their permit from 2002 – 2004. Average Earnings will not properly reflect estimated earnings by permit holder or vessel for these years.*
- *2018 data is preliminary.*

Table 1-10 provides additional Chignik salmon purse seine vessel characteristics. Included are statistics of engine propulsion and hull material for each year since 1978.

Table 1-10. Additional Chignik Salmon Purse Seine Vessel Characteristics

	Vessel	Engine Power					Hull Material								
Year	Count	Count	Diesel		Gas		Count	Aluminum		Fiberglass		Steel		Wood	
1978	*95*	*91*	90	*98.9%*	1	*1.1%*	*92*	2	*2.2%*	50	*54.3%*	0	*0.0%*	40	*43.5%*
1979	*109*	*103*	102	*99.0%*	1	*1.0%*	*104*	2	*1.9%*	64	*61.5%*	0	*0.0%*	38	*36.5%*
1980	*103*	*95*	95	*100.0%*	0	*0.0%*	*95*	2	*2.1%*	70	*73.7%*	0	*0.0%*	23	*24.2%*
1981	*103*	*96*	95	*99.0%*	1	*1.0%*	*96*	3	*3.1%*	77	*80.2%*	0	*0.0%*	16	*16.7%*
1982	*103*	*99*	99	*100.0%*	0	*0.0%*	*98*	2	*2.0%*	83	*84.7%*	0	*0.0%*	13	*13.3%*
1983	*98*	*95*	95	*100.0%*	0	*0.0%*	*95*	2	*2.1%*	81	*85.3%*	0	*0.0%*	12	*12.6%*
1984	*102*	*101*	99	*98.0%*	2	*2.0%*	*101*	2	*2.0%*	86	*85.1%*	0	*0.0%*	13	*12.9%*
1985	*103*	*100*	96	*96.0%*	4	*4.0%*	*101*	2	*2.0%*	87	*86.1%*	0	*0.0%*	12	*11.9%*
1986	*104*	*101*	95	*94.1%*	6	*5.9%*	*103*	2	*1.9%*	91	*88.3%*	0	*0.0%*	10	*9.7%*
1987	*104*	*103*	100	*97.1%*	3	*2.9%*	*104*	3	*2.9%*	92	*88.5%*	0	*0.0%*	9	*8.7%*
1988	*109*	*107*	104	*97.2%*	3	*2.8%*	*108*	3	*2.8%*	95	*88.0%*	0	*0.0%*	10	*9.3%*
1989	*106*	*105*	102	*97.1%*	3	*2.9%*	*106*	2	*1.9%*	96	*90.6%*	0	*0.0%*	8	*7.5%*
1990	*101*	*101*	100	*99.0%*	1	*1.0%*	*101*	1	*1.0%*	93	*92.1%*	1	*1.0%*	6	*5.9%*
1991	*105*	*105*	104	*99.0%*	1	*1.0%*	*105*	0	*0.0%*	98	*93.3%*	2	*1.9%*	5	*4.8%*
1992	*102*	*102*	101	*99.0%*	1	*1.0%*	*102*	0	*0.0%*	98	*96.1%*	2	*2.0%*	2	*2.0%*
1993	*104*	*104*	104	*100.0%*	0	*0.0%*	*104*	0	*0.0%*	100	*96.2%*	2	*1.9%*	2	*1.9%*
1994	*101*	*101*	100	*99.0%*	1	*1.0%*	*101*	1	*1.0%*	98	*97.0%*	1	*1.0%*	1	*1.0%*
1995	*103*	*100*	98	*98.0%*	2	*2.0%*	*103*	1	*1.0%*	99	*96.1%*	2	*1.9%*	1	*1.0%*
1996	*102*	*98*	97	*99.0%*	1	*1.0%*	*102*	1	*1.0%*	99	*97.1%*	1	*1.0%*	1	*1.0%*
1997	*99*	*95*	95	*100.0%*	0	*0.0%*	*99*	1	*1.0%*	95	*96.0%*	2	*2.0%*	1	*1.0%*
1998	*85*	*81*	81	*100.0%*	0	*0.0%*	*85*	0	*0.0%*	83	*97.6%*	1	*1.2%*	1	*1.2%*
1999	*93*	*88*	87	*98.9%*	1	*1.1%*	*92*	2	*2.2%*	88	*95.7%*	1	*1.1%*	1	*1.1%*
2000	*100*	*96*	96	*100.0%*	0	*0.0%*	*100*	1	*1.0%*	96	*96.0%*	3	*3.0%*	0	*0.0%*
2001	*92*	*88*	88	*100.0%*	0	*0.0%*	*92*	1	*1.1%*	88	*95.7%*	3	*3.3%*	0	*0.0%*
2002	*42*	*41*	41	*100.0%*	0	*0.0%*	*42*	1	*2.4%*	40	*95.2%*	1	*2.4%*	0	*0.0%*
2003	*45*	*43*	43	*100.0%*	0	*0.0%*	*45*	0	*0.0%*	44	*97.8%*	1	*2.2%*	0	*0.0%*
2004	*34*	*34*	34	*100.0%*	0	*0.0%*	*34*	0	*0.0%*	33	*97.1%*	1	*2.9%*	0	*0.0%*
2005	*46*	*45*	44	*97.8%*	1	*2.2%*	*46*	2	*4.3%*	44	*95.7%*	0	*0.0%*	0	*0.0%*
2006	*55*	*53*	53	*100.0%*	0	*0.0%*	*55*	1	*1.8%*	54	*98.2%*	0	*0.0%*	0	*0.0%*
2007	*55*	*51*	51	*100.0%*	0	*0.0%*	*54*	1	*1.9%*	53	*98.1%*	0	*0.0%*	0	*0.0%*
2008	*54*	*52*	50	*96.2%*	2	*3.8%*	*54*	1	*1.9%*	53	*98.1%*	0	*0.0%*	0	*0.0%*
2009	*55*	*53*	51	*96.2%*	2	*3.8%*	*55*	0	*0.0%*	54	*98.2%*	1	*1.8%*	0	*0.0%*
2010	*65*	*63*	61	*96.8%*	2	*3.2%*	*65*	0	*0.0%*	64	*98.5%*	1	*1.5%*	0	*0.0%*
2011	*68*	*66*	64	*97.0%*	2	*3.0%*	*67*	0	*0.0%*	63	*94.0%*	3	*4.5%*	1	*1.5%*
2012	*68*	*66*	65	*98.5%*	1	*1.5%*	*68*	0	*0.0%*	65	*95.6%*	2	*2.9%*	1	*1.5%*
2013	*77*	*75*	74	*98.7%*	1	*1.3%*	*77*	1	*1.3%*	72	*93.5%*	3	*3.9%*	1	*1.3%*
2014	*71*	*69*	68	*98.6%*	1	*1.4%*	*71*	1	*1.4%*	66	*93.0%*	4	*5.6%*	0	*0.0%*
2015	*70*	*68*	67	*98.5%*	1	*1.5%*	*70*	2	*2.9%*	63	*90.0%*	5	*7.1%*	0	*0.0%*
2016	*67*	*66*	65	*98.5%*	1	*1.5%*	*67*	1	*1.5%*	61	*91.0%*	5	*7.5%*	0	*0.0%*
2017	*66*	*64*	63	*98.4%*	1	*1.6%*	*66*	2	*3.0%*	61	*92.4%*	3	*4.5%*	0	*0.0%*
*2018**	*6*	*5*	5	*100.0%*	0	*0.0%*	*6*	0	*0.0%*	6	*100.0%*	0	*0.0%*	0	*0.0%*
Total	***325***	***308***	**286**	***92.9%***	**22**	***7.1%***	***312***	**14**	***4.5%***	**241**	***77.2%***	**12**	***3.8%***	**45**	***14.4%***

- *Total includes every vessel used in this fishery from 1978 to 2018.*
- *From 2002 – 2005 the majority of S01L permit holders participated in a salmon cooperative. Some S01L permit holders benefited from the cooperative without using their permit from 2002 – 2004. Average Earnings will not properly reflect estimated earnings by permit holder or vessel for these years.*
- *2018 data is preliminary.*

Participation and Earnings

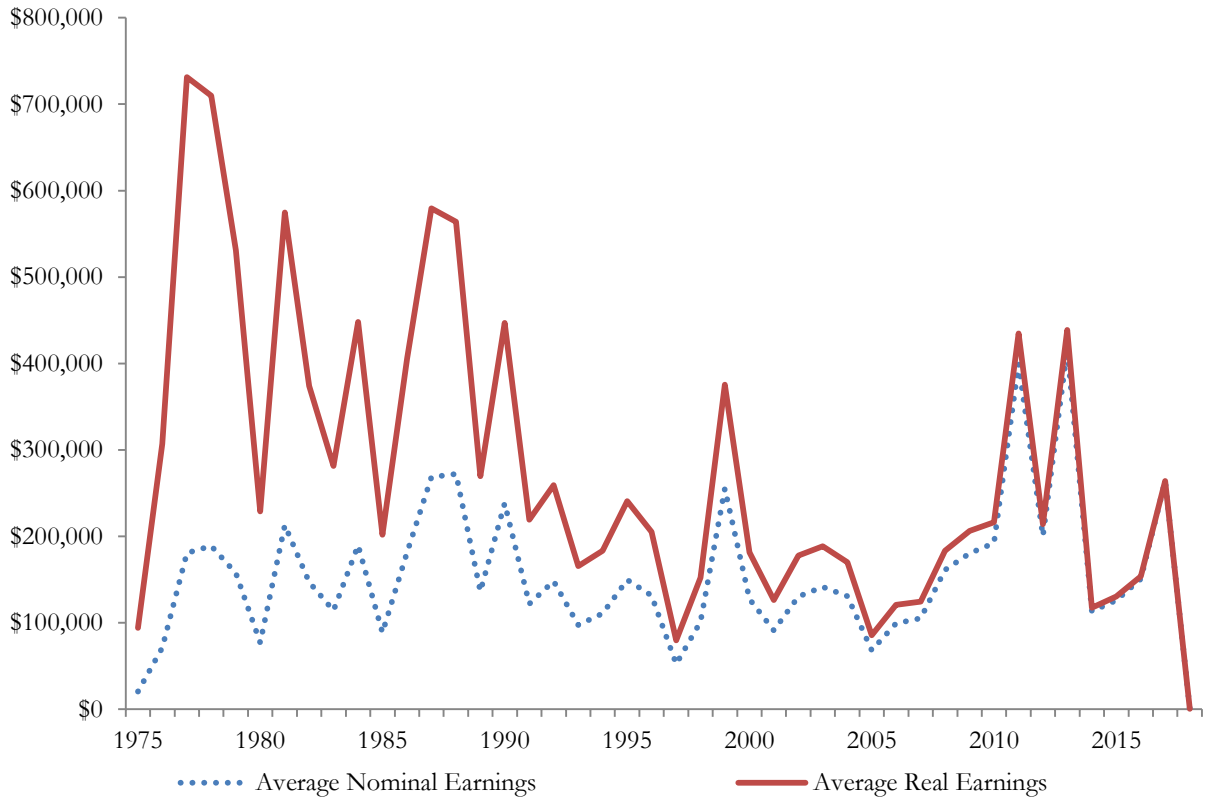
Earnings are estimated from weighted average ex-vessel prices, and as noted earlier, largely stem from the ADF&G Commercial Operators Annual Report and fish ticket values. Earnings shown in Figure 1-4 are for both nominal and real dollars using the 2017 Consumer Price Index from the U.S. Bureau of Labor Statistics.

Permit counts include interim-entry permits and permanent permits. Interim-entry permits are issued to individuals during the period when their applications for permanent permits are in adjudication. The last year an interim-entry permit was held for the Chignik salmon purse seine fishery was in 2008. Some individuals made landings on both an interim-entry permit and subsequently on their newly issued permanent permit in the same year; for these instances, only the permanent permit is counted in this report.

Table 1-11 reports the number of permits issued, permits and vessels with landings, and estimated gross earnings in the Chignik salmon purse seine fishery from 1975 to 2018. Note that the figures by permit in this table span the entire year, regardless of who held the permit or however many times the permit was transferred.

Table 1-12 reports the number of permit holders (people) and estimated real (inflation-adjusted) gross earnings by each resident type.

Figure 1-4. Estimated Nominal and Real Average Gross Earnings Per Chignik Salmon Purse Seine Permit



- *Real earnings are adjusted for inflation using the 2017 U.S. Bureau of Labor Statistics Consumer Price Index.*

Table 1-11. Estimated Total Gross Earnings (Real and Nominal) for the Chignik Salmon Purse Seine Fishery, With Average Earnings (Real) by Permit and Vessel, 1975-2018

Year	Permits Issued	Total Gross Earnings Nominal	Total Gross Earnings Real	Permits With Landings	Average Real Earnings	Vessels With Landings	Average Real Vessel Earnings
1975	91	$1,779,704	$8,108,568	86	$94,286	86	$94,286
1976	91	$5,486,251	$23,634,268	77	$306,939	78	$303,003
1977	91	$15,912,254	$64,363,229	88	$731,400	88	$731,400
1978	95	$17,562,986	$66,028,208	93	$709,981	95	$695,034
1979	101	$15,890,341	$53,650,694	101	$531,195	109	$492,208
1980	101	$7,778,332	$23,138,650	101	$229,096	103	$224,647
1981	102	$21,733,891	$58,607,385	102	$574,582	103	$569,004
1982	102	$14,867,916	$37,766,046	101	$373,921	103	$366,661
1983	100	$11,436,399	$28,145,484	100	$281,455	98	$287,199
1984	100	$18,989,185	$44,799,124	100	$447,991	102	$439,207
1985	101	$8,955,351	$20,400,890	101	$201,989	103	$198,067
1986	100	$18,139,377	$40,568,651	100	$405,687	104	$390,083
1987	102	$27,389,328	$59,099,226	102	$579,404	104	$568,262
1988	101	$27,492,891	$56,965,827	101	$564,018	109	$522,622
1989	101	$13,646,696	$26,976,436	100	$269,764	106	$254,495
1990	101	$24,062,162	$45,127,139	101	$446,803	101	$446,803
1991	101	$12,300,704	$22,137,655	101	$219,185	105	$210,835
1992	101	$14,988,314	$26,186,283	101	$259,270	102	$256,728
1993	102	$9,952,323	$16,882,446	102	$165,514	104	$162,331
1994	100	$10,980,605	$18,161,713	99	$183,452	101	$179,819
1995	100	$14,961,281	$24,063,709	100	$240,637	103	$233,628
1996	101	$13,150,294	$20,544,295	100	$205,443	102	$201,415
1997	100	$5,125,222	$7,827,379	98	$79,871	99	$79,064
1998	100	$8,617,756	$12,959,414	85	$152,464	85	$152,464
1999	99	$22,966,602	$33,790,958	90	$375,455	93	$363,344
2000	99	$12,629,695	$17,977,879	99	$181,595	100	$179,779
2001	98	$8,411,090	$11,641,595	92	$126,539	92	$126,539
2002	100	$5,348,911	$7,288,078	41	$177,758	42	$173,526
2003	101	$6,088,452	$8,110,877	43	$188,625	45	$180,242
2004	100	$4,191,186	$5,438,558	32	$169,955	34	$159,958
2005	99	$6,627,770	$8,318,479	97	$85,758	46	$180,836
2006	96	$4,764,730	$5,793,306	48	$120,694	55	$105,333
2007	92	$5,798,496	$6,854,990	55	$124,636	55	$124,636
2008	92	$8,702,917	$9,908,172	54	$183,485	54	$183,485
2009	91	$9,930,644	$11,346,292	55	$206,296	55	$206,296
2010	91	$12,509,651	$14,062,285	65	$216,343	65	$216,343
2011	91	$25,542,055	$27,833,628	64	$434,900	68	$409,318
2012	91	$13,842,993	$14,779,108	69	$214,190	68	$217,340
2013	91	$31,698,894	$33,353,937	76	$438,868	77	$433,168
2014	91	$7,935,605	$8,216,644	70	$117,381	71	$115,727
2015	91	$8,955,851	$9,262,028	71	$130,451	70	$132,315
2016	91	$10,403,040	$10,624,662	69	$153,981	67	$158,577
2017	91	$17,685,960	$17,685,960	67	$263,970	66	$267,969
2018*	90	$3,983	$3,889	6	$648	6	$648

- *Adjusted for inflation to 2017 dollars using U.S. Bureau of Labor Statistics Consumer Price Index.*
- *Counts will differ from CFEC on-line Basic Information Tables where the on-line data does not account for the combination of interim-entry permits that were issued as permanent permits in the same year.*
- *From 2002 – 2005 the majority of S01L permit holders participated in a salmon cooperative. Some S01L permit holders benefited from the cooperative without using their permit from 2002 – 2004. Average Earnings will not properly reflect estimated earnings by permit holder or vessel for these years.*
- *2018 data is preliminary.*

Table 1-12. Estimated Real Gross Earnings for Permit Holders in the Chignik Salmon Purse Seine Fishery by Resident Type, 1975-2018

	Local			*Nonlocal*			*Nonresident*			*Total*		
		Gross Earnings			Gross Earnings			Gross Earnings			Gross Earnings	
Year	People	Average	Total	People	Average	Total	People	Average	Total	People	Average	Total
1975	30	$108,424	$3,252,709	37	$85,063	$3,147,338	19	$89,922	$1,708,522	86	$94,286	$8,108,568
1976	31	$290,773	$9,013,976	33	$313,873	$10,357,794	15	$284,167	$4,262,498	79	$299,168	$23,634,268
1977	33	$714,158	$23,567,218	40	$735,390	$29,415,609	17	$669,435	$11,380,402	90	$715,147	$64,363,229
1978	38	$637,375	$24,220,265	43	$759,274	$32,648,763	13	$704,552	$9,159,180	94	$702,428	$66,028,208
1979	38	$447,136	$16,991,168	49	$584,855	$28,657,882	14	$571,546	$8,001,643	101	$531,195	$53,650,694
1980	43	$199,525	$8,579,586	45	$253,421	$11,403,956	14	$225,365	$3,155,108	102	$226,850	$23,138,650
1981	47	$495,749	$23,300,187	40	$663,946	$26,557,824	18	$486,076	$8,749,374	105	$558,166	$58,607,385
1982	46	$358,334	$16,483,351	41	$396,882	$16,272,181	16	$313,157	$5,010,514	103	$366,661	$37,766,046
1983	49	$249,192	$12,210,415	40	$299,818	$11,992,738	16	$246,396	$3,942,332	105	$268,052	$28,145,484
1984	53	$385,160	$20,413,464	36	$480,400	$17,294,416	15	$472,750	$7,091,244	104	$430,761	$44,799,124
1985	56	$208,461	$11,673,843	40	$173,035	$6,921,395	14	$128,975	$1,805,652	110	$185,463	$20,400,890
1986	60	$371,508	$22,290,462	34	$415,321	$14,120,904	13	$319,791	$4,157,285	107	$379,146	$40,568,651
1987	57	$544,902	$31,059,409	37	$570,266	$21,099,859	14	$495,711	$6,939,958	108	$547,215	$59,099,226
1988	52	$504,116	$26,214,054	36	$595,730	$21,446,275	15	$620,367	$9,305,498	103	$553,066	$56,965,827
1989	52	$308,160	$16,024,308	36	$235,233	$8,468,373	17	$146,103	$2,483,755	105	$256,918	$26,976,436
1990	49	$406,580	$19,922,424	41	$428,412	$17,564,884	17	$449,402	$7,639,831	107	$421,749	$45,127,139
1991	48	$204,864	$9,833,493	36	$198,882	$7,159,765	21	$244,971	$5,144,397	105	$210,835	$22,137,655
1992	54	$218,317	$11,789,135	39	$221,021	$8,619,812	20	$288,867	$5,777,336	113	$231,737	$26,186,283
1993	47	$148,976	$7,001,872	38	$151,176	$5,744,701	19	$217,678	$4,135,873	104	$162,331	$16,882,446
1994	53	$159,357	$8,445,924	33	$164,021	$5,412,699	19	$226,478	$4,303,090	105	$172,969	$18,161,713
1995	49	$233,040	$11,418,971	36	$214,997	$7,739,904	21	$233,563	$4,904,833	106	$227,016	$24,063,709
1996	51	$178,694	$9,113,377	34	$201,612	$6,854,810	18	$254,228	$4,576,108	103	$199,459	$20,544,295
1997	51	$71,291	$3,635,848	33	$83,902	$2,768,768	15	$94,851	$1,422,764	99	$79,064	$7,827,379
1998	48	$135,319	$6,495,293	25	$159,562	$3,989,045	12	$206,256	$2,475,076	85	$152,464	$12,959,414
1999	47	$382,389	$17,972,262	33	$365,735	$12,069,256	10	$374,944	$3,749,440	90	$375,455	$33,790,958
2000	47	$181,518	$8,531,323	42	$167,033	$7,015,373	13	$187,014	$2,431,182	102	$176,254	$17,977,879
2001	51	$120,225	$6,131,481	33	$111,183	$3,669,053	12	$153,422	$1,841,061	96	$121,267	$11,641,595
2002	29	$143,421	$4,159,213	confidential	confidential	confidential	1 to 3	confidential	confidential	42	$173,526	$7,288,078
2003	31	$158,190	$4,903,902	9	$288,113	$2,593,017	4	$153,490	$613,958	44	$184,338	$8,110,877
2004	25	$148,379	$3,709,483	confidential	confidential	confidential	1 to 3	confidential	confidential	32	$169,955	$5,438,558
2005	44	$105,300	$4,633,183	39	$70,952	$2,767,144	14	$65,582	$918,152	97	$85,758	$8,318,479
2006	29	$126,791	$3,676,948	13	$103,472	$1,345,140	6	$128,536	$771,218	48	$120,694	$5,793,306
2007	31	$135,117	$4,188,612	15	$97,513	$1,462,701	9	$133,742	$1,203,677	55	$124,636	$6,854,990
2008	35	$164,772	$5,767,028	15	$162,905	$2,443,577	6	$282,928	$1,697,567	56	$176,932	$9,908,172
2009	38	$194,451	$7,389,142	14	$172,540	$2,415,554	6	$256,933	$1,541,596	58	$195,626	$11,346,292
2010	34	$189,397	$6,439,492	25	$203,192	$5,079,793	9	$282,556	$2,543,001	68	$206,798	$14,062,285
2011	37	$427,997	$15,835,891	22	$353,460	$7,776,128	8	$527,701	$4,221,609	67	$415,427	$27,833,628
2012	38	$210,963	$8,016,610	24	$218,747	$5,249,917	7	$216,083	$1,512,580	69	$214,190	$14,779,108
2013	37	$440,828	$16,310,628	30	$432,183	$12,965,479	11	$370,712	$4,077,830	78	$427,615	$33,353,937
2014	34	$117,218	$3,985,397	25	$90,817	$2,270,426	11	$178,256	$1,960,821	70	$117,381	$8,216,644
2015	34	$126,012	$4,284,402	28	$120,141	$3,363,939	10	$161,369	$1,613,688	72	$128,639	$9,262,028
2016	35	$156,380	$5,473,289	24	$158,538	$3,804,905	10	$134,647	$1,346,468	69	$153,981	$10,624,662
2017	36	$250,861	$9,030,978	23	$255,314	$5,872,225	9	$309,195	$2,782,757	68	$260,088	$17,685,960
2018*	confidential	confidential	confidential	1 to 3	confidential	confidential	0	$0	$0	6	$648	$3,889

- *Adjusted for inflation to 2017 dollars using U.S. Bureau of Labor Statistics Consumer Price Index.*
- *Counts will differ from CFEC on-line Basic Information Tables where the on-line data does not account for the combination of interim-entry permits that were issued as permanent permits in the same year. Note that these counts are for individuals, not permits.*
- *From 2002 – 2005 the majority of S01L permit holders participated in a salmon cooperative. Some S01L permit holders benefited from the cooperative without using their permit from 2002 – 2004. Average Earnings will not properly reflect estimated earnings by permit holder or vessel for these years.*
- *2018 data is preliminary.*

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposals 73, 74, 75, 77

Dear Chairman Morisky and Board of Fisheries Members,

My name is Chris Johnson and I am a second-generation fisherman in Kodiak, Alaska. I grew up fishing on my dad's boat and got my first crew job working for someone else two weeks after I graduated high school. I haven't missed a salmon season since. I bought into the fishing industry in 2011 with the purchase of a 25-foot jig boat that I worked for two years in the winter and spring months while I still crewed for salmon in the summer. Access to the jig fisheries focusing on cod and rockfish was the only way that I could afford to move into the salmon fleet with a 38-footer in 2013. After the recent cod collapse, I now primarily rely on salmon seining and live here year-round with my wife.

I oppose these proposals (73, 74, 75, and 77) because they are counterproductive to the stated intent and I support the current management plan as written.

Taking away any fishing opportunity from Kodiak fishermen, particularly from the small boat fleet, would have a direct negative impact on new entrants trying to gain a foothold in this industry, fishing families trying to get by, and fishing support businesses in our region. I'm proud to call Kodiak home and am working to protect our fishing way of life.

Sincerely,
Chris Johnson
F/V North Star

December 27, 2019

Alaska Board of Fisheries
Board Support Section
PO Box 115526
Juneau, AK 99811-5526

Charles “Chuck” McCallum
601 N Bragaw Street
Anchorage, AK 99508

Subject: CFEC Report for Chignik

Dear Alaska Board of Fisheries,

Chignik seine permit values are higher than Kodiak seine permit values and frequently people make the mistake of assuming that means that Chignik’s fishery earnings must be higher than Kodiak’s, but this is simply not so. In fact Kodiak’s earnings are higher than Chignik’s and still, Chignik’s permit values are higher. Attached is a report from University of Alaska professor Dr. Gunnar Knapp, which was submitted at the 2017 Kodiak Board of Fisheries meeting, that discusses this.

In brief the report says that simple economic theory would hold that “if permit buyers are willing to pay more for a Fishery A permit than for a Fishery B permit, they presumably expect that they are likely to earn higher profits in Fishery A than in Fishery B; but that since “average earnings per permit fished have in recent years more often than not been higher in the Kodiak fishery than in the Chignik fishery, it seems hard to conclude that higher permit prices in the Chignik fishery necessarily imply that it is more profitable for active participants than the Kodiak fishery.”

Simple econmic theory assumes buyers have perfect knowledge of the market (supply and demand) and business operating conditions and we might speculate that the lack of perfect knowledge of the Chignik fishery may explain, at least in part, why Chignik permit prices defy simple economic theory. In any case understanding the ‘why’ is really beside the primary point which is that it would be illlogial to concude that because Chignik permit values are higher than Kodiak’s that that is any kind of valid evidence that Chignik’s fisheries are in good shape. Chignik is in bad shape compared to Kodiak and needs the boards help in ensuring that more Chignik bound sockeye are available for harvest by Chignik fishermen.

Sincerely,

Chuck McCallum

January 7, 2017

To: Chuck McCallum

From: Gunnar Knapp
Professor Emeritus of Economics
University of Alaska Anchorage Institute of Social and Economic Research (ISER)



This memo responds to your request for my professional opinion about whether differences in permit values between fisheries necessarily reflect differences in the potential earnings in those fisheries, and in particular whether differences in permit values between the Chignik and Kodiak salmon purse seine fisheries necessarily reflect differences in the potential earnings of permit holders in these two fisheries.

Please note that in responding to your request I am not intending to comment in any way on any policy issue which may be before the Board of Fisheries. I have not followed whatever issues the Board may be considering with respect to these fisheries and I have no opinion on them. So I'm only addressing the specific question you raised related to what relative permit valuations can tell us about relative earnings potential between two fisheries.

My background

By way of background, I retired at the end of June 2016 from the University of Alaska Anchorage Institute of Social and Economic Research (ISER). I spent most of my 35-year career at ISER studying economic issues related to salmon markets and salmon management, including factors affecting salmon fishery earnings and permit prices.

Upon my retirement, I was designated a "professor emeritus," which is basically an honorary distinction under which I retain an affiliation with ISER. I am doing a small amount of work for ISER under one contract related to economic impacts of southeast Alaska salmon fisheries, but am otherwise not receiving any pay from ISER or any other organization. However, I continue to maintain my professional interest in Alaska salmon markets and management.

The simple answer suggested by economic theory

Simple economic theory suggests that what a potential permit buyer would be willing to pay for a permit in a given fishery reflects the buyer's estimate of the present discounted value (e.g. value as of the present time) of the profits that he will be able to earn from the fishery in the future. Under this reasoning, if permit buyers are willing to pay more for a Fishery A permit than for a Fishery B permit, they presumably expect that they are likely to earn higher profits in Fishery A than in Fishery B.

What do the data show?

It's always a good idea to check whether available data support the logic of an economic theory. To do this with regard to the Chignik and Kodiak purse seine fisheries, I prepared the attached table comparing selected data for these fisheries for the most recent ten-year period for which data are available (2006-2010).

Selected data for the Kodiak (S01K) and Chignik (S01L) salmon purse seine fisheries

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Average permit price										
S01K	18,000	21,300	24,200	26,000	27,700	44,000	41,700	40,600	50,600	40,000
S01L	146,500	131,500	91,300	70,800	78,400	95,100	97,600	186,300	211,300	227,500
Ratio	0.12	0.16	0.27	0.37	0.35	0.46	0.43	0.22	0.24	0.18
Average earnings per permit fished										
S01K	191,505	173,984	166,749	190,795	129,137	250,596	244,927	333,048	190,573	173,209
S01L	99,265	105,427	161,165	180,557	192,456	399,095	200,623	417,091	113,366	126,138
Ratio	1.93	1.65	1.03	1.06	0.67	0.63	1.22	0.80	1.68	1.37
Average earnings, first quartile										
S01K	439,948	358,674	414,490	457,321	313,852	724,935	622,489	745,762	545,807	496,199
SO1L	210,370	249,968	299,956	319,366	358,095	812,550	360,357	675,786	294,362	250,913
Ratio	2.09	1.43	1.38	1.43	0.88	0.89	1.73	1.10	1.85	1.98
Average earnings, second quartile										
S01K	289,271	255,152	250,238	305,184	224,280	453,987	409,765	502,911	328,654	305,384
SO1L	141,970	178,648	238,946	257,793	268,280	615,590	279,354	544,693	194,716	195,995
Ratio	2.04	1.43	1.05	1.18	0.84	0.74	1.47	0.92	1.69	1.56
Average earnings, third quartile										
S01K	209,084	201,936	174,398	201,519	142,600	279,367	268,385	343,247	222,088	186,259
SO1L	102,964	111,628	171,077	193,786	197,164	441,737	205,385	451,909	124,453	130,067
Ratio	2.03	1.81	1.02	1.04	0.72	0.63	1.31	0.76	1.78	1.43
Average earnings, fourth quartile										
S01K	97,062	88,096	84,034	95,594	60,991	113,944	117,877	172,473	86,250	80,217
SO1L	53,659	50,655	89,149	101,455	109,693	201,926	113,188	244,669	52,342	66,680
Ratio	1.81	1.74	0.94	0.94	0.56	0.56	1.04	0.70	1.65	1.20
Total permanent permits renewed										
S01K	375	377	374	374	375	376	376	376	373	372
S01L	91	91	91	91	91	91	91	91	91	91
Ratio	4.12	4.14	4.11	4.11	4.12	4.13	4.13	4.13	4.10	4.09
Total permits issued/renewed										
S01K	375	377	374	374	375	376	376	376	373	372
S01L	96	92	92	91	91	91	91	91	91	91
Total permits fished										
S01K	130	140	128	157	154	174	166	167	184	180
S01L	48	55	54	55	65	64	69	76	70	71
Share of permits fished										
S01K	35%	37%	34%	42%	41%	46%	44%	44%	49%	48%
S01L	50%	60%	59%	60%	71%	70%	76%	84%	77%	78%

Data Sources: CFEC Basic Information Tables and Quartile tables

Clearly, during this period, Kodiak permit prices were much lower than Chignik permit prices, with the price of a Kodiak permit ranging from as low as 12% of the price of a Chignik permit (in 2006) to as high as 46% (in 2011).

However, average earnings per permit fished between these fisheries did not show the same disparity. Average earnings per permit fished were higher in the Kodiak fishery than for the Chignik fishery in seven of the ten years. In general, this was the case for all quartile groups: for all quartile groups, in most years, average earnings were higher in the Kodiak fishery than for the Chignik fishery.

Thus, whatever economic theory based on permit prices might seem to suggest, it seems hard to conclude that those permit holders who actually participated in the Chignik fishery were somehow doing far better economically than those who participated in the Kodiak fishery.

It should be noted that the theory of permit prices is based on expected future profits, which are of course not the same as earnings, but depend also on costs. Thus two fisheries might have similar earnings but one might have higher profits if it has lower costs. I'm not aware of any particular reason why there would be a huge difference in costs between these two fisheries, although differences in the geography of where people fish and the mix of species they fish for might affect the share of costs in total earnings and thus profits.

I am struck by the significant differences between these two fisheries in the share of permits fished (and its converse, the share on non-fished or latent permits). Clearly a much higher share of permits are fished in the Chignik fishery than in the Kodiak fishery. Put differently, there is a much higher share of unfished or latent permits in the Kodiak fishery than in the Chignik fishery.

I would hypothesize that this difference in the share of permits fished may reflect an important difference between the two fisheries which *may* help to explain the difference in permit prices. Clearly the number of permits in the Chignik fishery is closer to "optimal" for current run and market conditions than it is in the Kodiak fishery. The large number of latent permits may tend to hold down permit prices in Kodiak because a larger number of are likely to available for sale at any given time. Perhaps more importantly, there is less potential for upside gain in a permit holder's earnings in the Kodiak fishery should future prices and runs strengthen, because there is more potential for effort in the fishery to increase, spreading the available harvest among more permits.

Conclusion

I have not studied these fisheries in detail and I am not able to give a definitive explanation of the relative differences in permit prices in the Kodiak and Chignik fisheries. But given the fact that average earnings per permit fished have in recent years more often than not been higher in the Kodiak fishery than in the Chignik fishery, it seems hard to conclude that higher permit prices in the Chignik fishery necessarily imply that it is more profitable for active participants than the Kodiak fishery.

Office of the Mayor and City Council
710 Mill Bay Road, Room 220, Kodiak, Alaska 99615

December 12, 2019

Chairman Reed Morisky
Alaska Board of Fisheries Members
Boards Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Emailed to:
dfg.bof.comments@alaska.gov

Submitted via Online Comments

Dear Chairman Morisky:

The City of Kodiak looks forward to hosting the Alaska Board of Fisheries here in Kodiak for your January 11-14 Kodiak finfish meeting.

Kodiak is a commercial fishing town. We exist as a community because of our fisheries and our economy continues to be based, in large part, on commercial and recreational fishing. Especially important to Kodiak is the salmon fleet's enormous economic contribution which often provides more than $40,000,000 per year to our community. The massive fishery management changes advocated by proposals 58-64 regarding the Cape Igvak Management Plan and proposals 65, 66 and 37 regarding changes to Kodiak sockeye management could reduce annual Kodiak salmon revenues by more than 1/3. Approving any one or more of these proposals will cause significant economic harm as well as social and cultural upheaval to Kodiak's harvesters, processors, processing workers, businesses, schools, villages and the entire community.

Consequently, The City of Kodiak strongly opposes Alaska Board of Fisheries Approval of proposals 58, 59, 60, 61, 62, 63, 64, 65, 66, and 37!

The Cape Igvak Management Plan has been in place since 1977. The 1977 Alaska Board of Fisheries struck a compromise between Kodiak fishermen that had fished in the area for many years and Chignik fishermen that were focused on catching local stocks by mostly fishing in Chignik lagoon. Unlike many fishery allocations plans that award a strict percentage of the run to competing users, the Cape Igvak management plan specifically guarantees Chignik fishermen a set amount of catch before Kodiak fishermen can fish at Cape Igvak. The plan further limits Kodiak fishermen to a percentage of the overall Chignik run.

Consequently, the structure of the Cape Igvak management plan ensures resource conservation in years of low abundance (2018 &19) by altogether prohibiting Kodiak fishermen from fishing at Cape Igvak. In years of greater abundance, Chignik fishermen are awarded a minimum of 300,000 sockeye or approximately 2.5 million dollars in value (@$35,000 per active vessel) before Kodiak fishermen can fish Cape Igvak. The economic and conservation safety net for Chignik illustrates that the Cape Igvak management plan was not based on some respective strength of the sockeye runs the two areas. If it were, the plan would have tracked the minimum Chignik guarantee to an assessment of the strength of the Chignik run. In summary the Cape Igvak Management Plan already balances economic equities between Kodiak and Chignik and establishes a shared conservation burden.

United Cook Inlet Drift Association's (UCIDA) proposals, 65 and 66, would make wholesale and unwarranted changes to Kodiak's salmon harvests in multiple areas around Kodiak, setting caps to limit sockeye harvests by week and by area in addition to area closures. Their proposed "harvest caps" are unsupported by harvest data or biology. In addition the caps focused exclusively on sockeye salmon would disrupt a carefully balanced Kodiak management system for pink, chum, and coho salmon.

The Kodiak salmon fishery has existed for 135 years, since 1882. Kodiak's salmon harvesting sector is made up of seine and set gillnet participants—many of which are native Alaskan or 3 and 4th generation fishermen. The Kodiak season lasts for almost four months and changes focus from early run sockeye to pinks and chums and then to coho as they arrive with a transition to late run sockeye. Management of the fishery is focused on all species of local stocks with an emphasis on early encounter by allowing fishing on the capes and capture of high-quality Kodiak salmon for maximum market value.

Recent genetic information has provided more detail regarding the randomness and unpredictability of Cook Inlet sockeye in the Kodiak area but it does not show consistent catches of Cook Inlet origin sockeye in any one area or time frame. Moreover, the genetic study confirmed that Kodiak's catches of Cook Inlet stocks are not above estimates made by the Alaska Department of Fish and Game in the early 1990's. Large area closures and the "caps" proposed in proposals 65 and 66 will lower fish quality, force derby style fisheries in "near river" areas and reallocate between seine fishermen and set-net fishermen based on a low probability that Cook Inlet stocks would be in a specific section of the Kodiak management area during a specific time frame.

The City of Kodiak encourages the Board to carefully apply your Mixed Stock Fisheries Policy as well as your Allocation Criteria to the aforementioned proposals. As the Mixed Stock Fisheries Policy states regarding the Cape Igvak Management plan. "Most mixed stock fisheries are long standing and have been scrutinized many times by past Boards. Consequently, existing regulatory management plans are understood to incorporate conservation burden and allocation."

The Board's 7 Allocation Criteria also tip in favor of maintaining the status quo. Kodiak's commercial salmon harvests are well established without any new or expanding fisheries. The

management plans for Kodiak's salmon fishery have remained essentially unchanged for almost 30 years – back to when Kodiak's "conservation corridor" was established by the N. Shelikof management plan. Kodiak enjoys a large resident salmon fishing fleet and the salmon fleet accounts, in most years, for more than 1/3 of Kodiak's overall fishing income.

As representatives of the City of Kodiak we often face proposals and advocates wanting CHANGE to a particular City program, project of policy. Sometimes change in needed and justified by the facts and circumstances. However, we've also experienced that when a program or policy is long established and working well, change can have unintended consequences and cause unnecessary harm. We believe this is the situation the Alaska Board of Fisheries faces with regard to proposals 58-66 & 37. Change to Kodiak's salmon management plans is not justified by the facts and circumstances surrounding the issues and it will result in unintended consequences and unnecessary harm. Therefore, STATUS QUO, is the decision the Board should make.

If you have any questions regarding the City of Kodiak's strong opposition to proposals 58-66 and proposal 37 please do not hesitate to contact me.

Sincerely,

Pat Branson, Mayor

5642 40th Ave. W.
Seattle, WA 98199

Alaska Dept. of Fish & Game
Boards Support Section
P.O. Box 115526
Juneau, AK
99811-5526

Dear A.D.F.&G. Board Members:

I've been a setnetter in Uyak Bay, the Northwest Section of the Central Kodiak District, since 1971. My experience and observation during this time have given me confidence that the management decisions of the A.D.F.&G. have protected and sustained this amazing resource. Of course, when these decisions have a negative impact on my local area, I will always speak up in unity with my fellow fishermen. I rely on the judgement, hard work and research of the Kodiak Salmon Work Group and the Northwest Setnetters Association to guide me in advocating for their support for the following proposals at the upcoming Board meetings in Kodiak:

Proposal # 67 5AAC 18:331
Proposal # 70 5 AAC 18:362
Proposal # 71 5 AAC 18:362

I urge you to oppose the following proposals:

#37
#58
#59
#60
#61
#62
#63
#64
#65
#66

Sincerely,

Daniel Earle

December 22, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Re: Opposition to Proposals 73, 74, 75, and 77

Dear Chairman Morisky and Board of Fisheries Members,

My name is Danielle Ringer and I appreciate the opportunity to comment on proposals before the Board in writing and in person for the Kodiak finfish meeting. I live in Kodiak with my husband and we own and operate the 38-foot F/V North Star. We chiefly rely on salmon seining and cod and rockfish jigging to maintain our fishing way of life and ability to live on Kodiak Island. I grew up in Homer learning to harvest and process fish from my parents in Kachemak Bay and dipnetting on the Kenai River. I hold a Master's degree from the University of Alaska Fairbanks in Political Ecology of Fisheries and was one of the researchers on the *Graying of the Fleet in Alaska's Fisheries: Defining the Problem and Assessing Alternatives* study in the Kodiak region.

I oppose these proposals (73, 74, 75, and 77) because they are counterproductive to the stated intent and I support the current management plan as written.

I see no biological, scientific, historical, economic, nor sociocultural reasons that could justify the Board making any changes to the salmon management plans in the Kodiak Management Area, which would create ripple effects negatively impacting Kodiak fishermen, processing workers, and community businesses. Thank you for your consideration of my comments and I look forward Board of Fisheries members spending time in our fishing community during the Kodiak meeting.

I humbly request the Board to reject these proposals.

Respectfully,
Danielle Ringer, M.A.
F/V North Star

Danny Campbell
Box 22
Ouzinkie, AK 99644

December 23, 2019

Alaska Board of Fisheries
P.O. Box 115526
Juneau, Ak 99811

RE: Oppose Proposals 58,59,60,61,62,63,64,37.65.66

Board Members:

I'm a salmon fisherman living in Ouzinkie. Salmon fishing is my primary income. I depend on having an opportunity to fish all over the island and on the mainland. During a long Kodiak salmon season, it's important for me and my skipper to have lots of options. If you would close down Cape Igvak or the mainland or some of the capes on Kodiak, that would directly impact me and my fishing earnings. As more boats stack up in smaller spaces, it doesn't make it worthwhile for anyone. Kodiak is more of a grinding fishery, not just a big hit or a big day here or there. That's why the types of closures recommended in proposals 58,59,60,61,62,63,64,65,66 and 37 would be so bad for me and the fishermen from Ouzinkie.

For thousands of years nonlocal sockeye salmon have been passing through what is today the Kodiak management area. And Kodiak bound salmon are undoubtedly harvested within other management areas and always have been. Kodiak salmon fisheries are well-known to be mixed stock fisheries, with an unpredictable component of nonlocal salmon.

There is no indication that 135 years of commercial salmon fishing around Ouzinkie and in Kodiak's waters ever posed any threat to Cook Inlet stocks. Under conditions when conservation of Cook Inlet's sockeye returns would be a concern, it is not likely that much bycatch. You can't catch what isn't there. I understand that the Department looked at this for several years in the 1990's and concluded that the presence of Cook Inlet sockeye in the Kodiak area is directly related to the strength of the Cook Inlet run.

If the Yentna River in upper Cook Inlet has a stock of yield concern that requires regulatory action, you can't start by imposing restrictions 400 miles away in Kodiak. You have to start management restrictions in the nearest and biggest intercept fisheries, not the furthest and smallest. Kodiak salmon fisheries are already managed according to a well-documented series of successful management plans, none of which need to be amended now to account for harvests that fluctuate on the basis of natural abundance and pose no threat to conservation.

Thank you for your time and your service.

Thank You

Danny Campbell

Danny Campbell

Danny Clarion
Box P.O. Box 71
Ouzinkie, AK 99644

December 23, 2019

Alaska Board of Fisheries
P.O. Box 115526
Juneau, Ak 99811

RE: Reject Proposals 58,59,60,61,62,63,64,65,66 and 37

Board Members:

I've been a fishermen and resident of Ouzinkie for most of my life. Salmon fishing is very important to Ouzinkie. We've worked hard to have a good boat harbor and city dock to support our salmon fleet. Everyone in Ouzinkie knows that Cook Inlet fish sometimes pass through our area. On the back of Spruce Island, they occasionally just show up and then they are gone. No one knows when they will appear and most years, we don't see any of the bigger fish. That's why I don't think the Board should make any changes to salmon fishing in Kodiak because of Cook Inlet fish. They're not here every year and they are not in the same spot when they do hit. More closures just hurt Kodiak without any known benefit to Cook Inlet.

When I look at the make-up of this current Board of Fisheries, I feel a little uneasy. I see three members with very little commercial fishing experience with four members who live in upper Cook Inlet, plus one in Fairbanks. I only see one member with Kodiak area knowledge and another with some blue water commercial fishing experience. I think it may take some experience on the water to understand the Kodiak fishery. It's a long fishery with a number of variables happening all at once. Several salmon species from hundreds of systems return over about four months. Fishermen are moving constantly. That's why the Cape Igvak fishery is so important. There is occasionally a "big hit" but more often our season is a day to day grind. We don't fish like Cook Inlet or Chignik close to a primary terminal area. I hope you will listen to your fellow board members that have commercial fishing experience to Understand Kodiak's "mixed stocks" fishery. As you travel around the state you will find that mixed stock fisheries are the rule rather than the exception.

I strongly urge you to look at the long-term stability of the Kodiak fishery, and to rely on the Board's statutory allocation criteria when making allocative decisions, especially involving salmon. Dozens and dozens of past board members have done just that, and what exists in regulation now is an evolved balance that recognizes the history and economic importance of both Kodiak and Cook Inlet. Since 1989, all salmon management decisions in the Kodiak area have been based on local Kodiak stocks. Targeted interceptions that occurred before 1989 have long ago been stopped. Local pink and chum salmon are harvested all around the Kodiak and Afognak Island complex. Whatever interception of Cook Inlet salmon that still occurs is minimal, sporadic, and generally not measurable in-season.

Sincerely yours

Danny Clarion

December 22, 2019
Darren Platt (FV Agnes Sabine)
10708 Birch Cir
Kodiak, AK 99615

Alaska Board of Fisheries
Board Support Section
PO Box 115526
Juneau, AK 99811-5526

RE: **Opposition to Proposals 58-61**

The members of the Alaska Board of Fisheries,

I'm writing in **opposition to proposals 58-61**, which are designed to re-allocate harvest away from Kodiak fishermen to Chignik area fishermen. I'm a Kodiak resident and am now 10 years into my career as the owner/operator of a 42-foot fishing vessel that I operate exclusively in the Kodiak area. I find the proposals concerning the Cape Igvak area to be particularly personal and impactful because this area has been indispensable to my survival as a commercial fisherman. There have been multiple years during which my effort at Cape Igvak defined my profit for the season.

Our fleet is already at a breaking point, as disastrous even year salmon runs, declining markets, drought plagued streams, and the collapse of the cod and herring fishery has left our fishermen in fear of the future. The last thing that we need is for the board to overturn a longstanding fishery that we have relied on and built our businesses around. The problems facing the Chignik community are not unique to them, but are instead indicative of a regionwide struggle. Kodiak's communities have *not* been spared from the same economic declines.

While Kodiak is often the focus of attention when it comes to mixed stock fisheries, our southern neighbors in Chignik have somehow evaded any consideration for the non-local portion of their harvest, despite the publication of the WASSIP study and the clear recent expansion of their fishery into fully allocated, mixed, non-local stocks. It has been frustrating as a Kodiak fisherman to speak to honest Chignik fishermen who have told us what we already knew – that they are catching our fish in abundance and without limitations. Stories of Chignik fishermen harvesting deckloads of late-Karluk sockeye (the most easily identifiable salmon in the gulf) are commonly told by the fishermen who caught them, yet, even in 2016, when we had our disastrous year, Chignik fishermen operated without any limitations designed to protect our fleet and our local stocks. This is a glaring inequity in how the two regions are managed, and if any changes need to be made then those changes should occur in the Chignik area where they should also be held accountable for the harvest of Kodiak fish.

It is my hope that this board will fairly adjudicate this long-standing dispute just as other boards have done in the past by strictly applying the allocation criteria and considering the historical and economic importance of the Igvak fishery to Kodiak's fleet. If the board were to accept any of these proposals then they should be aware and open about the fact that they are choosing to lower annual harvests, which will necessarily put some Kodiak fishermen out of business. Such a decision would need a clear justification. The board will not be able to fix the problems of our coastal communities by stealing from one area to provide for another, especially when fishermen in both areas are struggling simply to maintain their livelihoods.

Thank you,
Darren Platt

December 22, 2019
Darren Platt (FV Agnes Sabine)
10708 Birch Cir
Kodiak, AK 99615

Alaska Board of Fisheries
Board Support Section
PO Box 115526
Juneau, AK 99811-5526

RE: **Opposition to Proposals 63 and 37**

The members of the Alaska Board of Fisheries,

I'm writing in **Opposition to Proposals 63 and 37**. The conservation of King salmon is one of the most important fisheries issues facing the state and I believe that we should continue the non-retention program in Kodiak until stocks have rebounded. However, the genetic reports on recreational, seine and trawl-caught Chinook in the Kodiak area all concluded that there are minimal Cook Inlet Kings in the western Gulf. How can we adopt conservation measures in Kodiak to save fish that we aren't catching in the first place? This is clearly another case where Kodiak fishermen are receiving undue blame for problems occurring elsewhere in the state. Conservation plans are most effective near the natal streams of the concerned stocks and restrictions should focus where they would provide the most benefit with the least unintended harm.

Thank you,
Darren Platt

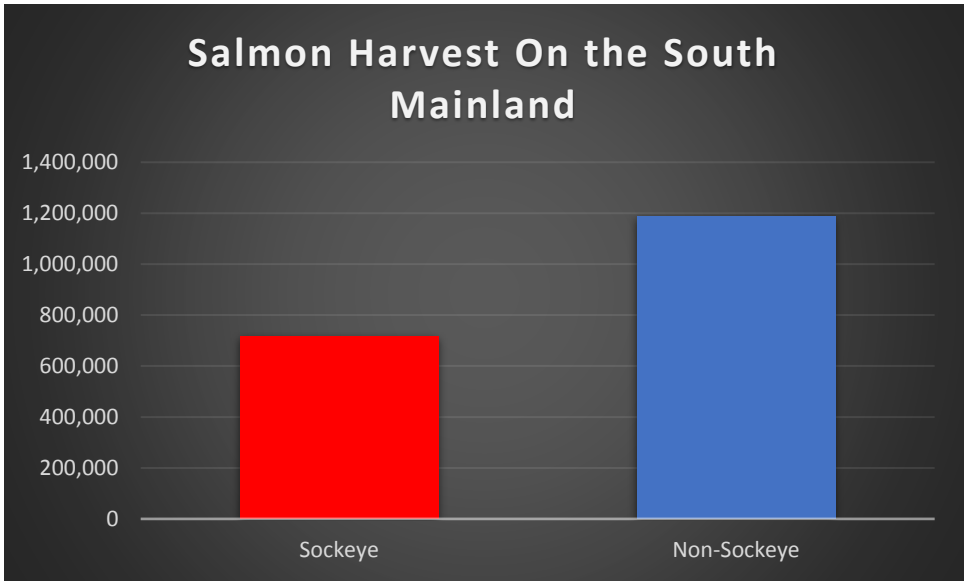
December 22, 2019
Darren Platt (FV Agnes Sabine)
10708 Birch Cir
Kodiak, AK 99615

Alaska Board of Fisheries
Board Support Section
PO Box 115526
Juneau, AK 99811-5526

RE: **Oppose Proposals 64 and 65**

The members of the Alaska Board of Fisheries,

I'm writing in **Opposition to Proposals 64 and 65**. These proposals are designed to close down a long-standing fishery with the misguided intention of preventing the harvest of Cook Inlet bound sockeye. These proposals neglect the fact that the majority of fish harvested in this area during the four 57-hour July openings are local pink and chum salmon. I put a graph below that shows cumulative harvest in this section from 2008 to 2018.



Clearly the greatest impact of the proposal would be to inhibit the harvest of local stocks in addition to disrupting an established fishery. We already have extremely limited fishing opportunities in this area, since the Katmai Bay and Alinchak sections are only allowed four 57-hour openers before August 1st, and the Igvak section, when it actually opens, is managed with fixed harvest allocation which inherently acts to protect Cook Inlet stocks, as well.

There is no scientific or genetic data to suggest that Cook Inlet sockeye are the primary stocks harvested here. No genetic stock assessment was performed in Katmai Bay and Alinchak sections and the data from from Igvak is too sparse and inconsistent to draw conclusions about predictable migration paths. The North Shelikof Straight Management plan already imposes an unusual conservation burden on Kodiak fishermen simply to protect Cook Inlet Sockeye which are regularly over-escaped in the Kenai river.

The Board should also consider the current lack of consistency in management policies. Kodiak fishermen are help accountable for non-local harvest at Cape Igvak and the North Shelikof Straight, yet no other areas have management protections designed to inhibit the non-local harvest of Kodiak stocks.

The entire reason why the board adopted a mixed stock policy was because it is readily clear that proposals like this one would cause net harm to Alaska and its fishing communities.

I'm the owner and captain of a small seiner in Kodiak and these proposals would directly negatively impact me, my crew and my business.

Thank you,
Darren Platt

December 22, 2019
Darren Platt (FV Agnes Sabine)
10708 Birch Cir
Kodiak, AK 99615

Alaska Board of Fisheries
Board Support Section
PO Box 115526
Juneau, AK 99811-5526

RE: **Opposition Proposals 69-79**

The members of the Alaska Board of Fisheries,

I'm writing in **opposition to proposals 69 and 70**, which would allow fishery managers to open the central section for the directed harvest of Karluk pink salmon even if the local streams in the Northwest district are experiencing poor escapement. It is dangerous to assume that Karluk is consistently the primary source of pink salmon production on the West Side of Kodiak and approval of this proposal will lead to the deterioration of even-year pink runs in the Northwest Kodiak district. Although on some years, such as 2018 Karluk produced abundant pink returns in comparison systems in the Northwest district, this has not always been the case. In 2006, one of the highest historical harvests in the Kodiak area occurred with enormous runs in most pink systems in the NW district. More recently, 2012 saw large west side pink runs outside of Karluk and 28% of the combined pink harvest in the Central and inner bay sections took place in the inner bays, indicating substantial runs to these terminal systems.

There is no data to suggest that fish harvested in all areas of the central section are primarily Karluk bound pink. If the proposal were to be accepted, then conducting a directed of harvest of Karluk fish in the central section during poor pink salmon returns in the NW district would result to high rates of incidental harvest of depleted stocks. No tagging studies or genetic data exists to indicate that pink salmon caught in Kupreonof Straights, for example, are likely to be Karluk fish, and opening such a large area just for Karluk stocks could prove incredibly damaging.

Adoption of these proposals would necessarily imperil the potential of achieving large pink runs on even years on the west side of Kodiak if fishery managers were to choose to open the central section despite poor escapement to the major systems in this area. Additionally, Karluk-bound pinks can be harvested in the inner and outer Karluk section when other systems in the Northwest district are experiencing poor returns. Karluk is one of the few systems in the Kodiak Management Area that can be effectively managed terminally with high quality fish, so there is no need to include the Central section to direct harvest of Karluk bound pink salmon.

I'm the owner and operator of a 42-foot seiner and I fish exclusively in Kodiak for salmon, herring and tanner crabs.

Thank you,
Darren Platt

December 22, 2019
Darren Platt (FV Agnes Sabine)
10708 Birch Cir
Kodiak, AK 99615

Alaska Board of Fisheries
Board Support Section
PO Box 115526
Juneau, AK 99811-5526

RE: **Support Proposals 72 and 73**

To the members of the Alaska Board of Fisheries,

I'm writing in **support of proposals 72 and 73 if and only if these regulations only occur when king salmon numbers in the Ayakulik river have not met escapement objectives.** King salmon are in trouble and as commercial fishermen we must make some sacrifices to better help with the conservation of the Ayakulik Chinook. Management of the Ayakulik needs to explicitly account for escapement objectives for king salmon so that we better ensure preservation of the run and support for the recreational fishermen who utilize it.

This is a classic case where mutually conflicting goals of traditional management practices make it impossible to optimize harvest while conserving fish. We currently cannot optimize sockeye harvest while ensuring Chinook escapement in the Ayakulik river. Since the board is obligated to take a conservative management approach, and since it accepted that escapement and yield objectives cannot always be achieved simultaneously for all components of a mixed stock harvest, it is the responsibility of the board and fishery managers to either under-harvest and potentially over-escape Ayakulik sockeye or to risk further depleting Ayakulik Chinook stocks. The combination of these proposals 72 and 73 provides a perfect solution to balance between the two undesirable outcomes.

When Ayakulik sockeye runs are strong but King salmon runs weak, then short openings to the river mouth will allow for a "cleanup" of surplus reds without posing too large of a threat to Kings salmon returning to the system. Assuming that the non-retention program of king salmon will remain in place, then the subsequent closure will give released fish time to recover and potentially migrate upstream. The board should consider imposing longer closed periods between Inner Ayakulik openings, perhaps 48 to 72 hours. During these closed periods fishery managers should be encouraged to interact with weir personnel and to perform aerial surveys before announcing subsequent Inner Ayakulik openings in order to gauge whether an abundance of sockeye in the vicinity warrants additional fishing time at the river mouth.

I understand that large pulses of sockeye often show up at the Ayakulik, and that this proposal may imperil that run by critically over-escaping the Ayakulik system. Currently, this system has already been providing poor yields, so excessive escapement may further deplete the sockeye yields to point where we no longer have a fishery there, however, I believe that this risk is low compared to the threat currently facing Chinook and that as a commercial fishermen we must accept this risk and do our share to conserve depleted stocks in our own area.

I'm a resident of Kodiak and the owner/operator of a 42-foot seiner. I participate in the local salmon, tanner crab, and herring fisheries.

Thank you,
Darren Platt

David Little
P.O. Box KWP
Kodiak, AK 99697

December 22, 2019

Re: Proposals 37 and 58-66

Dear BOF Members,

I am concerned about proposals 37 and 58-66 and how these proposals would impact our salmon fishery and the community in which we live. I live in Village Islands, a small community located in Uganik Bay on the west side of Kodiak Island. Everyone here is connected to the Kodiak salmon fishery and everyone of us, seiner and set netter alike, focuses our fishing on the waters immediately surrounding our community. The possible closing of sections of our management area will drive boats into the bays, substantially impacting our catches and creating unprecedented gear conflicts. No one here is wealthy. Nearly everyone has loans on their boats, sites, and permits. Nearly all the income of the community comes from salmon.

The following is a brief description of the people who live here.

Shawna Rittenhouse, 57.
Salmon seiner and tender operator. Also active in other fisheries. Life long salmon fisherman. Entire family fishes salmon.
Steve Rittenhouse, 62.
Salmon set netter, works with family in other fisheries. All family members are salmon fishermen.
Michelle Rittenhouse, 32.
Salmon seiner and crew in other fisheries. Grew up and home schooled in Village Islands.
Sally Rittenhouse, 30.
Salmon seiner and crew in other fisheries. Grew up and home schooled in Village Islands.
Ron Dunlap, 86.
The community's most senior resident, Ron still crews as a salmon set netter.
Dave Little, 67.
Salmon set netter, crews in other fisheries.
Tollef Monson, 40.
Salmon set netter, crews in other fisheries, direct markets some of his fish in the lower 48, top 10 Iditarod finisher.
Adelia Myrick, 41.
Life-long salmon set netter, crews in other fisheries, direct markets some of her salmon in the lower 48.
Anitra Winkler, 26
Salmon set netter, crews in other fisheries, grew up and home schooled in a trapping family near Cantwell. Also teaches at the Alaska Avalanche School.
Linda Lindberg, 75.
Matriarch of the community. Takes care of everyone, including their mail.

Dave Lindberg, 74.
Retired salmon fisherman, active in various fisheries and assists with family's salmon operations.

In addition there are several residents who split their time between Village Islands and Kodiak. Again, nearly all of their income is from salmon fishing.

Harvey Goodell,
Salmon set netter as well as crew in other fisheries. Entire family fishes salmon.
Wendy Beck,
Salmon set netter. Has crewed in other fisheries. Entire family fishes salmon.
Naomi Beck-Goodell, life-long salmon set netter.
Jamin Price-Hall
Salmon set netter as well as crew in other fisheries.
Howard Peterson,
Salmon seiner and active in other fisheries.
Parry Nelson,
Salmon seiner and active in other fisheries.

In considering each of the proposals regarding our salmon fishery, please think of the people in communities such as ours, people whose lives could be substantially adversely impacted by your decision.

Thank you for your consideration,
David Little

Devin Koozaata
P.O. 83
Old Harbor, AK 99615

December 18, 2019

Alaska Board of Fisheries
P.O. Box 115526
Juneau, AK 99811

Re: Opposition to Proposals 58,59,60,61,62,63,64,37,65,66

Dear Board and Chairman:

I live in Old Harbor and I'm a fisherman. Fishing is really all I've ever done. I work on a local salmon vessel, the F/V Rolling Bay. Our whole crew was from Old Harbor. Fishing is about the only type of job available in Old Harbor. I don't want to see you take away the only way I can make a living. My skipper tells me that you might pass proposals that could take away 1/3 of my crew share. I just can't afford that. Why would you try to kill Old Harbor's fisheries?

I've heard about some sort of genetic study that showed we catch some Cook Inlet sockeye in Kodiak. You didn't need a study to show that. We know that some years the Cook Inlet fish hit here or there and some years they don't. It's no big deal or new information. I was told that in the early 1990's Fish and Game already estimated that there were Cook Inlet fish in the Kodiak area --- especially when they had a big run. I don't think that the fish we catch in Kodiak belong to the fishermen in Cook Inlet. I've always heard that these wild salmon were "common property". Why would you give Cook Inlet an ownership in fish?

The best thing for me about the Cape Igvak fishery is that a bunch of boats go over there and we have more room to fish and we don't have to wait so long in a line to make a set. That's why Cape Igvak is important to most of the boats in the Old Harbor fleet. I know it's tough to live in Chignik but it's tough to live in Old Harbor too. We're both village people. Why would they try to take our livelihood away? That's not right.

I've heard the older skippers talk about having to fight with Chignik and Cook Inlet for years on the very same issues. I appreciate that the Board in the past has kept the Kodiak fishery the same and rejected the Cook Inlet and Chignik proposals. I'm asking you to do that again. Just vote NO on proposals 58,59,60,61,61,63,64,37, 65&66.

Sincerely yours,

Devin Koozaata

Devin H Koozaata

Devin Skonberg
2930 Woody Way Circle
Unit B
Kodiak AK, 99615

12/26/19
Chairman Reed Morisky
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Proposal 58,59,60,61,62

Dear Chairman Morisky and Board of Fish members:

My name is Devin Skonberg and I am a salmon seiner from the village of Ouzinkie, AK. I am 31 years old and started fishing when I was 11 years old with my grandpa James Skonberg Sr. I am currently part owner and full-time operator of my grandpa's 48-foot seiner the Lorena Marie. I bought my current share of the operation in 2007, and started running the boat in 2009 and the salmon fishery in Kodiak has been our primary fishery ever since my grandpa's halibut quota decreased to a level that did not make sense to go fishing for. I am writing today to request the Board of Fisheries **reject proposals 58,59,60,61, and 62.**

As I previously mentioned, salmon is the only fishery my operation currently operates in, and we make enough during the summer to pay for boat expenses and a small living expense on the side. In recent years without the Cape Igvak fishery as a dependable source of production, it is harder and harder to justify going fishing in June, as local runs to the Karluk and Ayakulik and other smaller sockeye producing systems have been smaller and less profitable. These proposals present a threat to a historical part of our fishing season, as during years when we are allowed to fish in Igvak, we tend to have much better production than when we are stuck on the Westside of Kodiak. In recent years, we haven't fished Igvak in June as a result of the weak runs there, and as much as the Chignik fishermen want to complain that the run failures are due in part to Kodiak fishermen fishing, that argument is simply not true. The Cape Igvak management plan gives Chignik sockeye stocks and fishermen every protection needed to make sure that we aren't causing any damage to the runs or the Chignik area economically. In addition, the argument is made that because salmon has been poor, the health of the villages in the Chignik area are dying, but I can honestly say this is a problem that is happening through all of coastal Alaska. My own village once had a small but effective fleet of salmon seiners, that is now reduced to 2 boats fishing, mine being one.

The Cape Igvak fishery has been under scrutiny every Kodiak board cycle for over 40 years. To make changes to this plan would be foolish and would undermine the care of which the plan was originally created. Please leave it alone and allow Kodiak fisherman the ability to historically participate in an aspect of our fishery we have always had access to.

Sincerely,

Devin Skonberg

Devin Skonberg
2930 Woody Way Circle
Unit B
Kodiak AK, 99615

12/26/19
Chairman Reed Morisky
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Proposal 63,64,65,66

Dear Chairman Morisky and Board of Fish members:

My name is Devin Skonberg and I am a salmon seiner from the village of Ouzinkie, AK. I am 31 years old and started fishing when I was 11 years old with my grandpa James Skonberg Sr. I am currently part owner and full-time operator of my grandpa's 48-foot seiner the Lorena Marie. I bought my current share of the operation in 2007, and started running the boat in 2009 and the salmon fishery in Kodiak has been our primary fishery ever since my grandpa's halibut quota decreased to a level that did not make sense to go fishing for. I am writing today to request the Board of Fisheries **reject proposals 63,64,65, and 66.**

These proposals are in response to the genetic study that was conducted during 2014-2016 to identify sockeye salmon stocks caught within the Kodiak Management Area (KMA). Cook Inlet fisherman have locked onto an idea that this genetic study uncovered something new, the presence of Cook Inlet stocks in Kodiak's commercial harvest. This is not something new; my grandpa who fished Kodiak from 1962 till 2008 could tell you that Cook Inlet bound sockeye have been traveling through Kodiak waters every year since he fished. In some years, they travel through in larger volumes than others, but it is not up to the fisherman to decide which way they swim and when. These fish have made up a historic allocation of Kodiak fishermen's harvest and any attempts by Cook Inlet fisherman to try to change that is purely out of greed with no consideration to the economic harm these proposals could have on our communities. These proposals are written with no understanding or consideration for the well-developed and established Kodiak Management Plan. This plan was created as one of the most complex management plans in existence and takes into account the varying run timings and species of the numerous salmon producing systems around Kodiak and Mainland.

Please leave the Kodiak Management plan alone. It is our last economic driver as participators in commercial fishing and these proposals threaten the very livelihood my grandpa and numerous other villagers have existed on for hundreds of years.

Sincerely,

Devin Skonberg

Dwayne Inga
PO Box 85
Old Harbor
99643

12/18/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

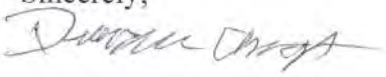
RE: Proposal 58,59,60,61,62

Dear Chairman Moriskey and Board of Fish members:

My name is Dwayne Inga, and I am a 39-year old resident, born and raised in Old Harbor Alaska. I started fishing salmon when I was 13 years old and can say without a shadow of a doubt that salmon fishery has been my primary livelihood over the last few years. Opportunities in other fisheries has ceased to exist and I stay busy during the winter months working for the local native tribe organization in Old Harbor. **Please reject all proposals to make changes to the Cape Igvak fishery.**

We haven't been able to fish in the Cape Igvak fishery over the last few years as a result of the poor runs to the Chignik river system. As a crewmember, this is very frustrating as fishing in June is usually very scratchy with not a lot of fish and long summer days. When we have been able to fish at Igvak, we usually end up with a way better start to the season. As the salmon fishery is my primary source of income for the year, it makes me nervous to see proposed changes to a part of our fishery that has usually been a large portion of my summer settlement. I respectfully request the Board leave the Cape Igvak fishery alone.

Sincerely,



Dwayne Inga

Dwayne Inga
PO Box 85
Old Harbor
99643

12/18/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Proposal 63,64,65,66

Dear Chairman Moriskey and Board of Fish members:

My name is Dwayne Inga, and I am a 39-year old resident, born and raised in Old Harbor Alaska. I started fishing salmon when I was 13 years old and can say without a shadow of a doubt that salmon fishery has been my primary livelihood over the last few years. Opportunities in other fisheries has ceased to exist and I stay busy during the winter months working for the local native tribe organization in Old Harbor. **Please reject proposals 63,64,65, and 66.**

The proposals put forward to close areas of the Kodiak salmon fishery because Kodiak fishermen catch some Cook Inlet sockeye don't seem to show a true understanding of the nature of the Kodiak fishery. In reading these proposals, you would think Kodiak fisherman only catch sockeye. As a crewmember, I make the majority of my season on the amount of pink salmon we catch, with a much smaller portion coming from sockeye and chum. All of these proposals suggest closing area or limiting time to prevent the harvest of sockeye, yet forget about the importance of the other fish species to the fishery. Any changes to the Kodiak management plan would seriously affect my ability to make enough money from salmon to help support me through the winter.

Sincerely,

Dwayne Inga

Edward Pestrikoff
Box 56
Old Harbor
99643

12/19/19

Chairman Reed Morisky
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Proposal 63,64,65,66

My Name is Edward Pestrikoff and I am an Old Harbor resident and current store owner. I have been involved in the Kodiak Salmon fishery since I was 5 years old in 1952. I started running skiff for my dad when I was 12 years old. I currently own and run a 51-foot seiner in Old Harbor, with the salmon fishery being my primary source of income from fishing. **I oppose the proposals from Cook Inlet fisherman** attempting to shut down area and time during our summer salmon fishery.

The proposals from Cook Inlet fisherman attempt to limit the incidental harvest of Cook Inlet bound sockeye in the Kodiak salmon fishery. Kodiak fisherman have been harvesting a small portion of the Cook Inlet runs every year since commercial fishing started in Kodiak over 120 years ago. An allocation of those fish has been written into the Kodiak management plan under the North Shelikof Sockeye management plan. These proposals would cause severe economic harm to the Kodiak fishery and the community of Old Harbor. The wide-reaching effects of these proposals would limit our ability to harvest strong pink, chum, and sockeye runs as lined out in Kodiak's longstanding management plan.

Please **reject** all the proposals to curtail the Kodiak fishery. The fishery is so valuable to the community of Old Harbor it cannot be emphasized how negatively impactful these proposals would be with little to no measurable gains to Cook Inlet fishermen.

Sincerely,

Edward Pestrikoff

Edward Pestrikoff
Box 56
Old Harbor
99643

12/18/19

Chairman Reed Morisky
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Proposal 58,59,60,61,62

My Name is Edward Pestrikoff and I am an Old Harbor resident and current store owner. I have been involved in the Kodiak Salmon fishery since I was 5 years old in 1952. I currently own and run a 54-foot seiner in Old Harbor, with the salmon fishery being my primary source of income from fishing. **I oppose the proposals from the Chignik fishermen** attempting to shut down area and time during the Cape Igvak fishery.

I have fished the Cape Igvak fishery, and in recent years, as a result of low runs to Chignik, we haven't had the Cape Igvak fishery and it is much more difficult to make any money anymore in June. The Cape Igvak management plan was developed because of the historic fishing patterns of fisherman in that area prior to the creation of limited entry and the decision to create management area boundaries. The fishery in Igvak created opportunity for me when I was younger to fish areas closer to home such as Alitak by drawing Kodiak boats away from our traditional fishing areas. In later years when southend runs were weak, the Igvak fishery allowed me an opportunity to make money in June. Without it I would have had numerous years with difficulty paying pre-season bills by the time they came due at the end of June.

It's important for the Board to realize that the Chignik river has experienced poor runs in the last few years, but that is not as a result of Kodiak fisherman placing any burdens on those runs. The management plan in Igvak doesn't allow us to fish in years of low abundance, and when we are allowed to fish, Chignik fisherman have to have already been fishing. The poor runs in Chignik are due to the natural ebb and flow of run strengths over time. I have seen it time and time again with local sockeye stocks in Kodiak, including the major systems such as Karluk, Ayakulik and the south end systems.

Please leave the Cape Igvak management plan alone.

Sincerely,

Edward Pestrikoff

Emil Christiansen Sr.

8211 DeBarr Rd.

Anchorage, AK 99615

Alaska Board of Fisheries

P.O. Box 115526

Juneau, AK

Re Opposition: to Proposals 58,59,60,61,62,63,64,37,65,66

Dear Alaska Board of Fisheries:

I'm a life-long Kodiak salmon fisherman from Old Harbor. I've fished crab, herring, cod, halibut but now all I have left is salmon.

Here we are again, fighting for our right to exist as a fishing community. This time it is both Chignik and Cook Inlet coming after us,

Why do Kodiak commercial fishing regulations have to change every three years? What is it that prompts board members to think we need to change yet again? I come to your meetings every three years and have to fight to keep my fishery. We don't go trying to take away some eles's fishery. Yet, every three years we're back here having to persuade you to just leave us alone. The fish we catch are a common property resource and have been allocated to our area by the board repeatedly over the past several decades. Let's leave things alone for once and we can go home and be happy with what we have – the opportunity to fish another season.

It is clearly impossible to forego more incidental harvest of Cook Inlet bound salmon in Kodiak without dramatically restricting Kodiak's fishery. Kodiak and Cook Inlet salmon fisheries have fundamentally different properties. Cook Inlet catches approximately 3 million salmon a year, most of which are sockeye. Kodiak catches approximately 15 million salmon, most of which are pinks.

Does it make sense to you that Kodiak should forego millions of bright pinks in order to add a few thousand more sockeye in Cook Inlet? If you take the Kodiak fleet off the capes and push the fleet up into the bays to harvest black pinks, what is the considerable cost in lost quality? Do you believe the losses in Kodiak from a wholesale destruction of its seven local stock management plans would be balanced by much smaller, likely undetectable gains in Cook Inlet?

If the UCIDA proposal, # 66, were adopted, the various sockeye caps would be achieved in just a day or two of fishing. Without fishing opportunity many vessels, set net sites, tenders, and

processors would find it unmanageable to operate at all. Permit prices would plummet, more permits would go unfished, businesses would close, and Kodiak Island communities would suffer. The small gains realized by Cook Inlet fishermen could not offset the economic gutting of Kodiak's salmon fishery.

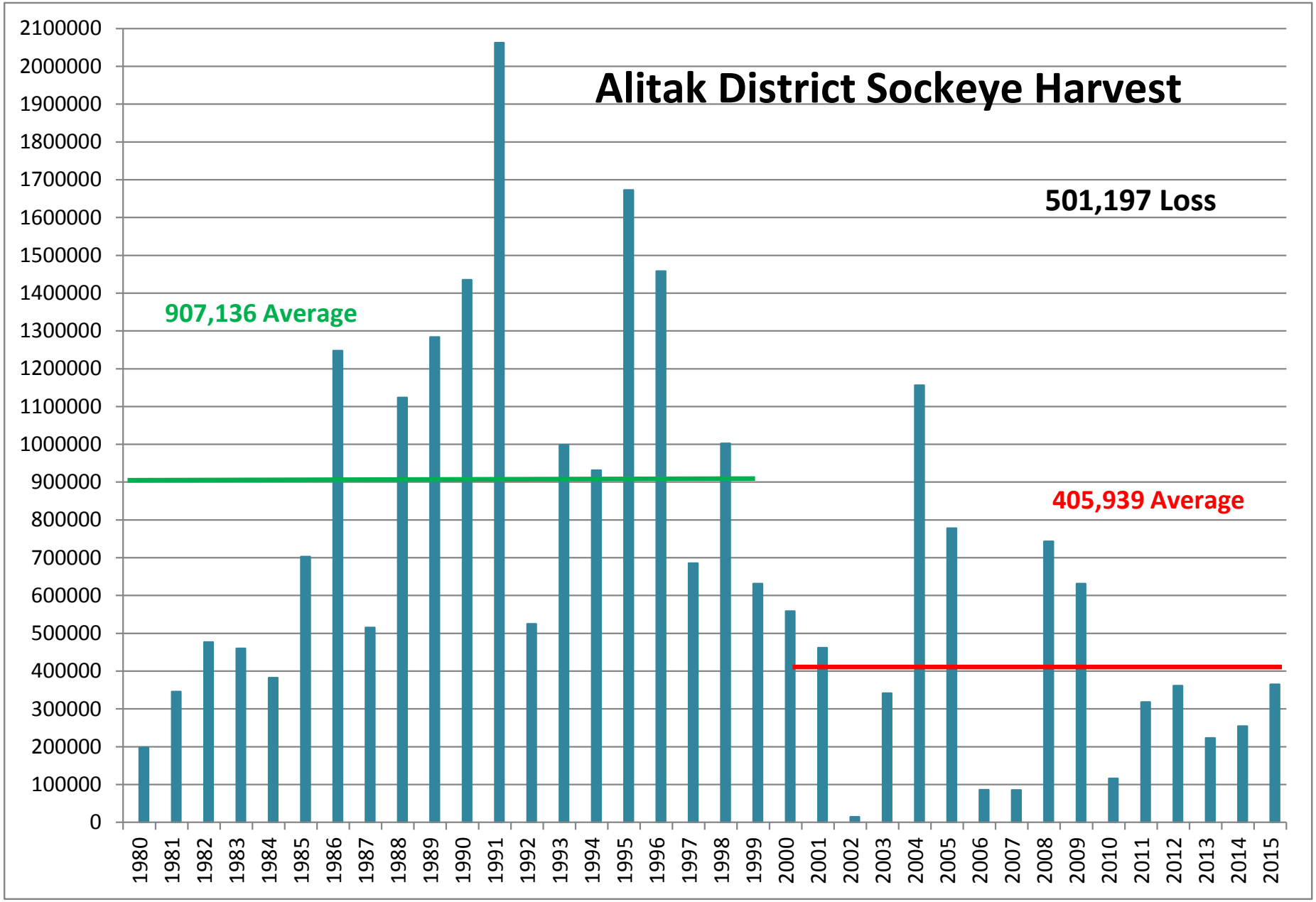
Under the standards of the Board's Mixed Stock Policy and the allocation criteria, balancing of gains and impacts must occur. Otherwise the policy and the criteria would long ago not have survived judicial review. Economic harm in Kodiak under proposal 66 and others is not balanced by economic gain in Cook Inlet.

The seven local stock management plans adopted by the Board many years ago insure that the Kodiak fishery remains stable, and that the passage of sockeye to Cook Inlet is optimized to the maximum extent consistent with the Mixed Stock Policy and the allocation criteria.

As fishermen we need to get along and work together. We shouldn't be fighting each other every three years. If you change Kodiak's management this year, then we'll have to fight to change Chignik's management in a couple of years and Cook Inlet's management three years from now. Why start that kind of conflict over and over? I ask you to let the Cape Igvak Management plan stay the same and to retain the current North Shelikof Management Plan. Please vote NO on proposals 58,59,60,61,62,63,64,65,66, and 37!

Thank you.

Emil Christiansen. Sr.



Submitted by Eric Dieters

Frazer 1975-2009

Escapemen	Total return	R/S	Theoretical yield
0	0	0	0
25,000	105,944	4.24	80,944
50,000	182,151	3.64	132,151
75,000	234,883	3.13	159,883
100,000	269,226	2.69	169,226
125,000	289,304	2.31	164,304
150,000	298,444	1.99	148,444
175,000	299,320	1.71	124,320
200,000	294,073	1.47	94,073
225,000	284,403	1.26	59,403
250,000	271,656	1.09	21,656
275,000	256,885	0.93	-18,115
300,000	240,910	0.80	-59,090
325,000	224,359	0.69	-100,641
350,000	207,709	0.59	-142,291
375,000	191,314	0.51	-183,686
400,000	175,429	0.44	-224,571
425,000	160,235	0.38	-264,765
450,000	145,851	0.32	-304,149
475,000	132,348	0.28	-342,652

Upper Station early run 1975-2009

Escapemen	Total return	R/S	Theoretica l yield
0	0	0	0
10,000	35,660	3.57	25,660
20,000	65,554	3.28	45,554
30,000	90,382	3.01	60,382
40,000	110,768	2.77	70,768
50,000	127,267	2.55	77,267
60,000	140,375	2.34	80,375
70,000	150,531	2.15	80,531
80,000	158,128	1.98	78,128
90,000	163,514	1.82	73,514
100,000	166,995	1.67	66,995
110,000	168,845	1.53	58,845
120,000	169,304	1.41	49,304
130,000	168,586	1.30	38,586
140,000	166,877	1.19	26,877
150,000	164,343	1.10	14,343
160,000	161,128	1.01	1,128
170,000	157,359	0.93	-12,641
180,000	153,146	0.85	-26,854

Upper Station late run 1975-2009

Escapemen	Total return	R/S	Theoretical yield
0	0	0	0
20,000	94,696	4.73	74,696
40,000	180,136	4.50	140,136
60,000	256,996	4.28	196,996
80,000	325,913	4.07	245,913
100,000	387,480	3.87	287,480
120,000	442,249	3.69	322,249
140,000	490,738	3.51	350,738
160,000	533,431	3.33	373,431
180,000	570,778	3.17	390,778
200,000	603,199	3.02	403,199
220,000	631,088	2.87	411,088
240,000	654,810	2.73	414,810
260,000	674,705	2.60	414,705
280,000	691,090	2.47	411,090
300,000	704,262	2.35	404,262
320,000	714,496	2.23	394,496
340,000	722,046	2.12	382,046
360,000	727,152	2.02	367,152
380,000	730,033	1.92	350,033

Upper Station/Akalura Harvest

("LATE-LATE"; AUGUST 25-29) 2014

	2014
Uganik-Kupreanof	6,915
Uyak	10,186
Karluk-Sturgeon	7,045
Ayakulik-Halibut Bay	??
W & SW COMBINED HARVEST	**24,146**

5 day period to catch 24,146 Late Upper Station Sockeye

("Late"; July 26–August 29) 2014

	2014
Alitak District Seiners Harvest	**3,449**

35 day period to catch 3,449 Late Upper Station Sockeye

Data in this document was used from the Genetic Stock Composition
of the Commercial Harvest of Sockeye Salmon in Kodiak Management Area, 2014–2016

Ayakulik/Frazer Harvest "Early" (June) 2014

	2014
Uganik-Kupreanof	12,571
Uyak	18,819
Karluk-Sturgeon	19,980
Ayakulik-Halibut Bay	116,247
W & SW COMBINED HARVEST	**167,617**
Alitak District Seiners Harvest	**0**

Upper Station/Akalura Harvest "Early" (June) 2014

	2014
Uganik-Kupreanof	524
Uyak	1,523
Karluk-Sturgeon	1,622
Ayakulik-Halibut Bay	4,539
W & SW COMBINED HARVEST	**8,208**
Alitak District Seiners Harvest	**0**

Data in this document was used from the Genetic Stock Composition
of the Commercial Harvest of Sockeye Salmon in Kodiak Management Area, 2014–2016

Submitted by Eric Dieters

Genetic Stock Composition Information for Alitak Sockeye

Upper Station/Akalura Sockeye Harvest

	2014	2015	2016
Uganik-Kupreanof	8,203	966	-
Uyak	13,411	-	2,006
Karluk-Sturgeon	13,723	4,045	3,810
Ayakulik-Halibut Bay	20,529	11,691	4,142
W & SW COMBINED HARVEST	**55,866**	**16,702**	**9,958**
Alitak District Seiners Harvest	8,829	12,665	17,264
Estimated Alitak Setnet Harvest	14,224	26,152	28,991
Total Alitak District Harvest	**23,053**	**38,817**	**46,255**
Escapement Total ER+ LR	**218,234**	**187,337**	**193,060**
TOTAL RUN Escapement + Harvest	**297,153**	**242,874**	**249,273**
W & SW COMBINED HARVEST	18.80%	6.88%	3.99%
Total Alitak District Harvest	7.81%	15.98%	18.55%

Data in this document was used from the Genetic Stock Composition
of the Commercial Harvest of Sockeye Salmon in Kodiak Management Area, 2014–2016
and Kodiak Management Area Salmon Escapement and Catch Sampling Results, 2014 -2016

Submitted by Eric Dieters

Ayakulik/Frazer Sockeye Harvest

	2014	2015	2016
Uganik-Kupreanof	17,431	3,715	1,380
Uyak	29,466	2,258	7,264
Karluk-Sturgeon	45,406	15,081	5,115
Ayakulik-Halibut Bay	236,602	252,727	62,295
W & SW COMBINED HARVEST	**328,905**	**273,781**	**76,054**
70% Ayakulik /**30 % Frazer**	230,234 / **98,671**	191,647 / **82,134**	53,238 / **22,816**

Alitak District Seiners Harvest	**66,942**	**55,537**	**24,579**
70% Frazer / 30% Ayakulik	**46,859** / 20,083	**38,875** / 16,662	**17,205**/ 7,374

Estimated Alitak Setnet Harvest	**112,031**	**89,556**	**49,636**

Escapement Total Frazer Lake	**200,296**	**219,093**	**122,585**

TOTAL RUN Escapement + Harvest	**457,857**	**429,658**	**212,242**
W & SW COMBINED HARVEST	21.5% at 30% ratio	19.1% at 30% ratio	10.7% at 30% ratio
Alitak Setnet + Seiner(70%) Harvest	34.7% at 70% ratio	29.8% at 70% ratio	31.4% at 70% ratio

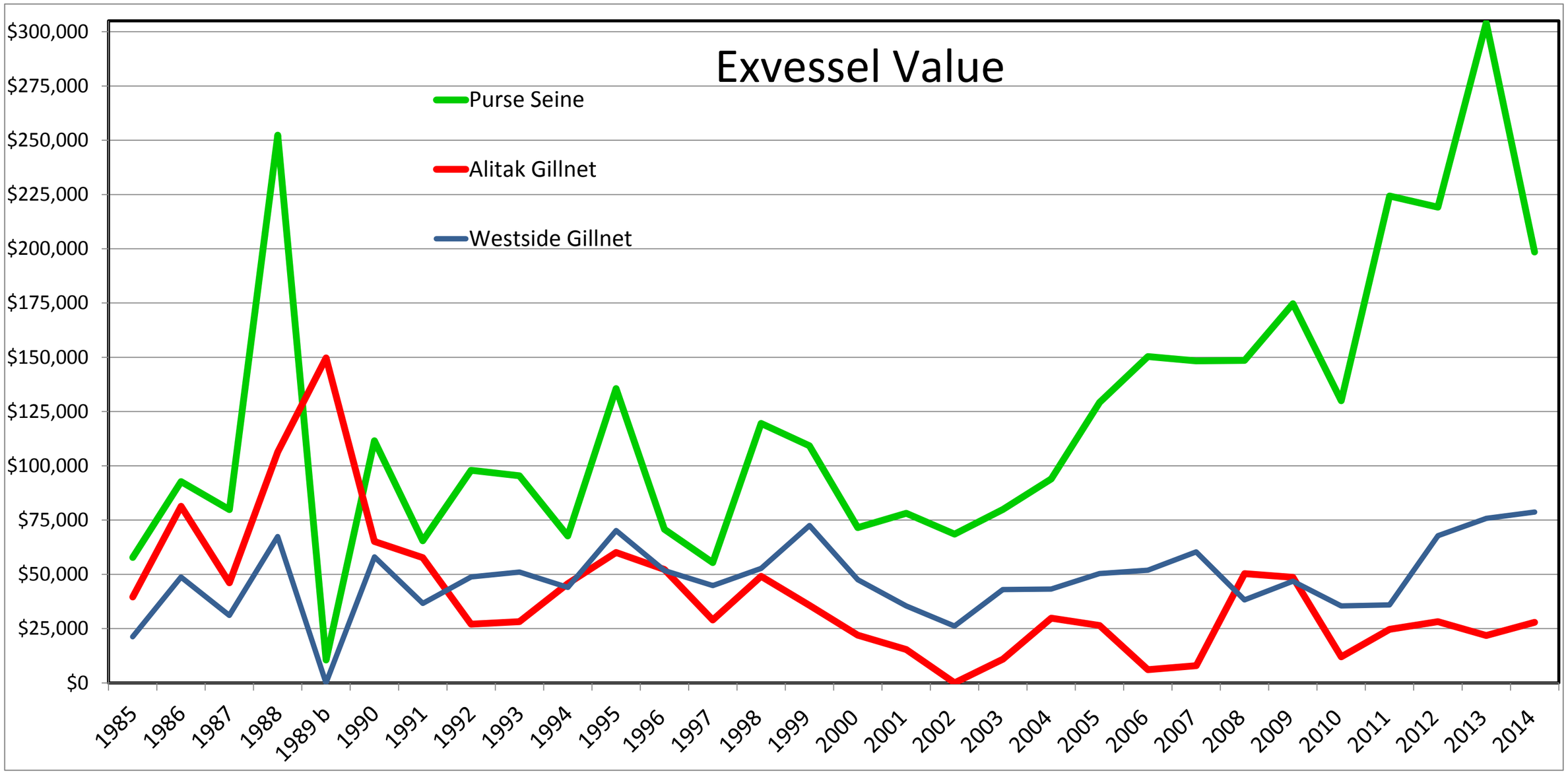
Numbers below show hypothetical mixed percentages of Frazer and Ayakulik sockeye

	2014	2015	2016
W & SW COMBINED HARVEST	**328,905**	**273,781**	**76,054**
50% Frazer/ 50% Ayakulik Sockeye	**164,452**/164,452	**136,890**/136,890	**38,027**/38,027
40% Frazer/ 60% Ayakulik Sockeye	**131,562**/197,343	**109,512**/164,269	**30,421**/45,633
30% Frazer/ 70% Ayakulik Sockeye	**98,671**/230,234	**82,134**/191,647	**22,816**/53,238

Alitak District Seiners Harvest	**66,942**	**55,537**	**24,579**
50% Frazer/ 50% Ayakulik Sockeye	**33,471**/33,471	**27,768**/27,768	**12,289**/12,289
60% Frazer/ 40% Ayakulik Sockeye	**40,165**/26,777	**33,322**/22,215	**14,747**/9,832
70% Frazer/ 30% Ayakulik Sockeye	**46,859**/20,083	**38,87**5/166,62	**17,205**/7,374

Data in this document was used from the Genetic Stock Composition
of the Commercial Harvest of Sockeye Salmon in Kodiak Management Area, 2014–2016
and Kodiak Management Area Salmon Escapement and Catch Sampling Results, 2014 - 2016

Submitted by Eric Dieters



Submitted by Eric Dieters

Pulse Fishing

-Is a natural way for systems to rebuild via escapement, without man made enhancement and fertilization projects.
-Allows the "Mixed Stock" and "Sustainable Salmon fisheries" to function as conservation tools as they were intended.
-Allows "Traditional Harvest Areas" for both subsistence and commercial to remain in place.
-Allows runs to stay strong for future returns and large surplus harvest opportunities for all fishermen.
-Ensures a "precautionary approach" to keeping an ecosystem/industry relationship at a healthy balance.
-Gives ADF&G the power to manage an Island migratory ecosystem more effectively than a district by district policy with political boundaries.
-The *"Burden of Conservation*" will be shared more by the *entire* migratory pathway harvest user group rather than just the *end* harvest user group.

Commercial Salmon Fishing Regulations

Migratory Habitats and Pathways should be protected
-5AAC 39.222 (c) (A) (iv) page 68

"Escapement Protection and **Precautionary** Conservation of salmon"
-5AAC 39.222 (c) (2) (D,E,F,H) Page 69

"Primary goal to **protect sustained yield**, while at the same time providing an **equitable distribution of harvest** between various users"
-5AAC 39.200 (a) page 65

Mixed Stock Fisheries. 5AAC39.220 (b) page 67
-**Burden of conservation** should be shared respective to their harvest on the stock of concern.

High Impact **Emerging** Commercial Fisheries
-5AAC 39.210. (a)

Topics of Concern for the Alitak District.

Fishing pressure is too intense island wide.
Leaving harvest areas open "Extended until further notice" is not good for salmon ecosystems. Alitak district is the only area with a mandatory pulse cycle. Alitak District sockeye fishermen are often "closed until further notice", while surrounding sections and districts are kept "open until further notice".

Migratory pathways of sockeye are known, but are not being protected.
Interception harvest issues need to be addressed. Placing the burden of conservation solely on the Alitak end user group is putting fishermen out of business. Traditional harvest areas are no longer profitable.

Lack of protection of sockeye escapement has put Alitak District runs at risk.
Escapement trends are considerably lower than what they used to be. What kind of future return size can we expect from low escapement in the lakes? Escapement should be the top priority of ADF&G, fishermen, and processors.

When ADF&G is trying to obtain escapement, more than one Section/ District should be able to be closed for the protection of that respective run. Keeping the sockeye section of the Alitak District closed has proven to be not enough protection for the runs. Minimum escapement is not always achieved.

Alitak District has some of the Islands largest salmon runs, but receives the least amount of attention via Research and Management protection.

New styles of harvesting, and advanced gear technology have emerged making harvest more efficient island wide. ADF&G has not implemented any new protective measures to counter balance the advanced fleet pressure. Pulse Fishing management style needs to be extended out beyond the boundaries of the Alitak District.

Pulse open/closures are a simple management tool that should overrule District by District management plans when minimum escapement is needed. Migration pathways and run timing always need to be considered for the health of Sockeye bound for the Alitak district.

Alitak District is a complex area to manage because of the geographic location and multiple choke points that salmon must migrate past.
This area requires more attention from both the research and management.

Submitted by Eric Dieters

Erik OBrien
Kodiak Setnet
12/28/2019 12:59 AM AKST

RE: Comment on multiple proposals

My family has fished Kodiak setnet since 1977, I have been a participant since 1992 and an owner operator since 2002. Kodiak setnet is traditionally a family business, and unfortunately a fishery that is approaching a point of no longer being viable. Our family has been very lucky and worked very hard to build a business that we hoped to sustain ourselves. We make investments every year, and between the 5 families that contribute, all have jobs in the off season in hopes of perpetuating our ability to continue setnet fishing salmon in Kodiak. I am very proud to be a part of a sustainable managed fishery; however that statement has implications. One gear group cannot improve their allocation of the fishery without taking from another. We have become very effective at harvesting everything at a maximum sustainable level. For setnetting this means that we have lost out to other gear types and fisheries, as our harvest methods have basically remained unchanged while others improve. I do not fault others for increasing efficiency; although I do fault our selves for not becoming more efficient, or more appropriately, not changing the rules of our fishery to remain viable. If we continue to lose allocation to other districts and other gear types setnet fishing will cease to be a viable fishery. Said another way: hard working Alaskan fishing families such as mine will cease to be involved in our fishery. We must be allowed to improve our efficiency and maintain our historical allocation of the harvest of Kodiak salmon.

Ernest Torsen

P.O. Box 63

Ouzinkie Alaska 99644

Alaska Board of Fisheries

P.O. Box 115526

Juneau, AK 99811

Vote NO on proposals 37,58,59,60,61,62,63,64,65,66.

Dear Board Members:

I am a lifelong fisherman and resident of Ouzinkie and Kodiak's salmon fishery is important to me. It makes me mad that every few years someone is trying to take away from Ouzinkie's fishermen. Who owns the salmon that travel through the Kodiak area? Cook Inlet fishermen say they do. Chignik fishermen say some of those fish are theirs. But Kodiak fishermen have been fishing the same way for over a hundred years. These issues were decided 30 or 40 years ago!

The Alaska Constitution settled this question. That document provides that fish are reserved to the people for common use. It's called the "common property" clause. Also, the Constitution provides for no exclusive right of fishery. So, the fish everywhere belong to everyone, not to one particular group who may reside close to where salmon spawn.

The Alaska Legislature has directed that you, the Board of Fisheries, decide who gets to catch the fish based on the statutory allocation criteria. First among these is history. In the case of Kodiak and Cook Inlet, both areas have a long history of taking sockeye salmon, over 125 years. Cook Inlet does not deserve a preference based on this criterion.

Other important criteria include state and local economies. It would be difficult to justify a new preference for Cook Inlet over Kodiak based on economics and the economy of a village like Ouzinkie. Commercial sockeye fishing in both areas is important to local and state economies, but the Kodiak salmon fishery, which harvests primarily pinks and which would be greatly disrupted by attempts to limit bycatch of sockeye, is much larger than the Cook Inlet fishery.

Other allocation criteria relate to taking fish for food or recreation. Again, both areas have robust food and recreational fisheries, and finding that one area deserves a new preference would be destructive to the balance that has evolved over decades. I do want to thank the board for the exclusive subsistence area you created in the Ouzinkie harbor. This is a fishery I participate in every year to help feed the community.

No drastic changes are warranted in the Kodiak fishery at this time based on the board's allocation criteria, and based on the constitutional principle of common property. I urge the Board to retain the status quo. Vote NO on proposals 37,58,59,60,61,62,63,64,65 & 66.

Sincerely yours,

Ernest Torsen

Ernest Torsen

RECEIVED
DEC 16 2019
BOARDS

Ernie Carlson
FV Desperado
PO Box 21
Chignik, AK 99564

Alaska Board of Fisheries

Board Support Section
PO Box 115526
Juneau, AK 99811-5526

10 December 2019

Subject: Cape Igvak- **Proposals 60 and 61**.

Dear Alaska Board of Fisheries:

I am a life-long Chignik commercial salmon fisherman who depends on the Chignik salmon fishery to support my family and my three crewmen and their families from Chignik Lake Village.

The Chignik salmon fishery is solely managed on its two Chignik River sockeye runs. And unlike Kodiak and Area M, Chignik has no interception salmon fisheries or any other local sockeye stocks to depend upon when its two sockeye runs fail. It is evident that Chignik's two sockeye runs are no longer what they use to be, darn strong. In 2017, 2018, and 2019 Chignik's early run failed and in 2018 the same occurred on the late run. The Chignik forecast for 2020 on the early run is for a likely repeat of no fishery, and the late run is not expected to be strong.

Per F&G, the 2009-2018 Chignik harvest averaged 1.4 million while the 2014-2018 harvest averaged 0.9 million, a 36% decrease (Chignik Season Summary, F&G, 11/6/19). This last season (2019), the Chignik salmon fishery harvested only 648,000 sockeye salmon. Again the 2020 Chignik forecast is for a repeat of a no early-run fishery, and the late run is expected to provide below average opportunity.

Specifically please consider the following four points when you take up **Igvak proposals 60 and 61**:

1. When the Igvak interception fishery was pioneered in 1964, Chignik's two sockeye runs were healthy and remained such until more recently. Comparatively the Kodiak sockeye runs were severely depressed in the 1960's and 1970's and the Cape Igvak fishery provided an opportunity to redistribute revenue away from Chignik to Kodiak---- socialism.

2. Now Chignik is weak and Kodiak sockeye stocks are healthy. Kodiak has 39 significant sockeye-producing streams, two hatcheries, and several notable newly developed runs. Chignik has but its two sockeye runs and not a single hatchery or enhanced or introduced salmon run of any species. Economically Chignik is totally dependent on local salmon production, while Kodiak has not only many salmon-producing fisheries but many other economic components (ground & shellfish fisheries, tourism, USGC base, numerous service industries, space station, ranching, and a university system).

3. Kodiak no longer needs the Igvak fishery. Its sockeye harvest has more than doubled from when the Board adopted the Igvak fishery. Per F&G the 1973-77 Kodiak average was only 397,000 and in 1978 when the Board sanctioned Igvak, the catch increased to 1.0 million sockeye salmon. Now Kodiak is averaging 2.3 million sockeye (2009-18), and last season (2019) the catch was 2.2 million. In perspective Chignik harvested 0.6 million in the 2019 fishery and a mere 128 sockeye salmon in their 2018 'fishery.'

4. Chignik needs your help. It needs relief in the good years, if there are to be any more, as well as in the mediocre and poor years. The Board can greatly assist Chignik by passing Igvak Proposals 60 and 61.

Thank you.
Sincerely

Ernie Carlson

Freddie Christiansen
PO Box 56
Old Harbor

12/18/19

Chairman Reed Morisky
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Proposals 63, 64, 65, and 66

Dear Chairman Morisky and Board of Fish members:

I am a lifelong resident of Old Harbor, Alaska on the eastside of Kodiak island. I have been involved in the salmon fishery in Kodiak since I was 6 years old, with my first paycheck from fishing came in 1969. In those days salmon was our mainstay, prior to the crab boom of the 1970s. I've lived through tremendous negative impacts of the Old Harbor community through changes in management such as the limited entry and IFQ programs. I respectfully request the board **reject** these proposals to change the Kodiak management plan and allow Kodiak fisherman to continue the historic harvest patterns I have enjoyed since I was a child.

The proposals from fisherman in Cook Inlet fail to recognize the historic harvest of Cook Inlet bound sockeye in the Kodiak fishery. As far as I can remember, the incidental, historic harvest of these sockeye has been entirely relative to the strength of the Cook Inlet run. It is a matter of fact that in years of strong Cook Inlet returns, Kodiak fisherman harvest more Cook Inlet origin sockeye simply by nature of the geographic location of Kodiak in the Gulf of Alaska. Does the harvest of these sockeye cause detriment to the strength of the Cook Inlet runs, absolutely not. This historic harvest has occurred since commercial fishing existed in the Kodiak area, well over 100 years.

I respectfully request you leave the Kodiak management plan alone. These proposals could cripple the healthy and historic Kodiak fishery while creating an immeasurable gain to the Cook Inlet region.

Sincerely,



Freddie Christiansen

Freddie Christiansen
PO Box 6
Old Harbor AK
99643

12/18/19

Chairman Reed Morisky
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Proposals 58, 59, 60, and 61

Dear Chairma Morisky and Board of Fish members:

I am a lifelong resident of Old Harbor, Alaska on the eastside of Kodiak island. I have been involved in the salmon fishery in Kodiak since I was 6 years old, with my first paycheck from fishing came in 1969. In those days salmon was our mainstay, prior to the crab boom of the 1970s. I've lived through tremendous negative impacts of the Old Harbor community through changes in management such as the limited entry and IFQ programs. I respectfully request the board **reject the proposals** to change the Cape Igvak management plan and place any further restrictions on the Kodiak Salmon fishery.

I am sympathetic to the fisherman of Chignik as they have experienced what no fisherman should have to, the decline of a revenue stream they rely on, however recognize that the Kodiak Fisherman did not in any way cause the decline of Chignik stocks. The Cape Igvak management plan prevents that from happening through safeguards to protect the Chignik sockeye runs biologically. In addition, allocation protections also exist that guarantee Chignik fisherman are allowed to harvest 300,000 sockeye before any fishing time exists for Cape Igvak fisherman. It is therefore impossible for Kodiak fishermen to be held at fault for the economic downturn in the Chignik area.

The Cape Igvak management plan exists because Kodiak fisherman have historic harvest patterns in that area, and that plan has undergone significant review by previous Boards to find deficiencies that need to be addressed. They haven't found any, and what remains is the second longest standing management plan in the state. The economic hardships in Chignik will not be fixed by changes to this management plan, therefore any changes should be rejected.

Sincerely,



Freddie Christiansen

From: Gabriel Edwards
To: DFG, BOF Comments (DFG sponsored)
Subject: proposals
Date: Thursday, December 26, 2019 8:59:59 AM

Hello, my name is Gabriel Edwards. I'm a 31 year old commercial salmon setnet fisherman and lifelong resident of Kodiak Island, Alaska. I would like to comment on the following proposals:

Proposal #67: Our setnet industry has been burdened lately with a large increase in green algae blooms/"slime" on our gillnets. Although "slime" has long been an occasional factor in our industry, in recent years it has gotten much worse, and I feel like this proposal could potentially make the situation better for us. Monofilament may make the gillnets easier to clean and I don't see any real downside regarding its use, so I'm supporting this proposal.

Proposal #71: Ensuring that management targets are attained before inner bay fish are harvested seems like something which should be an obvious priority. Lately it seems like the setnet fishery has been disadvantaged by a model that greatly limits the opportunities setnetters have to harvest the resource, and instead relies on the seine fleet to fulfill that role once the fish have reached the inner bays. To me the idea that nets which are fixed to the shore (setnets) would have a more deleterious effect on the resource than mobile operations which can target it anywhere (seiners) is bizarre. I'd prefer a system in which both geartypes get a fair shot at harvesting and the resource is protected, so I support this proposal.

Proposals re: Cook Inlet: I'm 100% against any changes resulting from the Cook Inlet issue which would adversely affect the Kodiak fisheries management plan. I last wrote about this issue several years ago and my opposition has not changed since that time.

Garman Squartsoff
Box 112
Ouzinkie, AK 99644

December 23, 2019

Alaska Board of Fisheries
P.O. Box 115526
Juneau, Ak 99811

RE: Vote NO Proposals 37,63,64,65,66

Dear Board of Fisheries Members:

I'm a crewman and I live in Ouzinkie. My family for several generations is from Ouzinkie. I've both gillnetted and seined salmon with Ouzinkie permit holders. Fishing is my primary income. I'm learning about the fisheries but I can already see that it doesn't make sense to close down Kodiak's July fishery because of a guess that Cook Inlet sockeye may be passing through our area. We setnet in inside waters and sometimes catch what appear to be Cook Inlet bound sockeye. Closing more of the Shelikof or moving boats to the capes won't stop our catch of Cook Inlet fish when they are here. To me it's like closing the gate after the cows are gone. You'll always be trying to regulate last years salmon run. I say stay with the way things are and reject proposals 63,64,65 and 66.

Proposal 66 is the same thing as the Board saw in September 2017 and similar to what UCIDA proposed years ago. I can read any real justification in the proposal's language except an allusion to a "genetic study" The Shedd genetic study from 2014-16 does not lend itself to be used for allocation purposes. Consequently, proposal 66 has no real justification, no foundation, solves no problems in Cook Inlet, and, from what I understand, it would be impossible to measure the effects of the proposal in Cook Inlet.

It is possible, however, to measure the impact to the Kodiak seine fleet of implementing proposal 66. The 6-year average annual foregone loss to Kodiak fishermen if you adopt Proposal 66 would be 3.5 million dollars. In 2019 alone, 4.5 million dollars would have been lost. Fish bound to Cook Inlet through Kodiak seine fisheries are an unknown but tiny fraction of that 4.5 million dollars. For the seine fishery the average annual loss per permit holder over the past six years would be $42,800. That's each year for each permit. How many of you can give up $43,000 per year and survive? The effect on Ouzinkie as well as Kodiak would be devastating. The annual benefit to Cook Inlet commercial fishermen, if noticeable, would be far, far less than 4.5 million dollars

Why would you consider taking such a drastic action that has never before been imposed on any commercial fishery in Alaska? No board has ever intentionally ripped the heart out of a long-standing stable salmon fishery for purely allocative reasons without a shred of conservation concern being present. Vote No on 63,64,65,66 & 37.

Sincerely yours,

Garman Squartsoff

Gary Boskofsky

P.O. Box

Ouzinkie Alaska 99644

Alaska Board of Fisheries

P.O. Box 115526

Juneau, AK 99811

Vote NO on proposals 37,58,59,60,61,62,63,64,65,66.

Dear Board Members:

I am a life long resident of Ouzinkie and Kodiak's salmon fishery is important to me. It makes me mad that every few years someone is trying to take away from Ouzinkie's fishermen. Who owns the salmon that travel through the Kodiak area? Cook Inlet fishermen say they do. Chignik fishermen say some of those fish are theirs. But Kodiak fishermen have been fishing the same way for over a hundred years. These issues were decided 30 or 40 years ago!

The Alaska Constitution settled this question. That document provides that fish are reserved to the people for common use. It's called the "common property" clause. Also, the Constitution provides for no exclusive right of fishery. So, the fish everywhere belong to everyone, not to one particular group who may reside close to where salmon spawn.

The Alaska Legislature has directed that you, the Board of Fisheries, decide who gets to catch the fish based on the statutory allocation criteria. First among these is history. In the case of Kodiak and Cook Inlet, both areas have a long history of taking sockeye salmon, over 125 years. Cook Inlet does not deserve a preference based on this criterion.

Other important criteria include state and local economies. It would be difficult to justify a new preference for Cook Inlet over Kodiak based on economics and the economy of a village like Ouzinkie. Commercial sockeye fishing in both areas is important to local and state economies, but the Kodiak salmon fishery, which harvests primarily pinks and which would be greatly disrupted by attempts to limit bycatch of sockeye, is much larger than the Cook Inlet fishery.

Other allocation criteria relate to taking fish for food or recreation. Again, both areas have robust food and recreational fisheries, and finding that one area deserves a new preference would be destructive to the balance that has evolved over decades. I do want to thank the board for the exclusive subsistence area you created in the Ouzinkie harbor. This is a fishery I participate in every year to help feed the community.

No drastic changes are warranted in the Kodiak fishery at this time based on the board's allocation criteria, and based on the constitutional principle of common property. I urge the Board to retain the status quo. Vote NO on proposals 37,58,59,60,61,62,63,64,65 & 66.

Sincerely yours,

Gary Boskofsky

Gene Anderson
Box 47
Ouzinkie, AK 99644

December 23, 2019

Alaska Board of Fisheries
P.O. Box 115526
Juneau, Ak 99811

RE: Oppose Proposals 58,59,60,61,62,63,64,37.65.66

Board Members:

I'm a retired salmon fisherman from Ouzinkie. I've lived and fished my whole life in Ouzinkie. Salmon fishing is what Ouzinkie was built on. We all grew up fishing and working to get our own boat. That's why I get angry when I see these proposals from Cook Inlet and Chignik. I fought over the Cape Igvak plan and the North Shelikof plan all those years ago. We reached a compromise both sides could live with. Now, even though I'm retired, they are still coming back to take away the Kodiak salmon fishery from Ouzinkie fishermen. It's not right that they can just keep coming back and asking for more, more more!

Look at proposal 66. If the Board wanted, for whatever reason, to move several thousand sockeye salmon out of the Kodiak salmon fishery and into the Cook Inlet fishery, where would you start? Proposal 66 just start blindly guts the Kodiak local stocks oriented. There are no "hot spots" where Cook Inlet fish tend to concentrate year after year in the Kodiak area. What little directed effort did occur at Cook Inlet stocks in Kodiak ended 30 years ago, but UCIDA still uses one incident from 1988 to try to persuade you that there is a problem that needs fixing.

How will you be assured that sockeye saved from one part of Kodiak won't be caught further north or west or east or south but still in the Kodiak area? How will you ever measure the success of such blind stabs in the dark? You would need to close all fishing in Kodiak to be sure of a savings! How will you know the fish you allegedly saved will show up in Cook Inlet? The predators still need to be fed, and many salmon won't survive the gauntlet of sea lions, orcas and legions of seals.

I just don't see why the Board would create havoc in the Kodiak local stocks fishery in order to provide more escapement or more catch in Cook Inlet? Will you even be able to measure the difference? What are the economic tradeoffs? You would be taking several million dollars out of the Kodiak fishery to boost UCIDA's catch by a few thousand sockeye? What does your allocation criteria say about that? The gains realized by Cook Inlet fishermen could not possibly offset the economic devastation in Kodiak. The balance weighs heavily in favor of continuing Kodiak's current management plans.

Thank you for your time.

Gene Anderson

December 27, 2019
Grace Allen
PO Box 1907
Kodiak, AK 99615

Alaska Board of Fisheries
Board Support Section
PO Box 115526
Juneau, AK 99811-5526

RE: **Oppose Proposal 58-62**

To the Board of Fisheries

I'm writing in **opposition to proposals 58-62**. I am a 27 year-old commercial fisherman with a decade of experience fishing around Kodiak island. I'm planning to invest in Alaska's salmon industry by buying my father's boat and continuing in his footsteps as a skipper of a Kodiak seiner. However, I have reservations regarding the future of the Kodiak salmon industry especially in the face of these proposals, and want have confidence in the management of our fishery before I invest my future.

As a crewmember on a Kodiak seiner Igvak is my favorite area to fish. The money I have made from fishing in Igvak is what will help me buy my salmon permit and further invest in our community. There are already many obstacles facing young fishermen entering the salmon industry. As recent years have shown, the salmon runs around Kodiak have become more unreliable, as rivers remain dry all summer the future of our salmon runs are uncertain. If Igvak is further restricted from the Kodiak seine fleet I am concerned that it will make it even harder for a young fishermen like myself to get a foothold in the industry.

Please oppose these proposals and help me and other young Kodiak fishermen be confident in the future of our fishery.

Thank you,
Grace Allan, FV Orion

RE: Comment on multiple proposals

Salutations Chairman Morisky and Board of Fisheries Members, My name is Henry Orth V, and I was born in Port Lions, a small village situated by the sea, on Kodiak Island. The son, grandson, and nephew of Kodiak and Afognak commercial fishers it's safe to say that salmon and the sea are deeply engrained in my DNA. A life of commercial fishing has instilled in me a sense of adventure, hard work, persistence, and respect for the sea. The aforementioned being values I hope to pass on to my young son. However, the proposed amendments to the Kodiak Commercial Salmon season (# 37 and 58-65) threaten the historical, economic, and cultural significance of Kodiak's storied salmon fishery. This being said I urge you to vote NO on proposals (#37, and 58-65) Much like the salmon that provide us our livelihood, the bounty of the bays, capes, and rivers of the Kodiak Statistical salmon area is one of cycles. No two seasons are the same, nor are two statistical salmon areas the same. Two lackluster seasons in Chignik, are from reason enough to limit and/or restrict openings in the Cape Igvak area. Fishing openers in the Cape Igvak section of the Mainland District are already dictated by Chignik catch/escapment, and to employ any further restrictions to Kodiak fisherman in June is highly detrimental to the economic prosperity of our Kodiak Fisherman. The vocal minority will always rise above the silent majority. With that said, too long have Kodiak Fisherman suffered at the expense of keeping Chignik fishers appeased and amiable. Additionally, restricting Westside Kodiak/Afognak openers to "protect" Cook Inlet sockeye returns is an incredibly asinine and erroneous proposal. Salmon by nature travel thousands of miles to return to spawn, however they don't always travel the same SEA-nic highway each year, nor do they follow a strict schedule. Cook Inlet reds have been caught as far south as Sitkinak as well as along the entire Western Shore of Kodiak, and Afognak anytime from late June - late July. Yet, they still seem to return to the Kenai in record numbers. Kodiak Fisherman intercepting these Cook Inlet bound fish is always a shot in the dark, and restricting Westside fishing time as the Pink Management plan starts (July 6th) would be deeply detrimental to Kodiak seiners and Gillnetters. Thank you for your time, and I implore you to vote NO on propsals (37, and 58-65) in order to protect the future of Kodiak's salmon fishery. Henry Orth V Kodiak Salmon Seine Permit Holder

Herman Andrewvitch
P.O. 83
Old Harbor, AK 99615

December 18, 2019

Alaska Board of Fisheries
P.O. Box 115526
Juneau, AK 99811

Re: Vote NO: Proposals58,59,60,61,62,63,64,37,65,66

Dear Alaska Board of Fisheries:

I started fishing on Old Harbor salmon vessels back in 1994. I've done salmon fishing on one or more local vessels every summer since then. Fishing is about the only job in Old Harbor. Old Harbor has a good size local fleet but there use to be lots more fishing opportunities - herring, tanner crab, cod,. Now it's just salmon. I hope you will keep Kodiak's salmon fishery the way it has been over the past 25 years --- it's all we have left! These proposals from Chignik and Cook Inlet will directly reduce my crew share allot. I ask you to vote NO on these proposals.

When you live in the village, it's hard to understand how people outside of the village can take away something like fishing. One of the Cook Inlet proposals looks to me like it would just shut down the seine fishery with the cape to cape closures. One of the main reasons to fish on the capes is to catch bright fish before they spawn. If you eliminate cape fishing for most of July, I think it's likely we'll be harvesting lots of black humpies.

My skipper has been fishing on Kodiak Island for more than 50 years. He has seen lots of things come and go. Over that entire time fishing in Kodiak, he has tried to find Cook Inlet sockeye in the Kodiak area. He tells me that sometimes Cook Inlet fish are here but most years they don't really show up in big numbers. From what he says, I don't think Kodiak is having that big of an impact on Cook Inlet. Normally, when we catch a few fish here, they are having a big run in the Inlet.

We fish at Cape Igvak if it is open. It sure seems like we're restricted allot over there. I don't understand why Chignik wants even more regulations. Many times, when we go over to Cape Igvak, the fish are already passed. Cape Igvak, just like the presence of Cook Inlet fish is a hit and miss fishery. Making closures creates the same restrictions every year but we know fish don't run the same way. That's why you need to oppose proposals 58,59,60,61,61,63,64,37, 65&66.

Sincerely yours,

Herman Andrewvitch

Herman Andrewvitch

James Fogle

12/16/2019 10:43 AM AKST

RE: PROPOSALS 58, 59, 61-66, 37

Over the last 40 years the Kodiak area has been the most flexible place in the state with helping to protect other areas fishing. From the original Igvak compromise to the seaward zone closures on the northwest side we have given up fishing space and time. We have reached a point where others have put forward proposals such as this one that will irreparably harm Kodiaks ability to harvest salmon in our district! The board needs to step froward and reject these self interested proposals aimed at further choking Kodiak salmon fishermen from making a living.

James Skonberg
Box
Ouzinkie, AK 99644

December 26, 2019

Alaska Board of Fisheries
P.O. Box 115526
Juneau, Ak 99811

RE: Vote NO Proposals 37,58,59,60,61,62, 63,64,65,66

Dear Board of Fisheries Members:

I am a long time Kodiak area salmon fisherman and I live in Ouzinkie. I grew up in Chignik and fished there before I moved to Ouzinkie in the 60's. My fishing career has spanned the history of the Cape Igvak fishery. I remember when we were allowed to fish at Cape Igvak whenever Chignik was open. I also remember when the Department of Fish and Game came up with the Cape Igvak management plan. Kodiak fishermen, like me, felt we had lost something when the original Cape Igvak plan was put in place. We would rather have fishing time than a percentage.

Now I see the Cape Igvak management plan differently. I see that my nephews and other relatives in Chignik are able to catch enough fish to pay most of their expenses before Kodiak can fish at Cape Igvak. In a season like last year or the disaster in 2018, Kodiak didn't fish at Cape Igvak because of the poor early Chignik run. I see this as the Cape Igvak management plan working --- saving the resource and helping out Chignik fishermen with an economic guarantee. That's why I think you should vote NO on proposals 58, 59, 60, 61 and 62. The plan is balanced and Chignik and Kodiak fishermen need to work together rather than fighting about Cape Igvak every three years.

I've also fished through the whole controversy regarding Cook Inlet origin sockeye in the Kodiak Area. Ouzinkie fishermen have known about the occasional presence of Cook Inlet fish since I started fishing. The trouble is that they don't show up every year and don't seem to hit in the same spot. Creating the North Shelikof Management Plan hurt my fishing. I had fished up around North Afognak for many years. Fortunately, Ouzinkie fishermen were able to have the Board modify the S.W. section of the North Shelikof management plan to allow us to fish "one set out" in that area which really helped the Ouzinkie fleet. All this is to say that I don't know how you regulate Kodiak more for when Cook Inlet fish may or may not appear. It just doesn't make sense. The harm to Kodiak and Ouzinkie would hurt far more than the benefit to Cook Inlet. I say vote NO on proposals 63,64,65 & 66.

I just want to say one thing regarding proposal 37. It looks like the tail wagging the dog. Yes we have concerns about Chinook salmon. But the solution is not some universal scheme that creates lots of hardship without a known benefit. Vote NO on proposal 37 (and RC 9)!

Sincerely yours,

James Skonberg

DATE: December 27, 2019

RE: Opposition to proposals 58-66 and 37

Chairman Morisky and members of the Board of Fisheries,

Thank you for the opportunity to comment on these proposals in advance of the Board meeting for Kodiak. I respectfully requests you oppose proposals 63, 64, 65, 37 and 66 as they present unjustified changes to a successful conservation tool and a very complex management plan for the Kodiak Management Area (KMA) salmon fishery.

I have participated in the set net fishery on the west side of Kodiak Island since 1979. Over the years as my family grew, my children and I built up our family operation. Today all three of my children and their families –including 3 grandchildren participate in the fishery. Set netting on Kodiak's west side is a family based and historic fishery. We have had our good and bad seasons over the past 40 years. We have heard about the phenomenal catches of the Chignik and Cook Inlet fishermen as we plodded along with our mediocre catches in comparison we never blamed our low catches on others management areas.

Kodiak's salmon fishery has not changed since management plans were adopted starting wih the Cape Igvak management Plan in 1978 and continuing through the early 1990's. Forty years ago and one year before I first entered the fishery. There is no 'new and expanding' fishery in Kodiak.

Yet here we are once again at a regular 3-year cycle of the Alaska Board of Fisheries in a defensive position regarding incidental catch of salmon bound for Cook Inlet and Chignik. These proposals have been brought forth by the same Cook Inlet fishing groups of years past. The results of this repetitive attack on the KMA harvest strategy are many. Firstly, it effectively deprives Kodiak fishermen from addressing their own issues, as we are put in the position once again of defending the KMA in regards to incidental catch of Cook Inlet salmon. As long as salmon have been harvested in Kodiak, Cook Inlet bound salmon have been harvested incidentally. This incidental harvest will continue as long as there is a commercial salmon fishery in Kodiak. The much referenced 2014-16 Kodiak sockeye genetic stock identification study does not provide any new information but simply provides more data to previous stock assessments developed in the 1990'.

My family fish exclusively in the Central Section of the Kodiak Management Area. We fish alongside Kodiak seiners in the Central Section, a combined gear group area. The Central Section of the Northwest District is the only area of Kodiak Island that combines both gear groups. All other Kodiak areas are seine only. Set netters in the Central Section work in a highly competitive and crowded area. Every one of the proposals put forth by Cook Inlet groups or individuals, if adopted, will severely increase the seine effort in an already congested mixed gear group area. The set netters in the Central Section will be the greatest losers if any of these misguided restrictions are mistakenly adopted.
My family is busy harvesting local Kodiak stocks of pink, chum and local sockeye salmon during the time periods that Cook Inlet groups and individuals are proposing restricting our fishing times and historical fishing locations. Any change or reduction in our set net opportunity, along with increased seine pressure in our only area, during these significant time periods, will result in our fishery being compromised.

Our fishery and gear group of set netting has not changed since its inception. Every BOF cycle we look at Cook Inlet groups proposing extreme restrictions to our fishing time and opportunities which are already limited by our very congested and competitive area.

Remember the KMA is a very complex area and is tightly managed for Kodiak's own local stocks. There are hundreds of salmon streams on the Island of Kodiak as well as roughly a dozen sockeye systems that have run timings that span over 4 months during the summer. Trying to manage our own local stocks and at the same time trying to manage for non-local stock incidental harvest would create many problems. Kodiak fishermen are already sharing the conservation burden with the North Shelikof Management Plan that was agreed upon and adopted years ago.

When looking at the Board's allocation criteria, there is not anything historically, biologically, scientifically, environmentally or sociologically that would justify the Board making changes to Kodiak's management Plan. I ask you to follow your mandate and reject proposals 58-66 and 37 and protect Kodiak's Management Plan and my grandchildrens future in the Kodiak salmon fishery.

Sincerely,

Jane Petrich, Kodiak

December 27, 2019

Alaska Board of Fisheries
Reed Morisky, Chair
Attn: Glen Haight, Executive Director
1255 W 8th Street
P.O. Box 115526
Juneau, AK 99811-5526

RE: Opposition to proposals 63, 64, 65, 37, and 66

Dear Chairman Morisky and Board Members,

Thank you for the opportunity to provide written comment on these proposals. My family and I are setnetters in Uyak Bay which is in the Central Section of the Northwest Kodiak District. We live in a cabin near our fishing locations during the summer months. The setnet fleet in this area make up a large part of the local community. As a group, northwest setnetters are restricted to fishing only in the Central Section of the Northwest Kodiak District and may not move to other fishing areas on the island if we are experiencing unfavorable water conditions, closures or poor fishing.

The Central Section is a combined gear group area. All of these proposals would increase the seine effort in the Central Section, in turn, creating even more competition for fish in an already crowded area. The setnet fleet will endure heavy sacrifices if any of these proposals are approved.

In addition, approval of these proposals will increase the complexity of an already complicated management plan; putting our local stocks in jeopardy of over-escapement.

I respectfully ask that the board reject proposals 63, 64, 65, 37, and 66.

Respectfully,

Jeff Bassett
Northwest Setnetter

December 27, 2019

Alaska Board of Fisheries
Reed Morisky, Chair
Attn: Glen Haight, Executive Director
1255 W 8th Street
P.O. Box 115526
Juneau, AK 99811-5526

RE: Approval of Proposal 67, 70 and 71

Dear Chairman Morisky and Board Members,

Thank you for the opportunity to provide written comment on these proposals. My family and I are setnetters in Uyak Bay which is in the Central Section of the Northwest Kodiak District. We live in a cabin near our fishing locations during the summer months. The setnet fleet in this area make up a large part of the local community. As a group, northwest setnetters are restricted to fishing only in the Central Section of the Northwest Kodiak District and may not move to other fishing areas on the island if we are experiencing unfavorable water conditions, closures or poor fishing.

Approval of proposal 67
The rate of slime events has increased over the last several years. These events at times create such poor conditions that we simply do not catch fish because our nets are covered in slime. Clean nets are very important in a gillnet fishery as the fish must penetrate our web to be caught. If fish see the net they simply turn the other way. Our only defense is to spray our nets with a pressure washer, which is only a temporary solution. In an ever-increasingly competitive fishery, proposal 67 has the potential to provide some relief for the Kodiak setnet fishery.

Approval of proposal 70
Proposal 70 is a sustainable addition to the Karluk River Management Plan, in that it will provide a mechanism for limiting over-escapement of pink salmon into the Karluk system. It will also provide all salmon fishermen, on the west side, an opportunity to harvest pink salmon bound for the Karluk while traveling through the Central section.

Approval of proposal 71
Approval of proposal 71 helps to insure a long-term viable fishery for fishermen of both gear groups. It is to the benefit of all fishermen to allow for interim pink salmon escapement goals to be achieved before opening the inner bays. It makes sense to secure early run escapement to provide for a well-balanced return.

The setnet fleet is restricted from these inner bay areas. As a result, the outcome of inner bay openings is generally detrimental to the setnet fishery.

Thank you for your consideration on the above proposals.

Respectfully,

Jeff Bassett
Northwest Setnetter

Joe Delgado
Box 1225 Selief Lane
Kodiak, AK 99615

December 26, 2019

Alaska Board of Fisheries
P.O. Box 115526
Juneau, Ak 99811

RE: Vote NO Proposals 37,63,64,65,66

Dear Chairman and Board of Fisheries Members:

I have lived in Ouzinkie most of my life and I'm currently a board member of the Ouzinkie Native Corporation. I fished for salmon out of Ouzinkie and I've worked hard to better the community. Salmon fishing is very important for the survival of Ouzinkie. Incremental regulation changes that reduce the fishing opportunities for residents of Ouzinkie will have a negative impact. We're already struggling to keep enough families in Ouzinkie to keep the school open. Changes in salmon fishing income could be the nudge that forces just one or two families to leave – that would force a school closure. It's easy to get caught up in the "big picture" and think in terms of "policy" but the reality is that changes you may initiate could create unintended consequences for Ouzinkie and Kodiak's other rural communities.

I've followed some these fishing issues for several years. One of the things that makes no sense is talking about protecting Susitna sockeye stocks here in Kodiak. Anyone that lives in the area knows the primary problem is Norther Pike. If you want more sockeye in the Susitna drainage, get rid of the pike. Some of my friends from the Knik tribe have said that some of the rivers up there are completely without sockeye due to the Norther Pike. I think most of the problems with salmon in Cook Inlet can and should be solved in the Cook Inlet management areas.

I've seen the sockeye genetic study done in Kodiak from 2014-16. I don't know what people were surprised about. The Department has said for a long time that Cook Inlet fish could make up as much as 15% of Kodiak's total sockeye run. I know from experience that it's hard to find Cook Inlet fish in the Kodiak area during many seasons. I see the results from 2014 in the genetic study as showing what happens here in Kodiak most years. The 2015 and 2016 information is more about what happens when Cook Inlet has larger than average runs and when the ocean temperatures are higher. I don't see that there is any "new" information in this study that should concern the Board. Vote NO on proposals 65 and 66.

Proposal 63 is another Cook Inlet sponsored proposal to restrict a Kodiak fishery. The proposal would reduce time and area in the Kodiak purse seine fishery, particularly in the Mainland District in order to catch fewer chinook. The proposer's justification is that current Kodiak salmon management plans do not give enough protection to Cook Inlet chinook stocks. Ouzinkie Native Corporation has worked a long time to reduce Chinook salmon bycatch in the Kodiak trawl fisheries. We've found out that less than 5% of the chinook taken by all gear types in the Gulf of Alaska are likely local stocks. In other words, large closures in time and area are not likely to have much impact on Cook Inlet Chinook stocks. Vote NO on 63 and 37.

Sincerely yours,

Joe Delgado

Jonathan Edwards

12/27/2019 09:21 AM AKST

RE: Comment on multiple proposals

I have been gill netting salmon in the Kodiak Management Area for 40 years. The incidental catch of Cook Inlet bound sockeye in the KMA has been an issue through most of my career set netting. In 1995, there was a huge effort by fishermen and managers to lay this issue to rest. A lot of work went into the North Shelikof Plan. Years since, we, KMA, have still been under attack, to the point of the Cook Inlet fishermen want to write the KMA Plan for us. When will this madness end?

KODIAK
CHAMBER OF COMMERCE
100 E. Marine Way STE 300 Kodiak, Alaska 99615 • (907) 486-5557 • Fax: (907) 486-7605

26 December 2019

Dear Chairman Morisky and Board members,

Kodiak's Chamber of Commerce is the voice for the business community in Kodiak. We have approximately 260 members which include fishermen, processors, support services and fishery supply venders. Fisheries are the economic driver for Kodiak, as it's third in the nation for volume of commercial landings in 2017; it must be preserved. Right now the Kodiak economy is under threat: In 2020 the Federal Pacific cod fisheries will not open; pollock quotas are down 20%; halibut harvests are also down and projections indicate continued decline; the herring fishery is severely depleted; and tanner crab has an extremely low guideline harvest level. Now, Board of Fisheries proposals from Cook Inlet and Chignik regions are attempting to reduce the economic returns from Kodiak's salmon fishery. We need to protect our economy and request that you vote NO on proposals which could severely impact Kodiak's salmon fisheries (proposals 58,59,60,61,62,63,64,37,65 and 66).

The Kodiak Island Borough (KIB) and the City of Kodiak commissioned a study looking at the Economic Impact of the Seafood Industry on the KIB[1]. Although the study is a bit dated, it does demonstrate the economic engine that drives Kodiak and the importance of the salmon industry. The study is considered by the Kodiak Chamber Board to still be extremely relevant. This study used the 2014 fishing year as a "snap-shot". Several important points can be drawn from this study about Kodiak's seafood industry in general and the importance of the salmon fishery in particular:

- The commercial salmon fishery is caught by seine and set gillnets and provides harvest opportunity for hundreds of small businesses throughout the Kodiak Archipelago.
- The salmon fishery contributed the highest value paid to harvesters of any fishery in 2014.
- For every million pounds of salmon landed and processed in the KIB, $900,000 in total labor income is created in the KIB economy, including all direct, indirect, and induced effects.
- For every million dollars paid to fishermen for salmon landed in the KIB, a total of $1.22 million in labor income is created in the KIB, including all harvest and processing related multiplier effects.
- 28% of the total dollars paid to fishermen where paid to KIB resident salmon permit holders.
- Seafood industry related jobs in the KIB indicates that the industry accounted for 38 percent of all Kodiak area employment.
- Employment in the processing plants is dominated by salmon deliveries from June until September.
- Kodiak's seafood processors employ the highest percentage of local residents of any major production region in Alaska due to the year-round nature of our fisheries.
- The community of Kodiak has made substantial investment in seafood industry-related infrastructure – public utilities, transportation connections, and maritime infrastructure. A healthy seafood industry is critical to the community's ability to pay for these investments.

Adopting proposals 65 or 66 is expected to have an adverse impact on Kodiak's economy. Based on internal research, the Kodiak Salmon Workgroup suggests that if proposals 65 and 66 were adopted, loss salmon revenue paid to Kodiak fishermen could exceed, on average, $5,000,000 annually. When the economic multiplier of dollars that circulate within the community is applied, that loss is compounded.

[1] Economic Impact of the Seafood Industry on the Kodiak Island Borough, prepared for the Kodiak Island Borough and City of Kodiak, prepared by McDowell Group, May 2016.

KODIAK
CHAMBER OF COMMERCE

100 E. Marine Way STE 300 Kodiak, Alaska 99615 • (907) 486-5557 • Fax: (907) 486-7605

Regarding the Cape Igvak Management Plan, the Chamber does not perceive a need for a change. The plan provides a biological and economic safety net for the Chignik fishery through restrictive harvest opportunities for Kodiak permit holders based on Chignik escapements. During 3 of the past 5 years, when Chignik runs were limited, Kodiak fishermen did not fish at Cape Igvak. Kodiak fishermen have participated in this fishery for as long as the State of Alaska has managed the fisheries. The compromise reached by the Board 40 years ago is fair and working so should not be changed.

The history of the fishery, the fishery's economic importance to the region, and alternative fishery resources are all part of the Board's allocation criteria when considering salmon management changes. The Kodiak Chamber of Commerce believes that when the Board applies each of these standards as well as the remaining allocation criteria, your decision tips in Kodiak's favor. We believe the board should vote no on proposals 58,59,60,61,62,63,64,37,65 & 66.

Yours in economic prosperity,

Sarah Phillips
Executive Director
ChamberDirector@Kodiak.org
(907) 486-5557



Kodiak Island Borough

Office of the Borough Mayor

710 Mill Bay Road
Kodiak, Alaska 99615
Phone (907) 486-9310 Fax (907) 486-9391

December 19, 2019

Chairman Reed Morisky
Alaska Board of Fisheries Members
Boards Support Section
P.O. Box 115526
Juneau, AK 99811-5526

Submitted via Online Comments

Re: **Opposition to Proposals 58-66 and 37**

Dear Chairman Morisky:

The Kodiak Island Borough (Borough) opposes Proposals 58-66 and 37, which will be considered at the upcoming January, 2020 Alaska Board of Fisheries (Board) meeting in Kodiak. The Borough encompasses the Kodiak Management Area as defined by the Alaska Department of Fish and Game, and includes the Kodiak Archipelago and the Alaska Peninsula from Cape Douglas west to Cape Igvak. Commercial fishing in State and Federal waters around Kodiak is a major economic driver for the Borough, and fisheries tax revenues comprise a significant portion of the Borough's revenues on an annual basis.

Proposals 58-66 and 37 would have substantial negative effects on Kodiak's economy and salmon fisheries, and this set of proposals simply reiterates the same arguments the Board has already addressed during each board cycle for the past 30 years. Namely, Chignik wants to change history and take away the Cape Igvak fishery and Cook Inlet wants to exert control over common property fish hundreds of miles away from Cook Inlet. Kodiak Island Borough strongly recommends that the Board maintain status quo in regard to both the Cape Igvak and Cook Inlet issues.

Cape Igvak Fishery. It is critical for the Board to consider the long history and context of Kodiak salmon fishing in the Cape Igvak area, and to maintain consistency with past management decisions and strategies. The Alaska Board of Fisheries recognizes this importance of historical use by listing "the history of each personal use, sport and commercial fishery" as the first of its Allocation Criteria.

Kodiak fishermen have been fishing throughout the Alaska Peninsula, including Chignik and area M, since even before the Limited Entry management system was implemented in the early 1970s. After limited entry Kodiak fishermen continued to fish on the Alaska Peninsula from Cape Douglas to Cape Igvak.



When Chignik fishermen became concerned that Kodiak's continued activity at Cape Igvak was impacting their fishery Kodiak and Chignik stakeholders met in Juneau at the 1977 Alaska Board of Fisheries meeting and hammered out the current Cape Igvak Management Plan. The plan balanced Kodiak's historical Cape Igvak fishery with Chignik's need to have economic and conservation protections. Consequently, the plan prohibits fishing at Cape Igvak until the Chignik fleet catches a minimum of 300,000 sockeye – about $2.5 million dollars in value. After the Cape Igvak fishery is opened to Kodiak fishermen, Kodiak is limited to 15% of the total Chignik run, which approximates prior catch percentages.

The Cape Igvak plan is balanced and fair and has endured with only one minor adjustment for 42 years because it balances protections for Chignik's fishery on one side with recognition of Kodiak's historical participation on the other. The Kodiak Island Borough does not see any "new information," new "best available science," any new and expanding fishery or any new conservation concerns that would justify changing the Cape Igvak fishery. The six Cape Igvak proposals (58-62 and 65) represent an attempted "fish grab" without justification, and seem to evidence a misplaced hope that the Board will ignore the history of the Cape Igvak fishery and the balance of the equities established by the Cape Igvak management plan in 1977.

Cook Inlet. Kodiak salmon fishermen have recognized the presence of what appear to be "non local" stocks in the Kodiak area for over 100 years, although it has always been impossible to predict when, where or if non-local fish will show up in any given season. In 1989, during an unusually calm summer Kodiak salmon fishermen found Cook Inlet bound sockeye out in the middle of the northern Shelikof Straits and concentrated fishing effort in that area.

In 1990 Alaska Board of Fisheries clarified that (1) the Kodiak fleet, unlike the Cook Inlet drift fishery, was limited to fishing inside the 3 nautical miles "state waters" line, and (2) that the activity in the North Shelikof constituted a "new and expanding" fishery. The Board then crafted the North Shelikof Management Plan which balanced continuation of the historical Kodiak fishery of local Kodiak stocks with a conservation zone to protect Cook Inlet bound sockeye that might be in the area. The North Shelikof Management Plan has endured for the past 29 years, with a single minor adjustment for expanded local stocks opportunities in the S.W. Afognak section.

The Borough is aware of the genetic sockeye identification study undertaken in the Kodiak Management Area from 2014-16. The study merely confirmed what was already known about the presence of Cook Inlet sockeye in the Kodiak area, and demonstrated amounts vary greatly from

year to year. In 2014 only a few fish are available; in 2015 larger concentrations appear in some areas but not in others and in 2016 there are "lighting strikes" at some places but not in the same places that fish appeared in 2015. Finally, across all three years the amount of Cook Inlet Sockeye captured in the Kodiak Management Area was within the amounts suggested by the Alaska Department of Fish and Game during the early 1990s. The 2014-16 genetic study is a new study but it does not provide new information relative to the presence of Cook Inlet sockeye in the Kodiak Management area. In short, there is no basis for additional restrictions on Kodiak's salmon management for local stocks because the presence of Cook Inlet sockeye in the Kodiak Management Area has already been accounted for in current management.

Allocation decisions are understandably difficult for the Alaska Board of Fisheries. However, in this case the Cape Igvak and Cook Inlet fisheries each have a long standing allocation plan that was reviewed by multiple Alaska Boards of Fisheries and there is no indication of new fishing patterns or significant new information. There is no need or imperative to change Kodiak's salmon management plans and the Board should maintain the current plans already in place.

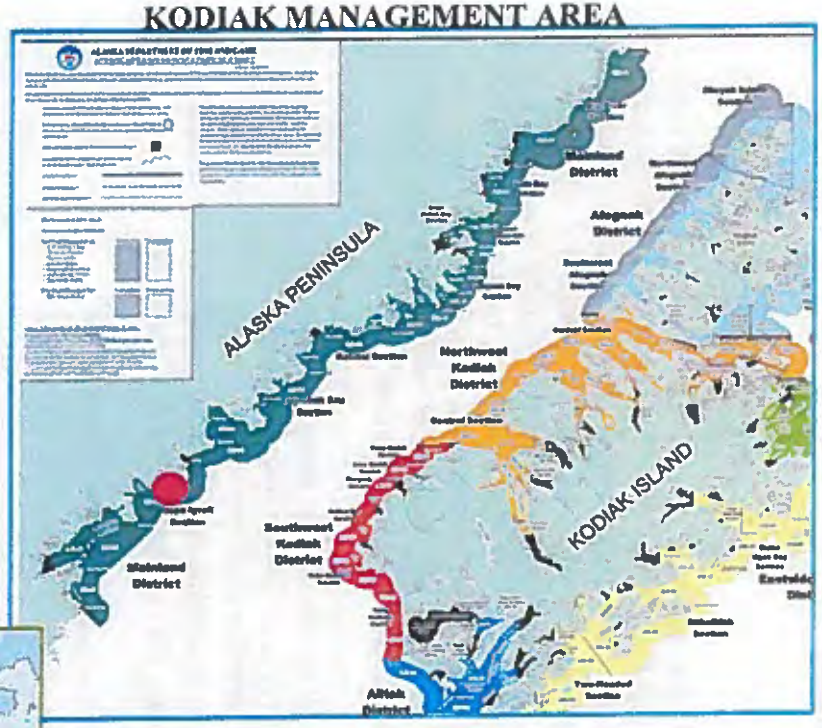
Kodiak Island Borough encourages the Board to reject proposals 58-66 and 37.

Very truly yours,

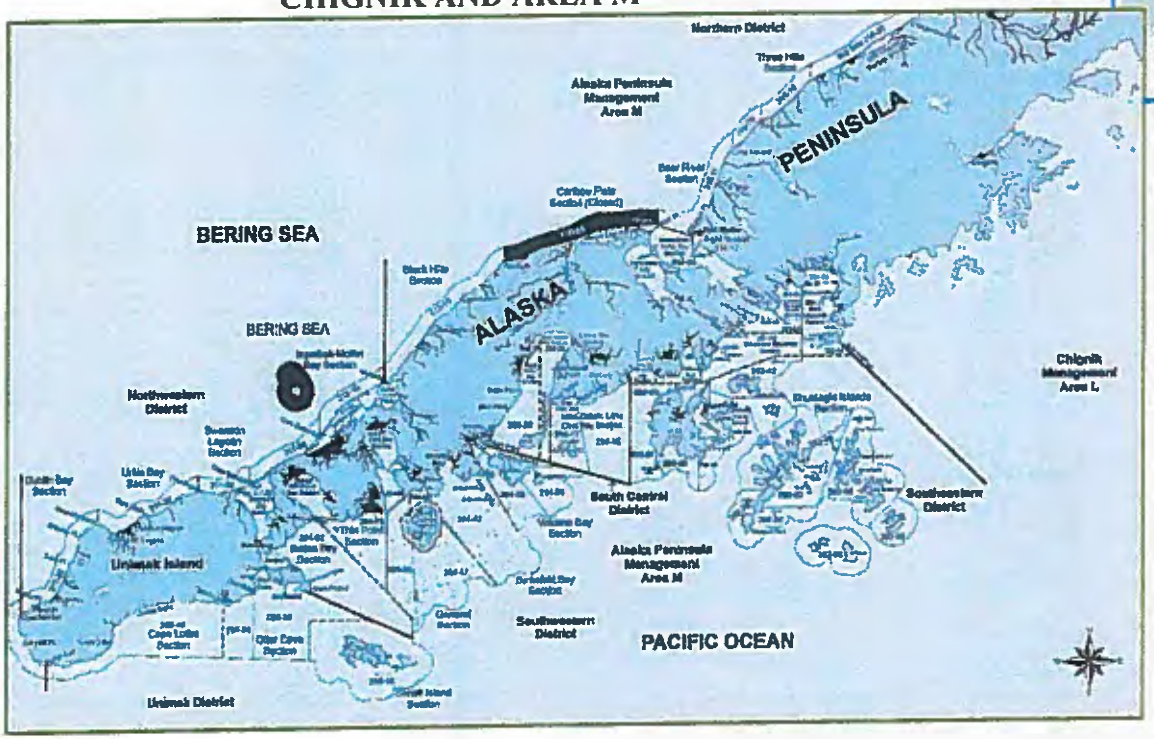
Bill Roberts, Borough Mayor

- Cap Igvak marked with red dot on Kodiak Management Area Map

KODIAK MANAGEMENT AREA



CHIGNIK AND AREA M



ALASKA COMMERCIAL FISHERIES

Salmon Management Activities

A listing of the major Alaska salmon fisheries

NORTON & KOTZEBUE SOUNDS

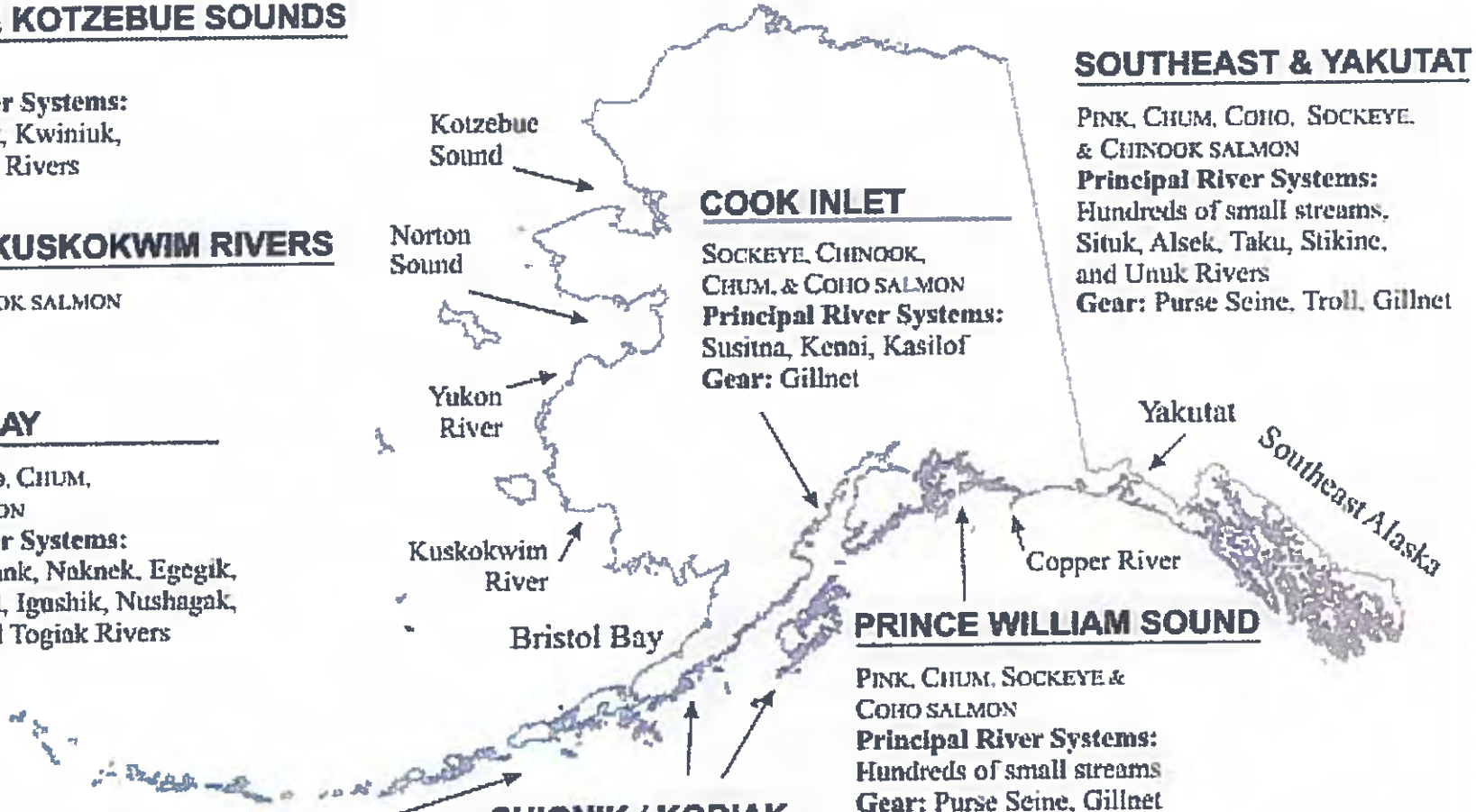
CHUM SALMON
Principal River Systems:
Kobuk, Noatak, Kwiniuk,
and Unalakleet Rivers

YUKON & KUSKOKWIM RIVERS

CHUM & CHINOOK SALMON
Gear: Gillnet

BRISTOL BAY

SOCKEYE, COHO, CHUM,
CHINOOK SALMON
Principal River Systems:
Kvichak, Alagank, Naknek, Egegik,
Ugashik, Wood, Igushik, Nushagak,
Mulchatna, and Togiak Rivers
Gear: Gillnet



COOK INLET

SOCKEYE, CHINOOK,
CHUM, & COHO SALMON
Principal River Systems:
Susitna, Kenai, Kasilof
Gear: Gillnet

SOUTHEAST & YAKUTAT

PINK, CHUM, COHO, SOCKEYE,
& CHINOOK SALMON
Principal River Systems:
Hundreds of small streams,
Situk, Alsek, Taku, Stikine,
and Unuk Rivers
Gear: Purse Seine, Troll, Gillnet

PRINCE WILLIAM SOUND

PINK, CHUM, SOCKEYE &
COHO SALMON
Principal River Systems:
Hundreds of small streams
Gear: Purse Seine, Gillnet

ALASKA PENINSULA

SOCKEYE & PINK SALMON
Principal River Systems:
Mestik, Ilnik, Sandy, Bear, Nelson
Gear: Purse Seine, Gillnet

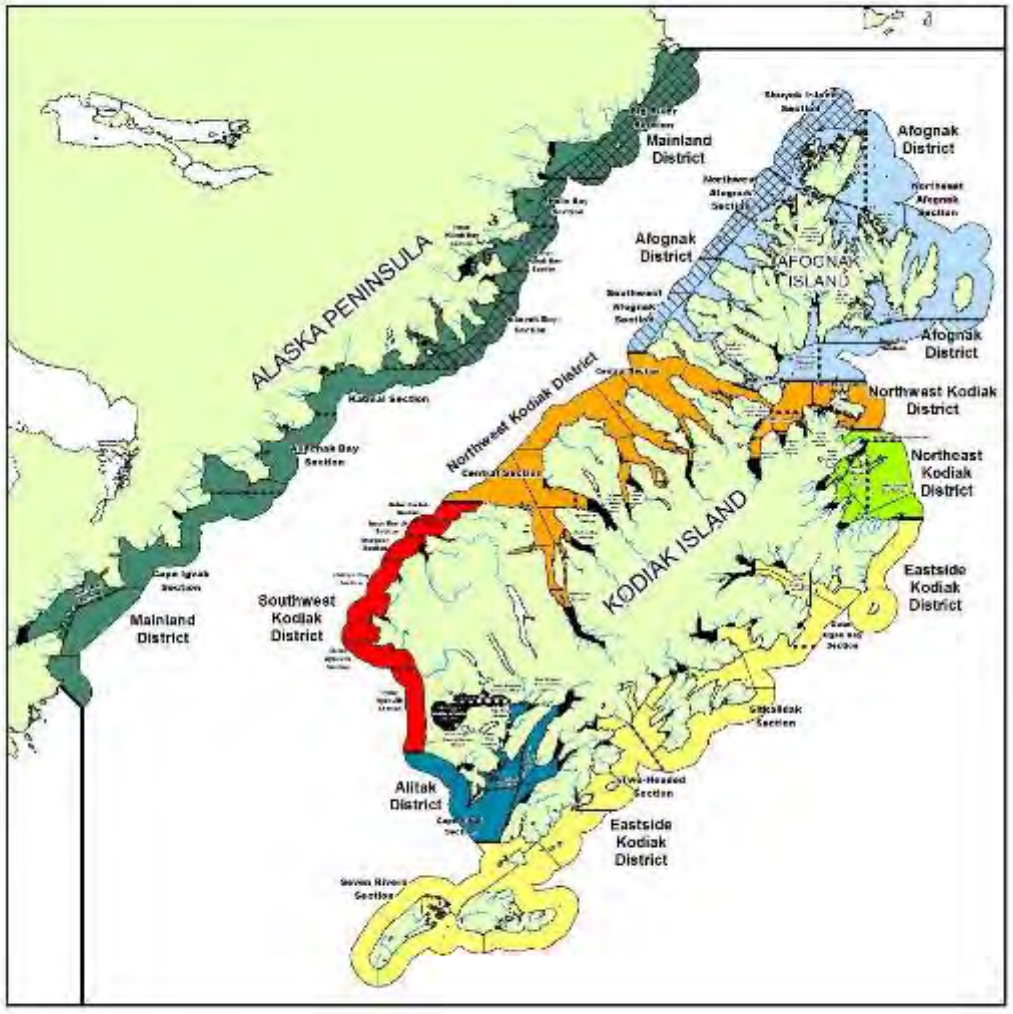
CHIGNIK / KODIAK

SOCKEYE & PINK SALMON
Principal River Systems:
Chignik, Buskin, Pasagshak, Karluk,
and Ayakulik Rivers
Gear: Purse Seine, Gillnet

COPPER RIVER

SOCKEYE & CHINOOK SALMON
Gear: Gillnet

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Economic Analysis of the Cumulative Impacts from Proposals 58 and 64.

Kodiak Salmon Workgroup

Summary:

The cumulative effects of all Cape Igvak proposals would close the fishery entirely before July 25th in all years (proposals 58 and 64). There would be additional restrictions due to the harvest minimums in Chignik area being raised to 600,000 (proposal 61). Assuming these closures, the reduction of Cape Igvak harvest to 5% of total Chignik sockeye count (proposal 60) would result in no additional limits on Cape Igvak harvests.

Cape Igvak Cumulative Direct Losses

On average, the cumulative effects of Cape Igvak Proposals 58, 60, 61, and 65, will result in more than 95% reduction of the current catch. Overall, these changes would result in an economic loss to the Borough of almost 3.23 million dollars a year.

Direct revenue lost to the Kodiak Borough per year:

$2.15 Million Dollars Yearly Direct Loss to Fishermen

$3.23 Million Dollars Annual Economic Loss in the Kodiak Borough

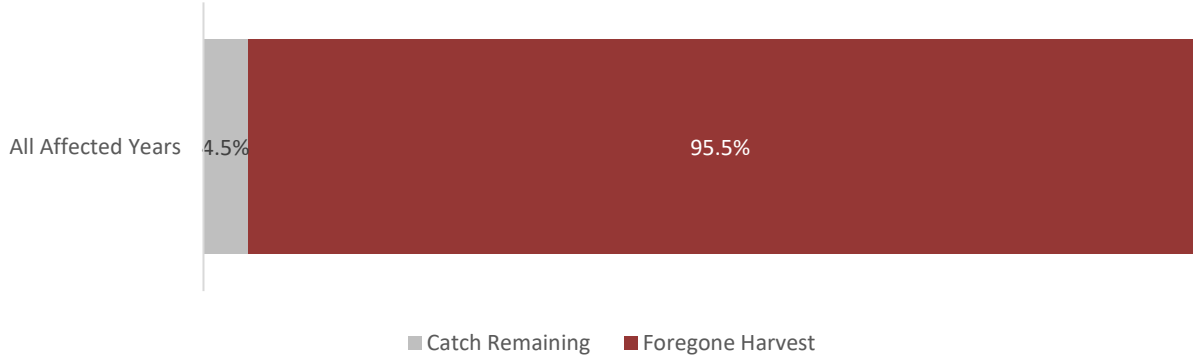
Direct loss per affected year:	**$2.15 Million**
Loss from sockeye fishery:	$1.77 Million
Fisheries employment impact:	19 jobs per year
All employment impact:	23.8 jobs per year
Indirect community loss:	$446,401
Induced community loss:	$628,960
Total Annual Borough Loss:	**$3,225,653**

The cumulative effects of the Cape Igvak proposals would have impacts throughout the Kodiak Borough. The direct loss to fishermen would be $2.15 million per year. Of the total loss to the fishery, the limitations on the sockeye fishery comprise the majority of the impact, accounting for $1.77 million of the loss with $380,000 of the total loss distributed among other salmon species.

The direct impact of this proposal will result in a loss of 19 fisheries specific jobs and a total of 23.8 jobs overall in the Kodiak Borough per year. In addition to the direct loss impact of $2.15 million, there is a further indirect loss of $446k as a result of lost business to business economic activity for the community from purchases such as fuel, gear, and supplies. There is an additional $629k of induced loss in the community resulting from the lost direct and indirect economic activity (total $2.60 million) and reduced labor market. This impact results in a total loss to the community from direct, indirect, and induced losses of $3.23 million per year.

Fisheries Loss

Chart 1: Average Revenue Loss Per Year



On average, restrictions during the affected years would result in more than 95% of the current catch being eliminated. 21 of the 22 years are affected. Over the last 22 years 1998-2019, there have been 18 years where the fisheries losses from these increased restrictions would result in a loss of more than 500k dollars of foregone ex vessel value to the fishery. One of the previous 22 years would be unaffected by the proposed changes. Fishing was severely restricted in 2018 due to historically low run returns.

The sockeye fishery would experience ex vessel losses of more than $500k for 15 of the 21 affected years.

Chart 2: Total Fishery Loss 1998-2019

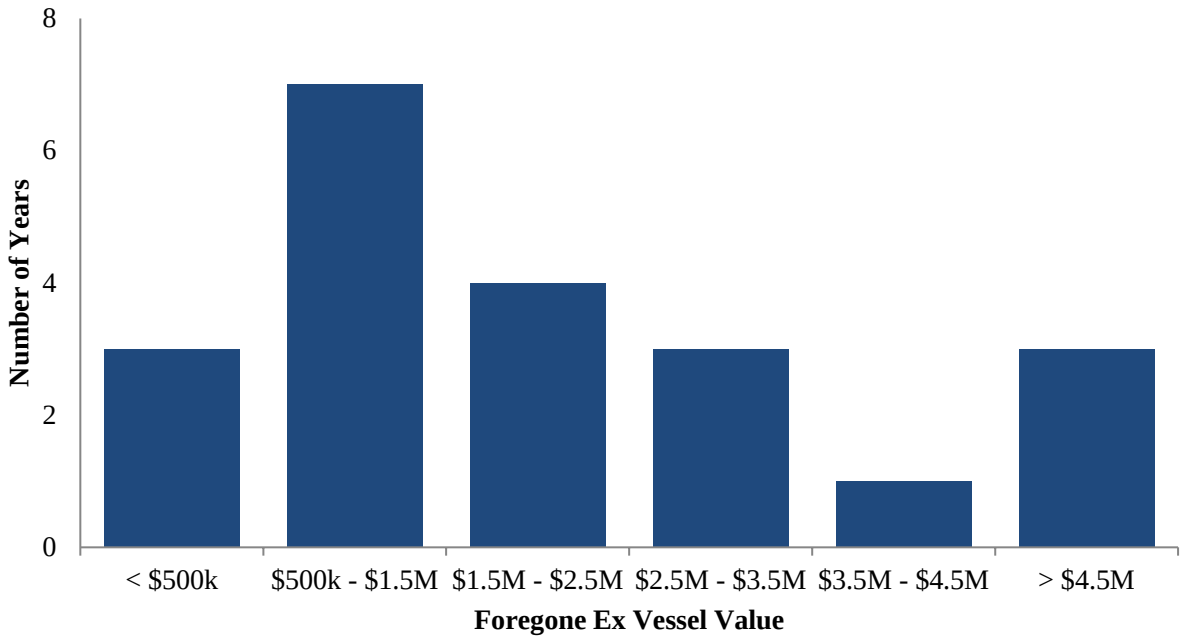
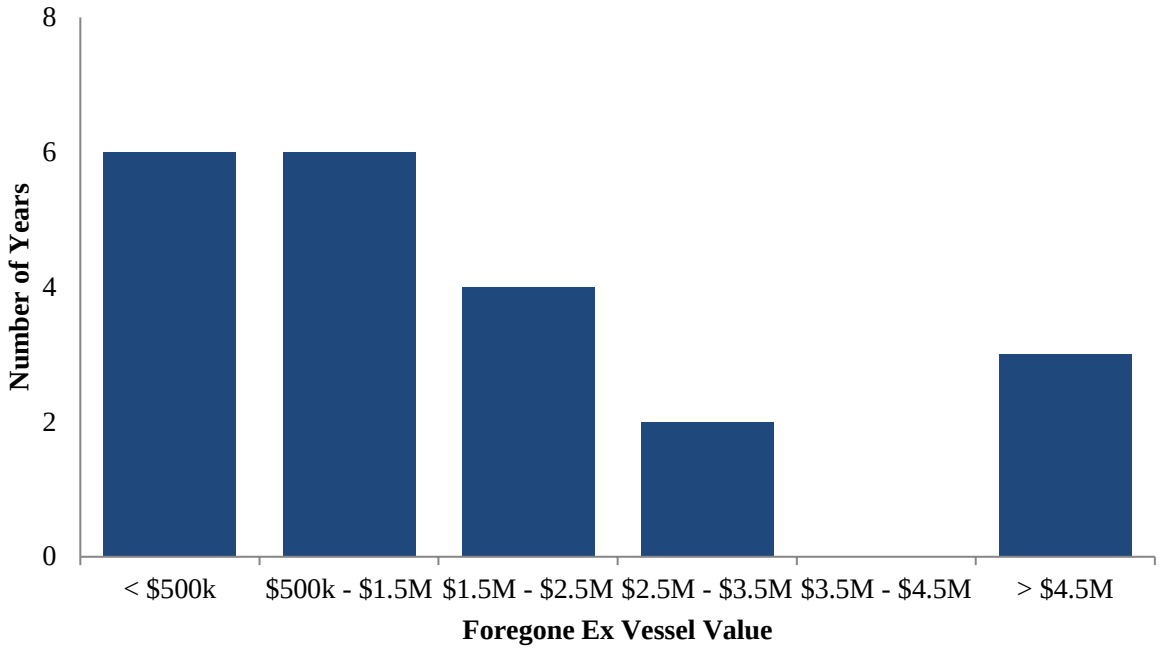


Chart 3: Total Sockeye Loss



The mean direct loss for all species per year is $2,150,292 with a median loss of $1,732,055. If these restrictions were in place the greatest impact would have been in 2011 with a loss of $6,644,239 and the least impact would have been in 2014 with a loss of $54,444.

Table 1: Direct Loss of Cape Igvak Proposal Implementation

Year	Direct Loss All Species	Direct Loss Sockeye
1998	$132,121	$91,646
1999	$5,619,379	$5,149,012
2000	$3,097,396	$2,831,444
2001	$2,048,165	$1,640,725
2002	$851,413	$799,675
2003	$719,506	$639,835
2004	$898,710	$869,284
2005	$2,217,289	$1,975,671
2006	$528,224	$241,350
2007	$546,640	$463,954
2008	$703,717	$144,405
2009	$1,732,055	$1,183,727
2010	$2,319,549	$1,873,907
2011	$6,644,239	$6,238,496
2012	$3,806,759	$3,482,478
2013	$5,663,632	$5,199,632
2014	$54,444	$29,775
2015	$344,912	$43,676
2016	$2,761,597	$2,462,796
2017	$1,331,454	$1,198,552
2019	$3,134,923	$559,916
Mean	**$2,150,292**	**$1,767,617**
Median	**$1,732,055**	**$1,183,727**
Min	**$54,444**	**$29,775**
Max	**$6,644,239**	**$6,238,496**

Table 2: Direct Loss of Cape Igvak Proposal Implementation Per Fishermen

	Average Loss Per Fishermen – All Species	Average Loss Per Fishermen – Sockeye Only
Mean	**$37,320**	**$26,004**
Median	**$25,286**	**$20,256**
Min	**$9,224**	**$2,730**
Max	**$87,965**	**$76,079**

Based on the number of active permits per year, individual fishermen would experience a mean direct loss for all species per year of $37,320 with a median loss of $25,286. If these restrictions were in place the greatest impact in the sockeye fishery would have been in 2008 with a loss of $87,965 per fishermen with the least impact in 2003 with an average loss of $9,224.

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Table 3: Loss Per Affected Permit Holder

Year	Permits	Loss per Permit	Total Value Foregone Harvest	2019 Inflation Adjustment
1998	10	$13,212	$83,727	$132,121
1999	126	$44,598	$3,639,494	$5,619,379
2000	126	$24,583	$2,073,223	$3,097,396
2001	81	$25,286	$1,409,611	$2,048,165
2002	69	$12,339	$595,394	$851,413
2003	78	$9,224	$514,668	$719,506
2004	37	$24,289	$659,846	$898,710
2005	71	$31,229	$1,683,590	$2,217,289
2006	46	$11,483	$413,969	$528,224
2007	36	$15,184	$440,484	$546,640
2008	8	$87,965	$588,885	$703,717
2009	28	$61,859	$1,444,583	$1,732,055
2010	71	$32,670	$1,965,720	$2,319,549
2011	82	$81,027	$5,812,982	$6,644,239
2012	60	$63,446	$3,398,892	$3,806,759
2013	78	$72,611	$5,130,102	$5,663,632
2014	5	$10,889	$50,133	$54,444
2015	16	$21,557	$317,892	$344,912
2016	63	$43,835	$2,576,117	$2,761,597
2017	83	$16,042	$1,269,261	$1,331,454
2019	39	$80,383	$3,134,923	$3,134,923
Average		**$37,320**	**$1,771,595**	**$2,150,292**

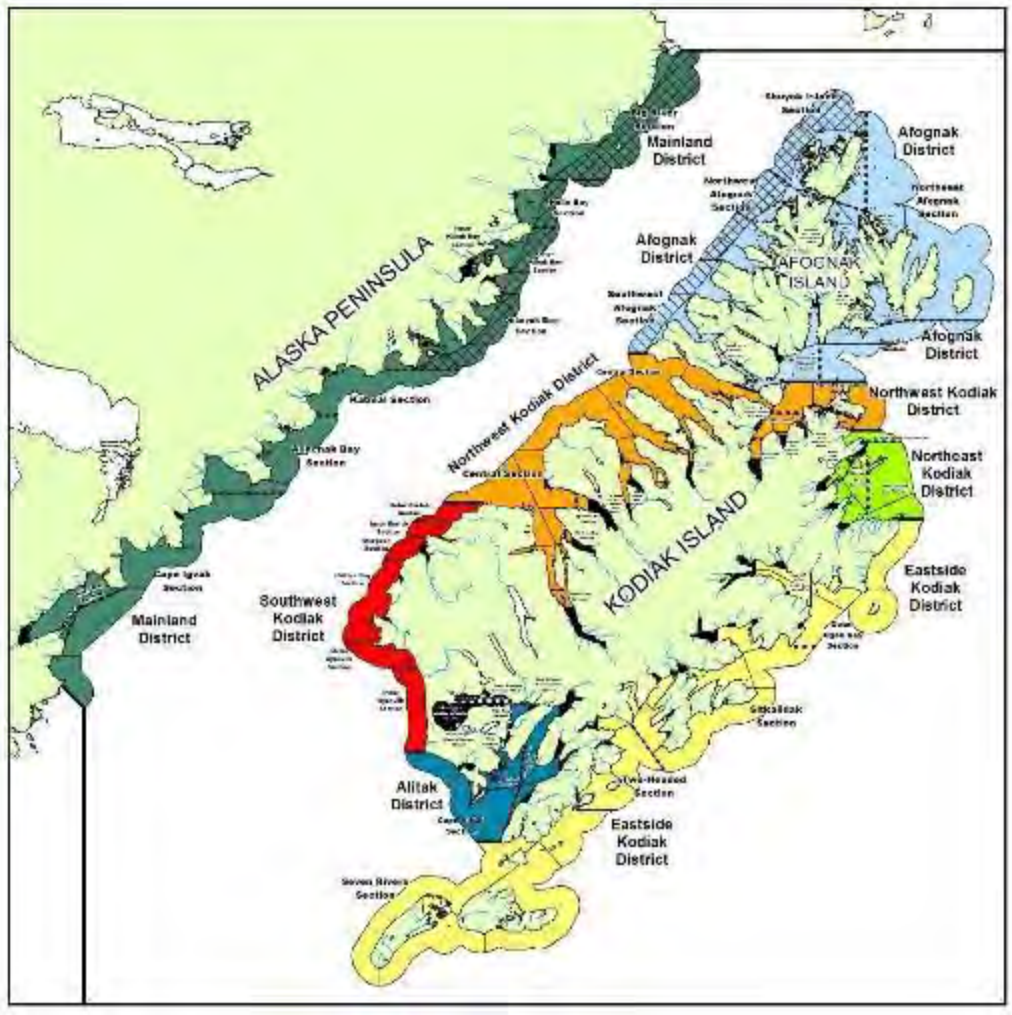
Foregone Tax Revenue

State Taxes	
Fisheries Business Tax (50% Share)	$34,405
SET Tax	$43,006
Total	**$77,410**
Borough	
Resource Severance Tax	$23,116
Fisheries Business Tax (Share of 50%)	$10,987
Total	**$34,102**

Cities (Share of Fisheries Business Tax)	
Akhiok	$2,564
Kodiak	**$10,239**
Larsen Bay	$2,562
Old Harbor	$2,751
Ouzinkie	$2,659
Port Lions	$2,643
Total	**$23,418**

The foregone harvest due to Cape Igvak Proposal Implementation would have tax implications for state, borough, and city budgets. The state implements two relevant taxes in the region: the fisheries business tax (which is shared with local governments) and the salmon enhancement tax (SET). Fisheries business tax rates vary by type of processing activity and the proportion of each is estimated from the State of Alaska's Annual Tax Report for FY18. The salmon enhancement tax rate is 2% in the Kodiak region. The Borough implements a resource severance tax of 1.075% and receives a share of the fisheries business tax from the state. The local city governments also receive a share of the fisheries business tax from the State of Alaska. Borough and city shares of the fisheries business tax estimated from the Borough's FY18 annual tax report.

The implementation of these proposals would result in average yearly tax losses of $77,410 to the State of Alaska, $34,102 to the Kodiak Borough, and $10,239 to Kodiak City.



Structure and Function of the Kodiak Management Area Salmon Fisheries, A Summary and Update of Brennan et al. 2017.

Kodiak Salmon Working Group
December 2019

Structure and Function of Kodiak Management Area Salmon Fisheries, a Summary and Update of Brennan et al. (2017)

by the Kodiak Salmon Work Group

In late 2017 a trio of former Kodiak area management biologists, with 34 years of cumulative, consecutive experience, authored a detailed report on the salmon fisheries and various salmon fishery management plans that pertain to the Kodiak management area (KMA). Their report was prepared in light of the potential effects of an agenda change request (ACR 11) that had been submitted by the United Cook Inlet Drift Association (UCIDA) for the Alaska Board of Fisheries work session in October 2017.

ACR 11 presented UCIDA's "umbrella plan" for Kodiak fisheries, and was essentially the same as the "umbrella plan" that is laid out in Proposal 66 currently in front of the board. Thus, the Brennan et al. report is as relevant today as it was two years ago. This report by former area management biologists also provides information that applies to the board's consideration of Proposals 64 and 65.

The main conclusion from Brennan et al. is that adjustments to the longstanding KMA management plans, such as those requested by Proposals 64-66, are not justified and would drastically damage the Kodiak salmon fisheries while providing little to no meaningful benefit to Cook Inlet fishermen or stocks.

In essence, imposition of management actions outlined in Proposals 64-66 would violate the board's Policy for the Management of Mixed Stock Salmon Fisheries (5 AAC 39.220) and the board's Policy for the Management of Sustainable Salmon Fisheries (5 AAC 39.222), and would not be consistent with the board's Allocation Criteria (AS 16.05.251(e)).

Specific Conclusions

The new mixed stock analysis (MSA), or genetic stock identification (GSI) study, on Kodiak sockeye salmon fisheries authored by Shedd et al. (2016) has limited applicability, and is not sufficient reason to change current KMA management. The salmon fisheries in the KMA are long-standing mixed stock, multi-species fisheries, with a variable and unpredictable component of nonlocal sockeye salmon.

The mixed stock nature of KMA salmon fisheries, including the incidental harvest of non-local, Cook Inlet sockeye stocks, is well known, not new.

There are no conservation emergencies for salmon and salmon fisheries within the KMA, including non-local sockeye stocks bound for Cook Inlet or Chignik.

Results of the 2014-2016 genetic MSA report did not provide sufficient cause for the board to accept ACR 11 and do not now support passage of proposals such as Proposals 64-66.
Alteration

of the KMA salmon management plans is not justified under application of the board's Mixed Stock Salmon Fisheries Policy or the Sustainable Salmon Fisheries Policy.

Pertinent Considerations

Based on location and oceanography, mixed stocks of Pacific salmon migrate through the Kodiak management area, and are harvested in KMA salmon fisheries. The mixed stock nature of KMA salmon fisheries and the KMA harvest of nonlocal, Cook Inlet-bound sockeye have long been known and accounted for.

KMA commercial salmon fishery management plans are complex and were developed with the potential for harvest of nonlocal sockeye in mind. With early-run sockeye, pink and chum, late-run sockeye and coho salmon runs showing at different systems at different times through a long fishing season, a blended management approach was formulated.
Targeting of nonlocal salmon was minimized by focusing fishing opportunity on the timing and abundance of local salmon.

In 1978, the Board of Fisheries passed the first Kodiak salmon management plan, the allocative *Cape Igvak Salmon Management Plan* (5 AAC 18.361). In 1987, based on increasing allocative disputes among set gillnet fishermen in the Alitak District, the Kodiak area management team wrote up and brought to the BOF a local stock management plan for the Alitak District.

In March 1990, the BOF considered two main Kodiak management plans. The first was the *Westside Kodiak Salmon Management Plan* (5 AAC 18.362); adopted into regulation was the blended management chronology of the major salmon fisheries in the Northwest Kodiak and Southwest Kodiak Districts.

The second, the *North Shelikof Strait Sockeye Salmon Management Plan* (5 AAC 18.363), was developed as an allocative plan meant to contain KMA salmon fisheries in the North Shelikof area after uniquely high catches of migrating sockeye occurred offshore in Shelikof Strait in 1988. The North Shelikof Plan, plus strict restriction of fishing to within three-miles of shore, precludes any repetition of 1988-style harvests on non-local sockeye, yet still provides for traditional opportunities to harvest high quality local pink and chum salmon. The North Shelikof Plan constitutes a significant contribution of KMA fisheries to the "burden of conservation" for Cook Inlet sockeye stocks.

Mixed stock analysis (MSA, via comparison of average weights and scale pattern analysis) continued on the July North Shelikof sockeye harvest and, in 1993, MSA was expanded to include the entire KMA except for the Cape Igvak fishery. The result was estimates of extremely variable numbers of nonlocal Cook Inlet sockeye stocks in KMA sockeye harvests.

Between 1990 and 1999, five more regulatory management plans were developed by the Kodiak area management team and adopted by the BOF. During those deliberations, the mixed stock nature of KMA sockeye harvests and the variable and

potentially large occasional harvest of Cook Inlet sockeye in various places around the KMA were known facts and often discussed.

The negative effects of adopting the UCIDA "umbrella plan" (ACR 11 and Proposal 66) are not presented by the proponents. But, the negative effects would be drastic: they would include extensive KMA fishery closures from late June through July resulting in substantial lost harvest opportunity, reduced salmon product quality, increased gear conflicts, and ultra-conservative management in the face of loss of traditional fishing patterns. The economy of Kodiak would be severely, negatively impacted.

Susitna sockeye are a designated as a stock of yield concern, and is not a conservation concern under present day management of Cook Inlet and KMA fisheries. The Action Plan for Susitna sockeye has not included reducing the harvest from Lower Cook Inlet or KMA fisheries, though it does identify many other sources of concern, such as invasive species (northern pike), loss or alteration of freshwater habitat, change in water quality and quantity, pathogens and freshwater fisheries.

The genetic MSA report (Shedd et al. 2016) shows a snapshot of events, with some significant limitations. The limits are outlined by the authors of the report, and should be heeded. Funding limited the scope of the study, and the study design was not intended to answer many biological and allocative questions regarding incidental KMA catch of nonlocal sockeye. Further, it is apparent that the information provided by the new KMA sockeye genetic MSA may be misused, and may create more uncertainty rather than less.

Some may believe that KMA local salmon stocks could all be harvested within 'terminal' fishing areas or 'inside the capes'. Long experience has shown that allowing salmon to enter the fresher (less saline), warmer, inside waters of the KMA will very quickly lead to loss of quality, or to complete loss to the fishery as the fish home-in and refuse to move out of closed water sanctuaries. Managing salmon escapement to within stated escapement goals would become much more difficult and threaten future stock productivity.

Policy for Management of Mixed Stock Salmon Fisheries and associated findings (93-07-FB):

- The Mixed Stock Policy asserts that the board's preference in assigning a burden of conservation in mixed stock fisheries is through the application of regulatory management plans. The KMA has operated under an interrelated suite of such management plans for decades.
- Each of the KMA regulatory management plans was developed and adopted by the Board of Fisheries with full knowledge of ongoing incidental harvest of non-local stocks, including sockeye salmon otherwise returning to Cook Inlet.
- The mixed stock nature of salmon fisheries such as those in the KMA was explicitly recognized and accepted by the Board of Fisheries in their findings.
- The very large harvest of presumably Cook Inlet-bound sockeye in Shelikof Strait in 1988 was the one instance where a "new or expanding" fishery has developed in the KMA, and the board took quick action to curtail that type of fishery expansion with the 1990 *North Shelikof Strait Sockeye Salmon Management Plan*, almost 30 years ago.

- KMA commercial salmon fishermen already bear a significant and potentially disproportionately high burden of conservation for Cook Inlet sockeye stocks through the regulations for the North Shelikof Plan. An additional burden of conservation for relatively healthy Cook Inlet salmon stocks should not be prioritized at the risk of harm to KMA fisheries and local salmon stocks.
- The BOF findings assert that "it is not the intent of this policy to create a terminal fisheries preference…" Rather, the board recognized that "stability is an important aspect of [Alaska's] fisheries," most of which "harvest stocks which are mixed".

Policy for the Management of Sustainable Salmon Fisheries:

- The stated goals of the policy include not only conservation of salmon and habitat, but the policy also seeks to ensure "the sustained economic health of Alaska's fishing communities." Moreover, the board will consider "existing harvest
  patterns" when formulating any fishery management plan. There is no doubt that the significant changes to KMA's long-standing salmon management plans sought in Proposals 64-66 would drastically negatively impact the economic health of Kodiak communities.
- Fortunately, there are no major conservation concerns for sockeye salmon stocks in Cook Inlet, thus the Sustainable Salmon Fisheries Policy is currently accommodated by existing regulatory management plans.
- Regarding the Susitna stock of yield concern, the associated action plan indicates that factors other than the incidental harvest of nonlocal sockeye in the KMA, or even in lower Cook Inlet, are the appropriate focus for action.

The Alaska Board of Fisheries' Allocation Criteria:

- The BOF has adopted directly the statutory language of AS 16.05.251 (e) as its standard for allocation criteria: subparagraphs (1), (4), (5), and (6) are most applicable to consideration of Proposals 64-66: (1) the history of each fishery, (4) the availability of alternative fisheries resources, (5) the importance of each fishery to the economy of the state, and (6) the importance of each fishery to the economy of the region and local area in which the fishery is located.
- Regarding the history of KMA salmon fisheries, they have been ongoing for over a hundred years with a recognized incidental catch of migrating, non-local sockeye bound for Cook Inlet. A large suite of regulatory management plans has been enacted to manage fisheries in the KMA, all of which considered and accommodated the variable and unpredictable harvests of mixed and non-local stocks. These harvests have become a part of Kodiak longstanding allocation and opportunity to harvest salmon. Proposals 64-66 would abrogate that recognized history and allocation, and for no apparent benefit.
- Regarding the availability of alternative resources, Proposals 64-66 purport to

protect some fraction of the Cook Inlet-bound migration of sockeye salmon through KMA fisheries, but the proposed mechanisms would directly and greatly diminish

the Kodiak fleets' ability to harvest alternative fishery resources such as local pink, chum and coho salmon.

- Regarding the importance of each fishery to the economy of the state, it is clear that the losses to KMA sockeye, pink, chum and coho fisheries caused by adoption of Proposals 64-66 and others, would greatly overshadow the minimal (if even detectable) gains that might accrue to the Cook Inlet fisheries. Thus, there would be a net negative impact to the economy of the state.
- Regarding the importance of each fishery to the economy of the region and local area, it is clear that a very large portion of the economy of Kodiak Island is directly dependent upon the harvesting and processing of sockeye, pink, chum and coho salmon. By contrast, the Cook Inlet sockeye fisheries comprise an important but proportionately less dominant contribution to the economy of Cook Inlet communities, the greater Anchorage area, and the Matanuska-Susitna region. Moreover, the very small (likely undetectable) gains to sockeye harvests in Cook Inlet constitute even that much smaller a contribution to the greater Cook Inlet economy.
- Finally, while not stated explicitly in the language of the Allocation Criteria, there is an implicit requirement of fairness, equity, and proportional benefit and cost for any action taken by the board. In this instance, it is clear that actions to implement Proposals 64-66 would impose costs many, many times higher than any possible calculation of benefit and thus would violate any reasonable standard of fairness or equity.

A Review of Agenda Change Request #11 and the ADF&G Kodiak 2014-2016 Sockeye Genetic Mixed Stock Analysis technical Fishery Manuscript, with recommendations to the BOF.

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Prepared for the Kodiak Salmon Work Group
September 25, 2017

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INTRODUCTION: BOF AGENDA CHANGE REQUEST CRITERIA AND CONSIDERATION OF ACR #11

United Cook Inlet Drift Association has submitted an Agenda Change Request (ACR #11), asking the BOF to consider an out-of-cycle proposal for a new salmon management plan in the Kodiak Management Area, to limit nontraditional harvest of nonlocal sockeye in KMA commercial salmon fisheries.

Normally, Kodiak Finfish issues are addressed during regularly scheduled (on-cycle) BOF meetings; only if the BOF accepts a properly submitted Agenda Change Request (ACR) will unscheduled (off-cycle) BOF consideration be approved. ACRs, reviewed at fall BOF work sessions, must meet the Policy for Changing Board of Fisheries Agenda (5 AAC 39.999). ACR consideration usually requires clear and concise biological concerns. Subsequent allocative considerations receive a lower priority. Application of BOF Criteria and Policies requires that unless there is compelling NEW information, then any allocatively-based ACRs would be denied. Such issues would then come up at the next on-cycle BOF meeting (for Kodiak Finfish that would be the 2019/2020 cycle).

The Criteria for an Agenda Change Request are found in the Alaska Administrative Code (regulations). For this discussion, the pertinent portions of that regulation are as follows:

> 5 AAC 39.999. POLICY FOR CHANGING BOARD AGENDA. (a) The Board of Fisheries (board) will, in its discretion, change its schedule for consideration of a proposed regulatory change in response to an agenda change request, submitted on a form provided by the board, in accordance with the following guidelines:
>
> (1) the board will accept an agenda change request only
>
> (A) for a fishery conservation purpose or reason;
>
> (B) to correct an error in a regulation; or
>
> (C) to correct an effect on a fishery that was unforeseen when a regulation was adopted;
>
> (2) the board will not accept an agenda change request that is predominantly allocative in nature in the absence of new information found by the board to be compelling.

Based on our review of the new MSA report and ACR #11, our brief responses to these criteria are:

Criteria 1(A): The BOF may accept an ACR for a fishery conservation purpose or reason. However, there isn't a Conservation Concern for any sockeye salmon stock in the Cook Inlet or Kodiak Management Areas. Published ADF&G forecasts for the 2014 to 2016 (GSI study years) and 2017 for Cook Inlet salmon fisheries predicted harvestable surplus for all sockeye stocks. Commercial fisheries were prosecuted in Upper Cook Inlet from 2014-2017, and there is no chronic inability to meet UCI sockeye escapement goals. Susitna sockeye are a Stock of Yield Concern, not a Conservation Concern. A BOF approved Action Plan was developed in 2008 and has been modified with BOF review (more detail is offered below).

Criteria 1 (B): The BOF may accept an ACR to correct an error in a regulation.

We feel there are no errors in current regulations governing the KMA salmon fisheries. This salmon fishery has been identified as a Mixed Stock Fishery, and past studies have revealed similar numbers and percentages of Cook Inlet sockeye present in KMA harvests, as did the new Kodiak sockeye genetic MSA study. KMA regulatory Salmon Management Plans (SMP) were written, discussed, and passed by the BOF with that knowledge.

Should that fact then dictate that nonlocal salmon in KMA harvests be discussed by the Board to consider possible change to KMA commercial salmon fishing regulations, then the BOF may schedule the issue for the on-cycle, regularly scheduled Kodiak finfish meeting. That option also allows for continued study, education, discussion and potential agreement or acceptance by stakeholders. Options and possible courses of action could be discussed among ADF&G researchers and managers.

An error in regulation is more likely with hasty, ill-prepared, unjustified or politically motivated proposed regulation changes. An issue of this importance and complexity deserves adequate consideration prior to changes to traditional and historical fisheries, changes which would also bring severe economic consequences to the Kodiak salmon fishery.

Criteria 1 (C): The BOF may accept an ACR to correct an effect on a fishery that was unforeseen when a regulation was adopted. There hasn't been any "effect on a fishery" demonstrated by ADF&G's new MSA study or report. There was substantial data, yet little to no analyses. The net effect of the KMA harvest of nonlocal sockeye is not new nor has it been demonstrated that it is endangering any sockeye stocks. Perhaps an ADF&G evaluation of the effect of KMA harvest of nonlocal sockeye is needed, and we suggest taking the time to ask the Department that, and other germane questions.

The presence of relatively large numbers of Cook Inlet salmon within KMA commercial salmon harvests during any year cannot be categorized as "unforeseen," for the reasons stated throughout this review. As previously shown, even a measure of the magnitude of the KMA commercial harvest of Cook Inlet sockeye estimated by the new MSA study was clearly demonstrated and reported to the BOF in the early to mid-1990s (over 20 years ago). No negative effects on the nonlocal sockeye stocks have been shown. Unfortunately, many UCI fishermen may hear of the NEW study and expect that the Mixed Stock nature of KMA salmon fisheries was an unforeseen effect.

Criteria (2): The board will not accept an agenda change request that is predominantly allocative in nature in the absence of new information found by the board to be compelling.

Does this new MSA study and report show that there should be new concern for the sustainability or conservation of any Cook Inlet sockeye stock? In the absence of a Biological Concern, what remains are Allocative Concerns. Based on our experiences, we do not believe that the new MSA is new and compelling.

We feel that the BOF should not accept any ACRs regarding KMA nonlocal salmon harvest at fall Board of Fisheries work sessions. Board review of KMA commercial salmon fishery

regulations should remain ON-CYCLE, to next occur during the BOF's 2019/2020 meeting cycle.

We have ISSUES with the ISSUES PRESENTED by UCIDA in ACR #11. There are misstatements and untruths contained in the ACR explanations and descriptions. For clarity, we comment on the UCIDA responses to the questions posed on the Agenda Change Request Form:

ACR #11 - Question 1: UCIDA asks for the adoption of a new regulatory management plan for the KMA. As stated, we do not believe that the Criteria for an Agenda Change request have been met.

ACR #11 Question 2: UCIDA states that the problem is "the harvest of Cook Inlet and other non-local salmon stocks in the Kodiak Area".

No evidence of harm or any problem with UCI sockeye stocks is shown or postulated. It appears that UCIDA feels that ANY harvest of nonlocal salmon in the KMA is a 'problem', despite the fact that Cook Inlet salmon have historically been present in the KMA and were identified in KMA salmon harvests in virtually all KMA MSA studies. Nonlocal sockeye salmon are a natural occurrence in the KMA, the magnitude of which may be related to overall abundance. Many uncontrollable factors are involved such as weather, ocean conditions, and migratory patterns.

ACR #11 - Question 4A: The fishery conservation purpose or reason appears to be that currently ADF&G does not use precise genetic stock estimates in development of escapement goals, management plans or brood tables.

ADF&G will use the best science available, and has successfully managed UCI and Kodiak sockeye stocks without precise genetic stock composition estimates. The KMA genetic MSA was just finished and published. TIME is needed to attempt to use data from the recent MSA. The new Kodiak sockeye genetic MSA was not designed or analyzed to determine appropriate limits on nonlocal, Cook Inlet sockeye harvest in KMA fisheries. Additional genetic studies, such as that conducted annually in Upper Cook Inlet, would be necessary.

ACR #11 - Question 4B: The error in regulation given by UCIDA seems to be the inaccurate or unfairly applied burden of conservation.

The Policy for the Management of Sustainable Salmon Fisheries (5 AAC 39.222), in subsection 4) D), states "in the absence of a regulatory management plan that otherwise allocates or restricts harvests, and when it is necessary to restrict fisheries on salmon stocks where there are known conservation problems, the burden of conservation shall be shared among all fisheries in close proportion to each fisheries' respective use…" (emphasis added). UCI sockeye escapements are met, Cook Inlet salmon fisheries are allowed, so the conservation burden is minimal. There is not a known conservation problem; Susitna sockeye are a Stock of Yield Concern only.

KMA already shares the burden of conservation with Cook Inlet. In December 1989, the Board passed a regulatory plan for the harvest of Cook Inlet sockeye salmon in the KMA, the North Shelikof Strait Sockeye SMP, which:

- o is located to afford the most protection for UCI sockeye as they migrate through the KMA commercial salmon fisheries (the North Shelikof);
  o is timed to cover the estimated peak timing of nonlocal sockeye presence in the KMA (July 6-25);
- o local Kodiak salmon forecasts and run strength indicators, with designated 2½ to 4½ day fishery closures each week; and,
- o only allows continued fishing in inshore waters (Shoreward Zones; offshore Seaward Zones, from the baseline to the 3 mile limit, are closed).

This is already a very large conservation burden on KMA fishermen, for which no positive net effect on UCI stocks has ever been demonstrated. Over half of the Mainland and Afognak Districts are subject to fishery closures in July, based on the 1988 KMA harvest of nonlocal Cook Inlet salmon. Many KMA stakeholders would say that the conservation burden is currently unfairly slanted against KMA fishermen.

ACR #11 - Question 4C: The magnitude of nonlocal salmon harvests was known and was before the Board when KMA management plans were deliberated and adopted, but a new MSA has inspired a new round in the ongoing Cook Inlet-Kodiak fish fight.

This type of proposal is not new. In the past, UCIDA and UCI stakeholders have submitted many proposals for changes in management of the KMA fisheries. Very similar proposals were submitted to the BOF in the mid-1990s. With dozens of meetings and hundreds of hours of BOF discussions, committee discussions, as well as 2 years of work by a BOF ADF&G-Stakeholder Cook Inlet-Kodiak Inter-Area Work Group, it is clear to us that the BOF has been informed, has reviewed the KMA nonlocal salmon issue, and has deliberated on such restrictive management plan proposals.

ACR #11 - Question 6: UCIDA rightly admits that their ACR (#11) is allocative. We concur.

ACR #11 - Question 7: This compels the Board to consider an allocative proposal outside of the regular cycle. UCIDA claims that "Now, years later, with the aid of genetics, we know much more about the timing, location, extent and magnitude of the harvests of Cook Inlet origin salmon stocks. This ACR is the first opportunity to look at the harvest of Cook Inet stocks in the Kodiak Management area, and we consider this a very serious misstatement of fact. This is not the first look at harvests of Cook Inlet salmon in the KMA. Beginning in the 1920s, salmon researchers have studied KMA salmon stocks composition and shown that Cook Inlet salmon contribute to KMA commercial fisheries. The magnitude of nonlocal sockeye in KMA commercial fishery harvests has been previously studied extensively by ADF&G. MSA estimates were conducted and reported to the BOF and the public between 1989 and 1996, with similar results as the new genetic MSA.

The recent 2014-16 Kodiak genetic MSA has indeed added to the data available, however it gives little to NO definitive answers to migratory timing, location, extent or magnitude of nonlocal salmon passing through the Kodiak Management Area. It was a limited, short term study that looked at only some parts of June-August KMA salmon fisheries for only three years (three data points for each temporal/spatial stratum). Data was pooled into three fairly long temporal periods and six fairly large geo-spatial strata. For any temporal/spatial strata, there are only three annual data points. Three data points will show a false trend more often than a true trend. Three data points are most likely to show no trend.

The study cannot infer an absolute or precise harvest rate of nonlocal sockeye in KMA provided limited results from a limited sampling plan that was NOT intended to provide nonlocal salmon harvest rates, but rather the sockeye stock components of seleced KMA fisheries during limited time periods. UCIDA claims that the Kodiak sockeye genetic MSA is new information that should prompt the BOF to "look at the harvests of Cook Inlet sockeye stocks in the Kodiak Management Area. We strongly disagree. Again, more will be discussed regarding these point, in subsequent parts of this review.

ACR #11 - Question 9: UCIDA clearly states that there is NEW proposal, "not previously… before the board" and that it was "modeled after existing portions of both the Kodiak and Cook Inlet Alaska Administrative Code themes and regulations."

The proposed UCIDA restrictive umbrella plan form ACR #11 is not a new proposal. It is modeled after proposals from the November 1995 Kodiak Finfish BOF meeting and prior BOF meetings.

At that meeting, there were several such proposed changes to KMA fisheries. And the Board did not adopt any further restrictions. In the Summary of Actions taken at that meeting, it clearly states that "the past Board had pretty much resolved the issue in 1989 utilizing the best information available. And that information has not changed to this point. The effort and catch has increased in the disputed areas due to local management practices in other areas of Kodiak. And it is difficult to determine if this (is) a new and expanding fishery when both this area and Cook Inlet fisheries are at an all-time high. The overriding reason for apparent increase in intercept of Cook Inlet stocks seems to be directly related to the density and strength of that run." (emphasis added).

The 1995 Board of Fisheries reviewed MSA and harvest information and determined that shifts in effort levels could be fishermen movement due to closures of North Shelikof fisheries SMP, not new or expanded targeting of Cook Inlet stocks. They recognized that nonlocal salmon harvests occur in KMA fisheries and the relative level of such harvests were related to run strength. No biological concerns and no allocative concerns meant no change to Kodiak SMPs.

In both 1995 and 1988, Kodiak salmon fishermen submitted proposals to increase the harvest triggers used in the North Shelikof July 6-25 fisheries. They did so because the number of local Kodiak sockeye had increased since 1988, due to both an increase in natural production and increased enhancement of Kodiak sockeye. This would have increased the number of local

sockeye salmon available in the North Shelikof fisheries. However, because of the complexity of the situations involved, the BOF did not accept either proposal.

There were subsequent changes to the North Shelikof SMP. In 2002, the Ouzinkie Native Corporation, representing tribal commercial fishermen from Ouzinkie and Port Lions, proposed a less restrictive plan for Southwest Afognak section commercial salmon fisheries during the North Shelikof SMP mid-season time period (July 6-25). The BOF allowed KMA fishermen to continue to fish traditional seine hauls in the Southwest Afognak Section out to within ½ Mile of the baseline (a reduction of the Seaward Zone). And at a regular Kodiak Finfish meeting in January 2008, the Board accepted an amended version of the Ouzinkie proposal, reducing the Seaward Zone in the Northwest Afognak Section to allow KMA fishermen to continue to fish traditional seine hauls.

The BOF, despite multiple considerations of the KMA salmon fisheries and the North Shelikof plan, has not accepted proposals for increased restriction of KMA fisheries based on Cook Inlet sockeye salmon harvests within the KMA.

Concern is expressed in the ACR that if the proposed plan is not adopted, KMA salmon fisheries continue to incidentally harvest nonlocal Cook Inlet sockeye salmon, and then there will be detrimental biological or ecological effects. Yet there are no examples given of what detriments have been experienced in Cook Inlet due to recent KMA salmon fisheries or fishing patterns. Nor was any potential biological or ecological harm identified in the ACR #11.

Since 1989, the Board of Fisheries has addressed dozens of proposals from Cook Inlet salmon fishery stakeholders, for KMA management plans or regulatory restrictions. And very few changes have been made to the existing Cook Inlet-Kodiak allocative SMP by the BOF, and the BOF has not deemed it necessary to expand the regulatory KMA fishery restrictions by time (before or beyond 7/6-25) or location (North Shelikof vs. other major fishing areas of the KMA such as the east side or southwest sides of Kodiak Island).

UCIDA's proposal would establish a complicated plan covering an expanded time period (5 weeks, from 6/25 to 7/29) and newly expanded locations to include most of the KMA wild stock salmon fisheries. Within the identified time period and locations, there would be weekly and "seasonal" (6/25 to 7/29) commercial harvest limits for sockeye salmon.

This proposed plan would completely change the nature of KMA commercial salmon fisheries, and the opportunity for KMA salmon fishermen to harvest millions of local salmon would be uncertain or lost due to shifting of fisheries to only inner bays and terminal harvest areas.

Long-standing harvest strategy criteria by which KMA managers have operated could be more difficult to assure or complete. For example, since about 1971, the KMA general pink salmon fishery has been managed to coordinate multiple fishery openings whenever possible, (several locations over a wide area opening to the salmon fishery during the same time periods) to disperse the purse seine fleet. More restriction of fishing areas means more boats in smaller places, increasing the likelihood of conflict. And since about 1980, managers have attempted to

maximize harvest opportunities on the highest quality salmon during orderly fisheries. More restrictions and a completely new harvest management plan would reduce opportunities, and would likely lead to poorer quality salmon products (brighter, fresher salmon are found outside of bays and in early pink salmon fisheries) as well as the potential for more gear conflicts.

Managers would be forced to be ultra-conservative in order to meet the proposed new plan's expectation that fishery managers would make closure announcements if they EXPECT a limit to be reached or if the current harvest is within 15% of that limit. The weekly and seasonal sockeye harvest limits given in the UCIDA proposal are vastly lower than actual harvest in the past. For example, for the Westside Districts the proposed weekly limit is 12,500 sockeye, yet over the past ten years (2008-2017) the weekly Westside sockeye harvest during the 6/25 to 7/29 plan duration has averaged over 61,000 sockeye.

In our opinion, such widespread KMA fishery restrictions in late June through July (five weeks in the middle of the KMA salmon season) would greatly reduce ADF&G's management precision (more uncertainty means more conservative management) and increase the likelihood of 'lost' harvest opportunities, reduced quality of the pink salmon harvested and increase the likelihood that Kodiak sockeye and pink salmon escapements would exceed the appropriate levels that have been determined by ADF&G and the BOF.

And, the proposed sockeye harvest limits are substantially below the recent or historical sockeye harvests in those fisheries. The vast majority of past KMA salmon fisheries (1985-present) would have been restricted had this proposed umbrella plan been in effect. The proposed management plan's weekly and/or seasonal sockeye harvest limits would have been met, forcing restriction of major KMA fisheries to only inshore waters.

This is a long-running fish fight, and one could expect that the KMA stakeholders would follow with their own Agenda Change Requests, proposed management plan adoption or modifications, negative rhetoric, legislative inquiries or legal actions. The effects of the proposed UCIDA umbrella plan on traditional strategies and fishing opportunities would force a substantial negative response by not only the KMA salmon fishermen, but by processors, business owners, local Borough and City governments, and local legislators that would know and experience the negative ramifications to KMA mid-season salmon fisheries.

Based on our knowledge of the KMA commercial salmon fishery, it is expected that should this proposal pass as is, it would severely cripple the Kodiak commercial salmon fishery and devastate the Kodiak economy.

IS THERE AN EMERGENCY OR COMPELLING NEW INFORMATION?

We feel there is no biological or conservation-based emergency, nor compelling new information that forces the Board to consider this Allocative Proposal. Therefore, we see no reason to take this issue up out of the regular BOF fishery-review meeting cycle.

BIOLOGICAL CONCERNS are mentioned in UCIDA's ACR #11. For a salmon run, escapement and resulting production are known biological concerns that are affected by commercial salmon fisheries.

Escapement estimation for Upper Cook Inlet salmon streams is a complicated and changing process. Based on data obtained from ADF&G, it appears that sockeye salmon escapement goals are generally being met (Table 1), and there is no chronic inability to meet escapement needs.

Table 1. Upper Cook Inlet sockeye salmon escapement goal ranges and recent escapement estimates, 2010 2017. Data from ADF&G, Division of Commercial Fisheries, Anchorage, 8-22-17.

Sockeye Escapement Goal Ranges [1]								
2010			2011	2012	2013	2014	2015	2016
Kasilof River	160,000 - 340,000	267,013	245,721	374,523	489,654	439,977	470,677	239,981
Kenai River	1,000,000 -	970,662	1,300,000	1,599,217	1,581,555	1,359,893	1,520,340	1,704,767	1,383,692
Fish Creek	15,000 - 45,000	126,829	66,678	18,813	18,912	43,915	102,296	46,202
Chelatna	20,000 - 45,000	37,784	70,353	36,736	70,555	26,212	69,897	60,792
Judd	15,000 - 40,000	18,466	39,984	18,715		22,229	47,934	No Count
Larson	15,000 - 35,000	20,324		16,566	14,088		23,185	
			12,190		21,821	12,430		14,333

1. Escapement goals are those provided by ADF&G following a 2017 Board of Fisheries review.

Harvestable surpluses of UCI sockeye salmon have been consistently realized. ADF&G forecasts for 2014-2017 Cook Inlet salmon fisheries show significant surplus sockeye salmon production, over and above published escapement needs. Harvest records show that recent annual Cook Inlet sockeye salmon commercial harvests were in excess of forecast.

Actual Cook Inlet commercial, subsistence or sport harvests may vary and at times may even be lower than in the past. However, commercial fisheries were prosecuted in Lower and Upper Cook Inlet resulting in Cook Inlet commercial salmon fishery harvests of millions of sockeye salmon. Sockeye salmon production seems to be near historical highs, based on data provided by ADF&G.

A STOCK of CONCERN designation was placed on the Susitna sockeye stock in 2008. However, the Susitna sockeye stock was categorized as a YIELD concern, not a Management or a Conservation Concern. Even that designation was not without controversy, both for and against. The level of Concern for Susitna sockeye has not changed with almost 10 years of subsequent ADF&G and BOF review.

Based on the Policy for the Management of Sustainable Salmon Fisheries, "yield concern" means a concern arising from chronic inability, despite the use of specific

management needs (5 AAC 39.222(f)(42)). Based on the Sustainable Salmon Policy, there is an Action Plan for Susitna sockeye salmon as a Stock of Yield Concern, and that plan is reviewed and updated as necessary during salmon area specific BOF meetings. The Action Plan, in part, must contain goals, measurable and implementable objectives, and provisions, including fishery management actions needed to achieve rebuilding goals and objectives, as well as descriptions of new or expanding salmon fisheries.

Within the Susitna sockeye salmon Action Plan, there are NO new or expanding fisheries listed. This is especially surprising when considering the near meteoric rise in sport fishing effort and commercial sport fishing operations (guides, charter operators and lodges) across the State of Alaska in the past 20 years. The Kodiak commercial salmon fishery has not been identified as 'New and Expanding', nor have any portion of KMA salmon fisheries.

The Susitna sockeye salmon Action Plan designates that ADF&G Division of Commercial Fisheries will manage the Susitna sockeye stock using commercial fishery regulation of Upper Cook Inlet's Northern and Central Districts, only (Figure 1). There are no commercial salmon fisheries restrictions in Lower Cook Inlet (5 Districts) based on this Stock of Concern.

It seems like an over-reach to ask for severe commercial fishing restriction in the KMA, so far 'downstream', while ignoring Lower Cook Inlet. Especially since all Upper Cook Inlet stocks MUST pass through Lower Cook Inlet.

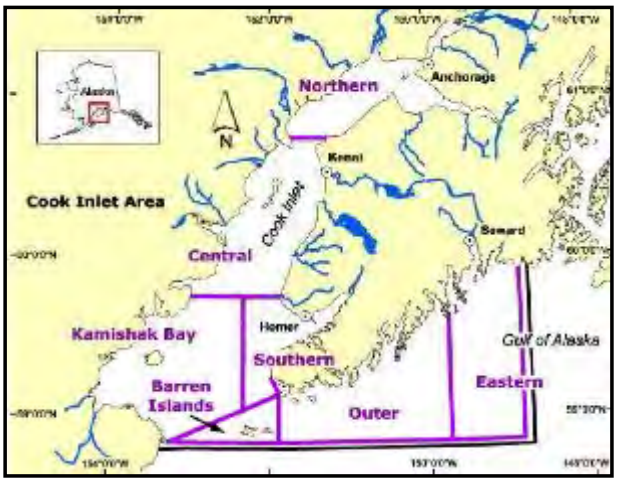


Figure 1. Map of Cook Inlet's commercial salmon fishing districts. Figure taken from ADF&G website

ADF&G has identified several other factors, besides natural or incidental mortality, that may be affecting the survival (yield) of Susitna sockeye salmon in freshwater (spawning and rearing areas), including the introduction of invasive species (Northern Pike), loss or alteration of habitat, changes in water quality or quantity, pathogens, or harvest by sport fishing. Yield Concerns, by definition, are NOT concerns for the sustainability or successful management of the stock, rather it is concern for lower than desired harvestable surpluses, above expected

escapement needs. To 'conserve' UCI sockeye salmon for harvest by a select group of Alaska fishermen, for only Cook Inlet commercial salmon fishermen or sport fishermen or commercial sport fishing business owners, is based on allocation; it is not a concern for conservation caused by new and expanding fisheries.

We feel confident that no biological reason exists for restricting KMA fisheries in order to protect Cook Inlet-bound salmon, based on the information given in the UCIDA ACR, or in the 2014-16 KMA genetic MSA (more in following part of this review).

Nothing New has been determined with which to accurately determine the impact of KMA sockeye harvests of nonlocal salmon on Cook Inlet sockeye salmon stocks.

Perhaps some people have assumed that the magnitude of the Cook Inlet sockeye component of KMA harvests was an unknown. Perhaps some people assumed that Cook Inlet salmon rarely migrate through the KMA, so the harvest numbers in the report were shocking to them.

However, the 2014-16 MSA report was not an analysis of nonlocal sockeye harvest in the KMA. It is a reporting of recent data collected in yet another MSA in the KMA. In the 2014-16 KMA sockeye genetic MSA, only very limited information from past tagging studies was included, and there is only one citation from several Kodiak MSA reports by ADF&G from 1989-1996.

Without a discussion of 'How we got here' it is often difficult to correctly ascertain exactly where we are now. It is unfortunate that, in the new MSA report, Shedd et al (2016) included only very limited information on past Kodiak sockeye MSA studies and published reports.

Earlier MSA Studies were Conducted in the KMA using existing fisheries data and samples, such as analyses of run timing, or of scale samples for stock-specific age-markers or patterns, or use of average sockeye salmon lengths or weights from KMA vs CIMA commercial harvests. A quick comparison shows that many data from the new KMA genetic MSA and from previous KMA average weight MSAs are similar. There was no mention or analysis of these facts in the new MSA report.

Included in the new MSA report are over 60 tables describing the annual estimates of local and nonlocal sockeye salmon in each of six preselected geographic areas (geospatial strata) during each of three time periods (temporal strata). The middle stratum encompasses the July 6-25 period used in earlier studies, so is most comparable with that earlier data. The 1994 Barrett and Vining report also looked at specific area harvests, some of which approximate the 2014-2016 sampling areas.

Barrett and Vining (1994), using average weights, estimated the stock compositions of KMA July harvests from eight KMA locations (geospatial strata), which are basically the same as the geospatial strata in the recent KMA genetic MSA. For example, in Barrett and Vining (1994), for Ayakulik and Halibut Bay, the nonlocal (Cook Inlet) sockeye harvests for July, 1988-1992, ranged from 103,900 to 444,400 fish. In the recent KMA genetic MSA report, the mid-season (basically July) 2014-2016 KMA harvest of nonlocal sockeye in the Ayakulik/Halibut Bay strata

ranged from 41,300 to 185,100 fish. From this comparison it is obvious that the earlier studies not only showed that Cook Inlet sockeye were present and were caught in July Ayakulik halibut Bay fisheries, but that the magnitude of the incidental harvest was greater than in 2014-2016. Should the NEW information be touted as a decline in nonlocal salmon harvests, or only annual variability?

Using another example, the 1988-1992 MSA (Barrett and Vining 1994), the July (mid-season strata) Cape Alitak nonlocal (Cook Inlet) sockeye salmon harvest was estimated at 46,400 to 63,200 fish, and in the 2014-2016 KMA genetic MSA (Shedd et al, 2016) the harvest of nonlocal sockeye in the Alitak District ranged from 37,500 to 127,700 fish. The average weight MSA estimated significant harvest of nonlocal sockeye in the Alitak District, which was confirmed by the KMA genetic MSA. However, does the new MSA study point out an increase in nonlocal salmon harvest in the Alitak Bay District, or annual variability?

There is simply no truthful way to claim that the harvest of nonlocal, Cook Inlet salmon is new information, or that the magnitude of those incidental harvests is new information, or that the timing and estimated number of incidental sockeye harvested is anything but unpredictable and widely variable between and among years.

The New Genetic MSA Report, by presenting seemingly new MSA data with high numbers and percentages of nonlocal salmon in KMA salmon harvests, without comparing that to past study data and results (such as previously determined bycatch levels of Cook Inlet sockeye in KMA harvests), has led to unfounded conclusions and has created an emotional response by stakeholders from Cook Inlet fisheries. Vital information is not included, again pointing to the need for development of a comprehensive document or set of data, for review by stakeholders and the BOF prior to deliberating on any proposed change to KMA salmon management.

In the new 2014-2016 Kodiak sockeye genetic MSA report, authors show the number of nonlocal, Cook Inlet sockeye salmon estimated to be harvested in KMA commercial fisheries as a percent of the KMA commercial harvests during selected time periods and within selected portions of the area. This shows the estimated stock contribution rate (stock proportions) of the KMA harvest. We feel this has been misleading for some people.

The Kodiak genetic MSA provides nonlocal harvest data as a percentage of the KMA harvest. It does not attempt to show the potential impact to Cook Inlet stocks. It is understandable (and should have been expected) that some people, upon seeing tables of numbers demonstrating large percentages of nonlocal salmon, may jump to the conclusion that there is a danger to the sustainability of any seemingly fully utilized stocks. The new MSA report does not provide a comparison of the estimated KMA nonlocal Cook Inlet harvest to the total Cook Inlet sockeye harvest or run, or to individual CI sockeye runs (a harvest rate).

But again, as with number of salmon, similarity between the nonlocal stock contribution proportions from earlier and recent KMA sockeye MSA is quickly evident.

Within the new MSA report, the 2014-2016 estimates of overall nonlocal contribution to KMA harvests ranged from 12% (2014) to 42% (2015 and 2016); this is within the ranges determined by earlier studies, and is not new information. In 1996, ADF&G estimated that overall, during July 6-25 sockeye salmon harvest for 1983-1995 (excluding 1989), nonlocal sockeye salmon were from 10.6% to 76.2% of the KMA harvest (excluding Cape Igvak; Vining 1996).

The average weight studies were a rigorous scientific statistical analysis, much discussed, agreed to by ADF&G headquarters, Cook Inlet and Kodiak ADF&G staffs, edited by ADF&G, and the various authors thoroughly discussed the limitations of such a study and cautioned against misapplication of results.

Comparing the estimated number of nonlocal Cook Inlet sockeye harvested in sampled KMA commercial salmon fisheries against the total Cook Inlet harvest or total run, gives a look at the harvest rate of Cook Inlet salmon in KMA fisheries. This is an important distinction, if one is trying to gauge the potential biological impact of bycatch of Cook Inlet sockeye salmon (Table 2). Still, great caution must be employed when trying to determine accurate harvest rates for Cook Inlet sockeye in KMA fisheries. We can only generate very rough estimates of harvest rates from the available data. The 2014-2016 KMA sockeye genetic MSA was not intended or designed to provide accurate harvest rates of Cook Inlet-bound sockeye in KMA fisheries.

Table 2. Estimated KMA nonlocal Cook Inlet sockeye harvest in select KMA commercial fisheries, 2014 2017. Data from ADF&G Anchorage, 8-22-17.

Year	Estimated KMA Harvest of CI Sockeye	Cook Inlet Sockeye Salmon		
		% of KMA harvest	% of Cook Inlet Harvest	% of Cook Inlet Run
2014	113,972	7.5%	4.2%	2.1%
2015	626,473	36.6%	17.9%	9.1%
2016	384,089	29.6%	12.4%	6.9%

Table 2 (above) shows that current estimated harvest percentages are also in agreement with Vining (1996); he showed the estimated percent of the UCI sockeye runs (in the Kodiak Management Area harvest) from 1983-1995 ranged from 1% to 12.1%. Using an overall estimate, it appears that less than 15% of Cook Inlet sockeye runs are harvested in KMA fisheries. It is interesting to note that the other KMA allocative plan, the Cape Igvak plan, allows KMA fishermen to harvest up to 15% of the Chignik sockeye runs. Annual variability is again perhaps the only fact that is clearly demonstrated.

The study and report document only numbers and percentages. Authors (Shedd et al, 2016a) do not comment on whether nonlocal sockeye presence and levels were an affirmation of historical migration patterns and natural background levels of historic bycatch in commercial salmon fisheries targeting Kodiak salmon stocks in this known Mixed Stock fishery.

LIMITATIONS OF THE KMA GENETIC MSA

The recent MSA study was only the first look at a KMA mixed stock fishery using modern stock separation methods (Genetic Stock Identification). And, the report clearly informs readers that it only provided new harvest statistics for some fisheries for a limited set of years, for limited time periods. The lack of analyses or any further interpretation of this data and the lack of comparisons with previous sockeye stock composition estimates, within the KMA genetic MSA report or in a separate report, has led some people to draw their own conclusions.

CAUTIONS: However, the authors (Shedd et al, 2016a) did specify that, since the study was limited, caution must be exercised when trying to extrapolate limited results to wider questions or if trying to fit the data to other issues: "However, while this 3-year data set provides some measure of interannual variability in environmental and fishery conditions, some caution must be exercised when extrapolating the results to years, areas, and temporal periods not analyzed because changes in relative abundance among reporting groups, prosecution of fisheries, or migratory behavior due to ocean conditions very likely affect distribution of stock-specific harvests among fisheries." (Shedd, et al, 2016a, page ; emphasis added).

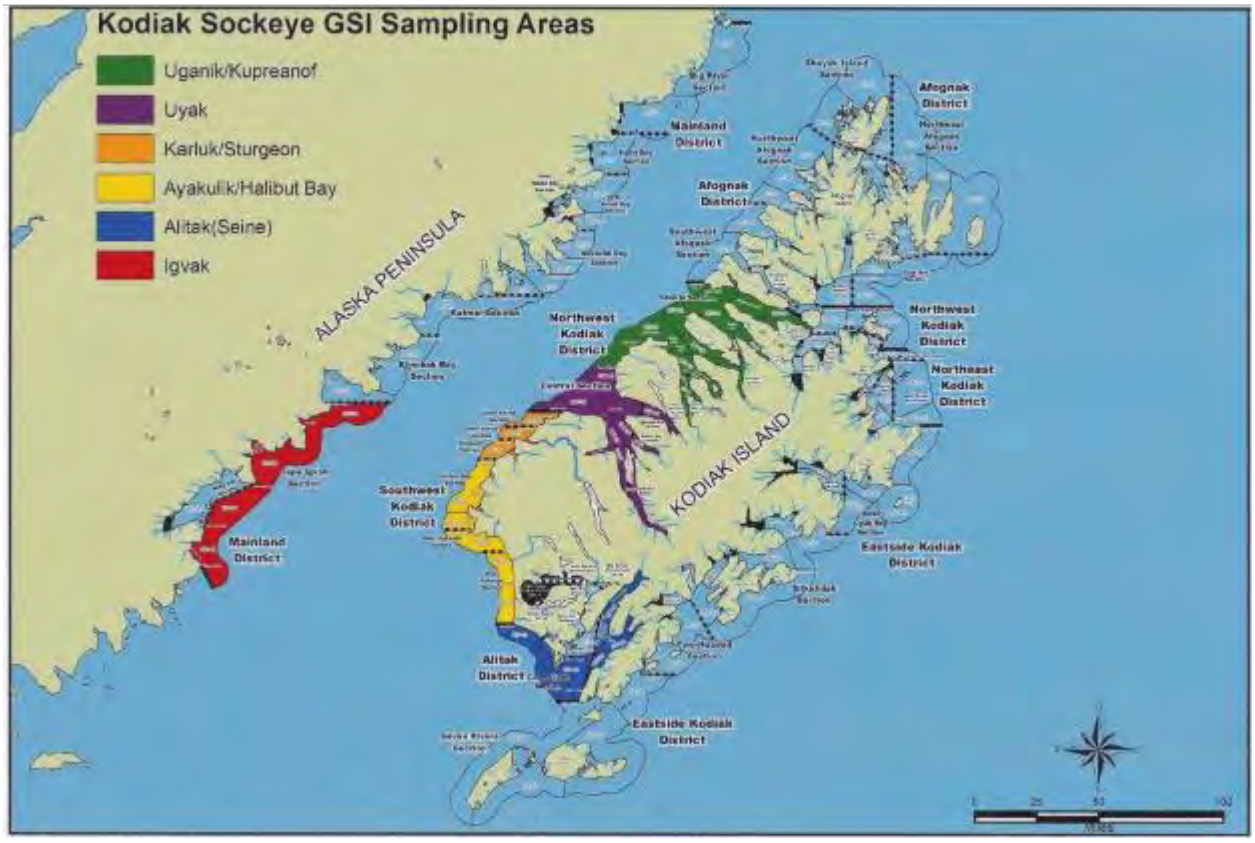


Figure 2. Kodiak Area management units sampled for genetic stock identification, 2014-2016.
Figure taken from Shedd, et al, 2016.

Funding Limits are very real constraints. Authors of the 2014-16 MSA report also found that

"funding constraints limited the scope of this project to specific sampling areas and time periods". The genetic sockeye MSA study planners had to limit both the study area (number of geospatial strata) and the time periods (temporal strata within the June 1 to October 31 KMA commercial salmon fishing season). Though the initial objective of this project was to sample the major directed sockeye salmon commercial fisheries in marine waters of KMA, only eight locations were selected, with all of them in the west and southwestern part of the KMA (Figure 2. Only three sampling time periods were used, spanning June 1 through August. Significant harvests of sockeye salmon can occur in September and October.

Other Limits: It is clear that the new MSA study is a "snapshot", showing results of samples collected from limited areas during limited time periods over a limited set of years. Not included in this new MSA study were not only the known areas where KMA fisheries may target nonlocal stocks (Afognak and Mainland District sections bordering the North Shelikof), but also areas of prior Board review for KMA harvest of nonlocal sockeye (Eastside Kodiak District). The authors of the new MSA report admit that, succumbing to funding limits, they sampled less than they intended, both in areas covered and time periods sampled.

The authors admit that GSI techniques are not robust enough to distinguish between Ayakulik and Frazer sockeye stocks; they did not attempt to distinguish between local Saltery stock sockeye salmon (Eastside District) and enhancement project production at Spiridon Lake (NW Kodiak District; west side). Are there other stocks that are difficult to distinguish? ADF&G also published a KMA Genetic Baseline report that contains many such statistics and graphic presentations. However, it is not clear to me, and may not be to any but the initiated, if there are KMA and UCI sockeye stocks that are so closely 'related' genetically, that there could be overlap or misidentification (i.e. Horse Marine sockeye salmon).

The study does not speculate on reasons for the observed variability in harvests between the three years. There are factors that could influence this and research could be directed at answering other important questions beside 'How many?' Funding has limited sampling by time and area, and stock similarity has limited the separation of at least three stocks, so this study cannot reveal the full picture over a robust set of years.

Do the results clarify or obfuscate issues relating to the use of this data or the controversy regarding KMA harvest of nonlocal sockeye?

The new KMA genetic MSA report authors believe that the study was successful: "These results represent a majority of sockeye salmon commercial harvests in KMA and <u>should</u> improve our understanding of stock productivity and migratory patterns, and provide information to evaluate assumptions built into management plans." (Shedd, et al, 2016a, page 23; emphasis added).

Sufficient time should be given for ADF&G managers and researchers to utilize the limited data they've collected to discover its usefulness to actual fishery management needs.

We note that the 2014-2016 MSA report may seem incomprehensibly technical to some, but it s easy to seize on numbers! As written, this report is of questionable utility for BOF members for the purpose of a specific discussion of issues that could lead to restrictive regulatory changes to

KMA salmon fishery management, let alone stakeholder understanding, interpretation, and education. We do not mean to diminish the work done; the report is a fine piece of Scientific Reporting, and meets ADF&G standards for technical publications.

The 2014-16 MSA report is fine for a scientific audience, not as the basis for stakeholder discussions or restrictive BOF actions that would destabilize the KMA fisheries. For concerned stakeholders, and the BOF, it is more likely to lead to misunderstanding, and raises more questions than answered. People want to jump on numbers, but may miss the limitations.

We feel this technical study and report should only serve to provide limited information on a limited study. It should be the impetus and basis for a further report to BOF, if the BOF determines that further review is needed at this time.

The study results alone are not sufficient for restricting KMA fisheries to potentially re-allocate sockeye salmon harvests; an additional more comprehensive report on the specific issue of Cook Inlet salmon within the KMA should be considered to educate and inform stakeholders and begin discussions, prior to Board action.

Any such additional document would need to include a thorough discussion of issues (not stats, not methods, etc.) in more digestible form. A more colloquial summarization, perhaps formulated by a joint stakeholder committee, would best serve if further discussion of nonlocal salmon harvest in the KMA is to become a Board of Fisheries agenda item at 'Special' meetings or the next regular Kodiak Finfish meeting.

The intent, goals and objectives of the new MSA study and report are shown within the report. Caution must be taken against misuse the data provided based on personal concerns.

It was not the intent and goal of the new MSA to produce specific information for a BOF review of KMA fisheries, nor was it to suggest restriction of the KMA fishery due to reported UCI sockeye harvest numbers. And the new MSA study and report's goal was certainly not to open another allocative dispute, though that outcome could have been predicted and may have been prevented by additional analyses.

INTENT: When reviewing a scientific study, it is vital to bear in the forefront of one's mind the general intent or purpose of that study, its specific goals and objectives, as well as the assumptions and limitations that encompass any analyses. It may be difficult, even dangerous, to try to draw answers or conclusions from information that was not collected specifically to answer that question, or which has many poorly founded assumptions. The possibility for misinterpretation, misuse and mistakes are increased. False assumptions or misinterpretation of data can lead to completely inaccurate conclusions.

The KMA sockeye genetic MSA study (or indeed any study) and the report should primarily be viewed through the lenses of the intent, or purpose, of the study. What was the intent of study planners and report authors? What was it needed for and why? What did it seek to show or do?

What issues or what answers were beyond the scope of the study? Attention to intent, goals and objectives will inform us what the results may actually demonstrate.

Unfortunately, the intent of the new MSA study is not clearly defined in the early portions of the report, but rather is found scattered throughout the report. In the acknowledgements comes the most basic purpose of this study. Authors thank a former ADF&G Director for "prioritizing department resources to address this knowledge gap in KMA" (Shedd, et al, 2016a, page 27; emphasis added).

Genetic stock identification for Mixed Stock Analysis has been completed for much of Western Alaska (WASSIP), and GSI has been used in Cook Inlet since 2005, to identify the mixed stocks within UCI fisheries. No such genetic data existed for the KMA (a knowledge gap), so a Kodiak salmon genetic MSA was funded.

PLEASE NOTE: the MSA of Cook Inlet fisheries show NO nonlocal salmon, not because only local stocks are present... it appears that nonlocal stocks are NOT part of the UCI MSA model. That is, researchers assume that there are NO nonlocal salmon in Cook Inlet fisheries; nonlocal sockeye are not looked for! You can't find what you don't look for.

In other places in the new MSA report we find additional comments regarding intent. The authors state that: "The impetus for this study was to provide analytically sound estimates of stocks harvested in KMA fisheries to better understand stock productivity and address management assumptions. The principal objective of this project was to sample the major directed sockeye salmon commercial fisheries in marine waters of KMA." (Shedd, et al, 2016a, page 23).

Unfortunately , what the authors meant by "management assumptions" is not defined within this report; if that was a serious consideration by study developers and planners, then those assumptions should have been clearly defined. All assumptions of specific scientific research, particularly if they are to be tested in the study, should be clearly stated. The need to address management assumptions, if not defined, should not be a focus for use of data collected.

As former Kodiak Area Management Biologists, we know of no 'management assumptions' that would require a three year genetic study. Indeed, as managers we know that limited research is too often misused and is commonly taken 'too far' by strongly opinionated people in attempts to prove their point.

In another passage the authors state that: "While nonlocal harvest of sockeye salmon in KMA commercial fisheries has been assumed in regulation and demonstrated in previous studies based on tagging, scale pattern analysis (Barrett and Swanton 1991, 1992), or average weight (Vining 1996), this project represents the first effort to use modern MSA techniques to quantify that harvest" (Shedd, et al, 2016a, page 26; emphasis added).

The primary intent was to use newly provided funding for a 'first effort' to try genetic stock identification methods in a Kodiak MSA, since no GSI had been attempted prior to 2014.

STUDY GOAL or PRINCIPLE OBJECTIVES: The report authors specifically define their goal: "The overall goal of this project is to provide information that will be useful for reconstructing runs, building accurate brood tables to define escapement goals, and refining management by identifying spatial and temporal harvest patterns of local and nonlocal stocks…." (Shedd, et al, 2016a, page 5, emphasis added).

Unfortunately, this goal has NOT yet been met. Satisfactory completion of the stated goal will require additional time and analysis of the gathered information.

It is important to give ADF&G time to actually apply these results to run reconstructions and brood table development. ADF&G may then be able to refine pre-season management by providing better predictors of stock productivity and anticipated run strengths (forecast). Inseason fishery management will not be improved.

It truly seems that there is an intent to reverse the order and to change management based on a limited study, rather than explore the statistics to see if solid, scientifically valid results point to needed changes in established, stable management. The possibility exists for future analysis and study, additional research, discussions between stakeholders and managers, researchers, and the BOF. We encourage the BOF to take this opportunity, and to use this study as intended. We fear a hasty, knee-jerk reaction to an emotional issue to appease a vocal user group.

The principle objective has been addressed, yet not fully met. "The principal objective of this project was to sample the major sockeye salmon commercial fisheries in marine waters of KMA from June through the end of August and use genetic mixed stock analysis (MSA) to estimate stock compositions. The study only partially accomplished this objective. KMA harvest samples have been collected and analyzed using the most current genetic MSA techniques. However, the project was not able to sample all KMA commercial fisheries, and so was limited to specific geographic areas, within specific time strata, for a limited number of years.

ADF&G study planners and authors agreed, with authors stating that: "these results may only have limited utility in formal run-reconstructions for 2 primary reasons. First, not all fishing areas were sampled, and sampling did not include harvest after August 29, when substantial numbers of Karluk and Upper Station late-run fish can be harvested. Second, the genetic baseline was unable to adequately distinguish between Ayakulik and Frazer stocks for the purposes of MSA." (Shedd, et al, 2016a, page 26).

To meet the study's goals, it would appear that there is a need to work further with the information gathered, in run reconstruction (back-casting, to improve fit of forecasting models) and escapement goal review. Authors caution: "Management would benefit from estimates of stock-specific harvest of Ayakulik and Frazer stocks and future research should explore means to accomplish this objective (Shedd, et al, 2016a, page 24).

There needs to be further analysis of the Ayakulik/Frazer samples to either separate or determine and apply additional information needed to split this grouping into the two distinct stocks.

Four (4) objectives are then specifically listed, 1 through 4, yet these objectives address the report, not the study. The stated objectives for the report that describes the study are:

1) Describe sampling of genetic tissues from sockeye salmon caught from June through August in select commercial fisheries in the KMA, 2014 2016;
2) Describe subsampling of genetic tissues in proportion to catch within sampling areas and temporal strata;
3) Report MSA results of stock proportions and stock-specific harvests of sockeye salmon sampled from select commercial fisheries in the KMA, 2014 2016;
4) Characterize where stocks were harvested from select commercial fisheries in the KMA, Shedd, et al, 2016a, page 5)

AN IMPERFECT DESIGN

The new MSA study design left many pertinent questions unanswered and many data needs unmet. The study design seems practical for the general overall goal; that is, during some portion of KMA commercial salmon fishery, to collect samples from some portion of the KMA salmon fisheries and analyze for genetic MSA stock identification, over three years.

Unfortunately, it was not designed to address or answer some very fundamental questions that could enlighten the issue of variable incidental harvest of Cook Inlet sockeye in KMA fisheries. As shown previously, the study did not include the North Shelikof Straits. However, it is possible that, with additional sampling, analyses or interpretation of results, more definitive answers or conclusions could be made that would be helpful to the BOF during their consideration of this ongoing fish fight.

The BOF has attempted to 'solve' this issue in the past. After 4 years of ACRs and proposals at every Kodiak Finfish BOF review, in 1994 the BOF formed a Work Group to determine possible solutions.

In 1994, a Kodiak / Cook Inlet Inter-Area Work Group (hereafter referred to as the IAWG or the Work Group) was formed by the BOF. As previously stated, in 1988 following the occurrence of a large harvest of nonlocal sockeye salmon in mid-stream Shelikof Strait, the active allocative dispute between Cook Inlet and Kodiak fishermen gained strength. From 1988 through 1996, Kodiak ADF&G conducted sockeye stock identification studies (MSA). Cook Inlet-Kodiak allocative conflicts were the subject of many meetings with the Board of Fisheries. The IAWG met several times prior to reporting to the BOF at a Special Meeting in March 1995.

At the beginning of IAWG discussions, ADF&G researchers and managers, Work Group stakeholder members, and the BOF members mutually agreed upon several key 'facts':

- The bycatch of Cook Inlet-bound sockeye in KMA fisheries is directly proportional to Cook Inlet sockeye run strength;
- The incidence of Cook Inlet sockeye in KMA fisheries varies widely. It is inconsistent as to area, annual timing, and between years;
- The incidence of Cook Inlet salmon in KMA fisheries is 'insignificant' if the Cook Inlet sockeye run is less than 4 million;
- The July 6-25 period is not only an important time period in KMA salmon fisheries management, it is the period of PEAK abundance of Cook Inlet-bound sockeye salmon in KMA waters;
- Within that period, the majority of bycatch occurs within a narrower, 7-10 day period.

These facts were established by ADF&G and stakeholders on the IAWG, based on the 19881995 Kodiak MSA studies and fisheries. These facts served the BOF and ADF&G by focusing the scope of research and discussions to a manageable level and by focusing any potential Board action on the most effective time period within the fishing season.

The 1994-95 Inter-Area Work Group also recommended that ADF&G undertake additional inseason stock-separation studies and develop inseason indices or markers to determine when Cook Inlet salmon are present in KMA fisheries. The IAWG asked that Kodiak and Cook Inlet ADF&G estimate timing and percentage of Cook Inlet run present.

Other serious limits to the Kodiak sockeye genetic MSA include:

GEAR SELECTIVITY could have biased many of the genetic MSA samples. The geospatial strata included 2 location in the Central Section (Uyak and Uganik/Kupreanof), where both Set Gillnet and Seine gear are legal to operate. Based on concerns for getting 'pure' samples from these specific locations, the samples were collected from fixed set gillnet gear. Gillnets will select for the larger fish. In both 2015 and 2016, average sockeye sizes were lower than average, which would further bias against the smaller, local Kodiak sockeye. Karluk sockeye are the dominant stock, so these locations represent the major sockeye fishery of the KMA. Yet, the MSA study does not even mention gear type in the discussion of genetic sampling.

TEMPORAL STRATA used in the 2014-16 KMA genetic MSA do not readily correspond with actual KMA management plan fishing periods, which includes an important mid-season management period (July 6-25). We also feel the time periods used for this study are not sufficiently narrow to define periods when Cook Inlet sockeye stocks may be in the KMA and vulnerable to harvest.

Temporal strata were not consistent among the three years of the study, and the use of different and changing mid-season temporal strata effectively muddles the comparative usefulness of the data presented. During 2014 and 2016 the middle strata dates were June 28 through July 25, and in 2015 this was shifted to July 4 through August 1. While we recognize that, in some years, run timing may be delayed, pushing the mid-season temporal stratum by 7 days based on someone's perception of run timing also confounds interpretation of the study results and their potential use for regulatory discussions. The KMA regulatory Salmon Management Plans all use calendar DATES that do not shift based on perceived run timing.

Anecdotal, first-hand knowledge shows that the location of harvest of larger, suspected Cook Inlet sockeye are almost ephemeral… here today, gone tomorrow. More relevant to CIMA-KMA allocative issues might be the selection and achievement of specific numbers of genetic samples during narrower time periods that correspond to how KMA fisheries are actually prosecuted, particularly during the July 6-25 time period.

GEOSPATIAL STRATA employed in the KMA genetic MSA report are overly broad, and the ability to determine potential offshore or cape fishery "hot spots" was lost. This could lead to misrepresentation. For example, Alitak sampling did not include set gillnet areas and combined the inside (inner bay) and outside (cape or offshore) seine fisheries; it was meant to be representative of the entire Alitak District harvests. However, even limited information about more specific harvest location is of interest and could be important in understanding stock compositions, timing and migratory patterns in KMA mixed stock fisheries.

DATA POOLING may also obscure important or essential information. The manner in which samples were later subsampled and data was pooled to fit temporal strata affects how the sample data can be used. Within the 2014-16 KMA genetic MSA report, there is no commercial fishery data given beside sample date, sample and subsample size, and the reported KMA sockeye catch from that particular sample was from a Seiner or Gillnetter. Effort data is lost.

Caution must be taken in use of the KMA genetic MSA data. Again, we feel that since the study was limited by its intent and goals, by funding, by MSA and study design shortcomings, and was not designed to answer the known and important questions regarding Cook Inlet sockeye in KMA salmon harvests, such as above, then it would be very unwise to apply this new data other than as intended.

DOES THE GENETIC MSA CREATE MORE UNCERTAINTY OR LESS?

The 2014-16 MSA report provides good presence/absence data, and provides MSA composition estimates for some geographic strata and/or time periods previously either unsampled or found to have insignificant or undiscernible levels of nonlocal sockeye. The report simply presents data, with little interpretation, leaving that to the readers. However, to fully explain the harvest numbers, there are many additional considerations (which we hope are becoming clearer after our review).

Presenting snapshots of fishery harvest stock compositions does not elucidate why or how those levels of harvest may have occurred. Is it due to targeting, or some unusual environmental factors? The 2014-16 MSA report does not show actual fishing time during periods in question… Was commercial fishing effort in high catch stratum due to targeting? Did participation increase following some initial 'event'? Would the effects of actual 2014 to 2016 management actions (Emergency Order-based fishing time) and commercial fishing effort point to a 'problem area'?

It should be fairly easy to disprove beliefs that there is a targeted interception fishery on Upper Cook Inlet sockeye in KMA fisheries. Yes, salmon fishermen target sockeye salmon, due to market demand and price, but KMA fishery managers and fishermen are not conducting a secret fishery within KMA salmon fisheries. A pairing of sample collection and estimated stock composition data with actual hours of fishing time and number of landings would show the incidental nature of nonlocal sockeye harvests.

The current KMA salmon commercial fishery management 'harvest strategy' relies on a period during July (July 6-25) when fishing periods targeting pink salmon are weekly 'pulse fisheries' with limited hours of fishing time allowed each week. Pink salmon numbers increase almost exponentially during this time period, but fish QUALITY remains good. After July 25, management sections may be opened for longer weekly periods only in sections where production is expected to be in excess of escapement needs. Management during the July 6-25 mid-season time period actually reduces potential bycatch of nonlocal sockeye. We feel that is an important consideration.

Similarly, without consideration of all factors, some may believe that KMA salmon stocks could all be harvested within 'terminal' fishing areas or 'inside the capes'. Long experience has shown that allowing salmon to enter the fresher (less saline), warmer, inside-waters of the KMA will very quickly lead to loss of quality, or to complete loss to the fishery as the fish home-in and refuse to move out of closed water sanctuaries.

Without consideration of all factors, we cannot answer truly important questions (i.e. Why is there such variability in estimated nonlocal contribution to KMA salmon harvests, between and among years, time strata and geospatial strata?) This could be a topic requiring much study to fully elucidate.

The depth and complexity of the issues involved requires extensive analyses and discussions between ADF&G authors and managers and interested stakeholders, just to set the ground rules for further review and evaluation of proposed restrictive BOF actions. We feel this cannot occur in a few months, but will require additional time for all parties to become apprised of important considerations which may not be apparent to someone not intimately familiar with both KMA and Cook Inlet fisheries and the issues at hand.

We feel that there has always been some level of nonlocal sockeye salmon harvests in KMA salmon fisheries; KMA is a mixed stock fishery. This is an annual part of the KMA salmon fishery harvest, not an aberration or an unanticipated consequence or a new and expanding targeted 'interception' fishery. Identifying the 'natural' background level of harvest of nonlocal salmon would allow for the identification of new or expanding fisheries on nonlocal sockeye salmon versus historical fisheries of the KMA.

If 'reallocation' of some portion of the KMA salmon fishery harvest is to occur (restricting KMA fisheries with the HOPE to positively influence the harvest in UCI) then a lot of information needs to be clearly elucidated in a comprehensive report to the BOF. We offer a limited list of questions that we would like to see addressed prior to any BOF action.

EVALUATION OF APPLICATION OF THE POLICIES OF THE ALASKA BOF

MIXED STOCK FISHERIES POLICY

In March 1993, the Alaska Board of Fisheries (BOF) adopted a significant policy into regulation, The Policy for the Management of Mixed Stock Salmon Fisheries (5 AAC 39.220; effective 5-291993). The Mixed Stock Fisheries (MSF) policy created a framework through which the BOF could analyze specific Alaska salmon fisheries with the goal of determining if Board action is appropriate and required to conserve and protect the salmon stocks in question. With this policy in regulation, any proposed change in the salmon fishery regulations or Board approved Management Plans, is to be judged against the criteria established in the Mixed Stock policy.

In fact, the 1988-1992 allocative disputes between the sport and commercial fishermen of Cook Inlet and the commercial salmon fishermen of the KMA were the 'backdrop' during the discussion and adoption of the Mixed Stock Policy into regulation.

The first use (test) of the MSF Policy following its adoption by the BOF (March 1993) was yet another petition from Upper Cook Inlet stakeholders seeking to control the harvest of Cook Inletbound salmon in KMA salmon fisheries; that petition failed.

It is important to evaluate each of the MSF policy's elements, and those of the associated findings (93-07-FB), against the best available information regarding the Kodiak salmon fishery, the associated take of Cook Inlet sockeye, and the status of Cook Inlet's sockeye stocks.

Pertinent sections of the MSF policy and our evaluation include:

(a) In applying this statewide mixed stock salmon policy for all users, conservation of wild salmon stocks consistent with sustained yield shall be accorded the highest priority"

For UCI sockeye salmon, conservation and sustained yield, the highest priorities under the Mixed Stock Policy, are not threatened. This leaves allocation as the major consideration left, and any BOF actions must abide by established allocation criteria.

(b) In the absence of a regulatory management plan that otherwise allocates or restricts harvests and when it is necessary to restrict fisheries on stocks where there are known conservation problems, the burden of conservation shall be shared among all fisheries in their respective harvest on the stock of concern"
close proportion to

.

There is an allocative management plan in place that allocates and restricts harvest, the North Shelikof fisheries management plan.

Further, no conservation problem has been shown for Cook Inlet sockeye stocks (Susitna Sockeye are a Stock of Yield Concern, not Conservation Concern). KMA commercial salmon fishermen currently bear a burden of conservation which protects an unknown proportion of nonlocal salmon within KMA waters and fisheries. Would additional restrictions actually help in possible future conservation concerns? We feel the BOF should not be restricting fisheries

and reallocating historic harvests of nonlocal salmon in the absence of a true Conservation Concern. We feel that much additional discussion is needed to begin to define and answer such questions.

(d) Consequently, the board will restrict new or expanding mixed stock fisheries… Natural fluctuations in the abundance of stocks harvested in a fishery shall not be the single factor that identifies a fishery as new or expanding.

The KMA harvest of nonlocal salmon is neither new nor has it been shown to be expanding. In fact, the number of participants in KMA fisheries has significantly contracted (Figure 3). The KMA salmon fishery is old and contracting!



Figure 3. The number of Limited Entry permits actually fished for Kodiak commercial salmon fisheries, by gear type, 1980-2016. (No 1989 fisheries due to EVOS) Data from ADF&G, Kodiak.

For the 2014-2016 MSA study period, KMA set gillnet permit participation was down 22.5%, KMA purse seine participation was down 52.6%, and KMA beach seine participation was down 92.4% from the number of available permits to fish during those same three years.

A determination of the "natural fluctuation of abundance" of nonlocal salmon in the KMA is required in order to define any "new and expanding" fisheries in the KMA that target nonlocal sockeye salmon.

(e) This policy will be implemented only by the board through regulations adopted (1) during its regular meeting cycle, or (2) through procedures established in the …Policy for Changing Board Agenda (5 AAC 39.999).

This issue must be tabled until KMA fisheries come up in the regular BOF meeting cycle. The criteria for changing the BOF agenda have not been met.

Past analyses of the harvest of Cook Inlet sockeye in Kodiak waters, using the accepted MSA at the time, have postulated that such bycatch is negligible when Cook Inlet returns are poor to average (Ruggerone and Rogers, 1994). Under conditions when conservation of Cook Inlet's sockeye returns would be a concern, it is not likely that any significant Kodiak bycatch of those sockeye would occur. You can't catch what isn't there.

The Board's Findings, associated with adoption of the Mixed Stock Fishery policy regulations, not only reiterate specific points of the policy but amplify and clarify the Board's intent outside of the constraint of regulatory language. Several of these findings apply to consideration of this Kodiak-Cook Inlet sockeye issue.

The Board found that Alaska's salmon industry appropriately relies upon stable existing fisheries, most of which harvest mixed stocks. Kodiak's established management program for the harvest and conservation of mixed stocks has been successful in sustaining and promoting Kodiak's century-old industry. The findings also speak to harvest of many mixed stocks with an eye towards QUALITY of the harvest, and management of KMA fisheries has promoted protection, rebuilding and high-quality harvests of a large number of stocks of salmon. To restrict fisheries to inside 'terminal' areas will lead to a significant decline in salmon quality, thereby significantly reducing the volume and value of KMA salmon fisheries.

KMA salmon fisheries are already managed according to a well-orchestrated series of management plans, none of which need to be amended now to account for harvests of fish that fluctuate on the basis of natural abundance and pose no threat to conservation. There is no indication that 135 years of commercial salmon fishing in Kodiak's waters ever posed any threat to Cook Inlet salmon stocks

SUSTAINABLE SALMON POLICY: The Policy for the Management of Sustainable Salmon Fisheries (5 AAC 39.222; aka Sustainable Salmon policy), developed by the BOF, was adopted into regulation in September 2000. This policy greatly expands some of the same principles found in the Mixed Stock policy.

The policy updates and strengthens long-standing principles of Alaska's salmon management program. Most importantly, it directs ADF&G and the Alaska Board of Fisheries to follow a systematic process for evaluating the health of salmon stocks throughout the state by requiring ADF&G to provide the Board, in concert with its regulatory cycle, with reports on the status of salmon stocks and fisheries under consideration for regulatory changes (Clark, et al, 2006). The policy also defines a new process for identifying stocks of concern (stocks which have not met escapement goals or yield expectations), and requires ADF&G and the Alaska Board of

Fisheries to develop action plans to rebuild these stocks through the use of management measures, improved research, and restoring and protecting habitat.

The Sustainable salmon policy is a long and very complicated policy, and we will not attempt to review KMA nonlocal salmon harvests through all of its many parts. We will instead point out what we consider to be salient points that apply to the current issue.

The stated goal of the policy include not only conservation of salmon and habitat, and protection of subsistence and other customary and traditional uses plans, restricting fisheries to protect nonlocal salmon, would negatively change the economic health of Kodiak communities to a considerable degree.

The policy also provides many clear definitions for terms commonly used and newly developed terms or classifications. Of note is the definition of Stocks of Concern (SOC). As mentioned earlier, the Susitna sockeye salmon stock was listed as a Stock of Yield Concern in 2008. Yield chronic inability, despite the use of specific management measures, to maintain expected yields, or harvestable surpluses, above a stock's escapement needs; a yield concern is less severe than a management concern, which is less severe than a conservation concern". Based on that definition, there is NO conservation concern for Susitna sockeye salmon.

The policy dictates that an Action Plan be developed for SOC action. Such plans "should contain goals, measurable and implementable objectives, and provisions" including "fishery management actions needed to achieve rebuilding goals and objectives, in proportion to each fishery's use of, and hazards posed to, a salmon stock" and "a research plan as necessary to provide information to address concerns".

The Action Plan for Susitna sockeye salmon, as prepared by ADF&G and approved by BOF through at least three BOF meeting cycles (over 9 years), contains NO mention of concern about Susitna salmon harvest in adjacent Areas (Kodiak) nor the need to further investigate (through research) possible nonlocal harvest. There is no concern of sufficient importance to even consider nonlocal harvest, let alone restriction of KMA salmon fisheries.

In fact, restriction to address the SOC status of Susitna sockeye salmon are limited to Northern or Central District salmon fisheries. No ADF&G management actions are taken in Cook Inlet salmon fisheries in the more southerly districts of the Cook Inlet Area (including Kamishak, Southern, Eastern and Outer Districts). The VAST majority of Susitna salmon MUST migrate through those southerly districts.

How could a restriction to KMA salmon fisheries, where some unknown portion of the Susitna sockeye run may sometimes migrate in unknown patterns) even be considered?

Deferral of ACRs and potential BOF regulatory action until the regular meeting cycle for KMA (and UCI) salmon fisheries is supported by our analysis of application of other BOF policies and criteria. This issue should be addressed within the BOF regular schedule for consideration of Alaska salmon fisheries, during the 2019/2020 cycle.

CONCLUSIONS

Importantly, not included in the new 2014-16 MSA report is any discussion of the incidence of KMA sockeye salmon in Cook Inlet or Chignik salmon fisheries. We learn in elementary school that we should first balance an equation in order to solve it, and working with unequal factors will lead to skewed solutions. The KMA is nestled between the Cook Inlet and Chignik management areas. Early tagging studies sought information on stock of origin as well as migration patterns and timing.

Management plans defining fishing opportunities on KMA local stock were developed by stakeholders, Management Biologists at ADF&G, concerned representatives of government and scientific agencies, and many prior Alaska Boards of Fisheries, over the course of many years. Discussions and decisions were made with full knowledge that KMA was a mixed stock fishery and that significant numbers of both Chignik and Cook Inlet sockeye will be found and may be harvested in KMA fisheries.

Nowhere in existing Alaska Statute, regulation, policy, or management plan does it allow for decisions based on political expediency or personal bias. Allocative pressures within Cook Inlet salmon fisheries are very real, very large, and are growing. The establishment of BOF findings is needed, clarifying the extent to which Inter-Area allocative disputes may be used to modify long standing regulatory structure. Without a definitive pronouncement that x number or percent of nonlocal salmon are harvested, either generally or by stock of origin, then allocative fish fights will be waged.

It is impossible to maintain the economic success of a fishery that is subject to capricious reduction based on poor information or colloquial opinion. A Board finding that historic KMA harvest may contain x% of salmon from Cook Inlet and x% of Chignik salmon will allow determination of new or expanded fisheries and sound allocative decisions.

The 2014-2016 MSA report is a technical report and maximum opportunity needs to be given for this report, and all other pertinent data, to be interpreted for stakeholders and interested parties. It's written in a format that makes ready understanding difficult for those uninitiated in modern genetics research. The format of the report does not lead to easy consumption. It's long on methods, techniques, statistics and data (a data dump from a three year project) and short on analysis.

All parties would benefit from time spent discussing the report, finding answers to questions that it brings up, seeking information from ADF&G or others, educating and discussing pertinent issues with as many stakeholders as possible, defining problems (from the most obvious to the minute), defining possible and favored BOF actions, refining arguments (both for and against), and educating the public. All this should occur PRIOR to full BOF review and deliberation on potential regulatory actions. Another document, more comprehensive and written for BOF and Stakeholder consideration, would be helpful and should be drafted with clearly defined issues and goals, all available data, lists of possible actions and repercussions, as well as the potential of success of proposed actions under the defined goals.

This issue, while not new, is unique and very complex. The new 2014-16 MSA only represents another piece of the larger puzzle. Representative and informed decision will require different /more information and involves further discussions with and between ADF&G and stakeholders. Stakeholders need background and education. They need to narrow their concerns, look for common ground, identify issues and potential problems, review possible actions to deal with the identified issues, and then suggest to the BOF a range of possible actions and recommendations, if needed.

There is potential for additional analyses or even additional research studies that would better inform the issue. We urge caution, and with no immediate biological conservations issues we urge the BOF to postpone or deny any regulatory limitations to the KMA salmon fisheries at this time.

It is a broad truth that Mother Nature has allocated nonlocal salmon to Kodiak salmon fisheries. It cannot be predicted, nor can it be identified inseason or postseason, without a recurring annual MSA. The effects of restricting KMA fisheries to limit nonlocal sockeye harvests on CIMA sockeye escapement or harvest cannot be identified or quantified.

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December 27, 2019

Chairman Morisky
Alaska Board of Fisheries
Boards Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: UCIDA Proposals 65 & 66 (inclusive of proposal 64)
Proposals 37, 63 and RC-09.

Dear Chairman Morisky and Board Members:

The Kodiak Salmon Work Group (KSWG) is an ad hoc committee created to address the issues of Cook Inlet bound sockeye captured in the Kodiak Management Area and the continuation of the Cape Igvak Management Plan. Membership is open and encompasses seiners from both Kodiak seine organizations, setnetters from both Kodiak setnet organizations, beach seine permit holders and processors. In other words, all of Kodiak's salmon fishing community. The group is supported by voluntary stakeholder contributions including those from the City of Kodiak and the Kodiak Island Borough.

KSWG is herewith submitting several documents for the Board's review: 1. Structure and Function of the Kodiak Management Area Salmon Fisheries; 2. Review of Genetic Studies of Sockeye Salmon Harvests in the Kodiak Management Area; 3. Review of Shedd et al. (2016) by Geiger & Quinn; 4. Gulf of Alaska Climate Conditions and Sockeye Salmon Run Timing During 2014-16; 5. Overview and Contrast of Management Plans and Harvests of Sockeye Salmon Destined for Upper Cook Inlet, 2014-16; 6. Synthesis of Chinook Salmon Stock Contribution Estimates within the Kodiak Management Area Commercial Fisheries (Proposals 63 & 37); 7. Economic Analysis of Proposals 65 & 66; and 8. Comments on RC O9, an amendment to proposal 37. Informational maps are attached as well.

Presence of Cook Inlet Sockeye Stocks in Kodiak Area

Proposal 66:

Proposal 66 closely tracks former Agenda Change Request 11 which was submitted to the Board in April 2017 and rejected by the Board in October 2017. Several assertions by the proposers are incorrect. First, the proposer claims that proposal 66 is needed to "prevent a repetition of the nontraditional harvest pattern which occurred during 1988 and many years since. Next, the proposer states that "only recently, as the result of genetic testing and analysis, that the real magnitude of the harvest of Cook Inlet and other non-local salmon stocks in the Kodiak Management Area became known." Then the proposer concludes that "this proposal (proposal 66) is a "first opportunity to look at the harvest of Cook Inlet stocks in the Kodiak Management Area".

The "non-traditional" harvest pattern that occurred in 1988 and years prior was, in large part, an error regarding fishing in federal waters in Shelikof Strait. In addition, the Board concluded that there had been targeting of Cook Inlet bound sockeye in the North Shelikof Strait. The North Shelikof management plan clarified that all federal waters in the Shelikof Strait are closed to salmon fishing and further limited Kodiak's seine fleet to cape to cape fishing throughout North Shelikof after small "trigger" amounts of sockeye are captured. Consequently, for the past 30 years it has been regulatorily impossible to repeat "the nontraditional harvest pattern which occurred during 1988". The idea that the Kodiak fleet is new or expanding or harvesting in "non-traditional" patters is a myth. See further, Structure and Function of the Kodiak Management Area Salmon Fisheries.

"Genetic Stock Composition of the Commercial Harvest of Sockeye Salmon in Kodiak Management Area, 2014-2016" (Genetic Study by ADF&G) provided additional detail to information that was already generally known by the Department. However, the "study was not designed to understand migratory patterns of sockeye salmon through KMA, nor to address finer temporal patterns of non-local stock distribution." See further, Review of Genetic Studies of Sockeye Salmon Harvests in the Kodiak Management Area, and Geiger and Quinn 2017.

The Genetic Study's authors (Shedd et al. 2016) state "**caution must be exercised when extrapolating the results to years, areas, and temporal periods not analyzed because changes in… migratory behavior due to ocean conditions very likely affect distribution of stock specific harvests among fisheries**." Ocean conditions and climate variability add another reason for caution. "The rate of physical and biological change currently occurring in the Gulf of Alaska is unprecedented, and suggest the need for caution when re-evaluating long-standing management practices based on a few years of data" See further, Gulf of Alaska Climate Conditions and Sockeye Salmon Run Timing during 2014-16.

History is violated by claiming the proposal 66 is the "first opportunity to look at the harvest of Cook Inlet Stocks in the Kodiak Management Area". The Board's records will show that the Board addressed the presence of Cook Inlet stocks in the Kodiak area from the early 1990s through at least 2006. Reports by Barrett and Swanton in 1991 and 1992, Vining and Barrett in 1994 and Vining in 1996 all calculated the amount of Cook Inlet sockeye captured in Kodiak. In addition to these stock assessments, task forces were formed and management plans were developed and several dozen proposals on the issue were reviewed by the Board. Throughout all these years, each Board concluded that the Board's Allocation Criteria did not justify additional regulations focused upon Cook Inlet sockeye harvests in Kodiak. One of the important aspects of the allocation criteria is the assessment of 'cost' or harm that would occur from regulatory change. If proposal 66 were adopted by the Board, Kodiak would lose over $4.5 million dollars annually (See further, Economic Analysis of Proposals 58, 60, 61, 65 & 66.) with little measurable benefit to Cook Inlet. See further, Contrast of Management Plans and Harvest of Sockeye Salmon Destined for Upper Cook Inlet, 2014-16.

Economic losses in Kodiak greatly exceed potential economic gains in Cook Inlet. As one major processor has stated, "I cannot keep my plant open if the fishery is closed for several days during each of 5 weeks in late June or July. My fixed costs are too high and my processing workers can't afford to stay here." Kodiak is a volume fishery that relies on ample fishing time. In contrast, Cook Inlet is a high value fishery that relies on spatial opportunity. Regulations that may work in Cook Inlet would have devastating impacts in Kodiak.

Proposal 65:

Cook Inlet fishermen seek absolute closure of salmon fishing in Kodiak's mainland districts west of Dakavak (outside of the N. Shelikof management plan) from June 28 to July 25th. Interestingly, this excludes about 75% of the historical Cape Igvak catch and keys in on a single year, 2016, when Cook Inlet fish "hit" at Cape Igvak. Nothing is known from the 2014-16 Genetic Study regarding the Katmai and Alinchak sections but the proposer must have determined that proximity to Cape Igvak equaled a justification for closure.

The author of proposal 65 did not mention that Kodiak's existing management plans restrict fishing in the Katmai and Alinchak districts during July to weekly openings of 57 hours. Clearly, fishing opportunity in these districts are focused on local stocks. The Genetic Study doesn't establish anything other than a single event at Cape Igvak. When the lack of information from the Genetic Study is paired with local stock catches of pinks, chums and coho, it becomes apparent that the area should be removed from further regulatory consideration.

The cost to Kodiak fishermen from a proposal 65 closure would average about $1.09 million dollars annually. See further: Economic Analysis of Proposals 58, 60, 61, 65 & 66.

Chinook Concerns

These two proposals use concern for Gulf of Alaska Chinook salmon as a basis for seeking additional management restrictions in the Kodiak Management Area. Salmon fishermen throughout the Gulf of Alaska have been concerned about Chinook productivity for at least 15 years. Kodiak fishermen successfully lead the initiative to reduce Chinook bycatch in the GOA trawl fisheries. One of the first Chinook systems to show declines was Karluk. Initially sport fishing was restricted and then eliminated. Eventually, commercial salmon fishermen working with the Department volunteered to accept a regulation to return alive Chinook larger than 28 inches. Karluk has stabilized but Ayakulik's Chinook returns continue to be of concern. The focus of regulatory restrictions, however, should be rely upon a nexus between the restriction and the probability of

having an impact on the stock of concern. Neither Proposal 63 or 37 come close to establishing such a connection.

Proposals 63:

Much of rhetoric in proposal 63 is incorrect. For example, the presumption that Chinook catches would remain static in the KMA from 2011-13 to the 2014-16 time period ignores the proposers underlying thesis that Chinook salmon runs are diminishing. The author touches lightly on known Chinook genetic assessments (2014-2016) which correlate with several earlier studies and confirm that the proportion of Cook Inlet Chinook captured in the Kodiak area is very small. Smaller still is the "wild" component of Cook Inlet Chinook stocks, as Cook Inlet has a number of Chinook hatcheries.

Proposal 63 is asking that the Board impose a fishing restriction on the Kodiak salmon fleet that would cost in excess of $1.0 million dollars annually in an attempt to save an unmeasurable portion of less than 1% of Cook Inlet bound wild Chinook. The solution for saving Cook Inlet Chinook should start closer to home just like the efforts to sustain the Karluk and Ayakulik fisheries are focused in Kodiak. A definitive assessment of the known proportionality of Gulf of Alaska Chinook populations in the KMA is found in Synthesis of Chinook Salmon Stock Contribution Estimates within the Kodiak Management Area Commercial Salmon Fisheries (Proposals 63 & 37)

Proposal 37 (RC-09)

The proposer asserts that Kodiak is "slaughtering" Chinook salmon that would otherwise be preserved in Cook Inlet. Apparently this proposer, like the author of proposal 63, was not aware of the very low number of wild Cook Inlet Chinook captured in the Kodiak area. He further makes an assumption that the open water gillnet fisheries in Kodiak are parallel to Cook Inlet gillnet fisheries located in proximity to Cook Inlet Chinook spawning streams. Apart from the fact that salmon are caught in both Cook Inlet and Kodiak, there is very little similarity between the two fisheries --- the fishing gear is different, the size of the area and the special geography is different, the weather in Kodiak, on the open ocean, is different, seasonality in Kodiak with of hundreds of spawning streams over 5 months is different, the abundance of non-sockeye species is different, numbers of

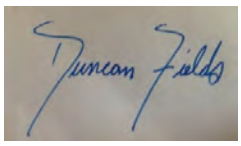
participants is far different as is comparative management success in terms of meeting escapement goals. Consequently, the idea of "paired management" seems misplaced.

RC-09 created on opportunity for a single user group to insert a proposal in the Board's process after the proposal deadline. The "new" proposal 37 absorbed an initial idea of joint management and expanded it both by species and geography with the specific application of fishery limitations to the Kodiak fishery. It appears that RC 09 is one user group's solution in search of a regulatory vehicle. Starting with a problem statement, like "it doesn't include Area L, Prince William Sound, or Southeast Alaska, recreational fisheries for Chinook, sockeye, coho, chum and pink salmon" would lead the reader to think that a suggested solution would include what the problem indicated was needed. However, the proposed solution is to modify management plans in Kodiak and Lower Cook Inlet ONLY – in other words, talk about something that is comprehensive but just regulate "those guys", not us! The Board should see through the subterfuge. Also, the tables submitted with RC-09 are invalid. See further, Comments on RC 09, an Amendment to Proposal 37.

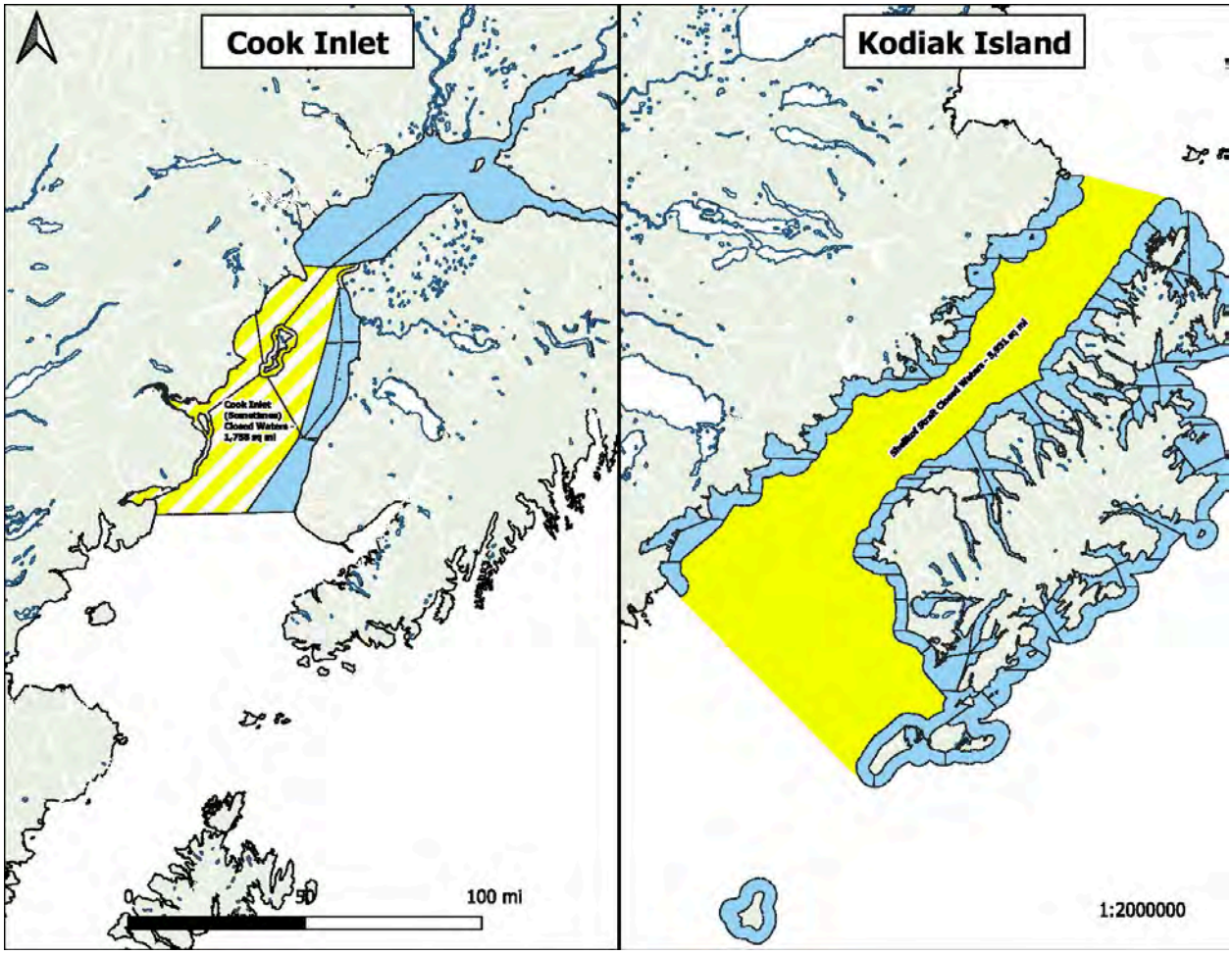
Conclusion

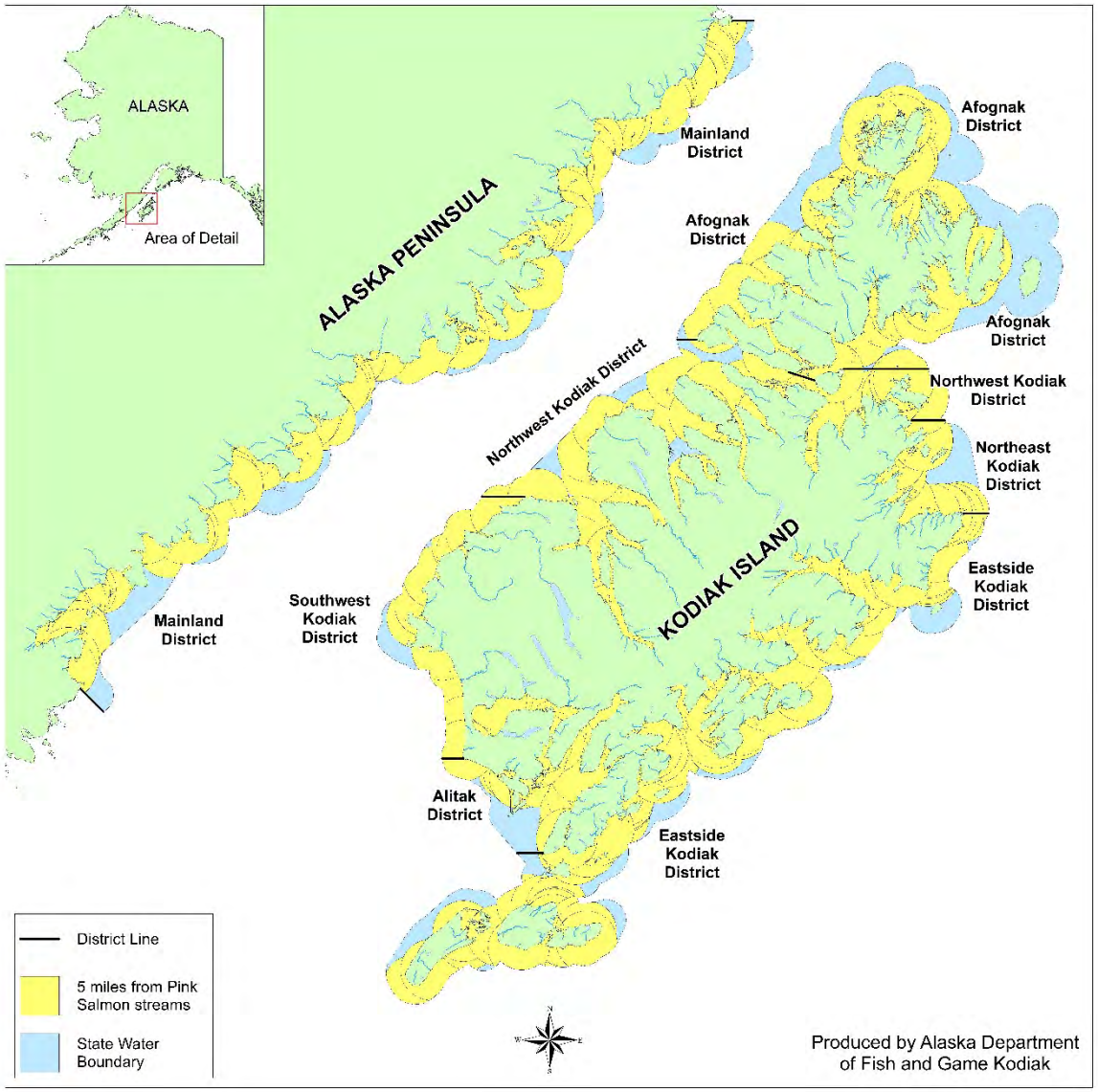
In summary, it is the position of the Kodiak Salmon Work Group that proposals to further limit Kodiak's commercial salmon fishery based on the possible presence of Cook Inlet sockeye or Chinook salmon stocks in the Kodiak area should be rejected. We request that you vote NO on proposals 63, 64, 65, 66, 37 and RC-09. Kodiak salmon fishermen remain committed to work with the Board to solve real conservation issues with workable solutions. The five Cook Inlet proposals do not have a reasonable nexus between actual conservation and meaningful regulation.

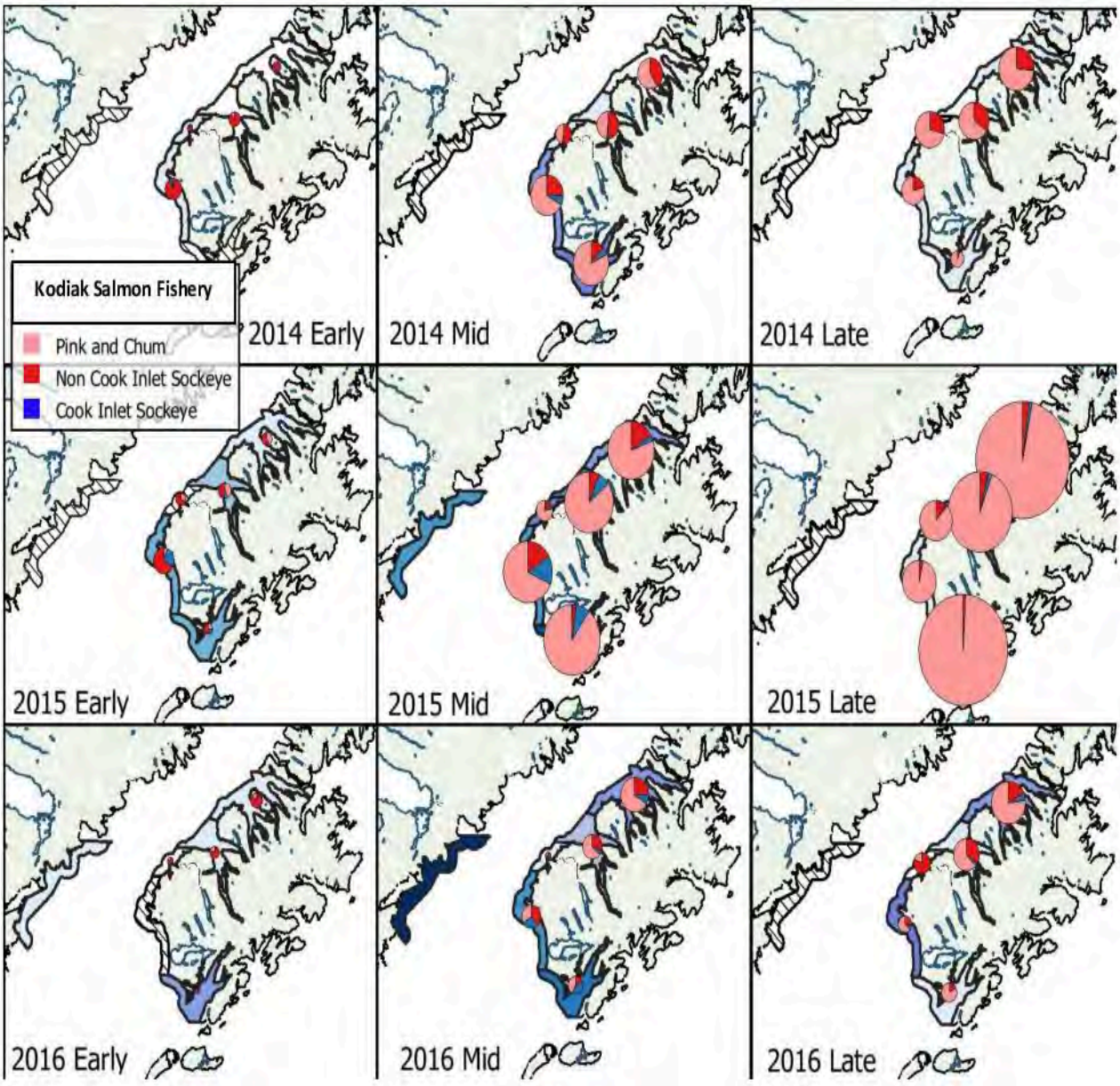
Very Truly yours,

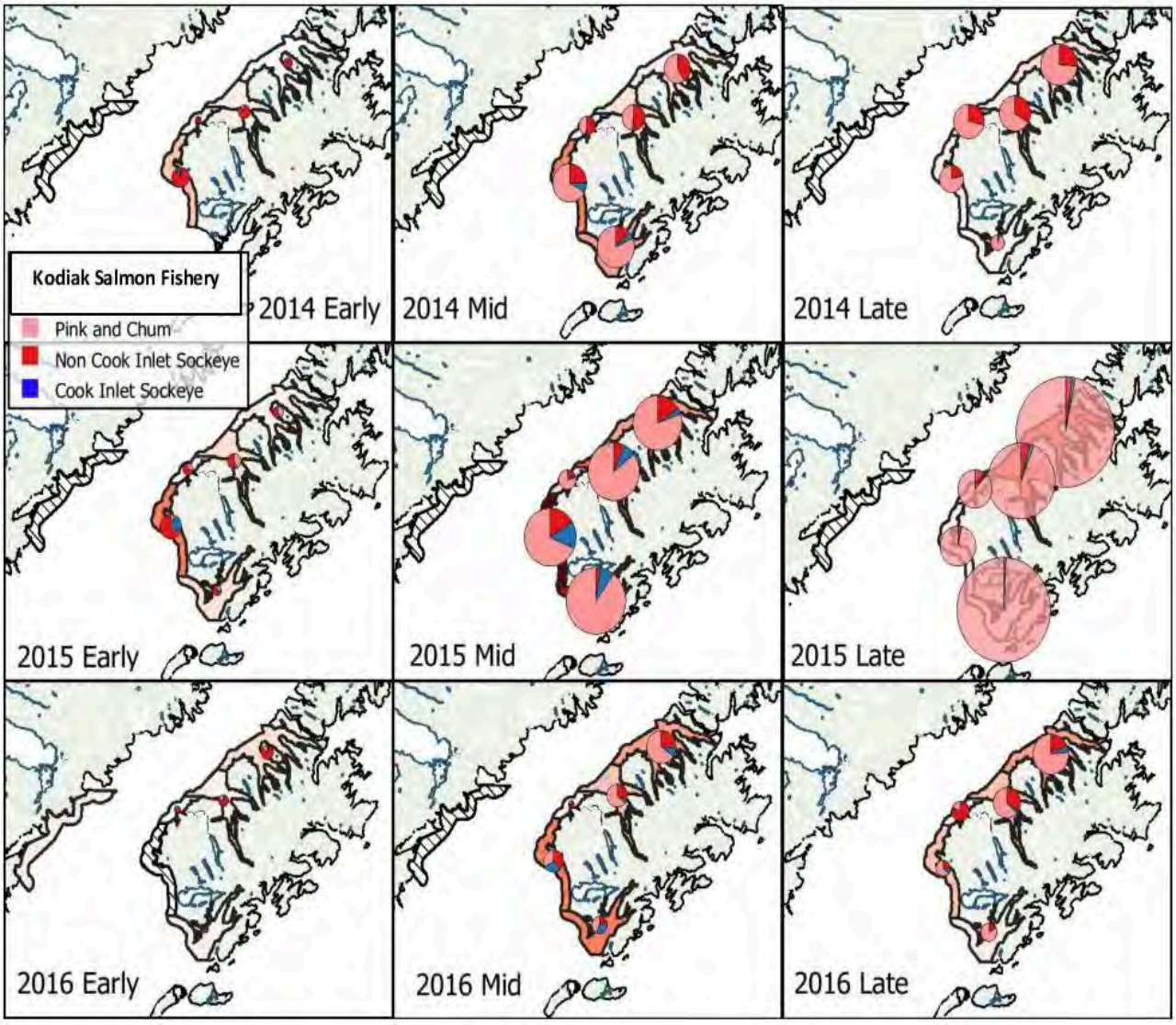


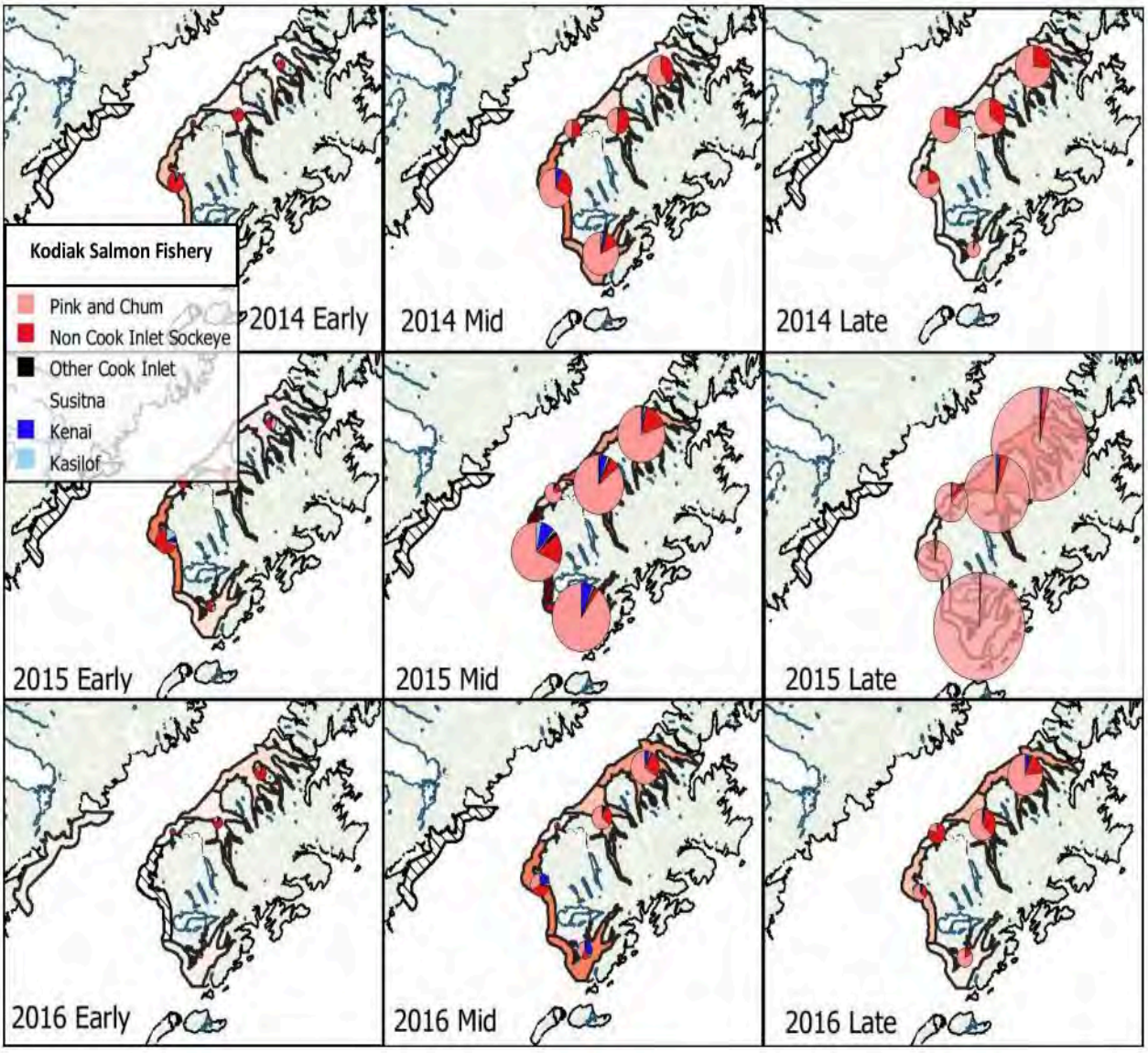
Duncan Fields, Chairman

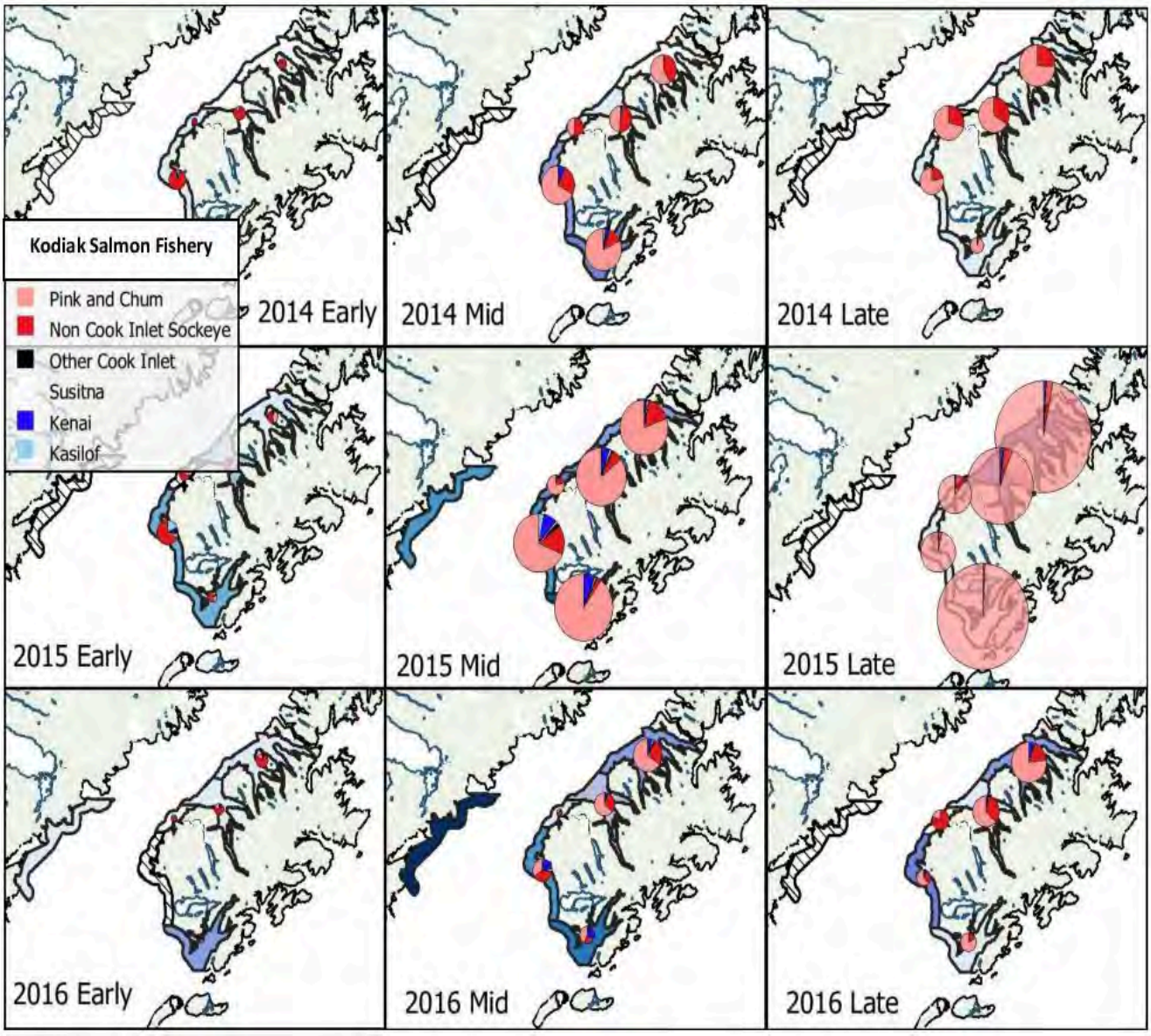

Cook Inlet
Kodiak Island
Cook Inlet (Sometimes) Closed Waters - 1,758 sq mi
Shelikof Strait Closed Waters - 3,551 sq mi
0
50
100 mi
1:2000000


ALASKA
Area of Detail
ALASKA PENINSULA
Mainland District
Afognak District
Afognak District
Afognak District
Northwest Kodiak District
Northwest Kodiak District
Northeast Kodiak District
KODIAK ISLAND
Eastside Kodiak District
Southwest Kodiak District
Mainland District
Alitak District
Eastside Kodiak District
District Line
5 miles from Pink Salmon streams
State Water Boundary
Produced by Alaska Department of Fish and Game Kodiak


Kodiak Salmon Fishery
Pink and Chum
Non Cook Inlet Sockeye
Cook Inlet Sockeye
2014 Early
2014 Mid
2014 Late
2015 Early
2015 Mid
2015 Late
2016 Early
2016 Mid
2016 Late


Kodiak Salmon Fishery
Pink and Chum
Non Cook Inlet Sockeye
Cook Inlet Sockeye
2014 Early
2014 Mid
2014 Late
2015 Early
2015 Mid
2015 Late
2016 Early
2016 Mid
2016 Late


Kodiak Salmon Fishery
Pink and Chum
Non Cook Inlet Sockeye
Other Cook Inlet
Susitna
Kenai
Kasilof
2014 Early
2014 Mid
2014 Late
2015 Early
2015 Mid
2015 Late
2016 Early
2016 Mid
2016 Late


Kodiak Salmon Fishery
Pink and Chum
Non Cook Inlet Sockeye
Other Cook Inlet
Susitna
Kenai
Kasilof
2014 Early
2014 Mid
2014 Late
2015 Early
2015 Mid
2015 Late
2016 Early
2016 Mid
2016 Late

Kodiak Seiners Association
PO Box 8835
Kodiak, AK 99615

December 20, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: **Opposition to Ayakulik Proposals: 72,73,74,75**

Dear Chairman Morisky and Board of Fish Members:

Thank you for the opportunity to comment on Proposals 72,73,74, and 75 in advance of the Board meeting for Kodiak Finfish. The Kodiak Seiners Association (KSA) respectfully requests you **oppose these proposals** as they pose a hindrance to the effective management and prosecution of the Kodiak Management Area (KMA) salmon fishery.

While KSA recognizes and applauds the author of these proposals in his conservation minded approach to king salmon runs in the Ayakulik river, we feel the Board should reject or take no action on these proposals, as it is our belief, they will not allow for increased passage of more king salmon to this system. Our membership recognizes and supports the direction of ADF&G in creation and management of the non-retention of king salmon in the KMA, as local runs of Chinook are weak, however the number of king salmon harvested in the Inner Ayakulik section are so low, we feel these proposals could actually backfire on their original intent. Given that the Outer Ayakulik section is managed for local Ayakulik sockeye, pink, and coho stocks, an increase in fishing time in the Outer Ayakulik section would have to incur in order for ADF&G to prevent over-escapement of the Ayakulik river, as a result of the inability of the Department to hold Inner Ayakulik, terminal fisheries, during times when large pushes of sockeye and pinks make their way through the area in excess of upper end escapement goals and congregate on the beach at the river mouth. The catch of king salmon in the Outer Ayakulik section in the past, has been roughly 7 times the amount caught within inner Ayakulik, therefore if you increase fishing time in the Outer section to prevent over-escapement, you create the potential for increased catch of king salmon rather than decreasing it.

We support a conservative management approach and hope that any decisions of the Board to address king salmon and rebuilding of stocks does not come with the negative consequence of over-escaped systems of sockeye and pink salmon, and difficulties for management to manage for maximum sustained yield of these species.

We thank you for the opportunity to comment on behalf of the membership of KSA. We appreciate the scientific and factual creation of regulations regarding our fisheries and trust that the Board will continue to apply consistency in designing regulation changes while applying the guiding BOF policies, such as the Management for Mixed Stock Salmon Fisheries, and the Sustainable Fisheries Policy.

Kodiak Seiners Association represents 157 members including the majority of actively fishing SO1K seine permit holders, in addition to local Kodiak and Homer based businesses, and individual crewmembers. Our focus is advocacy for our membership through positive interactions with ADF&G, the Board of Fisheries and our State Legislature.

Sincerely,

Nate Rose
KSA President

Koniag
3800 Centerpoint Drive
Suite 502
Anchorage, AK 99503

December 19, 2019

Alaska Board of Fisheries
1255 West 8th St.
P.O. Box 115526
Juneau, AK 99811

Re: Maintain Kodiak's Salmon Fishery Oppose Proposals: 37,58,59,60,61,62,63,64,65, &66

Cama'i (hello) Alaska Board of Fisheries,

Koniag is a regional Alaska Native Corporation formed under the terms of the Alaska Native Claims Settlement Act of 1971. Koniag has approximately 4,100 Alutiiq Shareholders. Our region encompasses the Kodiak Island and a portion of the Alaska Peninsula. The communities in our region have traditionally been dependent on fisheries resources for subsistence and commercial purposes for centuries. Koniag has been working on issues affecting viability and sustainability of the village communities of the Kodiak Archipelago and access to fisheries is a critical component of this effort. As such, Koniag opposes Proposals 37, 58, 59, 60, 61, 62, 63, 64, 65, and 66.

Kodiak's management plans cover the entire Island and the portion of the Alaska Peninsula that is in the Kodiak management area and they only allow fishing openings based on the presence of local stocks. These plans have been in place for more than 25 years and have precluded expansion of salmon fishing that is not based on the presence of local stocks. Kodiak's salmon fishery has not expanded, in fact there are fewer permits fishing now than ten years ago.

Koniag is concerned that issues with returns in other areas and/or user conflicts in fisheries in other management areas have led to these proposals. Koniag does not believe that enactment of any of these proposals will address the concerns with returns and/or user conflicts in other management areas and enactment of these proposals will only have the effect of harming Kodiak's salmon fishermen while not helping the other management areas.

The 2014-1016 genetic study authored by Kyle Shedd is not "new" information in the sense that the conclusions were not previously known. The genetic study provides additional snapshots of detail illustrating the information and conclusions reached by the Department during the 1990-1995 time-frame. Namely, "The incidence of Cook Inlet sockeye in KMA fisheries varies widely. It is inconsistent as to area, annual timing, and between years." Moreover, the percentage of the Cook Inlet run incidentally captured in the Kodiak fishery during the 2014-16 time period is well with the ranges suggested by these earlier studies.

The Cape Igvak Management Plan has been in place for 40 years. The reason for the plan was conservation - to protect Chignik's late run. Prior to the plan, Kodiak fished at Cape Igvak "day for day" when the Chignik fishery was open. While Chignik was fishing on the "early run", it was thought that Kodiak could be impacting the "late run." Consequently, the Cape Igvak management plan insured both escapement into the Chignik system and an economic safety net for Chignik fishermen by limiting Kodiak. Kodiak's catch percentage of the Chignik run prior to the Cape Igvak Management Plan was about 15%. Under the plan, Kodiak has averaged about 12% (during years when fishing has occurred). Finally, the conservation aspects of the Cape Igvak Management plan were manifested by no Kodiak fishing at Cape Igvak during Chignik's recent run failures. The fact is, the Cape Igvak Management Plan works for both Chignik and Kodiak and should not be changed.

For these reasons, Koniag requests that the Board of Fisheries take no action on Proposals 37, 58, 59, 60,61, 62, 63, 64, 65 and 66.

Quyanaa (thank you),

Shauna Z. Hegna
President

koniag.com
P (907) 561-2668
F (907) 562-5258

Alaska Board of Fisheries

RECEIVED
DEC 2 5 2019
BOARDS

The Board's mixed stock salmon fisheries policy provides that the Board's preference in assigning conservation burdens in mixed stock fisheries is through management plans set out in area regulations. Long-standing management plans are presumed to incorporate conservation burden and harvest allocation.

It follows, then, that Kodiak's multiple management plans indicate that allocation and conservation apportionments are long-accomplished, with several prior boards affirming their equity.

If changes are considered for these long-standing stable fisheries, significant new information must be provided to justify upsetting the stability, or the changes will appear arbitrary which would compromise the Board's reputation as a fair and impartial regulator.

Kodiak's stable and durable salmon fishery management plans have withstood an onslaught of proposed changes from both Cook Inlet and Chignik over the past 30 to 40 years. All of Kodiak's commercial salmon fisheries are covered by management plans

focused on local stocks and have been for several years. There are no areas not covered by a plan.

Extensive proposed changes to Kodiak salmon management, therefore, must be well justified to overcome the current allocative stability cemented over a long time by past boards. To change these plans just for the sake of change would invite twisting, perverting, or ignoring the allocation criteria in order for this board, in contrast to all prior Boards, to get a different allocative result.

More specifically, the Cape Igvak proposals, # 58-62, are all 100% allocative in nature. The proposers do not even attempt to provide exceptional and credible new information to justify dramatically changing the long-standing Cape Igvak management plan.

The Cook Inlet proposals, especially proposal 66, suffer similar deficiencies. There is no new genetic information and no harvest rates set forth that would warrant upending the stability of Kodiak Island's seven management plans.

Speculation, scattergun cuts, and blind stabs are not credible reasons to upset a management plan, and are not hallmarks of the Board's fair and impartial process. In summary, the proposers have not met their burden of providing measurable evidence of new fishing patterns or new stocks of concern.

The Kodiak fishery stands on its own history, its own economic importance, and its own series of tight management plans adopted and polished over decades to stay viable. I hope you keep it that way.

Larry Edfelt
Box 210821
Auke Bay, AK 99821
~~Tel~~ 907 209 0712

LARSEN BAY
TRIBAL COUNCIL

PC553
1 of 3

PHONE(907) 847-2207
FAX (907) 847-2307

PO BOX 50
LARSEN BAY
ALASKA 99624

December 19, 2019

Alaska Board of Fisheries
1255 West 8th St.
Juneau, Ak 99811

Re: Maintain Kodiak's Salmon Fishery
Oppose Proposals: 58,59,60,61,62,63,64,65,37 and 66

Dear Alaska Board of Fisheries:

I am Richard Henson and I represent The Native Village of Larsen Bay in the community of Larsen Bay. Our community's economy is entirely based on fishing and on Kodiak's salmon fishery is particular. Loss of salmon fishing opportunities will have a direct impact on Larsen Bay.

We wonder what Kodiak fishermen have done that would justify changing our management plans. Our salmon fishery has not expanded, in fact there are fewer permits fishing now than were fishing five and ten years ago. We don't see any "new" fisheries for Kodiak salmon developing. Kodiak's management plans cover the entire Island and the Mainland and they only allow fishing openings based on the presence of local stocks. These plans have been in place for more than 25 years and have precluded expansion of salmon fishing that is not based on the presence of local stocks.

The 2014-16 genetic study authored by Kyle Shedd is not "new" information in the sense that the conclusions were not previously known. The genetic study provides additional snapshots of detail illustrating the information and conclusions reached by the Department during the 1990-1995 time frame. Namely, **The incidence of Cook Inlet sockeye in KMA fisheries varies widely. It is inconsistent as to area, annual timing, and between years."** Moreover, the percentage of the Cook Inlet run incidentally captured in the Kodiak fishery during the 2014-16 time period is well with the ranges suggested by these earlier studies.

The Cape Igvak Management Plan has been in place for 40 years. The reason for the plan was conservation to protect Chignik's late run. Prior to the plan, Kodiak fished at Cape Igvak "day for day" when the Chignik fishery was open. While Chignik was fishing on the" early run", it was thought that Kodiak could be impacting the "late run". Consequently, the Cape Igvak management plan insured both escapement into the Chignik system and an economic safety net for Chignik fishermen by limiting Kodiak. Kodiak's catch percentage of the Chignik run prior to the Cape Igvak Management Plan was about 15%. Under the plan, Kodiak has averaged about 12%. (During years when fishing has occurred). Finally, the conservation aspects of the Cape Igvak Management Plan were highlighted with Chignik's recent run failures. There was no fishing at Cape Igvak! Why change a balanced plan that is accomplishing its intended purposes?

In summary, The Native Village of Larsen Bay request that the Board of Fisheries take no action on Proposals 58,59,60,61,62,63,64,65,37 and 66!

Sincerely,

Richard Henson
President

LARSEN BAY TRIBAL COUNCIL

PC553
2 of 3

PHONE(907) 847-2207
FAX (907) 847-2307

PO BOX 50
LARSEN BAY
ALASKA 99624

RESOLUTION 2019- 11

A RESOLUTION OF THE NATIVE VILLAGE OF LARSEN BAY IN SUPPORT OF THE ALASKA DEPARTMENT OF FISH AND GAME'S TRADIITIONAL AND HISTORIC MANAGEMENT OF THE KODIAK SALMON FISHERY, AND IN OPPOSITION TO PROPOSALS 58, 59,60,61,62,63,64,65,37 AND 66.

WHEREAS: the Kodiak commercial salmon fishery was one of the first salmon fisheries developed in the State of Alaska and has continuously operated on the Alaska Mainland and the West Side of Kodiak Island since before 1980; and

WHEREAS: Kodiak's commercial salmon fishermen and virtually all residents of Larsen Bay are economically and culturally dependent on the Kodiak commercial salmon fishery; and

WHEREAS: Kodiak's six Alutiiq rural communities, including the community of Larsen Bay are economically struggling due, in part, to dramatically reduced codfish quotas and substantially lower ex-vessel prices as well as impacts from the State of Alaska's budget crisis; and

WHEREAS: the Cape Igvak Management Plan was implemented to protect Chignik's "second run" and maintain the historical catch of Chignik bound fish by the Kodiak fleet; and

WHEREAS: for the last 40 years the Cape Igvak Management Plan has effectively balanced Chignik's conservation and economic needs with Kodiak's historical participation in the Cape Igvk fishery; and

WHEREAS: the Cape Igvak Management Plan does not impact the current biological concerns for Chignik's early run sockeye in that the Cape Igvak fishery is closed until an adequate escapement and catch is assured for the Chignik fishery; and

WHEREAS: in addition to the Cape Igvak fishery, all the remainder of Kodiak's commercial salmon fishery has remained essentially the same fishery since the implementation of North Shelikof Management Plan in 1989; and

WHEREAS: Kodiak's commercial salmon fishery has shared the burden of conservation for Cook Inlet salmon stocks since 1989; and

WHEREAS: recent sockeye genetic information confirms what was already known about the presence of Cook Inlet sockeye in the Kodiak Management Area, namely "the incidence of Cook Inlet sockeye in the KMA fisheries varies widely. It is inconsistent as to area, annual timing, and between years"; and

WHEREAS: further restrictions on Kodiak's salmon fishery to limit the catch of Cook Inlet sockeye would substantially impact Kodiak's fishing for local sockeye as well as for pinks, chums, and coho, costing Kodiak fishermen millions of dollars while such restrictions may or may not result in any protection for Cook Inlet sockeye depending on the year, place and time that Cook Inlet stocks may be in the Kodiak area; and

WHEREAS: neither the Alaska Board of Fisheries Mixed Stock Fisheries policy or the Board's Allocation Criteria justify making changes to salmon management in the Kodiak Area.

NOW THEREFORE, BE IT RESOLVED BY THE NATIVE VILLAGE OF LARSEN BAY THAT:

Section 1: Larsen Bay hereby requests the Alaska Board of Fisheries maintain the balance between the commercial salmon fisheries in Kodiak, Chignik and Cook Inlet by taking no action on proposals 58,59,60,61,62,63,64,65,37 and 66.

ADOPTED BY THE LARSEN BAY TRIBAL COUNCIL THIS 18th **DAY OF** December, **2019**

Richard Henson
Richard Henson, President

Marilyn Henson
Marilyn Henson, Secretary/Treasurer

Loyd Ashouwak
PO Box 106
Old Harbor
99643

12/18/19

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Proposal 37,58,59,60,61,62,63,64,65,66

Dear Chairman Moriskey and Board of Fish members:

My name is Loyd Ashouwak and I am a lifelong resident of Old Harbor, Alaska located on the eastside of Kodiak Island. I am 57 years old and have been involved in the salmon fishery in Kodiak since I was 10 years old. The salmon fishery in Kodiak is my primary source of income to support myself and my family through the winters in Old Harbor.

The proposals to change the Kodiak fishery from the Chignik and Cook Inlet fisherman threaten the only fishery I have left to depend on. I've watched the different fisheries around the island go away, as cod are gone, crab stocks are low, halibut numbers are decreasing, and the herring fishery isn't worth the effort anymore. Salmon is the only fishery that seems to have any life left in it, and these proposals threaten that dependability and consistency.

I have tossed around the idea of investing in the salmon fishery, as it has been proven to be reliable year after year based on the quality of the management plan. This management plan allows the boats I have fished on to fish in multiple areas on multiple species of fish throughout the entire summer. I would respectfully ask the Board to **reject all these proposals**, as they threaten the quality of that management plan and my ability to rely on it should I decide to invest in the industry.

Sincerely,

Loyd Ashouwak

Luke Lester

12/27/2019 09:39 PM AKST

RE: PROPOSAL 58 Close the Cape Igvak commercial salmon fishery prior to July 8

December 27, 2019 Alaska Board of Fisheries Board Support Section P.O. Box 115526 Juneau, AK 99811-5526 RE: OPPOSE Proposal 58-62 Dear Chairman Morisky and Board of Fish members: The Cape Igvak fishery on the Kodiak mainland has been a long-standing fishery harvesting primarily Chignik bound sockeye with an allocation of 15 percent of the Chignik catch. The management plan implementing the Cape Igvak fishery has been amended a few times, almost always to Kodiak's detriment and Chignik's gain. Kodiak fishermen have accepted the additional safeguards for Chignik. Currently, Kodiak vessels cannot fish at Cape Igvak until Chignik has caught 300,000 sockeye. How many of Alaska's salmon fisheries have an onerous regulation like that to start the season? There is only one other, and that is an identical provision near the Area M boundary at the west end of Chignik. This regulation was a huge concession on the part of Kodiak fishermen to share the burden of conservation and protect Chignik fisheries. A current Chignik proposal, # 61, seeks to increase the 300,000 fish trigger to 600,000, essentially negating the long-time 15 percent allocation to Kodiak seiners. Another proposal (# 60), seeks to slash the long-standing 15 percent allocation to 5 percent. At the Area M meeting last February in Anchorage the Board turned away most of Chignik's proposals to extract even more fish from Area M. The Board needs to do the same thing in Kodiak. Their proposals are purely allocative. Nothing has changed under the allocation criteria to justify a different allocation. We acknowledge Chignik did not fish in 2018, but that year's diminished run should not be used to further cut back the Cape Igvak fishery. Under the existing management plan Kodiak fishermen did not fish Cape Igvak in 2018 also. Chignik is well protected by the 300,000 fish trigger. Doubling that is a fish grab, not an act of conservation. Please reject proposals 58 through 62. Sincerely, Luke Lester F/V Raging Beauty

RE: PROPOSAL 66 Create a Kodiak Area Salmon Management Plan

December 27, 2019 Alaska Board of Fisheries Board Support Section P.O. Box 115526 Juneau, AK 99811-5526 RE: OPPOSE Proposal 58-62 Dear Chairman Morisky and Board of Fish members: RE: Opposed Proposals Dear Chairman Morisky and Board of Fish Members: Incidental, non-targeted bycatch in the salmon fisheries of Alaska is a regular feature in dozens of areas. Cook Inlet fishermen complain that Kodiak catches fish bound for Cook Inlet. But Cook Inlet driftnets when fishing for Kenai River reds indiscriminately catch reds and cohos bound for the Matanuska and Susitna river systems. The Mat-Su interceptions are incidental and while the catch is minimized, it can't be stopped altogether. In Bristol Bay, sockeye and chums bound for the Kuskokwim are caught in the Nushagak and Togiak districts. No effort is made to stop that. The Egegik fishery takes some sockeye headed for Ugashik. The Kvichak fishery has a bycatch of of sockeye headed for the Naknek and other systems. In the absence of a severe conservation problem, no adjustments are made for bycatch in these fisheries because it is a common attribute of the fishery. The bycatch fish belong to the fishermen who catch them. Southeast Alaska is a giant mixed stock fishery. The troll fishery, consisting of 2000 boats, catches king salmon bound for the west coast of Washington, Oregon and British Columbia.. The Southeast Alaska troll chinook catch, even though non-local in summer, is protected by the US-Canada treaty. It is the official position of the State of Alaska that salmon use multiple marine habitats for feeding and rearing, and that simple proximity to salmon spawning streams should not confer harvest priority or preference. Cook Inlet and Chignik fishermen want to take an axe to Kodiak fisheries in an effort to boost their own fortunes. Kodiak bycatch of Chignik and Cook Inlet salmon has already been minimized to the greatest practical extent, and what bycatch remains is part of the long-standing allocation of Kodiak salmon by the efforts of many past boards. Please reject all efforts to change that. Sincerely, Luke Lester F/V Raging Beauty

December 26, 2019

Alaska Board of Fisheries
Reed Morisky, Chair
Attn: Glen Haight, Executive Director
1255 W 8th St
PO Box 115526
Juneau, AK 99811-5526

Dear Chairman Morisky and Members of the Board of Fisheries,

As I'm sure you're well aware the past several years have seen some dramatic changes to our fisheries, with some areas coming in above projected escapement to set historic records, while other areas seeing unprecedented low returns of salmon. Further, while some areas may come in at their projected harvest, the catch seems to be less evenly distributed among fisherman and among gear-types in harvest areas. This departure from what has been normal harvest patterns has left many looking to the cause of change and/or someone to blame; and in many cases emotion and hypothesis have short circuited thoughtful fact-based decision making. My focus in this letter is to address proposals up for consideration this year that are aimed at curtailing the perceived impact that Kodiak fisherman have on adjacent areas. It should be noted that during periods of normal return the districts to the north and south of Kodiak seem to enjoy decent fishing. The proposals that are up before the Board are a dramatic departure of 30 years of management and in my opinion reflect an emotional knee-jerk reaction to what should be a thoughtful fact-based assessment of what is best and fairest for all.

Changing something that has worked for 30 years does not feel like a step in this direction of fairness based on sound decision making. By adopting many of these proposals it will effectively cause a loss of fishable area on Kodiak by limiting the areas open; all in order to achieve negligible positive gains outside the Kodiak harvest areas. For me and other set netters like me, many of the proposals being considered will have the negative effect of limiting the opportunities to catch salmon bound for kodiak waters by limiting fishing time and increasing the competition and interaction between gear types. While I offer no specifics as to what the outcome of deliberation should be, I do make a plea for thoughtful, sound fact-based decision making.

Thank you for your efforts and your thoughtful consideration.

Sincerely, Mark Larsen

Marko patitucci

12/27/2019 09:54 PM AKST

RE: PROPOSAL 71, 62, 63, 64, 37, 58

My name is marko Patitucci, I'm 29 years old and second generation fisherman from kodiak ak. I have spent every summer of my life seining in kodiak since I was 4 years old. I was fortunate enough to buy into the industry in 2010. I understand that in every fishery there are natural changes that effect the industry, and that is a risk we know that is there. Now with these new proposal our kodiak fishery is at risk, kodiak salmon fisheries have never been a easy way to make a living. The weather is bad and the fishing is rarely great. All I am asking is that we are able to have the same opportunity that we have always had. The opportunity to work hard long hours and days with our crews. Which time and time again has proven the only way to have a successful kodiak salmon career. With that said, I do not support any changes to our management plan. It would significantly hurt and change thousands of life's for the worst. Please do not let these proposals go through. I do not support any of these proposals. Proposal 37, proposal 58, proposal 70, proposal 71, proposal 62, proposal 63, proposal 64. Thank you for your consideration.

Marine Way Boatyard
817 E Marine Way
Kodiak Ak
99615

12/27/19

Chairman Reed Morisky
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Proposal 58,59,60,61,62,63,64,65,66

Marine Way Boatyard, previously known as Fuller's Boatyard is the largest provider of drydock facilities for small to medium sized vessels, and has been in operation since 1972. We provide haul-out services for vessels up to 150 tons and service the majority of Kodiak's seine vessels as well as overwintering storage for motor sailors, seiners and sport charter vessels.

We are grateful for the opportunity to express our concern relative to the proposals before the Board to curtail the Kodiak salmon fishery. As a support industry business with a large consumer base of local seine vessels our business model feels a direct impact from both successful and poor fishing seasons, predominantly the summer salmon fishery. During years where Kodiak fishermen have good salmon seasons, such as 2013 and 2015 our yard is busy with winter upgrade projects and other local businesses providing services such as fiberglass repair and reconstruction, welding and fabrication, hydraulic retrofits, and routine hull maintenance. During years of poor salmon seasons such as 2016, our yard sees little to no traffic and struggles to make profit off long term storage for overwintering vessels. It is our understanding, the proposals attempting to change the Cape Igvak fishery and the Westside and Mainland fisheries pose an economic threat to the salmon industry which in turn is a threat to our industry, the support services industry. We urge the Board to consider the trickle-down effect these proposals would have to an already downtrodden community that once thrived on a multitude of reliable and profitable fisheries. The salmon fishery in Kodiak is the last reliable fishery for a vast number of support businesses in the Kodiak community to count on for continued business during the winter and spring months.

Marine Way Boatyard respectfully requests the Board **reject** any proposals to change the Kodiak salmon management plan, including the Cape Igvak management plan. Let Kodiak fishermen and the businesses that support them continue to exist in the established and well managed fishery we have come to count on for almost 48 years.

Sincerely, Marine Way Boatyard

Melissa A Schmeil/ owner

Albert Tyler Schmeil/ owner

Melodi Anderson
Box 112
Ouzinkie, AK 99644

December 23, 2019

Alaska Board of Fisheries
P.O. Box 115526
Juneau, Ak 99811

RE: Vote NO Proposals 37, 58,59,60,61,62,63,64,65,66

Board Chairman Morisky and Board Members:

It has come to my attention that you will be reviewing the above proposals at your January Board meeting in Kodiak. I live in Ouzinkie and have been active on the City Council and Tribe to help our community. Any of these proposals that takes away salmon fishing opportunities is a direct hit to Ouzinkie's economy. Many of our residents either fish for salmon or crew on salmon fishing vessels.

I am aware that the incidental, non-targeted bycatch is a part of a number of the salmon fisheries of Alaska. Cook Inlet fishermen complain that Kodiak catches fish bound for Cook Inlet. But Cook Inlet driftnets when fishing for Kenai River reds indiscriminately catch reds and cohos bound for the Matanuska and Susitna river systems. The Mat-Su interceptions are incidental and regulations seek to reduce the catch, but it couldn't be stopped altogether.

In Bristol Bay, sockeye and chums bound for the Kuskokwim are caught in the Nushagak and Togiak districts. No effort is made to stop that. The Egegik fishery takes some sockeye headed for Ugashik. The Kvichak fishery has a bycatch of sockeye headed for the Naknek and other systems. In the absence of a severe conservation problem, no adjustments are made for bycatch in these fisheries because it is a common attribute of the fishery. The bycatch fish belong to the fishermen who catch them.

Southeast Alaska is a giant mixed stock fishery. The troll fishery, consisting of 2000 boats, catches king salmon bound for the west coast of Washington, Oregon and British Columbia. The Southeast Alaska troll chinook catch, even though non-local in summer, is protected by the US-Canada treaty. It is the official position of the State of Alaska that salmon use multiple marine habitats for feeding and rearing, and that simple proximity to salmon spawning streams should not confer harvest priority or preference.

Cook Inlet and Chignik fishermen want to take an axe to Kodiak fisheries in an effort to boost their own fortunes. Kodiak bycatch of Chignik and Cook Inlet salmon has already been minimized to the extent practical. The remaining bycatch is part of the long-standing allocation to Kodiak salmon fishermen focused on local stocks. Vote No on 58,59,60,61,62,63,64,65,66 & 37.

Sincerely yours,

Melodi Anderson

Michelle Rittenhouse

12/27/2019 07:18 PM AKST

RE: Comment on multiple proposals

RE: Proposals #37, 58-66, 70-77 Dear Chairman Reed Morisky and Board of Fish Members: I am 32 years old and was born and raised in Kodiak. I have been an active participant in nearly all of the commercial fisheries here for 23 years. Six years ago, I purchased my own vessel and Kodiak seine permit with hopes to continue my passion and livelihood for a fishery that has been a part of my family's lives for three generations. My decision to invest as heavily as I did in Kodiak's fisheries were centered around the fact that Kodiak's management plan is complex and well-constructed, considerate not only to the locals who fish in Kodiak, but also to other fishing groups, such as Chignik and Cook Inlet, whose salmon pass through our waters. There are a large number of proposals we are currently looking at that could cause significant harm to our livelihoods here in Kodiak, and that is why I am respectfully asking the Board to please oppose Proposals #37, 58-66, 70-77. I grew up on the west side of this island in the off-grid location of Uganik Bay. Many of these proposals, should they pass, would greatly reduce my ability to fish the area I am most familiar with on this island. My vessel and gear limit me in terms of where I can fish. I spend considerable time fishing inner bays, but also capes on the west side when conditions allow. Considering that there are a large number of variables--weather, breakdowns, low salmon returns--that can interfere with making the most of my fishing season, it is concerning to now be faced with further unnecessary obstacles that could shut down a significant portion of the salmon season. I am not wealthy and I have boat payments to make. Other fisheries that used to supplement my income, such as halibut and Pacific gray cod, are in decline, thus making me even more dependent on the salmon fishery as I have always known it. These proposals have the potential to not just cripple my own ability to make a living, but a great many of my commercial fishing friends and family who are also heavily reliant on Kodiak's salmon fishery. Kodiak's current management plan has nothing to do with the poor salmon returns to the Cook Inlet and Chignik areas. It was constructed with not just the Kodiak fishermen in mind, but in consideration of other areas as well. May it be reminded that salmon runs are cyclical in nature, experiencing highs and lows. Kodiak has had its own fair share of low returns. Trying to change Kodiak's system of management is by no means going to fix what can't be controlled in nature. It is concerning to imagine how these proposals could affect the salmon fishermen here, especially those of us like myself, who have large boat payments to make and are dependent on keeping the fishery the way we grew up knowing it. I don't want to lose everything I have worked so hard for. Commercial fishing is not just my livelihood, it is my passion, and I would like to continue doing it for many years to come. Again, with utmost respect, I ask that the Board please oppose Proposals #37, 58-66, 70-77. Thank you for giving me the opportunity to comment, and for your time. I hope the Board continues to apply consistency in its application of the guiding policies such as the Mixed Stock Fisheries Policy and the Sustainable Fisheries Policy. Most sincerely, Michelle Rittenhouse

mike longrich

12/27/2019 09:39 PM AKST

RE: Comment on multiple proposals

i oppose proposals (37,58-66) none of these proposal seem to be supported numerically or biologically .and appear to be politically motivated resource reallocations . with the future of GOA codfish fisheries questionable kodiak seining will not only play a more important role in the community of kodiaks taxbase but will become one of the few remaining entry level or open access fisheries availible to young and future fisherman.

Mitchell Keplinger
Box 1006
Kodiak, Ak 99615

12/18/19
Chairman Reed Morisky
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Proposal 58,59,60,61,62

Dear Chairman Morisky and Board of Fish members:

My name is Mitch Keplinger and I am a 3rd generation Kodiak Salmon seine fisherman. I started fishing in Kodiak in 1969 when I was 8 years old. At that time, I fished on my dad's boat for king crab, salmon, halibut, and herring. I started running a boat in 1979 when I was 18 years old, and have made my entire livelihood on commercial fishing out of Kodiak. Salmon is currently my primary fishery. I am writing today to request the Board **reject proposals 58, 59, 60, 61, and 62.**

I find myself wondering how many times in my lifetime I will have had to defend the Cape Igvak management area against these identical proposals. Board cycle after board cycle, since the plan was implemented in 1978, Kodiak fisherman have had to defend our historical access to this area. I fished as crew on my dad's boat prior to the implementation of the Cape Igvak management plan. These proposals are nothing but a fish grab by Chignik fisherman who have experienced the natural down cycles of salmon runs. The plan has existed and been managed well for over 40 years, and is unlike all other management plans in the state with the exception of the plan for Chignik harvest in Area M. These plans were designed to have biological and allocative safeguards for the Chignik runs and fishermen. Kodiak fishermen could not, nor never have caused any biological or economic harm to the Chignik Management area, because the management plan does not allow us to. If the preseason forecast for the Chignik area is less than 600,000 sockeye, Kodiak management may not open the Cape Igvak section. In years where the harvest in Chignik is projected to be higher than 600,000 sockeye, Kodiak fishermen still do not fish until 300,000 sockeye have been harvested. To claim, as these proposals do, that Kodiak fishermen are placing an economic stranglehold on the Chignik area is false and unjustified.

Please leave the Cape Igvak fishery alone. The management plan works well and historically it has contributed largely to my salmon business.

Sincerely,

Mitch Keplinger
F/V Alinchak

Mitchell Keplinger
Box 1006
Kodiak, Ak 99615

12/18/19
Chairman Reed Morisky
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Proposal 63,64,65,66

Dear Chairman Morisky and Board of Fish members:

My name is Mitch Keplinger and I am a 3rd generation Kodiak Salmon seine fisherman. I started fishing in Kodiak in 1969 when I was 8 years old. At that time, I fished on my dad's boat for king crab, salmon, halibut, and herring. I started running a boat in 1979 when I was 18 years old, and have made my entire livelihood on commercial fishing out of Kodiak. Salmon is currently my primary fishery. I am writing today to request the Board **reject proposals 63, 64, 65, and 66.**

These proposals are a reaction to the 2014-2016 sockeye identification study in the Kodiak Management area, that showed an already known fact; Kodiak commercial fisherman harvest Cook Inlet bound sockeye. As mentioned before, I have been fishing for over 50 years, and every year Kodiak fishermen have probably harvested some amount of Cook Inlet sockeye usually in an amount relative to the size of the Cook Inlet runs. There is no conservation concern for Cook Inlet stocks incidentally caught in Kodiak, if there was you would have seen a decrease in run strength over time, rather than current trends of over-escapement in some of the major Cook Inlet salmon producers. In addition, the overall king salmon that would be saved by the drastic measures of proposal 63 would be unmeasurable relative to the economic loss Kodiak fisherman would face.

These proposals take no consideration for the amount of pinks and chums harvested in the Kodiak salmon fishery, both of which make up the majority of my salmon harvest by volume and by dollar value. Please leave the Kodiak salmon fishery alone. We operate under a well-managed and well thought out management plan that allows the targeted harvest of local stocks and have been in all the years I've fished Kodiak.

Sincerely,

Mitch Keplinger
F/V Alinchak

Mitchell Keplinger
Box 1006
Kodiak, Ak 99615

12/26/19
Chairman Reed Morisky
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Proposal 72,73,74,75

Dear Chairman Morisky and Board of Fish members:

My name is Mitch Keplinger and I am a 3rd generation Kodiak Salmon seine fisherman. I started fishing in Kodiak in 1969 when I was 8 years old. At that time, I fished on my dad's boat for king crab, salmon, halibut, and herring. I started running a boat in 1979 when I was 18 years old, and have made my entire livelihood on commercial fishing out of Kodiak. Salmon is currently my primary fishery. I am writing today to request the Board **reject proposals 72, 73, 74, and 75.**

While I respect the attempt of the author of these proposals to conserve king salmon to the Ayakulik river, these proposals are based entirely on perceptions and assumptions with no scientific validity. The reality is, the number of kings caught in the Inner Ayakulik section is miniscule relative to the amount of sockeye and pinks harvested. I fish a shallow draft seiner and when Inner Ayakulik section is open I am usually fishing there, as I enjoy fishing in shallow water in challenging sets. I could probably count the number of kings I have harvested in the Inner Ayakulik section on one hand in the last 15 years. These proposals would not result in any "safe passage" for kings, however they would create difficulties for local ADFG management to manage the Ayakulik river as a terminal fishery if need be to prevent over escapement.

In closing, I would ask that the Board consider what king salmon runs are doing well in the Gulf of Alaska? There is a chronic problem in the environment that is causing the decline of king runs in the Gulf, not fishermen in Inner Ayakulik.

Sincerely,

Mitch Keplinger
F/V Alinchak

Nathaniel Rose
3011 Spruce Cape Rd
Kodiak AK
99615

12/27/19

Chairman Reed Morisky
Alaska Board of Fisheries
Board Support Section
P.O. Box 1 15526
Juneau, AK 99811-5526

RE: Cape Igvak Management plan, Proposals 58, 59, 60, and 61.

Dear Chairman Morisky and Board of Fish members:

I am a 34-year old salmon seine fisherman from Kodiak, Alaska. I did not grow up in a family tied at all to the commercial salmon fishery in Kodiak, however I fell in love with salmon seining in 2006 during my first season as a crewmember. My wife and I bought our first salmon seiner in 2013 in what would be one of the best seasons on record for the Kodiak salmon fishery. The Kodiak salmon fishery is our lifeblood economically and during the first years of our operation, the Cape Igvak fishery provided roughly 20% of our seasonal income from salmon. I request the Board **reject proposals 58, 59, 60 and 61** as they are proposals without sound reasonings or justifications for change.

These proposals which seek to amend the Cape Igvak management plan are predicated on the argument that Kodiak fishermen are placing pressure on the Chignik commercial sockeye fishery and in doing so creating an economic hardship for the fishermen and communities of the Chignik Management area. What the Board will hear from Chignik fishermen is an argument that Kodiak fishermen's harvest is placing a heavier burden on the Chignik early run and therefore to allow the "economic rebuilding" of the Chignik area, Kodiak fishermen should forego any harvest of the early run to allow a "redistribution of catch" to the Chignik area. The rationale behind this justification is so blatantly false, it is almost laughable. The Cape Igvak management plan was designed to provide protections to the Chignik runs and fleet so this specifically could not take place. These protections provide biological and allocative measures to not only ensure the Chignik runs could meet escapement goals, they also provide certainty to Chignik fishermen of the first harvests of Chignik runs. With the exception of the very similar management plan in Area M regarding harvest of Chignik stocks, there exists no other management plan in the state of Alaska with such well-designed protection measures in place.

The question bears to be asked, how would Chignik fishermen, who are currently prosecuting an expanding fishery in the Western and Perryville district on eastbound sockeye proven to be of non-local origin (see WASSIP) and the Eastern district on eastbound pink salmon, respond if Kodiak fisherman asked the Board for the same consideration be given to Kodiak sockeye and pink salmon stocks? No scientist is needed to realize these same fishermen that are arguing the need for more of "their fish" would be screaming for the largest allocation of non-local stocks they could possibly get. The Board should remain consistent in its application of the Mixed Stock Salmon policy, as "fishermen need to be assured that those standards will be applied uniformly to all mixed stock salmon fisheries, not just those that engender controversy and notoriety. "(5AAC 39.220) I ask the Board not to be

caught up in the emotional appeal of a “needed” change by Chignik fishermen and recognize the Cape Igvak fishery exists for Kodiak fishermen, because it has always been a part of the Kodiak fishery, and that the management plan created for that fishery was one crafted with the utmost care and has been under scrutiny by past Boards for over 40 years and found to be solid.

The Cape Igvak management plan was created to preserve traditional fishing access for both Chignik and Kodiak fishermen, not as a gracious gesture from Chignik fishermen during a time when Kodiak salmon stocks were in a state of decline. Kodiak fishermen have always accepted the reality that in fishing there are natural fluctuations in abundance and to place blame on another user of a historical resource for those natural declines would be hypocritical and naïve.

I hope the Board recognizes that you cannot solve the economic situation in the coastal Chignik communities by taking away anything from the Cape Igvak fishery, all you would accomplish if you tried would be a removal of opportunity for Kodiak fishermen in an area we have historically had access to.

Sincerely,

Nathaniel Rose
F/V June Sea

RE: PROPOSAL 62 Require reporting prior to commercial fishing in the Cape Igvak Section and upon leaving the section

How would the Chignik fishermen appreciate being called liars and breakers of the law.

Nathaniel Rose
3011 Spruce Cape Rd
Kodiak AK
99615

12/27/19

Chairman Reed Morisky
Alaska Board of Fisheries
Board Support Section
P.O. Box 1 15526
Juneau, AK 99811-5526

RE: Kodiak Management Plan, Proposals 63,64,65, and 66.

Dear Chairman Morisky and Board of Fish members:

Thank you for the opportunity to comment on the proposals regarding changes to the Kodiak management plan in an attempt to provide safe passage for king salmon and sockeye salmon bound for Cook Inlet. My wife and I currently own a 48-foot fishing vessel and the salmon fishery is one of two fisheries still profitable enough to justify participating in, the other being the small unreliable local tanner crab fishery. I respectfully request the Board **reject proposals 63, 64, 65, and 66** as they threaten not only the viability of our fishing business but the health of the community of Kodiak and surrounding villages.

All of these proposals were written with a focus on a snapshot of the Kodiak salmon fishery, as provided by the sockeye identification genetic study that was conducted in parts of the Kodiak Management Area (KMA) during the years 2014 through 2016. The problem with this snapshot is that it tells only one chapter, actually more like one page in a book that is the Kodiak Salmon fishery. The authors of these proposals would like the Board to believe this genetic study uncovered something new that needed Board action to fix, when in reality the study provided an affirmation of an aspect of the Kodiak fishery that has been widely known since long before it was first addressed in 1989 with the implementation of the North Shelikof Sockeye Management Plan; Kodiak fishermen incidentally catch Cook Inlet bound sockeye and a miniscule amount of kings while conducting targeted fishing efforts on local Kodiak stocks. The Board's Mixed Stock Fisheries Policy was written and adopted because the reality of any commercial fishery is that it is impossible to completely prevent fish of non-local origin mixing with those of local stocks. Every fishery in the State of Alaska is a mixed stock fishery, as the reality is fish migration patterns change due to a host of variables such as wind, currents, ocean temperature, and presence of food sources.

These proposals would drastically reduce the ability of ADFG management to manage the Kodiak Fishery in a manner consistent with sustained yield, not to mention create an economic crisis due to the foregone harvest of local sockeye, pink, chum and coho salmon. Please leave the Kodiak Management plan in the hands of the people who understand the Kodiak fishery, as it is not as black and white as the proposers make it out to be.
Sincerely,

Nathaniel Rose
F/V June Sea

UNITED STATES DEPARTMENT OF COM
National Oceanic Atmospheric Administration
National Marine Fisheries Service
P.O. Box 21668
Juneau Alaska 99802-1668

December 27, 2019

Alaska Department of Fish and Game
Board of Fisheries
P.O. Box 115526
Juneau, AK 99811-5526

Dear Chairman Morisky:

The Alaska Region National Marine Fisheries Service (Alaska Region) wishes to provide the Board of Fisheries (Board) with the following information on several regulatory proposals for your consideration during the upcoming meeting in Kodiak, Alaska that could impact State of Alaska and Federal fisheries participants. Krista Milani from the Alaska Region will be attending the Board meeting and will be available to answer questions concerning our letter.

Sincerely,

for James D. Balsiger, PhD.

Administrator, Alaska Region

Gulf of Alaska groundfish fisheries
Interaction between Federal and State of Alaska Fisheries
Alaska Board of Fisheries Meeting – January 11-14, 2020
NMFS Comments (Proposals 49, 50, 52, and 53)

Proposal 49: 5 AAC 28.410. Fishing seasons for the Kodiak Area; and 5 AAC 28.4XX. New Section.

Background on federal sablefish harvest specification process:

Overfishing levels (OFLs), acceptable biological catches (ABCs), and total allowable catches (TACs) for sablefish are recommended by the North Pacific Fisheries Management Council (Council) at their December meeting and implemented by the National Marine Fisheries Service (NMFS) on a yearly basis. In the Gulf of Alaska (GOA) the Council recommends the OFL and ABC for sablefish for the entire GOA, although in December 2019 the Science and Statistical Committee (SSC) and the Council recommended the OFL for sablefish be specified Alaska-wide. ABC is apportioned to each of the GOA regulatory areas (Western, Central, West Yakutat, and Southeast Outside). The ABC is the maximum amount of harvest that can be taken in both state and federal fisheries combined and is designed to help ensure that overfishing does not occur. Once the ABC has been apportioned, the TAC is recommended for each area and cannot exceed the ABC for that area. The TAC in the Central Gulf of Alaska (CGOA) is further proportioned between trawl (20%) and fixed gear (80%). Fixed gear is fully allocated to the individual fishing quota (IFQ) program.

Potential Issue:

- ***Sablefish quota holders and individuals holding sablefish IFQ and hired masters permits should be aware that they would only be allowed to harvest sablefish under the conditions of the IFQ program.***
- ***Setting a GHL on TAC would not allow the Council to adjust TACs to account for the GHL fishery. However, if the GHL was set based on ABC the Council would be able to accommodate the GHL fishery during the TAC setting process.***

Proposal 49 seeks to create a state-waters guideline harvest level (GHL) fishery for sablefish in the Kodiak area. Should this proposal be adopted, participants should be aware that if there is a sablefish quota share holder onboard, sablefish individual fishing quota (IFQ) permits, or sablefish IFQ master permits they are subject to additional federal regulation. Under 50 CFR 679.1(d) vessels with a holder of these federal permits would only be allowed to harvest sablefish under the conditions of the IFQ program. An IFQ holder could not, for example, move to a state-waters sablefish fishery once all of their IFQ has been exhausted and continue to harvest. In addition, they must debit catch in a state-waters fishery from their federal IFQ. These regulations do not govern fishing for a sablefish GHL in Prince William Sound or under a State of Alaska limited entry program.

This proposal seeks to base the GHL on 1% of the federal CGOA IFQ TAC. The TAC is the amount of catch allocated for the federal fishery and the Council is responsible for

recommending TACs that do not exceed the ABCs. In most years, the Council recommends TACs that are equal to the ABCs in each of the regulatory areas in the GOA for sablefish. If the State fishery had a GHL based on the federal CGOA IFQ TAC there would be no way for the Council to adjust the TAC to accommodate the GHL fishery so as not to exceed the ABC. However, if the state GHL was based on the CGOA ABC, the Council could adjust the sablefish TAC as needed to accommodate the State GHL fishery.

Proposal 50: 5 AAC 28.430. Lawful gear for Kodiak Area; and 5 AAC 28.467. Kodiak Area Pacific Cod Management Plan.

Background on parallel fisheries:

Parallel fisheries are when a vessel is fishing under a federal TAC inside 3 nautical miles (State waters). Vessels are able to participate in a parallel fishery with or without a federal fishing permit (FFP) and their harvest is deducted from a federal TAC. If a vessel has an FFP then both State and Federal regulations apply.

Additional information:

- ***Participants with an FFP should be aware that an LLP permit is required when fishing with more than five jig machines in the federal/parallel fishery.***

Proposal 50 seeks to increase the maximum number of jig machines per vessel that can be operated in the Kodiak Area Pacific cod fishery from five jig machines to six. It is unclear if this proposal pertains solely to the Kodiak Area state-waters GHL Pacific cod fishery or if it also extends to the Kodiak Area parallel Pacific cod fishery. If the intent of the proposal is to include the parallel fishery, then participants with an FFP should be aware of some additional federal regulation. Under 50 CFR 679.4 there is an exemption in the GOA which allows a vessel with an FFP to participate in a jig fishery with a maximum of five jig machines, one line per jig machine, and maximum of 30 hooks per line without obtaining a license limitation program (LLP) permit. Should Proposal 50 be adopted and include the parallel fishery, participants with an FFP would be required to obtain an LLP when using six jig machines. This would only apply to the parallel fishery and would not pertain to the Kodiak Area state-waters GHL fishery.

Proposal 52: 5 AAC 28.467. Kodiak Area Pacific Cod Management Plan.

Background on Pacific cod allocations:

Pacific cod OFLs, ABCs, and TACs are recommended by the Council and established by the Secretary of Commerce on a yearly basis. In the GOA the Council recommends the OFL and ABC for Pacific cod for the entire GOA. The ABC is apportioned to each of the GOA regulatory areas (Western, Central, and Eastern) based on the distribution of trawl survey biomass among each of the areas. The TACs are set based on the ABCs and are set to accommodate the State of Alaska's (State's) Pacific cod fisheries so that the ABC for Pacific cod is not exceeded. Currently there are three State fisheries that establish GHLs based on the

federal ABC in the Central GOA (total of 25%); Cook Inlet (3.75% of the ABC), Kodiak (12.5% of the ABC), and Chignik (8.75% of the ABC). Because the Council must ensure that total catch in the CGOA does not exceed the ABC, the Council must first calculate the state-water GHLs based on the CGOA ABC to determine the federal TAC. After taking into account state-waters GHL fisheries, the TAC is set equal to or less than the remainder of the Pacific cod federal ABC and is allocated to seven gear and processing sectors. Approximately 90% of the total CGOA TAC is apportioned to federal CV sectors where catch is delivered to shoreside processors. Currently jig gear is 1% of the CGOA TAC, but has step-up and step-down provisions depending on catch in the previous year. After the jig quota has been determined and subtracted from the TAC, the remaining TAC is divided among the six additional sectors: catcher vessel (CV) 50 feet and over hook-and-line (HAL, 6.7%), CV under 50 feet HAL (14.6%), catcher/processor (C/P) and CV pot (27.8%), C/P HAL (5.1%), C/P trawl (4.2%), and CV trawl (41.6%). In addition, 3.81% of the total TAC is apportioned to trawl CVs participating in Rockfish Program cooperatives and deducted from the CV trawl allocation.

Potential Issue:

- ***Increasing the percentage of GHL fish based on the ABC reduces the amount of TAC available to federal participants. A reduced federal TAC can cause federal sectors to have shorter seasons, be closed to the directed fishery, or have insufficient incidental catch of Pacific cod to participate in other directed fisheries.***

Proposal 52 seeks to increase the Kodiak area GHL fishery from 12.5% of the CGOA Pacific cod ABC to 17.5% of the ABC. As a result, the total amount of GHL taken from the federal ABC for the three CGOA GHL fisheries would increase from 25% to 30%. Because the federal TACs are determined after the subtraction of the state-waters GHL fisheries, this would result in an overall decrease in the amount for TAC available for all federal CGOA Pacific cod sectors. Table 1 shows the Pacific cod allocations by sector should the Kodiak state-waters GHL fishery be increased to 17.5% based on the 2019 federal ABC. Although Table 1 depicts sector allocations based on the 2019 federal ABC it should be noted that the ABC could decrease in the future, which would further reduce the federal allocations.

The Federal Pacific cod fishery is a major source of income for many people. Some vessels are ineligible to participate in state-waters GHL fisheries due to gear and size restrictions and rely solely on federal Pacific cod fisheries. Table 2 shows, by home port, the number of vessels that participated in GHL only Pacific cod fisheries, the number of vessels in both GHL and federal/parallel Pacific cod fisheries, and the number of vessels in federal/parallel Pacific cod fisheries only in the CGOA for 2019. Fifty-seven of the 58 total vessels that participated in federal fisheries were CVs. Forty-nine of the vessels that participated in federal fisheries had registered home ports in Alaska.

In addition, Pacific cod biomass in the GOA significantly decreased in 2018, which resulted in decreased season lengths and some sector closures to directed fishing in 2018 and 2019. Directed fishing for federal Pacific cod in the GOA will be closed in 2020 pursuant to 50 CFR 679.20(d)(4). Although federal directed fishing will be closed in 2020, Pacific cod TAC is still needed as incidental catch so that directed fishing for other species can continue to occur. Table

3 shows the amount of Pacific cod taken incidentally in other CGOA federal directed fisheries from 2012-2019.

A further decrease in the federal Pacific cod TACs could have a negative impact economically on vessels participating in all CGOA federal fisheries, especially in years with already depressed ABCs.

Table 1. CGOA sector splits in 2019 based on Kodiak GHL at 12.5% and 17.5% of CGOA ABC in metric tons.

Pacific Cod Sector	25% of ABC (status quo)	30% of ABC	Difference in TAC/GHL
Central GOA ABC	7,667	7,667	-
Cook Inlet GHL fishery (3.75%)	288	288	-
Chignik GHL fishery (8.75%)	671	671	-
Kodiak GHL fishery (12.5% vs 17.5%)	958	1,342	384
Central GOA TAC	5,750	5,366	-384
Jig (1% of TAC)	58	54	-4
Hook-and-line < 50 CV	831	775	-56
Hook-and-line >= 50 CV	382	356	-26
Hook-and-line CP	291	271	-20
Trawl CV	2,367	2,210	-157
Trawl CP	239	223	-16
Pot CV and CP	1,583	1,477	-106

Table 2. Vessels who participated in CGOA Pacific cod directed fisheries in 2019 as of December 20, 2019 by registered home port.*

Home Port	Number of vessels in State GHL fisheries only	Number of vessels in both GHL and Federal/parallel fisheries	Number of vessels in Federal/parallel fisheries only
Homer, AK	9	12	17
Juneau, AK	4	3	1
Kodiak, AK	13	6	5
Other AK	7	4	1
Washington and Oregon	1	1	2
Unknown	6	5	1
Total	**40**	**31**	**27**

*Data for this table came from the NMFS Catch Accounting System on December 20, 2019.

Table 3. Incidental catch (IC) of Pacific cod in the CGOA from 2012-2019 in metric tons.

Year	Pacific cod IC taken in other directed fisheries
2012	3,061
2013	6,188
2014	9,004
2015	4,512
2016	2,895
2017	2,383
2018	2,416
2019	2,990
Eight Year Average	**4,181**

<u>Proposal 53</u>: 5 AAC 28.467. Kodiak Area Pacific Cod Management Plan.

Background on Pacific cod allocations:

As discussed in Proposal 52, Pacific cod OFLs, ABCs, and TACs for Pacific cod in the GOA are established by the Council on a yearly basis.

Potential Issue:

- ***If the State has not determined how much GHL would be reallocated to the following calendar year before the December Council meeting, the Council might be unable to accurately determine the federal TAC for the upcoming calendar year.***
- ***The amount of ABC taken each year for GHL fisheries would vary widely from year to year leaving a sense of uncertainty for Federal and State participants.***
- ***Increasing the percentage of GHL fish based on the ABC reduces the amount of TAC available to federal participants. A reduced federal TAC can cause federal sectors to have shorter seasons, be closed to the directed fishery, or have insufficient incidental catch of Pacific cod to participate in other directed fisheries.***
- ***ABC can vary widely from year to year which could result in the GHL fisheries exceeding the ABC in years where the ABC was reduced dramatically. This would adversely affect Federal management by requiring more restrictive management measures in following years to ensure the ABC is not exceeded.***

Proposal 53 seeks to add unharvested Pacific cod by jig vessels in the Kodiak Area state-waters GHL fishery to the state pot gear allocation in the following calendar year. The Council meets at the beginning of December each year to recommend the OFLs, ABCs, and TACs for the upcoming calendar year. The Council calculates the GHL based on the ABC and reduces the federal TAC by the GHL amounts when setting the federal TAC to ensure the ABC is not exceeded. As a result, the Council would need to know in advance of its December meeting how much GHL was being reallocated from one calendar year to the next so that the proper amount could be accounted for in the TAC setting process. If, by the early December meeting, the State has not yet determined how much GHL was going to be reallocated to the upcoming calendar year, the Council may not be able to accurately determine the federal TAC to recommend for the upcoming calendar year. In GHL fisheries that have step-up and step-down provisions based on fishery performance, the State informs the National Marine Fisheries Service (NMFS) by November 15 if these provisions will be in place in the following calendar year to help facilitate the TAC setting process.

In addition, this proposal would leave a high degree of uncertainty each year during the TAC setting process. In other state GHL fisheries the Council and industry know in advance how much of the ABC the State will allocate to each GHL fishery. In cases where step-up or step-down provisions have been met, it is clearly outlined in State regulation how much the GHL percentage (of ABC) will be increased or decreased. Proposal 53 would allow for an unknown amount of Pacific cod to be added to the GHL fishery, and thus reducing the federal TAC to account for the GHL fishery, each calendar year and could vary widely from year to year.

The Kodiak Area Pacific cod GHL is based on 12.5% of the federal CGOA ABC and divided 50/50 between jig and pot gear. Essentially both jig and pot gear receive 6.25% of the ABC. Currently a total of 25% of the ABC is allocated to accommodate three CGOA state GHL fisheries before setting the TAC. If unused jig GHL was re-allocated into the next calendar year then a maximum of an additional 6.25% based on the previous year's ABC would be subtracted. ABCs can vary widely from year to year based on annual stock assessments. In cases where ABCs decrease significantly from one calendar year to the next, it is possible that the GHL reallocation to the following calendar year would result in insufficient TAC to open federal directed fisheries, insufficient TAC to cover incidental catch needed in other federal directed fisheries, and, in extreme cases, may even exceed the CGOA ABC. For example, in 2017 the CGOA ABC was 44,180 mt and 2,761 mt of that was allocated to the Kodiak area jig fishery (Tables 4 and 5). In 2018, the CGOA ABC was only 8,118 mt, and, after subtracting 25% to account for the three CGOA State GHL fisheries, the TAC was 6,089 mt (Table 4). If unused Kodiak jig Pacific cod from 2017 was reallocated to 2018 then a maximum of an additional 2,761 mt could have been subtracted before setting the TAC, leaving only 3,328 mt for federal fisheries (Table 5). Once the TAC is set, it is further divided by the seven gear and processing sectors and seasons. If there is not sufficient TAC for the federal sector, then that sector will not open to directed fishing. The available TAC also has to cover any incidental Pacific cod caught during other federal directed fisheries.

In 2016, the NMFS published a final rule to revise the National Standard 1 (NS1) guidelines. The revised guidelines included a carry-over provision where unused TAC from one calendar year could be rolled to the following calendar year (50 CFR 600.310(f)(2)(ii)(B)). At the December 2019 Council meeting the Science and Statistical Committee (SSC) reviewed the NS1 technical guidance on the new ABC control rule provisions, including the carry-over provision. The SSC cautioned that because most stock assessments in the Alaska Region are done each year, it might be difficult to account for a carry-over if the SSC concludes that the ABC and OFL should be lowered on the basis of a more recent assessment. Because this is a new provision and currently being unused in the Alaska Region, it is unclear how this carry-over provision might work in Alaska fisheries. However, since the provision is intended to apply to the ABC, it would result in allocative effects on all sectors managed under an ABC.

As indicated under potential issues for Proposal 52, historically Pacific cod has provided a major source of income for many people, and some vessels are ineligible to participate in state-waters GHL fisheries. Although directed fishing for federal Pacific cod in the GOA will be closed in 2020, Pacific cod TAC is still needed so that directed fishing for other species can continue to occur. Table 3 (included in the comments for Proposal 52) shows Pacific cod taken incidentally in other directed fisheries in the CGOA in the last eight years. A further decrease in the federal Pacific cod TACs could have a negative impact economically on vessels participating in all CGOA federal fisheries, especially in years with already depressed ABCs.

Table 4. 2018 CGOA ABC, GHLs, and TACs in metric tons.

2018 CGOA ABC	GHL Fisheries	% of ABC	State GHL	2018 Based on Actual TAC		
				TAC	Federal Gear Sectors	Gear Sector TAC
8,118	Cook Inlet	3.75%	304	6,089	Jig	61
	Chignik	8.75%	710		HAL < 50 CV	880
	Kodiak	12.50%	1,015		HAL >= 50 CV	404
	Total	**25.00%**	**2,030**		HAL CP	308
					Trawl CV	2,507
					Trawl CP	253
					Pot CV and CP	1,676

Table 5. 2018 CGOA ABC, GHLs, and TACs based on maximum jig reallocation from previous year in metric tons.

2017 CGOA ABC	2017 Kodiak Jig GHL	2018 ABC	GHL Fisheries	% of ABC	State GHL	2018 Based on Maximum Jig Reallocation from 2017		
						TAC	Federal Gear Sectors	Gear Sector TAC
44,180	2,761	8,118	Cook Inlet	3.75%	304	3,328	Jig	33
			Chignik	8.75%	710		HAL < 50 CV	481
			Kodiak	12.50%	1,015		HAL >= 50 CV	221
			Kodiak (from 2017 jig)	34.01%	2,761		HAL CP	168
							Trawl CV	1,371
			Total	**59.01%**	**4,791**		Trawl CP	138
							Pot CV and CP	916

Native Village of Akhiok
P.O. Box 5030
Akhiok,Alaska 99615
December 13, 2019

Alaska Board of Fisheries
1255 West 8th St.
P.O. Box 115526
Juneau, AK 99811

Re: Maintain Kodiak's Salmon Fishery
Oppose Proposals: 58,59,60,61,62,63,64,65,37 &66

Dear Alaska Board of Fisheries:

I am Speridon Simeonoff Sr. and I represent the Native Village of Akhiok in the community of Akhiok. Our community's economy is entirely based on fishing and on Kodiak's salmon fishery in particular. Loss of salmon fishing opportunities will have a direct impact on Akhiok.

We wonder what Kodiak fishermen have done that would justify changing our management plans. Our salmon fishery has not expanded, in fact there are fewer permits fishing now than were fishing five and ten years ago. We don't see any "new" fisheries for Kodiak salmon developing. Kodiak's management plans cover the entire Island and the Mainland and they only allow fishing openings based on the presence of local stocks. These plans have been in place for more than 25 years and have precluded expansion of salmon fishing that is not based on the presence of local stocks.

Regarding the proposals from Cook Inlet, the 2014-1016 genetic study authored by Kyle Shedd in not "new" information in the sense that the conclusions were not previously known. The genetic study provides additional snapshots of detail illustrating the information and conclusions reached by the Department during the 1990-1995 time-frame. Namely, **"The incidence of Cook Inlet sockeye in KMA fisheries varies widely. It inconsistent as to area, annual timing, and between years."** Moreover, the percentage of the Cook Inlet run incidentally captured in the Kodiak fishery during the 2014-16 time period is well with the ranges suggested I these earlier studies.

The Cape Igvak Management Plan has been in place for 40 years. The reason for the plan was conservation - to protect Chignik's late run. Prior to the plan, Kodiak fished at Cape Igvak "day for day" when the Chignik fishery was open. While Chignik was fishing on the "early run", it was thought that Kodiak could be impactin the "late run". Consequently, the Cape Igvak management plan insured both escapement into the Chignik system and an economic safety net for Chignik fishermen by limiting Kodiak. Kodiak's catch percentage of the Chignik run prior to the Cape Igvak Management Plan was about 15%. Under the plan, Kodiak has averaged about 12%. (During years when fishing has occurred.) Finally, the conservation aspects of the Cape Igvak Management plan were highlighted with Chignik's recent run failures. There was no fishing at Cape Igvak! Why change a balanced plan that is accomplishing its intended purposes?

In summary, Native Village of Akhiok request that the Board of Fisheries take no action on Proposals 58, 59,60,61,62,63,64, 65, 37 & 66!

Very truly yours,
Speridon M. Simeonoff Sr.

Dec 18 19, 10:59p

NATIVE VILLAGE OF AKHIOK
RESOLUTION NO. 19-14

A RESOLUTION OF THE NATIVE VILLAGE OF AKHIOK IN SUPPORT OF THE ALASKA DEPARTMENT FISH AND GAME'S TRADITIONAL AND HISTORIC MANAGEMENT OF THE KODIAK SALMON FISHE AND IN OPPOSITION TO PROPOSALS 58,59,60,61,62,63,64,65,37 AND 66.

WHEREAS, the Kodiak commercial salmon fishery was one of the first salmon fisheries developed in the Sta of Alaska and has continuously operated on the Alaska Mainland and the West Side of Kodiak Island since bef 1980; and,

WHEREAS, Kodiak's commercial salmon fishermen and virtually all residents of Akhiok are economically culturally dependent on the Kodiak commercial salmon fishery; and,

WHEREAS, Kodiak's six Alutiiq rural communities, including the community of Akhiok are economic struggling due, in part, to dramatically reduced codfish quotas and substantially lower exvessel prices as wel impacts from the State of Alaska's budget crisis; and,

WHEREAS, the Cape Igvak Management Plan was implemented to protect Chignik's "second run" and main the historical catch of Chignik bound fish by the Kodiak fleet, and

WHEREAS, for the last 40 years the Cape Igvak Management Plan has effectively balanced Chigr conservation and economic needs with Kodiak's historical participation in the Cape Igvak fishery, and

WHEREAS, the Cape Igvak Management Plan does not impact the current biological concerns for Chignik's e run sockeye in that the Cape Igvak fishery is closed until an adequate escapement and catch is assured for Chignik fishery, and

WHEREAS, in addition to the Cape Igvak fishery, all the remainder of Kodiak's commercial salmon fishery remained essentially the same fishery since the implementation of North Shelikof Management Plan in 1989; a

WHEREAS, Kodiak's commercial salmon fishery has shared the burden of conservation for Cook Inlet salr stocks since 1989; and

WHEREAS, recent sockeye genetic information confirms what was already known about the presence of C Inlet sockeye in the Kodiak Management Area, namely "the incidence of Cook Inlet sockeye in the KMA fishe varies widely. It is inconsistent as to area, annual timing, and between years", and

WHEREAS, further restrictions on Kodiak's salmon fishery to limit the catch of Cook Inlet sockeye would substantially impact Kodiak's fishing for local sockeye as well as for pinks, chums and coho, costing Kodiak fishermen millions of dollars while such restrictions may or may not result in any protection for Cook Inlet socke – depending on the year, place and time that Cook Inlet stocks may be in the Kodiak area, and

WHEREAS, neither the Alaska Board of Fisheries Mixed Stock Fisheries policy or the Board's Alloca Criteria justify making changes to salmon management in the Kodiak area.

NOW, THEREFORE, BE IT RESOLVED BY Native Village of Akhiok **THAT:**

Section 1: NVOA hereby requests the Alaska Board of Fisheries maintain the balance between commercial salmon fisheries in Kodiak, Chignik and Cook Inlet by taking no action on propo 58,59,60,61,62,63,64,65,37 and 66.

ADOPTED BY THE NVOA
THIS 18 **DAY OF** December, **2019.**

Spendon M. Simeonoff Sr. — Spendon M. Simeonoff Sr. — 12-18-19

PRINT — TITLE — SIGNATURE — DATE

Native Village of Ouzinkie
Address
Ouzinkie, AK 99644

December 23, 2019

Alaska Board of Fisheries
P.O. Box 115526
Juneau, Ak 99811

RE: Oppose Proposals 58,59,60,61,62,63,64,37.65.66

To Whom it May Concern:

The Native Village of Ouzinkie represents tribal members that live in Ouzinkie. Many of our members are commercial salmon fishermen. Ouzinkie has been a commercial salmon fishing community for over 100 years. At one time we had two salmon processing plants operating in Ouzinkie. Since salmon fishing is so important to Ouzinkie, the Ouzinkie Tribe opposes attempts by Cook Inlet and Chignik fishermen to take fishing opportunities away from our fishermen. That's why we oppose proposals 58-66 and proposal 37 (along with RC 9).

Every time a new Board of Fisheries gathers to consider Kodiak salmon fishing regulations, the new Board members seem to have preconceived notions that something needs to change. This is because of the constant attacks and arguments pushed on the Board from adjacent areas that the common property nature of Alaska's salmon fisheries seemingly does not apply to the Kodiak area. Migrating fish caught in the Kodiak area, they say, belong to Chignik, or to Cook Inlet. This is a false argument of ownership these fish are common property – belonging as much to Ouzinkie tribal members as anyone from outside of Kodiak.

Nothing in Area K needs to change. So many boards at uncounted meetings have reviewed Cook Inlet and Chignik proposals and not made changes. Every salmon fishery in Kodiak has a management plan, and every management decision is based on local stocks. Major allocation battles have long ago been settled. Please allow the department to manage our fisheries, in season, based on local conditions, not the whims of fishermen in adjacent areas.

The Native Village of Ouzinkie views these proposals from Cook Inlet and Chignik as the same proposals the Board has reviewed again and again. There is no reason for the Board to accept any of these proposals. Vote NO on proposals 58,59,60,61,62,63,64,37,65,66.

Sincerely yours

Dan Clarion, Tribal Administrator.

NATIVE VILLAGE OF
Port Lions

Traditional Tribal Council
P.O. Box 69, Port Lions, Alaska 99550
PORTLIONSTRIBE.NET

December 23, 2019

Alaska Board of Fisheries
1255 West 8th St.
P.O. Box 115526
Juneau, AK 99811

Re: Maintain Kodiak's Salmon Fishery
Oppose Proposals: 58,59,60,61,62,63,64,65,37 &66

Dear Alaska Board of Fisheries:

I am the President of the Port Lions Traditional Tribal Council and I represent Native Village of Port Lions (Tribe) in the community of Port Lions. Our community's economy is entirely based on fishing and on Kodiak's salmon fishery in particular. Loss of salmon fishing opportunities will have a direct impact on Port Lions.

We wonder what Kodiak fishermen have done that would justify changing our management plans. Our salmon fishery has not expanded, in fact there are fewer permits fishing now than were fishing five and ten years ago. We don't see any "new" fisheries for Kodiak salmon developing. Kodiak's management plans cover the entire Island and the Mainland and they only allow fishing openings based on the presence of local stocks. These plans have been in place for more than 25 years and have precluded expansion of salmon fishing that is not based on the presence of local stocks.

The 2014-1016 genetic study authored by Kyle Shedd in not "new" information in the sense that the conclusions were not previously known. The genetic study provides additional snapshots of detail illustrating the information and conclusions reached by the Department during the 1990-1995 time-frame. Namely, **"The incidence of Cook Inlet sockeye in KMA fisheries varies widely. It is inconsistent as to area, annual timing, and between years."** Moreover, the percentage of the Cook Inlet run incidentally captured in the Kodiak fishery during the 2014-16 time period is well with the ranges suggested by these earlier studies.

The Cape Igvak Management Plan has been in place for 40 years. The reason for the plan was conservation --- to protect Chignik's late run. Prior to the plan, Kodiak fished at Cape Igvak "day for day" when the Chignik fishery was open. While Chignik was fishing on the "early run", it was thought that Kodiak could be impacting the "late run". Consequently, the Cape Igvak management plan insured both escapement into the Chignik system and an economic safety net for Chignik fishermen by limiting Kodiak. Kodiak's catch percentage of the Chignik run prior to the Cape Igvak Management Plan was about 15%. Under the plan, Kodiak has averaged about 12%. (During years when fishing has occurred.) Finally, the conservation aspects of the Cape Igvak Management plan were highlighted with Chignik's recent run failures. There was no fishing at Cape Igvak! Why change a balanced plan that is accomplishing its intended purposes?

In summary, the Native Village of Port Lions request that the Board of Fisheries take no action on Proposals 58, 59,60,61,62,63,64, 65, 37 & 66!

Respectfully,

Nancy M Nelson

Nancy Nelson
President

Nick Katelnikoff
Box P.O. Box 29
Ouzinkie, AK 99644

December 23, 2019

Alaska Board of Fisheries
P.O. Box 115526
Juneau, Ak 99811

RE: Reject Proposals 58,59,60,61,62,63,64,65,66 and 37

Board Members:

I have been a salmon fisherman in Ouzinkie all of my life. My crew is always from Ouzinkie. I support several families that live in Ouzinkie. My boat, the "Lady J" is competitive all over the island and I frequently fish at Cape Igvak when it is open. I strongly believe that the Cape Igvak management plan created an imbalance between Chignik and Kodiak. Before we use to fish day for day with Chignik. If we were doing that now, we would be catching allot more fish. The Cape Igvak management plan gives Chignik 300,000 fish before we can fish on the early run and 600,000 fish before we can fish on the late run. Three of the past five years we didn't fish at all. Seems to me that Kodiak got the short end of the Cape Igvak plan. It doesn't make sense that Chignik is still asking for more.

In 2018 Chignik had a bad year. Chignik's problems that year could not have been fixed by doing anything more at Cape Igvak. The Cape Igvak fishery was completely closed. If there are no surplus fish returning to Chignik, there is no Cape Igvak fishery. Chignik should not be using the 2018 hardship to justify changes at Cape Igvak. That's not honest. We hope the Chignik system will go another 37 consecutive years of meeting escapement goals. Please leave the Cape Igvak fishery the way it is and manage under current management plans.

I also don't see why the Board would want to make any regulation changes because of Cook Inlet fish. Migrating Cook Inlet sockeye haven't been fenced into the Kodiak area. And Kodiak fishermen are not "rustlers" crossing into Cook Inlet to steal fish. Nature, from time to time, allocates an unknown portion of Cook Inlet stocks to mix with Kodiak's local stocks. The GSI study cannot answer the crucial question of when, where and why Cook Inlet salmon appear in Kodiak waters. Every few years we have to face this whole issue again. When will it stop? I'm getting old and I want you to keep the Kodiak salmon fishery so my kids can use my boat and continue to make their living fishing.

Thank You for Considering My comments,

Nick Katelnikoff

Nick Katelnikoff

Northwest Setnetters Association
P.O. Box 870
Kodiak, AK 99615

December 21, 2019

Alaska Board of Fisheries
Reed Morisky, Chair
Attn: Glen Haight, Executive Director
1255 W 8th Street
P.O. Box 115526
Juneau, AK 99811-5526

RE: Opposition to proposals 63, 64, 65, 37 and 66

Dear Chairman Morisky and members of the Board of Fisheries,

Thank you for the opportunity to comment on these proposals in advance of the Board meeting for Kodiak. The Northwest Setnetters Association (NWSA) respectfully requests you oppose proposals 63, 64, 65, 37 and 66 as they present unnecessary change to an already fine-tuned and very complex management plan for the Kodiak Management Area (KMA) salmon fishery.

Northwest Setnetters Association is comprised of over 100 active SO4K permit holders and crewmembers of which the vast majority have been family run operations for many years and passed down to family members through the generations.

Members of NWSA find themselves once again at a regular 3-year cycle of the Alaska Board of Fisheries in a defensive position regarding incidental catch of salmon bound for Cook Inlet. These proposals have been brought forth by the same Cook Inlet fishing groups of years past. The results of this repetitive attack on the KMA harvest strategy are many. Firstly, it effectively deprives Kodiak stakeholders from addressing their own issues, as we are put in the position once again of defending the KMA in regards to incidental catch of Cook Inlet salmon. As long as salmon have been harvested in Kodiak, Cook Inlet bound salmon have been harvested incidentally. This incidental harvest will continue as long as there is a commercial salmon fishery in Kodiak.

Northwest setnetters fish exclusively in the Central Section of the Kodiak Management Area. All Northwest setnetters fish alongside Kodiak seiners in the Central Section, a combined gear group area. The Central Section of the Northwest District is the only area of Kodiak Island that combines both gear groups. All other Kodiak areas are seine only (attached is a map displaying these areas). That being said, setnetters in the Central Section work in a highly competitive and crowded area. Every one of the proposals put forth by Cook Inlet groups or individuals, if adopted, will severely increase the seine effort in an already congested mixed gear group area. The setnetters in the Central Section will clearly be the greatest losers if any of these draconian restrictions are mistakenly adopted in an effort to protect Cook Inlet bound salmon.

It is very important to be aware of the fact that Northwest Setnetters are very busy harvesting local Kodiak stocks of pink, chum and local sockeye salmon during the time periods that Cook Inlet groups and individuals are proposing restricting our fishing times and historical fishing locations. This is also a time that NW Setnetters are harvesting enhanced Spiridon Bay bound sockeye stocks from our Kodiak Regional Aquaculture Association. These stocks are paid for from every Kodiak commercial salmon fishermen's enhancement tax. Any change or reduction in our setnet opportunity, along with increased seine pressure in our only area, during these significant time periods, could result in the Central Section setnet fishery being compromised.

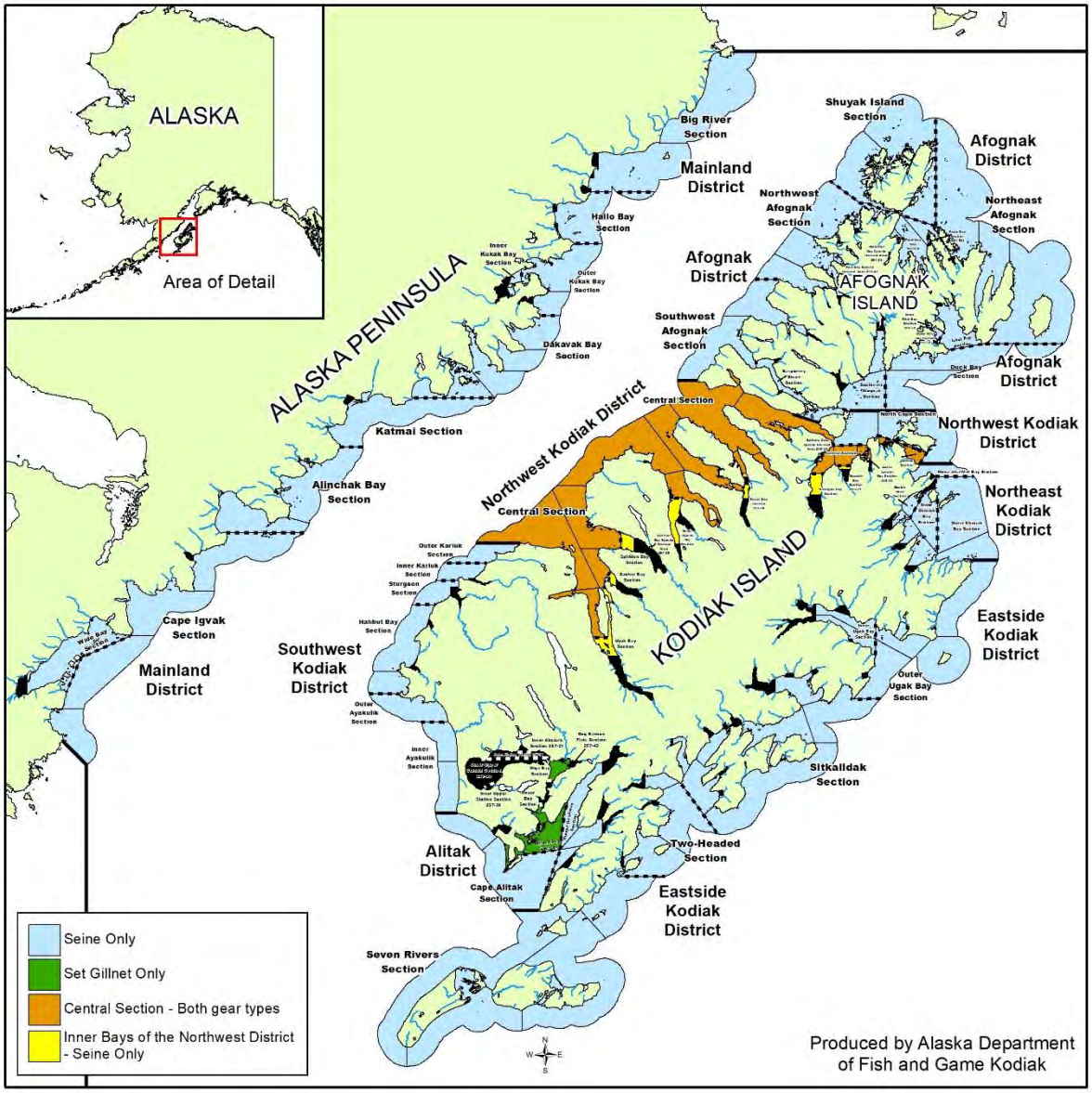
We as Northwest Setnetters, fishing exclusively in the Central Section of Kodiak, believe the continuous attacks on our KMA plan by Cook Inlet groups and individuals should stop. We seem to have to rally our troops and consolidate our efforts to defend ourselves against the constant threat brought forth by Cook Inlet fishing groups. Our fishery and gear group of set netting has not changed since its inception. Every BOF cycle we look at Cook Inlet groups proposing extreme restrictions to our fishing time and opportunities which are already limited by our very congested and competitive area.

Please remember the KMA is a very complex area and is tightly managed for Kodiak's own local stocks. There are hundreds of salmon streams on the Island of Kodiak as well as roughly a dozen sockeye systems that have run timings that span over 4 months during the summer. Trying to manage our own local stocks and at the same time trying to manage for non-local stock incidental harvest would create many problems. Kodiak fishermen are already sharing the conservation burden with the North Shelikof Management Plan that was agreed upon and adopted years ago.

We respectfully ask the Board to reject proposals 63, 64, 65, 37 and 66 and protect Kodiak's Management Plan. There does not appear to be anything of substance that the Board can look at regarding allocation criteria that justifies a change to the KMA plan.

Sincerely,

Mark Beardsley
President - Northwest Setnetters Association


ALASKA
Area of Detail
ALASKA PENINSULA
KODIAK ISLAND
AFOGNAK ISLAND
Big River Section
Mainland District
Shuyak Island Section
Afognak District
Northwest Afognak Section
Northeast Afognak Section
Afognak District
Hallo Bay Section
Inner Kukak Bay Section
Outer Kukak Bay Section
Southwest Afognak Section
Dakavak Bay Section
Afognak District
Duck Bay Section
Central Section
Northwest Kodiak District
Katmai Section
Northwest Kodiak District
Alinchak Bay Section
Central Section
Northeast Kodiak District
Outer Karluk Section
Inner Karluk Section
Sturgeon Section
Cape Igvak Section
Halibut Bay Section
Eastside Kodiak District
Mainland District
Southwest Kodiak District
Outer Ugak Bay Section
Outer Ayakulik Section
Inner Ayakulik Section
Sitkalidak Section
Two-Headed Section
Alitak District
Cape Alitak Section
Eastside Kodiak District
Seven Rivers Section
Seine Only
Set Gillnet Only
Central Section - Both gear types
Inner Bays of the Northwest District - Seine Only
Produced by Alaska Department of Fish and Game Kodiak

United States Department of the Interior

Office of Subsistence Management
1011 East Tudor Road MS 121
Anchorage, Alaska 99503-6199

IN REPLY REFER TO:

OSM 19093.GP

DEC 20 2019

Mr. Reed Morisky, Chair
Alaska Board of Fisheries
Alaska Department of Fish and Game
P.O. Box 115526
Juneau, Alaska 99811-5526

Dear Chairman Morisky:

The Alaska Board of Fisheries (Board) will deliberate 2019/2020 regulatory proposals that address Kodiak Area Finfish fisheries, among other issues, beginning January 11, 2020. The Office of Subsistence Management (OSM) have reviewed the proposals the Board will be considering at this meeting.

The Office of Subsistence Management, working with other Federal agencies, has reviewed these proposals and is providing the enclosed comments for three proposals which, if adopted, may have impacts on Federally qualified subsistence users in this area. We may wish to comment on other proposals, if issues arise during the meeting.

We appreciate the opportunity to comment on these important regulatory matters and look forward to working with your Board and the Alaska Department of Fish and Game on these issues. Please contact George Pappas, State Subsistence Liaison, 907-786-3822, with any questions you may have concerning this material.

Sincerely,

Thomas Doolittle
Acting Assistant Regional Director

cc:
Anthony Christianson, Chair, Federal Subsistence Board
Greg Risdahl, Acting Deputy Assistant Regional Director,
Office of Subsistence Management
Suzanne Worker, Acting Subsistence Policy Coordinator, Office of Subsistence Management
Robbin La Vine, Acting Anthropology Division Supervisor
Office of Subsistence Management
Tom Kron, Acting Supervisor Program Analyst, Office of Subsistence Management
DeAnna Perry, Subsistence Council Coordinator, U.S. Forest Service
Southcentral Subsistence Regional Advisory Council
Doug Vincent-Lang, Commissioner, Alaska Department of Fish and Game
Glenn Haight, Executive Director, Alaska Department of Fish and Game
Ben Mulligan, Deputy Commissioner, Alaska Department of Fish and Game
Mark Burch, Special Projects Coordinator, Alaska Department of Fish and Game
Interagency Staff Committee
Administrative Record

Recommendations

ALASKA BOARD OF FISHERIES PROPOSALS

KODIAK MANAGEMENT AREA

OFFICE OF SUBSISTENCE MANAGEMENT

January 11 – 14, 2020

Kodiak, Alaska

PROPOSAL 45 seeks to modify the boundaries of the Kodiak Road Zone (KRZ) salt waters in State sport fishing regulations.

5 AAC 64.005. Description of the Kodiak Area.

Amend the boundaries of the Kodiak Road Zone salt waters.

CURRENT FEDERAL REGULATIONS.

§100.3 Applicability and scope.

(1) Alaska Maritime National Wildlife Refuge, including the:

(i) Karluk Subunit: All of the submerged land and water of the Pacific Ocean (Sheliokof Strait) extending 3,000 feet from the shoreline between a point on the spit at the meander corner common to Sections 35 and 36 of Township 30 South, Range 33 West, and a point approximately 1¼ miles east of Rocky Point within Section 14 of Township 29 South, Range 31, West, Seward Meridian as described in Public Land Order 128, dated June 19, 1943;

(ii) Womens Bay Subunit: Womens Bay, Gibson Cove, portions of St. Paul Harbor and Chiniak Bay: All of the submerged land and water as described in Public Land Order 1182, dated July 7, 1955 (U.S. Survey 21539);

(iii) Afognak Island Subunit: All submerged lands and waters of the Pacific Ocean lying within 3 miles of the shoreline as described in Proclamation No. 39, dated December 24, 1892;

§100.14 Relationship to State procedures and regulations.

(a) State fish and game regulations apply to public lands and such laws are hereby adopted and made a part of the regulations in this part to the extent they are not inconsistent with, or superseded by, the regulations in this part.

§ .27(e)(9)(v)

(9)(v) The annual limit for a subsistence salmon fishing permit holder is as follows:

(A) In the Federal public waters of Kodiak Island, east of the line from Crag Point south to the westernmost point of Saltery Cove, including the waters of Woody and Long Islands, and the salt waters bordering this area within 1 mile of Kodiak Island, excluding the waters bordering Spruce Island, 25 salmon for the permit holder plus an additional 25 salmon for each member of the same

household whose names are listed on the permit: an additional permit may be obtained upon request.

(B) In the remainder of the Kodiak Area not described in paragraph (e)(9)(v)(A) of this section, there is no annual harvest limit for a subsistence salmon fishing permit holder.

§100.25 Subsistence taking of fish, wildlife, and shellfish: general regulations.

(a) *Definitions.* The following definitions apply to all regulations contained in this part:

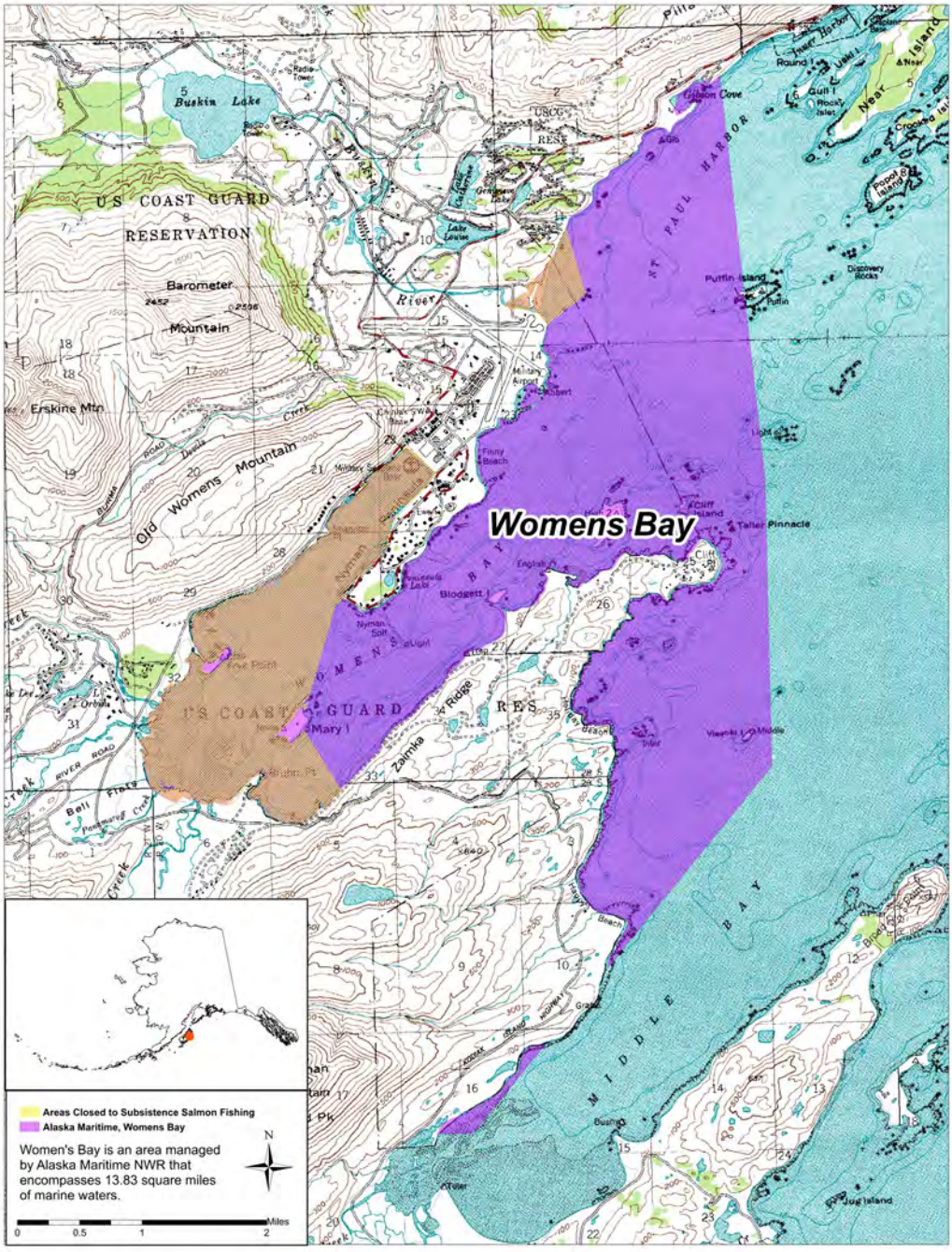
Groundfish or *bottomfish* means any marine fish except halibut, osmerids, herring, and salmonids.

Impact to Federal subsistence users/fisheries: Minimal. Adoption of this proposal is unlikely to impact Federally qualified subsistence users fishing in the waters under Federal subsistence fisheries jurisdiction contained with the existing KRZ (see page 2)(**map 1**). Within approximately .375 mile radius of the wedge-shaped arc of waters around Cliff Point (57° 43.512'N, 152° 26.622'W) east, excluding the KRZ from State sport fisheries management will not change Federal subsistence fisheries jurisdiction or the Federal subsistence fisheries.

Adoption of this proposal would change the State sport fisheries area status from KRZ to marine waters in some areas. Thus, the marine waters under Federal subsistence fisheries jurisdiction near Cliff Point could be restricted if a future conservation concern develops for any fish population managed under Federal subsistence regulations (salmon, herring, groundfish and bottomfish).

Federal Position/Recommended Action: OSM is **neutral** on this proposal.

Rationale: OSM provided comments on this proposal strictly as reference materials for managers. The likelihood of a substantial fisheries restriction with the “wedge” of waters off of Cliff Point is very low and because no Federal subsistence effort or harvest has been reported or recorded in this specific area.



Map 1. Marine waters of Womens Bay area under Federal subsistence fisheries jurisdiction.

PROPOSAL 46 seeks to establish a Chinook Salmon catch and release (only) sport fishery in the Dog Salmon River watershed from January 1 through July 25. The use of bait would be prohibited between July 1 and July 25.

CURRENT FEDERAL REGULATIONS.

§100.14 Relationship to State procedures and regulations.

(a) State fish and game regulations apply to public lands and such laws are hereby adopted and made a part of the regulations in this part to the extent they are not inconsistent with, or superseded by, the regulations in this part.

§ .27(e)(9)(i)

(i) You may take fish other than salmon, rainbow/steelhead trout, char, bottomfish, or herring at any time unless restricted by the terms of a subsistence fishing permit. If you take rainbow/steelhead trout incidentally in other subsistence net fisheries, you may retain them for subsistence purposes.
(ii) You may take salmon for subsistence purposes 24 hours a day from January 1 through December 31, with the following exceptions:

(v) The annual limit for a subsistence salmon fishing permit holder is as follows:
(B) In the remainder of the Kodiak Area not described in paragraph (e)(9)(v)(A) of this section, there is no annual harvest limit for a subsistence salmon fishing permit holder.
(viii) You may take salmon only by gillnet, rod and reel, or seine.

Impact to Federal subsistence users/fisheries: Unknown. Introducing an inriver catch and release only sport fishery with decreasing escapements of introduced but self-sustaining spawning population of Chinook Salmon may lead to conservation concerns for the run if the escapement is low (e.g. 17 total fish in 2019) and interest in the proposed fishery is realized. It is difficult to ascertain the total mortality that a catch and release fishery may cause in this remote and difficult to access area of Kodiak. Angler participation in the proposed fishery is not expected to increase because of the small escapement and remoteness of the drainage. However, during a time of low Chinook Salmon abundance, locally and statewide (e.g. less than 100 fish on average annually over a 10-year period for the Dog Salmon watershed) the proposed fishery may experience ebbs and flows of interest which may cumulatively result in a conservation concerns for the Chinook Salmon return. Introduction of a targeted catch and release fishery could lead to challenges for future continuance of subsistence uses for Federally qualified users if the population is at low levels due to minimal escapement.

The 2019 weir count was 17 total Chinook Salmon, which raises significant concerns about developing a catch and release fishery that results in additive mortality. No population estimates are available for this stock of Chinook Salmon, which may experience times of significant exploitation rates from the local and regional commercial fisheries prior to entering the proposed sport fishery area.

Federal Position/Recommended Action: The OSM recommendation is to **oppose** this proposal.

Rationale: OSM opposes developing a catch and release sport fishery for Chinook Salmon in the Dog Salmon watershed in Olga Bay. Few, if any, examples of an inriver sport fishery directly targeting a wild population of Chinook Salmon with an average escapement of less than 100 fish exists in Alaska, much less nationwide. The size and characteristics of the Chinook Salmon return to the Dog Salmon watershed is unknown, and there is currently no escapement goal. OSM opposes this proposal based on the potential for conservation concerns, violation of recognized fish and wildlife management principles, and the potential to negatively affect subsistence uses by Federally qualified subsistence users. During times of Chinook Salmon low abundance, restrictive management actions have been implemented in many of the fisheries across Alaska.

PROPOSAL 48 - 5 AAC 28.466. Kodiak Area Rockfish Management Plan; and 5 AAC 64.XXX. New section.

Establish a management plan for the Kodiak Area rockfish sport fishery and a guideline harvest range for the Kodiak Area commercial rockfish fishery, as follows:

Current Federal Regulations:

§100.14 Relationship to State procedures and regulations.

(a) State fish and game regulations apply to public lands and such laws are hereby adopted and made a part of the regulations in this part to the extent they are not inconsistent with, or superseded by, the regulations in this part.

§100.25 Subsistence taking of fish, wildlife, and shellfish: general regulations.

(a) *Definitions. The following definitions apply to all regulations contained in this part:*

Groundfish or bottomfish means any marine fish except halibut, osmerids, herring, and salmonids.

§__. 27(b) Subsistence taking of fish.

(16) Unless specified otherwise in this section, you may use a rod and reel to take fish without a subsistence fishing permit. Harvest limits applicable to the use of a rod and reel to take fish for subsistence uses shall be as follows:

(i) If you are required to obtain a subsistence fishing permit for an area, that permit is required to take fish for subsistence uses with rod and reel in that area. The harvest and possession limits for taking fish with a rod and reel in those areas are the same as indicated on the permit issued for subsistence fishing with other gear types.

(ii) Except as otherwise provided for in this section, if you are not required to obtain a subsistence fishing permit for an area, the harvest and possession limits for taking fish for subsistence uses with a rod and reel are the same as for taking fish under State of Alaska subsistence fishing regulations in those same areas. If the State does not have a specific subsistence season and/or harvest limit for that particular species, the limit shall be the same as for taking fish under State of Alaska sport fishing regulations.

§__.27(e)(9) Kodiak Area…

(i) You may take fish other than salmon, rainbow/steelhead trout, char, bottomfish, or herring at any time unless restricted by the terms of a subsistence fishing permit. If you take rainbow/steelhead trout incidentally in other subsistence net fisheries, you may retain them for subsistence purposes

(iv) You must have a subsistence fishing permit for taking salmon, trout, and char for subsistence purposes. You must have a subsistence fishing permit for taking herring and bottomfish for subsistence purposes during the State commercial herring sac roe season from April 15 through June 30.

(vii) You may take fish other than salmon by gear listed in this part unless restricted under the terms of a subsistence fishing permit.

Is a similar issue being addressed by the Federal Subsistence Board? No.

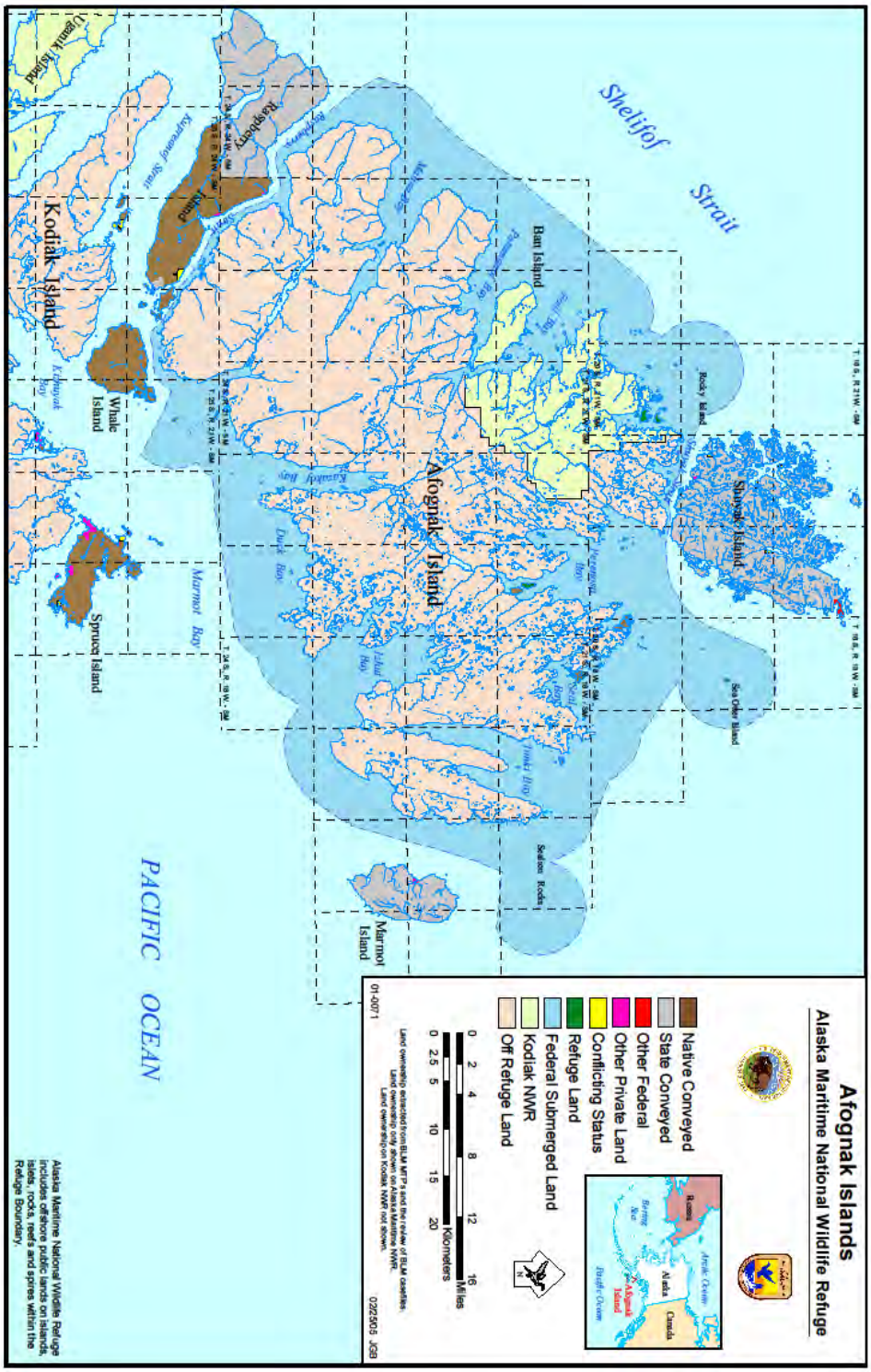
Impact to Federal subsistence users/fisheries: Yes. Adoption of this proposal may contribute to the conservation of the rock fish populations in the Women's Bay and Gibson Cove area, both of which are within the Chiniak Bay area, as well as the marine waters surrounding Afognak Island. Adoption of this proposal may help reduce future conservation concerns and challenges to the continuation of subsistence uses through sound management and help rebuild fish populations.

Federal Position/Recommended Action: The OSM recommendation is to **support** the proposal.

Rationale: The Alaska Department of Fish and Game statewide harvest survey data estimates that approximately 105,000 total rock fish have been harvested in one Chiniak Bay sport fishery (from boats) between 2006 through 2015 (range 5,040 – 18,570 fish). The estimated harvest for the Woman's Bay and Gibson Cove portion of Chiniak Bay are not available. A reduction in overall mortality rates of rock fish by restricting the sport fishery catch and possession limits may assist with ensuring long-term sustainability of the resource. Conservation measures mirroring commercial fisheries regulations may also assist with the rebuilding effort.

The current Federal subsistence fisheries rock fish harvest limits are the same as the State subsistence fishery limits, which are 2 ling cod and 10 rock fish per day. The Federal subsistence fishery requires a permit and annual reporting when fishing for herring or bottomfish between April 15 and June 30 (the commercial herring fishing season). The State subsistence fishery does not require a permit or harvest reporting for rockfish in Kodiak area.

To date, no rock fish harvest has been reported from waters under Federal subsistence fisheries jurisdiction by Federally qualified subsistence users. If warranted, the Federal inseason manager may reduce the catch and possession limits of rock fish in the Federal subsistence rod and reel fishery in Woman's Bay, Gibson Cove and in the marine waters encompassing Afognak Island (**Maps 1 and 2**); may restrict participation in the fisheries through the Federal Subsistence Board to a subset of Federally qualified users only through the Section 804 process; or may close all fisheries for conservation purposes or to ensure future continuance of subsistence uses by Federally qualified users.



Map 2. Marine waters encompassing Afognak Island under Federal subsistence fisheries jurisdiction.

OUZINKIE
NATIVE CORPORATION

December 19, 2019

Alaska Board of Fisheries
P.O. Box 115526
Juneau, AK 99811

Re: Opposition to Proposals 58,59,60,61,62,63,64,37,65,66

Dear Alaska Board of Fisheries:

Ouzinkie Native Corporation (ONC) represents shareholders that originated in the fishing community of Ouzinkie. Ouzinkie's salmon fleet developed during the earliest days of Kodiak's salmon fishery. In fact, before the 1964 earthquake, there were two salmon processing plants operating in Ouzinkie. Although our salmon fleet has diminished over the years, salmon fishing is still the primary source of income for several local vessels and their crews. ONC has worked hard to energize Ouzinkie's fisheries economy. We advocated for reductions of salmon and halibut bycatch, limited bottom trawling in Marmot Bay and helped purchase community owned halibut quotas. Because of our long-term involvement supporting and encouraging Ouzinkie fisheries, it's particularly aggravating to see proposals from Chignik and Cook Inlet trying to take fishing opportunities away from Ouzinkie's salmon fishermen. Ouzinkie Native Corporation urges you not to let this happen!

Regarding the Cape Igvak issues, Ouzinkie understands how many folks living in Chignik are feeling. Several families in our two communities are related. We are all hurting trying to earn a living from fishing and live in isolated communities. But us residents of rural communities need to be working together rather than fighting each other. If the Cape Igvak management plan was contributing to under-escapement in Chignik or taking fish away from Chignik fishermen before they had a chance to fish, Ouzinkie would agree that it needed changing. But the Cape Igvak management plan does NOT impact escapement and it economically protects Chignik fishermen, so they earn in excess of $2,500,000 before any fishing takes place at Cape Igvak. Consequently, despite Ouzinkie's understanding of Chignik's economic woes, Ouzinkie Native Corporation strongly suggests that the Cape Igvak management plan did not contribute to Chignik's salmon run problems and eliminating or altering the plan will not help solve these problems.

Commercial fishing at Karluk predates the Bristol Bay, Chignik and Cook Inlet salmon fisheries. Many Ouzinkie residents would travel to Karluk in the early days to work the beach seines and process salmon. Ouzinkie fishermen had often been told that, in some years, there a "middle run" to Karluk. We now know that the middle run is now local stocks enhances with the presence of Cook Inlet sockeye in the Kodiak area. Ouzinkie fishermen have also experienced another constant during the past 150 years. We have not been able to accurately predict when Cook Inlet sockeye may be present in the Kodiak area and where those fish may appear --- and we've tried hard to do so.

The unpredictability of Cook Inlet stocks in the Kodiak area is clearly illustrated in the recent Kodiak sockeye genetic stock ID study from 2014-16. (Shedd) The genetic study showed wide variation in the amount of Cook Inlet bound sockeye captured in the Kodiak area and substantial differences between years regarding when and where Cook Inlet sockeye were caught. In each year, in almost all areas and

OUZINKIE
NATIVE CORPORATION

time frames, local sockeye with local pinks, chum and Coho far exceeded catches of non-local stocks. Moreover, even for a high catch year like 2015, the study showed Cook Inlet catches in the Kodiak area to be within ranges predicted in the 1990s. In summary, ONC does not see that additional regulation in the Kodiak Management Area for Cook Inlet is practical or needed.

Changing the Cape Igvak management plan or imposing more Kodiak area closures because of Cook Inlet's concerns directly impacts Ouzinkie fishermen. Our fleet mostly fishes in proximity to the village and Ouzinkie fishermen only occasionally travel to Cape Igvak. However, when Cape Igvak is open 30-40 Kodiak boats fish over there and Ouzinkie fishermen have much more opportunity to catch fish in our traditional areas. Additional closures along the Shelikof because of possible Cook Inlet sockeye will also result in more boats competing with the Ouzinkie fleet and further eroding fishing opportunity. You'll just cram the same number of vessels into a smaller area!

Be aware of unintended consequences. When the North Shelikof management plan was adopted in 1989 the Southwest Afognak section reverted to cape to cape closures if the sockeye cap was hit. The cape to cape closures really hit the Ouzinkie fleet because of our extensive fishing, "homesteading", in the Southwest Afognak area. Subsequently, the Board recognized the hardship imposed on Ouzinkie fishermen and provided a ½ mile corridor (one set out) for fishing in the S.W. Afognak section.

In contrast to the proposals at hand, the Ouzinkie Native Corporation asks the Board to partner with us to expand and enhance salmon fishing opportunities for Ouzinkie residents. Our limited entry system inhibits village kids from entering our salmon fisheries and our regulatory structures require immediate competitiveness to survive in the fishery. ONC would like to initiate discussions with the Board to consider some Local Area Management Plans, LAMPS, that would provide limited salmon fishing opportunities to a defined set of Ouzinkie and Port Lions (Afognak) residents. Eliminating the Cape Igvak fishery or imposing more Cook Inlet related closures will only accelerate Ouzinkie's sense of urgency to have the Board address community specific fisheries.

Ouzinkie Native Corporation remembers the Board's attentiveness and responsiveness to our requests during the last Board cycle. We had asked the Board to create a subsistence harvest zone in the harbor area next to Ouzinkie. Although the strength of the local sockeye run has gone up and down, the subsistence zone has been a big success. Thank You!

We trust the Alaska Board of Fisheries is clear regarding Ouzinkie Native Corporation's strong opposition to making changes to the Cape Igvak Management Plan and to changing any Kodiak management plans because of the possible presence of Cook Inlet stocks. Vote NO on these proposals and partner with Ouzinkie Native Corporation to envision and build a stronger fisheries-based economy for Ouzinkie.

Very truly yours,

Darren Muller, Sr.
Board Chair

Main Office: P.O. Box 89 • Ouzinkie, AK 99644 • 907.680.2208
Anchorage Office: 11001 O'Malley Centre Drive Ste. 105 • Anchorage, AK 99515 • 907.561.2452
www.ouzinkie.com

12/27/19

Mr. Chairman and Members of the Board,

I cannot overstate the devastating consequences, both financially and culturally, that Chignik is burdened with. And still, our future in Chignik looks grim, the preliminary forecast is for 586k total harvestable sockeye. That is below the 600K harvest minimum afforded Chignik at present. That is less than $70K boat gross on average. With conservative figures of $13k insurance, $15k fuel, $4k for 3months groceries, $8k gear/supplies, $21K to crew , and $3.5k 5% fish tax leaves $5,500.00 for the boat wear and tear and captain. It's not enough even if the 600k sockeye harvest preference was met. The prospect of a $7,000.00 crewshare isn't even enough to secure crew for 3 months. Local hire and their families must move with no other industry to fall back on. Cod is faltering, halibut and other species can't be processed locally because there is not enough salmon to entice a shore-based processor. Historically, we had three or more processors (shore based). Because of all this, I support Proposal 61.

In 2018, salmon fishermen in Chignik didn't fish, had zero income, and went backwards with mounting bills.

2019 was poor with no fishing until after July 20th and the poor escapement precluded harvests on the capes of prime pinks and chum. The 638K harvested in 2019 was barely sufficient and only because about 25% of the permits/boats went elsewhere to fish salmon or didn't fish at all fearing more debt load.

The dynamics of the community is crumbling. More families (some with children) are relocating out of Chignik after this year to find employment. An above average amount of bills to the City of Chignik go unpaid. The only reason food was not scarce was from the charity of UMCOR (United Methodist Committee on Relief) who by the grace of God directly donated food with shipping to all five communities. Staffing at the City Office is often short and likewise the school attendance is nearly insufficient. If the school closes, it will add to the hardships of those remaining. Chignik is reeling from economic disaster and the generational fishing way of life is dwindling away. There is no other industry in Chignik to support its existence.

If there is any hope for Chignik, if in the future if there is a good salmon return, then Chignik needs to reap those benefits to make up for the "negative balance sheet" so to speak.

Kodiak seiners have averaged a greater boat gross than Chignik in 11 of the last 15 years. The 40 sockeye runs and hatcheries provide good returns and economic stability. If the Igvak allocation were lowered to 5% it would impact the roughly 176 seiners by about 2% exvessel value, but would give direct relief to Chignik fisherman along the lines of 7-8% increased income per boat. It would also make it less necessary to take large percentages of the Black Lake stock to reach the allocation as in 2016 when Igvak caught 19% (4% over allocation). The Chignik runs have been so poor in the last 15 years that Igvak hasn't even opened 1/3rd of the years.

There is a shift in the needs of the two areas today than when the Igvak management Plan was implemented. Kodiak has stability, many processors, 40 robust runs, hatcheries, and other industry. Chignik and it's fishery is collapsing. For the above reasons I support Proposal 60.

When the Igvak management plan was created it was thought there were not enough permits awarded to Chignik but it would be better to redistribute the catch rather than increase the permits. This has wronged Chignik since inception, robbing it of economic basis to build its communities. That income should have gone to the families in Chignik and the fish to the local processors. Instead the families and processors have painfully dwindled away. Until, the communities and fishery in Chignik recover, the Igvak allocation should be 0%. Citing transcripts from 1977-1978 Igvak Board Meetings:

Jim Beaton suggests that the difference between Kodiak income and Chignik income is great enough to trigger a limited entry problem that could result in the state giving or selling more Chignik permits that could expand the Chignik fleet to 150. He states that it is in Chigniks long term interest to give up this allocation now rather than end up with half later. Jim Beaton states that the Kodiak people have found a way to use the Board to get a piece of the Chignik action but hopefully a small portion and that if it gets out of hand he is willing to take a hard look at doing away with Igvak in the future. After having voted 4/2 in support of the concept of allocating 15% in December of 1977 the Board voted 6/0 at this meeting in April of 1978 to approve the management plan.

In the future Chignik is facing a poor forecast in 2020, and there is doubt about the returns from the failed 2018 and 2019 runs. Redistributing the Igvak catch would be of nominal impact to Kodiak but would magnanimously help Chignik's people in their economic recovery. With that I would ask you take favorable action on 59, 60, and 61. I also support actions on the mainland proposals 63, 64, and 65 that minimize interception of nonlocal stocks as a poor quality/weakness of return is prevalent in many terminal areas and seems to be on the increase. Whether from climate change or increased interception fishing pressures or both, damage should be prevented.

In closing, my daughter approached my husband and I as we discussed the preliminary Chignik forecast for 2020. She asked, "Will there be fishing in Chignik next summer?" We answered "maybe". Then with her 11-year-old wisdom she exclaimed "If we don't fish, how will anyone make money? We'll all have to leave." For us it really is that simple, but I realize that complexities exist from your perspective. So, thank you for your time and thoughtfulness in these matters. It is appreciated.

Sincerely,

Raechel Allen

Richard Blanc

12/27/2019 05:30 PM AKST

RE: PROPOSAL 58-61

A Chignik CFEC seine permit is worth 4 times the value of a Kodiak seine permit. Reject this proposal.

THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Commercial Fisheries Entry Commission

Mailing Address: PO Box 110302
Juneau, Alaska 99811-0302
Main: 907.789.6160
Licensing: 907.789.6150
Fax: 907.789.6170
www.cfec.state.ak.us

December 20, 2019

S01K Kodiak, Salmon, Purse Seine, most current (November 2019) estimated value is $34,000

S01L Chignik, Salmon, Purse Seine, most current (November 2019) estimated value is $136,400

Please see attached explanation of how these estimates are acquired and the last 4 or more years of values.

CFEC - Permit Value Table Description

> Fishery Statistics

PERMIT VALUE

TABLE DESCRIPTION: This table contains estimated values for permanent permits in Alaska's limited fisheries. The estimated values were calculated from actual permit sales as reported on the Commercial Fisheries Entry Commission's transfer survey. In general, permit value estimates for each limited fishery are created by calculating the average purchase price of transfers that occurred in the last three months. The value is calculated on a monthly basis.

By statutes and regulation, the financial data reported on the CFEC permit transfer surveys are confidential and cannot be disclosed to the public. For reporting purposes, permit value estimates must be averages from at least four transactions. In some fisheries, permit transfers are not common occurrences. In these instances, transactions that occurred before the three most recent months must be included in order to reach the four-transfer minimum. In some limited fisheries four market transfers do not exist; therefore a permit value cannot be estimated for these fisheries.

Year-end averages are calculated and include transactions that occurred between January and December for each year. Where fewer than four transactions occur in a year, additional data from earlier months are included until an adequate number of observations are obtained to meet confidentiality requirements.

The table contains the following information:

PERIOD

The month, year, or quarter for which the estimated value applies. Estimated values are currently determined monthly. Prior to 1985, estimated values were calculated on a quarterly basis.

ESTIMATED VALUE

An estimate of the value of permit transfers during the period specified based on the average price of actual sales transactions.

RANGE

The difference between the highest and lowest values used to calculate the estimated value. Range is indicated from 1991 to present.

STANDARD DEVIATION

A measure of the variance from the estimated value, the average purchase price of transfers. Standard deviation is indicated from 1991 to present.

MAXIMUM VALUE

Prior to 1991, maximum value is listed. Maximum value is the highest value used in the calculation of the estimated value and is used with the minimum value to indicate the range of values used to calculate the estimated value. A "."

indicates that less than four transactions occurred during the three month period and no value can be displayed.

MIMIMUM VALUE

Prior to 1991, minimum value is listed. Minimum value is the lowest value used in the calculation of the estimated value and is used with the maximum value to indicate the range of values used to calculate the estimated value. A "." indicates that less than four transactions occurred during the three month period and no value can be displayed.

EARLIEST/LATEST TRANSACTIONS

Permit transactions occurring from the earliest month shown through the latest month shown, inclusive, were used to calculate the estimated value.

In some cases it may appear that the estimated value is calculated from transfers in just one or two months rather than the three most recent. In these situations, the current month has more than four transfers but either or both of the preceding months have no transfers. No values are included from one or both of the preceding months, so the estimated value is calculated as the average of the transfers in the most recent month.

Prior to 1987, the estimated value was calculated for the current month and two prior months. If there were fewer than four transfers, insufficient data existed to determine the estimated value. Transactions from preceding months were not added to reach the minimum required number. Earliest and latest transactions are not indicated for these years.

QUESTIONS

Questions regarding this data should be addressed to our Research Section.

Phone: (907) 789-6160

Address:

Attn: Marcus Gho
Commercial Fisheries Entry Commission
P.O. Box 110302
Juneau , AK 99802

Click here for an explanation of this report.

Alaska Commercial Fisheries Entry Commission
Estimated Permit Value Report
(S01K) SALMON, PURSE SEINE, KODIAK

Year	Month	Estimated Value	Range	Standard Deviation	Earliest Transaction	Latest Transaction
2019	NOV	$34,000	6,000	2,700	JUL19	NOV19
	OCT	$30,000	10,000	4,100	JUN19	SEP19
	SEP	$30,000	10,000	4,100	JUN19	SEP19
	AUG	$28,800	5,000	2,150	JUN19	JUL19
	JUL	$29,300	6,000	2,000	MAY19	JUL19
	JUN	$28,800	6,000	2,150	APR19	JUN19
	MAY	$28,300	6,000	2,200	MAR19	MAY19
	APR	$26,700	5,000	2,000	FEB19	APR19
	MAR	$27,000	5,000	2,300	JAN19	MAR19
	FEB	$26,700	5,000	2,350	NOV18	FEB19
	JAN	$26,700	5,000	2,350	OCT18	JAN19
2018	ALL	$26,800	5,900	2,400	JAN18	NOV18
	DEC	$26,000	2,000	1,100	SEP18	NOV18
	NOV	$26,000	2,000	1,100	SEP18	NOV18
	OCT	$26,800	5,000	2,350	AUG18	OCT18
	SEP	$26,800	5,000	2,350	MAY18	SEP18
	AUG	$27,500	5,000	2,900	APR18	AUG18
	JUL	$26,000	5,900	2,700	MAR18	MAY18
	JUN	$26,000	5,900	2,700	MAR18	MAY18
	MAY	$26,000	5,900	2,700	MAR18	MAY18
	APR	$28,000	5,900	2,800	NOV17	APR18
	MAR	$27,000	5,900	2,550	NOV17	MAR18
	FEB	$28,500	4,000	1,900	OCT17	JAN18
	JAN	$28,500	4,000	1,900	OCT17	JAN18
2017	ALL	$27,200	7,000	2,650	JAN17	NOV17
	DEC	$28,500	4,000	1,900	JUL17	NOV17
	NOV	$28,500	4,000	1,900	JUL17	NOV17
	OCT	$27,800	5,000	2,650	JUN17	OCT17
	SEP	$26,500	5,000	2,400	JUN17	JUL17
	AUG	$26,200	5,000	1,950	JUN17	JUL17
	JUL	$27,000	7,000	2,850	MAY17	JUL17
	JUN	$26,300	7,000	2,550	APR17	JUN17
	MAY	$28,800	7,000	3,750	JAN17	MAY17
	APR	$27,000	7,000	3,350	JAN17	APR17
	MAR	$29,000	8,000	4,100	JUN16	FEB17

Year	Month	Estimated Value	Range	Standard Deviation	Earliest Transaction	Latest Transaction
	FEB	$29,000	8,000	4,100	JUN16	FEB17
	JAN	$32,500	15,000	6,150	JUN15	JAN17
2016	ALL	$38,300	8,000	3,600	MAY15	JUN16
	DEC	$38,300	8,000	3,600	MAY15	JUN16
	NOV	$38,300	8,000	3,600	MAY15	JUN16
	OCT	$38,300	8,000	3,600	MAY15	JUN16
	SEP	$38,300	8,000	3,600	MAY15	JUN16
	AUG	$38,300	8,000	3,600	MAY15	JUN16
	JUL	$38,300	8,000	3,600	MAY15	JUN16
	JUN	$38,300	8,000	3,600	MAY15	JUN16
	MAY	$39,800	2,000	950	MAY15	JUN15
	APR	$39,800	2,000	950	MAY15	JUN15
	MAR	$39,800	2,000	950	MAY15	JUN15
	FEB	$39,800	2,000	950	MAY15	JUN15
	JAN	$39,800	2,000	950	MAY15	JUN15
2015	ALL	$40,000	2,000	900	JAN15	JUN15
	DEC	$39,800	2,000	950	MAY15	JUN15
	NOV	$39,800	2,000	950	MAY15	JUN15
	OCT	$39,800	2,000	950	MAY15	JUN15
	SEP	$39,800	2,000	950	MAY15	JUN15
	AUG	$39,800	2,000	950	MAY15	JUN15
	JUL	$39,800	2,000	950	MAY15	JUN15
	JUN	$39,800	2,000	850	APR15	JUN15
	MAY	$40,300	2,000	950	JAN15	MAY15
	APR	$44,000	13,000	6,050	JUN14	APR15
	MAR	$47,100	12,000	6,500	JUN14	JAN15
	FEB	$47,100	12,000	6,500	JUN14	JAN15
	JAN	$47,100	12,000	6,500	JUN14	JAN15
2014	ALL	$50,600	15,500	3,650	JAN14	OCT14
	DEC	$50,100	11,000	5,400	MAY14	OCT14
	NOV	$50,100	11,000	5,400	MAY14	OCT14
	OCT	$50,100	11,000	5,400	MAY14	OCT14
	SEP	$53,400	2,500	1,100	MAY14	JUN14
	AUG	$53,400	2,500	1,100	MAY14	JUN14
	JUL	$53,400	2,500	1,100	MAY14	JUN14
	JUN	$52,200	5,000	1,800	APR14	JUN14
	MAY	$52,500	7,500	2,700	MAR14	MAY14
	APR	$52,000	7,500	3,250	MAR14	APR14
	MAR	$50,300	12,500	3,600	JAN14	MAR14
	FEB	$48,100	6,000	2,200	DEC13	JAN14
	JAN	$47,700	7,000	2,450	NOV13	JAN14

Click here for an explanation of this report.

Alaska Commercial Fisheries Entry Commission
Estimated Permit Value Report

(S01L) SALMON, PURSE SEINE, CHIGNIK

Year	Month	Estimated Value	Range	Standard Deviation	Earliest Transaction	Latest Transaction
2019	NOV	$136,400	46,800	21,800	MAY16	MAY18
	OCT	$136,400	46,800	21,800	MAY16	MAY18
	SEP	$136,400	46,800	21,800	MAY16	MAY18
	AUG	$136,400	46,800	21,800	MAY16	MAY18
	JUL	$136,400	46,800	21,800	MAY16	MAY18
	JUN	$136,400	46,800	21,800	MAY16	MAY18
	MAY	$136,400	46,800	21,800	MAY16	MAY18
	APR	$136,400	46,800	21,800	MAY16	MAY18
	MAR	$136,400	46,800	21,800	MAY16	MAY18
	FEB	$136,400	46,800	21,800	MAY16	MAY18
	JAN	$136,400	46,800	21,800	MAY16	MAY18
2018	ALL	$136,400	46,800	21,800	MAY16	MAY18
	DEC	$136,400	46,800	21,800	MAY16	MAY18
	NOV	$136,400	46,800	21,800	MAY16	MAY18
	OCT	$136,400	46,800	21,800	MAY16	MAY18
	SEP	$136,400	46,800	21,800	MAY16	MAY18
	AUG	$136,400	46,800	21,800	MAY16	MAY18
	JUL	$136,400	46,800	21,800	MAY16	MAY18
	JUN	$136,400	46,800	21,800	MAY16	MAY18
	MAY	$136,400	46,800	21,800	MAY16	MAY18
	APR	$167,200	120,000	55,450	FEB15	JUN16
	MAR	$167,200	120,000	55,450	FEB15	JUN16
	FEB	$167,200	120,000	55,450	FEB15	JUN16
	JAN	$167,200	120,000	55,450	FEB15	JUN16
2017	ALL	$167,200	120,000	55,450	FEB15	JUN16
	DEC	$167,200	120,000	55,450	FEB15	JUN16
	NOV	$167,200	120,000	55,450	FEB15	JUN16
	OCT	$167,200	120,000	55,450	FEB15	JUN16
	SEP	$167,200	120,000	55,450	FEB15	JUN16
	AUG	$167,200	120,000	55,450	FEB15	JUN16
	JUL	$167,200	120,000	55,450	FEB15	JUN16
	JUN	$167,200	120,000	55,450	FEB15	JUN16
	MAY	$167,200	120,000	55,450	FEB15	JUN16
	APR	$167,200	120,000	55,450	FEB15	JUN16
	MAR	$167,200	120,000	55,450	FEB15	JUN16

Year	Month	Estimated Value	Range	Standard Deviation	Earliest Transaction	Latest Transaction
	FEB	$167,200	120,000	55,450	FEB15	JUN16
	JAN	$167,200	120,000	55,450	FEB15	JUN16
2016	ALL	$167,200	120,000	55,450	FEB15	JUN16
	DEC	$167,200	120,000	55,450	FEB15	JUN16
	NOV	$167,200	120,000	55,450	FEB15	JUN16
	OCT	$167,200	120,000	55,450	FEB15	JUN16
	SEP	$167,200	120,000	55,450	FEB15	JUN16
	AUG	$167,200	120,000	55,450	FEB15	JUN16
	JUL	$167,200	120,000	55,450	FEB15	JUN16
	JUN	$167,200	120,000	55,450	FEB15	JUN16
	MAY	$206,300	120,000	54,850	JUN14	MAY16
	APR	$227,500	35,000	14,450	APR14	FEB15
	MAR	$227,500	35,000	14,450	APR14	FEB15
	FEB	$227,500	35,000	14,450	APR14	FEB15
	JAN	$227,500	35,000	14,450	APR14	FEB15
2015	ALL	$227,500	35,000	14,450	APR14	FEB15
	DEC	$227,500	35,000	14,450	APR14	FEB15
	NOV	$227,500	35,000	14,450	APR14	FEB15
	OCT	$227,500	35,000	14,450	APR14	FEB15
	SEP	$227,500	35,000	14,450	APR14	FEB15
	AUG	$227,500	35,000	14,450	APR14	FEB15
	JUL	$227,500	35,000	14,450	APR14	FEB15
	JUN	$227,500	35,000	14,450	APR14	FEB15
	MAY	$227,500	35,000	14,450	APR14	FEB15
	APR	$227,500	35,000	14,450	APR14	FEB15
	MAR	$227,500	35,000	14,450	APR14	FEB15
	FEB	$227,500	35,000	14,450	APR14	FEB15
	JAN	$211,300	50,000	22,500	APR14	JUN14
2014	ALL	$211,300	50,000	22,500	APR14	JUN14
	DEC	$211,300	50,000	22,500	APR14	JUN14
	NOV	$211,300	50,000	22,500	APR14	JUN14
	OCT	$211,300	50,000	22,500	APR14	JUN14
	SEP	$211,300	50,000	22,500	APR14	JUN14
	AUG	$211,300	50,000	22,500	APR14	JUN14
	JUL	$211,300	50,000	22,500	APR14	JUN14
	JUN	$211,300	50,000	22,500	APR14	JUN14
	MAY	$196,300	55,000	25,600	MAY13	APR14
	APR	$196,300	55,000	25,600	MAY13	APR14
	MAR	$186,300	55,000	26,250	APR13	AUG13
	FEB	$186,300	55,000	26,250	APR13	AUG13
	JAN	$186,300	55,000	26,250	APR13	AUG13

Rick Berns
Box 44
Old Harbor

12/18/19

Chairman Reed Morisky Alaska
Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Proposals 63, 64, 65, 66

Dear Chairman Morisky and Board of Fish members:

My name is Rick Berns, and I am a salmon seine fisherman based out of the community of Old Harbor on the East side of Kodiak island. I have been fishing since 1972 as a crewman and started running a boat in 1976. I have been the mayor of Old Harbor since 1990, and fishing is the economic backbone of our community. The salmon fishery has been the major contributor economically to the residents of our community, and the main employment provider and these proposals pose an economic threat to not only our community but to our neighboring villages as well.

These proposals create an issue of fish quality. If you prevent Kodiak fisherman from having the ability to harvest high quality local fish on the capes, you create an issue of harvesting fish, especially pinks and chums in inner bays where the quality of fish starts to deteriorate. You also increase gear conflicts between seine and setnet as you cram everyone up into the bays.
The incidental harvest of Cook Inlet sockeye is part of the longstanding history of fishing patterns in Kodiak, and is part of a natural allocation built into the fishery. This allocation has been solidified for more than 30 years under the North Shelikof Sockeye management plan. The amount of sockeye harvested in the Shelikof is related to the run size of all sockeye producing streams, but is managed specifically for the harvest of local stocks of sockeye, chum and pink salmon. These proposals are nothing more than an attempt by Cook Inlet fisherman of sensationalizing an already known, documented, and managed allocation in the Kodiak salmon fishery.

I respectfully request you reject these proposals and leave the Kodiak management plan alone, as it is a proven working management plan having undergone repeated scrutiny by past boards and found to be solid.

Respectfully,

Rick Berns

Rick Berns
Box 44
Old Harbor
99643

12/18/19
Chairman Reed Morisky
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Proposal 58, 59, 60, 61, 62

Dear Chairman Morisky and Board of Fish members:

My name is Rick Berns, and I am a salmon seine fisherman based out of the community of Old Harbor on the East side of Kodiak island. Fishing since 1972 as a crewman and started running a boat in 1976. I have been the mayor of Old Harbor since 1990, and fishing is the economic backbone of our community. The salmon fishery has been the major contributor economically to the residents of our community, and the main employment provider and these proposals pose an economic threat to not only our community but to our neighboring villages as well.

With regard to the Cape Igvak fishery, I would to see Status Quo. This management plan was founded based on the historical fishing patterns of Kodiak fishermen. It was not created as an economic pillow for Kodiak fishermen as Kodiak stocks were depressed, but rather as a recognition that Chignik origin sockeye have comprised a component of harvest to Kodiak fisherman since before limited entry.

The Cape Igvak fishery eases pressure on the South end of Kodiak by providing more area available to the entire fleet. Traditionally, Old Harbor fisherman fished the Alitak, and Southwest Kodiak districts during June and early July, and the Igvak fishery creates opportunity for boats from Kodiak and Homer to fish in areas other than those fished by Old Harbor fishermen. As a result of poor Chignik runs in the last few years, and the lack of fishing opportunities in the Cape Igvak section, we have noticed an increase in the number of boats now fishing areas traditionally fished mostly by Old Harbor and south end fishermen.

While we recognize the poor runs to the Chignik system have placed an economic hardship on the Chignik fishermen, we would like to remind the Board that those poor runs were caused by environmental conditions, not by pressure on stocks from Kodiak fishermen. The safeguards within the Cape Igvak management plan prevent Kodiak fisherman from placing biological strain on the Chignik systems. I respectfully request the Board **reject** these proposal as the economic balance of our communities are also tied to the strength of our salmon fishery.

Sincerely,

Rick Berns

Robbie Boskofsky
Box 1
Ouzinkie, AK 99644

December 23, 2019

Alaska Board of Fisheries
P.O. Box 115526
Juneau, Ak 99811

RE: Vote NO Proposals 37, 58,59,60,61,62,63,64,65,66

Board Chairman Morisky and Board Members:

I am the president of the Native Village of Ouzinkie. My family and I choose to live in Ouzinkie. I have commercial fished with a number of Ouzinkie fishermen. Fishing is the economic base of Ouzinkie. I'm concerned that these proposals from Chignik and Cook Inlet will hurt our fishermen and our community. I'm just worried about keeping Ouzinkie together. We're down to 16 kids in the school this year. It will only take a couple more families leaving and we'll be Larsen Bay and Karluk with their schools closed. I know it may seem to you that one little regulation change here or there won't make that much difference. However, these things have a domino effect. You close Cape Igvak and then those boats, every year, are competing with our local guys in Marmot Bay.

One of the things I don't understand is why the Alaska Board of Fisheries is looking to solve Cook Inlet problems here in Kodiak. Cook Inlet doesn't have escapement problems. As I understand it, the Kenai River often hits the upper end of their escapement goal and beyond. Then I hear the problem is in the Susitna drainage. But this also doesn't make any sense either. Why would the Board look to Kodiak to solve issues in the Susitna when the problem is right there with the drift fleet in the middle of Cook Inlet? Upper Cook Inlet management problems have to start with regulating the largest and closest interceptor, not the smallest and furthest away.

From what I can see I don't see how the Board could favor Cook Inlet with an additional salmon allocation from the Kodiak area. Where is the new and expanding fishery? I read in the Cook Inlet proposals the assertion that the Kodiak seine fleet, sometime (the proposer is vague) has changed its fishing patterns. The skippers I talk to in Ouzinkie would dispute this. They have fished the capes along the Shelikof strait, on both sides, as far back as the 1950s. In fact, they believe the North Shelikof plan was a big take away from where they use to fish. It was the Ouzinkie fishermen that came back to the Board with historical evidence regarding the S.W. Afognak section of the N. Shelikof plan and persuaded the Board to modify the plan and give

them a ½ mile out to fish. So, when you look at it, there is no new or expanding fishery here on Kodiak that would justify making the changes Cook Inlet is proposing. Again, I'm asking you to just vote NO on proposals 37, 58, 59,60, 61,62, 63,64,65 and 66.

Very Truly yours,

Robbie Boskofsky

Robert W. Katelnikoff
Box 56
Ouzinkie, AK 99644

December 23, 2019

Alaska Board of Fisheries
P.O. Box 115526
Juneau, Ak 99811

RE: Oppose Proposals 58,59,60,61,62,63,64,37.65.66

Board Members:

I'm a salmon fisherman living in Ouzinkie. I'm been involved with the Tribal Village of Ouzinkie and worked hard over the years to keep our community alive. Salmon fishing is very important to Ouzinkie. I'm currently skipper on a salmon vessel. I travel all around the island to fish. It concerns me that the Board would consider eliminating the Cape Igvak fishery or further limiting Kodiak because of Cook Inlet Concerns. Both of these proposals will hurt me, my crew and the community of Ouzinkie.

The Cook Inlet sponsored proposals for Kodiak are a sham – especially proposal #66 from UCIDA. It is a fish grab, pure and simple. Why does UCIDA need to resurrect something that happened more than 30 years ago by a few Kodiak boats to justify its proposal? Kodiak has been managed on Kodiak stocks since 1989, thirty seasons ago. There are no new interceptions, only the memory of an old one. Catches of Cook Inlet fish in Kodiak today are incidental and happen because it is unavoidable in Kodiak's focus on quality pink salmon fisheries. The incidental take of Cook Inlet bound fish is historical, more than a hundred years duration, and is a natural part of the Kodiak's mixed stock fishery. The trade off to further allocate to Cook Inlet is just not worth it.

I see there are also a couple of Chinook proposals in the packet. I know that we are required to discard the larger Chinook we catch. I'm concerned about proposal 37 and some sort of universal Chinook management plan. I don't think this will work. Ouzinkie had worked hard to limit the trawl bycatch of Chinook. There are too many variables regarding Chinook to put together a comprehensive management plan --- unless it takes in both State and Federal waters.

Again, please help us keep a salmon fishing fleet in Ouzinkie and vote NO on proposals 37, 58,59,60,61,62,63,64,65 and 66.

Very truly yours,

Robert W. Katelnikoff

From: Dallasak789
To: DFG, BOF Comments (DFG sponsored)
Subject: Fwd: Written testimony
Date: Tuesday, December 3, 2019 3:36:55 PM
Attachments: Carmon_HB139_HSTA_04252019.pdf
Carmon_X_X_04252019.docx

Begin forwarded message:

From: LIO Kenai <lio.kenai@akleg.gov>
Date: Apr 30, 2019 at 2:16 PM
To: Roni Carmon <dallasak789@hotmail.com>
Subject: Written testimony

Good afternoon Mr. Carmon.

Attached are the edited versions of the testimony you dropped off for HB 139. If we don't hear of any changes you would like to make by 2:30 pm this afternoon, I will submit the one for HB 139 to the committee.

For the second one, there was no bill or resolution written on the paper. Which piece of legislation did you intend for it to accompany?

If you have any questions, please let us know.

Heather Prisk
Kenai LIO
283-2030

From: Dallasak789
To: DFG, BOF Comments (DFG sponsored)
Subject: Fwd: Complete List Of U.S. Organizations Funded By George Soros - Young Conservatives
Date: Tuesday, December 3, 2019 3:35:20 PM

This is a interesting read:
You need to look at number ,58,and number 66

Your being funded by George soaros ,to eliminate ,Commerical fisherman industry.
This is fish and game using the board of fish ,to eliminate the Cook Inlet Commerical fishery.

Begin forwarded message:

From: Dallasak789 <dallasak789@hotmail.com>
Date: Nov 17, 2019 at 7:43 AM
To: Bbird <bbird@radiokenai.com>
Subject: Complete List Of U.S. Organizations Funded By George Soros - Young Conservatives

Tap on the blue to open

https://www.chicksonright.com/youngconservatives/2019/11/16/complete-list-of-u-s-organizations-funded-by-george-soros/?utm_source=palin&fbclid=IwAR0rdGY7blkYDFuuQ--TxGONDsvo50IurS3dqGlmlPXmi-tflB3l5ubd4gU

From: Dallasak789
To: DFG, BOF Comments (DFG sponsored)
Subject: Fwd: Alaska Journal | ADFG leaders tout $11 billion return on agency spending
Date: Tuesday, December 3, 2019 3:16:51 PM

Begin forwarded message:

From: Matt Gruening <matt.gruening@akleg.gov>
Date: Oct 2, 2019 at 5:40 PM
To: Roni Carmon <dallasak789@hotmail.com>
Subject: RE: Alaska Journal | ADFG leaders tout $11 billion return on agency spending

Hey Roni,

I believe I said message**s** below. I was between meetings, listened to your voicemail, and wanted confirming that I received them as you requested.

Thanks again for the information. I will take a deeper look into this stuff when I get a chance.

Sincerely,

Matt Gruening
Chief of Staff
Fisheries Committee Aide
Office of Rep. Louise Stutes
Work: 907-465-3271
Cell: 907-209-0280

From: Roni Carmon <dallasak789@hotmail.com>
Sent: Wednesday, October 02, 2019 3:25 PM
To: Matt Gruening <Matt.Gruening@akleg.gov>
Subject: Re: Alaska Journal | ADFG leaders tout $11 billion return on agency spending

I sent 4messages not one.

On Oct 2, 2019 at 1:55 PM, <Matt Gruening> wrote:

Hey Roni

Confirming that I received your messages. I am in meetings this afternoon sorry.

Thanks for the info.

Sincerely,

Matt

From: Rep. Louise Stutes <Rep.Louise.Stutes@akleg.gov>
Sent: Wednesday, October 02, 2019 1:54 PM
To: Matt Gruening <Matt.Gruening@akleg.gov>
Subject: FW: Alaska Journal | ADFG leaders tout $11 billion return on agency spending

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From: Roni Carmon <dallasak789@hotmail.com>
Sent: Wednesday, October 02, 2019 12:27 PM
To: Rep. Louise Stutes <Rep.Louise.Stutes@akleg.gov>
Subject: Fwd: Alaska Journal | ADFG leaders tout $11 billion return on agency spending

This is just stupid/I'm not.
Only in office a week ,and he comes up with this .

If we had a commission of revenue,in stead a commission of fish?
Would he'd been as stupid?
To let 44billion dollars go through his fingers.

Begin forwarded message:

From: Dallasak789 <dallasak789@hotmail.com>
Date: Sep 1, 2019 at 8:53 PM
To: Roni Carmon <dallasak789@hotmail.com>
Subject: Alaska Journal | ADFG leaders tout $11 billion return on agency spending

https://www.alaskajournal.com/2019-04-03/adfg-leaders-tout-11-billion-return-agency-spending

From: Dallasak789
To: DFG, BOF Comments (DFG sponsored)
Subject: Fwd: This letter :I hope you make law!
Date: Tuesday, December 3, 2019 3:14:14 PM

I hope you think about ,what's coming.
The loss of the second biggest fishery, will soon be gone

Begin forwarded message:

From: Ombudsman General e-mail Account <ombudsmangeneral.e-mailaccount@akleg.gov>
Date: Oct 30, 2019 at 3:34 PM
To: Roni Carmon <dallasak789@hotmail.com>
Subject: RE: This letter :I hope you make law!

Good afternoon, Mr. Carmon,

The Alaska State Ombudsman investigates complaints about the administrative acts of state government agencies. If you have a complaint about the administrative act of a state agency and you have not been able to resolve your issues directly with the agency, you can file a complaint with our office.

You can fill out a complaint form that you can find here. You can submit it via mail, email or fax. Our contact information is:

Alaska State Ombudsman
1500 W. Benson Blvd.
Anchorage, AK 99503
Phone: 907-269-5290
Fax: 907-269-5291
Email: ombudsman@akleg.gov

You can also make a confidential complaint through our online complaint portal here.

If you have questions about the jurisdiction of our office or about the ombudsman complaint process, please contact our office directly at (907) 269-5290 or toll-free (outside of Anchorage, but within Alaska) at 1-800-478-2624.

Sincerely,

Marie Laroza
Intake Assistant
Alaska State Ombudsman

From: Roni Carmon <dallasak789@hotmail.com>

Sent: Monday, October 28, 2019 1:02 PM
To: Ombudsman General e-mail Account <OmbudsmanGeneral.e-mailAccount@akleg.gov>
Subject: Fwd: This letter :I hope you make law!

Can I submit this letter ,with out a lawyer?

Begin forwarded message:

From: Dallasak789 <dallasak789@hotmail.com>
Date: Oct 24, 2019 at 3:45 PM
To: Rep. Sarah Vance <rep.sarah.vance@akleg.gov>, Rep Stutes <rep.louise.stutes@akleg.gov>
Subject: This letter :I hope you make law!

The illegal ,act of adfg,and all he bof!
The state congress didn't intend,
The adfg ,and the bof to do this too ,the Commerical fisherman.
It was adfg,that started the dipnet fishery,it was a emergency order,back in 1989

From: Dallasak789
To: DFG, BOF Comments (DFG sponsored)
Subject: Fwd: Bof
Date: Tuesday, December 3, 2019 12:17:00 PM

Sending again
Maybe some one will read it.

Begin forwarded message:

From: Glenn E (DFG) Haight <glenn.haight@alaska.gov>
Date: Sep 30, 2019 at 4:23 PM
To: Roni Carmon <dallasak789@hotmail.com>
Subject: RE: Bof

Hi Roni,

There is an automatic response on our end when that email address is used, but it will only send the automatic response on the first email. After that it recognizes the sending email address and won't keep sending the note.

That address below looks correct. I recall last time we messaged each other I checked and we had received many emails from you.

I think we are receiving them.

Thanks,
Glenn

From: Roni Carmon <dallasak789@hotmail.com>
Sent: Monday, September 30, 2019 2:11 PM
To: Haight, Glenn E (DFG) <glenn.haight@alaska.gov>
Subject: Fwd: Bof

I've sent ,more board of fish
Messages, they used to say delivered.
I'm not getting that message any more.
So I'm not sure there going any where .
Roni lee Carmon

Begin forwarded message:

From: Dallasak789 <dallasak789@hotmail.com>
Date: Sep 30, 2019 at 2:07 PM
To: Dfg Comments <dfg.bof.comments@alaska.gov>
Subject: Bof

Talked to Doug Lang,
Commission of fish!

He told me the dipnet fishery was implemented,and thought of
Way before the oil spill.

If it was; then it was set up to harvest fish ,through the state.

And the state was selling Commerical fishing permits,
Knowing some day , they would be taking the harvest away from Commerical fishermen.
In cookinlet.

In 1989 ,the oil spill,the dipnet fishery was implemented.
30 years now,

And the Commerical fisherman ,their industry ruined.
Last year ,the dipnet fisherman took 7million fish,
The sport fisherman took 6million just on the Kenai river.

Adfg allocations ,to Commerical fisherman was ,1.3 million fish.
So 14 million fish, we are talking about the Kenai river.

The dipnet fisherman got 21 days on the Kenai river ,and 41days on the kasiolf,

We got half those day.
The commission came down took two days away from us.

Said he wasn't going to follow the plan.
That gave the dipnet fishery,non stop 9 days straight of the peak.

We got zero days of the peak ,the week of the 23 of July.

The oil companies,paying fish and game wages.
The brutal government must stop this,or buy are permits back.
You realize how many sucisides
And how must financial losses you caused.
How many divorces,broken homes,you caused.

And zero income to the state ,or bourgh.
Last year542 million dollars retail

Left the state,two sucisides

Let’s stop this massive give away.
It’s not nessesary ,limit fishing tried to go to 18, and even 24 fish .
With a fishing pole.
How stupid was that

From: Dallasak789
To: DFG, BOF Comments (DFG sponsored)
Subject: I listen to the board of fish in Seward
Date: Monday, December 23, 2019 1:28:18 PM

I believe ,your going to. Rule ,their no cost to the public ,,or no hard ship on the Commerical fishery, and the commissioner ,can rule a emergency order.
The bof has the final say,

Dipnet fishery does no harm to the local economy,there for the dipnet fishery can continue on the Kenai peninsula.

But remember, if you read the story about George soaros,you can see ,your getting funding to keep Commerical fishermen on shore.
And 542 million was what was given away as free food to the people,rather than the general fund.

That's how I'm going to fight this.
People don't need substance,or personal use.
They want jobs ,and they want a future.
You can't buy votes ,with free food.
They can go to the food bank for that!

From: Dallasak789
To: DFG, BOF Comments (DFG sponsored)
Subject: Fwd: Commerical fishing
Date: Wednesday, December 25, 2019 1:11:55 PM

Begin forwarded message:

From: Dallasak789 <dallasak789@hotmail.com>
Date: Dec 5, 2019 at 11:08 AM
To: Ethanford <ethanford@alaska.gov>
Subject: Commerical fishing

Ethan I can't be there:but we need to stop the dipnet fishery,
We need to stop catch and release on all rivers and lakes in Alaska.

We need to stop proxy fishing for king salmon.
Commerical can't fish reds,cause of low king returns:at he same time ,guides,and seniors 65 and over fish kings year round.

Proxy cards for seniors , they never stop fishing kings ,with proxy cards.

The two rivers,on the Kenai Pennisula,Kenai River ,and kasiolf River , take 543 million dollars worth of salmon .
At 15.99 a pound.
That not subsistence fishing .
It a total harvest , taken from the Commerical fishery.
It needs to stop. Today things have changed,the oil companies are selling their assets,
Adfg ,the biggest user of federal funds in Alaska.

And they re funding going to run out.
So the Commerical fishery about the only income to the state .
That's legally taken :
So maybe it's time to stop the ,catch and release,and the taking of fish by the dipnet fishery.
And concentrate on a good Commerical fishery again
Ron Carmon

From: Dallasak789
To: DFG, BOF Comments (DFG sponsored)
Subject: No more substance,or personal use.
Date: Friday, December 27, 2019 5:38:26 PM

Till guides get licensed,
They fish for free.

They cater to the substance,and personal use,and bribe ,politicians,for a wavier,and fish Commerically , and pay nothing to the state or borough,or federal governments.

Currently the guides ,and charter boats operators owe the state of Alaska,and the federal government, 44 billion dollars,
This includes the dipnet personal use,on the Kenai peninsula.

From: Dallasak789
To: DFG, BOF Comments (DFG sponsored)
Subject: Sockeye salmon ,pollack, are plankton eaters
Date: Friday, December 27, 2019 6:20:05 PM

Sockeye help ,establish the ocean ph levels, in our ocean .

We got to save these fish!
When we target sockeye salmon
They should be taken in the ocean only, we can no longer take the plankton eater in the hold up area,in river or in there spawning grounds.

We need every egg ,we can get to come back to the river as a fish.

The rivers and lakes should be a sanctuary , not a place of the blood sport of catch and release.
And derbies ,and personal use of want and waste.

Never have we seen such stupidity ,as the last twenty years on the Kenai peninsula borough.

Over 13 million fish in jeopardy ,for some 30 years now.
And almost zero dollars collected ,for revenue .

Our state broke now!
Proof of broke ,the politician are after the permanent fund.

Our fish will be our income .
Just as it always has been.

So we need to stop , personal use.
Is it a theat to our environment (yes)
Is it a threat to our economy (yes)
Is it un regulated(yes)
Is un enforcers ()yes)

Is it a threat to our planet (yes)

Will it hurt any one not to have personal use,(no)

The majority of the people ,think personal use ,is not a good thing.

And we need jobs ,more than we need personal use.

Roni carmon

From: Ross Kendall
To: DFG, BOF Comments (DFG sponsored)
Subject: Fwd: Kendall. comments
Date: Friday, December 27, 2019 9:41:42 AM

Sent from my iPad

Begin forwarded message:

> Dear. Board Member
>
> As a setnetter on the west side of Kodiak Island since 1979 I would like to address a few of the proposals before you.
>
> Proposal # 67. Allow the use of single filament web.
>
> The slime we are getting on our nets is getting worse by the year. Using single filament web will allow us to fish a little longer into a slime event. Already we are using 4500 psi pressure washers and 2" volume pumps trying to keep the nets clean. Please note that this change will not affect any other fishery or area. The use of monofilament web will allow our nets to stay clean a little longer.
>
> Proposal #70. Karluk Pink Proposal. Like the Karluk Reds, the Karluk Pinks come by our nets on their way to the Karluk. They should definitely be part of the management plan after the 6th of July. When they build up in the Karluk lagoon the west side should remain open and not close because Bowman Creek or some small west side pink run looks like it might be short a few pinks.
>
>
> Proposal # 71. Westside Inner Bay Proposal. We should definitely keep Seiners out of the inner bays until interim escapement has occurred.
> I believe that over the years there is a problem with the management plan that has contributed to the falling early pink returns on the west side. When the projection is for fewer pinks F&G managers limit the early July openings to 3 days a week or even two days. The problem comes when they re-open after the fish have gone into the inner bays for 4 days. The seiners, because they are alllowed to, head into the inner bays and spend a day or two cleaning out whatever build up has taken place. Two years from now a 3.5 day opening has become a 2.5 day opening followed by 4.5 day closing. If we would keep seiners out of the inner bays on the West side until late in July I believe the early July pinks would return and we could all fish on them. In 1979 and the eighties the first 1000 pink day for a setnetter on the West side of Kodiak came in the first or second week of July and the openings starting on July 6th were 4 or 5 days long. That situation should be the goal going forward .
>
>
> Finally Cook Inlet Proposals 37, 52 to 56. If the Northeast wind is blowing the Cook Inlet reds don't show up on the west side of Shelikof Straits. The west side seiners have had restrictions on their fishery for years. Every four or five years with the right westerly some one near the capes gets a few. So we are going to restrict fishers along the westside of Kodiak Island every year on the off chance the wind is blowing westerly at the wrong time. Perhaps Cook Inlet Commercial fishers should restrict dip netters in the Kenai river and restrict tourists in campers who pay for their drive to Alaska by canning their catch and selling it back home in Nebraska. With the resulting additional escapement they could increase their run. Or they can pray for east winds on Shelikof Straits in early July.

>
>
>
> Virginia: Above is my comment Ross

Sally Rittenhouse
PO Box KWP
Kodiak, AK 99615

December 26, 2019

Chairman Reed Morisky
Alaska Board of Fisheries
Board Support Section
PO Box 115526
Juneau, AK 99811-5526

RE: Proposals 37, 58-66, and 70-77

Dear Chairman Morisky and Board of Fish members:

My name is Sally Rittenhouse. I am a third generation fisherman and I have spent my entire life dedicating myself to the fishing industry in Kodiak from gillnetting, longlining, pot fishing, jigging, and, most importantly for me, seining. Very recently, I purchased my own boat so I could participate in the seining fishery. It is difficult for young people like myself to enter into this industry with a workable boat, permit, and adequate gear. When we do manage, we are at odds with environmental factors that have made our Kodiak salmon runs unpredictable; in addition to this, outside influences threaten to negatively impact the foundation of Kodiak's management plan and create yet one more lofty barrier to surmount. I became heavily invested in the salmon fishery in Kodiak--following family tradition--because of this solid Kodiak management plan that has existed my entire life. With the growing bombardment from different areas attempting to change the longstanding Kodiak management that has proven itself many times over to be reliable and accountable, young fishermen like myself could eventually find ourselves invested in a fishery that no longer produces a reliable livelihood. It is for these reasons that I respectfully request the Board to reject Proposals 37, 58-66, and 70-77.

The Kodiak salmon management plan is designed to account for nonlocal salmon traveling through Kodiak waters. It is a tried and true system with a longstanding history that has proven to work. Our management plan already contains adequate and solid safeguards against targeted interception of sockeye salmon traveling to origins outside of Kodiak. Placing further restrictions and limits on Kodiak fishermen is unfair and unnecessary. My family lives in a small community off-grid where we rely heavily on our salmon fishery not only for subsistence but also as our livelihood. Our reliance on our salmon industry has made it possible for us to maintain our lifestyle. To have restrictions and limits placed on the salmon fishery would impact us in more ways than just financially. It could cause us to lose what we have worked our entire lives for. These proposals, should they pass, would greatly reduce our productivity and our ability to continue living as we have lived for three generations.

Many of these proposals are just an attempt of other fishing groups to blame Kodiak fishermen for their

failing salmon returns. May it be reminded that salmon runs are cyclical, experiencing highs and lows. Kodiak has experienced low returns much the same as Chignik and Cook Inlet have. Changing the construction of our complex management plan is not going to fix environmental factors outside of our control. Again, I respectfully urge you to reject proposals 37, 58-66, and 70-77. I appreciate the opportunity to comment.

I hope the Board continues to apply consistency in its application of the guiding policies such as the Mixed Stock Fisheries Policy, and the Sustainable Fisheries Policy.

Sincerely,

Sally Rittenhouse

Sandra Katelnikoff Lester
Native Public
12/27/2019 04:00 PM AKST

RE: Comment on multiple proposals

It is my understanding that certain agencies have certain authority to make decisions. These agencies use public comment as a way to make informed and logical decisions. In this case additional information came from science which alluded to information that may not be accurate because the information is subject to variables that are not reliably consistent. Information gathered through the use of these variables has more reliability for the propensity to change than for consistency. Therefore changing a set of rules and regulations with the knowledge that the variables fluctuate may result in unforeseen catastrophe detrimental to the Kodiak Island fisheries. It us the people's understanding the agencies have authority to make changes using current information but we also realize the agency does not possess the autonomy to make changes without public comment. In this situation the needs of one group does not out way the needs of the other . No changes are necessary. No changes are justifiable. To many variables are not consistent or stable. Think of the people and consider the negative affect to the island fishing industry. Our economy is derived mainly from the fishing industry. Our borough, city's and tribal governments will be affected which in turn will affect every citizen. The changes proposed will change the fabric of the native culture. The federal and state government and their agencies have a duty to protect the longevity of the little that remains to our culture and way of native life. Consider the choices for change wisely. At this point in time the best decision is to make no changes to current rules and regulations. Thank you for reading everyone's concerns. Best Regards, Sandra M Katelnikoff Lester

Shawna Rittenhouse

12/27/2019 10:58 PM AKST

RE: Comment on multiple proposals

RE: Proposals #37, 58-66, 70-77 Dear Chairman Reed Morisky and Board of Fish Members: I am a 55 year old second generation commercial fishermen who has fished Kodiak for 40 years. I've been running my own fishing vessel for the past 30 years, participating in multiple fisheries but namely, salmon seining. My husband and two daughters are deeply invested in the salmon fishery here, as well as many of our friends and relatives. The changes to Kodiak's management plan that many of these proposals ask for are unnecessary, as many of them are false accusations lacking in evidence. Kodiak's salmon fishery has always been well-managed and has been considerate of not just the locals who fish here, but also towards other areas such as Chignik and Cook Inlet. It is not Kodiak's fault that these areas are experiencing low salmon returns. Kodiak has had more than its fair share of low returns that we all have managed to suffer through. Trying to change our management plan is not going to fix what is just a known fact: That salmon returns are cyclical in nature. I have seen a lot of highs and lows in all fisheries during my career, yet managed to survive without trying to cause irreversible harm to or blame some other fishing group. We all want to make it and continue doing what defines us. I would like to see the Kodiak salmon fishery remain accessible not only to folks like myself, but to our future generations, like my daughters. These proposals would cause great harm to the current and future livelihoods of countless Kodiak fishermen dependent on the salmon industry. I respectfully ask that the Board please oppose Proposals #37, 58-66, and 70-77. Thank you for allowing me to comment. I hope the Board continues to apply consistency in its application of the guiding policies such as the Mixed Stock Fisheries Policy and the Sustainable Fisheries Policy. Sincerely, Shawna Rittenhouse

Stephen Rittenhouse

12/27/2019 11:47 PM AKST

RE: Comment on multiple proposals

RE: Proposals #37, 58-66, 70-77 Dear Chairman Reed Morisky and Board of Fish Members: I am a 62 year old second generation commercial fishermen who has fished Kodiak for 40 years. I own a setnet site on the west side of the island in Uganik Bay, which is where my family's home is also located. My wife Shawna has been running a salmon seiner for nearly 30 years. My two daughters, Sally and Michelle, have each been fishing for about 20 years, and are trying to follow in their mother's footsteps by recently buying into their own seine operations. I would especially like to see my daughters succeed in their business ventures, but I am concerned that, should these proposals pass, it is going to greatly harm their ability to do so. Not to mention threaten mine, my wife's, and many other fishing friends and relatives who are dependent on the salmon season as their primary source of income. Considering that fishing is unstable enough due to environmental factors and the usual highs and lows of salmon runs, the last thing we need are unnecessary obstacles adding to the mix. The changes to Kodiak's management plan that many of these proposals ask for are unnecessary, as many of them are false accusations lacking in evidence. Kodiak's salmon fishery has always been well-managed and has been considerate of not just the locals who fish here, but also towards other areas such as Chignik and Cook Inlet. It is not the Kodiak fishermen's fault that these areas are experiencing low salmon returns. Kodiak has had more than its fair share of low returns that we all have managed to suffer through. Trying to change our management plan is not going to fix what is just a known fact: That salmon returns are cyclical in nature. I have seen a lot of highs and lows in all fisheries during my career, yet managed to survive without trying to cause irreversible harm to or blame some other fishing group. We all want to make it and continue doing what defines us. I would like to see the Kodiak salmon fishery remain accessible not only to folks like myself, but to our future generations, like my daughters. These proposals would cause great harm to the current and future livelihoods of countless Kodiak fishermen dependent on the salmon industry. I respectfully ask that the Board please oppose Proposals #37, 58-66, and 70-77. Thank you for allowing me to comment. I hope the Board continues to apply consistency in its application of the guiding policies such as the Mixed Stock Fisheries Policy and the Sustainable Fisheries Policy. Sincerely, Steve Rittenhouse

Stephen Shangin
8840 Washburn St.
Anchorage, AK 99502

RECEIVED
NOV 2 2019
BOARDS

Alaska Board of Fisheries
P.O. Box 115526
Juneau, Alaska 99811-5526

November 24, 2019

Subject: Cape Igvak Fishery on Chignik Sockeye Salmon

Dear Chairman and Members of the Alaska Board of Fisheries,

There are five proposals coming before at your Kodiak meeting that address Igvak. As a Chignik fisherman I am in full agreement with two: Proposals 60 and 61.

Unfortunately I am unable to attend the Kodiak meeting, not from lack of desire or interest but because I simply cannot afford the cost of air travel, meals, and a hotel room. My family is broke from the poor salmon fisheries that Chignik has experienced in recent time. My debts are significant, and while last season I caught about ½ of what I usually catch the main problem is that I have never experienced such a season as in 2018 when our fishery only caught 128 sockeye (I did not catch a single one of them!). Being closed for the entire 2018 season put me and others in debt. It is going to take several average and good seasons to recover, and unfortunately Chignik is not likely to see any semblance of a good sockeye fishery or even an average one this next season based on the forecast. We may very well have no fishing time on our first run in June and July as was the case last season, so I have been told.

Chignik salmon fishermen need significant relief from the neighboring interception fisheries not just as currently provided in the SEDM and Igvak management plans but when the Chignik runs (hopefully) become what they use to be, reasonably strong and stable. Those other areas have plenty of fishing opportunity, and we do not as we are tied totally to local stock management by regulation. When one or both Chignik runs are short on escapement we do not fish. If like Kodiak we had multiple sockeye runs (30+) and hatchery fish we would not have the problem that we now have. Hopefully you understand that the prospect of the entire Chignik fleet being tied to the dock for most, if not all the season, when our early and late runs fail, is real.

Please support the proposed increase to the Chignik harvest preference (Proposal 61) and the allocation change to 5% (Proposal 60).

Thank you,

Steven Horn
1210 Mission Road
Kodiak, AK 99615

12/26/2019

Chairman Reed Moriskey
Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811-5526

RE: Proposals 37, 58-66, 70-76

My name is Steven Horn. I have been an owner/operator in the Kodiak seine fishery for the past 47 years and a crew member for 7 years prior to that. You might say I have some history in the fishery. I've been to more Board of Fishery meetings than I care to count and it is always to defend the Kodiak fishery.

I respectfully request you reject proposals 37, 58-66, and 70-76. They are all merely rewritten and reworded proposals that have been before us in some form or another using the strategy of death by a thousand cuts. We have the Igvak Management Plan, North Shelikof Management Plan as well as ones for all other Kodiak areas, which over time have been critiqued and tweaked to become solid utilized management tools. Yet every 3 years when Kodiak area comes up in the board cycle there are a bunch of proposals to further restrict our fishing time and area. The only thing that's different from previous Board meetings is new board members hearing the same old tune. What a huge waste of time and resources. At best we keep the status quo or we lose a little bit more. In my 50+ years of fishing Kodiak I've lost a lot.

I ask this board to take a hard look at where these proposals come from. Has Chignik ever addressed their intercept fishery of Kodiak bound fish or Area M bound fish, or how about Cook Inlet or Bristol Bay bound fish or are we to naively assume that the only fish entering the Chignik management area are Chignik fish. Where's their management plan? Where's their accountability? If you have any doubts, check out the geography.

How about Cook Inlet, let's talk about the ever increasing population of South Central Alaska with ever increasing sport fishing, dip netting, catch and release of King salmon ad nauseam.(What's the survival rate there?) Is every tourist owed a shot at our resources? I guess the answer is shut down all fisheries outside of Cook Inlet. What about trawler bycatch of Kings in the gulf. I could go on and on. I just don't fathom how the Kodiak fishery is always the bullseye.

Again I urge you to reject proposals 37, 58-66, and 70-76.

I know this letter will probably not even get read to the end if at all but to those of you who do I appreciate you taking the time and thank you.

Respectfully

Steven E. Horn

Steven Roth

12/27/2019 01:51 PM AKST

RE: PROPOSAL 77 Close waters within 500 yards of the terminus of the Ayakulik River to commercial salmon fishing September 1–October 31

Alaska Board of Fisheries Board Support Section P.O. Box 115526 Juneau, AK 99811-5526 Re: Opposition to Proposals 73, 74, 75, and 77 Dear Chairman Morisky and Board of Fisheries Members, I am Steve Roth, Kodiak and Lower Cook Inlet salmon purse seine permit holder. Thank you for the opportunity to comment on proposals for the Kodiak finfish meeting. My wife and I reside in Homer, but fish in Kodiak. I own and operate the F/V Sea Grace. We rely solely on salmon seining for our livelihood and annual income to support our business, our family and contribute to our Alaskan economy through business and personal expenditures. ? I oppose the following proposals (73, 74, 75, and 77) because I support the current management plan as written. Chinook are not a target species for commercial fishermen, there is already a non-retention policy for fish exceeding 28 inches I ask that the Board reject these proposals. Thank you for your time and consideration, Steve and Jenny Roth F/V Sea Grace Homer, AK

TANGIRNAQ NATIVE VILLAGE
Woody Island Tribal Council

December 20, 2019

Alaska Board of Fisheries
P.O. Box 115526
Juneau, AK 99811

Re: Maintain Kodiak's Salmon Fishery, Oppose Proposals: 37, 58, 59, 60, 61, 62, 63, 64, 65, & 66

Dear Alaska Board of Fisheries:

Tangirnaq Native Village (aka Woody Island) is a federally-recognized Tribe whose Tribal lands are located within the Kodiak archipelago. Many of our Tribal members participate in Kodiak's salmon fishery, which is vital to the economy of the Kodiak area and the livelihood of many of its residents. Loss of salmon fishing opportunities will have a direct impact on Tangirnaq Native Village and its members.

The Kodiak salmon fishery has not expanded in a way which justifies any change to the Cape Igvak Management Plan, with fewer permits being fished now than a decade ago. Kodiak's management plans cover the entire archipelago and the mainland, and only allow fishing openings based on the presence of local stocks. Time, experience, and scientific studies have all shown that the incidence of Cook Inlet sockeye in Kodiak management area fisheries varies widely, and is inconsistent as to area and timing.

In the time that the Cape Igvak Management Plan has been in place, it has effectively managed this fishery. The Plan ensures both escapement into the Chignik system and an economic safety net for Chignik fishermen by limiting Kodiak. Under the Plan, Kodiak has averaged about 12% of the catch during years when fishing has occurred. The conservation aspects of the Cape Igvak Management Plan were highlighted with Chignik's recent run failures, as there was no fishing at Cape Igvak.

In summary, on behalf of Tangirnaq Native Village and the Woody Island Tribal Council, I request that the Board of Fisheries take no action on Proposals 37, 58, 59, 60, 61, 62, 63, 64, 65, & 66.

Sincerely,

Gwen Sargent

Gwen Sargent, President
Tangirnaq Native Village

3449 East Rezanof Drive · Kodiak AK 99615 · Phone (907) 486-9872 · info@woodyisland.com
www.woodyisland.com

From: Terri Springer
To: DFG, BOF Comments (DFG sponsored)
Subject: Vote NO Cook Inlet proposals 37,, 58-66
Date: Thursday, December 26, 2019 4:44:50 PM

Dear Chairman and BOF members,
My 1st year setnet fishing on the Westside of Kodiak was 1968. As you can imagine there have been many changes in our fishing industry since then, both in management and regulations. But none that have been of greater concern than the Cook Inlet proposals 37, 58-66.
The umbrella concept and or 4 week blanket closures from June 25-July 28 where 65-69% of our total income is caught would be devastating to our family! Not only personally, but our community would be facing catastrophic economic disaster! From processors to cannery workers, and all Kodiak businesses would be severely negatively impacted by proposals that have such limited substance to a historical fishery other than “I want more”!

Closures will force the seine fleet into already congested areas, and with NO regulations for the co-existence of seine/setnet, we as setnetters will lose even more than we do now. Already at various times due to other area closures we are “shut down” by seiners setting on both sides of our gear and at times double setting! That is almost 2/3 of a mile blocking off all fish to our 150 fathom net. The result of a forced increase in the seine fleet to our area due to the proposed Cook Inlet closures will be the END of our livelihood.

Forced closures will devastate our local runs from overescapement and the quality will plummet. As seiners are the only one allowed into the inner bays, all Westside setnetters will lose.

This is a terrible precedent to set. Salmon are considered “common property” and do not “belong to” the management area where they were born.
By disrupting one areas fishery to give the advantage to another area will have statewide repercussions as other areas jump on the “THEY’RE MINE” bandwagon!

Kodiak fisheries is a historical fishery. We are not fishing in any new areas. The same species come and go year after year. But every year is different! The Westside sees very few Cook Inlet fish when the wind blows easterly. There is no way to determine what the weather and run will be year after year.

Thank you for your considerations.
SO4K setnetters
Tom & Terri Springer

Sent from my iPad

Travis Berns
PO Box 33
Old Harbor AK
99643

12/18/19

Chairman Reed Morisky
Alaska Board of Fisheries
Board Support Section
P.O. Box 1 15526
Juneau, AK 99811-5526

RE: Proposals 63,64,65,66

Dear Chairman Morisky and Board of Fish members:

I am a Kodiak salmon seiner based out of my hometown of Old Harbor. I started salmon fishing when I was 4 years old with my dad in 1980. I started officially crewing in 1990 when I was 14, and bought my own salmon seiner in 1999 during years when the price of reds was $0.65 and humpies were $0.05. My first years as a boat owner were difficult to make a living on salmon alone and I had to fish various other fisheries just to make it such as cod, and crewing in the Bering Sea. Over the past few years as a result of declining options in other fisheries, salmon has become my primary moneymaker. I request you **reject proposals 63, 64, 65, and 66**.

These proposals are unrealistic. The proposer is assuming that all we catch is sockeye bound for Cook Inlet. We have already switched over to pink and chum salmon management by the beginning of the timeframe suggested in this proposal. Growing up in Old Harbor, we have traditionally fished the Eastside during the early openers in July because often times these openers are shorter and it is hard to justify running to the other side of the island and increasing travel time and costs in doing so. In years past, harvest of sockeye returning to local systems such as Saltery, Olga, and Upper Station as well as early run pinks and chums on the Eastside have provided opportunity for Old Harbor fisherman to fish close to home and make money doing so. On years where these systems are weaker, we fish on the Westside of Kodiak and these proposals threaten the ability of these fisherman to fish in traditional fishing locations on local sockeye, pink and chum stocks.

The board needs to reject these proposals. The Kodiak salmon fishery is managed under a longstanding management plan that was created to manage local stocks. The incidental harvest of non-local stocks is minimal and what little we do catch is part of our historical harvest and historical allocation created when the BOF created the North Shelikof Sockeye Management plan in 1989. Please leave the Kodiak fishery as is, as the management plan is working just fine.

Respectfully,

Travis Berns

Travis Berns
PO Box 33
Old
Harbor,AK
99643

12/18/19

Chairman Reed Morisky
Alaska Board of Fisheries
Board Support Section
P.O. Box 1 15526
Juneau, AK 99811-5526

RE: Proposals 58,59,60,61

Dear Chairman Morisky and Board of Fish members:

I am a Kodiak salmon seiner based out of my hometown of Old Harbor. I started salmon fishing when I was 4 years old with my dad in 1980. I started officially crewing in 1990 when I was 14, and bought my own salmon seiner in 1999 during years when the price of reds was $0.65 and humpies were $0.05. My first years as a boat owner were difficult to make a living on salmon alone and I had to fish various other fisheries just to make it such as cod, and crewing in the Bering Sea. Over the past few years as a result of declining options in other fisheries, salmon has become my primary moneymaker. I suggest you reject proposals 58, 59,60, and 61.

The Cape Igvak fishery has been the best chance for me to make money in June. Not having the Igvak fishery in June has significantly impacted my decision of where to fish, and it is hard to justify even fishing without that increased chance of making money. I am one of the few fishermen from Old Harbor that fish Igvak when it is open, and without it, the pressure on south end stocks is increased. This also makes it harder for management to give us adequate time to gain any economic value from scratchy June fishing.

The Board needs to leave the Cape Igvak fishery as is. This part of the Kodiak salmon fishery is historic and was created to give Kodiak fisherman access to the traditional fishing grounds on the mainland district. With the safeguards in the management plan, we don't fish in Igvak unless Chignik is already fishing, so situations like the run failure in 2018 did not happen because of Kodiak fisherman catching Chignik fish. Leave the Cape Igvak fishery as is.

Respectfully,

Travis Berns

ravis Berns

Vickie Novak
Box 61
Ouzinkie, AK 99644

December 23, 2019

Alaska Board of Fisheries
P.O. Box 115526
Juneau, Ak 99811

RE: Vote NO Proposals 37, 58,59,60,61,62,63,64,65,66

Board Chairman Morisky and Board Members:

I live in the community of Ouzinkie and I've served on the Ouzinkie Native Corporation Board of Directors in the past. I've was married to Ouzinkie commercial salmon fishermen and now work for the Corporation as the Shareholder Development Manager. I interface with Ouzinkie residents to assess needs for the Corporation. For a long time, we've identified the need to strengthen the Ouzinkie fisheries economy as an overarching Ouzinkie need. These proposals from Chignik and Cook Inlet just go in the other direction. Rather than strengthening our rural fisheries-based economy they only take more away. Here in Ouzinkie we've lost our crab fishery, our herring fishery, our halibut fishery, most of our limited entry permits and now we keep having to defend the only fishery we have left – our salmon fishery.

The Board's mixed stock salmon fisheries policy provides that the Board's preference in assigning conservation burdens in mixed stock fisheries is through management plans set out in area regulations. Long-standing management plans are presumed to incorporate conservation burden and harvest allocation. It follows, then, that Kodiak's multiple management plans indicate that allocation and conservation apportionments are long-accomplished, with several prior boards affirming their equity.

If changes are considered for these long-standing stable fisheries, significant new information must be provided to justify upsetting the stability, or the changes will appear arbitrary which would compromise the Board's reputation as a fair and impartial regulator. Kodiak's stable and durable salmon fishery management plans have withstood an onslaught of proposed changes from both Cook Inlet and Chignik over the past 30 to 40 years. All of Kodiak's commercial salmon fisheries are covered by management plans focused on local stocks and have been for several years. There are no areas not covered by a plan.

Extensive proposed changes to Kodiak salmon management, therefore, must be well justified to overcome the current allocative stability cemented over a long time by past boards. To change

these plans just for the sake of change would invite twisting, perverting, or ignoring the allocation criteria in order for this board, in contrast to all prior Boards, to get a different allocative result.

More specifically, the Cape Igvak proposals, # 58-62, are all 100% allocative in nature. The proposers do not even attempt to provide credible new information to justify dramatically changing the long-standing Cape Igvak management plan. The Cook Inlet proposals, especially proposal 66, suffer similar deficiencies. There is no new information regarding the magnitude of Cook Inlet stocks in the Kodiak Management area and no harvest rates set forth that would warrant upending the stability of Kodiak Island's seven management plans.

Speculation, scattergun cuts, and blind stabs are not credible reasons to upset a management plan, and are not hallmarks of the Board's fair and impartial process. In summary, the proposers have not met their burden of providing measurable evidence of new fishing patterns or new stocks of concern.

This all leads me back to the impacts of regulation changes on Ouzinkie. When Cape Igvak is closed, more vessels compete with our local vessels for limited hook hauling spots. This reduces local catches. If more area were to be closed to "protect" Cook Inlet stocks, then more vessels will crown into the inside areas around Ouzinkie and where Ouzinkie vessels fish. Again, this will reduce local catches of salmon. Said differently, if you grant any one of the 10 proposals listed above (with the exception of the Igvak registration proposal #62) there will be a direct economic impact on Ouzinkie.

Finally, in closing, I want to Thank the Board for your creation of the Ouzinkie subsistence fishing area at your last meeting. This, as you will remember, is a fishery supported by the Kodiak Regional Aquaculture Association by imprinting sockeye salmon on the Ouzinkie harbor. You created an exclusive subsistence zone for when these fish return. In each of the last three seasons Ouzinkie residents and others have taken advantage of this fishery and enjoyed the benefits of the exclusive zone. We now have fish for the elders and smoked and jarred fish in abundance. As a community, we are appreciative of what you created last Board cycle.

Thank you for considering my concerns about proposals 37, 58,59,60,61,62,63,64,65, &66. Please help Ouzinkie and Kodiak's salmon fishermen buy voting NO on these proposals.

Sincerely yours,

Vickie Novak

Vickie Novak

Virginia Adams
Kodiak Salmon Workgroup
12/27/2019 10:18 AM AKST

RE: Comment on multiple proposals

My name is Virginia Adams. I have been a commercial fisherman on Kodiak Island since 1980. I have owned and operated a set net site on Uganik Island on the west side of Kodiak for 40 years with my husband and son and hired crew. It is with great dismay that I once again have to spend tremendous time, energy and capital on responding to the never ending attacks by Cook Inlet salmon fishermen on the complex and successful Kodiak Management Area salmon regulatory plans. I was a founding member of the Kodiak Salmon Work Group and dedicated the same precious time and resources to this battle in 1995. It was in the preparation for that Board of Fishery meeting in 1995 that we compiled volumes of data showing the incidental catch in the KMA of Cook Inlet bound salmon to NOT be of concern for reaching Cook Inlet escapement goals or affecting commercial harvest opportunities for Cook Inlet commercial or sport salmon fishermen. And yet 25 years later we find ourselves with the same locked horns, over the same issue, attempting again to completely rewrite and disrupt the KMA because of the known fact that Cook Inlet bound salmon swim through Kodiak Island waters and are incidentally harvested by Kodiak salmon fishermen. Those fish always have and always will be incidentally caught in Kodiak. There is nothing new in the past 25 years. There IS a genetic study, short but sweet if cherry picked by Cook Inlet fishermen, that shows Cook Inlet salmon harvest in Kodiak. No revelation there. Lets not mention the hundreds of thousands of pounds of Kodiak salmon harvested during this time period. But I am getting off track. My point is this constant attack on Kodiaks salmon management has to stop. There are reams and reams of paper showing the incidental catch of Cook Inlet bound salmon does not contribute to any issues with escapement concerns or harvest restrictions in Cook Inlet. This constant threat from Cook Inlet groups costs Kodiak salmon fishermen, and our ADF&G Dept, and our entire community, tremendous time, energy and money. There has to at some point, and I hope NOW, a definitive "enough is enough" on the same attack over and over again.

Wallace Fields
P.O. Box 8370
Kodiak, AK 99615

December 27, 2019

Alaska Board of Fisheries
Board Support Section
P.O. Box 115526
Juneau, AK 99811

Regarding Proposals 66,65, 64, 63 and 37.

Dear Alaska Board of Fisheries:

My family has commercially fished salmon in the Kodiak Area for the past 66 years. This past summer was my 58th season at our set gillnet site in Uyak Bay, on the West side of Kodiak Island. Our nets are in open water on the Shelikof Strait. Some of our sites have been fished continuously since 1929 and many since before Statehood.

Over the last 50 plus years I've observed lots of changes in our salmon fishery. However, some things haven't changed. First, set gillnetting for salmon is still hard physical work without much help in technology or hydraulics. Second, since 1975 the same amount of setnet permits, with the same amount of gear for each permit, has been allowed. And third, Cook Inlet origin sockeye in the Kodiak area are unpredictable. I've seen years when we caught a fair amount of Cook Inlet fish for a day or two and other fishermen, just across the bay, didn't catch any. In other years, no one in our area saw a noticeable increase in larger sockeye during July and then, in some years, other people in Uyak Bay seem to catch Cook Inlet bound fish and we don't. That's why I get frustrated when I read proposals like 65 and 66 that claim there is "new information" about Cook Inlet fish in the Kodiak area and more regulations are needed. UCIDA knows better!

Every three years when the Kodiak salmon fisheries are up for consideration by the board, a new round of accusatory proposals are hurled at Kodiak about catching sockeye salmon bound for Cook Inlet. Sometimes the firing squad consists of new participants unfamiliar with the histories of Kodiak and Cook Inlet fisheries. Sometimes it's old hands at the game who try again to convince a new board that Kodiak is now expanding the Kodiak fishery to intercept Cook Inlet fish.

This round, the advocates are pointing to the Shedd genetic sockeye ID study and claiming that the report is "new information". Actually, the report adds additional detail to what managers already know. Let's have a quick review: The Kodiak incidental harvest of Cook Inlet sockeye has been going on for more than a hundred years. The earliest tagging report is from 1928 (duplicated in 1929) by Rich and Morton. That was 92 years ago. Rich tagged 700 sockeye in

August from a trap in Uganik Bay. Most of the recoveries came from Kodiak fisheries, but two tags were recovered in Cook Inlet, despite no real recovery effort there.
In 1948 and 1949, Don Bevan tagged about 11,000 sockeye from traps in northwest Kodiak. Small numbers (28 and 13, respectively) were recovered in Cook Inlet, again without a targeted recovery effort.

Forty one separate sockeye salmon tagging efforts around Kodiak Island took place in the 1960's and 1970's by ADF&G. The recoveries, often small in number, showed a highly mixed composition of stocks from all parts of Kodiak Island, Cook Inlet and Chignik. Several stock composition findings by Barrett and Swanton for the years 1988-1992 in the North Shelikof district showed a large mixture of stocks with Cook Inlet stocks dominant some years.

More recently Shedd's genetic sockeye stocks ID study for 2014-16 showed with more precision which stocks are present in Kodiak. Nevertheless, when you add the numerous mixed stock analyses with the recent genetic stock identification studies, they all show that Cook Inlet origin stocks are present in the Kodiak seasonally at a wide range of magnitude. Think of it, the conclusions of the Shedd study with modern technology is essentially the same as all the tagging studies over the last 90 years: Kodiak's local stock fisheries has a component of Cook Inlet origin fish.

If there were something "new" in Kodiak that justified regulation change based, perhaps, on the Board's mixed stock policy Cook Inlet advocates would need to show increased "targeting" efforts in specific areas, changes in Kodiak's salmon management plans that are not based on local stocks or some new fishing pattern that hadn't previously occurred. The "hard facts" support for their proposals are missing from the Cook Inlet advocates proposal narratives. Active Kodiak seine permits are much reduced from 20 years ago During July, the Kodiak seine fleet is widely dispersed and catches far more local pinks and chums than Sockeye. And finally, new or expanding fisheries in the Kodiak Management Area are not identified because they do not exist. Consequently, Cook Inlet advocates have not met their burden to prove a basis for changing Kodiak's existing management plans. Vote NO on proposals 66, 65, 64, 63 and 37.

Thank you for your consideration of my comments.

Sincerely yours,

Wallace Fields

Randy Blondin
fishermen
12/27/2019 10:26 AM AKST

RE: Comment on other issues

To whom it may concern / Board of Fisheries My name is Randy Blondin, as the board is aware I have written several letters explaining my concern with the regulation change to the Kodiak Dungeness fisheries that was adopted a year and half ago (proposal #209). I am a fisherman trying to work my way through the system to get this proposal changed as it was adopted hastily. I now have the Department of Fish and Game acknowledging this proposal needs to be adjusted. (For example the regulation says we must pull our Dungeness pots every 14 days, however, all Kodiak fishermen agree that time table is unworkable and needs to be changed to 30 days. The Kodiak Department of Fish and Game now acknowledges it should be 21 days). Never the less all parties agree the regulation needs to be adjusted. What I am attempting to do is to get the regulation changed before our next Dungeness crab season May 1st, 2020. I submitted a proposal in October assuming it was going to be on the agenda for the December meeting so that there could be public testimony at the January meeting in Kodiak, however, because I was unaware of the process it was not on the agenda for the January meeting in Kodiak-so I am now trying to get a proposal on the March meeting in Anchorage. I am writing this letter because I have an important appointment in the lower 48 during the Kodiak Meeting in January. However, it is a good opportunity for other fishermen besides myself impacted by this regulation to voice their concerns. What myself and other Kodiak Dungeness fishermen are asking for at the January meeting in Kodiak is for the board to please put a proposal on the agenda for the March meeting in Anchorage where this issue can be addressed. If you have any questions feel free to contact me at 907-512-9494. Thank you, Randy Blondin

Alaska Board of Fisheries
Reed Morisky, Chair
Attn: Glen Haight, Executive Director
1255 W 8th Street
P.O. Box 115526
Juneau, AK 99811-5526

December 27, 2019

Dear Chairman Morisky and members of the Board of Fisheries,

On behalf of all of Alaska's aquaculture associations, we would like to thank you for the opportunity to comment on the Agenda for the Hatchery Committee Meeting to be held March 7, 2020. It remains the case that the complexity of Alaska's fisheries enhancement programs and regulatory structure make it difficult to gain a thorough understanding of them in a single day. It is our hope that the continuation of this process, through Joint Protocol on Salmon Enhancement (#2002-FB-215), will broaden the Board's and the public's understanding of these unique and dynamic programs which are administered by their diverse regional non-profit organizations.

The Hatchery Committee meeting is an important link in gaining greater depth of knowledge related to ongoing hatchery research as well as the aquaculture associations themselves: their organizational structure, statutory and regulatory oversite, and even, to some degree, day-to-day operations. With just one day allocated to the Hatchery Committee meeting, the agenda must be both focused and specific. We suggest breaking the day into two or three presentations beginning with an introductory presentation that delves into hatchery funding and lending mechanisms which should include a presentation from the Department of Commerce, Community and Economic Development, as well as information from ADF&G that touches on fisheries management for hatchery cost recovery and brood stock, organizational structure and governance, departmental oversight, and Annual Management Plan approval. Additional presentations focused more on how hatcheries and hatchery associations actually operate from planning to achievement of production goals may also be of interest to the Board, along with review and current updates on the Alaska Hatchery Research Project.

We respectfully submit the following topic outline for your consideration:

1. **Funding and Corporate Structure**
    a. Department of Commerce, Community and Economic Development
        i. Fisheries Enhancement Loan Program
        ii. Return on investment (SET vs. Common Property Contribution)
        iii. Lending Policy and Regulatory Structure
    b. Department of Fish & Game
        i. Aquaculture Board Composition (Statutes)
        ii. Cost Recovery (Statutes)
    c. Departmental Oversight and Reporting
2. **Aquaculture Associations: Organizational Structure, Operations**
    a. Role of Regional Planning Teams
    b. Annual Management Plans, Corporate Escapement
    c. Operational Goals, Requirements, Planning
    d. "How it Works"
3. **Review and Update on Alaska Hatchery Research Project**
    a. AHRP/HWI Research
        i. Details of work and findings to-date
        ii. Details of Continuing work, implications
    b. Identify where we have legitimate information gaps
    c. Changes in ocean environment

We believe it is important for the board continue to follow the Joint Protocol on Salmon Enh
(#2002-FB-215). This allows for regular updates to the Board of Fisheries and the public, as w
provide for regional participation by affected areas during the appropriate meeting cycle.

We look forward to working with the Alaska Department of Fish and Game in conjunction with the Alaska Board of Fisheries to better inform the public on the Alaska Hatchery Program. We encourage this ongoing discussion as it allows for the Board and the public to gain information about an existing body of knowledge related to hatchery program and bring to light fact-based, scientific work that is ongoing within the industry. As scientists and stewards of the resource, we see this ongoing inquiry as a benefit to our programs and to the contributions we make to the State of Alaska. We look forward to continuing to bring the knowledge and benefits of these important salmon enhancement programs to the public's attention.

Respectfully,

Alaska's Hatchery Operators

Armstrong-Keta Incorporated
Angela Bowers, Executive Director

Cook Inlet Aquaculture Association
Dean Day, Executive Director

Douglas Island Pink and Chum
E. Prestegard/K. Harms, Executive Director

Kodiak Regional Aquaculture Association
Tina Fairbanks, Executive Director

Northern Southeast Regional Aquaculture Association
Steve Reifenstuhl, General Manager

Prince William Sound Aquaculture Corporation
Tommy Sheridan, General Manager/CEO

Southern Southeast Regional Aquaculture Association
David Landis, General Manager

Valdez Fisheries Development Association
Mike Wells, Executive Director

















From: Gale K. Vick
To: DFG, BOF Comments (DFG sponsored)
Subject: Recommendations for BOF Hatchery Agenda March 2020
Date: Friday, December 27, 2019 11:35:26 PM

Date: December 27, 2019
From: Gale Vick, Fairbanks, AK
To: Alaska Board of Fisheries
RE: Recommendations for BOF Hatchery Agenda March 7, 2020

Dear Board of Fisheries Members:

As a long time Alaska resident (52 years) and a former commercial fisherman, subsistence fisherman, current recreational fisherman and fisheries policy advisor, I am concerned about the long term trend of reduction in run strength and size of Chinook salmon as well as other salmon species. And I am concerned that we often do not adequately consider all potential impacts in an ecosystem context when making management decisions.

Hatcheries are part of that ecosystem equation. We are becoming increasingly aware of hatchery impacts to wild stock all along the Pacific and North Pacific coasts and the potential for threats to habitat, forage and biodiversity. The body of evidence for these complex relationships is growing significantly. As a state that constitutionally prides itself on protection of its natural resources, it is incumbent on us to pursue a *more in depth* understanding of hatchery impacts - environmentally, politically and economically - and try to do so with a single goal in mind…. the protection of wild stock.

Since the 1971 development of FRED (Division of Fisheries Rehabilitation, Enhancement and Development) and the subsequent
1974 Alaska Hatchery Act, the Alaska PNP hatchery system, which was designed to *supplement* - not replace - sustainable natural production, has increased salmon fry releases dramatically to over 1.6 billion by 2017 (*Alaska Salmon Fisheries Enhancement Report 2017)* for a return that is primarily for the commercial market, both in the common property harvest and cost recovery harvest. Some of the inherent questions are: (1) how might this production be competing with wild stock for forage food and, (2) how straying of hatchery fish to wild streams might be genetically affecting wild stock or wild stock habitat, and (3) what nutrients might be taken away from ecosystems that both wild and hatchery stock share? Essentially, we do not know; we are just beginning to catch up on the science we should have been conducting all along.

I commercially fished a mixed wild-hatchery system for over 20 years. To my knowledge, the fleet rarely, if ever, discussed hatchery impacts, even when the 1989 Exxon Valdez Oil Spill resulted in research indicating that hatchery production may be one of the causes of overall wild salmon decline. *(Assessment of the Genetic Toxicological Impacts of the Exxon Valdez Oil Spill on Pink Salmon (Oncorhynchus gorbuscha) may be Confounded by the Influence of Hatchery Fish,* Cronin & Maki 2004) } Most of us assumed that hatchery production was benign as it was “ocean ranching” and not stationary open-pen fish farms. In retrospect, I wish we had started asking questions much sooner that could have guided hatchery production and developed baseline and long-term research.

To this end, I respectfully recommend for the March 7, 2010 Board of Fisheries Hatchery

meeting the following agenda items:

(1) Institutionalize a full day hatchery meeting every year with specific agenda
(a) Adopt in regulation the Joint Protocol on Salmon Enhancement #2002-FB-215
(b) Review protocols for hatchery reviews at every annual meeting
(c) Provide specifics for implementation of "precautionary approach" when reviewing hatcheries
(d) Develop a hatchery subcommittee of the Board to meet on a quarterly basis
(e) Define a "wild fish priority"
(f) Define "sustainability" within the context of hatchery impacts on and interaction with wild stock
(g) Create procedures for addressing hatchery straying
(h) Provide summary reporting which also includes historical charts for *all* the true costs of hatchery support - including original and on-going infrastructure, loans and grants (and their management), debt forgiveness, oversight, genetics, management, etc., *and* how some of that multi-agency support might have a negative impact on wild stock management.
(i) Consider the long-term viability of hatcheries within the context of changing ocean conditions

(2) Add to every "call for proposal" a section for hatchery issues

(3) Continue with *independent research* of various hatchery impacts and have an *independent* review team conduct peer review on the subsequent research

(4) Provide for a catalog of research both in Alaska, Pacific Coast Canada and the entire U.S. Pacific Coast.

Thank you.

Nancy Hillstrand
Box 674
Homer, Alaska 99603

December 21, 2019

Agenda BOF hatchery committee

Greetings- I respectfully submitted proposals to the Board of Fisheries in April 2019 to amend, adopt, or repeal regulations. These proposals asked for consideration for a solution to:

- inter-regional straying from PWS into LCI in high proportions into significant stocks,
- harvest strategy to intercept these feral hatchery salmon before they stray,
- wanton waste of a harvestable surplus,
- the unreliability of escapement goals from these high rates of straying.

Since escapement goals are the crown of sustainable management in Alaska, the Board of Fisheries may find it wise to adopt regulations it considers advisable to address these issues.

As directed by AS 16.10.251(c), I am writing to the board, and await a written explanation of why these proposals, and these critical issues affecting wild fish priority are continually being denied and ignored. Why were these critical issues not considered or even mentioned either at the October 2019 work session where they were moved to, listed under non-regulatory proposals, nor the December 2019 BOF LCI meeting in Seward where they were originally intended. Also why is the Board of Fisheries receiving erroneous information from ADFG as per the transcript pertaining to ACR2 that was contrary to the staff comments submitted in October about the serious issue od straying in SEAK?

These issues are at the heart of the "adverse affects" that **shall not** occur from hatchery/ wild interaction as per the Hatchery Act. The State of Alaska is out of compliance.

I respectfully ask that these issues under your authority as per AS 16.05.251[1] and AS 16.05.730[2] etc. will be considered at the March Hatchery Committee meeting so we stop wasting valuable time delaying addressing these problems, that will continue, and come to solution. Please:

1. Adopt in regulation the Joint Protocol on Salmon Enhancement #2002-FB-215.
2. Create procedure to address hatchery straying.
3. Unreliable Escapement goals from hatchery straying[3]
4. Remote Release – criteria
5. Wild Fish Priority – define
6. Request an unbiased independent council
7. Adopt in regulation clear accurate BOF authority

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[1] The Board of Fisheries Hatchery Committee may adopt regulations it considers advisable for wild fish sanctuaries as per the genetics policy in the waters of the state over which it has jurisdiction;
(2) establishing open and closed seasons and areas for the taking of fish; if consistent with resource conservation…, the board may adopt regulations establishing restricted seasons and areas necessary for
(4) establishing means and methods in … transport of fish;
(5) establishing marking and identification requirements for means used in…transport of fish;
(6) classifying as… predators or other categories essential for regulatory purposes;
(7) … management, conservation, protection, …propagation, and stocking of fish;
(8) investigating and determining the extent and effect of disease, predation, and competition among <u>hatchery</u> fish in the state, with wild fish, exercising control measures considered necessary to the resources of the state;
(9) prohibiting and regulating the…transport, or release of native or exotic fish or their eggs;
(12) regulating … fishing as needed for the conservation, development, and utilization of fisheries;
(d) Regulations adopted under (a) of this section must, consistent with sustained yield and the
(5) the importance of <u>wild</u> fisheries to the economy of the state; <u>including crab and shrimp</u>
(6) the importance of each fishery to the economy of the region and local area in which the fishery is located;
(h) shall adopt by regulation a policy that shall provide for the management of mixed stock fisheries in a manner that is consistent with sustained yield of wild fish stocks.
[2] AS 16.05.730. Management of Wild and Enhanced Stocks of Fish. (a) Fish stocks in the state shall be managed consistent with sustained yield of wild fish stocks and may be managed consistent with sustained yield of enhanced fish stocks.
[3] 5AAC 39.223 Policy for Statewide Escapement Goals

2019 Alaska Commercial Salmon Harvests — Ex-vessel Values



Source: ADF&G

PRELIMINARY DATA: 2019 Salmon Season

Updated 10/16/2019. Subject to change

Preliminary figures may not total exactly due to rounding.
Estimates based on fish tickets and reports from Area Managers.
DATA NOT FOR LEGAL INTERPRETATIONS.

Area	Species	Average Weight (in pounds)	Average Price per Pound	Number of Fish	Pounds of Fish	Estimated Exvessel Value
SOUTHEAST (including Yakutat)	CHINOOK	11.88	$5.07	177,246	2,106,034	$10,687,304
Updated 10/11/2019	SOCKEYE	5.67	$2.13	878,252	4,980,383	$10,623,867
	COHO	6.80	$1.71	1,652,014	11,232,259	$19,257,575
	PINK	3.68	$0.30	21,106,149	77,769,262	$23,694,520
	CHUM	7.99	$0.56	8,416,594	67,261,401	$37,582,818
	totals			32,230,255	163,349,339	$101,846,084
PRINCE WILLIAM SOUND (including hatchery fish)	CHINOOK	18.42	$8.59	18,399	338,836	$2,911,944
Updated 10/3/2019	SOCKEYE	5.35	$2.49	2,553,041	13,656,160	$33,989,146
	COHO	8.01	$1.19	504,159	4,038,880	$4,807,891
	PINK	3.40	$0.34	49,340,614	167,752,712	$57,746,792
	CHUM	6.04	$0.48	5,334,239	32,230,460	$15,449,375
	totals			57,750,452	218,017,048	$114,905,148
COOK INLET	CHINOOK	14.95	$3.54	3,393	50,736	$179,712
Updated 10/8/2019	SOCKEYE	5.34	$1.85	1,975,333	10,556,250	$19,556,087
	COHO	5.75	$0.76	158,584	911,207	$693,427
	PINK	3.11	$0.31	2,048,406	6,375,091	$1,953,714
	CHUM	6.91	$0.41	178,621	1,234,641	$506,282
*see supplemental tables	**totals**			4,364,337	19,127,925	$22,889,222
BRISTOL BAY	CHINOOK	11.40	$0.50	30,579	347,449	$173,725
Updated 9/24/2019	SOCKEYE	5.20	$1.35	42,967,737	225,108,917	$303,897,039
	COHO	6.00	$0.55	75,517	455,885	$250,737
	PINK	3.80	$0.05	5,680	21,588	$1,079
	CHUM	6.50	$0.25	1,379,169	9,002,884	$2,250,721
	totals			44,458,682	234,936,723	$306,573,301
KODIAK	CHINOOK	8.92	$0.60	7,723	68,889	$41,333
Updated 10/2/2019	SOCKEYE	4.96	$1.50	2,179,133	10,806,398	$16,209,597
	COHO	7.17	$0.52	396,326	2,842,352	$1,478,023
	PINK	3.17	$0.28	33,119,381	104,896,254	$29,370,951
	CHUM	7.04	$0.26	548,943	3,865,278	$1,004,972
	totals			35,702,563	118,613,893	$47,099,905
CHIGNIK	CHINOOK	9.13	$0.80	4,286	39,024	$31,219
Updated 10/3/2019	SOCKEYE	5.66	$1.40	638,772	3,614,393	$5,060,150
	COHO	6.37	$0.32	248,281	1,581,396	$506,047
	PINK	3.09	$0.27	2,452,838	7,583,891	$2,047,651
	CHUM	6.58	$0.35	157,517	1,037,197	$363,019
	totals			3,501,694	13,855,901	$8,008,086
ALASKA PENINSULA AND ALEUTIAN ISLANDS	CHINOOK	8.44	$0.58	26,006	219,493	$126,655
	SOCKEYE	5.17	$1.53	4,002,326	20,709,338	$31,751,763
	COHO	6.00	$0.25	560,495	3,362,106	$848,143
Updated 10/16/2019	PINK	2.77	$0.24	20,903,380	57,977,153	$13,777,438
	CHUM	5.89	$0.32	1,386,998	8,168,441	$2,630,082
*see supplemental tables	**totals**			26,879,205	90,436,531	$49,134,081
KUSKOKWIM	CHINOOK					
Updated 10/2/2019	SOCKEYE					
	COHO		No Buyer in the Kuskokwim Area			
	PINK					
	CHUM					
	totals					

YUKON	CHINOOK	12.17	$6.65	3,105	37,784	$251,295
Updated 10/1/2019	SOCKEYE					
	COHO	5.96	$1.00	57,389	342,297	$342,249
	PINK	3.09	$0.10	10,962	33,835	$3,384
	CHUM	6.56	$0.60	490,188	3,215,358	$1,923,447
*see supplemental tables	**totals**			561,644	3,629,274	$2,520,374
NORTON SOUND	CHINOOK	10.50	$3.00	1,371	14,792	$44,376
Updated 10/4/2019	SOCKEYE	6.0	$1.39	6,969	41,859	$58,299
	COHO	6.4	$1.57	139,820	899,549	$1,409,520
	PINK	3.4	$0.13	75,929	261,240	$33,125
	CHUM	6.7	$0.50	157,035	1,057,675	$528,266
	totals			381,124	2,275,115	$2,073,586
KOTZEBUE	CHINOOK	12.30	$0.80	16	197	$158
Updated 10/4/2019	SOCKEYE	4.90	$1.50	29	143	$215
	COHO					
	PINK					
	CHUM	8.1	$0.38	493,295	4,004,727	$1,538,603
	totals			493,340	4,005,067	$1,538,975
ALASKA TOTALS	CHINOOK	11.84	$4.48	272,124	3,223,234	$14,447,722
Updated 10/16/2019	SOCKEYE	5.24	$1.45	55,201,592	289,473,840	$421,146,163
	COHO	6.77	$1.15	3,792,585	25,665,932	$29,593,611
	PINK	3.27	$0.30	129,063,339	422,671,026	$128,628,652
	CHUM	7.07	$0.49	18,542,599	131,078,062	$63,777,586
	totals			206,872,239	872,112,094	$657,593,734



***Supplemental Tables: 2019 Salmon Season**

		Average Weight (in pounds)	Average Price per Pound	Number of Fish	Pounds of Fish	Estimated Exvessel Value
LOWER COOK INLET	CHINOOK	12.86	$4.07	736	8,854	$36,057
updated 10/8/2019	SOCKEYE	4.47	$2.20	311,696	1,394,639	$3,065,187
	COHO	7.40	$0.95	12,712	93,086	$88,017
	PINK	3.11	$0.31	1,980,124	6,165,154	$1,909,627
	CHUM	7.25	$0.49	55,508	402,516	$198,396
	totals			2,360,776	8,064,249	$5,297,284
UPPER COOK INLET	CHINOOK	15.76	$3.43	2,657	41,882	$143,655
updated 10/4/2019	SOCKEYE	5.51	$1.80	1,663,637	9,161,611	$16,490,900
	COHO	5.61	$0.74	145,872	818,121	$605,410
	PINK	3.07	$0.21	68,282	209,937	$44,087
	CHUM	6.76	$0.37	123,113	832,125	$307,886
	totals			2,003,561	11,063,676	$17,591,938
NORTHERN DISTRICT OF ALASKA PENINSULA	CHINOOK	14.83	$1.29	3,566	52,879	$67,965
Updated 10/13/2019	SOCKEYE	5.27	$1.56	2,371,500	12,504,661	$19,444,748
	COHO	6.33	$0.32	37,583	238,084	$76,901
	PINK	3.25	$0.26	113,278	368,576	$96,604
	CHUM	5.94	$0.41	49,246	292,491	$119,336
	totals			2,575,173	13,456,691	$19,805,554
SOUTH ALASKA PENINSULA, NORTHWESTERN DISTRICT, & ALEUTIAN ISLANDS	CHINOOK	7.42	$0.35	22,440	166,614	$58,690
	SOCKEYE	5.03	$1.50	1,630,826	8,204,677	$12,307,015
Updated 10/15/2019	COHO	5.97	$0.25	522,912	3,124,022	$771,242
	PINK	2.77	$0.24	20,790,102	57,608,577	$13,680,834
	CHUM	5.89	$0.32	1,337,752	7,875,950	$2,510,746
	totals			24,304,032	76,979,840	$29,328,526
YUKON SUMMER SEASON	CHINOOK	12.35	$6.59	2,582	31,896	$210,079
Updated 10/1/2019	SOCKEYE					
	COHO					
	PINK	3.09	$0.10	10,962	33,835	$3,384
	CHUM	6.07	$0.60	227,089	1,377,335	$823,473
	totals			240,633	1,443,066	$1,036,936
YUKON FALL SEASON	CHINOOK	11.26	$7.00	523	5,888	$41,216
Updated 10/1/2019	SOCKEYE					
	COHO	5.96	$1.00	57,389	342,297	$342,249
	PINK					
	CHUM	6.99	$0.60	263,099	1,838,023	$1,099,974
	totals			321,011	2,186,208	$1,483,438

Kodiak Management Area - 24 Hour Commercial Fishing Days

2017, 2018 and 2019

A. Kodiak Management Area

Date	Total Days	Days Fished
June 2017	30	30
July 2017	31	31
August 2017	31	31
September 2017	30	20
Total 2017	122	112
June 2018	30	25
July 2018	31	26
August 2018	31	28
September 2018	30	22
Total 2018	122	101
June 2019	30	13
July 2019	31	25
August 2019	31	29
September 2019	30	16
Total 2019	122	83

B. Karluk, NW Kodiak, SW Afognak, Ayakulik, Halibut and Sturgeon Bay

Date	Total Days	Days Fished
June 2017	30	30
July 2017	31	31
August 2017	31	31
September 2017	30	20
Total 2017	122	112
June 2018	30	25
July 2018	31	26
August 2018	31	28
September 2018	30	22
Total 2018	122	101
June 2019	30	13
July 2019	31	25
August 2019	31	29
September 2019	30	16
Total 2019	122	83

C. Central District Upper Cook Inlet Drift and Setnet *

Date	Total Days	Days Fished
June 2017	30	2
July 2017	31	6.5
August 2017	31	5
September 2017	30	1
Total 2017	122	14.5
June 2018	30	2
July 2018	31	4
August 2018	31	2
September 2018	30	0
Total 2018	122	8
June 2019	30	2
July 2019	31	5
August 2019	31	4
September 2019	30	1
Total 2019	122	12

* Central District regular openings are prescribed 12 hour periods

Cape Igvak, Wide Bay, Mid & North Mainland										
	2017 Chinook		2017 Sockeye		2017 Coho		2017 Chum		2017 Pink	
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Cape Igvak & Wide Bay	Mid & North Mainland	Cape Igvak & Wide Bay	Mid & North Mainland	Cape Igvak & Wide Bay	Mid & North Mainland	Cape Igvak & Wide Bay	Mid & North Mainland	Cape Igvak & Wide Bay	Mid & North Mainland
1-Jun	0	0	0	0	0	0	0	0	0	0
2-Jun	0	0	0	0	0	0	0	0	0	0
3-Jun	0	0	0	0	0	0	0	0	0	0
4-Jun	0	0	0	0	0	0	0	0	0	0
5-Jun	0	0	0	0	0	0	0	0	0	0
6-Jun	0	0	0	0	0	0	0	0	0	0
7-Jun	0	0	0	0	0	0	0	0	0	0
8-Jun	0	0	0	0	0	0	0	0	0	0
9-Jun	0	0	0	0	0	0	0	0	0	0
10-Jun	0	0	0	0	0	0	0	0	0	0
11-Jun	0	0	0	0	0	0	0	0	0	0
12-Jun	0	0	0	0	0	0	0	0	0	0
13-Jun	0	0	0	0	0	0	0	0	0	0
14-Jun	6	0	12,994	0	1	0	936	0	718	0
15-Jun	63	0	69,656	0	2	0	8,078	0	4,049	0
16-Jun	75	0	80,614	0	2	0	9,515	0	4,563	0
17-Jun	75	0	80,614	0	2	0	9,515	0	4,563	0
18-Jun	75	0	80,614	0	2	0	9,515	0	4,563	0
19-Jun	75	0	80,614	0	2	0	9,515	0	4,563	0
20-Jun	75	0	80,614	0	2	0	9,515	0	4,563	0
21-Jun	75	2	80,614	472	2	0	9,515	51	4,563	0
22-Jun	75	2	80,614	672	2	0	9,515	54	4,563	35
23-Jun	155	2	92,190	672	2	0	11,733	54	12,127	35
24-Jun	473	2	126,829	672	114	0	16,891	54	30,355	35
25-Jun	484	2	130,776	672	114	0	17,540	54	32,090	35
26-Jun	484	2	130,854	672	114	0	17,586	54	32,122	35
27-Jun	484	2	130,854	672	114	0	17,586	54	32,122	35
28-Jun	484	2	130,854	672	114	0	17,586	54	32,122	35
29-Jun	484	2	130,854	672	114	0	17,586	54	32,122	35
30-Jun	484	2	130,854	672	114	0	17,586	54	32,122	35
1-Jul	484	2	130,854	672	114	0	17,586	54	32,122	35
2-Jul	484	2	130,854	672	114	0	17,586	54	32,122	35
3-Jul	484	2	130,854	672	114	0	17,586	54	32,122	35
4-Jul	484	2	130,854	672	114	0	17,586	54	32,122	35
5-Jul	484	2	130,854	672	114	0	17,586	54	32,122	35
6-Jul	484	2	130,854	672	114	0	17,586	54	32,122	35
7-Jul	484	49	130,854	1,737	114	0	17,586	1,554	32,122	613
8-Jul	484	135	130,854	4,430	114	4	17,586	4,214	32,122	4,419
9-Jul	484	155	130,854	5,486	114	4	17,586	4,674	32,122	5,234
10-Jul	484	155	130,854	5,486	114	4	17,586	4,676	32,122	5,234
11-Jul	484	155	130,854	5,486	114	4	17,586	4,676	32,122	5,234
12-Jul	484	155	130,854	5,486	114	4	17,586	4,674	32,122	5,234
13-Jul	484	186	130,854	9,568	114	4	17,586	5,896	32,122	6,014
14-Jul	484	322	130,854	19,202	114	25	17,586	9,523	32,122	8,289

	2017 Chinook		2017 Sockeye		2017 Coho		2017 Chum		2017 Pink	
15-Jul	484	342	130,854	22,355	114	25	17,586	11,345	32,122	9,180
16-Jul	484	342	130,854	22,780	114	33	17,586	12,130	32,122	12,189
17-Jul	484	342	130,854	22,780	114	33	17,586	12,130	32,122	12,189
18-Jul	484	342	130,854	22,780	114	33	17,586	12,130	32,122	12,189
19-Jul	484	342	130,854	22,780	114	33	17,586	12,130	32,122	12,189
20-Jul	484	347	130,854	24,136	114	36	17,586	16,027	32,122	14,071
21-Jul	484	458	130,854	69,580	114	1,195	17,586	50,871	32,122	36,087
22-Jul	484	465	130,854	71,255	114	1,430	17,586	68,981	32,122	38,856
23-Jul	484	540	130,854	73,605	114	1,509	17,586	70,148	32,122	47,411
24-Jul	484	540	130,854	73,605	114	1,509	17,586	70,148	32,122	47,411
25-Jul	484	540	130,854	73,605	114	1,509	17,586	70,148	32,122	47,411
26-Jul										
27-Jul	484	546	132,043	76,192	1,058	2,138	29,149	91,811	76,274	63,356
28-Jul	484	554	134,092	84,217	2,247	3,659	42,274	112,969	148,934	104,819
29-Jul	485	585	137,573	96,874	4,939	5,838	61,157	141,908	252,494	150,310
30-Jul	604	614	141,360	110,669	8,055	9,624	70,650	158,260	334,273	190,246
31-Jul	612	624	142,057	117,271	9,284	12,123	74,596	167,431	350,360	209,735
1-Aug	612	624	142,057	117,271	9,284	12,123	74,596	167,431	350,360	209,735
2-Aug	612	624	142,057	117,271	9,284	12,123	74,596	167,431	350,360	209,735
3-Aug	612	625	145,429	117,560	10,020	12,237	77,585	172,258	459,444	214,175
4-Aug	612	645	147,423	123,586	10,449	14,534	80,730	195,895	512,660	265,999
5-Aug	612	655	150,242	125,468	11,202	14,682	83,933	199,950	625,990	276,662
6-Aug	612	682	152,870	128,056	11,775	14,890	86,206	202,944	703,527	313,677
7-Aug	612	685	153,046	128,408	11,842	15,024	86,714	203,964	707,527	321,677
8-Aug	612	685	153,046	128,408	11,842	15,024	86,714	203,964	707,527	321,677
9-Aug	612	685	153,046	128,408	11,842	15,024	86,714	203,964	707,527	321,677
10-Aug	612	685	153,046	128,411	11,842	15,024	87,032	211,439	725,084	336,092
11-Aug	613	697	153,863	130,703	12,052	17,064	88,186	222,726	766,113	379,690
12-Aug	614	701	153,983	132,329	12,076	17,175	88,801	231,730	784,439	380,136
13-Aug	620	702	154,483	133,028	12,270	17,199	89,544	248,121	818,695	432,669
14-Aug	620	702	154,483	133,028	12,270	17,199	89,544	248,121	818,695	432,669
15-Aug	620	702	154,483	133,028	12,270	17,199	89,544	248,121	818,695	432,669
16-Aug	620	702	154,483	133,028	12,270	17,204	92,717	250,056	837,098	435,453
17-Aug	620	702	154,483	133,031	12,270	17,297	94,877	262,915	873,012	440,226
18-Aug	620	702	154,812	133,133	12,997	17,358	95,141	276,883	908,785	474,907
19-Aug	620	702	154,812	133,154	12,997	17,401	95,141	238,445	908,785	490,974
20-Aug	620	702	155,389	134,174	15,535	17,857	95,992	288,201	926,943	515,571
21-Aug	620	702	155,389	134,181	15,535	17,857	95,992	291,129	926,943	526,305
22-Aug	620	702	155,389	134,181	15,535	17,857	95,992	291,129	926,943	526,305
23-Aug	620	702	155,389	134,181	15,535	17,857	95,992	291,129	926,943	526,305
24-Aug	620	702	155,389	134,181	15,535	17,857	95,992	291,129	926,943	526,305
25-Aug	620	702	155,389	134,181	15,535	17,857	95,992	291,129	926,943	526,305
26-Aug	620	702	155,389	134,181	15,535	17,857	95,992	291,129	926,943	526,305
27-Aug	620	702	155,389	134,181	15,535	17,857	95,992	291,129	926,943	526,305
28-Aug	620	702	155,389	134,181	15,535	17,857	95,992	291,204	926,943	559,571
29-Aug	620	702	155,389	134,508	15,535	20,540	95,992	292,831	926,943	562,786
30-Aug	620	702	155,389	134,548	15,535	20,573	95,992	294,222	926,943	568,478
31-Aug	620	702	155,389	134,618	15,535	20,635	95,992	294,236	926,943	573,304

	2017 Chinook		2017 Sockeye		2017 Coho		2017 Chum		2017 Pink	
1-Sep	620	702	155,389	134,618	15,535	20,635	95,992	294,236	926,943	573,304
2-Sep	620	702	155,389	134,618	15,535	20,635	95,992	294,236	926,943	573,304
3-Sep	620	702	155,389	134,618	15,535	20,635	95,992	294,236	926,943	573,304
4-Sep	620	702	155,389	134,618	15,535	20,635	95,992	294,236	926,943	573,304
5-Sep	620	702	155,389	134,618	15,535	20,635	95,992	294,236	926,943	573,304
6-Sep	620	702	155,389	134,618	15,535	20,635	95,992	294,236	926,943	573,304
7-Sep	620	702	155,389	134,618	15,535	20,635	95,992	294,236	926,943	573,304
8-Sep	620	702	155,389	134,618	15,535	20,635	95,992	294,236	926,943	573,304
9-Sep	620	702	155,389	134,618	15,535	20,635	95,992	294,236	926,943	573,304
10-Sep	620	702	155,389	134,643	15,535	20,817	95,992	296,939	926,943	573,485
11-Sep	620	702	155,389	134,643	15,535	20,817	95,992	297,544	926,943	573,485
12-Sep	620	702	155,389	134,643	15,535	20,817	95,992	297,544	926,943	573,485
13-Sep	620	702	155,389	134,643	15,535	20,817	95,992	297,544	926,943	573,485
14-Sep	620	702	155,389	134,643	15,535	20,817	95,992	279,544	926,943	573,485
15-Sep	620	702	155,389	134,643	15,535	20,817	95,992	297,544	926,943	573,485
16-Sep	620	702	155,389	134,643	15,535	20,817	95,992	297,544	926,973	573,485
17-Sep	Confidential									
18-Sep										
19-Sep										
20-Sep	620	702	155,389	134,643	15,535	20,817	95,992	297,544	926,973	537,485

East & Northeast Kodiak					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	East & Northeast Kodiak	East & Northeast Kodiak	East & Northeast Kodiak	East & Northeast Kodiak	East & Northeast Kodiak
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	121	0	68	13
16-Jun	0	1,455	0	1,621	867
17-Jun	0	1,455	0	1,621	867
18-Jun	0	1,455	0	1,621	867
19-Jun	0	1,455	0	1,621	867
20-Jun	0	1,455	0	1,621	867
21-Jun	0	3,043	0	4,883	1,905
22-Jun	11	5,259	0	7,226	3,488
23-Jun	11	5,259	0	7,226	3,488
24-Jun	11	5,331	0	7,238	3,489
25-Jun	11	5,331	0	7,238	3,489
26-Jun	11	5,331	0	7,238	3,489
27-Jun	11	5,331	0	7,238	3,489
28-Jun	11	5,331	0	7,238	3,489
29-Jun	11	5,331	0	7,238	3,489
30-Jun	11	5,331	0	7,238	3,489
1-Jul	11	5,331	0	7,238	3,489
2-Jul	11	5,331	0	7,238	3,489
3-Jul	11	5,331	0	7,238	3,489
4-Jul	11	5,331	0	7,238	3,489
5-Jul	11	5,331	0	7,238	3,489
6-Jul	13	5,331	164	21,754	8,519
7-Jul	51	25,034	2,814	146,225	48,873
8-Jul	60	28,995	5,113	202,357	75,259
9-Jul	101	47,939	9,322	302,569	138,585
10-Jul	171	62,054	13,453	417,504	232,861
11-Jul	171	62,054	13,453	417,504	232,861

12-Jul	171	62,054	13,453	417,504	232,861
	2017 Chinook	**2017 Sockeye**	**2017 Coho**	**2017 Chum**	**2017 Pink**
13-Jul	172	64,418	14,266	418,885	245,631
14-Jul	176	71,594	15,684	446,121	277,398
15-Jul	183	74,732	15,888	451,656	287,134
16-Jul	205	79,176	17,047	458,497	304,953
17-Jul	319	86,549	19,022	472,889	334,710
18-Jul	319	87,475	19,566	477,922	342,940
19-Jul	319	87,475	19,566	477,922	342,940
20-Jul	319	88,288	19,824	480,981	347,499
21-Jul	424	94,549	21,325	492,326	373,335
22-Jul	428	95,321	21,361	493,152	379,531
23-Jul	439	96,501	21,550	497,668	391,870
24-Jul	447	97,732	21,608	498,920	405,681
25-Jul	459	98,097	21,608	499,832	408,356
27-Jul	459	98,313	21,618	500,164	415,707
28-Jul	459	98,657	21,634	501,084	426,871
29-Jul	459	98,657	21,634	501,804	426,871
30-Jul	468	99,184	21,642	505,012	449,893
31-Jul	468	99,184	21,642	505,012	449,893
1-Aug	468	99,184	21,642	505,012	449,893
2-Aug	468	99,184	21,642	505,012	449,893
3-Aug	468	99,857	21,668	507,002	484,368
4-Aug	524	101,860	21,739	511,268	543,711
5-Aug	524	102,923	21,756	513,359	583,995
6-Aug	534	105,742	22,157	522,385	673,693
7-Aug	534	105,742	22,157	522,385	673,693
8-Aug	534	105,742	22,157	522,385	673,693
9-Aug	534	105,742	22,157	522,385	673,693
10-Aug	534	105,874	22,159	525,208	738,073
11-Aug	554	106,542	22,266	532,408	793,586
12-Aug	561	107,199	22,285	542,912	894,981
13-Aug	573	107,924	22,316	557,360	999,818
14-Aug	573	107,924	22,316	557,360	999,818
15-Aug	573	107,924	22,316	557,360	999,818
16-Aug	573	108,125	22,324	565,048	1,052,815
17-Aug	573	108,739	22,397	576,008	1,205,137
18-Aug	575	109,715	22,590	583,909	1,342,382
19-Aug	575	110,305	22,757	590,319	1,469,801
20-Aug	575	111,397	23,425	598,523	1,652,433
21-Aug	575	111,807	23,717	604,720	1,810,798
22-Aug	575	112,263	24,186	633,317	2,024,645
23-Aug	576	112,697	25,087	649,890	2,220,038
24-Aug	578	113,076	26,112	656,766	2,337,528
25-Aug	578	113,615	27,911	663,628	2,545,605
26-Aug	583	114,086	29,296	672,510	2,707,296

27-Aug	583	114,566	31,445	675,634	2,833,255
	2017 Chinook	**2017 Sockeye**	**2017 Coho**	**2017 Chum**	**2017 Pink**
28-Aug	583	114,715	32,119	676,980	2,886,102
29-Aug	583	115,108	34,876	683,111	3,022,332
30-Aug	583	115,439	36,947	691,677	3,155,129
31-Aug	583	115,682	38,796	701,219	3,284,087
1-Sep	583	115,937	40,532	719,836	3,401,980
2-Sep	583	116,111	41,634	722,291	3,452,264
3-Sep	583	116,195	41,954	725,879	3,481,105
4-Sep	583	116,232	43,007	727,882	3,524,910
5-Sep	583	116,252	43,867	732,162	3,560,648
6-Sep	594	116,325	45,198	742,120	3,606,292
7-Sep	594	116,325	45,198	742,120	3,606,292
8-Sep	594	116,325	45,198	742,120	3,606,292
9-Sep	594	116,328	45,218	743,208	3,608,465
10-Sep	594	116,335	47,025	751,224	3,630,829
11-Sep	594	116,336	47,054	752,674	3,630,877
12-Sep	594	116,336	47,305	756,199	3,633,355
13-Sep	594	116,336	47,305	756,199	3,633,355
14-Sep	594	116,336	47,305	756,199	3,633,355
15-Sep	594	116,336	47,305	756,199	3,633,355
16-Sep	594	116,336	47,305	756,199	3,633,355
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	594	116,336	47,305	756,199	3,633,355

Karluk, NW Kodiak & SW Afognak					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Karluk, NW Kodiak & SW Afognak	Karluk, NW Kodiak & SW Afognak	Karluk, NW Kodiak & SW Afognak	Karluk, NW Kodiak & SW Afognak	Karluk, NW Kodiak & SW Afognak
1-Jun	28	6,085	0	7	2
2-Jun	192	33,631	0	210	13
3-Jun	336	48,002	0	329	0
4-Jun	393	70,755	862	671	28
5-Jun	417	83,258	8	798	37
6-Jun	419	98,880	8	1,556	68
7-Jun	421	107,184	8	1,676	68
8-Jun	432	127,049	8	3,285	127
9-Jun	446	143,476	8	4,169	161
10-Jun	454	167,014	8	5,626	186
11-Jun	475	174,246	8	6,131	192
12-Jun	514	200,639	8	8,848	249
13-Jun	536	211,828	8	9,210	267
14-Jun	576	225,690	8	10,021	314
15-Jun	609	235,871	8	10,770	358
16-Jun	623	245,260	8	11,327	377
17-Jun	727	262,091	8	14,490	496
18-Jun	801	271,999	9	15,802	563
19-Jun	875	280,670	10	17,588	737
20-Jun	955	285,337	11	18,292	830
21-Jun	982	301,059	14	21,485	1,421
22-Jun	1,004	305,665	14	22,473	1,641
23-Jun	1,038	309,478	14	23,333	1,771
24-Jun	1,097	314,118	17	24,017	2,207
25-Jun	1,104	320,734	18	24,829	2,500
26-Jun	1,123	332,123	19	26,994	3,457
27-Jun	1,169	353,704	20	33,516	5,421
28-Jun	1,196	372,043	23	18,908	8,193
29-Jun	1,199	377,954	29	42,283	9,621
30-Jun	1,227	391,777	37	51,714	14,882
1-Jul	1,253	399,178	49	55,592	17,991
2-Jul	1,294	410,572	68	63,299	22,605
3-Jul	1,360	419,884	121	75,461	29,111
4-Jul	1,386	431,056	106	81,861	35,789
5-Jul	1,415	450,304	122	92,869	44,041
6-Jul	1,451	463,295	158	99,504	53,060
7-Jul	1,591	481,527	257	111,394	68,781
8-Jul	1,648	494,735	638	122,151	86,390
9-Jul	1,675	519,892	1,091	136,108	105,352
10-Jul	1,718	539,911	1,567	158,651	146,903
11-Jul	1,718	539,911	1,567	158,651	146,903

12-Jul	1,718	548,168	1,567	158,723	148,229
	2017 Chinook	**2017 Sockeye**	**2017 Coho**	**2017 Chum**	**2017 Pink**
13-Jul	1,722	565,144	1,596	164,533	171,492
14-Jul	1,755	593,188	1,890	189,347	266,664
15-Jul	1,792	612,408	2,056	201,131	312,986
16-Jul	1,883	637,473	2,433	220,705	502,083
17-Jul	1,995	659,987	2,964	239,637	686,838
18-Jul	1,999	660,318	2,972	240,509	690,268
19-Jul	1,999	660,318	2,972	240,509	690,268
20-Jul	2,001	674,932	3,407	248,007	753,958
21-Jul	2,020	702,156	5,197	274,760	1,037,313
22-Jul	2,136	718,311	6,508	287,834	1,256,651
23-Jul	2,389	747,619	8,618	306,339	1,644,002
24-Jul	2,536	772,726	9,838	319,816	1,900,255
25-Jul	2,608	782,013	10,471	325,647	2,047,859
27-Jul	2,621	796,874	10,600	334,719	2,248,910
28-Jul	2,653	825,013	11,247	348,402	2,633,583
29-Jul	2,680	844,839	12,261	358,508	2,991,236
30-Jul	2,691	861,512	13,393	366,785	3,375,009
31-Jul	2,715	876,620	14,875	376,713	3,765,653
1-Aug	2,764	902,527	18,089	387,072	4,165,835
2-Aug	2,828	920,865	20,538	394,120	4,419,335
3-Aug	2,916	952,865	24,007	404,438	4,852,133
4-Aug	2,968	980,228	26,088	412,272	5,089,075
5-Aug	3,036	1,008,454	28,577	420,054	5,400,650
6-Aug	3,060	1,026,393	30,638	426,134	5,710,935
7-Aug	3,111	1,045,746	33,496	432,808	6,074,697
8-Aug	3,181	1,062,084	35,336	438,999	6,416,071
9-Aug	3,201	1,074,298	37,432	447,632	6,690,652
10-Aug	3,264	1,083,517	39,361	453,289	6,939,288
11-Aug	3,333	1,095,990	47,808	457,882	7,211,224
12-Aug	3,397	1,113,920	54,503	464,856	7,451,232
13-Aug	3,512	1,145,905	60,114	472,679	7,980,255
14-Aug	3,522	1,176,445	63,401	476,589	8,487,661
15-Aug	3,588	1,201,023	66,693	481,221	9,002,471
16-Aug	3,633	1,224,765	68,552	484,422	9,417,173
17-Aug	3,658	1,250,257	71,585	488,490	9,845,154
18-Aug	3,672	1,271,022	73,654	493,204	10,216,533
19-Aug	3,699	1,288,864	75,744	494,845	10,502,494
20-Aug	3,705	1,313,398	78,332	496,960	10,779,339
21-Aug	3,716	1,329,447	81,785	499,665	11,168,431
22-Aug	3,744	1,348,508	85,791	503,669	11,543,566
23-Aug	3,751	1,370,551	90,875	504,983	12,039,386
24-Aug	3,786	1,390,446	97,980	506,678	12,447,999
25-Aug	3,789	1,412,000	104,787	509,111	12,891,491
26-Aug	3,794	1,430,167	110,370	510,380	13,304,324

27-Aug	3,821	1,442,656	117,441	511,651	13,596,412
	2017 Chinook	**2017 Sockeye**	**2017 Coho**	**2017 Chum**	**2017 Pink**
28-Aug	3,827	1,448,355	120,106	512,052	13,704,228
29-Aug	3,830	1,450,673	122,281	512,287	13,784,104
30-Aug	3,834	1,453,977	127,124	512,713	13,992,500
31-Aug	3,837	1,465,354	133,200	513,405	14,118,217
1-Sep	3,843	1,471,575	140,562	514,080	14,270,419
2-Sep	3,857	1,480,008	148,536	514,718	14,383,531
3-Sep	3,866	1,483,772	152,033	514,945	14,421,111
4-Sep	3,868	1,487,431	156,688	515,086	14,618,167
5-Sep	3,884	1,509,461	162,886	515,493	14,715,560
6-Sep	3,888	1,549,046	169,175	515,803	14,862,324
7-Sep	3,914	1,571,621	172,483	515,997	14,962,303
8-Sep	3,918	1,586,453	176,072	516,106	15,011,261
9-Sep	3,952	1,592,006	177,749	516,191	15,032,791
10-Sep	3,954	1,600,321	181,509	516,305	15,060,695
11-Sep	3,967	1,607,981	186,681	516,430	15,087,249
12-Sep	3,969	1,616,342	194,980	516,563	15,107,496
13-Sep	3,970	1,619,523	197,550	516,991	15,115,366
14-Sep	3,970	1,629,812	204,495	517,123	15,126,535
15-Sep	3,971	1,632,909	205,847	517,149	15,128,380
16-Sep	3,975	1,637,811	207,903	517,186	15,131,804
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	3,975	1,647,779	210,556	517,251	15,134,321

Ayakulik, Halibut Bay & Sturgeon Bay					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Ayakulik, Halibut Bay & Sturgeon	Ayakulik, Halibut Bay & Sturgeon	Ayakulik, Halibut Bay & Sturgeon	Ayakulik, Halibut Bay & Sturgeon	Ayakulik, Halibut Bay & Sturgeon
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	726	0	51	2
18-Jun	84	14,841	0	1,076	44
19-Jun	85	22,772	0	1,602	61
20-Jun	87	23,339	0	1,694	70
21-Jun	87	23,339	0	1,694	70
22-Jun	87	23,339	0	1,694	70
23-Jun	87	23,339	0	1,694	70
24-Jun	87	23,339	0	1,694	70
25-Jun	87	23,339	0	1,694	70
26-Jun	87	23,339	0	1,694	70
27-Jun	87	23,339	0	1,694	70
28-Jun	87	23,339	0	1,694	70
29-Jun	87	23,339	0	1,694	70
30-Jun	87	23,339	0	1,694	70
1-Jul	87	23,339	0	1,694	70
2-Jul	87	23,339	0	1,694	70
3-Jul	87	23,339	0	1,694	70
4-Jul	87	23,339	0	1,694	70
5-Jul	87	23,339	0	1,694	70
6-Jul	87	23,339	0	1,694	70
7-Jul	87	23,339	0	1,694	70
8-Jul	87	23,339	0	1,694	70
9-Jul	87	23,339	0	1,694	70
10-Jul	87	23,339	0	1,694	70
11-Jul	87	23,339	0	1,694	70

12-Jul	87	23,339	0	1,694	70
	2017 Chinook	**2017 Sockeye**	**2017 Coho**	**2017 Chum**	**2017 Pink**
13-Jul	87	23,409	0	1,785	209
14-Jul	131	29,893	0	2,013	684
15-Jul	131	29,893	0	2,013	684
16-Jul	131	29,893	0	2,013	684
17-Jul	131	29,893	0	2,013	684
18-Jul	131	29,893	0	2,013	684
19-Jul	131	29,893	0	2,013	684
20-Jul	131	29,893	0	2,013	684
21-Jul	131	29,963	4	2,022	1,234
22-Jul	131	29,963	4	2,022	1,234
23-Jul	131	30,262	8	2,025	1,361
24-Jul	131	30,772	158	2,711	13,044
25-Jul	131	30,772	158	2,711	13,044
27-Jul	131	30,772	158	2,711	13,044
28-Jul	131	35,685	213	3,027	31,477
29-Jul	131	35,685	213	3,027	31,477
30-Jul	131	45,228	448	3,506	64,374
31-Jul	131	47,864	541	4,045	75,035
1-Aug	131	49,994	688	4,180	84,264
2-Aug	134	56,025	1,359	4,607	104,845
3-Aug	138	64,257	1,434	4,798	138,518
4-Aug	138	65,165	1,434	4,834	143,935
5-Aug	138	67,287	1,460	4,852	144,882
6-Aug	138	67,287	1,460	4,852	144,882
7-Aug	138	67,447	1,461	4,872	145,762
8-Aug	138	67,447	1,461	4,872	145,762
9-Aug	138	67,447	1,461	4,872	145,762
10-Aug	138	68,143	1,522	4,908	149,461
11-Aug	138	68,626	1,561	4,925	156,877
12-Aug	138	68,626	1,561	4,925	156,877
13-Aug	145	71,887	1,685	5,097	203,133
14-Aug	146	76,075	1,963	5,369	280,663
15-Aug	146	81,525	2,836	6,114	366,805
16-Aug	146	87,450	3,854	6,521	447,459
17-Aug	149	90,847	4,389	6,870	495,410
18-Aug	168	96,357	5,521	7,261	571,057
19-Aug	172	104,046	6,225	7,607	674,406
20-Aug	172	114,263	6,760	7,947	753,204
21-Aug	181	115,618	6,920	8,007	769,992
22-Aug	181	116,662	7,151	8,088	779,688
23-Aug	185	118,509	7,485	8,142	813,568
24-Aug	188	120,928	7,935	8,207	851,259
25-Aug	194	123,421	8,579	8,272	885,926
26-Aug	194	125,192	9,201	8,380	920,805

27-Aug	194	128,405	10,007	8,460	984,997
	2017 Chinook	**2017 Sockeye**	**2017 Coho**	**2017 Chum**	**2017 Pink**
28-Aug	194	128,781	10,203	8,475	999,159
29-Aug	194	129,322	10,398	8,484	1,012,912
30-Aug	194	130,913	10,967	8,568	1,036,421
31-Aug	197	131,724	12,490	8,601	1,042,254
1-Sep	197	131,724	12,490	8,601	1,042,254
2-Sep	197	131,724	12,490	8,601	1,042,254
3-Sep	197	131,724	12,490	8,601	1,042,254
4-Sep	197	131,724	12,490	8,601	1,042,254
5-Sep	197	131,724	12,490	8,601	1,042,254
6-Sep	197	131,724	12,490	8,601	1,042,254
7-Sep	197	131,724	12,490	8,601	1,042,254
8-Sep	197	134,653	13,117	8,649	1,052,786
9-Sep	197	134,653	13,117	8,649	1,052,786
10-Sep	197	134,951	13,306	8,690	1,058,736
11-Sep	197	135,238	14,250	8,690	1,060,707
12-Sep	197	135,238	14,250	8,690	1,060,707
13-Sep	197	135,238	14,250	8,690	1,060,707
14-Sep	197	135,238	14,250	8,690	1,060,707
15-Sep	197	135,238	14,250	8,690	1,060,707
16-Sep	197	135,238	14,250	8,690	1,060,707
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	197	135,238	14,250	8,690	1,060,707

Alitak Bay, Olga, Moser & Dog Salmon					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Alitak Bay, Olga, Moser & Dog Salmon	Alitak Bay, Olga, Moser & Dog Salmon	Alitak Bay, Olga, Moser & Dog Salmon	Alitak Bay, Olga, Moser & Dog Salmon	Alitak Bay, Olga, Moser & Dog Salmon
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	2,677	0	1	0
10-Jun	0	5,934	0	7	1
11-Jun	0	5,934	0	7	1
12-Jun	0	5,934	0	7	1
13-Jun	0	5,934	0	7	1
14-Jun	0	5,934	0	7	1
15-Jun	0	5,934	0	7	1
16-Jun	0	5,934	0	7	1
17-Jun	0	9,395	2	13	2
18-Jun	0	13,855	2	56	5
19-Jun	0	16,116	2	82	5
20-Jun	0	16,116	2	82	5
21-Jun	0	16,116	2	82	5
22-Jun	0	16,116	2	82	5
23-Jun	0	16,116	2	82	5
24-Jun	0	16,166	2	82	5
25-Jun	0	16,116	2	82	5
26-Jun	0	16,116	2	82	5
27-Jun	0	16,116	2	82	5
28-Jun	0	16,116	2	82	5
29-Jun	0	16,116	2	82	5
30-Jun	0	16,116	2	82	5
1-Jul	0	16,116	2	82	5
2-Jul	0	16,116	2	82	5
3-Jul	0	16,116	2	82	5
4-Jul	0	16,116	2	82	5
5-Jul	0	16,116	2	82	5
6-Jul	0	16,116	2	82	5
7-Jul	0	16,116	2	82	5
8-Jul	0	16,116	2	82	5
9-Jul	0	16,116	2	82	5
10-Jul	0	16,116	2	82	5
11-Jul	0	16,116	2	82	5

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
12-Jul	0	16,116	2	82	5
13-Jul	0	19,249	5	528	3,068
14-Jul	0	21,758	43	1,122	6,909
15-Jul	0	23,361	48	1,404	8,569
16-Jul	0	23,361	48	1,404	8,569
17-Jul	0	23,361	48	1,404	8,569
18-Jul	0	18,551	48	1,404	8,569
19-Jul	0	23,361	48	1,404	8,569
20-Jul	1	28,199	52	1,689	15,631
21-Jul	1	35,485	60	2,056	26,198
22-Jul	1	39,126	73	2,352	34,110
23-Jul	1	39,126	73	2,352	34,110
24-Jul	1	39,126	73	2,352	34,110
25-Jul	1	39,126	73	2,352	34,110
27-Jul	1	43,688	81	2,781	45,079
28-Jul	1	48,730	99	3,417	58,776
29-Jul	1	51,989	106	3,803	70,604
30-Jul	1	55,354	117	4,094	81,140
31-Jul	1	55,354	117	4,094	81,140
1-Aug	1	55,354	117	4,094	81,140
2-Aug	1	55,354	117	4,094	81,140
3-Aug	1	58,034	121	4,283	91,361
4-Aug	1	59,397	131	4,624	97,170
5-Aug	1	62,783	151	5,320	107,603
6-Aug	1	65,726	190	6,012	120,014
7-Aug	1	65,726	190	6,012	120,014
8-Aug	1	65,726	190	6,012	120,014
9-Aug	1	65,726	190	6,012	120,014
10-Aug	1	65,726	190	6,012	120,014
11-Aug	1	65,726	190	6,012	120,014
12-Aug	1	65,726	190	6,012	120,014
13-Aug	1	65,726	190	6,012	120,014
14-Aug	1	65,726	190	65,012	120,014
15-Aug	1	65,726	190	6,012	120,014
16-Aug	1	66,571	232	6,468	128,875
17-Aug	1	67,492	322	6,943	134,787
18-Aug	1	67,492	322	6,943	134,787
19-Aug	1	67,492	322	6,943	134,787
20-Aug	1	67,492	322	6,943	134,787
21-Aug	1	67,492	322	6,943	134,787
22-Aug	1	71,207	436	7,227	142,913
23-Aug	1	74,602	573	7,624	153,083
24-Aug	1	78,862	729	8,156	165,365
25-Aug	1	78,862	729	8,156	165,365
26-Aug	1	78,862	729	8,056	165,365

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
27-Aug	1	78,862	729	8,156	165,365
28-Aug	1	80,645	924	8,413	170,958
29-Aug	1	83,728	1,342	8,744	179,595
30-Aug	1	86,058	1,716	9,041	190,587
31-Aug	1	88,149	2,233	9,397	200,753
1-Sep	1	89,576	2,411	9,726	207,156
2-Sep	1	91,189	2,656	9,969	212,534
3-Sep	1	93,346	2,814	10,110	216,648
4-Sep	1	97,144	3,359	10,602	222,858
5-Sep	1	99,159	3,609	10,843	228,514
6-Sep	1	101,466	3,853	11,230	234,100
7-Sep	1	103,689	4,050	11,568	238,638
8-Sep	1	104,674	4,240	11,689	241,453
9-Sep	1	106,085	4,525	12,091	244,880
10-Sep	1	107,308	4,686	12,240	248,092
11-Sep	1	108,501	4,866	12,339	250,571
12-Sep	1	114,294	5,554	13,624	256,573
13-Sep	1	109,886	5,010	12,550	252,709
14-Sep	1	110,659	5,227	12,757	255,327
15-Sep	1	110,776	5,238	12,858	255,868
16-Sep	1	111,879	5,345	13,009	257,412
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	1	113,852	5,497	13,279	258,160

Cape Alitak & Humpy-Deadman					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Cape Alitak & Humpy-Deadman	Cape Alitak & Humpy-Deadman	Cape Alitak & Humpy-Deadman	Cape Alitak & Humpy-Deadman	Cape Alitak & Humpy-Deadman
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	1
10-Jun	0	1,757	0	231	2
11-Jun	0	1,912	0	245	2
12-Jun	0	2,044	0	246	2
13-Jun	0	2,044	0	246	2
14-Jun	0	2,044	0	246	2
15-Jun	0	2,044	0	246	2
16-Jun	0	2,044	0	246	2
17-Jun	0	2,044	0	246	2
18-Jun	38	3,656	0	337	6
19-Jun	59	6,402	0	630	21
20-Jun	59	6,402	0	630	21
21-Jun	59	6,402	0	630	21
22-Jun	59	6,402	0	630	21
23-Jun	59	6,402	0	630	21
24-Jun	59	6,402	0	630	21
25-Jun	59	6,402	0	630	21
26-Jun	59	6,402	0	630	21
27-Jun	59	6,402	0	630	21
28-Jun	59	6,402	0	630	21
29-Jun	59	6,402	0	630	21
30-Jun	59	6,402	0	630	21
1-Jul	59	6,402	0	630	21
2-Jul	59	6,402	0	630	21
3-Jul	59	6,402	0	630	21
4-Jul	59	6,402	0	630	21
5-Jul	59	6,402	0	630	21
6-Jul	59	6,402	0	630	21
7-Jul	59	6,402	0	630	21
8-Jul	59	6,402	0	630	21
9-Jul	59	6,402	0	630	21
10-Jul	59	6,402	0	630	21
11-Jul	59	6,402	0	630	21

12-Jul	59	6,402	0	630	21
	2017 Chinook	**2017 Sockeye**	**2017 Coho**	**2017 Chum**	**2017 Pink**
13-Jul	59	6,435	2	560	276
14-Jul	67	10,096	75	12,675	12,330
15-Jul	81	13,678	157	16,988	23,689
16-Jul	93	16,227	173	18,469	31,653
17-Jul	83	18,551	186	20,166	40,876
18-Jul	83	18,551	186	20,166	40,876
19-Jul	83	18,551	186	20,166	40,876
20-Jul	83	20,763	187	28,277	55,491
21-Jul	101	26,846	283	37,467	77,863
22-Jul	102	28,428	297	40,964	101,175
23-Jul	103	29,992	373	41,848	117,016
24-Jul	103	31,316	394	43,579	141,495
25-Jul	104	31,970	395	46,043	149,576
27-Jul	113	33,730	404	57,551	175,650
28-Jul	133	36,987	441	59,462	212,965
29-Jul	160	40,297	458	60,607	262,892
30-Jul	189	42,691	470	62,100	286,395
31-Jul	189	43,437	503	63,331	290,347
1-Aug	189	43,437	503	63,331	290,347
2-Aug	189	43,437	503	63,331	290,347
3-Aug	190	45,100	516	63,707	310,426
4-Aug	197	49,278	699	65,353	357,835
5-Aug	214	57,787	732	66,505	434,030
6-Aug	215	60,013	759	67,528	468,994
7-Aug	217	61,145	767	67,674	478,003
8-Aug	217	61,145	767	67,674	478,003
9-Aug	217	61,145	767	67,674	478,003
10-Aug	217	61,268	771	68,171	518,179
11-Aug	217	61,798	800	71,159	590,806
12-Aug	217	62,119	802	75,354	678,365
13-Aug	217	63,295	808	79,636	754,850
14-Aug	217	63,295	808	79,636	754,850
15-Aug	217	63,295	808	79,636	754,850
16-Aug	217	63,545	829	81,320	850,475
17-Aug	217	63,801	842	83,140	965,474
18-Aug	217	64,068	855	84,486	1,067,416
19-Aug	217	64,364	862	85,367	1,190,679
20-Aug	217	65,366	906	86,123	1,312,558
21-Aug	217	65,795	931	86,446	1,434,572
22-Aug	217	66,364	945	87,624	1,575,542
23-Aug	217	66,659	992	89,116	1,707,324
24-Aug	217	68,409	1,400	91,865	1,847,527
25-Aug	217	69,305	1,635	93,551	1,957,702
26-Aug	217	70,930	1,928	95,177	2,111,952

27-Aug	217	71,844	2,400	96,485	2,244,745
	2017 Chinook	**2017 Sockeye**	**2017 Coho**	**2017 Chum**	**2017 Pink**
28-Aug	217	72,168	2,544	96,829	2,283,217
29-Aug	217	76,313	3,064	97,645	2,377,351
30-Aug	217	76,969	3,376	97,987	2,507,213
31-Aug	217	77,547	3,907	99,095	2,596,298
1-Sep	217	78,165	4,674	100,411	2,680,609
2-Sep	217	78,319	4,891	100,820	2,721,912
3-Sep	217	81,129	5,964	101,785	2,804,512
4-Sep	217	86,007	7,192	102,432	2,881,505
5-Sep	217	91,199	8,211	103,676	2,990,580
6-Sep	217	92,728	9,142	104,171	3,043,398
7-Sep	217	94,875	9,487	104,509	3,076,892
8-Sep	217	95,533	9,613	104,644	3,090,390
9-Sep	217	96,125	9,969	104,797	3,098,710
10-Sep	217	96,125	9,969	104,797	3,098,710
11-Sep	217	96,125	9,969	104,797	3,098,710
12-Sep	217	96,864	10,339	104,993	3,109,763
13-Sep	217	96,864	10,339	104,993	3,109,763
14-Sep	217	97,171	10,819	105,154	3,114,647
15-Sep	217	98,841	11,480	105,416	3,130,835
16-Sep	217	98,841	11,480	105,416	3,130,835
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	217	98,841	11,480	105,416	3,130,835

Duck, Izhut & Kitoi Bays					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Duck, Izhut & Kitoi Bays	Duck, Izhut & Kitoi Bays	Duck, Izhut & Kitoi Bays	Duck, Izhut & Kitoi Bays	Duck, Izhut & Kitoi Bays
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun	0	0	0	0	0
11-Jun	0	524	0	675	28
12-Jun	0	668	0	857	35
13-Jun	0	668	0	857	35
14-Jun	0	730	0	1,129	35
15-Jun	0	788	0	1,211	37
16-Jun	0	793	0	1,515	42
17-Jun	0	793	0	1,515	42
18-Jun	0	796	0	5,861	42
19-Jun	5	854	0	7,907	121
20-Jun	7	873	0	9,742	138
21-Jun	7	873	0	9,742	138
22-Jun	7	1,055	0	10,796	339
23-Jun	7	1,068	0	10,801	342
24-Jun	14	1,390	0	19,494	554
25-Jun	15	1,428	0	22,726	587
26-Jun	15	1,428	0	22,726	587
27-Jun	18	1,765	1	24,488	1,990
28-Jun	18	1,765	1	24,488	1,990
29-Jun	18	1,947	2	26,074	3,059
30-Jun	18	2,185	2	26,237	3,455
1-Jul	18	2,185	2	26,237	3,455
2-Jul	18	2,185	2	26,237	3,455
3-Jul	18	2,185	2	26,237	3,455
4-Jul	18	2,185	2	26,237	3,455
5-Jul	18	2,185	2	26,237	3,455
6-Jul	18	2,185	2	26,237	3,455
7-Jul	18	2,185	2	26,237	3,455
8-Jul	18	2,185	2	26,237	3,455
9-Jul	18	2,185	2	26,237	3,455
10-Jul	18	2,228	2	26,467	3,668
11-Jul	28	3,066	159	31,857	4,667
12-Jul	59	3,655	284	35,732	4,996

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
13-Jul	57	4,119	466	39,357	5,291
14-Jul	68	5,580	751	78,481	8,598
15-Jul	68	5,655	753	99,976	8,622
16-Jul	68	6,493	995	128,005	11,396
17-Jul	70	7,007	1,252	138,436	13,636
18-Jul	79	7,499	1,333	140,271	16,206
19-Jul	94	8,983	1,734	143,737	24,036
20-Jul	94	8,983	1,734	143,737	24,036
21-Jul	94	9,018	1,734	144,002	24,145
22-Jul	94	9,018	1,734	144,002	24,145
23-Jul	96	9,268	1,915	144,274	25,805
24-Jul	97	9,360	1,956	144,411	26,139
25-Jul	97	10,238	1,995	145,853	30,599
27-Jul	97	10,238	1,995	145,853	30,599
28-Jul	97	10,238	1,995	145,853	30,599
29-Jul	97	10,374	2,070	145,970	33,677
30-Jul	103	10,548	2,177	146,066	38,161
31-Jul	103	10,548	2,177	146,066	38,161
1-Aug	107	11,076	2,571	146,547	54,652
2-Aug	110	11,529	2,822	146,962	74,775
3-Aug	114	11,839	3,040	147,187	89,345
4-Aug	114	11,839	3,040	147,187	89,345
5-Aug	114	11,839	3,040	147,187	89,345
6-Aug	114	11,839	3,040	147,187	89,345
7-Aug	114	11,839	3,040	147,187	89,345
8-Aug	114	11,989	3,040	150,159	132,915
9-Aug	114	11,990	3,040	150,615	192,799
10-Aug	114	12,524	3,244	151,747	255,378
11-Aug	114	12,524	3,244	151,747	255,378
12-Aug	114	12,524	3,244	151,747	255,378
13-Aug	114	12,524	3,244	151,747	255,378
14-Aug	114	12,524	3,244	151,747	255,378
15-Aug	114	12,524	3,244	151,747	255,378
16-Aug	114	12,524	3,244	151,747	255,378
17-Aug	114	12,524	3,244	151,747	255,378
18-Aug	114	12,524	3,244	151,747	255,378
19-Aug	114	12,524	3,244	151,747	255,378
20-Aug	114	12,524	3,244	151,747	255,378
21-Aug	114	12,524	3,244	151,747	255,378
22-Aug	114	12,524	3,244	151,747	255,378
23-Aug	114	12,524	3,244	151,747	255,378
24-Aug	114	12,524	3,244	151,747	255,378
25-Aug	114	12,524	3,244	151,747	255,378
26-Aug	114	12,524	3,244	15,177	255,378
27-Aug	114	12,524	4,197	151,747	340,368

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
28-Aug	114	12,524	4,197	151,747	340,368
29-Aug	114	15,824	4,987	153,667	483,925
30-Aug	114	12,526	5,768	151,748	723,346
31-Aug	114	12,526	7,300	151,749	980,562
1-Sep	114	12,526	12,780	151,749	1,269,963
2-Sep	114	15,526	16,911	151,749	1,601,399
3-Sep	114	12,526	16,101	151,749	1,516,051
4-Sep	114	12,527	16,949	151,752	1,620,324
5-Sep	114	12,530	20,213	151,761	1,815,499
6-Sep	114	12,547	22,867	151,763	1,893,165
7-Sep	117	12,612	23,382	151,921	1,909,854
8-Sep	117	12,612	24,692	151,925	1,944,296
9-Sep	117	12,623	24,865	151,925	1,950,749
10-Sep	117	12,654	26,230	151,929	1,972,878
11-Sep	117	12,656	27,698	151,935	1,985,761
12-Sep	117	12,657	28,400	151,935	1,994,440
13-Sep	117	12,659	28,722	151,940	1,997,421
14-Sep	117	12,659	28,722	151,940	1,997,421
15-Sep	117	12,659	28,772	151,940	1,997,421
16-Sep	117	12,659	28,722	151,940	1,997,421
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	117	12,659	28,966	151,940	1,997,421

NW Afognak, Shuyak & Perenosa					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	NW Afognak, Shuyak & Perenosa	NW Afognak, Shuyak & Perenosa	NW Afognak, Shuyak & Perenosa	NW Afognak, Shuyak & Perenosa	NW Afognak, Shuyak & Perenosa
1-Jun	0	0	0	0	0
2-Jun	0	8,807	0	0	0
3-Jun	0	12,093	0	11	0
4-Jun	0	13,132	0	11	0
5-Jun	0	13,132	0	11	0
6-Jun	0	14,507	0	11	0
7-Jun	0	14,507	0	11	0
8-Jun	0	14,665	0	11	0
9-Jun	0	1,465	0	11	0
10-Jun	0	15,625	0	11	0
11-Jun	0	15,625	0	11	0
12-Jun	0	16,892	0	11	0
13-Jun	0	16,892	0	11	0
14-Jun	0	18,925	0	11	0
15-Jun	0	19,638	0	56	0
16-Jun	22	20,095	0	61	0
17-Jun	22	20,095	0	61	0
18-Jun	22	21,095	0	61	0
19-Jun	22	21,095	0	61	0
20-Jun	22	21,874	0	62	0
21-Jun	22	21,874	0	62	0
22-Jun	22	25,127	0	97	1
23-Jun	22	25,396	0	97	1
24-Jun	22	25,396	0	97	1
25-Jun	22	25,396	0	97	1
26-Jun	22	25,396	0	97	1
27-Jun	22	25,396	0	97	1
28-Jun	22	25,396	0	97	1
29-Jun	22	25,396	0	97	1
30-Jun	22	25,396	0	97	1
1-Jul	22	25,396	0	97	1
2-Jul	22	25,396	0	97	1
3-Jul	22	25,396	0	97	1
4-Jul	22	25,396	0	97	1
5-Jul	22	25,396	0	97	1
6-Jul	22	25,396	0	97	1
7-Jul	22	26,546	5	347	1,301
8-Jul	22	26,546	5	347	1,301
9-Jul	22	27,130	9	741	2,142
10-Jul	22	27,510	12	1,312	2,942
11-Jul	22	27,510	12	1,312	2,942

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
12-Jul	22	27,510	12	1,312	2,942
13-Jul	22	27,510	12	1,312	2,942
14-Jul	22	27,730	19	1,442	5,272
15-Jul	22	27,730	19	1,442	5,272
16-Jul	33	28,239	43	2,080	13,791
17-Jul	33	28,607	49	2,326	18,579
18-Jul	33	28,607	49	2,326	18,579
19-Jul	33	28,607	49	2,326	18,579
20-Jul	33	28,607	49	2,326	18,579
21-Jul	33	28,607	49	2,326	18,579
22-Jul	33	28,607	49	2,326	21,464
23-Jul	36	28,820	70	2,572	20,622
24-Jul	37	29,411	161	2,665	22,808
25-Jul	53	32,022	686	3,326	40,145
27-Jul	53	32,022	686	3,326	40,145
28-Jul	53	32,022	686	3,326	40,145
29-Jul	53	32,022	686	3,326	40,145
30-Jul	53	32,022	686	3,326	40,145
31-Jul	53	32,022	686	3,326	40,145
1-Aug	53	32,022	686	3,326	40,145
2-Aug	53	32,022	686	3,326	40,145
3-Aug	53	32,022	686	3,326	40,145
4-Aug	53	32,022	686	3,326	40,145
5-Aug	53	32,022	686	3,326	40,145
6-Aug	53	32,022	686	3,326	40,145
7-Aug	53	32,022	686	3,326	40,145
8-Aug	53	32,022	686	3,326	40,145
9-Aug	53	32,022	686	3,326	40,145
10-Aug	53	32,022	686	3,326	40,145
11-Aug	54	32,064	803	3,510	42,905
12-Aug	54	32,064	803	3,510	42,905
13-Aug	54	33,169	1,035	4,065	65,656
14-Aug	54	33,169	1,035	4,065	65,656
15-Aug	54	33,169	1,035	4,065	65,656
16-Aug	54	33,169	1,035	4,065	65,656
17-Aug	54	33,219	1,485	4,074	66,606
18-Aug	54	33,219	1,485	4,074	66,606
19-Aug	54	33,219	1,485	4,074	66,606
20-Aug	54	33,219	1,485	4,074	66,606
21-Aug	54	33,219	1,485	4,074	66,606
22-Aug	54	33,129	1,485	4,074	66,606
23-Aug	54	33,219	1,485	4,074	66,606
24-Aug	54	33,219	1,485	4,074	66,606
25-Aug	54	33,219	1,485	4,074	66,606
26-Aug	54	33,219	1,485	4,074	66,606

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
27-Aug	54	33,219	1,485	4,074	66,606
28-Aug	54	33,219	1,485	4,074	66,606
29-Aug	54	33,219	1,485	4,074	66,606
30-Aug	54	33,219	1,485	4,074	66,606
31-Aug	54	33,219	1,485	4,074	66,606
1-Sep	54	33,219	1,485	4,074	66,606
2-Sep	54	33,219	1,485	4,074	66,606
3-Sep	54	33,219	1,485	4,074	66,606
4-Sep	54	33,219	1,485	4,074	66,606
5-Sep	54	33,219	1,485	4,074	66,606
6-Sep	54	33,219	1,485	4,074	66,606
7-Sep	54	33,129	1,485	4,074	66,606
8-Sep	54	33,219	1,485	4,074	66,606
9-Sep	54	33,223	1,576	4,385	67,323
10-Sep	54	33,223	1,576	4,385	67,323
11-Sep	54	33,223	1,576	4,385	67,323
12-Sep	54	33,223	1,576	4,385	67,323
13-Sep	54	33,223	1,576	4,385	67,323
14-Sep	54	33,223	1,576	4,385	67,323
15-Sep	54	33,223	1,576	4,385	67,323
16-Sep	54	33,223	1,576	4,385	67,323
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	54	33,223	1,576	4,385	67,323

SE Afognak & Raspberry					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	SE Afognak & Raspberry	SE Afognak & Raspberry	SE Afognak & Raspberry	SE Afognak & Raspberry	SE Afognak & Raspberry
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	4	0	3	1
28-Jun	0	4	0	3	1
29-Jun	0	4	0	3	1
30-Jun	0	4	0	3	1
1-Jul	0	4	0	3	2
2-Jul	0	4	0	3	1
3-Jul	0	4	0	3	1
4-Jul	0	4	0	3	1
5-Jul	0	4	0	3	1
6-Jul	0	4	0	3	1
7-Jul	0	4	0	3	1
8-Jul	0	4	0	3	1
9-Jul	0	4	0	3	1
10-Jul	0	4	0	3	1
11-Jul	0	4	0	3	1
12-Jul	0	4	0	3	1

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
13-Jul	0	4	0	3	1
14-Jul	0	4	0	3	1
15-Jul	0	4	0	3	1
16-Jul	0	4	0	3	1
17-Jul	0	4	0	3	1
18-Jul	0	4	0	3	1
19-Jul	0	4	0	3	1
20-Jul	0	4	0	3	1
21-Jul	0	4	0	3	1
22-Jul	0	4	0	3	1
23-Jul	0	4	0	3	1
24-Jul	0	4	0	3	1
25-Jul	0	4	0	3	1
27-Jul	0	4	0	3	1
28-Jul	0	4	0	3	1
29-Jul	0	4	0	3	1
30-Jul	0	4	0	3	1
31-Jul	0	4	0	3	1
1-Aug	0	4	0	3	1
2-Aug	0	4	0	3	1
3-Aug	0	4	0	3	1
4-Aug	0	4	0	3	1
5-Aug	0	4	0	3	1
6-Aug	0	4	0	3	1
7-Aug	0	4	0	3	1
8-Aug	0	4	0	3	1
9-Aug	0	4	0	3	1
10-Aug	0	4	0	3	241
11-Aug	0	4	0	3	241
12-Aug	0	14	7	9	626
13-Aug	0	174	53	70	2,261
14-Aug	0	174	53	70	2,261
15-Aug	0	174	53	70	2,261
16-Aug	0	174	53	70	2,261
17-Aug	0	174	53	70	2,261
18-Aug	0	174	53	70	2,261
19-Aug	0	174	53	70	2,261
20-Aug	0	174	53	70	2,261
21-Aug	0	174	53	70	2,261
22-Aug	0	174	53	70	2,261
23-Aug	0	174	53	70	2,261
24-Aug	0	174	53	70	2,261
25-Aug	0	174	53	70	2,261
26-Aug	0	174	53	70	2,261
27-Aug	0	174	53	70	2,261

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
28-Aug	0	174	53	70	2,261
29-Aug	0	174	53	70	2,261
30-Aug	0	174	53	70	2,261
31-Aug	0	174	53	70	2,261
1-Sep	0	174	53	70	2,261
2-Sep	0	174	53	70	2,261
3-Sep	0	174	53	70	2,261
4-Sep	0	174	114	70	2,331
5-Sep	0	174	114	70	2,331
6-Sep	0	174	114	70	2,331
7-Sep	0	174	114	70	2,331
8-Sep	0	174	114	70	2,331
9-Sep	0	174	114	70	2,331
10-Sep	0	174	114	70	2,331
11-Sep	0	174	114	70	2,331
12-Sep	0	174	114	70	2,331
13-Sep	0	174	114	70	2,331
14-Sep	0	174	114	70	2,331
15-Sep	0	174	114	70	2,331
16-Sep	0	174	114	70	2,331
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	0	174	114	70	2,331

Mid & North Mainland					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Mid & North Mainland	Mid & North Mainland	Mid & North Mainland	Mid & North Mainland	Mid & North Mainland
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	2	472	0	51	0
22-Jun	2	672	0	54	35
23-Jun	2	672	0	54	35
24-Jun	2	672	0	54	35
25-Jun	2	672	0	54	35
26-Jun	2	672	0	54	35
27-Jun	2	672	0	54	35
28-Jun	2	672	0	54	35
29-Jun	2	672	0	54	35
30-Jun	2	672	0	54	35
1-Jul	2	672	0	54	35
2-Jul	2	672	0	54	35
3-Jul	2	672	0	54	35
4-Jul	2	672	0	54	35
5-Jul	2	672	0	54	35
6-Jul	2	672	0	54	35
7-Jul	49	1,737	0	1,554	613
8-Jul	135	4,430	4	4,214	4,419
9-Jul	155	5,486	4	4,674	5,234
10-Jul	155	5,486	4	4,676	5,234
11-Jul	155	5,486	4	4,676	5,234
12-Jul	155	5,486	4	4,674	5,234

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
13-Jul	186	9,568	4	5,896	6,014
14-Jul	322	19,202	25	9,523	8,289
15-Jul	342	22,355	25	11,345	9,180
16-Jul	342	22,780	33	12,130	12,189
17-Jul	342	22,780	33	12,130	12,189
18-Jul	342	22,780	33	12,130	12,189
19-Jul	342	22,780	33	12,130	12,189
20-Jul	347	24,136	36	16,027	14,071
21-Jul	458	69,580	1,195	50,871	36,087
22-Jul	465	71,255	1,430	68,981	38,856
23-Jul	540	73,605	1,509	70,148	47,411
24-Jul	540	73,605	1,509	70,148	47,411
25-Jul	540	73,605	1,509	70,148	47,411
27-Jul	546	76,192	2,138	91,811	63,356
28-Jul	554	84,217	3,659	112,969	104,819
29-Jul	585	96,874	5,838	141,908	150,310
30-Jul	614	110,669	9,624	158,260	190,246
31-Jul	624	117,271	12,123	167,431	209,735
1-Aug	624	117,271	12,123	167,431	209,735
2-Aug	624	117,271	12,123	167,431	209,735
3-Aug	625	117,560	12,237	172,258	214,175
4-Aug	645	123,586	14,534	195,895	265,999
5-Aug	655	125,468	14,682	199,950	276,662
6-Aug	682	128,056	14,890	202,944	313,677
7-Aug	685	128,408	15,024	203,964	321,677
8-Aug	685	128,408	15,024	203,964	321,677
9-Aug	685	128,408	15,024	203,964	321,677
10-Aug	685	128,411	15,024	211,439	336,092
11-Aug	697	130,703	17,064	222,726	379,690
12-Aug	701	132,329	17,175	231,730	380,136
13-Aug	702	133,028	17,199	248,121	432,669
14-Aug	702	133,028	17,199	248,121	432,669
15-Aug	702	133,028	17,199	248,121	432,669
16-Aug	702	133,028	17,204	250,056	435,453
17-Aug	702	133,031	17,297	262,915	440,226
18-Aug	702	133,133	17,358	276,883	474,907
19-Aug	702	133,154	17,401	238,445	490,974
20-Aug	702	134,174	17,857	288,201	515,571
21-Aug	702	134,181	17,857	291,129	526,305
22-Aug	702	134,181	17,857	291,129	526,305
23-Aug	702	134,181	17,857	291,129	526,305
24-Aug	702	134,181	17,857	291,129	526,305
25-Aug	702	134,181	17,857	291,129	526,305
26-Aug	702	134,181	17,857	291,129	526,305
27-Aug	702	134,181	17,857	291,129	526,305

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
28-Aug	702	134,181	17,857	291,204	559,571
29-Aug	702	134,508	20,540	292,831	562,786
30-Aug	702	134,548	20,573	294,222	568,478
31-Aug	702	134,618	20,635	294,236	573,304
1-Sep	702	134,618	20,635	294,236	573,304
2-Sep	702	134,618	20,635	294,236	573,304
3-Sep	702	134,618	20,635	294,236	573,304
4-Sep	702	134,618	20,635	294,236	573,304
5-Sep	702	134,618	20,635	294,236	573,304
6-Sep	702	134,618	20,635	294,236	573,304
7-Sep	702	134,618	20,635	294,236	573,304
8-Sep	702	134,618	20,635	294,236	573,304
9-Sep	702	134,618	20,635	294,236	573,304
10-Sep	702	134,643	20,817	296,939	573,485
11-Sep	702	134,643	20,817	297,544	573,485
12-Sep	702	134,643	20,817	297,544	573,485
13-Sep	702	134,643	20,817	297,544	573,485
14-Sep	702	134,643	20,817	279,544	573,485
15-Sep	702	134,643	20,817	297,544	573,485
16-Sep	702	134,643	20,817	297,544	573,485
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	702	134,643	20,817	297,544	573,485

Foul Bay SHA					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Foul Bay SHA	Foul Bay SHA	Foul Bay SHA	Foul Bay SHA	Foul Bay SHA
1-Jun	0	0	0	0	0
2-Jun	0	8,807	0	0	0
3-Jun	0	12,093	0	11	0
4-Jun	0	13,132	0	11	0
5-Jun	0	13,132	0	11	0
6-Jun	0	14,507	0	11	0
7-Jun	0	14,507	0	11	0
8-Jun	0	14,665	0	11	0
9-Jun	0	14,665	0	11	0
10-Jun	0	15,625	0	11	0
11-Jun	0	15,625	0	11	0
12-Jun	0	16,892	0	11	0
13-Jun	0	16,892	0	11	0
14-Jun	0	18,579	0	11	0
15-Jun	0	18,579	0	11	0
16-Jun	0	18,579	0	11	0
17-Jun	0	18,579	0	11	0
18-Jun	0	19,579	0	11	0
19-Jun	0	19,579	0	11	0
20-Jun	0	20,358	0	12	0
21-Jun	0	20,358	0	12	0
22-Jun	0	21,032	0	12	0
23-Jun	0	21,301	0	12	0
24-Jun	0	21,301	0	12	0
25-Jun	0	21,301	0	12	0
26-Jun	0	21,301	0	12	0
27-Jun	0	21,301	0	12	0
28-Jun	0	21,301	0	12	0
29-Jun	0	21,301	0	12	0
30-Jun	0	21,301	0	12	0
1-Jul	0	21,301	0	12	0
2-Jul	0	21,301	0	12	0
3-Jul	0	21,301	0	12	0
4-Jul	0	21,301	0	12	0
5-Jul	0	21,301	0	12	0
6-Jul	0	21,301	0	12	0
7-Jul	0	21,301	0	12	0
8-Jul	0	21,301	0	12	0
9-Jul	0	21,301	0	12	0
10-Jul	0	21,301	0	12	0
11-Jul	0	21,301	0	12	0
12-Jul	0	21,301	0	12	0

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
13-Jul	0	21,301	0	12	0
14-Jul	0	21,301	0	12	0
15-Jul	0	21,301	0	12	0
16-Jul	0	21,301	0	12	0
17-Jul	0	21,301	0	12	0
18-Jul	0	21,301	0	12	0
19-Jul	0	21,301	0	12	0
20-Jul	0	21,301	0	12	0
21-Jul	0	21,301	0	12	0
22-Jul	0	21,301	0	12	0
23-Jul	0	21,301	0	12	0
24-Jul	0	21,301	0	12	0
25-Jul	0	21,301	0	12	0
27-Jul	0	21,301	0	12	0
28-Jul	0	21,301	0	12	0
29-Jul	0	21,301	0	12	0
30-Jul	0	21,301	0	12	0
31-Jul	0	21,301	0	12	0
1-Aug	0	21,301	0	12	0
2-Aug	0	21,301	0	12	0
3-Aug	0	21,301	0	12	0
4-Aug	0	21,301	0	12	0
5-Aug	0	21,301	0	12	0
6-Aug	0	21,301	0	12	0
7-Aug	0	21,301	0	12	0
8-Aug	0	21,301	0	12	0
9-Aug	0	21,301	0	12	0
10-Aug	0	21,301	0	12	0
11-Aug	0	21,301	0	12	0
12-Aug	0	21,301	0	12	0
13-Aug	0	21,301	0	12	0
14-Aug	0	21,301	0	12	0
15-Aug	0	21,301	0	12	0
16-Aug	0	21,301	0	12	0
17-Aug	0	21,301	0	12	0
18-Aug	0	21,301	0	12	0
19-Aug	0	21,301	0	12	0
20-Aug	0	21,301	0	12	0
21-Aug	0	21,301	0	12	0
22-Aug	0	21,301	0	12	0
23-Aug	0	21,301	0	12	0
24-Aug	0	21,301	0	12	0
25-Aug	0	21,301	0	12	0
26-Aug	0	21,301	0	12	0
27-Aug	0	21,301	0	12	0

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
28-Aug	0	21,301	0	12	0
29-Aug	0	21,301	0	12	0
30-Aug	0	21,301	0	12	0
31-Aug	0	21,301	0	12	0
1-Sep	0	21,301	0	12	0
2-Sep	0	21,301	0	12	0
3-Sep	0	21,301	0	12	0
4-Sep	0	21,301	0	12	0
5-Sep	0	21,301	0	12	0
6-Sep	0	21,301	0	12	0
7-Sep	0	21,301	0	12	0
8-Sep	0	21,301	0	12	0
9-Sep	0	21,301	0	12	0
10-Sep	0	21,301	0	12	0
11-Sep	0	21,301	0	12	0
12-Sep	0	21,301	0	12	0
13-Sep	0	21,301	0	12	0
14-Sep	0	21,301	0	12	0
15-Sep	0	21,301	0	12	0
16-Sep	0	21,301	0	12	0
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	0	21,301	0	12	0

Waterfall SHA					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Waterfall SHA	Waterfall SHA	Waterfall SHA	Waterfall SHA	Waterfall SHA
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	0	0	0	0
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
1-Jul	0	0	0	0	0
2-Jul	0	0	0	0	0
3-Jul	0	0	0	0	0
4-Jul	0	0	0	0	0
5-Jul	0	0	0	0	0
6-Jul	0	0	0	0	0
7-Jul	0	0	0	0	0
8-Jul	0	0	0	0	0
9-Jul	0	0	0	0	0
10-Jul	0	0	0	0	0
11-Jul	0	0	0	0	0
12-Jul	0	0	0	0	0

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
13-Jul	0	0	0	0	0
14-Jul	0	0	0	0	0
15-Jul	0	0	0	0	0
16-Jul	0	0	0	0	0
17-Jul	0	0	0	0	0
18-Jul	0	0	0	0	0
19-Jul	0	0	0	0	0
20-Jul	0	0	0	0	0
21-Jul	0	0	0	0	0
22-Jul	0	0	0	0	0
23-Jul	0	0	0	0	0
24-Jul	0	0	0	0	0
25-Jul	0	0	0	0	0
27-Jul	0	0	0	0	0
28-Jul	0	0	0	0	0
29-Jul	0	0	0	0	0
30-Jul	0	0	0	0	0
31-Jul	0	0	0	0	0
1-Aug	0	0	0	0	0
2-Aug	0	0	0	0	0
3-Aug	0	0	0	0	0
4-Aug	0	0	0	0	0
5-Aug	0	0	0	0	0
6-Aug	0	0	0	0	0
7-Aug	0	0	0	0	0
8-Aug	0	0	0	0	0
9-Aug	0	0	0	0	0
10-Aug	0	0	0	0	0
11-Aug	0	0	0	0	0
12-Aug	0	0	0	0	0
13-Aug	0	0	0	0	0
14-Aug	0	0	0	0	0
15-Aug	0	0	0	0	0
16-Aug	0	0	0	0	0
17-Aug	0	0	0	0	0
18-Aug	0	0	0	0	0
19-Aug	0	0	0	0	0
20-Aug	0	0	0	0	0
21-Aug	0	0	0	0	0
22-Aug	0	0	0	0	0
23-Aug	0	0	0	0	0
24-Aug	0	0	0	0	0
25-Aug	0	0	0	0	0
26-Aug	0	0	0	0	0
27-Aug	0	0	0	0	0

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
28-Aug	0	0	0	0	0
29-Aug	0	0	0	0	0
30-Aug	0	0	0	0	0
31-Aug	0	0	0	0	0
1-Sep	0	0	0	0	0
2-Sep	0	0	0	0	0
3-Sep	0	0	0	0	0
4-Sep	0	0	0	0	0
5-Sep	0	0	0	0	0
6-Sep	0	0	0	0	0
7-Sep	0	0	0	0	0
8-Sep	0	0	0	0	0
9-Sep	0	0	0	0	0
10-Sep	0	0	0	0	0
11-Sep	0	0	0	0	0
12-Sep	0	0	0	0	0
13-Sep	0	0	0	0	0
14-Sep	0	0	0	0	0
15-Sep	0	0	0	0	0
16-Sep	0	0	0	0	0
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	0	0	0	0	0

Telrod Cove SHA					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Telrod Cove SHA	Telrod Cove SHA	Telrod Cove SHA	Telrod Cove SHA	Telrod Cove SHA
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	0	0	0	0
28-Jun	0	0	0	0	0
29-Jun	0	704	0	0	0
30-Jun	0	2,144	0	0	0
1-Jul	0	2,144	0	0	0
2-Jul	0	4,186	0	6	0
3-Jul	0	2,042	0	6	0
4-Jul	0	2,042	0	6	35
5-Jul	0	2,042	0	6	35
6-Jul	0	2,042	0	6	35
7-Jul	0	2,042	0	6	35
8-Jul	0	3,223	0	31	90
9-Jul	0	13,251	0	67	375
10-Jul	0	12,449	0	28	166
11-Jul	0	12,449	0	28	166
12-Jul	0	20,706	0	100	1,492

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
13-Jul	0	25,098	0	123	1,860
14-Jul	0	25,098	0	123	860
15-Jul	0	31,981	0	321	1,914
16-Jul	0	35,526	0	354	2,486
17-Jul	0	36,584	0	366	2,632
18-Jul	0	36,854	0	366	2,632
19-Jul	0	36,581	0	366	2,632
20-Jul	0	44,801	0	772	6,254
21-Jul	0	48,219	0	831	6,940
22-Jul	0	48,318	0	2,059	13,275
23-Jul	0	49,989	0	2,207	14,503
24-Jul	0	49,989	0	2,207	14,503
25-Jul	0	49,989	0	2,207	14,503
27-Jul	0	53,633	0	2,270	18,378
28-Jul	0	54,733	0	2,270	19,478
29-Jul	0	54,733	0	2,270	19,478
30-Jul	0	54,802	0	2,288	19,750
31-Jul	0	54,802	0	2,288	19,750
1-Aug	0	58,980	0	2,379	29,205
2-Aug	0	58,980	0	2,379	29,205
3-Aug	0	60,890	0	2,445	34,500
4-Aug	0	64,086	0	2,445	34,590
5-Aug	0	63,439	0	2,489	43,642
6-Aug	0	65,389	0	2,520	50,770
7-Aug	0	66,227	0	2,589	62,322
8-Aug	0	66,623	0	2,589	62,774
9-Aug	0	67,402	0	2,589	63,395
10-Aug	0	67,402	0	2,589	63,395
11-Aug	0	67,402	0	2,589	63,395
12-Aug	0	67,402	0	2,589	63,395
13-Aug	0	67,402	0	2,589	63,395
14-Aug	0	67,402	0	2,589	63,395
15-Aug	0	67,402	0	2,589	63,395
16-Aug	0	69,490	0	2,589	64,740
17-Aug	0	69,995	0	2,589	66,699
18-Aug	0	69,995	0	2,589	66,699
19-Aug	0	69,995	0	2,589	66,699
20-Aug	0	69,995	0	2,589	66,699
21-Aug	0	69,995	0	2,589	66,699
22-Aug	0	69,995	0	2,589	66,699
23-Aug	0	69,995	2	2,589	66,699
24-Aug	0	69,995	2	2,589	66,699
25-Aug	0	69,995	2	2,589	66,699
26-Aug	0	69,995	2	2,589	66,699
27-Aug	0	69,995	2	2,589	66,699

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
28-Aug	0	69,995	2	2,589	66,699
29-Aug	0	69,995	2	2,589	66,699
30-Aug	0	69,995	2	2,589	66,699
31-Aug	0	69,995	2	2,589	66,699
1-Sep	0	69,995	2	2,589	66,699
2-Sep	0	69,995	2	2,589	66,699
3-Sep	0	69,995	2	2,589	66,699
4-Sep	0	69,995	2	2,589	66,699
5-Sep	0	69,995	2	2,589	66,699
6-Sep	0	69,995	2	2,589	66,699
7-Sep	0	69,995	2	2,589	66,699
8-Sep	0	69,995	2	2,589	66,699
9-Sep	0	69,995	2	2,589	66,699
10-Sep	0	69,995	2	2,589	66,699
11-Sep	0	69,995	2	2,589	66,699
12-Sep	0	69,995	2	2,589	66,699
13-Sep	0	69,995	2	2,589	66,699
14-Sep	0	69,995	2	2,589	66,699
15-Sep	0	69,995	2	2,589	66,699
16-Sep	0	69,995	2	2,589	66,699
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	0	69,995	2	2,589	66,699

Telrod Cove Cost Recovery					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Telrod Cove Cost Recovery	Telrod Cove Cost Recovery	Telrod Cove Cost Recovery	Telrod Cove Cost Recovery	Telrod Cove Cost Recovery
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	0	0	0	0
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
1-Jul	0	0	0	0	0
2-Jul	0	0	0	6	0
3-Jul	0	0	0	6	0
4-Jul	0	0	0	6	35
5-Jul	0	0	0	6	35
6-Jul	0	0	0	6	35
7-Jul	0	0	0	6	35
8-Jul	0	0	0	31	90
9-Jul	0	0	0	67	375
10-Jul	0	0	0	28	166
11-Jul	0	0	0	28	166
12-Jul	0	0	0	100	1,492

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
13-Jul	0	0	0	123	1,860
14-Jul	0	0	0	123	860
15-Jul	0	0	0	321	1,914
16-Jul	0	0	0	354	2,486
17-Jul	0	0	0	366	2,632
18-Jul	0	0	0	366	2,632
19-Jul	0	0	0	366	2,632
20-Jul	0	0	0	772	6,254
21-Jul	0	0	0	831	6,940
22-Jul	0	0	0	2,059	13,275
23-Jul	0	0	0	2,207	14,503
24-Jul	0	0	0	2,207	14,503
25-Jul	0	0	0	2,207	14,503
27-Jul	0	0	0	2,270	18,378
28-Jul	0	0	0	2,270	19,478
29-Jul	0	0	0	2,270	19,478
30-Jul	0	0	0	2,288	19,750
31-Jul	0	0	0	2,288	19,750
1-Aug	0	54,802	0	2,288	19,750
2-Aug	0	54,802	0	2,288	19,750
3-Aug	0	54,802	0	2,288	19,750
4-Aug	0	54,802	0	2,288	19,750
5-Aug	0	19,750	0	2,288	19,750
6-Aug	0	54,802	0	2,288	19,750
7-Aug	0	54,802	0	2,288	19,750
8-Aug	0	54,802	0	2,288	19,750
9-Aug	0	54,802	0	2,288	19,750
10-Aug	0	54,802	0	2,288	19,750
11-Aug	0	54,802	0	2,288	19,750
12-Aug	0	54,802	0	2,288	19,750
13-Aug	0	54,802	0	2,288	19,750
14-Aug	0	54,802	0	2,288	19,750
15-Aug	0	54,802	0	2,288	19,750
16-Aug	0	54,802	0	2,288	19,750
17-Aug	0	54,802	0	2,288	19,750
18-Aug	0	54,802	0	2,288	19,750
19-Aug	0	54,802	0	2,288	19,750
20-Aug	0	54,802	0	2,288	19,750
21-Aug	0	54,802	0	2,288	19,750
22-Aug	0	54,802	0	2,288	19,750
23-Aug	0	54,802	0	2,288	19,750
24-Aug	0	54,802	0	2,288	19,750
25-Aug	0	54,802	0	2,288	19,750
26-Aug	0	54,802	0	2,288	19,750
27-Aug	0	54,802	0	2,288	19,750

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
28-Aug	0	54,802	0	2,288	19,750
29-Aug	0	54,802	0	2,288	19,750
30-Aug	0	54,802	0	2,288	19,750
31-Aug	0	54,802	0	2,288	19,750
1-Sep	0	54,802	0	2,288	19,750
2-Sep	0	54,802	0	2,288	19,750
3-Sep	0	54,802	0	2,288	19,750
4-Sep	0	54,802	0	2,288	19,750
5-Sep	0	54,802	0	2,288	19,750
6-Sep	0	54,802	0	2,288	19,750
7-Sep	0	54,802	0	2,288	19,750
8-Sep	0	54,802	0	2,288	19,750
9-Sep	0	54,802	0	2,288	19,750
10-Sep	0	54,802	0	2,288	19,750
11-Sep	0	54,802	0	2,288	19,750
12-Sep	0	54,802	0	2,288	19,750
13-Sep	0	54,802	0	2,288	19,750
14-Sep	0	54,802	0	2,288	19,750
15-Sep	0	54,802	0	2,288	19,750
16-Sep	0	54,802	0	2,288	19,750
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	0	54,802	0	2,288	19,750

Kitoi Cost Recovery					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Kitoi Cost Recovery	Kitoi Cost Recovery	Kitoi Cost Recovery	Kitoi Cost Recovery	Kitoi Cost Recovery
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	0	0	0	0
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
1-Jul	0	0	0	0	0
2-Jul	0	0	0	0	0
3-Jul	0	0	0	0	0
4-Jul	0	0	0	0	0
5-Jul	0	0	0	0	0
6-Jul	0	0	0	0	0
7-Jul	0	0	0	0	0
8-Jul	0	0	0	0	0
9-Jul	0	0	0	0	0
10-Jul	0	0	0	0	0
11-Jul	0	0	0	0	0
12-Jul	0	0	0	0	0

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
13-Jul	0	0	0	0	0
14-Jul	0	0	0	0	0
15-Jul	0	0	0	0	0
16-Jul	0	0	0	0	0
17-Jul	0	0	0	0	0
18-Jul	0	0	0	0	0
19-Jul	0	0	0	0	0
20-Jul	0	0	0	0	0
21-Jul	0	0	0	0	0
22-Jul	0	0	0	0	0
23-Jul	0	0	0	0	0
24-Jul	0	0	0	0	0
25-Jul	0	0	0	0	0
27-Jul	0	0	0	0	0
28-Jul	0	0	0	0	0
29-Jul	0	0	0	0	0
30-Jul	0	0	0	0	0
31-Jul	0	0	0	0	0
1-Aug	0	0	0	0	0
2-Aug	0	0	0	0	0
3-Aug	0	0	0	0	0
4-Aug	0	0	0	0	0
5-Aug	0	0	0	0	0
6-Aug	0	0	0	0	0
7-Aug	0	0	0	0	0
8-Aug	0	150	0	2,972	43,570
9-Aug	0	151	0	3,428	103,454
10-Aug	0	685	204	4,560	166,033
11-Aug	0	685	204	4,560	166,033
12-Aug	0	685	204	4,560	166,033
13-Aug	0	685	204	4,560	166,033
14-Aug	0	685	204	4,560	166,033
15-Aug	0	685	204	4,560	166,033
16-Aug	0	685	204	4,560	166,033
17-Aug	0	685	204	4,560	166,033
18-Aug	0	685	204	4,560	166,033
19-Aug	0	685	204	4,560	166,033
20-Aug	0	685	204	4,560	166,033
21-Aug	0	685	204	4,560	166,033
22-Aug	0	685	204	4,560	166,033
23-Aug	0	685	204	4,560	166,033
24-Aug	0	685	204	4,560	166,033
25-Aug	0	685	204	4,560	166,033
26-Aug	0	685	204	4,560	166,033
27-Aug	0	685	1,157	4,560	251,023

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
28-Aug	0	685	1,157	4,560	251,023
29-Aug	0	3,985	1,947	6,480	394,580
30-Aug	0	687	3,871	4,561	853,231
31-Aug	0	687	3,871	4,561	853,231
1-Sep	0	687	9,351	4,561	1,142,634
2-Sep	0	687	12,672	4,561	1,388,720
3-Sep	0	687	12,672	4,561	1,388,720
4-Sep	0	687	12,859	4,561	1,488,348
5-Sep	0	687	13,513	4,561	1,665,866
6-Sep	0	687	15,132	4,561	1,736,632
7-Sep	0	687	15,132	4,561	1,736,632
8-Sep	0	687	15,132	4,561	1,736,632
9-Sep	0	687	15,132	4,561	1,736,632
10-Sep	0	687	15,132	4,561	1,736,632
11-Sep	0	687	15,132	4,561	1,736,632
12-Sep	0	687	15,132	4,561	1,736,632
13-Sep	0	687	15,132	4,561	1,736,632
14-Sep	0	687	15,132	4,561	1,736,632
15-Sep	0	687	15,132	4,561	1,736,632
16-Sep	0	687	15,132	4,561	1,736,632
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	0	687	15,132	4,561	1,736,632

2017 Kodiak Chinook Harvest

	Daily	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative		Cumulative
	Total Chinook Harvest	Karluk, NW Kodiak & SW Afognak	Ayakulik, Halibut Bay & Sturgeon	Alitak Bay, Olga, Moser & Dog Salmon	Cape Alitak & Humpy-Deadman	East & Northeast Kodiak	Duck, Izhut & Kitoi Bays	NW Afognak, Shuyak & Perenosa	SE Afognak & Raspberry	Cape Igvak & Wide Bay	Mid & North Mainland	Foul Bay SHA	Waterfall SHA	Telrod Cove SHA	Telrod Cove Cost Recovery	Kitoi cost Recovery	Igvak %	Cumulative Chinook Harvest
1-Jun	28	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0		28
2-Jun	164	192	0	0	0	0	0	0	0	0	0	0	0	0	0	0		192
3-Jun	144	336	0	0	0	0	0	0	0	0	0	0	0	0	0	0		336
4-Jun	57	393	0	0	0	0	0	0	0	0	0	0	0	0	0	0		393
5-Jun	26	417	0	0	0	0	0	0	0	0	0	0	0	0	0	0		417
6-Jun	2	419	0	0	0	0	0	0	0	0	0	0	0	0	0	0		419
7-Jun	2	421	0	0	0	0	0	0	0	0	0	0	0	0	0	0		421
8-Jun	11	432	0	0	0	0	0	0	0	0	0	0	0	0	0	0		432
9-Jun	14	446	0	0	0	0	0	0	0	0	0	0	0	0	0	0		446
10-Jun	8	454	0	0	0	0	0	0	0	0	0	0	0	0	0	0		454
11-Jun	21	475	0	0	0	0	0	0	0	0	0	0	0	0	0	0		475
12-Jun	39	514	0	0	0	0	0	0	0	0	0	0	0	0	0	0		514
13-Jun	22	536	0	0	0	0	0	0	0	0	0	0	0	0	0	0		536
14-Jun	46	576	0	0	0	0	0	0	0	6	0	0	0	0	0	0		582
15-Jun	90	609	0	0	0	0	0	0	0	63	0	0	0	0	0	0		672
16-Jun	14	623	0	0	0	0	0	22	0	75	0	0	0	0	0	0		720
17-Jun	104	727	0	0	0	0	0	22	0	75	0	0	0	0	0	0		824
18-Jun	196	801	84	0	38	0	0	22	0	75	0	0	0	0	0	0		1,020
19-Jun	101	875	85	0	59	0	5	22	0	75	0	0	0	0	0	0		1,121
20-Jun	82	955	87	0	59	0	7	22	0	75	0	0	0	0	0	0		1,205
21-Jun	27	982	87	0	59	0	7	22	0	75	2	0	0	0	0	0		1,234
22-Jun	35	1,004	87	0	59	11	7	22	0	75	2	0	0	0	0	0		1,267
23-Jun	114	1,038	87	0	59	11	7	22	0	155	2	0	0	0	0	0		1,381
24-Jun	384	1,097	87	0	59	11	14	22	0	473	2	0	0	0	0	0		1,765
25-Jun	8	1,104	87	0	59	11	15	22	0	484	2	0	0	0	0	0		1,784
26-Jun	19	1,123	87	0	59	11	15	22	0	484	2	0	0	0	0	0		1,803
27-Jun	26	1,169	87	0	59	11	18	22	0	484	2	0	0	0	0	0		1,852
28-Jun	27	1,196	87	0	59	11	18	22	0	484	2	0	0	0	0	0		1,879
29-Jun	3	1,199	87	0	59	11	18	22	0	484	2	0	0	0	0	0		1,882
30-Jun	28	1,227	87	0	59	11	18	22	0	484	2	0	0	0	0	0		1,910
1-Jul	26	1,253	87	0	59	11	18	22	0	484	2	0	0	0	0	0		1,936
2-Jul	41	1,294	87	0	59	11	18	22	0	484	2	0	0	0	0	0		1,977
3-Jul	66	1,360	87	0	59	11	18	22	0	484	2	0	0	0	0	0		2,043
4-Jul	26	1,386	87	0	59	11	18	22	0	484	2	0	0	0	0	0		2,069
5-Jul	22	1,415	87	0	59	11	18	22	0	484	2	0	0	0	0	0		2,098
6-Jul	38	1,451	87	0	59	13	18	22	0	484	2	0	0	0	0	0		2,136
7-Jul	225	1,591	87	0	59	51	18	22	0	484	49	0	0	0	0	0		2,361
8-Jul	152	1,648	87	0	59	60	18	22	0	484	135	0	0	0	0	0		2,513
9-Jul	58	1,675	87	0	59	101	18	22	0	484	155	0	0	0	0	0		2,601
10-Jul	113	1,718	87	0	59	171	18	22	0	484	155	0	0	0	0	0		2,714
11-Jul	10	1,718	87	0	59	171	28	22	0	484	155	0	0	0	0	0		2,724
12-Jul	29	1,718	87	0	59	171	59	22	0	484	155	0	0	0	0	0		2,753
13-Jul	36	1,722	87	0	59	172	57	22	0	484	186	0	0	0	0	0		2,789
14-Jul	236	1,755	131	0	67	176	68	22	0	484	322	0	0	0	0	0		3,025
15-Jul	78	1,792	131	0	81	183	68	22	0	484	342	0	0	0	0	0		3,103

16-Jul	126	1,883	131	0	93	205	68	33	0	484	342	0	0	0	0	0	
17-Jul	228	1,995	131	0	83	319	70	33	0	484	342	0	0	0	0	0	
18-Jul	9	1,999	131	0	83	319	79	33	0	484	342	0	0	0	0	0	3,470
19-Jul	15	1,999	131	0	83	319	94	33	0	484	342	0	0	0	0	0	3,485
20-Jul	8	2,001	131	1	83	319	94	33	0	484	347	0	0	0	0	0	3,493
21-Jul	253	2,020	131	1	101	424	94	33	0	484	458	0	0	0	0	0	3,746
22-Jul	128	2,136	131	1	102	428	94	33	0	484	465	0	0	0	0	0	3,874
23-Jul	265	2,389	131	1	103	439	96	36	0	484	540	0	0	0	0	0	4,219
24-Jul	161	2,536	131	1	103	447	97	37	0	484	540	0	0	0	0	0	4,376
25-Jul	0	2,608	131	1	104	459	97	53	0	484	540	0	0	0	0	0	4,477
27-Jul	28	2,621	131	1	113	459	97	53	0	484	546	0	0	0	0	0	4,505
28-Jul	60	2,653	131	1	133	459	97	53	0	484	554	0	0	0	0	0	4,565
29-Jul	86	2,680	131	1	160	459	97	53	0	485	585	0	0	0	0	0	4,651
30-Jul	203	2,691	131	1	189	468	103	53	0	604	614	0	0	0	0	0	4,854
31-Jul	24	2,715	131	1	189	468	103	53	0	612	624	0	0	0	0	0	4,896
1-Aug	53	2,764	131	1	189	468	107	53	0	612	624	0	0	0	0	0	4,949
2-Aug	70	2,828	134	1	189	468	110	53	0	612	624	0	0	0	0	0	5,019
3-Aug	98	2,916	138	1	190	468	114	53	0	612	625	0	0	0	0	0	5,117
4-Aug	135	2,968	138	1	197	524	114	53	0	612	645	0	0	0	0	0	5,252
5-Aug	95	3,036	138	1	214	524	114	53	0	612	655	0	0	0	0	0	5,347
6-Aug	62	3,060	138	1	215	534	114	53	0	612	682	0	0	0	0	0	5,409
7-Aug	51	3,111	138	1	217	534	114	53	0	612	685	0	0	0	0	0	5,465
8-Aug	70	3,181	138	1	217	534	114	53	0	612	685	0	0	0	0	0	5,535
9-Aug	20	3,201	138	1	217	534	114	53	0	612	685	0	0	0	0	0	5,555
10-Aug	63	3,264	138	1	217	534	114	53	0	612	685	0	0	0	0	0	5,618
11-Aug	103	3,333	138	1	217	554	114	54	0	613	697	0	0	0	0	0	5,721
12-Aug	72	3,397	138	1	217	561	114	54	0	614	701	0	0	0	0	0	5,797
13-Aug	122	3,512	145	1	217	573	114	54	0	620	702	0	0	0	0	0	5,938
14-Aug	11	3,522	146	1	217	573	114	54	0	620	702	0	0	0	0	0	5,949
15-Aug	66	3,588	146	1	217	573	114	54	0	620	702	0	0	0	0	0	6,015
16-Aug	35	3,633	146	1	217	573	114	54	0	620	702	0	0	0	0	0	6,060
17-Aug	28	3,658	149	1	217	573	114	54	0	620	702	0	0	0	0	0	6,088
18-Aug	35	3,672	168	1	217	575	114	54	0	620	702	0	0	0	0	0	6,123
19-Aug	31	3,699	172	1	217	575	114	54	0	620	702	0	0	0	0	0	6,154
20-Aug	6	3,705	172	1	217	575	114	54	0	620	702	0	0	0	0	0	6,160
21-Aug	20	3,716	181	1	217	575	114	54	0	620	702	0	0	0	0	0	6,180
22-Aug	28	3,744	181	1	217	575	114	54	0	620	702	0	0	0	0	0	6,208
23-Aug	12	3,751	185	1	217	576	114	54	0	620	702	0	0	0	0	0	6,220
24-Aug	40	3,786	188	1	217	578	114	54	0	620	702	0	0	0	0	0	6,260
25-Aug	9	3,789	194	1	217	578	114	54	0	620	702	0	0	0	0	0	6,269
26-Aug	10	3,794	194	1	217	583	114	54	0	620	702	0	0	0	0	0	6,279
27-Aug	27	3,821	194	1	217	583	114	54	0	620	702	0	0	0	0	0	6,306
28-Aug	6	3,827	194	1	217	583	114	54	0	620	702	0	0	0	0	0	6,312
29-Aug	3	3,830	194	1	217	583	114	54	0	620	702	0	0	0	0	0	6,315
30-Aug	4	3,834	194	1	217	583	114	54	0	620	702	0	0	0	0	0	6,319
31-Aug	6	3,837	197	1	217	583	114	54	0	620	702	0	0	0	0	0	6,325
1-Sep	6	3,843	197	1	217	583	114	54	0	620	702	0	0	0	0	0	6,331
2-Sep	14	3,857	197	1	217	583	114	54	0	620	702	0	0	0	0	0	6,345
3-Sep	5	3,866	197	1	217	583	114	54	0	620	702	0	0	0	0	0	6,354
4-Sep	2	3,868	197	1	217	583	114	54	0	620	702	0	0	0	0	0	6,356
5-Sep	16	3,884	197	1	217	583	114	54	0	620	702	0	0	0	0	0	6,372

6-Sep	15	3,888	197	1	217	594	114	54	0	620	702	0	0	0	0	0	6,387
7-Sep	209	3,914	197	1	217	594	117	54	0	620	702	0	0	0	0	0	6,416
8-Sep	4	3,918	197	1	217	594	117	54	0	620	702	0	0	0	0	0	6,420
9-Sep	34	3,952	197	1	217	594	117	54	0	620	702	0	0	0	0	0	6,454
10-Sep	2	3,954	197	1	217	594	117	54	0	620	702	0	0	0	0	0	6,456
11-Sep	2	3,967	197	1	217	594	117	54	0	620	702	0	0	0	0	0	6,469
12-Sep	2	3,969	197	1	217	594	117	54	0	620	702	0	0	0	0	0	6,471
13-Sep	1	3,970	197	1	217	594	117	54	0	620	702	0	0	0	0	0	6,472
14-Sep	0	3,970	197	1	217	594	117	54	0	620	702	0	0	0	0	0	6,472
15-Sep	1	3,971	197	1	217	594	117	54	0	620	702	0	0	0	0	0	6,473
16-Sep	4	3,975	197	1	217	594	117	54	0	620	702	0	0	0	0	0	6477
17-Sep																	
18-Sep																	
19-Sep																	
20-Sep	0	3,975	197	1	217	594	117	54	0	620	702	0	0	0	0	0	6,477

Confidential

2017 Kodiak Sockeye Harvest

	Daily	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative		Cumulative
	Total Sockeye Harvest	Karluk, NW Kodiak & SW Afognak	Ayakulik, Halibut Bay & Sturgeon	Alitak Bay, Olga, Moser & Dog Salmon	Cape Alitak & Humpy-Deadman	East & Northeast Kodiak	Duck, Izhut & Kitoi Bays	NW Afognak, Shuyak & Perenosa	SE Afognak & Raspberry	Cape Igvak & Wide Bay	Mid & North Mainland	Foul Bay SHA	Waterfall SHA	Telrod Cove SHA	Telrod Cove Cost Recovery	Kitoi cost Recovery	Igvak %	Cumulative Sockeye Harvest
1-Jun	6,085	6,085	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	6,085
2-Jun	35,254	33,631	0	0	0	0	0	8,807	0	0	0	8,807	0	0	0	0	0.0%	42,438
3-Jun	18,669	48,002	0	0	0	0	0	12,093	0	0	0	12,093	0	0	0	0	0.0%	60,095
4-Jun	23,792	70,755	0	0	0	0	0	13,132	0	0	0	13,132	0	0	0	0	0.0%	83,887
5-Jun	12,296	83,258	0	0	0	0	0	13,132	0	0	0	13,132	0	0	0	0	0.0%	96,390
6-Jun	16,997	98,880	0	0	0	0	0	14,507	0	0	0	14,507	0	0	0	0	0.0%	113,387
7-Jun	8,304	107,184	0	0	0	0	0	14,507	0	0	0	14,507	0	0	0	0	0.0%	121,691
8-Jun	20,023	127,049	0	0	0	0	0	14,665	0	0	0	14,665	0	0	0	0	0.0%	141,714
9-Jun	19,104	143,476	0	2,677	0	0	0	1,465	0	0	0	14,665	0	0	0	0	0.0%	160,818
10-Jun	29,512	167,014	0	5,934	1,757	0	0	15,625	0	0	0	15,625	0	0	0	0	0.0%	190,330
11-Jun	7,911	174,246	0	5,934	1,912	0	524	15,625	0	0	0	15,625	0	0	0	0	0.0%	198,241
12-Jun	27,936	200,639	0	5,934	2,044	0	668	16,892	0	0	0	16,892	0	0	0	0	0.0%	226,177
13-Jun	11,189	211,828	0	5,934	2,044	0	668	16,892	0	0	0	16,892	0	0	0	0	0.0%	237,366
14-Jun	28,951	225,690	0	5,934	2,044	0	730	18,925	0	12,994	0	18,579	0	0	0	0	0.0%	266,317
15-Jun	67,735	235,871	0	5,934	2,044	121	788	19,638	0	69,656	0	18,579	0	0	0	0	0.0%	334,052
16-Jun	9,394	245,260	0	5,934	2,044	1,455	793	20,095	0	80,614	0	18,579	0	0	0	0	0.0%	356,195
17-Jun	21,018	262,091	726	9,395	2,044	1,455	793	20,095	0	80,614	0	18,579	0	0	0	0	0.0%	377,213
18-Jun	31,098	271,999	14,841	13,855	3,656	1,455	796	21,095	0	80,614	0	19,579	0	0	0	0	0.0%	408,311
19-Jun	21,667	280,670	22,772	16,116	6,402	1,455	854	21,095	0	80,614	0	19,579	0	0	0	0	19.5%	429,978
20-Jun	5,465	285,337	23,339	16,116	6,402	1,455	873	21,874	0	80,614	0	20,358	0	0	0	0	16.6%	436,010
21-Jun	16,777	301,059	23,339	16,116	6,402	3,043	873	21,874	0	80,614	472	20,358	0	0	0	0	15.2%	453,792
22-Jun	11,462	305,665	23,339	16,116	6,402	5,259	1,055	25,127	0	80,614	672	21,032	0	0	0	0	14.3%	464,249
23-Jun	15,671	309,478	23,339	16,116	6,402	5,259	1,068	25,396	0	92,190	672	21,301	0	0	0	0	16.0%	479,920
24-Jun	39,673	314,118	23,339	16,166	6,402	5,331	1,390	25,396	0	126,829	672	21,301	0	0	0	0	20.6%	519,593
25-Jun	6,654	320,734	23,339	16,116	6,402	5,331	1,428	25,396	0	130,776	672	21,301	0	0	0	0	21.1%	530,194
26-Jun	11,389	332,123	23,339	16,116	6,402	5,331	1,428	25,396	0	130,854	672	21,301	0	0	0	0	21.1%	541,661
27-Jun	15,726	353,704	23,339	16,116	6,402	5,331	1,765	25,396	4	130,854	672	21,301	0	0	0	0	21.1%	563,583
28-Jun	18,339	372,043	23,339	16,116	6,402	5,331	1,765	25,396	4	130,854	672	21,301	0	0	0	0	21.3%	581,922
29-Jun	5,911	377,954	23,339	16,116	6,402	5,331	1,947	25,396	4	130,854	672	21,301	0	704	0	0	21.3%	588,015
30-Jun	13,823	391,777	23,339	16,116	6,402	5,331	2,185	25,396	4	130,854	672	21,301	0	2,144	0	0	21.3%	602,076
1-Jul	7,401	399,178	23,339	16,116	6,402	5,331	2,185	25,396	4	130,854	672	21,301	0	2,144	0	0	19.9%	609,477
2-Jul	11,394	410,572	23,339	16,116	6,402	5,331	2,185	25,396	4	130,854	672	21,301	0	4,186	0	0	19.9%	620,871
3-Jul	11,456	419,884	23,339	16,116	6,402	5,331	2,185	25,396	4	130,854	672	21,301	0	2,042	0	0	19.0%	630,183
4-Jul	11,172	431,056	23,339	16,116	6,402	5,331	2,185	25,396	4	130,854	672	21,301	0	2,042	0	0	18.0%	641,355
5-Jul	15,640	450,304	23,339	16,116	6,402	5,331	2,185	25,396	4	130,854	672	21,301	0	2,042	0	0	17.5%	660,603
6-Jul	14,316	463,295	23,339	16,116	6,402	5,331	2,185	25,396	4	130,854	672	21,301	0	2,042	0	0	17.1%	674,919
7-Jul	38,825	481,527	23,339	16,116	6,402	25,034	2,185	26,546	4	130,854	1,737	21,301	0	2,042	0	0	17.1%	713,744
8-Jul	19,862	494,735	23,339	16,116	6,402	28,995	2,185	26,546	4	130,854	4,430	21,301	0	3,223	0	0	16.4%	733,606
9-Jul	37,059	519,892	23,339	16,116	6,402	47,939	2,185	27,130	4	130,854	5,486	21,301	0	13,251	0	0	16.3%	779,347
10-Jul	34,918	539,911	23,339	16,116	6,402	62,054	2,228	27,510	4	130,854	5,486	21,301	0	12,449	0	0	16.3%	813,904
11-Jul	838	539,911	23,339	16,116	6,402	62,054	3,066	27,510	4	130,854	5,486	21,301	0	12,449	0	0	16.3%	814,742
12-Jul	8,835	548,168	23,339	16,116	6,402	62,054	3,655	27,510	4	130,854	5,486	21,301	0	20,706	0	0	16.3%	823,577
13-Jul	27,133	565,144	23,409	19,249	6,435	64,418	4,119	27,510	4	130,854	9,568	21,301	0	25,098	0	0	16.3%	850,710
14-Jul	59,189	593,188	29,893	21,758	10,096	71,594	5,580	27,730	4	130,854	19,202	21,301	0	25,098	0	0	16.3%	909,899
15-Jul	30,771	612,408	29,893	23,361	13,678	74,732	5,655	27,730	4	130,854	22,355	21,301	0	31,981	0	0	16.3%	940,670

16-Jul	33,405	637,473	29,893	23,361	16,227	79,176	6,493	28,239	4	130,854	22,780	21,301	0	35,526	0	0	
17-Jul	31,660	659,987	29,893	23,361	18,551	86,549	7,007	28,607	4	130,854	22,780	21,301	0	36,584	0	0	
18-Jul	492	660,318	29,893	18,551	18,551	87,475	7,499	28,607	4	130,854	22,780	21,301	0	36,854	0	0	15.0%	1,009,342
19-Jul	1,484	660,318	29,893	23,361	18,551	87,475	8,983	28,607	4	130,854	22,780	21,301	0	36,581	0	0	15.0%	1,010,826
20-Jul	23,833	674,932	29,893	28,199	20,763	88,288	8,983	28,607	4	130,854	24,136	21,301	0	44,801	0	0	14.3%	1,034,659
21-Jul	92,403	702,156	29,963	35,485	26,846	94,549	9,018	28,607	4	130,854	69,580	21,301	0	48,219	0	0	14.3%	1,127,062
22-Jul	23,825	718,311	29,963	39,126	28,428	95,321	9,018	28,607	4	130,854	71,255	21,301	0	48,318	0	0	14.2%	1,150,887
23-Jul	32,389	747,619	30,262	39,126	29,992	96,501	9,268	28,820	4	130,854	73,605	21,301	0	49,989	0	0	14.3%	1,186,051
24-Jul	29,283	772,726	30,772	39,126	31,316	97,732	9,360	29,411	4	130,854	73,605	21,301	0	49,989	0	0	14.3%	1,214,906
25-Jul	878	782,013	30,772	39,126	31,970	98,097	10,238	32,022	4	130,854	73,605	21,301	0	49,989	0	0	14.2%	1,228,701
27-Jul	25,175	796,874	30,772	43,688	33,730	98,313	10,238	32,022	4	132,043	76,192	21,301	0	53,633	0	0	14.2%	1,253,876
28-Jul	51,769	825,013	35,685	48,730	36,987	98,657	10,238	32,022	4	134,092	84,217	21,301	0	54,733	0	0	14.2%	1,305,645
29-Jul	41,683	844,839	35,685	51,989	40,297	98,657	10,374	32,022	4	137,573	96,874	21,301	0	54,733	0	0	14.2%	1,348,314
30-Jul	50,169	861,512	45,228	55,354	42,691	99,184	10,548	32,022	4	141,360	110,669	21,301	0	54,802	0	0	14.2%	1,398,552
31-Jul	17,744	876,620	47,864	55,354	43,437	99,184	10,548	32,022	4	142,057	117,271	21,301	0	54,802	0	0	14.2%	1,424,361
1-Aug	28,565	902,527	49,994	55,354	43,437	99,184	11,076	32,022	4	142,057	117,271	21,301	0	58,980	54,802	0	14.2%	1,452,926
2-Aug	24,822	920,865	56,025	55,354	43,437	99,184	11,529	32,022	4	142,057	117,271	21,301	0	58,980	54,802	0	14.2%	1,477,748
3-Aug	44,722	952,865	64,257	58,034	45,100	99,857	11,839	32,022	4	145,429	117,560	21,301	0	60,890	54,802	0	14.2%	1,526,967
4-Aug	42,927	980,228	65,165	59,397	49,278	101,860	11,839	32,022	4	147,423	123,586	21,301	0	64,086	54,802	0	14.2%	1,570,801
5-Aug	48,008	1,008,454	67,287	62,783	57,787	102,923	11,839	32,022	4	150,242	125,468	21,301	0	63,439	19,750	0	14.2%	1,618,809
6-Aug	31,143	1,026,393	67,287	65,726	60,013	105,742	11,839	32,022	4	152,870	128,056	21,301	0	65,389	54,802	0	14.2%	1,649,952
7-Aug	19,513	1,045,746	67,447	65,726	61,145	105,742	11,839	32,022	4	153,046	128,408	21,301	0	66,227	54,802	0	14.2%	1,671,125
8-Aug	16,488	1,062,084	67,447	65,726	61,145	105,742	11,989	32,022	4	153,046	128,408	21,301	0	66,623	54,802	150	14.2%	1,687,613
9-Aug	12,215	1,074,298	67,447	65,726	61,145	105,742	11,990	32,022	4	153,046	128,408	21,301	0	67,402	54,802	151	14.2%	1,699,828
10-Aug	10,707	1,083,517	68,143	65,726	61,268	105,874	12,524	32,022	4	153,046	128,411	21,301	0	67,402	54,802	685	14.2%	1,710,535
11-Aug	17,305	1,095,990	68,626	65,726	61,798	106,542	12,524	32,064	4	153,863	130,703	21,301	0	67,402	54,802	685	14.2%	1,727,840
12-Aug	17,825	1,113,920	68,626	65,726	62,119	107,199	12,524	32,064	14	153,983	132,329	21,301	0	67,402	54,802	685	14.2%	1,748,504
13-Aug	30,360	1,145,905	71,887	65,726	63,295	107,924	12,524	33,169	174	154,483	133,028	21,301	0	67,402	54,802	685	14.2%	1,788,115
14-Aug	34,728	1,176,445	76,075	65,726	63,295	107,924	12,524	33,169	174	154,483	133,028	21,301	0	67,402	54,802	685	14.2%	1,822,843
15-Aug	30,028	1,201,023	81,525	65,726	63,295	107,924	12,524	33,169	174	154,483	133,028	21,301	0	67,402	54,802	685	14.2%	1,852,871
16-Aug	29,276	1,224,765	87,450	66,571	63,545	108,125	12,524	33,169	174	154,483	133,028	21,301	0	69,490	54,802	685	14.0%	1,883,834
17-Aug	30,733	1,250,257	90,847	67,492	63,801	108,739	12,524	33,219	174	154,483	133,031	21,301	0	69,995	54,802	685	14.0%	1,914,567
18-Aug	27,949	1,271,022	96,357	67,492	64,068	109,715	12,524	33,219	174	154,812	133,133	21,301	0	69,995	54,802	685	14.0%	1,942,516
19-Aug	26,438	1,288,864	104,046	67,492	64,364	110,305	12,524	33,219	174	154,812	133,154	21,301	0	69,995	54,802	685	14.0%	1,968,954
20-Aug	38,442	1,313,398	114,263	67,492	65,366	111,397	12,524	33,219	174	155,389	134,174	21,301	0	69,995	54,802	685	14.0%	2,007,396
21-Aug	18,187	1,329,447	115,618	67,492	65,795	111,807	12,524	33,219	174	155,389	134,181	21,301	0	69,995	54,802	685	14.0%	2,025,646
22-Aug	24,049	1,348,508	116,662	71,207	66,364	112,263	12,524	33,129	174	155,389	134,181	21,301	0	69,995	54,802	685	14.0%	2,050,491
23-Aug	28,014	1,370,551	118,509	74,602	66,659	112,697	12,524	33,219	174	155,389	134,181	21,301	0	69,995	54,802	685	14.0%	2,078,505
24-Aug	28,703	1,390,446	120,928	78,862	68,409	113,076	12,524	33,219	174	155,389	134,181	21,301	0	69,995	54,802	685	14.0%	2,107,208
25-Aug	25,428	1,412,000	123,421	78,862	69,305	113,615	12,524	33,219	174	155,389	134,181	21,301	0	69,995	54,802	685	14.0%	2,132,690
26-Aug	22,034	1,430,167	125,192	78,862	70,930	114,086	12,524	33,219	174	155,389	134,181	21,301	0	69,995	54,802	685	14.0%	2,154,724
27-Aug	17,096	1,442,656	128,405	78,862	71,844	114,566	12,524	33,219	174	155,389	134,181	21,301	0	69,995	54,802	685	14.0%	2,171,820
28-Aug	8,331	1,448,355	128,781	80,645	72,168	114,715	12,524	33,219	174	155,389	134,181	21,301	0	69,995	54,802	685	14.0%	2,180,151
29-Aug	14,107	1,450,673	129,322	83,728	76,313	115,108	15,824	33,219	174	155,389	134,508	21,301	0	69,995	54,802	3,985	14.0%	2,194,258
30-Aug	8,252	1,453,977	130,913	86,058	76,969	115,439	12,526	33,219	174	155,389	134,548	21,301	0	69,995	54,802	687	14.0%	2,199,212
31-Aug	15,025	1,465,354	131,724	88,149	77,547	115,682	12,526	33,219	174	155,389	134,618	21,301	0	69,995	54,802	687	14.0%	2,214,382
1-Sep	8,521	1,471,575	131,724	89,576	78,165	115,937	12,526	33,219	174	155,389	134,618	21,301	0	69,995	54,802	687	14.0%	2,222,903
2-Sep	10,374	1,480,008	131,724	91,189	78,319	116,111	15,526	33,219	174	155,389	134,618	21,301	0	69,995	54,802	687	14.0%	2,233,277
3-Sep	8,402	1,483,772	131,724	93,346	81,129	116,195	12,526	33,219	174	155,389	134,618	21,301	0	69,995	54,802	687	14.0%	2,242,092
4-Sep	12,373	1,487,431	131,724	97,144	86,007	116,232	12,527	33,219	174	155,389	134,618	21,301	0	69,995	54,802	687	14.0%	2,254,465
5-Sep	29,260	1,509,461	131,724	99,159	91,199	116,252	12,530	33,219	174	155,389	134,618	21,301	0	69,995	54,802	687	14.0%	2,283,725

6-Sep	43,511	1,549,046	131,724	101,466	92,728	116,325	12,547	33,219	174	155,389	134,618	21,301	0	69,995	54,802	687	14.0%	2,327,336
7-Sep	27,010	1,571,621	131,724	103,689	94,875	116,325	12,612	33,129	174	155,389	134,618	21,301	0	69,995	54,802	687	14.0%	2,354,246
8-Sep	19,413	1,586,453	134,653	104,674	95,533	116,325	12,612	33,219	174	155,389	134,618	21,301	0	69,995	54,802	687	14.0%	2,373,659
9-Sep	7,565	1,592,006	134,653	106,085	96,125	116,328	12,623	33,223	174	155,389	134,618	21,301	0	69,995	54,802	687	14.0%	2,381,224
10-Sep	9,899	1,600,321	134,951	107,308	96,125	116,335	12,654	33,223	174	155,389	134,643	21,301	0	69,995	54,802	687	14.0%	2,391,123
11-Sep	5,371	1,607,981	135,238	108,501	96,125	116,336	12,656	33,223	174	155,389	134,643	21,301	0	69,995	54,802	687	14.0%	2,400,266
12-Sep	14,894	1,616,342	135,238	114,294	96,864	116,336	12,657	33,223	174	155,389	134,643	21,301	0	69,995	54,802	687	14.0%	2,415,160
13-Sep	3,426	1,619,523	135,238	109,886	96,864	116,336	12,659	33,223	174	155,389	134,643	21,301	0	69,995	54,802	687	14.0%	2,413,935
14-Sep	11,369	1,629,812	135,238	110,659	97,171	116,336	12,659	33,223	174	155,389	134,643	21,301	0	69,995	54,802	687	14.0%	2,425,304
15-Sep	4,884	1,632,909	135,238	110,776	98,841	116,336	12,659	33,223	174	155,389	134,643	21,301	0	69,995	54,802	687	14.0%	2,430,188
16-Sep	6,005	1,637,811	135,238	111,879	98,841	116,336	12,659	33,223	174	155,389	134,643	21,301	0	69,995	54,802	687	14.0%	2,436,193
17-Sep																		
18-Sep																		
19-Sep																		
20-Sep	3,801	1,647,779	135,238	113,852	98,841	116,336	12,659	33,223	174	155,389	134,643	21,301	0	69,995	54,802	687	14.0%	2,448,134

Confidential

2017 Kodiak Coho Harvest

	Daily	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative		Cumulative
	Total Coho Harvest	Karluk, NW Kodiak & SW Afognak	Ayakulik, Halibut Bay & Sturgeon	Alitak Bay, Olga, Moser & Dog Salmon	Cape Alitak & Humpy-Deadman	East & Northeast Kodiak	Duck, Izhut & Kitoi Bays	NW Afognak, Shuyak & Perenosa	SE Afognak & Raspberry	Cape Igvak & Wide Bay	Mid & North Mainland	Foul Bay SHA	Waterfall SHA	Telrod Cove SHA	Telrod Cove Cost Recovery	Kitoi cost Recovery	Igvak %	Cumulative Coho Harvest
1-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
2-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
3-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
4-Jun	862	862	0	0	0	0	0	0	0	0	0	0	0	0	0	0		862
5-Jun	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0		8
6-Jun	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0		8
7-Jun	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0		8
8-Jun	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0		8
9-Jun	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0		8
10-Jun	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0		8
11-Jun	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0		8
12-Jun	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0		8
13-Jun	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0		8
14-Jun	1	8	0	0	0	0	0	0	0	1	0	0	0	0	0	0		9
15-Jun	1	8	0	0	0	0	0	0	0	2	0	0	0	0	0	0		10
16-Jun	0	8	0	0	0	0	0	0	0	2	0	0	0	0	0	0		10
17-Jun	2	8	0	2	0	0	0	0	0	2	0	0	0	0	0	0		12
18-Jun	1	9	0	2	0	0	0	0	0	2	0	0	0	0	0	0		13
19-Jun	1	10	0	2	0	0	0	0	0	2	0	0	0	0	0	0		14
20-Jun	1	11	0	2	0	0	0	0	0	2	0	0	0	0	0	0		15
21-Jun	3	14	0	2	0	0	0	0	0	2	0	0	0	0	0	0		18
22-Jun	0	14	0	2	0	0	0	0	0	2	0	0	0	0	0	0		18
23-Jun	0	14	0	2	0	0	0	0	0	2	0	0	0	0	0	0		18
24-Jun	115	17	0	2	0	0	0	0	0	114	0	0	0	0	0	0		133
25-Jun	1	18	0	2	0	0	0	0	0	114	0	0	0	0	0	0		134
26-Jun	1	19	0	2	0	0	0	0	0	114	0	0	0	0	0	0		135
27-Jun	2	20	0	2	0	0	1	0	0	114	0	0	0	0	0	0		137
28-Jun	3	23	0	2	0	0	1	0	0	114	0	0	0	0	0	0		140
29-Jun	6	29	0	2	0	0	2	0	0	114	0	0	0	0	0	0		147
30-Jun	8	37	0	2	0	0	2	0	0	114	0	0	0	0	0	0		155
1-Jul	12	49	0	2	0	0	2	0	0	114	0	0	0	0	0	0		167
2-Jul	19	68	0	2	0	0	2	0	0	114	0	0	0	0	0	0		186
3-Jul	53	121	0	2	0	0	2	0	0	114	0	0	0	0	0	0		239
4-Jul	23	106	0	2	0	0	2	0	0	114	0	0	0	0	0	0		224
5-Jul	13	122	0	2	0	0	2	0	0	114	0	0	0	0	0	0		240
6-Jul	200	158	0	2	0	164	2	0	0	114	0	0	0	0	0	0		440
7-Jul	2,754	257	0	2	0	2,814	2	5	0	114	0	0	0	0	0	0		3,194
8-Jul	2,684	638	0	2	0	5,113	2	5	0	114	4	0	0	0	0	0		5,878
9-Jul	4,180	1,091	0	2	0	9,322	2	9	0	114	4	0	0	0	0	0		10,544
10-Jul	4,494	1,567	0	2	0	13,453	2	12	0	114	4	0	0	0	0	0		15,154
11-Jul	157	1,567	0	2	0	13,453	159	12	0	114	4	0	0	0	0	0		15,311
12-Jul	125	1,567	0	2	0	13,453	284	12	0	114	4	0	0	0	0	0		15,436
13-Jul	1,027	1,596	0	5	2	14,266	466	12	0	114	4	0	0	0	0	0		16,463
14-Jul	2,138	1,890	0	43	75	15,684	751	19	0	114	25	0	0	0	0	0		18,601
15-Jul	459	2,056	0	48	157	15,888	753	19	0	114	25	0	0	0	0	0		19,060

16-Jul	1,818	2,433	0	48	173	17,047	995	43	0	114	33	0	0	0	0	0
17-Jul	2,518	2,964	0	48	186	19,022	1,252	49	0	114	33	0	0	0	0	0
18-Jul	81	2,972	0	48	186	19,566	1,333	49	0	114	33	0	0	0	0	0
19-Jul	401	2,972	0	48	186	19,566	1,734	49	0	114	33	0	0	0	0	0
20-Jul	701	3,407	0	52	187	19,824	1,734	49	0	114	36	0	0	0	0	0
21-Jul	4,558	5,197	4	60	283	21,325	1,734	49	0	114	1,195	0	0	0	0	0
22-Jul	1,609	6,508	4	73	297	21,361	1,734	49	0	114	1,430	0	0	0	0	0
23-Jul	2,539	8,618	8	73	373	21,550	1,915	70	0	114	1,509	0	0	0	0	0
24-Jul	1,591	9,838	158	73	394	21,608	1,956	161	0	114	1,509	0	0	0	0	0
25-Jul	39	10,471	158	73	395	21,608	1,995	686	0	114	1,509	0	0	0	0	0
27-Jul	1,729	10,600	158	81	404	21,618	1,995	686	0	1,058	2,138	0	0	0	0	0
28-Jul	3,483	11,247	213	99	441	21,634	1,995	686	0	2,247	3,659	0	0	0	0	0
29-Jul	5,984	12,261	213	106	458	21,634	2,070	686	0	4,939	5,838	0	0	0	0	0
30-Jul	8,407	13,393	448	117	470	21,642	2,177	686	0	8,055	9,624	0	0	0	0	0
31-Jul	1,575	14,875	541	117	503	21,642	2,177	686	0	9,284	12,123	0	0	0	0	0
1-Aug	3,755	18,089	688	117	503	21,642	2,571	686	0	9,284	12,123	0	0	0	0	0
2-Aug	3,371	20,538	1,359	117	503	21,642	2,822	686	0	9,284	12,123	0	0	0	0	0
3-Aug	4,333	24,007	1,434	121	516	21,668	3,040	686	0	10,020	12,237	0	0	0	0	0
4-Aug	5,071	26,088	1,434	131	699	21,739	3,040	686	0	10,449	14,534	0	0	0	0	0
5-Aug	3,486	28,577	1,460	151	732	21,756	3,040	686	0	11,202	14,682	0	0	0	0	0
6-Aug	3,309	30,638	1,460	190	759	22,157	3,040	686	0	11,775	14,890	0	0	0	0	0
7-Aug	2,859	33,496	1,461	190	767	22,157	3,040	686	0	11,842	15,024	0	0	0	0	0
8-Aug	1,840	35,336	1,461	190	767	22,157	3,040	686	0	11,842	15,024	0	0	0	0	0
9-Aug	2,096	37,432	1,461	190	767	22,157	3,040	686	0	11,842	15,024	0	0	0	0	0
10-Aug	2,200	39,361	1,522	190	771	22,159	3,244	686	0	11,842	15,024	0	0	0	0	204
11-Aug	10,989	47,808	1,561	190	800	22,266	3,244	803	0	12,052	17,064	0	0	0	0	204
12-Aug	4,944	54,503	1,561	190	802	22,285	3,244	803	7	12,076	17,175	0	0	0	0	204
13-Aug	4,935	60,114	1,685	190	808	22,316	3,244	1,035	53	12,270	17,199	0	0	0	0	204
14-Aug	3,565	63,401	1,963	190	808	22,316	3,244	1,035	53	12,270	17,199	0	0	0	0	204
15-Aug	4,165	66,693	2,836	190	808	22,316	3,244	1,035	53	12,270	17,199	0	0	0	0	204
16-Aug	2,603	68,552	3,854	232	829	22,324	3,244	1,035	53	12,270	17,204	0	0	0	0	204
17-Aug	4,287	71,585	4,389	322	842	22,397	3,244	1,485	53	12,270	17,297	0	0	0	0	204
18-Aug	4,195	73,654	5,521	322	855	22,590	3,244	1,485	53	12,997	17,358	0	0	0	0	204
19-Aug	3,011	75,744	6,225	322	862	22,757	3,244	1,485	53	12,997	17,401	0	0	0	0	204
20-Aug	6,829	78,332	6,760	322	906	23,425	3,244	1,485	53	15,535	17,857	0	0	0	0	204
21-Aug	3,911	81,785	6,920	322	931	23,717	3,244	1,485	53	15,535	17,857	0	0	0	0	204
22-Aug	4,771	85,791	7,151	436	945	24,186	3,244	1,485	53	15,535	17,857	0	0	0	0	204
23-Aug	6,503	90,875	7,485	573	992	25,087	3,244	1,485	53	15,535	17,857	0	0	2	0	204
24-Aug	9,144	97,980	7,935	729	1,400	26,112	3,244	1,485	53	15,535	17,857	0	0	2	0	204
25-Aug	9,391	104,787	8,579	729	1,635	27,911	3,244	1,485	53	15,535	17,857	0	0	2	0	204
26-Aug	7,883	110,370	9,201	729	1,928	29,296	3,244	1,485	53	15,535	17,857	0	0	2	0	204
27-Aug	11,451	117,441	10,007	729	2,400	31,445	4,197	1,485	53	15,535	17,857	0	0	2	0	1,157
28-Aug	3,874	120,106	10,203	924	2,544	32,119	4,197	1,485	53	15,535	17,857	0	0	2	0	1,157
29-Aug	9,538	122,281	10,398	1,342	3,064	34,876	4,987	1,485	53	15,535	20,540	0	0	2	0	1,947
30-Aug	9,345	127,124	10,967	1,716	3,376	36,947	5,768	1,485	53	15,535	20,573	0	0	2	0	3,871
31-Aug	11,356	133,200	12,490	2,233	3,907	38,796	7,300	1,485	53	15,535	20,635	0	0	2	0	3,871
1-Sep	15,524	140,562	12,490	2,411	4,674	40,532	12,780	1,485	53	15,535	20,635	0	0	2	0	9,351
2-Sep	13,668	148,536	12,490	2,656	4,891	41,634	16,911	1,485	53	15,535	20,635	0	0	2	0	12,672
3-Sep	3,849	152,033	12,490	2,814	5,964	41,954	16,101	1,485	53	15,535	20,635	0	0	2	0	12,672
4-Sep	8,390	156,688	12,490	3,359	7,192	43,007	16,949	1,485	114	15,535	20,635	0	0	2	0	12,859
5-Sep	11,591	162,886	12,490	3,609	8,211	43,867	20,213	1,485	114	15,535	20,635	0	0	2	0	13,513

6-Sep	11,449	169,175	12,490	3,853	9,142	45,198	22,867	1,485	114	15,535	20,635	0	0	2	0	15,132	309,494
7-Sep	4,356	172,483	12,490	4,050	9,487	45,198	23,382	1,485	114	15,535	20,635	0	0	2	0	15,132	304,850
8-Sep	5,851	176,072	13,117	4,240	9,613	45,198	24,692	1,485	114	15,535	20,635	0	0	2	0	15,132	310,701
9-Sep	2,602	177,749	13,117	4,525	9,969	45,218	24,865	1,576	114	15,535	20,635	0	0	2	0	15,132	313,303
10-Sep	7,464	181,509	13,306	4,686	9,969	47,025	26,230	1,576	114	15,535	20,817	0	0	2	0	15,132	320,767
11-Sep	4,485	186,681	14,250	4,866	9,969	47,054	27,698	1,576	114	15,535	20,817	0	0	2	0	15,132	328,560
12-Sep	10,310	194,980	14,250	5,554	10,339	47,305	28,400	1,576	114	15,535	20,817	0	0	2	0	15,132	338,870
13-Sep	2,925	197,550	14,250	5,010	10,339	47,305	28,722	1,576	114	15,535	20,817	0	0	2	0	15,132	341,218
14-Sep	7,642	204,495	14,250	5,227	10,819	47,305	28,722	1,576	114	15,535	20,817	0	0	2	0	15,132	348,860
15-Sep	2,024	205,847	14,250	5,238	11,480	47,305	28,772	1,576	114	15,535	20,817	0	0	2	0	15,132	350,884
16-Sep	2,163	207,903	14,250	5,345	11,480	47,305	28,722	1,576	114	15,535	20,817	0	0	2	0	15,132	353,047
17-Sep																	
18-Sep																	
19-Sep																	
20-Sep	647	210,556	14,250	5,497	11,480	47,305	28,966	1,576	114	15,535	20,817	0	0	2	0	15,132	356,096

Confidential

2017 Kodiak Pink Harvest

	Daily	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative		Cumulative
	Total Pink Harvest	Karluk, NW Kodiak & SW Afognak	Ayakulik, Halibut Bay & Sturgeon	Alitak Bay, Olga, Moser & Dog Salmon	Cape Alitak & Humpy-Deadman	East & Northeast Kodiak	Duck, Izhut & Kitoi Bays	NW Afognak, Shuyak & Perenosa	SE Afognak & Raspberry	Cape Igvak & Wide Bay	Mid & North Mainland	Foul Bay SHA	Waterfall SHA	Telrod Cove SHA	Telrod Cove Cost Recovery	Kitoi cost Recovery	Igvak %	Cumulative Pink Harvest
1-Jun	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0		2
2-Jun	11	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0		13
3-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		13
4-Jun	15	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0		28
5-Jun	1	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0		37
6-Jun	31	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0		68
7-Jun	0	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0		68
8-Jun	59	127	0	0	0	0	0	0	0	0	0	0	0	0	0	0		127
9-Jun	35	161	0	0	1	0	0	0	0	0	0	0	0	0	0	0		162
10-Jun	27	186	0	1	2	0	0	0	0	0	0	0	0	0	0	0		189
11-Jun	34	192	0	1	2	0	28	0	0	0	0	0	0	0	0	0		223
12-Jun	64	249	0	1	2	0	35	0	0	0	0	0	0	0	0	0		287
13-Jun	18	267	0	1	2	0	35	0	0	0	0	0	0	0	0	0		305
14-Jun	765	314	0	1	2	0	35	0	0	718	0	0	0	0	0	0		1,070
15-Jun	3,390	358	0	1	2	13	37	0	0	4,049	0	0	0	0	0	0		4,460
16-Jun	24	377	0	1	2	867	42	0	0	4,563	0	0	0	0	0	0		5,852
17-Jun	122	496	2	2	2	867	42	0	0	4,563	0	0	0	0	0	0		5,974
18-Jun	116	563	44	5	6	867	42	0	0	4,563	0	0	0	0	0	0		6,090
19-Jun	285	737	61	5	21	867	121	0	0	4,563	0	0	0	0	0	0		6,375
20-Jun	110	830	70	5	21	867	138	0	0	4,563	0	0	0	0	0	0		6,494
21-Jun	1,601	1,421	70	5	21	1,905	138	0	0	4,563	0	0	0	0	0	0		8,123
22-Jun	2,068	1,641	70	5	21	3,488	339	1	0	4,563	35	0	0	0	0	0		10,163
23-Jun	7,697	1,771	70	5	21	3,488	342	1	0	12,127	35	0	0	0	0	0		17,860
24-Jun	18,877	2,207	70	5	21	3,489	554	1	0	30,355	35	0	0	0	0	0		36,737
25-Jun	326	2,500	70	5	21	3,489	587	1	0	32,090	35	0	0	0	0	0		38,798
26-Jun	957	3,457	70	5	21	3,489	587	1	0	32,122	35	0	0	0	0	0		39,787
27-Jun	3,171	5,421	70	5	21	3,489	1,990	1	1	32,122	35	0	0	0	0	0		43,155
28-Jun	2,772	8,193	70	5	21	3,489	1,990	1	1	32,122	35	0	0	0	0	0		45,927
29-Jun	1,428	9,621	70	5	21	3,489	3,059	1	1	32,122	35	0	0	0	0	0		48,424
30-Jun	5,261	14,882	70	5	21	3,489	3,455	1	1	32,122	35	0	0	0	0	0		54,081
1-Jul	3,109	17,991	70	5	21	3,489	3,455	1	2	32,122	35	0	0	0	0	0		57,190
2-Jul	4,614	22,605	70	5	21	3,489	3,455	1	1	32,122	35	0	0	0	0	0		61,804
3-Jul	6,506	29,111	70	5	21	3,489	3,455	1	1	32,122	35	0	0	0	0	0		68,310
4-Jul	6,766	35,789	70	5	21	3,489	3,455	1	1	32,122	35	0	0	35	35	0		74,988
5-Jul	7,375	44,041	70	5	21	3,489	3,455	1	1	32,122	35	0	0	35	35	0		83,240
6-Jul	14,049	53,060	70	5	21	8,519	3,455	1	1	32,122	35	0	0	35	35	0		97,289
7-Jul	57,953	68,781	70	5	21	48,873	3,455	1,301	1	32,122	613	0	0	35	35	0		155,242
8-Jul	45,071	86,390	70	5	21	75,259	3,455	1,301	1	32,122	4,419	0	0	90	90	0		200,313
9-Jul	80,518	105,352	70	5	21	138,585	3,455	2,142	1	32,122	5,234	0	0	375	375	0		286,987
10-Jul	133,861	146,903	70	5	21	232,861	3,668	2,942	1	32,122	5,234	0	0	166	166	0		423,827
11-Jul	999	146,903	70	5	21	232,861	4,667	2,942	1	32,122	5,234	0	0	166	166	0		424,826
12-Jul	1,655	148,229	70	5	21	232,861	4,996	2,942	1	32,122	5,234	0	0	1,492	1,492	0		426,481
13-Jul	40,565	171,492	209	3,068	276	245,631	5,291	2,942	1	32,122	6,014	0	0	1,860	1,860	0		467,046
14-Jul	149,956	266,664	684	6,909	12,330	277,398	8,598	5,272	1	32,122	8,289	0	0	860	860	0		618,267
15-Jul	69,992	312,986	684	8,569	23,689	287,134	8,622	5,272	1	32,122	9,180	0	0	1,914	1,914	0		688,259

16-Jul	226,173	502,083	684	8,569	31,653	304,953	11,396	13,791	1	32,122	12,189	0	0	2,486	2,486	
17-Jul	225,795	686,838	684	8,569	40,876	334,710	13,636	18,579	1	32,122	12,189	0	0	2,632	2,632	
18-Jul	2,570	690,268	684	8,569	40,876	342,940	16,206	18,579	1	32,122	12,189	0	0	2,632	2,632	0	1,162,434
19-Jul	7,830	690,268	684	8,569	40,876	342,940	24,036	18,579	1	32,122	12,189	0	0	2,632	2,632	0	1,170,264
20-Jul	91,808	753,958	684	15,631	55,491	347,499	24,036	18,579	1	32,122	14,071	0	0	6,254	6,254	0	1,262,072
21-Jul	364,805	1,037,313	1,234	26,198	77,863	373,335	24,145	18,579	1	32,122	36,087	0	0	6,940	6,940	0	1,626,877
22-Jul	262,412	1,256,651	1,234	34,110	101,175	379,531	24,145	21,464	1	32,122	38,856	0	0	13,275	13,275	0	1,889,289
23-Jul	418,161	1,644,002	1,361	34,110	117,016	391,870	25,805	20,622	1	32,122	47,411	0	0	14,503	14,503	0	2,314,320
24-Jul	311,151	1,900,255	13,044	34,110	141,495	405,681	26,139	22,808	1	32,122	47,411	0	0	14,503	14,503	0	2,623,066
25-Jul	4,460	2,047,859	13,044	34,110	149,576	408,356	30,599	40,145	1	32,122	47,411	0	0	14,503	14,503	0	2,803,223
27-Jul	305,542	2,248,910	13,044	45,079	175,650	415,707	30,599	40,145	1	76,274	63,356	0	0	18,378	18,378	0	3,108,765
28-Jul	579,405	2,633,583	31,477	58,776	212,965	426,871	30,599	40,145	1	148,934	104,819	0	0	19,478	19,478	0	3,688,170
29-Jul	543,664	2,991,236	31,477	70,604	262,892	426,871	33,677	40,145	1	252,494	150,310	0	0	19,478	19,478	0	4,259,707
30-Jul	599,658	3,375,009	64,374	81,140	286,395	449,893	38,161	40,145	1	334,273	190,246	0	0	19,750	19,750	0	4,859,637
31-Jul	401,305	3,765,653	75,035	81,140	290,347	449,893	38,161	40,145	1	350,360	209,735	0	0	19,750	19,750	0	5,300,470
1-Aug	425,902	4,165,835	84,264	81,140	290,347	449,893	54,652	40,145	1	350,360	209,735	0	0	29,205	19,750	0	5,726,372
2-Aug	294,204	4,419,335	104,845	81,140	290,347	449,893	74,775	40,145	1	350,360	209,735	0	0	29,205	19,750	0	6,020,576
3-Aug	547,313	4,852,133	138,518	91,361	310,426	484,368	89,345	40,145	1	459,444	214,175	0	0	34,500	19,750	0	6,679,916
4-Aug	454,543	5,089,075	143,935	97,170	357,835	543,711	89,345	40,145	1	512,660	265,999	0	0	34,590	19,750	0	7,139,876
5-Aug	563,427	5,400,650	144,882	107,603	434,030	583,995	89,345	40,145	1	625,990	276,662	0	0	43,642	19,750	0	7,703,303
6-Aug	561,910	5,710,935	144,882	120,014	468,994	673,693	89,345	40,145	1	703,527	313,677	0	0	50,770	19,750	0	8,265,213
7-Aug	364,642	6,074,697	145,762	120,014	478,003	673,693	89,345	40,145	1	707,527	321,677	0	0	62,322	19,750	0	8,650,864
8-Aug	384,944	6,416,071	145,762	120,014	478,003	673,693	132,915	40,145	1	707,527	321,677	0	0	62,774	19,750	43,570	9,035,808
9-Aug	333,265	6,690,652	145,762	120,014	478,003	673,693	192,799	40,145	1	707,527	321,677	0	0	63,395	19,750	103,454	9,370,273
10-Aug	451,682	6,939,288	149,461	120,014	518,179	738,073	255,378	40,145	241	725,084	336,092	0	0	63,395	19,750	166,033	9,821,955
11-Aug	494,879	7,211,224	156,877	120,014	590,806	793,586	255,378	42,905	241	766,113	379,690	0	0	63,395	19,750	166,033	10,316,834
12-Aug	399,952	7,451,232	156,877	120,014	678,365	894,981	255,378	42,905	626	784,439	380,136	0	0	63,395	19,750	166,033	10,764,953
13-Aug	687,232	7,980,255	203,133	120,014	754,850	999,818	255,378	65,656	2,261	818,695	432,669	0	0	63,395	19,750	166,033	11,632,729
14-Aug	584,936	8,487,661	280,663	120,014	754,850	999,818	255,378	65,656	2,261	818,695	432,669	0	0	63,395	19,750	166,033	12,217,665
15-Aug	600,952	9,002,471	366,805	120,014	754,850	999,818	255,378	65,656	2,261	818,695	432,669	0	0	63,395	19,750	166,033	12,818,617
16-Aug	639,308	9,417,173	447,459	128,875	850,475	1,052,815	255,378	65,656	2,261	837,098	435,453	0	0	64,740	19,750	166,033	13,492,643
17-Aug	790,802	9,845,154	495,410	134,787	965,474	1,205,137	255,378	66,606	2,261	873,012	440,226	0	0	66,699	19,750	166,033	14,283,445
18-Aug	756,677	10,216,533	571,057	134,787	1,067,416	1,342,382	255,378	66,606	2,261	908,785	474,907	0	0	66,699	19,750	166,033	15,040,112
19-Aug	656,059	10,502,494	674,406	134,787	1,190,679	1,469,801	255,378	66,606	2,261	908,785	490,974	0	0	66,699	19,750	166,033	15,696,171
20-Aug	702,909	10,779,339	753,204	134,787	1,312,558	1,652,433	255,378	66,606	2,261	926,943	515,571	0	0	66,699	19,750	166,033	16,399,080
21-Aug	666,766	11,168,431	769,992	134,787	1,434,572	1,810,798	255,378	66,606	2,261	926,943	526,305	0	0	66,699	19,750	166,033	17,096,073
22-Aug	744,933	11,543,566	779,688	142,913	1,575,542	2,024,645	255,378	66,606	2,261	926,943	526,305	0	0	66,699	19,750	166,033	17,843,847
23-Aug	867,045	12,039,386	813,568	153,083	1,707,324	2,220,038	255,378	66,606	2,261	926,943	526,305	0	0	66,699	19,750	166,033	18,710,892
24-Aug	716,279	12,447,999	851,259	165,365	1,847,527	2,337,528	255,378	66,606	2,261	926,943	526,305	0	0	66,699	19,750	166,033	19,427,171
25-Aug	774,332	12,891,491	885,926	165,365	1,957,702	2,545,605	255,378	66,606	2,261	926,943	526,305	0	0	66,699	19,750	166,033	20,223,582
26-Aug	763,653	13,304,324	920,805	165,365	2,111,952	2,707,296	255,378	66,606	2,261	926,943	526,305	0	0	66,699	19,750	166,033	20,987,235
27-Aug	700,022	13,596,412	984,997	165,365	2,244,745	2,833,255	340,368	66,606	2,261	926,943	526,305	0	0	66,699	19,750	251,023	21,687,257
28-Aug	252,156	13,704,228	999,159	170,958	2,283,217	2,886,102	340,368	66,606	2,261	926,943	559,571	0	0	66,699	19,750	251,023	21,939,413
29-Aug	479,402	13,784,104	1,012,912	179,595	2,377,351	3,022,332	483,925	66,606	2,261	926,943	562,786	0	0	66,699	19,750	394,580	22,418,815
30-Aug	730,478	13,992,500	1,036,421	190,587	2,507,213	3,155,129	723,346	66,606	2,261	926,943	568,478	0	0	66,699	19,750	853,231	23,169,484
31-Aug	598,860	14,118,217	1,042,254	200,753	2,596,298	3,284,087	980,562	66,606	2,261	926,943	573,304	0	0	66,699	19,750	853,231	23,791,285
1-Sep	650,212	14,270,419	1,042,254	207,156	2,680,609	3,401,980	1,269,963	66,606	2,261	926,943	573,304	0	0	66,699	19,750	1,142,634	24,441,497
2-Sep	541,511	14,383,531	1,042,254	212,534	2,721,912	3,452,264	1,601,399	66,606	2,261	926,943	573,304	0	0	66,699	19,750	1,388,720	24,983,008
3-Sep	84,238	14,421,111	1,042,254	216,648	2,804,512	3,481,105	1,516,051	66,606	2,261	926,943	573,304	0	0	66,699	19,750	1,388,720	25,050,795
4-Sep	428,407	14,618,167	1,042,254	222,858	2,881,505	3,524,910	1,620,324	66,606	2,331	926,943	573,304	0	0	66,699	19,750	1,488,348	25,479,202
5-Sep	443,037	14,715,560	1,042,254	228,514	2,990,580	3,560,648	1,815,499	66,606	2,331	926,943	573,304	0	0	66,699	19,750	1,665,866	25,922,239

6-Sep	328,478	14,862,324	1,042,254	234,100	3,043,398	3,606,292	1,893,165	66,606	2,331	926,943	573,304	0	0	66,699	19,750	1,736,632	26,250,717
7-Sep	154,700	14,962,303	1,042,254	238,638	3,076,892	3,606,292	1,909,854	66,606	2,331	926,943	573,304	0	0	66,699	19,750	1,736,632	26,405,417
8-Sep	110,245	15,011,261	1,052,786	241,453	3,090,390	3,606,292	1,944,296	66,606	2,331	926,943	573,304	0	0	66,699	19,750	1,736,632	26,515,662
9-Sep	42,620	15,032,791	1,052,786	244,880	3,098,710	3,608,465	1,950,749	67,323	2,331	926,943	573,304	0	0	66,699	19,750	1,736,632	26,558,282
10-Sep	81,740	15,060,695	1,058,736	248,092	3,098,710	3,630,829	1,972,878	67,323	2,331	926,943	573,485	0	0	66,699	19,750	1,736,632	26,640,022
11-Sep	33,908	15,087,249	1,060,707	250,571	3,098,710	3,630,877	1,985,761	67,323	2,331	926,943	573,485	0	0	66,699	19,750	1,736,632	26,683,957
12-Sep	48,459	15,107,496	1,060,707	256,573	3,109,763	3,633,355	1,994,440	67,323	2,331	926,943	573,485	0	0	66,699	19,750	1,736,632	26,732,416
13-Sep	11,267	15,115,366	1,060,707	252,709	3,109,763	3,633,355	1,997,421	67,323	2,331	926,943	573,485	0	0	66,699	19,750	1,736,632	26,739,403
14-Sep	18,671	15,126,535	1,060,707	255,327	3,114,647	3,633,355	1,997,421	67,323	2,331	926,943	573,485	0	0	66,699	19,750	1,736,632	26,758,074
15-Sep	18,574	15,128,380	1,060,707	255,868	3,130,835	3,633,355	1,997,421	67,323	2,331	926,943	573,485	0	0	66,699	19,750	1,736,632	26,776,648
16-Sep	4,968	15,131,804	1,060,707	257,412	3,130,835	3,633,355	1,997,421	67,323	2,331	926,973	573,485	0	0	66,699	19,750	1,736,632	26,781,616
17-Sep																	
18-Sep																	
19-Sep																	
20-Sep	971	15,134,321	1,060,707	258,160	3,130,835	3,633,355	1,997,421	67,323	2,331	926,973	537,485	0	0	66,699	19,750	1,736,632	

2017 Kodiak Chum Harvest

	Daily	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative		Cumulative
	Total Chum Harvest	Karluk, NW Kodiak & SW Afognak	Ayakulik, Halibut Bay & Sturgeon	Alitak Bay, Olga, Moser & Dog Salmon	Cape Alitak & Humpy-Deadman	East & Northeast Kodiak	Duck, Izhut & Kitoi Bays	NW Afognak, Shuyak & Perenosa	SE Afognak & Raspberry	Cape Igvak & Wide Bay	Mid & North Mainland	Foul Bay SHA	Waterfall SHA	Telrod Cove SHA	Telrod Cove Cost Recovery	Kitoi cost Recovery	Igvak %	Cumulative Chum Harvest
1-Jun	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0		7
2-Jun	203	210	0	0	0	0	0	0	0	0	0	0	0	0	0	0		210
3-Jun	168	329	0	0	0	0	0	11	0	0	0	11	0	0	0	0		340
4-Jun	342	671	0	0	0	0	0	11	0	0	0	11	0	0	0	0		682
5-Jun	138	798	0	0	0	0	0	11	0	0	0	11	0	0	0	0		809
6-Jun	758	1,556	0	0	0	0	0	11	0	0	0	11	0	0	0	0		1,567
7-Jun	120	1,676	0	0	0	0	0	11	0	0	0	11	0	0	0	0		1,687
8-Jun	1,609	3,285	0	0	0	0	0	11	0	0	0	11	0	0	0	0		3,296
9-Jun	885	4,169	0	1	0	0	0	11	0	0	0	11	0	0	0	0		4,181
10-Jun	1,694	5,626	0	7	231	0	0	11	0	0	0	11	0	0	0	0		5,875
11-Jun	1,194	6,131	0	7	245	0	675	11	0	0	0	11	0	0	0	0		7,069
12-Jun	2,900	8,848	0	7	246	0	857	11	0	0	0	11	0	0	0	0		9,969
13-Jun	362	9,210	0	7	246	0	857	11	0	0	0	11	0	0	0	0		10,331
14-Jun	2,109	10,021	0	7	246	0	1,129	11	0	936	0	11	0	0	0	0		12,350
15-Jun	8,086	10,770	0	7	246	68	1,211	56	0	8,078	0	11	0	0	0	0		20,436
16-Jun	861	11,327	0	7	246	1,621	1,515	61	0	9,515	0	11	0	0	0	0		24,292
17-Jun	3,220	14,490	51	13	246	1,621	1,515	61	0	9,515	0	11	0	0	0	0		27,512
18-Jun	6,817	15,802	1,076	56	337	1,621	5,861	61	0	9,515	0	11	0	0	0	0		34,329
19-Jun	4,677	17,588	1,602	82	630	1,621	7,907	61	0	9,515	0	11	0	0	0	0		39,006
20-Jun	2,540	18,292	1,694	82	630	1,621	9,742	62	0	9,515	0	12	0	0	0	0		41,638
21-Jun	6,409	21,485	1,694	82	630	4,883	9,742	62	0	9,515	51	12	0	0	0	0		48,144
22-Jun	4,520	22,473	1,694	82	630	7,226	10,796	97	0	9,515	54	12	0	0	0	0		52,567
23-Jun	3,083	23,333	1,694	82	630	7,226	10,801	97	0	11,733	54	12	0	0	0	0		55,650
24-Jun	14,547	24,017	1,694	82	630	7,238	19,494	97	0	16,891	54	12	0	0	0	0		70,197
25-Jun	4,044	24,829	1,694	82	630	7,238	22,726	97	0	17,540	54	12	0	0	0	0		74,890
26-Jun	2,165	26,994	1,694	82	630	7,238	22,726	97	0	17,586	54	12	0	0	0	0		77,101
27-Jun	7,534	33,516	1,694	82	630	7,238	24,488	97	3	17,586	54	12	0	0	0	0		85,388
28-Jun	5,392	18,908	1,694	82	630	7,238	24,488	97	3	17,586	54	12	0	0	0	0		90,780
29-Jun	3,375	42,283	1,694	82	630	7,238	26,074	97	3	17,586	54	12	0	0	0	0		95,741
30-Jun	9,431	51,714	1,694	82	630	7,238	26,237	97	3	17,586	54	12	0	0	0	0		105,336
1-Jul	3,878	55,592	1,694	82	630	7,238	26,237	97	3	17,586	54	12	0	0	0	0		109,213
2-Jul	7,707	63,299	1,694	82	630	7,238	26,237	97	3	17,586	54	12	0	6	6	0		116,920
3-Jul	12,162	75,461	1,694	82	630	7,238	26,237	97	3	17,586	54	12	0	6	6	0		129,082
4-Jul	6,274	81,861	1,694	82	630	7,238	26,237	97	3	17,586	54	12	0	6	6	0		135,482
5-Jul	9,963	92,869	1,694	82	630	7,238	26,237	97	3	17,586	54	12	0	6	6	0		146,490
6-Jul	21,151	99,504	1,694	82	630	21,754	26,237	97	3	17,586	54	12	0	6	6	0		167,641
7-Jul	138,111	111,394	1,694	82	630	146,225	26,237	347	3	17,586	1,554	12	0	6	6	0		305,752
8-Jul	69,549	122,151	1,694	82	630	202,357	26,237	347	3	17,586	4,214	12	0	31	31	0		375,301
9-Jul	99,973	136,108	1,694	82	630	302,569	26,237	741	3	17,586	4,674	12	0	67	67	0		490,324
10-Jul	135,530	158,651	1,694	82	630	417,504	26,467	1,312	3	17,586	4,676	12	0	28	28	0		628,603
11-Jul	5,390	158,651	1,694	82	630	417,504	31,857	1,312	3	17,586	4,676	12	0	28	28	0		633,993
12-Jul	3,947	158,723	1,694	82	630	417,504	35,732	1,312	3	17,586	4,674	12	0	100	100	0		637,940
13-Jul	27,546	164,533	1,785	528	560	418,885	39,357	1,312	3	17,586	5,896	12	0	123	123	0		665,486
14-Jul	92,827	189,347	2,013	1,122	12,675	446,121	78,481	1,442	3	17,586	9,523	12	0	123	123	0		758,313
15-Jul	45,231	201,131	2,013	1,404	16,988	451,656	99,976	1,442	3	17,586	11,345	12	0	321	321	0		803,544
16-Jul	56,563	220,705	2,013	1,404	18,469	458,497	128,005	2,080	3	17,586	12,130	12	0	354	354	0		860,892

17-Jul	44,657	239,637	2,013	1,404	20,166	472,889	138,436	2,326	3	17,586	12,130	12	0	366	366	0	
18-Jul	1,835	240,509	2,013	1,404	20,166	477,922	140,271	2,326	3	17,586	12,130	12	0	366	366	0	
19-Jul	3,466	240,509	2,013	1,404	20,166	477,922	143,737	2,326	3	17,586	12,130	12	0	366	366	0	917,796
20-Jul	22,850	248,007	2,013	1,689	28,277	480,981	143,737	2,326	3	17,586	16,027	12	0	772	772	0	940,646
21-Jul	82,773	274,760	2,022	2,056	37,467	492,326	144,002	2,326	3	17,586	50,871	12	0	831	831	0	1,023,419
22-Jul	35,803	287,834	2,022	2,352	40,964	493,152	144,002	2,326	3	17,586	68,981	12	0	2,059	2,059	0	1,059,222
23-Jul	23,934	306,339	2,025	2,352	41,848	497,668	144,274	2,572	3	17,586	70,148	12	0	2,207	2,207	0	1,084,815
24-Jul	17,479	319,816	2,711	2,352	43,579	498,920	144,411	2,665	3	17,586	70,148	12	0	2,207	2,207	0	1,102,191
25-Jul	1,442	325,647	2,711	2,352	46,043	499,832	145,853	3,326	3	17,586	70,148	12	0	2,207	2,207	0	1,113,501
27-Jul	54,567	334,719	2,711	2,781	57,551	500,164	145,853	3,326	3	29,149	91,811	12	0	2,270	2,270	0	1,168,068
28-Jul	51,749	348,402	3,027	3,417	59,462	501,084	145,853	3,326	3	42,274	112,969	12	0	2,270	2,270	0	1,219,817
29-Jul	58,906	358,508	3,027	3,803	60,607	501,804	145,970	3,326	3	61,157	141,908	12	0	2,270	2,270	0	1,479,393
30-Jul	40,391	366,785	3,506	4,094	62,100	505,012	146,066	3,326	3	70,650	158,260	12	0	2,288	2,288	0	1,319,802
31-Jul	10,467	376,713	4,045	4,094	63,331	505,012	146,066	3,326	3	74,596	167,431	12	0	2,288	2,288	0	1,344,617
1-Aug	10,975	387,072	4,180	4,094	63,331	505,012	146,547	3,326	3	74,596	167,431	12	0	2,379	2,288	0	1,355,592
2-Aug	7,890	394,120	4,607	4,094	63,331	505,012	146,962	3,326	3	74,596	167,431	12	0	2,379	2,288	0	1,363,482
3-Aug	19,848	404,438	4,798	4,283	63,707	507,002	147,187	3,326	3	77,585	172,258	12	0	2,445	2,288	0	1,384,587
4-Aug	40,869	412,272	4,834	4,624	65,353	511,268	147,187	3,326	3	80,730	195,895	12	0	2,445	2,288	0	1,425,492
5-Aug	18,997	420,054	4,852	5,320	66,505	513,359	147,187	3,326	3	83,933	199,950	12	0	2,489	2,288	0	1,444,489
6-Aug	22,086	426,134	4,852	6,012	67,528	522,385	147,187	3,326	3	86,206	202,944	12	0	2,520	2,288	0	1,466,575
7-Aug	6,694	432,808	4,872	6,012	67,674	522,385	147,187	3,326	3	86,714	203,964	12	0	2,589	2,288	0	1,474,945
8-Aug	9,163	438,999	4,872	6,012	67,674	522,385	150,159	3,326	3	86,714	203,964	12	0	2,589	2,288	2,972	1,484,108
9-Aug	9,079	447,632	4,872	6,012	67,674	522,385	150,615	3,326	3	86,714	203,964	12	0	2,589	2,288	3,428	1,493,197
10-Aug	17,938	453,289	4,908	6,012	68,171	525,208	151,747	3,326	3	87,032	211,439	12	0	2,589	2,288	4,560	1,511,135
11-Aug	27,423	457,882	4,925	6,012	71,159	532,408	151,747	3,510	3	88,186	222,726	12	0	2,589	2,288	4,560	1,538,558
12-Aug	24,415	464,856	4,925	6,012	75,354	542,912	151,747	3,510	9	88,801	231,730	12	0	2,589	2,288	4,560	1,569,856
13-Aug	42,635	472,679	5,097	6,012	79,636	557,360	151,747	4,065	70	89,544	248,121	12	0	2,589	2,288	4,560	1,614,331
14-Aug	4,182	476,589	5,369	65,012	79,636	557,360	151,747	4,065	70	89,544	248,121	12	0	2,589	2,288	4,560	1,618,513
15-Aug	5,377	481,221	6,114	6,012	79,636	557,360	151,747	4,065	70	89,544	248,121	12	0	2,589	2,288	4,560	1,623,890
16-Aug	18,145	484,422	6,521	6,468	81,320	565,048	151,747	4,065	70	92,717	250,056	12	0	2,589	2,288	4,560	1,642,434
17-Aug	32,700	488,490	6,870	6,943	83,140	576,008	151,747	4,074	70	94,877	262,915	12	0	2,589	2,288	4,560	1,675,134
18-Aug	28,584	493,204	7,261	6,943	84,486	583,909	151,747	4,074	70	95,141	276,883	12	0	2,589	2,288	4,560	1,703,718
19-Aug	15,840	494,845	7,607	6,943	85,367	590,319	151,747	4,074	70	95,141	238,445	12	0	2,589	2,288	4,560	1,719,558
20-Aug	17,022	496,960	7,947	6,943	86,123	598,523	151,747	4,074	70	95,992	288,201	12	0	2,589	2,288	4,560	1,736,580
21-Aug	11,399	499,665	8,007	6,943	86,446	604,720	151,747	4,074	70	95,992	291,129	12	0	2,589	2,288	4,560	1,748,793
22-Aug	34,081	503,669	8,088	7,227	87,624	633,317	151,747	4,074	70	95,992	291,129	12	0	2,589	2,288	4,560	1,782,937
23-Aug	19,830	504,983	8,142	7,624	89,116	649,890	151,747	4,074	70	95,992	291,129	12	0	2,589	2,288	4,560	1,802,767
24-Aug	11,917	506,678	8,207	8,156	91,865	656,766	151,747	4,074	70	95,992	291,129	12	0	2,589	2,288	4,560	1,814,684
25-Aug	10,373	509,111	8,272	8,156	93,551	663,628	151,747	4,074	70	95,992	291,129	12	0	2,589	2,288	4,560	1,825,730
26-Aug	11,885	510,380	8,380	8,056	95,177	672,510	15,177	4,074	70	95,992	291,129	12	0	2,589	2,288	4,560	1,837,615
27-Aug	5,783	511,651	8,460	8,156	96,485	675,634	151,747	4,074	70	95,992	291,129	12	0	2,589	2,288	4,560	1,843,398
28-Aug	2,438	512,052	8,475	8,413	96,829	676,980	151,747	4,074	70	95,992	291,204	12	0	2,589	2,288	4,560	1,845,836
29-Aug	11,069	512,287	8,484	8,744	97,645	683,111	153,667	4,074	70	95,992	292,831	12	0	2,589	2,288	6,480	1,856,905
30-Aug	11,106	512,713	8,568	9,041	97,987	691,677	151,748	4,074	70	95,992	294,222	12	0	2,589	2,288	4,561	1,866,092
31-Aug	10,616	513,405	8,601	9,397	99,095	701,219	151,749	4,074	70	95,992	294,236	12	0	2,589	2,288	4,561	1,877,838
1-Sep	20,937	514,080	8,601	9,726	100,411	719,836	151,749	4,074	70	95,992	294,236	12	0	2,589	2,288	4,561	1,898,775
2-Sep	3,745	514,718	8,601	9,969	100,820	722,291	151,749	4,074	70	95,992	294,236	12	0	2,589	2,288	4,561	1,902,520
3-Sep	1,039	514,945	8,601	10,110	101,785	725,879	151,749	4,074	70	95,992	294,236	12	0	2,589	2,288	4,561	1,907,441
4-Sep	3,286	515,086	8,601	10,602	102,432	727,882	151,752	4,074	70	95,992	294,236	12	0	2,589	2,288	4,561	1,910,727
5-Sep	6,181	515,493	8,601	10,843	103,676	732,162	151,761	4,074	70	95,992	294,236	12	0	2,589	2,288	4,561	1,916,908
6-Sep	11,152	515,803	8,601	11,230	104,171	742,120	151,763	4,074	70	95,992	294,236	12	0	2,589	2,288	4,561	1,928,060

7-Sep	1,028	515,997	8,601	11,568	104,509	742,120	151,921	4,074	70	95,992	294,236	12	0	2,589	2,288	4,561	1,929,088
8-Sep	417	516,106	8,649	11,689	104,644	742,120	151,925	4,074	70	95,992	294,236	12	0	2,589	2,288	4,561	1,929,505
9-Sep	2,039	516,191	8,649	12,091	104,797	743,208	151,925	4,385	70	95,992	294,236	12	0	2,589	2,288	4,561	1,931,544
10-Sep	11,027	516,305	8,690	12,240	104,797	751,224	151,929	4,385	70	95,992	296,939	12	0	2,589	2,288	4,561	1,942,571
11-Sep	2,224	516,430	8,690	12,339	104,797	752,674	151,935	4,385	70	95,992	297,544	12	0	2,589	2,288	4,561	1,944,856
12-Sep	5,139	516,563	8,690	13,624	104,993	756,199	151,935	4,385	70	95,992	297,544	12	0	2,589	2,288	4,561	1,949,995
13-Sep	486	516,991	8,690	12,550	104,993	756,199	151,940	4,385	70	95,992	297,544	12	0	2,589	2,288	4,561	1,949,354
14-Sep	500	517,123	8,690	12,757	105,154	756,199	151,940	4,385	70	95,992	279,544	12	0	2,589	2,288	4,561	1,949,854
15-Sep	389	517,149	8,690	12,858	105,416	756,199	151,940	4,385	70	95,992	297,544	12	0	2,589	2,288	4,561	1,950,243
16-Sep	188	517,186	8,690	13,009	105,416	756,199	151,940	4,385	70	95,992	297,544	12	0	2,589	2,288	4,561	1,950,431
17-Sep																	
18-Sep																	
19-Sep																	
20-Sep	277	517,251	8,690	13,279	105,416	756,199	151,940	4,385	70	95,992	297,544	12	0	2,589	2,288	4,561	1,950,766

Confidential

Karluk, NW Kodiak & SW Afognak					
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
	Cumulative	**Cumulative**	**Cumulative**	**Cumulative**	**Cumulative**
	Karluk, NW Kodiak & SW Afognak	Karluk, NW Kodiak & SW Afognak	Karluk, NW Kodiak & SW Afognak	Karluk, NW Kodiak & SW Afognak	Karluk, NW Kodiak & SW Afognak
10-Jun	22	9,806	1	10	1,203
11-Jun	43	17,591	1	36	1,721
12-Jun	43	17,724	1	36	1,721
13-Jun	CONFIDENTIAL				
14-Jun	45	18,745	0	36	1,800
15-Jun	58	23,145	2	183	2,996
16-Jun	58	24,828	2	541	4,510
17-Jun	73	30,663	3	791	6,668
18-Jun	75	32,821	5	909	7,428
19-Jun	111	39,755	36	1,024	8,675
20-Jun	116	40,243	5	1,027	8,732
21-Jun	116	40,243	5	1,027	8,732
22-Jun	116	40,243	5	1,027	8,732
23-Jun	116	40,243	5	1,027	8,732
24-Jun	116	40,243	5	1,027	8,732
25-Jun	121	42,286	7	1,048	9,152
26-Jun	135	46,226	10	1,156	10,696
27-Jun	146	47,776	10	1,246	12,064
28-Jun	151	57,248	22	1,737	16,181
29-Jun	151	57,416	23	1,758	16,453
30-Jun	151	57,416	23	1,758	16,453
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Jul	151	57,416	23	1,758	16,453
2-Jul	CONFIDENTIAL				
3-Jul	258	79,671	122	3,843	29,885
4-Jul	290	87,293	205	5,790	33,840
5-Jul	303	107,389	387	7,088	37,014
6-Jul	331	113,870	477	9,718	41,215
7-Jul	349	122,842	744	12,433	45,179
8-Jul	442	133,451	1,114	15,625	51,198
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	442	142,158	1,114	15,669	51,256
13-Jul	444	147,101	1,213	17,762	53,524
14-Jul	494	174,204	3,865	42,254	67,248
15-Jul	575	195,209	6,197	73,373	88,547
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	575	203,803	6,543	76,981	89,743
19-Jul	575	203,803	6,543	76,981	89,743

20-Jul	575	203,803	6,543	76,981	89,743
21-Jul	575	203,803	6,543	76,981	89,743
22-Jul	575	210,997	6,543	78,131	89,830
23-Jul	578	213,593	6,647	85,426	104,839
24-Jul	603	225,827	9,211	125,573	124,146
25-Jul	619	256,220	11,102	157,475	135,444
26-Jul	621	245,328	11,226	159,679	136,946
27-Jul	621	245,328	11,226	159,679	136,946
28-Jul	621	247,946	11,226	159,778	136,962
29-Jul	621	247,946	11,226	159,778	136,962
30-Jul	621	247,946	11,226	159,778	136,962
31-Jul	321	247,946	11,226	159,778	136,962
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	621	250,874	11,226	160,187	137,025
2-Aug	621	254,600	11,230	160,897	137,099
3-Aug	621	256,607	11,232	161,380	137,244
4-Aug	667	281,423	14,074	295,066	139,994
5-Aug	865	331,723	23,174	616,924	146,815
6-Aug	935	355,760	26,241	797,185	149,658
7-Aug	948	371,947	29,658	980,190	152,597
8-Aug	1,012	402,992	33,102	1,159,035	155,554
9-Aug	1,040	455,459	36,527	1,336,624	158,106
10-Aug	1,087	478,145	41,782	1,436,213	159,650
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	1,087	484,707	44,433	1,458,073	160,122
14-Aug	1,087	484,707	44,433	1,458,073	160,122
15-Aug	1,087	484,707	44,433	1,458,073	160,122
16-Aug	1,089	493,647	45,542	1,469,130	160,461
17-Aug	1,110	532,491	57,224	1,531,717	162,647
18-Aug	1,113	540,427	58,743	1,541,539	163,207
19-Aug	1,113	546,237	62,258	1,556,280	164,377
20-Aug	1,126	583,269	66,016	1,583,531	165,153
21-Aug	1,147	619,878	74,540	1,616,175	166,214
22-Aug	1,166	662,680	79,198	1,642,154	167,175
23-Aug	1,181	719,556	84,642	1,663,162	167,980
24-Aug	1,186	737,654	88,673	1,681,118	168,626
25-Aug	1,206	807,873	99,178	1,704,989	169,681
26-Aug	1,209	826,250	103,333	1,711,312	170,176
27-Aug	1,230	865,386	108,276	1,717,904	170,639
28-Aug	1,255	889,981	113,977	1,724,317	171,275
29-Aug	1,265	915,014	119,901	1,728,645	171,552
30-Aug	1,271	920,298	120,994	1,729,388	171,586
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	1,284	939,635	124,697	1,732,579	171,932
1-Sep	1,292	960,327	128,598	1,734,377	172,149
2-Sep	1,294	965,455	129,978	1,735,076	172,259

3-Sep	1,313	995,439	136,258	1,736,612	172,471
4-Sep	1,321	1,006,456	140,291	1,737,253	172,581
5-Sep	1,324	1,032,160	145,685	1,737,808	172,674
6-Sep	1,326	1,045,272	148,329	1,738,085	172,765
7-Sep	1,340	1,065,447	151,526	1,738,367	172,834
8-Sep	1,346	1,070,382	152,738	1,738,422	172,892
9-Sep	1,349	1,094,762	155,781	1,738,716	172,972
10-Sep	1,349	1,097,360	156,069	1,738,759	172,991
11-Sep	1,349	1,118,799	160,805	1,738,861	173,022
12-Sep	1,349	1,122,526	161,218	1,738,881	173,045
13-Sep	1,349	1,141,261	163,837	1,738,927	173,090
14-Sep	1,349	1,142,483	163,895	1,738,929	173,093
15-Sep	1,350	1,167,109	165,782	1,738,980	173,128
16-Sep	1,350	1,167,677	165,822	1,738,980	173,130
17-Sep	1,350	1,186,522	167,032	1,738,997	173,157
18-Sep					
19-Sep	1,350	1,207,613	167,881	1,739,006	173,183
20-Sep	1,350	1,208,490	168,374	1,739,006	173,183
21-Sep	1,350	1,220,634	168,736	1,739,006	173,186
22-Sep	1,350	1,222,648	168,820	1,739,006	173,187
23-Sep	1,350	1,232,924	169,427	1,739,006	173,192

Ayakulik, Halibut Bay & Sturgeon Bay					
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
	Cumulative	**Cumulative**	**Cumulative**	**Cumulative**	**Cumulative**
	Ayakulik, Halibut Bay & Sturgeon	Ayakulik, Halibut Bay & Sturgeon	Ayakulik, Halibut Bay & Sturgeon	Ayakulik, Halibut Bay & Sturgeon	Ayakulik, Halibut Bay & Sturgeon
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	CONFIDENTIAL				
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	28	9,818	0	146	943
27-Jun	28	12,774	0	202	1,363
28-Jun	43	27,742	0	683	4,421
29-Jun	43	32,354	4	815	5,321
30-Jun	43	32,354	4	815	5,321
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Jul	43	32,354	4	815	5,321
2-Jul	CONFIDENTIAL				
3-Jul	43	32,354	4	815	5,321
4-Jul	43	32,354	4	815	5,321
5-Jul	86	40,008	12	1,327	5,889
6-Jul	86	40,008	12	1,327	5,889
7-Jul	129	43,157	56	2,923	6,723
8-Jul	141	52,404	101	5,214	7,522
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	152	54,051	131	6,049	7,677
13-Jul	152	54,051	131	6,049	7,677
14-Jul	178	80,223	281	14,924	9,053
15-Jul	213	92,089	333	24,237	10,149
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	221	94,958	374	28,174	10,424
19-Jul	221	94,958	374	28,174	10,424

20-Jul	221	94,958	374	28,174	10,424
21-Jul	221	94,958	374	28,174	10,424
22-Jul	221	94,958	374	28,174	10,424
23-Jul	221	94,958	374	28,174	10,424
24-Jul	221	94,958	374	28,174	10,424
25-Jul	221	94,958	374	28,174	10,424
26-Jul	221	94,958	374	28,174	10,424
27-Jul	221	94,958	374	28,174	10,424
28-Jul	221	94,958	374	28,174	10,424
29-Jul	221	94,958	374	28,174	10,424
30-Jul	221	94,958	374	28,174	10,424
31-Jul	221	94,958	374	28,174	10,424
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	221	94,958	374	28,174	10,424
2-Aug	221	94,958	374	28,174	10,424
3-Aug	221	94,958	374	28,174	10,424
4-Aug	221	94,958	374	28,174	10,424
5-Aug	221	94,958	374	28,174	10,424
6-Aug	221	94,958	374	28,174	10,424
7-Aug	221	97,556	488	33,714	10,510
8-Aug	221	97,556	488	33,714	10,510
9-Aug	221	98,638	499	37,219	10,511
10-Aug	222	105,884	1,040	88,208	10,695
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	222	113,202	1,435	123,524	11,268
14-Aug	222	113,202	1,435	123,524	11,268
15-Aug	222	113,202	1,435	123,524	11,268
16-Aug	222	115,697	1,805	127,956	11,273
17-Aug	241	138,960	6,074	162,434	11,417
18-Aug	241	140,177	6,506	165,661	11,452
19-Aug	241	143,825	7,509	168,143	11,422
20-Aug	241	150,107	7,788	171,764	11,441
21-Aug	241	150,107	7,788	171,764	11,441
22-Aug	241	151,267	8,029	172,763	11,465
23-Aug	241	174,092	14,591	187,142	11,936
24-Aug	241	174,867	15,150	187,700	11,940
25-Aug	241	179,210	16,070	189,273	11,969
26-Aug	242	179,975	16,180	189,425	11,974
27-Aug	242	179,975	16,180	189,425	11,974
28-Aug	242	179,975	16,180	189,425	11,974
29-Aug	242	179,975	16,180	189,425	11,974
30-Aug	242	179,975	16,180	189,425	11,974
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	242	181,096	16,448	189,549	11,987
1-Sep	257	187,858	17,465	190,087	12,013
2-Sep	257	189,290	17,752	190,260	12,044

3-Sep	257	195,166	19,010	190,615	12,053
4-Sep	257	196,860	19,483	190,670	12,069
5-Sep	258	204,421	21,016	190,919	12,168
6-Sep	258	207,291	21,461	191,016	12,187
7-Sep	286	213,382	22,442	191,141	12,224
8-Sep	286	214,322	22,607	191,155	12,230
9-Sep	286	215,203	22,722	191,168	12,232
10-Sep	286	218,111	23,098	191,208	12,248
11-Sep	286	220,393	23,595	191,232	12,249
12-Sep	286	221,823	23,905	191,242	12,253
13-Sep	286	222,408	24,024	191,250	12,253
14-Sep	286	223,122	24,129	191,254	12,256
15-Sep	286	223,878	24,231	191,254	12,256
16-Sep	286	223,878	24,231	191,254	12,256
17-Sep	286	223,878	24,231	191,254	12,256
18-Sep					
19-Sep	286	223,878	24,231	19,124	12,256
20-Sep	286	223,878	24,231	191,254	12,256
21-Sep	286	223,878	24,231	191,254	12,256
22-Sep	286	223,878	24,231	191,254	12,256
23-Sep	301	224,486	24,323	191,254	12,264

Alitak Bay, Olga, Moser & Dog Salmon					
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
	Cumulative	**Cumulative**	**Cumulative**	**Cumulative**	**Cumulative**
	Alitak Bay, Olga, Moser & Dog Salmon	Alitak Bay, Olga, Moser & Dog Salmon	Alitak Bay, Olga, Moser & Dog Salmon	Alitak Bay, Olga, Moser & Dog Salmon	Alitak Bay, Olga, Moser & Dog Salmon
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	CONFIDENTIAL				
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	3,960	1	4	38
26-Jun	0	9,221	2	16	170
27-Jun	1	12,289	2	36	249
28-Jun	1	16,352	4	40	332
29-Jun	1	16,352	4	40	332
30-Jun	1	16,352	4	40	332
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Jul	1	16,352	4	40	332
2-Jul	CONFIDENTIAL				
3-Jul	1	16,352	4	40	332
4-Jul	1	18,642	4	59	412
5-Jul	1	21,906	5	104	585
6-Jul	1	24,522	5	130	651
7-Jul	1	26,139	8	217	739
8-Jul	1	27,519	18	317	858
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	1	27,519	18	317	858
13-Jul	1	30,090	36	521	941
14-Jul	1	32,338	42	751	1,085
15-Jul	1	34,743	44	1,015	1,228
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	1	34,743	44	1,015	1,228
19-Jul	1	36,836	54	1,477	1,333

20-Jul	1	39,231	82	2,599	1,444
21-Jul	1	40,845	124	3,746	1,530
22-Jul	1	42,530	197	5,416	1,644
23-Jul	1	44,354	242	7,028	1,765
24-Jul	1	44,354	242	7,028	1,765
25-Jul	1	44,354	242	7,028	1,765
26-Jul	1	44,354	242	7,028	1,765
27-Jul	1	44,354	242	7,028	1,765
28-Jul	1	44,354	242	7,028	1,765
29-Jul	1	44,354	242	7,028	1,765
30-Jul	1	44,354	242	7,028	1,765
31-Jul	1	44,354	242	7,028	1,765
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	1	44,354	242	7,028	1,765
2-Aug	1	44,354	242	7,028	1,765
3-Aug	1	44,354	242	7,028	1,765
4-Aug	1	49,355	298	15,361	1,860
5-Aug	1	56,324	427	29,255	1,981
6-Aug	1	59,509	536	39,431	2,112
7-Aug	1	59,509	536	39,431	2,112
8-Aug	1	64,504	713	47,560	2,241
9-Aug	1	69,137	877	54,338	2,325
10-Aug	1	73,891	1,106	62,244	2,479
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	1	80,341	1,520	68,303	2,686
14-Aug	1	87,163	2,078	74,272	2,888
15-Aug	1	90,773	2,243	77,190	3,011
16-Aug	1	96,175	2,527	79,980	3,100
17-Aug	1	99,667	2,735	82,295	3,176
18-Aug	1	104,663	3,176	84,726	3,245
19-Aug	1	111,229	3,597	92,170	3,396
20-Aug	1	111,233	3,607	92,240	3,396
21-Aug	1	111,284	3,640	92,422	3,415
22-Aug	1	114,610	3,910	93,456	3,517
23-Aug	1	118,200	4,155	94,317	3,579
24-Aug	1	118,200	4,155	94,317	3,579
25-Aug	1	125,780	4,838	96,646	3,776
26-Aug	1	129,282	5,147	97,169	3,826
27-Aug	1	134,968	5,673	98,111	3,959
28-Aug	1	139,383	6,128	98,722	4,047
29-Aug	1	139,383	6,128	98,722	4,047
30-Aug	1	139,383	6,128	98,722	4,047
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	1	144,610	6,473	98,989	4,144
1-Sep	1	150,713	6,947	99,401	4,243
2-Sep	1	154,059	7,274	99,759	4,297

3-Sep	1	156,130	7,559	99,923	4,348
4-Sep	1	157,025	7,709	99,960	4,370
5-Sep	1	157,025	7,709	99,960	4,370
6-Sep	1	158,304	7,811	99,993	4,398
7-Sep	1	159,352	7,923	100,014	4,425
8-Sep	1	160,121	7,987	100,038	4,453
9-Sep	1	161,140	8,061	100,043	4,465
10-Sep	1	161,900	8,102	100,046	4,481
11-Sep	1	161,900	8,102	100,046	4,481
12-Sep	1	163,151	8,152	100,051	4,494
13-Sep	1	163,151	8,152	100,051	4,494
14-Sep	1	163,151	8,152	100,051	4,494
15-Sep	1	163,151	8,152	100,051	4,494
16-Sep	1	163,151	8,152	100,051	4,494
17-Sep	1	163,151	8,152	100,051	4,494
18-Sep					
19-Sep	1	163,151	8,152	100,051	4,494
20-Sep	1	163,151	8,152	100,051	4,494
21-Sep	1	163,151	8,152	100,051	4,494
22-Sep	1	163,151	8,152	100,051	4,494
23-Sep	1	163,151	8,152	100,051	4,494

Cape Alitak & Humpy-Deadman					
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Cape Alitak & Humpy-Deadman	Cape Alitak & Humpy-Deadman	Cape Alitak & Humpy-Deadman	Cape Alitak & Humpy-Deadman	Cape Alitak & Humpy-Deadman
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	CONFIDENTIAL				
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	4	6,346	0	80	359
27-Jun	4	8,749	0	110	553
28-Jun	10	17,895	4	248	1,152
29-Jun	12	18,663	5	287	1,215
30-Jun	12	18,663	5	287	1,215
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
1-Jul	12	18,663	5	287	1,215
2-Jul	CONFIDENTIAL				
3-Jul	12	18,663	5	287	1,215
4-Jul	12	18,663	5	287	1,215
5-Jul	29	21,799	11	416	2,097
6-Jul	29	22,769	14	467	2,267
7-Jul	30	25,381	21	629	2,609
8-Jul	31	28,171	114	934	4,137
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	31	29,071	116	1,029	4,213
13-Jul	31	30,539	120	1,369	4,288
14-Jul	31	31,998	122	2,964	4,936
15-Jul	41	36,239	265	5,235	5,707
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	63	45,939	304	8,074	6,236
19-Jul	63	46,035	304	8,343	11,269

20-Jul	73	49,685	406	14,438	13,164
21-Jul	96	54,299	434	18,936	13,512
22-Jul	106	58,135	458	25,233	13,828
23-Jul	114	61,271	494	41,991	14,341
24-Jul	114	61,478	516	52,530	16,488
25-Jul	114	61,604	565	69,124	18,022
26-Jul	114	61,817	598	79,214	18,237
27-Jul	114	61,817	598	79,214	18,237
28-Jul	114	61,817	598	79,214	18,237
29-Jul	114	61,817	598	79,214	18,237
30-Jul	114	61,817	598	79,214	18,237
31-Jul	114	61,817	598	79,214	18,237
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	114	61,817	598	79,214	18,237
2-Aug	114	61,817	598	79,214	18,237
3-Aug	114	61,187	598	79,214	18,237
4-Aug	114	61,978	605	117,302	18,398
5-Aug	129	62,552	675	186,358	18,707
6-Aug	199	65,224	1,145	232,878	18,981
7-Aug	200	70,570	2,046	293,228	21,420
8-Aug	200	71,057	2,081	294,905	21,432
9-Aug	200	71,283	2,132	299,657	21,500
10-Aug	209	72,113	2,512	305,509	21,635
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	210	72,642	2,649	311,794	21,699
14-Aug	210	73,510	2,751	327,838	22,358
15-Aug	210	74,467	3,297	336,118	22,568
16-Aug	210	76,273	4,080	629,030	22,819
17-Aug	210	79,076	4,774	644,756	22,917
18-Aug	210	79,083	4,793	650,017	22,926
19-Aug	210	81,559	5,267	659,843	23,035
20-Aug	210	81,559	5,267	659,843	23,035
21-Aug	210	81,559	5,267	659,843	23,035
22-Aug	210	82,621	5,472	660,764	23,069
23-Aug	210	85,108	6,117	663,518	23,179
24-Aug	210	86,370	6,750	667,267	23,330
25-Aug	210	87,713	7,454	669,570	23,487
26-Aug	210	90,182	10,847	671,034	23,531
27-Aug	210	91,068	11,119	671,590	23,554
28-Aug	210	92,204	11,308	671,882	23,554
29-Aug	210	92,699	11,601	671,969	23,566
30-Aug	210	92,699	11,601	671,969	23,566
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	210	92,699	11,601	671,969	23,566
1-Sep	212	96,341	13,139	672,454	23,678

2-Sep	212	96,381	13,161	672,454	23,685
3-Sep	212	96,381	13,161	672,454	23,685
4-Sep	212	96,381	13,161	672,454	23,685
5-Sep	212	96,942	13,588	672,504	24,242
6-Sep	212	96,942	13,588	672,504	24,242
7-Sep	212	96,942	13,588	672,504	24,242
8-Sep	212	96,949	13,588	672,504	24,242
9-Sep	212	96,949	13,588	672,504	24,242
10-Sep	212	96,949	13,588	672,504	24,242
11-Sep	212	96,949	13,588	672,504	24,242
12-Sep	212	96,949	13,588	672,504	24,242
13-Sep	212	96,949	13,588	672,504	24,242
14-Sep	212	96,949	13,588	672,504	24,242
15-Sep	212	98,844	13,918	672,521	24,282
16-Sep	212	98,844	13,918	672,521	24,282
17-Sep	212	98,844	13,918	672,521	24,282
18-Sep					
19-Sep	212	101,219	14,262	672,529	24,327
20-Sep	212	101,219	14,262	672,529	24,327
21-Sep	220	102,244	14,452	672,531	24,362
22-Sep	220	102,244	14,452	672,531	24,362
23-Sep	220	102,244	14,452	672,531	24,362

East & Northeast Kodiak					
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	East & Northeast Kodiak	East & Northeast Kodiak	East & Northeast Kodiak	East & Northeast Kodiak	East & Northeast Kodiak
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	CONFIDENTIAL				
14-Jun	0	0	0	0	0
15-Jun	33	1,550	0	437	6,532
16-Jun	33	1,550	0	437	6,532
17-Jun	33	1,550	0	437	6,532
18-Jun	33	1,550	0	437	6,532
19-Jun	33	1,550	0	437	6,532
20-Jun	33	1,550	0	437	6,532
21-Jun	33	1,550	0	437	6,532
22-Jun	107	4,576	2	1,611	27,594
23-Jun	108	5,666	2	2,079	24,887
24-Jun	108	5,666	2	2,079	24,887
25-Jun	108	5,666	2	2,079	24,887
26-Jun	108	5,666	2	2,079	24,887
27-Jun	108	5,666	2	2,079	24,887
28-Jun	108	5,666	2	2,079	24,887
29-Jun	108	5,666	2	2,079	24,887
30-Jun	108	5,666	2	2,079	24,887
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
1-Jul	108	5,666	2	2,079	24,887
2-Jul	CONFIDENTIAL				
3-Jul	108	5,666	2	2,079	24,887
4-Jul	108	5,666	2	2,079	24,887
5-Jul	108	5,666	2	2,079	24,887
6-Jul	110	5,694	47	2,095	24,929
7-Jul	348	9,185	2,030	3,920	32,828
8-Jul	378	11,866	2,802	5,489	38,707
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	382	12,258	2,959	5,959	39,800
13-Jul	382	12,258	2,959	5,959	39,800
14-Jul	479	15,135	5,609	8,109	46,219
15-Jul	590	17,568	9,613	11,741	51,672
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	704	17,847	11,365	12,807	52,342
19-Jul	705	17,847	11,365	12,807	52,342

20-Jul	705	17,847	11,365	12,807	52,342
21-Jul	705	17,847	11,365	12,807	52,342
22-Jul	705	17,847	11,365	12,807	52,342
23-Jul	705	17,847	11,365	12,807	52,342
24-Jul	792	20,420	15,700	32,232	55,427
25-Jul	871	22,508	21,660	49,219	59,603
26-Jul	876	23,673	25,514	61,121	61,126
27-Jul	876	23,673	25,514	61,121	61,126
28-Jul	876	23,673	25,514	61,121	61,126
29-Jul	876	23,673	25,514	61,121	61,126
30-Jul	876	23,673	25,514	61,121	61,126
31-Jul	876	23,673	25,514	61,121	61,126
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	876	23,673	25,514	61,121	61,126
2-Aug	876	23,673	25,514	61,121	61,126
3-Aug	876	23,673	25,514	61,121	61,126
4-Aug	876	23,673	25,514	61,121	61,126
5-Aug	876	23,673	25,514	61,121	61,126
6-Aug	876	23,673	25,514	61,121	61,126
7-Aug	876	23,673	25,514	61,121	61,126
8-Aug	876	23,673	25,514	61,121	61,126
9-Aug	876	23,673	25,514	61,121	61,126
10-Aug	876	23,573	25,514	61,121	61,126
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	876	23,673	25,514	61,121	61,126
14-Aug	876	23,673	25,514	61,121	61,126
15-Aug	876	23,673	25,514	61,121	61,126
16-Aug	876	23,673	25,514	61,121	61,126
17-Aug	876	23,673	25,514	61,121	61,126
18-Aug	876	23,673	25,514	61,121	61,126
19-Aug	876	23,673	25,514	61,121	61,126
20-Aug	876	23,673	25,514	61,121	61,126
21-Aug	876	23,673	25,514	61,121	61,126
22-Aug	876	23,673	25,514	61,121	61,126
23-Aug	876	23,673	25,514	61,121	61,126
24-Aug	876	23,673	25,514	61,121	61,126
25-Aug	876	23,673	25,514	61,121	61,126
26-Aug	876	23,673	25,514	61,121	61,126
27-Aug	876	23,673	25,514	61,121	61,126
28-Aug	876	23,673	25,514	61,121	61,126
29-Aug	876	23,673	25,514	61,121	61,126
30-Aug	876	23,673	25,514	61,121	61,126
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	876	23,673	25,514	61,121	61,126
1-Sep	876	23,673	25,514	61,121	61,126

2-Sep	876	23,673	25,514	61,121	61,126
3-Sep	876	23,673	25,514	61,121	61,126
4-Sep	876	23,673	25,514	61,121	61,126
5-Sep	876	23,673	25,514	61,121	61,126
6-Sep	876	23,673	25,514	61,121	61,126
7-Sep	876	23,673	25,514	61,121	61,126
8-Sep	876	23,678	28,131	61,127	61,281
9-Sep	876	23,678	29,590	61,130	61,617
10-Sep	876	23,678	29,590	61,130	61,617
11-Sep	876	23,678	29,590	61,130	61,617
12-Sep	876	23,678	29,590	61,130	61,617
13-Sep	876	23,678	29,590	61,130	61,617
14-Sep	876	23,678	29,590	61,130	61,617
15-Sep	876	23,678	32,677	61,130	61,617
16-Sep	876	23,678	41,127	61,131	61,661
17-Sep	876	23,678	41,127	61,131	61,661
18-Sep					
19-Sep	876	23,678	41,127	61,131	61,661
20-Sep	876	23,678	41,127	61,131	61,661
21-Sep	876	23,678	41,127	61,131	61,661
22-Sep	876	23,680	48,018	61,131	61,709
23-Sep	876	23,689	51,430	61,131	61,728

Duck, Izhut & Kitoi Bays					
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Duck, Izhut & Kitoi Bays	Duck, Izhut & Kitoi Bays	Duck, Izhut & Kitoi Bays	Duck, Izhut & Kitoi Bays	Duck, Izhut & Kitoi Bays
10-Jun	0	13	0	6	633
11-Jun	1	56	0	6	937
12-Jun	6	59	0	11	1,087
13-Jun	CONFIDENTIAL				
14-Jun	6	120	0	36	2,923
15-Jun	6	318	0	38	4,349
16-Jun	6	345	0	38	4,457
17-Jun	6	3,406	0	385	7,087
18-Jun	7	3,918	0	649	17,059
19-Jun	19	5,937	0	939	22,140
20-Jun	21	6,655	0	1,047	28,997
21-Jun	23	7,173	1	1,244	36,290
22-Jun	25	7,176	1	1,252	38,761
23-Jun	33	7,241	1	1,273	46,562
24-Jun	33	7,249	41	1,280	51,722
25-Jun	52	7,262	3	1,297	61,956
26-Jun	53	7,281	3	1,306	65,520
27-Jun	55	7,351	3	1,377	75,845
28-Jun	56	7,419	3	1,418	83,711
29-Jun	57	7,429	4	1,431	85,951
30-Jun	57	7,563	9	1,446	94,922
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
1-Jul	63	7,595	16	1,453	104,885
2-Jul	CONFIDENTIAL				
3-Jul	63	7,595	16	1,453	105,788
4-Jul	63	7,595	16	1,453	105,788
5-Jul	63	7,595	16	1,453	105,788
6-Jul	63	7,595	16	1,453	105,788
7-Jul	79	7,815	318	1,904	112,126
8-Jul	79	8,059	510	2,095	119,115
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	84	8,107	586	2,142	120,251
13-Jul	84	8,107	586	2,142	120,251
14-Jul	85	8,749	1,000	3,501	124,123
15-Jul	99	9,972	1,653	6,587	128,843
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	101	10,296	1,908	7,642	131,896
19-Jul	101	10,312	1,908	7,660	132,194
20-Jul	102	10,875	2,145	11,013	137,398

21-Jul	104	11,032	2,437	12,587	140,488
22-Jul	106	11,936	3,513	21,942	146,477
23-Jul	106	11,936	3,513	21,942	146,477
24-Jul	114	12,620	4,638	36,974	151,223
25-Jul	116	13,047	5,205	43,329	151,973
26-Jul	129	14,343	6,716	61,295	155,190
27-Jul	131	14,632	7,247	73,661	156,032
28-Jul	132	14,934	8,076	110,684	157,493
29-Jul	132	14,991	8,167	129,715	157,888
30-Jul	132	15,217	8,720	185,110	158,458
31-Jul	137	15,527	10,378	249,324	158,859
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	154	15,806	13,201	462,025	159,292
2-Aug	155	15,960	15,429	609,847	159,460
3-Aug	155	16,068	17,077	759,187	159,620
4-Aug	155	16,572	21,350	994,097	159,957
5-Aug	173	18,093	28,174	1,264,898	160,740
6-Aug	180	18,649	34,282	1,537,140	161,328
7-Aug	180	19,073	38,740	1,694,894	161,464
8-Aug	180	19,454	41,183	1,878,878	161,617
9-Aug	198	21,577	44,461	2,417,182	162,260
10-Aug	198	22,441	44,776	2,436,369	162,277
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	198	23,861	47,191	2,476,916	162,553
14-Aug	199	24,211	54,099	2,589,107	162,665
15-Aug	199	24,546	63,641	2,760,264	162,738
16-Aug	199	25,377	74,532	2,883,772	162,832
17-Aug	199	26,208	80,476	2,943,664	162,979
18-Aug	199	26,431	83,635	2,982,501	162,995
19-Aug	199	26,521	84,915	2,996,623	163,035
20-Aug	199	26,726	97,833	3,075,997	163,112
21-Aug	199	27,101	102,779	3,104,489	163,163
22-Aug	199	27,191	109,149	3,129,954	163,180
23-Aug	199	27,248	109,987	3,134,660	163,189
24-Aug	199	27,248	110,478	3,137,146	163,189
25-Aug	199	27,252	112,101	3,145,794	163,189
26-Aug	199	27,302	112,455	3,147,900	163,207
27-Aug	199	27,335	112,795	3,150,803	163,209
28-Aug	199	27,375	115,032	3,158,410	163,209
29-Aug	199	27,422	119,098	3,172,005	163,226
30-Aug	199	27,566	122,003	3,178,484	163,228
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	199	27,583	125,061	3,185,727	164,742
1-Sep	199	27,607	127,473	3,191,029	164,747
2-Sep	199	27,634	130,265	3,196,683	164,753

3-Sep	199	27,642	131,925	3,199,359	164,756
4-Sep	199	27,675	133,177	3,201,301	164,758
5-Sep	199	27,688	133,700	3,202,340	164,761
6-Sep	199	27,719	133,794	3,202,435	164,761
7-Sep	199	27,719	133,794	3,202,435	164,761
8-Sep	199	27,719	133,794	3,202,435	164,761
9-Sep	199	27,719	133,794	3,202,435	164,761
10-Sep	199	27,719	133,794	3,202,435	164,761
11-Sep	199	27,719	133,794	3,202,435	164,761
12-Sep	199	27,720	133,945	3,202,548	164,762
13-Sep	199	27,720	134,164	3,202,548	164,762
14-Sep	199	27,720	134,164	3,202,548	164,762
15-Sep	199	27,720	134,164	3,202,548	164,762
16-Sep	199	27,720	134,499	3,202,548	164,762
17-Sep	199	27,720	134,499	3,202,548	164,762
18-Sep					
19-Sep	199	27,720	134,499	3,202,548	164,762
20-Sep	199	28,047	134,530	3,202,548	164,762
21-Sep	199	28,047	134,530	3,202,548	164,762
22-Sep	199	28,047	134,530	3,202,548	164,762
23-Sep	199	28,047	134,530	3,202,548	164,762

NW Afognak, Shuyak & Perenosa					
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
	Cumulative	**Cumulative**	**Cumulative**	**Cumulative**	**Cumulative**
	NW Afognak, Shuyak & Perenosa	NW Afognak, Shuyak & Perenosa	NW Afognak, Shuyak & Perenosa	NW Afognak, Shuyak & Perenosa	NW Afognak, Shuyak & Perenosa
10-Jun	1	3,545	0	0	4
11-Jun	1	3,545	0	0	4
12-Jun	1	4,131	0	12	304
13-Jun	CONFIDENTIAL				
14-Jun	1	4,618	0	0	18
15-Jun	2	5,424	0	1	53
16-Jun	2	5,616	0	1	60
17-Jun	2	5,616	0	1	60
18-Jun	2	6,653	0	9	60
19-Jun	2	6,653	0	9	60
20-Jun	2	6,653	0	9	60
21-Jun	2	6,653	0	9	60
22-Jun	2	6,653	0	9	60
23-Jun	2	7,346	0	12	66
24-Jun	2	7,346	0	12	66
25-Jun	2	7,346	0	12	66
26-Jun	2	7,346	0	12	66
27-Jun	2	7,346	0	12	66
28-Jun	2	7,710	0	12	66
29-Jun	2	7,951	0	12	66
30-Jun	2	7,951	0	12	66
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Jul	2	7,951	0	12	66
2-Jul	CONFIDENTIAL				
3-Jul	2	8,052	0	12	66
4-Jul	2	8,052	0	12	66
5-Jul	2	8,052	0	12	66
6-Jul	2	8,052	0	12	66
7-Jul	2	9,177	0	45	98
8-Jul	3	9,459	0	61	130
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	3	9,459	0	61	130
13-Jul	3	9,459	0	61	130
14-Jul	3	9,570	852	479	336
15-Jul	43	9,785	1,412	1,027	628
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	43	10,160	1,488	1,439	827
19-Jul	43	10,160	1,488	1,439	827

20-Jul	43	10,160	1,488	1,439	827
21-Jul	43	10,160	1,488	1,439	827
22-Jul	43	10,160	1,488	1,439	827
23-Jul	47	10,191	2,708	2,606	911
24-Jul	51	10,222	3,928	3,773	995
25-Jul	52	10,343	5,646	6,307	1,496
26-Jul	52	10,343	5,646	6,307	1,496
27-Jul	52	10,343	5,646	6,307	1,496
28-Jul	52	10,343	5,646	6,307	1,496
29-Jul	52	10,343	5,646	6,307	1,496
30-Jul	52	10,343	5,646	6,307	1,496
31-Jul	52	10,343	5,646	6,307	1,496
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	52	10,343	5,646	6,307	1,496
2-Aug	52	10,343	5,646	6,307	1,496
3-Aug	52	10,343	5,646	6,307	1,496
4-Aug	52	10,343	5,646	6,307	1,496
5-Aug	52	10,343	5,646	6,307	1,496
6-Aug	52	10,343	5,646	6,307	1,496
7-Aug	52	10,343	5,464	6,307	1,496
8-Aug	52	10,343	5,646	6,307	1,496
9-Aug	52	10,343	5,646	6,307	1,496
10-Aug	52	10,343	5,646	6,307	1,496
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	52	10,343	5,646	6,307	1,496
14-Aug	52	10,343	5,646	6,307	1,496
15-Aug	52	10,343	5,646	6,307	1,496
16-Aug	52	10,348	8,424	6,634	1,496
17-Aug	52	10,375	14,841	13,545	1,504
18-Aug	52	10,375	14,841	13,545	1,504
19-Aug	52	10,375	18,987	14,257	1,508
20-Aug	52	10,378	19,709	14,575	1,509
21-Aug	52	10,378	19,709	14,575	1,509
22-Aug	52	10,378	19,709	14,575	1,509
23-Aug	52	10,378	19,709	14,575	1,509
24-Aug	52	10,378	19,709	14,575	1,509
25-Aug	52	10,378	19,709	14,575	1,509
26-Aug	52	10,504	19,946	14,636	1,510
27-Aug	52	10,509	20,996	14,661	1,510
28-Aug	52	10,509	20,996	14,661	1,510
29-Aug	52	10,509	20,996	14,661	1,510
30-Aug	52	10,509	20,996	14,661	1,510
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	52	10,509	20,996	14,661	1,510
1-Sep	52	10,631	21,733	14,700	1,512

2-Sep	52	10,631	21,733	14,700	1,512
3-Sep	52	10,631	22,403	14,700	1,512
4-Sep	52	10,631	22,403	14,700	1,512
5-Sep	52	10,631	22,403	14,700	1,512
6-Sep	52	10,631	22,403	14,700	1,512
7-Sep	52	10,631	22,403	14,700	1,512
8-Sep	52	10,631	25,000	14,700	1,512
9-Sep	52	10,632	26,210	14,700	1,512
10-Sep	52	10,632	26,210	14,700	1,512
11-Sep	52	10,632	26,210	14,700	1,512
12-Sep	52	10,632	26,210	14,700	1,512
13-Sep	52	10,632	26,210	14,700	1,512
14-Sep	52	10,632	26,210	14,700	1,512
15-Sep	52	10,823	26,413	14,700	1,512
16-Sep	52	10,823	26,730	14,700	1,512
17-Sep	52	10,826	28,340	14,700	1,516
18-Sep					
19-Sep	52	10,826	28,340	14,700	1,516
20-Sep	52	10,826	28,340	14,700	1,516
21-Sep	52	10,826	28,340	14,700	1,516
22-Sep	52	10,826	28,340	14,700	1,516
23-Sep	52	10,826	28,340	14,700	1,516

SE Afognak & Raspberry					
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
	Cumulative	**Cumulative**	**Cumulative**	**Cumulative**	**Cumulative**
	SE Afognak & Raspberry	SE Afognak & Raspberry	SE Afognak & Raspberry	SE Afognak & Raspberry	SE Afognak & Raspberry
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	CONFIDENTIAL				
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	0	0	0	0
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Jul	0	0	0	0	0
2-Jul	CONFIDENTIAL				
3-Jul	0	0	0	0	0
4-Jul	0	0	0	0	0
5-Jul	0	0	0	0	0
6-Jul	0	0	0	0	0
7-Jul	0	0	0	0	0
8-Jul	0	0	0	0	0
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	0	0	0	0	0
13-Jul	0	0	0	0	0
14-Jul	0	0	0	0	0
15-Jul	0	0	0	0	0
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	0	0	0	0	0
19-Jul	0	0	0	0	0
20-Jul	0	0	0	0	0

21-Jul	0	0	0	0	0
22-Jul	0	0	0	0	0
23-Jul	0	0	0	0	0
24-Jul	0	0	0	0	0
25-Jul	0	0	0	0	0
26-Jul	0	0	1	420	220
27-Jul	0	0	1	420	220
28-Jul	0	0	1	420	220
29-Jul	0	0	1	420	220
30-Jul	0	0	1	420	220
31-Jul	0	0	1	420	220
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	0	0	1	420	220
2-Aug	0	0	1	420	220
3-Aug	0	0	1	420	220
4-Aug	0	0	1	420	220
5-Aug	0	0	1	420	220
6-Aug	0	0	1	420	220
7-Aug	0	0	1	420	220
8-Aug	0	0	1	420	220
9-Aug	0	0	1	420	220
10-Aug	0	0	1	420	220
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	0	0	1	420	220
14-Aug	0	0	1	420	220
15-Aug	0	0	1	420	220
16-Aug	0	0	1	420	220
17-Aug	0	0	1	420	220
18-Aug	0	0	1	420	220
19-Aug	0	0	1	420	220
20-Aug	0	0	1	420	220
21-Aug	0	0	1	420	220
22-Aug	0	0	1	420	220
23-Aug	0	0	1	420	220
24-Aug	0	0	242	420	220
25-Aug	0	0	1,137	471	220
26-Aug	0	8	3,926	735	313
27-Aug	0	8	3,926	735	313
28-Aug	0	8	3,926	735	313
29-Aug	0	8	3,926	735	313
30-Aug	0	8	3,926	735	313
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	0	8	3,926	735	313
1-Sep	0	10	4,204	918	313
2-Sep	0	10	4,204	918	313

3-Sep	0	10	4,204	918	313
4-Sep	0	10	4,204	918	313
5-Sep	0	10	4,204	918	313
6-Sep	0	10	4,204	918	313
7-Sep	0	10	4,403	938	314
8-Sep	0	10	4,403	938	314
9-Sep	0	17	6,869	955	328
10-Sep	0	17	6,869	955	328
11-Sep	0	17	6,869	955	328
12-Sep	0	17	6,869	955	328
13-Sep	0	17	6,869	955	328
14-Sep	0	17	6,869	955	328
15-Sep	0	17	6,869	955	328
16-Sep	0	17	6,869	955	328
17-Sep	0	17	6,869	955	328
18-Sep					
19-Sep	0	17	6,869	955	328
20-Sep	0	17	6,869	955	328
21-Sep	0	17	6,869	955	328
22-Sep	0	17	6,869	955	328
23-Sep	0	17	6,869	955	328

Cape Igvak, Wide Bay, Mid & North Mainland					
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
	Cumulative	**Cumulative**	**Cumulative**	**Cumulative**	**Cumulative**
	Cape Igvak & Wide Bay	Cape Igvak & Wide Bay	Cape Igvak & Wide Bay	Cape Igvak & Wide Bay	Cape Igvak & Wide Bay
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	CONFIDENTIAL				
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	0	0	0	0
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Jul	0	0	0	0	0
2-Jul	CONFIDENTIAL				
3-Jul	0	0	0	0	0
4-Jul	0	0	0	0	0
5-Jul	0	0	0	0	0
6-Jul	0	0	0	0	0
7-Jul	0	0	0	0	0
8-Jul	0	0	0	0	0
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	0	0	0	0	0
13-Jul	0	0	0	0	0
14-Jul	0	0	0	0	0
15-Jul	0	0	0	0	0
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	0	0	0	0	0
19-Jul	0	0	0	0	0
20-Jul	0	0	0	0	0

21-Jul	0	0	0	0	0
22-Jul	0	0	0	0	0
23-Jul	0	0	0	0	0
24-Jul	0	0	0	0	0
25-Jul	0	0	0	0	0
26-Jul	0	0	0	0	0
27-Jul	0	0	0	0	0
28-Jul	0	0	0	0	0
29-Jul	0	0	0	0	0
30-Jul	0	0	0	0	0
31-Jul	0	0	0	0	0
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	0	0	0	0	0
2-Aug	0	0	0	0	0
3-Aug	0	0	0	0	0
4-Aug	0	0	0	0	0
5-Aug	0	0	0	0	0
6-Aug	0	0	0	0	0
7-Aug	0	0	0	0	0
8-Aug	0	0	0	0	0
9-Aug	0	0	0	0	0
10-Aug	0	0	0	0	0
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	0	0	0	0	0
14-Aug	0	0	0	0	0
15-Aug	0	0	0	0	0
16-Aug	0	0	0	0	0
17-Aug	0	0	0	0	0
18-Aug	0	0	0	0	0
19-Aug	0	0	0	0	0
20-Aug	0	0	0	0	0
21-Aug	0	0	0	0	0
22-Aug	0	0	0	0	0
23-Aug	0	0	0	0	0
24-Aug	0	0	0	0	0
25-Aug	0	0	0	0	0
26-Aug	0	0	0	0	0
27-Aug	0	0	0	0	0
28-Aug	0	0	0	0	0
29-Aug	0	0	0	0	0
30-Aug	0	0	0	0	0
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	0	0	0	0	0
1-Sep	0	0	0	0	0
2-Sep	0	0	0	0	0

3-Sep	0	0	0	0	0
4-Sep	0	0	0	0	0
5-Sep	0	0	0	0	0
6-Sep	0	0	0	0	0
7-Sep	0	0	0	0	0
8-Sep	0	0	0	0	0
9-Sep	0	0	0	0	0
10-Sep	0	0	0	0	0
11-Sep	0	0	0	0	0
12-Sep	0	0	0	0	0
13-Sep	0	0	0	0	0
14-Sep	0	0	0	0	0
15-Sep	0	0	0	0	0
16-Sep	0	0	0	0	0
17-Sep	0	0	0	0	0
18-Sep					
19-Sep	0	0	0	0	0
20-Sep	0	0	0	0	0
21-Sep	0	0	0	0	0
22-Sep	0	0	0	0	0
23-Sep	0	0	0	0	0

Mid & North Mainland					
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
	Cumulative	**Cumulative**	**Cumulative**	**Cumulative**	**Cumulative**
	Mid & North Mainland	Mid & North Mainland	Mid & North Mainland	Mid & North Mainland	Mid & North Mainland
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	CONFIDENTIAL				
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	0	0	0	0
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Jul	0	0	0	0	0
2-Jul	CONFIDENTIAL				
3-Jul	0	0	0	0	0
4-Jul	0	0	0	0	0
5-Jul	0	0	0	0	0
6-Jul	0	0	0	0	0
7-Jul	69	2,119	195	543	1,188
8-Jul	228	4,584	195	884	2,071
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	228	4,584	195	884	2,071
13-Jul	228	4,584	195	884	2,071
14-Jul	256	6,970	268	2,637	2,854
15-Jul	265	7,504	303	3,283	3,482
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	265	7,524	307	3,305	3,492
19-Jul	265	7,524	307	3,305	3,492
20-Jul	265	7,524	307	3,305	3,492

21-Jul	265	7,524	307	3,305	3,492
22-Jul	265	7,524	307	3,305	3,492
23-Jul	272	7,809	329	4,437	7,338
24-Jul	290	10,072	623	11,551	11,645
25-Jul	312	16,076	1,292	24,185	17,019
26-Jul	370	17,528	1,565	27,325	17,816
27-Jul	370	17,528	1,565	27,325	17,816
28-Jul	370	17,528	1,565	27,325	17,816
29-Jul	370	17,528	1,565	27,325	17,816
30-Jul	370	17,528	1,565	27,325	17,816
31-Jul	370	17,528	1,565	27,325	17,816
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	370	17,528	1,565	27,325	17,816
2-Aug	370	17,528	1,565	27,325	17,816
3-Aug	370	17,528	1,565	27,325	17,816
4-Aug	370	17,528	1,565	27,325	17,816
5-Aug	370	17,528	1,565	27,325	17,816
6-Aug	370	17,528	1,565	27,325	17,816
7-Aug	370	17,528	1,565	27,325	17,816
8-Aug	370	17,528	1,565	27,325	17,816
9-Aug	370	17,528	1,565	27,325	17,816
10-Aug	370	17,528	1,565	27,325	17,816
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	370	17,528	1,565	27,325	17,816
14-Aug	370	17,528	1,565	27,325	17,816
15-Aug	370	17,528	1,565	27,325	17,816
16-Aug	370	17,528	1,565	27,325	17,816
17-Aug	370	17,528	1,565	27,325	17,816
18-Aug	370	17,528	1,565	27,325	17,816
19-Aug	370	17,528	1,565	27,325	17,816
20-Aug	370	17,528	1,565	27,325	17,816
21-Aug	370	17,528	1,565	27,325	17,816
22-Aug	370	17,528	1,565	27,325	17,816
23-Aug	370	17,528	1,565	27,325	17,816
24-Aug	370	17,528	1,565	27,325	17,816
25-Aug	370	17,528	1,565	27,325	17,816
26-Aug	370	17,528	1,565	27,325	17,816
27-Aug	370	17,528	1,565	27,325	17,816
28-Aug	370	17,528	1,565	27,325	17,816
29-Aug	370	17,528	1,565	27,325	17,816
30-Aug	370	17,528	1,565	27,325	17,816
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	370	17,528	1,565	27,325	17,816
1-Sep	370	17,528	1,565	27,325	17,816
2-Sep	370	17,528	1,565	27,325	17,816

3-Sep	370	17,528	1,565	27,325	17,816
4-Sep	370	17,528	1,565	27,325	17,816
5-Sep	370	17,528	1,565	27,325	17,816
6-Sep	370	17,528	1,565	27,325	17,816
7-Sep	370	17,528	1,565	27,325	17,816
8-Sep	370	17,528	1,565	27,325	17,816
9-Sep	370	17,528	1,565	27,325	17,816
10-Sep	370	17,528	1,565	27,325	17,816
11-Sep	370	17,528	1,565	27,325	17,816
12-Sep	370	17,528	1,565	27,325	17,816
13-Sep	370	17,528	1,565	27,325	17,816
14-Sep	370	17,528	1,565	27,325	17,816
15-Sep	370	17,528	1,565	27,325	17,816
16-Sep	370	17,528	1,565	27,325	17,816
17-Sep	370	17,528	1,565	27,325	17,816
18-Sep					
19-Sep	370	17,528	1,565	27,325	17,816
20-Sep	370	17,528	1,565	27,325	17,816
21-Sep	370	17,528	1,565	27,325	17,816
22-Sep	370	17,528	1,565	27,325	17,816
23-Sep	370	17,528	1,565	27,325	17,816

Foul Bay SHA					
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Foul Bay SHA	Foul Bay SHA	Foul Bay SHA	Foul Bay SHA	Foul Bay SHA
10-Jun	1	3,253	0	0	4
11-Jun	1	3,253	0	0	4
12-Jun	1	3,759	0	0	4
13-Jun	CONFIDENTIAL				
14-Jun	1	4,258	0	0	4
15-Jun	1	4,258	0	0	4
16-Jun	1	4,280	0	0	4
17-Jun	1	4,280	0	0	4
18-Jun	1	5,161	0	0	4
19-Jun	1	5,161	0	0	4
20-Jun	1	5,161	0	0	4
21-Jun	1	5,161	0	0	4
22-Jun	1	5,161	0	0	4
23-Jun	1	5,589	0	0	4
24-Jun	1	5,589	0	0	4
25-Jun	1	5,589	0	0	4
26-Jun	1	5,589	0	0	4
27-Jun	1	5,589	0	0	4
28-Jun	1	5,953	0	0	4
29-Jun	1	6,194	0	0	4
30-Jun	1	6,194	0	0	4
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
1-Jul	1	6,194	0	0	4
2-Jul	CONFIDENTIAL				
3-Jul	1	6,295	0	0	4
4-Jul	1	6,295	0	0	4
5-Jul	1	6,295	0	0	4
6-Jul	1	6,295	0	0	4
7-Jul	1	6,295	0	0	4
8-Jul	1	6,295	0	0	4
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	1	6,295	0	0	4
13-Jul	1	6,295	0	0	4
14-Jul	1	6,295	0	0	4
15-Jul	1	6,295	0	0	4
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	1	6,295	0	0	4
19-Jul	1	6,295	0	0	4
20-Jul	1	6,295	0	0	4
21-Jul	1	6,295	0	0	4

22-Jul	1	6,295	0	0	4
23-Jul	1	6,295	0	0	4
24-Jul	1	6,295	0	0	4
25-Jul	1	6,295	0	0	4
26-Jul	1	6,295	0	0	4
27-Jul	1	6,295	0	0	4
28-Jul	1	6,295	0	0	4
29-Jul	1	6,295	0	0	4
30-Jul	1	6,295	0	0	4
31-Jul	1	6,295	0	0	4
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	1	6,295	0	0	4
2-Aug	1	6,295	0	0	4
3-Aug	1	6,295	0	0	4
4-Aug	1	6,295	0	0	4
5-Aug	1	6,295	0	0	4
6-Aug	1	6,295	0	0	4
7-Aug	1	6,295	0	0	4
8-Aug	1	6,295	0	0	4
9-Aug	1	6,295	0	0	4
10-Aug	1	6,295	0	0	4
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	1	6,295	0	0	4
14-Aug	1	6,295	0	0	4
15-Aug	1	6,295	0	0	4
16-Aug	1	6,295	0	0	4
17-Aug	1	6,295	0	0	4
18-Aug	1	6,295	0	0	4
19-Aug	1	6,295	0	0	4
20-Aug	1	6,295	0	0	4
21-Aug	1	6,295	0	0	4
22-Aug	1	6,295	0	0	4
23-Aug	1	6,295	0	0	4
24-Aug	1	6,295	0	0	4
25-Aug	1	6,295	0	0	4
26-Aug	1	6,295	0	0	4
27-Aug	1	6,295	0	0	4
28-Aug	1	6,295	0	0	4
29-Aug	1	6,295	0	0	4
30-Aug	1	6,295	0	0	4
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	1	6,295	0	0	4
1-Sep	1	6,295	0	0	4
2-Sep	1	6,295	0	0	4
3-Sep	1	6,295	0	0	4

4-Sep	1	6,295	0	0	4
5-Sep	1	6,295	0	0	4
6-Sep	1	6,295	0	0	4
7-Sep	1	6,295	0	0	4
8-Sep	1	6,295	0	0	4
9-Sep	1	6,295	0	0	4
10-Sep	1	6,295	0	0	4
11-Sep	1	6,295	0	0	4
12-Sep	1	6,295	0	0	4
13-Sep	1	6,295	0	0	4
14-Sep	1	6,295	0	0	4
15-Sep	1	6,295	0	0	4
16-Sep	1	6,295	0	0	4
17-Sep	1	6,295	0	0	4
18-Sep					
19-Sep	1	6,295	0	0	4
20-Sep	1	6,295	0	0	4
21-Sep	1	6,295	0	0	4
22-Sep	1	6,295	0	0	4
23-Sep	1	6,295	0	0	4

Waterfall SHA					
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Waterfall SHA	Waterfall SHA	Waterfall SHA	Waterfall SHA	Waterfall SHA
10-Jun	0	292	0	0	0
11-Jun	0	292	0	0	0
12-Jun	0	372	0	12	300
13-Jun	CONFIDENTIAL				
14-Jun	0	338	0	0	0
15-Jun	0	338	0	0	0
16-Jun	0	338	0	0	0
17-Jun	0	338	0	0	0
18-Jun	0	338	0	0	0
19-Jun	0	338	0	0	0
20-Jun	0	338	0	0	0
21-Jun	0	338	0	0	0
22-Jun	0	338	0	0	0
23-Jun	0	338	0	0	0
24-Jun	0	338	0	0	0
25-Jun	0	338	0	0	0
26-Jun	0	338	0	0	0
27-Jun	0	338	0	0	0
28-Jun	0	338	0	0	0
29-Jun	0	338	0	0	0
30-Jun	0	338	0	0	0
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
1-Jul	0	338	0	0	0
2-Jul	CONFIDENTIAL				
3-Jul	0	338	0	0	0
4-Jul	0	338	0	0	0
5-Jul	0	338	0	0	0
6-Jul	0	338	0	0	0
7-Jul	0	338	0	0	0
8-Jul	0	338	0	0	0
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	0	338	0	0	0
13-Jul	0	338	0	0	0
14-Jul	0	338	0	0	0
15-Jul	0	338	0	0	0
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	0	338	0	0	0
19-Jul	0	338	0	0	0
20-Jul	0	338	0	0	0
21-Jul	0	338	0	0	0

22-Jul	0	338	0	0	0
23-Jul	0	338	0	0	0
24-Jul	0	338	0	0	0
25-Jul	0	338	0	0	0
26-Jul	0	338	0	0	0
27-Jul	0	338	0	0	0
28-Jul	0	338	0	0	0
29-Jul	0	338	0	0	0
30-Jul	0	338	0	0	0
31-Jul	0	338	0	0	0
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	0	338	0	0	0
2-Aug	0	338	0	0	0
3-Aug	0	338	0	0	0
4-Aug	0	338	0	0	0
5-Aug	0	338	0	0	0
6-Aug	0	338	0	0	0
7-Aug	0	338	0	0	0
8-Aug	0	338	0	0	0
9-Aug	0	338	0	0	0
10-Aug	0	338	0	0	0
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	0	338	0	0	0
14-Aug	0	338	0	0	0
15-Aug	0	338	0	0	0
16-Aug	0	338	0	0	0
17-Aug	0	338	0	0	0
18-Aug	0	338	0	0	0
19-Aug	0	338	0	0	0
20-Aug	0	338	0	0	0
21-Aug	0	338	0	0	0
22-Aug	0	338	0	0	0
23-Aug	0	338	0	0	0
24-Aug	0	338	0	0	0
25-Aug	0	338	0	0	0
26-Aug	0	338	0	0	0
27-Aug	0	338	0	0	0
28-Aug	0	338	0	0	0
29-Aug	0	338	0	0	0
30-Aug	0	338	0	0	0
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	0	338	0	0	0
1-Sep	0	338	0	0	0
2-Sep	0	338	0	0	0
3-Sep	0	338	0	0	0

4-Sep	0	338	0	0	0
5-Sep	0	338	0	0	0
6-Sep	0	338	0	0	0
7-Sep	0	338	0	0	0
8-Sep	0	338	0	0	0
9-Sep	0	338	0	0	0
10-Sep	0	338	0	0	0
11-Sep	0	338	0	0	0
12-Sep	0	338	0	0	0
13-Sep	0	338	0	0	0
14-Sep	0	338	0	0	0
15-Sep	0	338	0	0	0
16-Sep	0	338	0	0	0
17-Sep	0	338	0	0	0
18-Sep					
19-Sep	0	338	0	0	0
20-Sep	0	338	0	0	0
21-Sep	0	338	0	0	0
22-Sep	0	338	0	0	0
23-Sep	0	338	0	0	0

Telrod Cove SHA					
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Telrod Cove SHA	Telrod Cove SHA	Telrod Cove SHA	Telrod Cove SHA	Telrod Cove SHA
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	CONFIDENTIAL				
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	0	0	0	0
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
1-Jul	0	0	0	0	0
2-Jul	CONFIDENTIAL				
3-Jul	0	0	0	0	0
4-Jul	0	0	0	0	0
5-Jul	0	12,507	0	6	3
6-Jul	0	12,507	0	6	3
7-Jul	0	12,507	0	6	3
8-Jul	0	12,507	0	6	3
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	0	21,214	0	50	61
13-Jul	0	21,214	0	50	61
14-Jul	0	21,214	0	50	61
15-Jul	0	21,214	0	50	61
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	0	28,862	0	217	101
19-Jul	0	28,862	0	217	101
20-Jul	0	28,862	0	217	101
21-Jul	0	28,862	0	217	101

22-Jul	0	36,056	0	1,367	188
23-Jul	0	36,056	0	1,367	188
24-Jul	0	36,056	0	1,367	188
25-Jul	0	58,608	0	3,227	268
26-Jul	0	47,332	0	2,297	228
27-Jul	0	47,332	0	2,297	228
28-Jul	0	49,950	0	2,396	244
29-Jul	0	49,950	0	2,396	244
30-Jul	0	49,950	0	2,396	244
31-Jul	0	49,950	0	2,396	244
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	0	52,878	0	2,805	307
2-Aug	0	56,604	4	3,515	381
3-Aug	0	58,611	6	3,998	526
4-Aug	0	58,611	6	3,998	526
5-Aug	0	60,455	6	4,422	576
6-Aug	0	60,590	7	4,530	606
7-Aug	0	60,590	7	4,530	606
8-Aug	0	61,650	7	4,710	606
9-Aug	0	62,133	7	4,802	606
10-Aug	0	62,770	7	4,944	610
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	0	62,770	7	4,944	610
14-Aug	0	62,770	7	4,944	610
15-Aug	0	62,770	7	4,944	610
16-Aug	0	62,770	7	4,944	610
17-Aug	0	63,326	9	5,064	611
18-Aug	0	63,326	9	5,064	611
19-Aug	0	63,326	9	5,064	611
20-Aug	0	63,326	9	5,064	611
21-Aug	0	63,326	9	5,064	611
22-Aug	0	63,326	9	5,064	611
23-Aug	0	63,326	9	5,064	611
24-Aug	0	63,326	9	5,064	611
25-Aug	0	63,326	9	5,064	611
26-Aug	0	63,326	9	5,064	611
27-Aug	0	63,326	9	5,064	611
28-Aug	0	63,326	9	5,064	611
29-Aug	0	63,326	9	5,064	611
30-Aug	0	63,326	9	5,064	611
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	0	63,326	9	5,064	611
1-Sep	0	63,326	9	5,064	611
2-Sep	0	63,326	9	5,064	611
3-Sep	0	63,326	9	5,064	611

4-Sep	0	63,326	9	5,064	611
5-Sep	0	63,326	9	5,064	611
6-Sep	0	63,326	9	5,064	611
7-Sep	0	63,326	9	5,064	611
8-Sep	0	63,326	9	5,064	611
9-Sep	0	63,326	9	5,064	611
10-Sep	0	63,326	9	5,064	611
11-Sep	0	63,326	9	5,064	611
12-Sep	0	63,326	9	5,064	611
13-Sep	0	63,326	9	5,064	611
14-Sep	0	63,326	9	5,064	611
15-Sep	0	63,326	9	5,064	611
16-Sep	0	63,326	9	5,064	611
17-Sep	0	63,326	9	5,064	611
18-Sep					
19-Sep	0	63,326	9	5,064	611
20-Sep	0	63,326	9	5,064	611
21-Sep	0	63,326	9	5,064	611
22-Sep	0	63,326	9	5,064	611
23-Sep	0	63,326	9	5,064	611

Telrod Cove Cost Recovery					
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
	Cumulative Telrod Cove Cost Recovery	**Cumulative** Telrod Cove Cost Recovery	**Cumulative** Telrod Cove Cost Recovery	**Cumulative** Telrod Cove Cost Recovery	**Cumulative** Telrod Cove Cost Recovery
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	CONFIDENTIAL				
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	0	0	0	0
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Jul	0	0	0	0	0
2-Jul	CONFIDENTIAL				
3-Jul	0	0	0	0	0
4-Jul	0	0	0	0	0
5-Jul	0	12,507	0	6	3
6-Jul	0	12,507	0	6	3
7-Jul	0	12,507	0	6	3
8-Jul	0	12,507	0	6	3
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	0	21,214	0	50	61
13-Jul	0	21,214	0	50	61
14-Jul	0	21,214	0	50	61
15-Jul	0	21,214	0	50	61
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	0	28,862	0	217	101
19-Jul	0	28,862	0	217	101
20-Jul	0	28,862	0	217	101

21-Jul	0	28,862	0	217	101
22-Jul	0	36,056	0	1,367	188
23-Jul	0	36,056	0	1,367	188
24-Jul	0	36,056	0	1,367	188
25-Jul	0	47,332	0	2,297	228
26-Jul	0	47,332	0	2,297	228
27-Jul	0	47,332	0	2,297	228
28-Jul	0	49,950	0	2,396	244
29-Jul	0	49,950	0	2,396	244
30-Jul	0	49,950	0	2,396	244
31-Jul	0	49,950	0	2,396	244
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	0	49,950	0	2,396	244
2-Aug	0	51,790	0	2,652	299
3-Aug	0	51,790	0	2,652	299
4-Aug	0	51,790	0	2,652	299
5-Aug	0	51,790	0	2,652	299
6-Aug	0	51,790	0	2,652	299
7-Aug	0	51,790	0	2,652	299
8-Aug	0	51,790	0	2,652	299
9-Aug	0	51,790	0	2,652	299
10-Aug	0	51,790	0	2,652	299
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	0	51,790	0	2,652	299
14-Aug	0	51,790	0	2,652	299
15-Aug	0	51,790	0	2,652	299
16-Aug	0	51,790	0	2,652	299
17-Aug	0	51,790	0	2,652	299
18-Aug	0	51,790	0	2,652	299
19-Aug	0	51,790	0	2,652	299
20-Aug	0	51,790	0	2,652	299
21-Aug	0	51,790	0	2,652	299
22-Aug	0	51,790	0	2,652	299
23-Aug	0	51,790	0	2,652	299
24-Aug	0	51,790	0	2,652	299
25-Aug	0	51,790	0	2,652	299
26-Aug	0	51,790	0	2,652	299
27-Aug	0	51,790	0	2,652	299
28-Aug	0	51,790	0	2,652	299
29-Aug	0	51,790	0	2,652	299
30-Aug	0	51,790	0	2,652	299
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	0	51,790	0	2,652	299
1-Sep	0	51,790	0	2,652	299
2-Sep	0	51,790	0	2,652	299

3-Sep	0	51,790	0	2,652	299
4-Sep	0	51,790	0	2,652	299
5-Sep	0	51,790	0	2,652	299
6-Sep	0	51,790	0	2,652	299
7-Sep	0	51,790	0	2,652	299
8-Sep	0	51,790	0	2,652	299
9-Sep	0	51,790	0	2,652	299
10-Sep	0	51,790	0	2,652	299
11-Sep	0	51,790	0	2,652	299
12-Sep	0	51,790	0	2,652	299
13-Sep	0	51,790	0	2,652	299
14-Sep	0	51,790	0	2,652	299
15-Sep	0	51,790	0	2,652	299
16-Sep	0	51,790	0	2,652	299
17-Sep	0	51,790	0	2,652	299
18-Sep					
19-Sep	0	51,790	0	2,652	299
20-Sep	0	51,790	0	2,652	299
21-Sep	0	51,790	0	2,652	299
22-Sep	0	51,790	0	2,652	299
23-Sep	0	51,790	0	2,652	299

Kitoi Cost Recovery					
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Kitoi Cost Recovery	Kitoi Cost Recovery	Kitoi Cost Recovery	Kitoi Cost Recovery	Kitoi Cost Recovery
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	CONFIDENTIAL				
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	0	0	0	0
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
1-Jul	0	0	0	0	0
2-Jul	CONFIDENTIAL				
3-Jul	0	0	0	0	0
4-Jul	0	0	0	0	0
5-Jul	0	0	0	0	0
6-Jul	0	0	0	0	0
7-Jul	0	0	0	0	0
8-Jul	0	0	0	0	0
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	0	0	0	0	0
13-Jul	0	0	0	0	0
14-Jul	0	0	0	0	0
15-Jul	0	0	0	0	0
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	0	0	0	0	0
19-Jul	0	0	0	0	0
20-Jul	0	0	0	0	0

2019 Alaska Commercial Salmon Harvests — Ex-vessel Values



Source: ADF&G

PRELIMINARY DATA: 2019 Salmon Season

Updated 10/16/2019. Subject to change

Preliminary figures may not total exactly due to rounding.
Estimates based on fish tickets and reports from Area Managers.
DATA NOT FOR LEGAL INTERPRETATIONS.

Area	Species	Average Weight (in pounds)	Average Price per Pound	Number of Fish	Pounds of Fish	Estimated Exvessel Value
SOUTHEAST (including Yakutat)	CHINOOK	11.88	$5.07	177,246	2,106,034	$10,687,304
Updated 10/11/2019	SOCKEYE	5.67	$2.13	878,252	4,980,383	$10,623,867
	COHO	6.80	$1.71	1,652,014	11,232,259	$19,257,575
	PINK	3.68	$0.30	21,106,149	77,769,262	$23,694,520
	CHUM	7.99	$0.56	8,416,594	67,261,401	$37,582,818
	totals			32,230,255	163,349,339	$101,846,084
PRINCE WILLIAM SOUND (including hatchery fish)	CHINOOK	18.42	$8.59	18,399	338,836	$2,911,944
Updated 10/3/2019	SOCKEYE	5.35	$2.49	2,553,041	13,656,160	$33,989,146
	COHO	8.01	$1.19	504,159	4,038,880	$4,807,891
	PINK	3.40	$0.34	49,340,614	167,752,712	$57,746,792
	CHUM	6.04	$0.48	5,334,239	32,230,460	$15,449,375
	totals			57,750,452	218,017,048	$114,905,148
COOK INLET	CHINOOK	14.95	$3.54	3,393	50,736	$179,712
Updated 10/8/2019	SOCKEYE	5.34	$1.85	1,975,333	10,556,250	$19,556,087
	COHO	5.75	$0.76	158,584	911,207	$693,427
	PINK	3.11	$0.31	2,048,406	6,375,091	$1,953,714
	CHUM	6.91	$0.41	178,621	1,234,641	$506,282
*see supplemental tables	**totals**			4,364,337	19,127,925	$22,889,222
BRISTOL BAY	CHINOOK	11.40	$0.50	30,579	347,449	$173,725
Updated 9/24/2019	SOCKEYE	5.20	$1.35	42,967,737	225,108,917	$303,897,039
	COHO	6.00	$0.55	75,517	455,885	$250,737
	PINK	3.80	$0.05	5,680	21,588	$1,079
	CHUM	6.50	$0.25	1,379,169	9,002,884	$2,250,721
	totals			44,458,682	234,936,723	$306,573,301
KODIAK	CHINOOK	8.92	$0.60	7,723	68,889	$41,333
Updated 10/2/2019	SOCKEYE	4.96	$1.50	2,179,133	10,806,398	$16,209,597
	COHO	7.17	$0.52	396,326	2,842,352	$1,478,023
	PINK	3.17	$0.28	33,119,381	104,896,254	$29,370,951
	CHUM	7.04	$0.26	548,943	3,865,278	$1,004,972
	totals			35,702,563	118,613,893	$47,099,905
CHIGNIK	CHINOOK	9.13	$0.80	4,286	39,024	$31,219
Updated 10/3/2019	SOCKEYE	5.66	$1.40	638,772	3,614,393	$5,060,150
	COHO	6.37	$0.32	248,281	1,581,396	$506,047
	PINK	3.09	$0.27	2,452,838	7,583,891	$2,047,651
	CHUM	6.58	$0.35	157,517	1,037,197	$363,019
	totals			3,501,694	13,855,901	$8,008,086
ALASKA PENINSULA AND ALEUTIAN ISLANDS	CHINOOK	8.44	$0.58	26,006	219,493	$126,655
	SOCKEYE	5.17	$1.53	4,002,326	20,709,338	$31,751,763
	COHO	6.00	$0.25	560,495	3,362,106	$848,143
Updated 10/16/2019	PINK	2.77	$0.24	20,903,380	57,977,153	$13,777,438
	CHUM	5.89	$0.32	1,386,998	8,168,441	$2,630,082
*see supplemental tables	**totals**			26,879,205	90,436,531	$49,134,081
KUSKOKWIM	CHINOOK					
Updated 10/2/2019	SOCKEYE					
	COHO		No Buyer in the Kuskokwim Area			
	PINK					
	CHUM					
	totals					

YUKON	CHINOOK	12.17	$6.65	3,105	37,784	
Updated 10/1/2019	SOCKEYE					
	COHO	5.96	$1.00	57,389	342,297	$342,249
	PINK	3.09	$0.10	10,962	33,835	$3,384
	CHUM	6.56	$0.60	490,188	3,215,358	$1,923,447
*see supplemental tables	**totals**			561,644	3,629,274	$2,520,374
NORTON SOUND	CHINOOK	10.50	$3.00	1,371	14,792	$44,376
Updated 10/4/2019	SOCKEYE	6.0	$1.39	6,969	41,859	$58,299
	COHO	6.4	$1.57	139,820	899,549	$1,409,520
	PINK	3.4	$0.13	75,929	261,240	$33,125
	CHUM	6.7	$0.50	157,035	1,057,675	$528,266
	totals			381,124	2,275,115	$2,073,586
KOTZEBUE	CHINOOK	12.30	$0.80	16	197	$158
Updated 10/4/2019	SOCKEYE	4.90	$1.50	29	143	$215
	COHO					
	PINK					
	CHUM	8.1	$0.38	493,295	4,004,727	$1,538,603
	totals			493,340	4,005,067	$1,538,975
ALASKA TOTALS	CHINOOK	11.84	$4.48	272,124	3,223,234	$14,447,722
Updated 10/16/2019	SOCKEYE	5.24	$1.45	55,201,592	289,473,840	$421,146,163
	COHO	6.77	$1.15	3,792,585	25,665,932	$29,593,611
	PINK	3.27	$0.30	129,063,339	422,671,026	$128,628,652
	CHUM	7.07	$0.49	18,542,599	131,078,062	$63,777,586
	totals			206,872,239	872,112,094	$657,593,734



***Supplemental Tables: 2019 Salmon Season**

		Average Weight (in pounds)	Average Price per Pound	Number of Fish	Pounds of Fish	Estimated Exvessel Value
LOWER COOK INLET	CHINOOK	12.86	$4.07	736	8,854	$36,057
updated 10/8/2019	SOCKEYE	4.47	$2.20	311,696	1,394,639	$3,065,187
	COHO	7.40	$0.95	12,712	93,086	$88,017
	PINK	3.11	$0.31	1,980,124	6,165,154	$1,909,627
	CHUM	7.25	$0.49	55,508	402,516	$198,396
	totals			2,360,776	8,064,249	$5,297,284
UPPER COOK INLET	CHINOOK	15.76	$3.43	2,657	41,882	$143,655
updated 10/4/2019	SOCKEYE	5.51	$1.80	1,663,637	9,161,611	$16,490,900
	COHO	5.61	$0.74	145,872	818,121	$605,410
	PINK	3.07	$0.21	68,282	209,937	$44,087
	CHUM	6.76	$0.37	123,113	832,125	$307,886
	totals			2,003,561	11,063,676	$17,591,938
NORTHERN DISTRICT OF ALASKA PENINSULA	CHINOOK	14.83	$1.29	3,566	52,879	$67,965
Updated 10/13/2019	SOCKEYE	5.27	$1.56	2,371,500	12,504,661	$19,444,748
	COHO	6.33	$0.32	37,583	238,084	$76,901
	PINK	3.25	$0.26	113,278	368,576	$96,604
	CHUM	5.94	$0.41	49,246	292,491	$119,336
	totals			2,575,173	13,456,691	$19,805,554
SOUTH ALASKA PENINSULA, NORTHWESTERN DISTRICT, & ALEUTIAN ISLANDS	CHINOOK	7.42	$0.35	22,440	166,614	$58,690
	SOCKEYE	5.03	$1.50	1,630,826	8,204,677	$12,307,015
Updated 10/15/2019	COHO	5.97	$0.25	522,912	3,124,022	$771,242
	PINK	2.77	$0.24	20,790,102	57,608,577	$13,680,834
	CHUM	5.89	$0.32	1,337,752	7,875,950	$2,510,746
	totals			24,304,032	76,979,840	$29,328,526
YUKON SUMMER SEASON	CHINOOK	12.35	$6.59	2,582	31,896	$210,079
Updated 10/1/2019	SOCKEYE					
	COHO					
	PINK	3.09	$0.10	10,962	33,835	$3,384
	CHUM	6.07	$0.60	227,089	1,377,335	$823,473
	totals			240,633	1,443,066	$1,036,936
YUKON FALL SEASON	CHINOOK	11.26	$7.00	523	5,888	$41,216
Updated 10/1/2019	SOCKEYE					
	COHO	5.96	$1.00	57,389	342,297	$342,249
	PINK					
	CHUM	6.99	$0.60	263,099	1,838,023	$1,099,974
	totals			321,011	2,186,208	$1,483,438

Kodiak Management Area - 24 Hour Commercial Fishing Days

2017, 2018 and 2019

A. Kodiak Management Area

Date	Total Days	Days Fished
June 2017	30	30
July 2017	31	31
August 2017	31	31
September 2017	30	20
Total 2017	122	112
June 2018	30	25
July 2018	31	26
August 2018	31	28
September 2018	30	22
Total 2018	122	101
June 2019	30	13
July 2019	31	25
August 2019	31	29
September 2019	30	16
Total 2019	122	83

B. Karluk, NW Kodiak, SW Afognak, Ayakulik, Halibut and Sturgeon Bay

Date	Total Days	Days Fished
June 2017	30	30
July 2017	31	31
August 2017	31	31
September 2017	30	20
Total 2017	122	112
June 2018	30	25
July 2018	31	26
August 2018	31	28
September 2018	30	22
Total 2018	122	101
June 2019	30	13
July 2019	31	25
August 2019	31	29
September 2019	30	16
Total 2019	122	83

C. Central District Upper Cook Inlet Drift and Setnet *

Date	Total Days	Days Fished
June 2017	30	2
July 2017	31	6.5
August 2017	31	5
September 2017	30	1
Total 2017	122	14.5
June 2018	30	2
July 2018	31	4
August 2018	31	2
September 2018	30	0
Total 2018	122	8
June 2019	30	2
July 2019	31	5
August 2019	31	4
September 2019	30	1
Total 2019	122	12

* Central District regular openings are prescribed 12 hour periods

Cape Igvak, Wide Bay, Mid & North Mainland										
	2017 Chinook		2017 Sockeye		2017 Coho		2017 Chum		2017 Pink	
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Cape Igvak & Wide Bay	Mid & North Mainland	Cape Igvak & Wide Bay	Mid & North Mainland	Cape Igvak & Wide Bay	Mid & North Mainland	Cape Igvak & Wide Bay	Mid & North Mainland	Cape Igvak & Wide Bay	Mid & North Mainland
1-Jun	0	0	0	0	0	0	0	0	0	0
2-Jun	0	0	0	0	0	0	0	0	0	0
3-Jun	0	0	0	0	0	0	0	0	0	0
4-Jun	0	0	0	0	0	0	0	0	0	0
5-Jun	0	0	0	0	0	0	0	0	0	0
6-Jun	0	0	0	0	0	0	0	0	0	0
7-Jun	0	0	0	0	0	0	0	0	0	0
8-Jun	0	0	0	0	0	0	0	0	0	0
9-Jun	0	0	0	0	0	0	0	0	0	0
10-Jun	0	0	0	0	0	0	0	0	0	0
11-Jun	0	0	0	0	0	0	0	0	0	0
12-Jun	0	0	0	0	0	0	0	0	0	0
13-Jun	0	0	0	0	0	0	0	0	0	0
14-Jun	6	0	12,994	0	1	0	936	0	718	0
15-Jun	63	0	69,656	0	2	0	8,078	0	4,049	0
16-Jun	75	0	80,614	0	2	0	9,515	0	4,563	0
17-Jun	75	0	80,614	0	2	0	9,515	0	4,563	0
18-Jun	75	0	80,614	0	2	0	9,515	0	4,563	0
19-Jun	75	0	80,614	0	2	0	9,515	0	4,563	0
20-Jun	75	0	80,614	0	2	0	9,515	0	4,563	0
21-Jun	75	2	80,614	472	2	0	9,515	51	4,563	0
22-Jun	75	2	80,614	672	2	0	9,515	54	4,563	35
23-Jun	155	2	92,190	672	2	0	11,733	54	12,127	35
24-Jun	473	2	126,829	672	114	0	16,891	54	30,355	35
25-Jun	484	2	130,776	672	114	0	17,540	54	32,090	35
26-Jun	484	2	130,854	672	114	0	17,586	54	32,122	35
27-Jun	484	2	130,854	672	114	0	17,586	54	32,122	35
28-Jun	484	2	130,854	672	114	0	17,586	54	32,122	35
29-Jun	484	2	130,854	672	114	0	17,586	54	32,122	35
30-Jun	484	2	130,854	672	114	0	17,586	54	32,122	35
1-Jul	484	2	130,854	672	114	0	17,586	54	32,122	35
2-Jul	484	2	130,854	672	114	0	17,586	54	32,122	35
3-Jul	484	2	130,854	672	114	0	17,586	54	32,122	35
4-Jul	484	2	130,854	672	114	0	17,586	54	32,122	35
5-Jul	484	2	130,854	672	114	0	17,586	54	32,122	35
6-Jul	484	2	130,854	672	114	0	17,586	54	32,122	35
7-Jul	484	49	130,854	1,737	114	0	17,586	1,554	32,122	613
8-Jul	484	135	130,854	4,430	114	4	17,586	4,214	32,122	4,419
9-Jul	484	155	130,854	5,486	114	4	17,586	4,674	32,122	5,234
10-Jul	484	155	130,854	5,486	114	4	17,586	4,676	32,122	5,234
11-Jul	484	155	130,854	5,486	114	4	17,586	4,676	32,122	5,234
12-Jul	484	155	130,854	5,486	114	4	17,586	4,674	32,122	5,234
13-Jul	484	186	130,854	9,568	114	4	17,586	5,896	32,122	6,014
14-Jul	484	322	130,854	19,202	114	25	17,586	9,523	32,122	8,289

	2017 Chinook		2017 Sockeye		2017 Coho		2017 Chum		2017 Pink	
15-Jul	484	342	130,854	22,355	114	25	17,586	11,345	32,122	9,180
16-Jul	484	342	130,854	22,780	114	33	17,586	12,130	32,122	12,189
17-Jul	484	342	130,854	22,780	114	33	17,586	12,130	32,122	12,189
18-Jul	484	342	130,854	22,780	114	33	17,586	12,130	32,122	12,189
19-Jul	484	342	130,854	22,780	114	33	17,586	12,130	32,122	12,189
20-Jul	484	347	130,854	24,136	114	36	17,586	16,027	32,122	14,071
21-Jul	484	458	130,854	69,580	114	1,195	17,586	50,871	32,122	36,087
22-Jul	484	465	130,854	71,255	114	1,430	17,586	68,981	32,122	38,856
23-Jul	484	540	130,854	73,605	114	1,509	17,586	70,148	32,122	47,411
24-Jul	484	540	130,854	73,605	114	1,509	17,586	70,148	32,122	47,411
25-Jul	484	540	130,854	73,605	114	1,509	17,586	70,148	32,122	47,411
26-Jul										
27-Jul	484	546	132,043	76,192	1,058	2,138	29,149	91,811	76,274	63,356
28-Jul	484	554	134,092	84,217	2,247	3,659	42,274	112,969	148,934	104,819
29-Jul	485	585	137,573	96,874	4,939	5,838	61,157	141,908	252,494	150,310
30-Jul	604	614	141,360	110,669	8,055	9,624	70,650	158,260	334,273	190,246
31-Jul	612	624	142,057	117,271	9,284	12,123	74,596	167,431	350,360	209,735
1-Aug	612	624	142,057	117,271	9,284	12,123	74,596	167,431	350,360	209,735
2-Aug	612	624	142,057	117,271	9,284	12,123	74,596	167,431	350,360	209,735
3-Aug	612	625	145,429	117,560	10,020	12,237	77,585	172,258	459,444	214,175
4-Aug	612	645	147,423	123,586	10,449	14,534	80,730	195,895	512,660	265,999
5-Aug	612	655	150,242	125,468	11,202	14,682	83,933	199,950	625,990	276,662
6-Aug	612	682	152,870	128,056	11,775	14,890	86,206	202,944	703,527	313,677
7-Aug	612	685	153,046	128,408	11,842	15,024	86,714	203,964	707,527	321,677
8-Aug	612	685	153,046	128,408	11,842	15,024	86,714	203,964	707,527	321,677
9-Aug	612	685	153,046	128,408	11,842	15,024	86,714	203,964	707,527	321,677
10-Aug	612	685	153,046	128,411	11,842	15,024	87,032	211,439	725,084	336,092
11-Aug	613	697	153,863	130,703	12,052	17,064	88,186	222,726	766,113	379,690
12-Aug	614	701	153,983	132,329	12,076	17,175	88,801	231,730	784,439	380,136
13-Aug	620	702	154,483	133,028	12,270	17,199	89,544	248,121	818,695	432,669
14-Aug	620	702	154,483	133,028	12,270	17,199	89,544	248,121	818,695	432,669
15-Aug	620	702	154,483	133,028	12,270	17,199	89,544	248,121	818,695	432,669
16-Aug	620	702	154,483	133,028	12,270	17,204	92,717	250,056	837,098	435,453
17-Aug	620	702	154,483	133,031	12,270	17,297	94,877	262,915	873,012	440,226
18-Aug	620	702	154,812	133,133	12,997	17,358	95,141	276,883	908,785	474,907
19-Aug	620	702	154,812	133,154	12,997	17,401	95,141	238,445	908,785	490,974
20-Aug	620	702	155,389	134,174	15,535	17,857	95,992	288,201	926,943	515,571
21-Aug	620	702	155,389	134,181	15,535	17,857	95,992	291,129	926,943	526,305
22-Aug	620	702	155,389	134,181	15,535	17,857	95,992	291,129	926,943	526,305
23-Aug	620	702	155,389	134,181	15,535	17,857	95,992	291,129	926,943	526,305
24-Aug	620	702	155,389	134,181	15,535	17,857	95,992	291,129	926,943	526,305
25-Aug	620	702	155,389	134,181	15,535	17,857	95,992	291,129	926,943	526,305
26-Aug	620	702	155,389	134,181	15,535	17,857	95,992	291,129	926,943	526,305
27-Aug	620	702	155,389	134,181	15,535	17,857	95,992	291,129	926,943	526,305
28-Aug	620	702	155,389	134,181	15,535	17,857	95,992	291,204	926,943	559,571
29-Aug	620	702	155,389	134,508	15,535	20,540	95,992	292,831	926,943	562,786
30-Aug	620	702	155,389	134,548	15,535	20,573	95,992	294,222	926,943	568,478
31-Aug	620	702	155,389	134,618	15,535	20,635	95,992	294,236	926,943	573,304

	2017 Chinook		2017 Sockeye		2017 Coho		2017 Chum		2017 Pink	
1-Sep	620	702	155,389	134,618	15,535	20,635	95,992	294,236	926,943	573,304
2-Sep	620	702	155,389	134,618	15,535	20,635	95,992	294,236	926,943	573,304
3-Sep	620	702	155,389	134,618	15,535	20,635	95,992	294,236	926,943	573,304
4-Sep	620	702	155,389	134,618	15,535	20,635	95,992	294,236	926,943	573,304
5-Sep	620	702	155,389	134,618	15,535	20,635	95,992	294,236	926,943	573,304
6-Sep	620	702	155,389	134,618	15,535	20,635	95,992	294,236	926,943	573,304
7-Sep	620	702	155,389	134,618	15,535	20,635	95,992	294,236	926,943	573,304
8-Sep	620	702	155,389	134,618	15,535	20,635	95,992	294,236	926,943	573,304
9-Sep	620	702	155,389	134,618	15,535	20,635	95,992	294,236	926,943	573,304
10-Sep	620	702	155,389	134,643	15,535	20,817	95,992	296,939	926,943	573,485
11-Sep	620	702	155,389	134,643	15,535	20,817	95,992	297,544	926,943	573,485
12-Sep	620	702	155,389	134,643	15,535	20,817	95,992	297,544	926,943	573,485
13-Sep	620	702	155,389	134,643	15,535	20,817	95,992	297,544	926,943	573,485
14-Sep	620	702	155,389	134,643	15,535	20,817	95,992	279,544	926,943	573,485
15-Sep	620	702	155,389	134,643	15,535	20,817	95,992	297,544	926,943	573,485
16-Sep	620	702	155,389	134,643	15,535	20,817	95,992	297,544	926,973	573,485
17-Sep	Confidential									
18-Sep										
19-Sep										
20-Sep	620	702	155,389	134,643	15,535	20,817	95,992	297,544	926,973	537,485

East & Northeast Kodiak					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	East & Northeast Kodiak	East & Northeast Kodiak	East & Northeast Kodiak	East & Northeast Kodiak	East & Northeast Kodiak
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	121	0	68	13
16-Jun	0	1,455	0	1,621	867
17-Jun	0	1,455	0	1,621	867
18-Jun	0	1,455	0	1,621	867
19-Jun	0	1,455	0	1,621	867
20-Jun	0	1,455	0	1,621	867
21-Jun	0	3,043	0	4,883	1,905
22-Jun	11	5,259	0	7,226	3,488
23-Jun	11	5,259	0	7,226	3,488
24-Jun	11	5,331	0	7,238	3,489
25-Jun	11	5,331	0	7,238	3,489
26-Jun	11	5,331	0	7,238	3,489
27-Jun	11	5,331	0	7,238	3,489
28-Jun	11	5,331	0	7,238	3,489
29-Jun	11	5,331	0	7,238	3,489
30-Jun	11	5,331	0	7,238	3,489
1-Jul	11	5,331	0	7,238	3,489
2-Jul	11	5,331	0	7,238	3,489
3-Jul	11	5,331	0	7,238	3,489
4-Jul	11	5,331	0	7,238	3,489
5-Jul	11	5,331	0	7,238	3,489
6-Jul	13	5,331	164	21,754	8,519
7-Jul	51	25,034	2,814	146,225	48,873
8-Jul	60	28,995	5,113	202,357	75,259
9-Jul	101	47,939	9,322	302,569	138,585
10-Jul	171	62,054	13,453	417,504	232,861
11-Jul	171	62,054	13,453	417,504	232,861

12-Jul	171	62,054	13,453	417,504	232,861
	2017 Chinook	**2017 Sockeye**	**2017 Coho**	**2017 Chum**	**2017 Pink**
13-Jul	172	64,418	14,266	418,885	245,631
14-Jul	176	71,594	15,684	446,121	277,398
15-Jul	183	74,732	15,888	451,656	287,134
16-Jul	205	79,176	17,047	458,497	304,953
17-Jul	319	86,549	19,022	472,889	334,710
18-Jul	319	87,475	19,566	477,922	342,940
19-Jul	319	87,475	19,566	477,922	342,940
20-Jul	319	88,288	19,824	480,981	347,499
21-Jul	424	94,549	21,325	492,326	373,335
22-Jul	428	95,321	21,361	493,152	379,531
23-Jul	439	96,501	21,550	497,668	391,870
24-Jul	447	97,732	21,608	498,920	405,681
25-Jul	459	98,097	21,608	499,832	408,356
27-Jul	459	98,313	21,618	500,164	415,707
28-Jul	459	98,657	21,634	501,084	426,871
29-Jul	459	98,657	21,634	501,804	426,871
30-Jul	468	99,184	21,642	505,012	449,893
31-Jul	468	99,184	21,642	505,012	449,893
1-Aug	468	99,184	21,642	505,012	449,893
2-Aug	468	99,184	21,642	505,012	449,893
3-Aug	468	99,857	21,668	507,002	484,368
4-Aug	524	101,860	21,739	511,268	543,711
5-Aug	524	102,923	21,756	513,359	583,995
6-Aug	534	105,742	22,157	522,385	673,693
7-Aug	534	105,742	22,157	522,385	673,693
8-Aug	534	105,742	22,157	522,385	673,693
9-Aug	534	105,742	22,157	522,385	673,693
10-Aug	534	105,874	22,159	525,208	738,073
11-Aug	554	106,542	22,266	532,408	793,586
12-Aug	561	107,199	22,285	542,912	894,981
13-Aug	573	107,924	22,316	557,360	999,818
14-Aug	573	107,924	22,316	557,360	999,818
15-Aug	573	107,924	22,316	557,360	999,818
16-Aug	573	108,125	22,324	565,048	1,052,815
17-Aug	573	108,739	22,397	576,008	1,205,137
18-Aug	575	109,715	22,590	583,909	1,342,382
19-Aug	575	110,305	22,757	590,319	1,469,801
20-Aug	575	111,397	23,425	598,523	1,652,433
21-Aug	575	111,807	23,717	604,720	1,810,798
22-Aug	575	112,263	24,186	633,317	2,024,645
23-Aug	576	112,697	25,087	649,890	2,220,038
24-Aug	578	113,076	26,112	656,766	2,337,528
25-Aug	578	113,615	27,911	663,628	2,545,605
26-Aug	583	114,086	29,296	672,510	2,707,296

27-Aug	583	114,566	31,445	675,634	2,833,255
	2017 Chinook	**2017 Sockeye**	**2017 Coho**	**2017 Chum**	**2017 Pink**
28-Aug	583	114,715	32,119	676,980	2,886,102
29-Aug	583	115,108	34,876	683,111	3,022,332
30-Aug	583	115,439	36,947	691,677	3,155,129
31-Aug	583	115,682	38,796	701,219	3,284,087
1-Sep	583	115,937	40,532	719,836	3,401,980
2-Sep	583	116,111	41,634	722,291	3,452,264
3-Sep	583	116,195	41,954	725,879	3,481,105
4-Sep	583	116,232	43,007	727,882	3,524,910
5-Sep	583	116,252	43,867	732,162	3,560,648
6-Sep	594	116,325	45,198	742,120	3,606,292
7-Sep	594	116,325	45,198	742,120	3,606,292
8-Sep	594	116,325	45,198	742,120	3,606,292
9-Sep	594	116,328	45,218	743,208	3,608,465
10-Sep	594	116,335	47,025	751,224	3,630,829
11-Sep	594	116,336	47,054	752,674	3,630,877
12-Sep	594	116,336	47,305	756,199	3,633,355
13-Sep	594	116,336	47,305	756,199	3,633,355
14-Sep	594	116,336	47,305	756,199	3,633,355
15-Sep	594	116,336	47,305	756,199	3,633,355
16-Sep	594	116,336	47,305	756,199	3,633,355
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	594	116,336	47,305	756,199	3,633,355

Karluk, NW Kodiak & SW Afognak					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Karluk, NW Kodiak & SW Afognak	Karluk, NW Kodiak & SW Afognak	Karluk, NW Kodiak & SW Afognak	Karluk, NW Kodiak & SW Afognak	Karluk, NW Kodiak & SW Afognak
1-Jun	28	6,085	0	7	2
2-Jun	192	33,631	0	210	13
3-Jun	336	48,002	0	329	0
4-Jun	393	70,755	862	671	28
5-Jun	417	83,258	8	798	37
6-Jun	419	98,880	8	1,556	68
7-Jun	421	107,184	8	1,676	68
8-Jun	432	127,049	8	3,285	127
9-Jun	446	143,476	8	4,169	161
10-Jun	454	167,014	8	5,626	186
11-Jun	475	174,246	8	6,131	192
12-Jun	514	200,639	8	8,848	249
13-Jun	536	211,828	8	9,210	267
14-Jun	576	225,690	8	10,021	314
15-Jun	609	235,871	8	10,770	358
16-Jun	623	245,260	8	11,327	377
17-Jun	727	262,091	8	14,490	496
18-Jun	801	271,999	9	15,802	563
19-Jun	875	280,670	10	17,588	737
20-Jun	955	285,337	11	18,292	830
21-Jun	982	301,059	14	21,485	1,421
22-Jun	1,004	305,665	14	22,473	1,641
23-Jun	1,038	309,478	14	23,333	1,771
24-Jun	1,097	314,118	17	24,017	2,207
25-Jun	1,104	320,734	18	24,829	2,500
26-Jun	1,123	332,123	19	26,994	3,457
27-Jun	1,169	353,704	20	33,516	5,421
28-Jun	1,196	372,043	23	18,908	8,193
29-Jun	1,199	377,954	29	42,283	9,621
30-Jun	1,227	391,777	37	51,714	14,882
1-Jul	1,253	399,178	49	55,592	17,991
2-Jul	1,294	410,572	68	63,299	22,605
3-Jul	1,360	419,884	121	75,461	29,111
4-Jul	1,386	431,056	106	81,861	35,789
5-Jul	1,415	450,304	122	92,869	44,041
6-Jul	1,451	463,295	158	99,504	53,060
7-Jul	1,591	481,527	257	111,394	68,781
8-Jul	1,648	494,735	638	122,151	86,390
9-Jul	1,675	519,892	1,091	136,108	105,352
10-Jul	1,718	539,911	1,567	158,651	146,903
11-Jul	1,718	539,911	1,567	158,651	146,903

12-Jul	1,718	548,168	1,567	158,723	148,229
	2017 Chinook	**2017 Sockeye**	**2017 Coho**	**2017 Chum**	**2017 Pink**
13-Jul	1,722	565,144	1,596	164,533	171,492
14-Jul	1,755	593,188	1,890	189,347	266,664
15-Jul	1,792	612,408	2,056	201,131	312,986
16-Jul	1,883	637,473	2,433	220,705	502,083
17-Jul	1,995	659,987	2,964	239,637	686,838
18-Jul	1,999	660,318	2,972	240,509	690,268
19-Jul	1,999	660,318	2,972	240,509	690,268
20-Jul	2,001	674,932	3,407	248,007	753,958
21-Jul	2,020	702,156	5,197	274,760	1,037,313
22-Jul	2,136	718,311	6,508	287,834	1,256,651
23-Jul	2,389	747,619	8,618	306,339	1,644,002
24-Jul	2,536	772,726	9,838	319,816	1,900,255
25-Jul	2,608	782,013	10,471	325,647	2,047,859
27-Jul	2,621	796,874	10,600	334,719	2,248,910
28-Jul	2,653	825,013	11,247	348,402	2,633,583
29-Jul	2,680	844,839	12,261	358,508	2,991,236
30-Jul	2,691	861,512	13,393	366,785	3,375,009
31-Jul	2,715	876,620	14,875	376,713	3,765,653
1-Aug	2,764	902,527	18,089	387,072	4,165,835
2-Aug	2,828	920,865	20,538	394,120	4,419,335
3-Aug	2,916	952,865	24,007	404,438	4,852,133
4-Aug	2,968	980,228	26,088	412,272	5,089,075
5-Aug	3,036	1,008,454	28,577	420,054	5,400,650
6-Aug	3,060	1,026,393	30,638	426,134	5,710,935
7-Aug	3,111	1,045,746	33,496	432,808	6,074,697
8-Aug	3,181	1,062,084	35,336	438,999	6,416,071
9-Aug	3,201	1,074,298	37,432	447,632	6,690,652
10-Aug	3,264	1,083,517	39,361	453,289	6,939,288
11-Aug	3,333	1,095,990	47,808	457,882	7,211,224
12-Aug	3,397	1,113,920	54,503	464,856	7,451,232
13-Aug	3,512	1,145,905	60,114	472,679	7,980,255
14-Aug	3,522	1,176,445	63,401	476,589	8,487,661
15-Aug	3,588	1,201,023	66,693	481,221	9,002,471
16-Aug	3,633	1,224,765	68,552	484,422	9,417,173
17-Aug	3,658	1,250,257	71,585	488,490	9,845,154
18-Aug	3,672	1,271,022	73,654	493,204	10,216,533
19-Aug	3,699	1,288,864	75,744	494,845	10,502,494
20-Aug	3,705	1,313,398	78,332	496,960	10,779,339
21-Aug	3,716	1,329,447	81,785	499,665	11,168,431
22-Aug	3,744	1,348,508	85,791	503,669	11,543,566
23-Aug	3,751	1,370,551	90,875	504,983	12,039,386
24-Aug	3,786	1,390,446	97,980	506,678	12,447,999
25-Aug	3,789	1,412,000	104,787	509,111	12,891,491
26-Aug	3,794	1,430,167	110,370	510,380	13,304,324

27-Aug	3,821	1,442,656	117,441	511,651	13,596,412
	2017 Chinook	**2017 Sockeye**	**2017 Coho**	**2017 Chum**	**2017 Pink**
28-Aug	3,827	1,448,355	120,106	512,052	13,704,228
29-Aug	3,830	1,450,673	122,281	512,287	13,784,104
30-Aug	3,834	1,453,977	127,124	512,713	13,992,500
31-Aug	3,837	1,465,354	133,200	513,405	14,118,217
1-Sep	3,843	1,471,575	140,562	514,080	14,270,419
2-Sep	3,857	1,480,008	148,536	514,718	14,383,531
3-Sep	3,866	1,483,772	152,033	514,945	14,421,111
4-Sep	3,868	1,487,431	156,688	515,086	14,618,167
5-Sep	3,884	1,509,461	162,886	515,493	14,715,560
6-Sep	3,888	1,549,046	169,175	515,803	14,862,324
7-Sep	3,914	1,571,621	172,483	515,997	14,962,303
8-Sep	3,918	1,586,453	176,072	516,106	15,011,261
9-Sep	3,952	1,592,006	177,749	516,191	15,032,791
10-Sep	3,954	1,600,321	181,509	516,305	15,060,695
11-Sep	3,967	1,607,981	186,681	516,430	15,087,249
12-Sep	3,969	1,616,342	194,980	516,563	15,107,496
13-Sep	3,970	1,619,523	197,550	516,991	15,115,366
14-Sep	3,970	1,629,812	204,495	517,123	15,126,535
15-Sep	3,971	1,632,909	205,847	517,149	15,128,380
16-Sep	3,975	1,637,811	207,903	517,186	15,131,804
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	3,975	1,647,779	210,556	517,251	15,134,321

Ayakulik, Halibut Bay & Sturgeon Bay					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Ayakulik, Halibut Bay & Sturgeon	Ayakulik, Halibut Bay & Sturgeon	Ayakulik, Halibut Bay & Sturgeon	Ayakulik, Halibut Bay & Sturgeon	Ayakulik, Halibut Bay & Sturgeon
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	726	0	51	2
18-Jun	84	14,841	0	1,076	44
19-Jun	85	22,772	0	1,602	61
20-Jun	87	23,339	0	1,694	70
21-Jun	87	23,339	0	1,694	70
22-Jun	87	23,339	0	1,694	70
23-Jun	87	23,339	0	1,694	70
24-Jun	87	23,339	0	1,694	70
25-Jun	87	23,339	0	1,694	70
26-Jun	87	23,339	0	1,694	70
27-Jun	87	23,339	0	1,694	70
28-Jun	87	23,339	0	1,694	70
29-Jun	87	23,339	0	1,694	70
30-Jun	87	23,339	0	1,694	70
1-Jul	87	23,339	0	1,694	70
2-Jul	87	23,339	0	1,694	70
3-Jul	87	23,339	0	1,694	70
4-Jul	87	23,339	0	1,694	70
5-Jul	87	23,339	0	1,694	70
6-Jul	87	23,339	0	1,694	70
7-Jul	87	23,339	0	1,694	70
8-Jul	87	23,339	0	1,694	70
9-Jul	87	23,339	0	1,694	70
10-Jul	87	23,339	0	1,694	70
11-Jul	87	23,339	0	1,694	70

12-Jul	87	23,339	0	1,694	70
	2017 Chinook	**2017 Sockeye**	**2017 Coho**	**2017 Chum**	**2017 Pink**
13-Jul	87	23,409	0	1,785	209
14-Jul	131	29,893	0	2,013	684
15-Jul	131	29,893	0	2,013	684
16-Jul	131	29,893	0	2,013	684
17-Jul	131	29,893	0	2,013	684
18-Jul	131	29,893	0	2,013	684
19-Jul	131	29,893	0	2,013	684
20-Jul	131	29,893	0	2,013	684
21-Jul	131	29,963	4	2,022	1,234
22-Jul	131	29,963	4	2,022	1,234
23-Jul	131	30,262	8	2,025	1,361
24-Jul	131	30,772	158	2,711	13,044
25-Jul	131	30,772	158	2,711	13,044
27-Jul	131	30,772	158	2,711	13,044
28-Jul	131	35,685	213	3,027	31,477
29-Jul	131	35,685	213	3,027	31,477
30-Jul	131	45,228	448	3,506	64,374
31-Jul	131	47,864	541	4,045	75,035
1-Aug	131	49,994	688	4,180	84,264
2-Aug	134	56,025	1,359	4,607	104,845
3-Aug	138	64,257	1,434	4,798	138,518
4-Aug	138	65,165	1,434	4,834	143,935
5-Aug	138	67,287	1,460	4,852	144,882
6-Aug	138	67,287	1,460	4,852	144,882
7-Aug	138	67,447	1,461	4,872	145,762
8-Aug	138	67,447	1,461	4,872	145,762
9-Aug	138	67,447	1,461	4,872	145,762
10-Aug	138	68,143	1,522	4,908	149,461
11-Aug	138	68,626	1,561	4,925	156,877
12-Aug	138	68,626	1,561	4,925	156,877
13-Aug	145	71,887	1,685	5,097	203,133
14-Aug	146	76,075	1,963	5,369	280,663
15-Aug	146	81,525	2,836	6,114	366,805
16-Aug	146	87,450	3,854	6,521	447,459
17-Aug	149	90,847	4,389	6,870	495,410
18-Aug	168	96,357	5,521	7,261	571,057
19-Aug	172	104,046	6,225	7,607	674,406
20-Aug	172	114,263	6,760	7,947	753,204
21-Aug	181	115,618	6,920	8,007	769,992
22-Aug	181	116,662	7,151	8,088	779,688
23-Aug	185	118,509	7,485	8,142	813,568
24-Aug	188	120,928	7,935	8,207	851,259
25-Aug	194	123,421	8,579	8,272	885,926
26-Aug	194	125,192	9,201	8,380	920,805

27-Aug	194	128,405	10,007	8,460	984,997
	2017 Chinook	**2017 Sockeye**	**2017 Coho**	**2017 Chum**	**2017 Pink**
28-Aug	194	128,781	10,203	8,475	999,159
29-Aug	194	129,322	10,398	8,484	1,012,912
30-Aug	194	130,913	10,967	8,568	1,036,421
31-Aug	197	131,724	12,490	8,601	1,042,254
1-Sep	197	131,724	12,490	8,601	1,042,254
2-Sep	197	131,724	12,490	8,601	1,042,254
3-Sep	197	131,724	12,490	8,601	1,042,254
4-Sep	197	131,724	12,490	8,601	1,042,254
5-Sep	197	131,724	12,490	8,601	1,042,254
6-Sep	197	131,724	12,490	8,601	1,042,254
7-Sep	197	131,724	12,490	8,601	1,042,254
8-Sep	197	134,653	13,117	8,649	1,052,786
9-Sep	197	134,653	13,117	8,649	1,052,786
10-Sep	197	134,951	13,306	8,690	1,058,736
11-Sep	197	135,238	14,250	8,690	1,060,707
12-Sep	197	135,238	14,250	8,690	1,060,707
13-Sep	197	135,238	14,250	8,690	1,060,707
14-Sep	197	135,238	14,250	8,690	1,060,707
15-Sep	197	135,238	14,250	8,690	1,060,707
16-Sep	197	135,238	14,250	8,690	1,060,707
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	197	135,238	14,250	8,690	1,060,707

Alitak Bay, Olga, Moser & Dog Salmon					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Alitak Bay, Olga, Moser & Dog Salmon	Alitak Bay, Olga, Moser & Dog Salmon	Alitak Bay, Olga, Moser & Dog Salmon	Alitak Bay, Olga, Moser & Dog Salmon	Alitak Bay, Olga, Moser & Dog Salmon
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	2,677	0	1	0
10-Jun	0	5,934	0	7	1
11-Jun	0	5,934	0	7	1
12-Jun	0	5,934	0	7	1
13-Jun	0	5,934	0	7	1
14-Jun	0	5,934	0	7	1
15-Jun	0	5,934	0	7	1
16-Jun	0	5,934	0	7	1
17-Jun	0	9,395	2	13	2
18-Jun	0	13,855	2	56	5
19-Jun	0	16,116	2	82	5
20-Jun	0	16,116	2	82	5
21-Jun	0	16,116	2	82	5
22-Jun	0	16,116	2	82	5
23-Jun	0	16,116	2	82	5
24-Jun	0	16,166	2	82	5
25-Jun	0	16,116	2	82	5
26-Jun	0	16,116	2	82	5
27-Jun	0	16,116	2	82	5
28-Jun	0	16,116	2	82	5
29-Jun	0	16,116	2	82	5
30-Jun	0	16,116	2	82	5
1-Jul	0	16,116	2	82	5
2-Jul	0	16,116	2	82	5
3-Jul	0	16,116	2	82	5
4-Jul	0	16,116	2	82	5
5-Jul	0	16,116	2	82	5
6-Jul	0	16,116	2	82	5
7-Jul	0	16,116	2	82	5
8-Jul	0	16,116	2	82	5
9-Jul	0	16,116	2	82	5
10-Jul	0	16,116	2	82	5
11-Jul	0	16,116	2	82	5

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
12-Jul	0	16,116	2	82	5
13-Jul	0	19,249	5	528	3,068
14-Jul	0	21,758	43	1,122	6,909
15-Jul	0	23,361	48	1,404	8,569
16-Jul	0	23,361	48	1,404	8,569
17-Jul	0	23,361	48	1,404	8,569
18-Jul	0	18,551	48	1,404	8,569
19-Jul	0	23,361	48	1,404	8,569
20-Jul	1	28,199	52	1,689	15,631
21-Jul	1	35,485	60	2,056	26,198
22-Jul	1	39,126	73	2,352	34,110
23-Jul	1	39,126	73	2,352	34,110
24-Jul	1	39,126	73	2,352	34,110
25-Jul	1	39,126	73	2,352	34,110
27-Jul	1	43,688	81	2,781	45,079
28-Jul	1	48,730	99	3,417	58,776
29-Jul	1	51,989	106	3,803	70,604
30-Jul	1	55,354	117	4,094	81,140
31-Jul	1	55,354	117	4,094	81,140
1-Aug	1	55,354	117	4,094	81,140
2-Aug	1	55,354	117	4,094	81,140
3-Aug	1	58,034	121	4,283	91,361
4-Aug	1	59,397	131	4,624	97,170
5-Aug	1	62,783	151	5,320	107,603
6-Aug	1	65,726	190	6,012	120,014
7-Aug	1	65,726	190	6,012	120,014
8-Aug	1	65,726	190	6,012	120,014
9-Aug	1	65,726	190	6,012	120,014
10-Aug	1	65,726	190	6,012	120,014
11-Aug	1	65,726	190	6,012	120,014
12-Aug	1	65,726	190	6,012	120,014
13-Aug	1	65,726	190	6,012	120,014
14-Aug	1	65,726	190	65,012	120,014
15-Aug	1	65,726	190	6,012	120,014
16-Aug	1	66,571	232	6,468	128,875
17-Aug	1	67,492	322	6,943	134,787
18-Aug	1	67,492	322	6,943	134,787
19-Aug	1	67,492	322	6,943	134,787
20-Aug	1	67,492	322	6,943	134,787
21-Aug	1	67,492	322	6,943	134,787
22-Aug	1	71,207	436	7,227	142,913
23-Aug	1	74,602	573	7,624	153,083
24-Aug	1	78,862	729	8,156	165,365
25-Aug	1	78,862	729	8,156	165,365
26-Aug	1	78,862	729	8,056	165,365

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
27-Aug	1	78,862	729	8,156	165,365
28-Aug	1	80,645	924	8,413	170,958
29-Aug	1	83,728	1,342	8,744	179,595
30-Aug	1	86,058	1,716	9,041	190,587
31-Aug	1	88,149	2,233	9,397	200,753
1-Sep	1	89,576	2,411	9,726	207,156
2-Sep	1	91,189	2,656	9,969	212,534
3-Sep	1	93,346	2,814	10,110	216,648
4-Sep	1	97,144	3,359	10,602	222,858
5-Sep	1	99,159	3,609	10,843	228,514
6-Sep	1	101,466	3,853	11,230	234,100
7-Sep	1	103,689	4,050	11,568	238,638
8-Sep	1	104,674	4,240	11,689	241,453
9-Sep	1	106,085	4,525	12,091	244,880
10-Sep	1	107,308	4,686	12,240	248,092
11-Sep	1	108,501	4,866	12,339	250,571
12-Sep	1	114,294	5,554	13,624	256,573
13-Sep	1	109,886	5,010	12,550	252,709
14-Sep	1	110,659	5,227	12,757	255,327
15-Sep	1	110,776	5,238	12,858	255,868
16-Sep	1	111,879	5,345	13,009	257,412
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	1	113,852	5,497	13,279	258,160

Cape Alitak & Humpy-Deadman					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Cape Alitak & Humpy-Deadman	Cape Alitak & Humpy-Deadman	Cape Alitak & Humpy-Deadman	Cape Alitak & Humpy-Deadman	Cape Alitak & Humpy-Deadman
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	1
10-Jun	0	1,757	0	231	2
11-Jun	0	1,912	0	245	2
12-Jun	0	2,044	0	246	2
13-Jun	0	2,044	0	246	2
14-Jun	0	2,044	0	246	2
15-Jun	0	2,044	0	246	2
16-Jun	0	2,044	0	246	2
17-Jun	0	2,044	0	246	2
18-Jun	38	3,656	0	337	6
19-Jun	59	6,402	0	630	21
20-Jun	59	6,402	0	630	21
21-Jun	59	6,402	0	630	21
22-Jun	59	6,402	0	630	21
23-Jun	59	6,402	0	630	21
24-Jun	59	6,402	0	630	21
25-Jun	59	6,402	0	630	21
26-Jun	59	6,402	0	630	21
27-Jun	59	6,402	0	630	21
28-Jun	59	6,402	0	630	21
29-Jun	59	6,402	0	630	21
30-Jun	59	6,402	0	630	21
1-Jul	59	6,402	0	630	21
2-Jul	59	6,402	0	630	21
3-Jul	59	6,402	0	630	21
4-Jul	59	6,402	0	630	21
5-Jul	59	6,402	0	630	21
6-Jul	59	6,402	0	630	21
7-Jul	59	6,402	0	630	21
8-Jul	59	6,402	0	630	21
9-Jul	59	6,402	0	630	21
10-Jul	59	6,402	0	630	21
11-Jul	59	6,402	0	630	21

12-Jul	59	6,402	0	630	21
	2017 Chinook	**2017 Sockeye**	**2017 Coho**	**2017 Chum**	**2017 Pink**
13-Jul	59	6,435	2	560	276
14-Jul	67	10,096	75	12,675	12,330
15-Jul	81	13,678	157	16,988	23,689
16-Jul	93	16,227	173	18,469	31,653
17-Jul	83	18,551	186	20,166	40,876
18-Jul	83	18,551	186	20,166	40,876
19-Jul	83	18,551	186	20,166	40,876
20-Jul	83	20,763	187	28,277	55,491
21-Jul	101	26,846	283	37,467	77,863
22-Jul	102	28,428	297	40,964	101,175
23-Jul	103	29,992	373	41,848	117,016
24-Jul	103	31,316	394	43,579	141,495
25-Jul	104	31,970	395	46,043	149,576
27-Jul	113	33,730	404	57,551	175,650
28-Jul	133	36,987	441	59,462	212,965
29-Jul	160	40,297	458	60,607	262,892
30-Jul	189	42,691	470	62,100	286,395
31-Jul	189	43,437	503	63,331	290,347
1-Aug	189	43,437	503	63,331	290,347
2-Aug	189	43,437	503	63,331	290,347
3-Aug	190	45,100	516	63,707	310,426
4-Aug	197	49,278	699	65,353	357,835
5-Aug	214	57,787	732	66,505	434,030
6-Aug	215	60,013	759	67,528	468,994
7-Aug	217	61,145	767	67,674	478,003
8-Aug	217	61,145	767	67,674	478,003
9-Aug	217	61,145	767	67,674	478,003
10-Aug	217	61,268	771	68,171	518,179
11-Aug	217	61,798	800	71,159	590,806
12-Aug	217	62,119	802	75,354	678,365
13-Aug	217	63,295	808	79,636	754,850
14-Aug	217	63,295	808	79,636	754,850
15-Aug	217	63,295	808	79,636	754,850
16-Aug	217	63,545	829	81,320	850,475
17-Aug	217	63,801	842	83,140	965,474
18-Aug	217	64,068	855	84,486	1,067,416
19-Aug	217	64,364	862	85,367	1,190,679
20-Aug	217	65,366	906	86,123	1,312,558
21-Aug	217	65,795	931	86,446	1,434,572
22-Aug	217	66,364	945	87,624	1,575,542
23-Aug	217	66,659	992	89,116	1,707,324
24-Aug	217	68,409	1,400	91,865	1,847,527
25-Aug	217	69,305	1,635	93,551	1,957,702
26-Aug	217	70,930	1,928	95,177	2,111,952

27-Aug	217	71,844	2,400	96,485	2,244,745
	2017 Chinook	**2017 Sockeye**	**2017 Coho**	**2017 Chum**	**2017 Pink**
28-Aug	217	72,168	2,544	96,829	2,283,217
29-Aug	217	76,313	3,064	97,645	2,377,351
30-Aug	217	76,969	3,376	97,987	2,507,213
31-Aug	217	77,547	3,907	99,095	2,596,298
1-Sep	217	78,165	4,674	100,411	2,680,609
2-Sep	217	78,319	4,891	100,820	2,721,912
3-Sep	217	81,129	5,964	101,785	2,804,512
4-Sep	217	86,007	7,192	102,432	2,881,505
5-Sep	217	91,199	8,211	103,676	2,990,580
6-Sep	217	92,728	9,142	104,171	3,043,398
7-Sep	217	94,875	9,487	104,509	3,076,892
8-Sep	217	95,533	9,613	104,644	3,090,390
9-Sep	217	96,125	9,969	104,797	3,098,710
10-Sep	217	96,125	9,969	104,797	3,098,710
11-Sep	217	96,125	9,969	104,797	3,098,710
12-Sep	217	96,864	10,339	104,993	3,109,763
13-Sep	217	96,864	10,339	104,993	3,109,763
14-Sep	217	97,171	10,819	105,154	3,114,647
15-Sep	217	98,841	11,480	105,416	3,130,835
16-Sep	217	98,841	11,480	105,416	3,130,835
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	217	98,841	11,480	105,416	3,130,835

Duck, Izhut & Kitoi Bays					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Duck, Izhut & Kitoi Bays	Duck, Izhut & Kitoi Bays	Duck, Izhut & Kitoi Bays	Duck, Izhut & Kitoi Bays	Duck, Izhut & Kitoi Bays
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun	0	0	0	0	0
11-Jun	0	524	0	675	28
12-Jun	0	668	0	857	35
13-Jun	0	668	0	857	35
14-Jun	0	730	0	1,129	35
15-Jun	0	788	0	1,211	37
16-Jun	0	793	0	1,515	42
17-Jun	0	793	0	1,515	42
18-Jun	0	796	0	5,861	42
19-Jun	5	854	0	7,907	121
20-Jun	7	873	0	9,742	138
21-Jun	7	873	0	9,742	138
22-Jun	7	1,055	0	10,796	339
23-Jun	7	1,068	0	10,801	342
24-Jun	14	1,390	0	19,494	554
25-Jun	15	1,428	0	22,726	587
26-Jun	15	1,428	0	22,726	587
27-Jun	18	1,765	1	24,488	1,990
28-Jun	18	1,765	1	24,488	1,990
29-Jun	18	1,947	2	26,074	3,059
30-Jun	18	2,185	2	26,237	3,455
1-Jul	18	2,185	2	26,237	3,455
2-Jul	18	2,185	2	26,237	3,455
3-Jul	18	2,185	2	26,237	3,455
4-Jul	18	2,185	2	26,237	3,455
5-Jul	18	2,185	2	26,237	3,455
6-Jul	18	2,185	2	26,237	3,455
7-Jul	18	2,185	2	26,237	3,455
8-Jul	18	2,185	2	26,237	3,455
9-Jul	18	2,185	2	26,237	3,455
10-Jul	18	2,228	2	26,467	3,668
11-Jul	28	3,066	159	31,857	4,667
12-Jul	59	3,655	284	35,732	4,996

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
13-Jul	57	4,119	466	39,357	5,291
14-Jul	68	5,580	751	78,481	8,598
15-Jul	68	5,655	753	99,976	8,622
16-Jul	68	6,493	995	128,005	11,396
17-Jul	70	7,007	1,252	138,436	13,636
18-Jul	79	7,499	1,333	140,271	16,206
19-Jul	94	8,983	1,734	143,737	24,036
20-Jul	94	8,983	1,734	143,737	24,036
21-Jul	94	9,018	1,734	144,002	24,145
22-Jul	94	9,018	1,734	144,002	24,145
23-Jul	96	9,268	1,915	144,274	25,805
24-Jul	97	9,360	1,956	144,411	26,139
25-Jul	97	10,238	1,995	145,853	30,599
27-Jul	97	10,238	1,995	145,853	30,599
28-Jul	97	10,238	1,995	145,853	30,599
29-Jul	97	10,374	2,070	145,970	33,677
30-Jul	103	10,548	2,177	146,066	38,161
31-Jul	103	10,548	2,177	146,066	38,161
1-Aug	107	11,076	2,571	146,547	54,652
2-Aug	110	11,529	2,822	146,962	74,775
3-Aug	114	11,839	3,040	147,187	89,345
4-Aug	114	11,839	3,040	147,187	89,345
5-Aug	114	11,839	3,040	147,187	89,345
6-Aug	114	11,839	3,040	147,187	89,345
7-Aug	114	11,839	3,040	147,187	89,345
8-Aug	114	11,989	3,040	150,159	132,915
9-Aug	114	11,990	3,040	150,615	192,799
10-Aug	114	12,524	3,244	151,747	255,378
11-Aug	114	12,524	3,244	151,747	255,378
12-Aug	114	12,524	3,244	151,747	255,378
13-Aug	114	12,524	3,244	151,747	255,378
14-Aug	114	12,524	3,244	151,747	255,378
15-Aug	114	12,524	3,244	151,747	255,378
16-Aug	114	12,524	3,244	151,747	255,378
17-Aug	114	12,524	3,244	151,747	255,378
18-Aug	114	12,524	3,244	151,747	255,378
19-Aug	114	12,524	3,244	151,747	255,378
20-Aug	114	12,524	3,244	151,747	255,378
21-Aug	114	12,524	3,244	151,747	255,378
22-Aug	114	12,524	3,244	151,747	255,378
23-Aug	114	12,524	3,244	151,747	255,378
24-Aug	114	12,524	3,244	151,747	255,378
25-Aug	114	12,524	3,244	151,747	255,378
26-Aug	114	12,524	3,244	15,177	255,378
27-Aug	114	12,524	4,197	151,747	340,368

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
28-Aug	114	12,524	4,197	151,747	340,368
29-Aug	114	15,824	4,987	153,667	483,925
30-Aug	114	12,526	5,768	151,748	723,346
31-Aug	114	12,526	7,300	151,749	980,562
1-Sep	114	12,526	12,780	151,749	1,269,963
2-Sep	114	15,526	16,911	151,749	1,601,399
3-Sep	114	12,526	16,101	151,749	1,516,051
4-Sep	114	12,527	16,949	151,752	1,620,324
5-Sep	114	12,530	20,213	151,761	1,815,499
6-Sep	114	12,547	22,867	151,763	1,893,165
7-Sep	117	12,612	23,382	151,921	1,909,854
8-Sep	117	12,612	24,692	151,925	1,944,296
9-Sep	117	12,623	24,865	151,925	1,950,749
10-Sep	117	12,654	26,230	151,929	1,972,878
11-Sep	117	12,656	27,698	151,935	1,985,761
12-Sep	117	12,657	28,400	151,935	1,994,440
13-Sep	117	12,659	28,722	151,940	1,997,421
14-Sep	117	12,659	28,722	151,940	1,997,421
15-Sep	117	12,659	28,772	151,940	1,997,421
16-Sep	117	12,659	28,722	151,940	1,997,421
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	117	12,659	28,966	151,940	1,997,421

NW Afognak, Shuyak & Perenosa					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	NW Afognak, Shuyak & Perenosa	NW Afognak, Shuyak & Perenosa	NW Afognak, Shuyak & Perenosa	NW Afognak, Shuyak & Perenosa	NW Afognak, Shuyak & Perenosa
1-Jun	0	0	0	0	0
2-Jun	0	8,807	0	0	0
3-Jun	0	12,093	0	11	0
4-Jun	0	13,132	0	11	0
5-Jun	0	13,132	0	11	0
6-Jun	0	14,507	0	11	0
7-Jun	0	14,507	0	11	0
8-Jun	0	14,665	0	11	0
9-Jun	0	1,465	0	11	0
10-Jun	0	15,625	0	11	0
11-Jun	0	15,625	0	11	0
12-Jun	0	16,892	0	11	0
13-Jun	0	16,892	0	11	0
14-Jun	0	18,925	0	11	0
15-Jun	0	19,638	0	56	0
16-Jun	22	20,095	0	61	0
17-Jun	22	20,095	0	61	0
18-Jun	22	21,095	0	61	0
19-Jun	22	21,095	0	61	0
20-Jun	22	21,874	0	62	0
21-Jun	22	21,874	0	62	0
22-Jun	22	25,127	0	97	1
23-Jun	22	25,396	0	97	1
24-Jun	22	25,396	0	97	1
25-Jun	22	25,396	0	97	1
26-Jun	22	25,396	0	97	1
27-Jun	22	25,396	0	97	1
28-Jun	22	25,396	0	97	1
29-Jun	22	25,396	0	97	1
30-Jun	22	25,396	0	97	1
1-Jul	22	25,396	0	97	1
2-Jul	22	25,396	0	97	1
3-Jul	22	25,396	0	97	1
4-Jul	22	25,396	0	97	1
5-Jul	22	25,396	0	97	1
6-Jul	22	25,396	0	97	1
7-Jul	22	26,546	5	347	1,301
8-Jul	22	26,546	5	347	1,301
9-Jul	22	27,130	9	741	2,142
10-Jul	22	27,510	12	1,312	2,942
11-Jul	22	27,510	12	1,312	2,942

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
12-Jul	22	27,510	12	1,312	2,942
13-Jul	22	27,510	12	1,312	2,942
14-Jul	22	27,730	19	1,442	5,272
15-Jul	22	27,730	19	1,442	5,272
16-Jul	33	28,239	43	2,080	13,791
17-Jul	33	28,607	49	2,326	18,579
18-Jul	33	28,607	49	2,326	18,579
19-Jul	33	28,607	49	2,326	18,579
20-Jul	33	28,607	49	2,326	18,579
21-Jul	33	28,607	49	2,326	18,579
22-Jul	33	28,607	49	2,326	21,464
23-Jul	36	28,820	70	2,572	20,622
24-Jul	37	29,411	161	2,665	22,808
25-Jul	53	32,022	686	3,326	40,145
27-Jul	53	32,022	686	3,326	40,145
28-Jul	53	32,022	686	3,326	40,145
29-Jul	53	32,022	686	3,326	40,145
30-Jul	53	32,022	686	3,326	40,145
31-Jul	53	32,022	686	3,326	40,145
1-Aug	53	32,022	686	3,326	40,145
2-Aug	53	32,022	686	3,326	40,145
3-Aug	53	32,022	686	3,326	40,145
4-Aug	53	32,022	686	3,326	40,145
5-Aug	53	32,022	686	3,326	40,145
6-Aug	53	32,022	686	3,326	40,145
7-Aug	53	32,022	686	3,326	40,145
8-Aug	53	32,022	686	3,326	40,145
9-Aug	53	32,022	686	3,326	40,145
10-Aug	53	32,022	686	3,326	40,145
11-Aug	54	32,064	803	3,510	42,905
12-Aug	54	32,064	803	3,510	42,905
13-Aug	54	33,169	1,035	4,065	65,656
14-Aug	54	33,169	1,035	4,065	65,656
15-Aug	54	33,169	1,035	4,065	65,656
16-Aug	54	33,169	1,035	4,065	65,656
17-Aug	54	33,219	1,485	4,074	66,606
18-Aug	54	33,219	1,485	4,074	66,606
19-Aug	54	33,219	1,485	4,074	66,606
20-Aug	54	33,219	1,485	4,074	66,606
21-Aug	54	33,219	1,485	4,074	66,606
22-Aug	54	33,129	1,485	4,074	66,606
23-Aug	54	33,219	1,485	4,074	66,606
24-Aug	54	33,219	1,485	4,074	66,606
25-Aug	54	33,219	1,485	4,074	66,606
26-Aug	54	33,219	1,485	4,074	66,606

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
27-Aug	54	33,219	1,485	4,074	66,606
28-Aug	54	33,219	1,485	4,074	66,606
29-Aug	54	33,219	1,485	4,074	66,606
30-Aug	54	33,219	1,485	4,074	66,606
31-Aug	54	33,219	1,485	4,074	66,606
1-Sep	54	33,219	1,485	4,074	66,606
2-Sep	54	33,219	1,485	4,074	66,606
3-Sep	54	33,219	1,485	4,074	66,606
4-Sep	54	33,219	1,485	4,074	66,606
5-Sep	54	33,219	1,485	4,074	66,606
6-Sep	54	33,219	1,485	4,074	66,606
7-Sep	54	33,129	1,485	4,074	66,606
8-Sep	54	33,219	1,485	4,074	66,606
9-Sep	54	33,223	1,576	4,385	67,323
10-Sep	54	33,223	1,576	4,385	67,323
11-Sep	54	33,223	1,576	4,385	67,323
12-Sep	54	33,223	1,576	4,385	67,323
13-Sep	54	33,223	1,576	4,385	67,323
14-Sep	54	33,223	1,576	4,385	67,323
15-Sep	54	33,223	1,576	4,385	67,323
16-Sep	54	33,223	1,576	4,385	67,323
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	54	33,223	1,576	4,385	67,323

SE Afognak & Raspberry					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	SE Afognak & Raspberry	SE Afognak & Raspberry	SE Afognak & Raspberry	SE Afognak & Raspberry	SE Afognak & Raspberry
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	4	0	3	1
28-Jun	0	4	0	3	1
29-Jun	0	4	0	3	1
30-Jun	0	4	0	3	1
1-Jul	0	4	0	3	2
2-Jul	0	4	0	3	1
3-Jul	0	4	0	3	1
4-Jul	0	4	0	3	1
5-Jul	0	4	0	3	1
6-Jul	0	4	0	3	1
7-Jul	0	4	0	3	1
8-Jul	0	4	0	3	1
9-Jul	0	4	0	3	1
10-Jul	0	4	0	3	1
11-Jul	0	4	0	3	1
12-Jul	0	4	0	3	1

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
13-Jul	0	4	0	3	1
14-Jul	0	4	0	3	1
15-Jul	0	4	0	3	1
16-Jul	0	4	0	3	1
17-Jul	0	4	0	3	1
18-Jul	0	4	0	3	1
19-Jul	0	4	0	3	1
20-Jul	0	4	0	3	1
21-Jul	0	4	0	3	1
22-Jul	0	4	0	3	1
23-Jul	0	4	0	3	1
24-Jul	0	4	0	3	1
25-Jul	0	4	0	3	1
27-Jul	0	4	0	3	1
28-Jul	0	4	0	3	1
29-Jul	0	4	0	3	1
30-Jul	0	4	0	3	1
31-Jul	0	4	0	3	1
1-Aug	0	4	0	3	1
2-Aug	0	4	0	3	1
3-Aug	0	4	0	3	1
4-Aug	0	4	0	3	1
5-Aug	0	4	0	3	1
6-Aug	0	4	0	3	1
7-Aug	0	4	0	3	1
8-Aug	0	4	0	3	1
9-Aug	0	4	0	3	1
10-Aug	0	4	0	3	241
11-Aug	0	4	0	3	241
12-Aug	0	14	7	9	626
13-Aug	0	174	53	70	2,261
14-Aug	0	174	53	70	2,261
15-Aug	0	174	53	70	2,261
16-Aug	0	174	53	70	2,261
17-Aug	0	174	53	70	2,261
18-Aug	0	174	53	70	2,261
19-Aug	0	174	53	70	2,261
20-Aug	0	174	53	70	2,261
21-Aug	0	174	53	70	2,261
22-Aug	0	174	53	70	2,261
23-Aug	0	174	53	70	2,261
24-Aug	0	174	53	70	2,261
25-Aug	0	174	53	70	2,261
26-Aug	0	174	53	70	2,261
27-Aug	0	174	53	70	2,261

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
28-Aug	0	174	53	70	2,261
29-Aug	0	174	53	70	2,261
30-Aug	0	174	53	70	2,261
31-Aug	0	174	53	70	2,261
1-Sep	0	174	53	70	2,261
2-Sep	0	174	53	70	2,261
3-Sep	0	174	53	70	2,261
4-Sep	0	174	114	70	2,331
5-Sep	0	174	114	70	2,331
6-Sep	0	174	114	70	2,331
7-Sep	0	174	114	70	2,331
8-Sep	0	174	114	70	2,331
9-Sep	0	174	114	70	2,331
10-Sep	0	174	114	70	2,331
11-Sep	0	174	114	70	2,331
12-Sep	0	174	114	70	2,331
13-Sep	0	174	114	70	2,331
14-Sep	0	174	114	70	2,331
15-Sep	0	174	114	70	2,331
16-Sep	0	174	114	70	2,331
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	0	174	114	70	2,331

Mid & North Mainland					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Mid & North Mainland	Mid & North Mainland	Mid & North Mainland	Mid & North Mainland	Mid & North Mainland
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	2	472	0	51	0
22-Jun	2	672	0	54	35
23-Jun	2	672	0	54	35
24-Jun	2	672	0	54	35
25-Jun	2	672	0	54	35
26-Jun	2	672	0	54	35
27-Jun	2	672	0	54	35
28-Jun	2	672	0	54	35
29-Jun	2	672	0	54	35
30-Jun	2	672	0	54	35
1-Jul	2	672	0	54	35
2-Jul	2	672	0	54	35
3-Jul	2	672	0	54	35
4-Jul	2	672	0	54	35
5-Jul	2	672	0	54	35
6-Jul	2	672	0	54	35
7-Jul	49	1,737	0	1,554	613
8-Jul	135	4,430	4	4,214	4,419
9-Jul	155	5,486	4	4,674	5,234
10-Jul	155	5,486	4	4,676	5,234
11-Jul	155	5,486	4	4,676	5,234
12-Jul	155	5,486	4	4,674	5,234

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
13-Jul	186	9,568	4	5,896	6,014
14-Jul	322	19,202	25	9,523	8,289
15-Jul	342	22,355	25	11,345	9,180
16-Jul	342	22,780	33	12,130	12,189
17-Jul	342	22,780	33	12,130	12,189
18-Jul	342	22,780	33	12,130	12,189
19-Jul	342	22,780	33	12,130	12,189
20-Jul	347	24,136	36	16,027	14,071
21-Jul	458	69,580	1,195	50,871	36,087
22-Jul	465	71,255	1,430	68,981	38,856
23-Jul	540	73,605	1,509	70,148	47,411
24-Jul	540	73,605	1,509	70,148	47,411
25-Jul	540	73,605	1,509	70,148	47,411
27-Jul	546	76,192	2,138	91,811	63,356
28-Jul	554	84,217	3,659	112,969	104,819
29-Jul	585	96,874	5,838	141,908	150,310
30-Jul	614	110,669	9,624	158,260	190,246
31-Jul	624	117,271	12,123	167,431	209,735
1-Aug	624	117,271	12,123	167,431	209,735
2-Aug	624	117,271	12,123	167,431	209,735
3-Aug	625	117,560	12,237	172,258	214,175
4-Aug	645	123,586	14,534	195,895	265,999
5-Aug	655	125,468	14,682	199,950	276,662
6-Aug	682	128,056	14,890	202,944	313,677
7-Aug	685	128,408	15,024	203,964	321,677
8-Aug	685	128,408	15,024	203,964	321,677
9-Aug	685	128,408	15,024	203,964	321,677
10-Aug	685	128,411	15,024	211,439	336,092
11-Aug	697	130,703	17,064	222,726	379,690
12-Aug	701	132,329	17,175	231,730	380,136
13-Aug	702	133,028	17,199	248,121	432,669
14-Aug	702	133,028	17,199	248,121	432,669
15-Aug	702	133,028	17,199	248,121	432,669
16-Aug	702	133,028	17,204	250,056	435,453
17-Aug	702	133,031	17,297	262,915	440,226
18-Aug	702	133,133	17,358	276,883	474,907
19-Aug	702	133,154	17,401	238,445	490,974
20-Aug	702	134,174	17,857	288,201	515,571
21-Aug	702	134,181	17,857	291,129	526,305
22-Aug	702	134,181	17,857	291,129	526,305
23-Aug	702	134,181	17,857	291,129	526,305
24-Aug	702	134,181	17,857	291,129	526,305
25-Aug	702	134,181	17,857	291,129	526,305
26-Aug	702	134,181	17,857	291,129	526,305
27-Aug	702	134,181	17,857	291,129	526,305

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
28-Aug	702	134,181	17,857	291,204	559,571
29-Aug	702	134,508	20,540	292,831	562,786
30-Aug	702	134,548	20,573	294,222	568,478
31-Aug	702	134,618	20,635	294,236	573,304
1-Sep	702	134,618	20,635	294,236	573,304
2-Sep	702	134,618	20,635	294,236	573,304
3-Sep	702	134,618	20,635	294,236	573,304
4-Sep	702	134,618	20,635	294,236	573,304
5-Sep	702	134,618	20,635	294,236	573,304
6-Sep	702	134,618	20,635	294,236	573,304
7-Sep	702	134,618	20,635	294,236	573,304
8-Sep	702	134,618	20,635	294,236	573,304
9-Sep	702	134,618	20,635	294,236	573,304
10-Sep	702	134,643	20,817	296,939	573,485
11-Sep	702	134,643	20,817	297,544	573,485
12-Sep	702	134,643	20,817	297,544	573,485
13-Sep	702	134,643	20,817	297,544	573,485
14-Sep	702	134,643	20,817	279,544	573,485
15-Sep	702	134,643	20,817	297,544	573,485
16-Sep	702	134,643	20,817	297,544	573,485
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	702	134,643	20,817	297,544	573,485

Foul Bay SHA					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Foul Bay SHA	Foul Bay SHA	Foul Bay SHA	Foul Bay SHA	Foul Bay SHA
1-Jun	0	0	0	0	0
2-Jun	0	8,807	0	0	0
3-Jun	0	12,093	0	11	0
4-Jun	0	13,132	0	11	0
5-Jun	0	13,132	0	11	0
6-Jun	0	14,507	0	11	0
7-Jun	0	14,507	0	11	0
8-Jun	0	14,665	0	11	0
9-Jun	0	14,665	0	11	0
10-Jun	0	15,625	0	11	0
11-Jun	0	15,625	0	11	0
12-Jun	0	16,892	0	11	0
13-Jun	0	16,892	0	11	0
14-Jun	0	18,579	0	11	0
15-Jun	0	18,579	0	11	0
16-Jun	0	18,579	0	11	0
17-Jun	0	18,579	0	11	0
18-Jun	0	19,579	0	11	0
19-Jun	0	19,579	0	11	0
20-Jun	0	20,358	0	12	0
21-Jun	0	20,358	0	12	0
22-Jun	0	21,032	0	12	0
23-Jun	0	21,301	0	12	0
24-Jun	0	21,301	0	12	0
25-Jun	0	21,301	0	12	0
26-Jun	0	21,301	0	12	0
27-Jun	0	21,301	0	12	0
28-Jun	0	21,301	0	12	0
29-Jun	0	21,301	0	12	0
30-Jun	0	21,301	0	12	0
1-Jul	0	21,301	0	12	0
2-Jul	0	21,301	0	12	0
3-Jul	0	21,301	0	12	0
4-Jul	0	21,301	0	12	0
5-Jul	0	21,301	0	12	0
6-Jul	0	21,301	0	12	0
7-Jul	0	21,301	0	12	0
8-Jul	0	21,301	0	12	0
9-Jul	0	21,301	0	12	0
10-Jul	0	21,301	0	12	0
11-Jul	0	21,301	0	12	0
12-Jul	0	21,301	0	12	0

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
13-Jul	0	21,301	0	12	0
14-Jul	0	21,301	0	12	0
15-Jul	0	21,301	0	12	0
16-Jul	0	21,301	0	12	0
17-Jul	0	21,301	0	12	0
18-Jul	0	21,301	0	12	0
19-Jul	0	21,301	0	12	0
20-Jul	0	21,301	0	12	0
21-Jul	0	21,301	0	12	0
22-Jul	0	21,301	0	12	0
23-Jul	0	21,301	0	12	0
24-Jul	0	21,301	0	12	0
25-Jul	0	21,301	0	12	0
27-Jul	0	21,301	0	12	0
28-Jul	0	21,301	0	12	0
29-Jul	0	21,301	0	12	0
30-Jul	0	21,301	0	12	0
31-Jul	0	21,301	0	12	0
1-Aug	0	21,301	0	12	0
2-Aug	0	21,301	0	12	0
3-Aug	0	21,301	0	12	0
4-Aug	0	21,301	0	12	0
5-Aug	0	21,301	0	12	0
6-Aug	0	21,301	0	12	0
7-Aug	0	21,301	0	12	0
8-Aug	0	21,301	0	12	0
9-Aug	0	21,301	0	12	0
10-Aug	0	21,301	0	12	0
11-Aug	0	21,301	0	12	0
12-Aug	0	21,301	0	12	0
13-Aug	0	21,301	0	12	0
14-Aug	0	21,301	0	12	0
15-Aug	0	21,301	0	12	0
16-Aug	0	21,301	0	12	0
17-Aug	0	21,301	0	12	0
18-Aug	0	21,301	0	12	0
19-Aug	0	21,301	0	12	0
20-Aug	0	21,301	0	12	0
21-Aug	0	21,301	0	12	0
22-Aug	0	21,301	0	12	0
23-Aug	0	21,301	0	12	0
24-Aug	0	21,301	0	12	0
25-Aug	0	21,301	0	12	0
26-Aug	0	21,301	0	12	0
27-Aug	0	21,301	0	12	0

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
28-Aug	0	21,301	0	12	0
29-Aug	0	21,301	0	12	0
30-Aug	0	21,301	0	12	0
31-Aug	0	21,301	0	12	0
1-Sep	0	21,301	0	12	0
2-Sep	0	21,301	0	12	0
3-Sep	0	21,301	0	12	0
4-Sep	0	21,301	0	12	0
5-Sep	0	21,301	0	12	0
6-Sep	0	21,301	0	12	0
7-Sep	0	21,301	0	12	0
8-Sep	0	21,301	0	12	0
9-Sep	0	21,301	0	12	0
10-Sep	0	21,301	0	12	0
11-Sep	0	21,301	0	12	0
12-Sep	0	21,301	0	12	0
13-Sep	0	21,301	0	12	0
14-Sep	0	21,301	0	12	0
15-Sep	0	21,301	0	12	0
16-Sep	0	21,301	0	12	0
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	0	21,301	0	12	0

Waterfall SHA					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Waterfall SHA	Waterfall SHA	Waterfall SHA	Waterfall SHA	Waterfall SHA
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	0	0	0	0
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
1-Jul	0	0	0	0	0
2-Jul	0	0	0	0	0
3-Jul	0	0	0	0	0
4-Jul	0	0	0	0	0
5-Jul	0	0	0	0	0
6-Jul	0	0	0	0	0
7-Jul	0	0	0	0	0
8-Jul	0	0	0	0	0
9-Jul	0	0	0	0	0
10-Jul	0	0	0	0	0
11-Jul	0	0	0	0	0
12-Jul	0	0	0	0	0

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
13-Jul	0	0	0	0	0
14-Jul	0	0	0	0	0
15-Jul	0	0	0	0	0
16-Jul	0	0	0	0	0
17-Jul	0	0	0	0	0
18-Jul	0	0	0	0	0
19-Jul	0	0	0	0	0
20-Jul	0	0	0	0	0
21-Jul	0	0	0	0	0
22-Jul	0	0	0	0	0
23-Jul	0	0	0	0	0
24-Jul	0	0	0	0	0
25-Jul	0	0	0	0	0
27-Jul	0	0	0	0	0
28-Jul	0	0	0	0	0
29-Jul	0	0	0	0	0
30-Jul	0	0	0	0	0
31-Jul	0	0	0	0	0
1-Aug	0	0	0	0	0
2-Aug	0	0	0	0	0
3-Aug	0	0	0	0	0
4-Aug	0	0	0	0	0
5-Aug	0	0	0	0	0
6-Aug	0	0	0	0	0
7-Aug	0	0	0	0	0
8-Aug	0	0	0	0	0
9-Aug	0	0	0	0	0
10-Aug	0	0	0	0	0
11-Aug	0	0	0	0	0
12-Aug	0	0	0	0	0
13-Aug	0	0	0	0	0
14-Aug	0	0	0	0	0
15-Aug	0	0	0	0	0
16-Aug	0	0	0	0	0
17-Aug	0	0	0	0	0
18-Aug	0	0	0	0	0
19-Aug	0	0	0	0	0
20-Aug	0	0	0	0	0
21-Aug	0	0	0	0	0
22-Aug	0	0	0	0	0
23-Aug	0	0	0	0	0
24-Aug	0	0	0	0	0
25-Aug	0	0	0	0	0
26-Aug	0	0	0	0	0
27-Aug	0	0	0	0	0

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
28-Aug	0	0	0	0	0
29-Aug	0	0	0	0	0
30-Aug	0	0	0	0	0
31-Aug	0	0	0	0	0
1-Sep	0	0	0	0	0
2-Sep	0	0	0	0	0
3-Sep	0	0	0	0	0
4-Sep	0	0	0	0	0
5-Sep	0	0	0	0	0
6-Sep	0	0	0	0	0
7-Sep	0	0	0	0	0
8-Sep	0	0	0	0	0
9-Sep	0	0	0	0	0
10-Sep	0	0	0	0	0
11-Sep	0	0	0	0	0
12-Sep	0	0	0	0	0
13-Sep	0	0	0	0	0
14-Sep	0	0	0	0	0
15-Sep	0	0	0	0	0
16-Sep	0	0	0	0	0
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	0	0	0	0	0

Telrod Cove SHA					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Telrod Cove SHA	Telrod Cove SHA	Telrod Cove SHA	Telrod Cove SHA	Telrod Cove SHA
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	0	0	0	0
28-Jun	0	0	0	0	0
29-Jun	0	704	0	0	0
30-Jun	0	2,144	0	0	0
1-Jul	0	2,144	0	0	0
2-Jul	0	4,186	0	6	0
3-Jul	0	2,042	0	6	0
4-Jul	0	2,042	0	6	35
5-Jul	0	2,042	0	6	35
6-Jul	0	2,042	0	6	35
7-Jul	0	2,042	0	6	35
8-Jul	0	3,223	0	31	90
9-Jul	0	13,251	0	67	375
10-Jul	0	12,449	0	28	166
11-Jul	0	12,449	0	28	166
12-Jul	0	20,706	0	100	1,492

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
13-Jul	0	25,098	0	123	1,860
14-Jul	0	25,098	0	123	860
15-Jul	0	31,981	0	321	1,914
16-Jul	0	35,526	0	354	2,486
17-Jul	0	36,584	0	366	2,632
18-Jul	0	36,854	0	366	2,632
19-Jul	0	36,581	0	366	2,632
20-Jul	0	44,801	0	772	6,254
21-Jul	0	48,219	0	831	6,940
22-Jul	0	48,318	0	2,059	13,275
23-Jul	0	49,989	0	2,207	14,503
24-Jul	0	49,989	0	2,207	14,503
25-Jul	0	49,989	0	2,207	14,503
27-Jul	0	53,633	0	2,270	18,378
28-Jul	0	54,733	0	2,270	19,478
29-Jul	0	54,733	0	2,270	19,478
30-Jul	0	54,802	0	2,288	19,750
31-Jul	0	54,802	0	2,288	19,750
1-Aug	0	58,980	0	2,379	29,205
2-Aug	0	58,980	0	2,379	29,205
3-Aug	0	60,890	0	2,445	34,500
4-Aug	0	64,086	0	2,445	34,590
5-Aug	0	63,439	0	2,489	43,642
6-Aug	0	65,389	0	2,520	50,770
7-Aug	0	66,227	0	2,589	62,322
8-Aug	0	66,623	0	2,589	62,774
9-Aug	0	67,402	0	2,589	63,395
10-Aug	0	67,402	0	2,589	63,395
11-Aug	0	67,402	0	2,589	63,395
12-Aug	0	67,402	0	2,589	63,395
13-Aug	0	67,402	0	2,589	63,395
14-Aug	0	67,402	0	2,589	63,395
15-Aug	0	67,402	0	2,589	63,395
16-Aug	0	69,490	0	2,589	64,740
17-Aug	0	69,995	0	2,589	66,699
18-Aug	0	69,995	0	2,589	66,699
19-Aug	0	69,995	0	2,589	66,699
20-Aug	0	69,995	0	2,589	66,699
21-Aug	0	69,995	0	2,589	66,699
22-Aug	0	69,995	0	2,589	66,699
23-Aug	0	69,995	2	2,589	66,699
24-Aug	0	69,995	2	2,589	66,699
25-Aug	0	69,995	2	2,589	66,699
26-Aug	0	69,995	2	2,589	66,699
27-Aug	0	69,995	2	2,589	66,699

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
28-Aug	0	69,995	2	2,589	66,699
29-Aug	0	69,995	2	2,589	66,699
30-Aug	0	69,995	2	2,589	66,699
31-Aug	0	69,995	2	2,589	66,699
1-Sep	0	69,995	2	2,589	66,699
2-Sep	0	69,995	2	2,589	66,699
3-Sep	0	69,995	2	2,589	66,699
4-Sep	0	69,995	2	2,589	66,699
5-Sep	0	69,995	2	2,589	66,699
6-Sep	0	69,995	2	2,589	66,699
7-Sep	0	69,995	2	2,589	66,699
8-Sep	0	69,995	2	2,589	66,699
9-Sep	0	69,995	2	2,589	66,699
10-Sep	0	69,995	2	2,589	66,699
11-Sep	0	69,995	2	2,589	66,699
12-Sep	0	69,995	2	2,589	66,699
13-Sep	0	69,995	2	2,589	66,699
14-Sep	0	69,995	2	2,589	66,699
15-Sep	0	69,995	2	2,589	66,699
16-Sep	0	69,995	2	2,589	66,699
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	0	69,995	2	2,589	66,699

Telrod Cove Cost Recovery					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Telrod Cove Cost Recovery	Telrod Cove Cost Recovery	Telrod Cove Cost Recovery	Telrod Cove Cost Recovery	Telrod Cove Cost Recovery
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	0	0	0	0
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
1-Jul	0	0	0	0	0
2-Jul	0	0	0	6	0
3-Jul	0	0	0	6	0
4-Jul	0	0	0	6	35
5-Jul	0	0	0	6	35
6-Jul	0	0	0	6	35
7-Jul	0	0	0	6	35
8-Jul	0	0	0	31	90
9-Jul	0	0	0	67	375
10-Jul	0	0	0	28	166
11-Jul	0	0	0	28	166
12-Jul	0	0	0	100	1,492

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
13-Jul	0	0	0	123	1,860
14-Jul	0	0	0	123	860
15-Jul	0	0	0	321	1,914
16-Jul	0	0	0	354	2,486
17-Jul	0	0	0	366	2,632
18-Jul	0	0	0	366	2,632
19-Jul	0	0	0	366	2,632
20-Jul	0	0	0	772	6,254
21-Jul	0	0	0	831	6,940
22-Jul	0	0	0	2,059	13,275
23-Jul	0	0	0	2,207	14,503
24-Jul	0	0	0	2,207	14,503
25-Jul	0	0	0	2,207	14,503
27-Jul	0	0	0	2,270	18,378
28-Jul	0	0	0	2,270	19,478
29-Jul	0	0	0	2,270	19,478
30-Jul	0	0	0	2,288	19,750
31-Jul	0	0	0	2,288	19,750
1-Aug	0	54,802	0	2,288	19,750
2-Aug	0	54,802	0	2,288	19,750
3-Aug	0	54,802	0	2,288	19,750
4-Aug	0	54,802	0	2,288	19,750
5-Aug	0	19,750	0	2,288	19,750
6-Aug	0	54,802	0	2,288	19,750
7-Aug	0	54,802	0	2,288	19,750
8-Aug	0	54,802	0	2,288	19,750
9-Aug	0	54,802	0	2,288	19,750
10-Aug	0	54,802	0	2,288	19,750
11-Aug	0	54,802	0	2,288	19,750
12-Aug	0	54,802	0	2,288	19,750
13-Aug	0	54,802	0	2,288	19,750
14-Aug	0	54,802	0	2,288	19,750
15-Aug	0	54,802	0	2,288	19,750
16-Aug	0	54,802	0	2,288	19,750
17-Aug	0	54,802	0	2,288	19,750
18-Aug	0	54,802	0	2,288	19,750
19-Aug	0	54,802	0	2,288	19,750
20-Aug	0	54,802	0	2,288	19,750
21-Aug	0	54,802	0	2,288	19,750
22-Aug	0	54,802	0	2,288	19,750
23-Aug	0	54,802	0	2,288	19,750
24-Aug	0	54,802	0	2,288	19,750
25-Aug	0	54,802	0	2,288	19,750
26-Aug	0	54,802	0	2,288	19,750
27-Aug	0	54,802	0	2,288	19,750

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
28-Aug	0	54,802	0	2,288	19,750
29-Aug	0	54,802	0	2,288	19,750
30-Aug	0	54,802	0	2,288	19,750
31-Aug	0	54,802	0	2,288	19,750
1-Sep	0	54,802	0	2,288	19,750
2-Sep	0	54,802	0	2,288	19,750
3-Sep	0	54,802	0	2,288	19,750
4-Sep	0	54,802	0	2,288	19,750
5-Sep	0	54,802	0	2,288	19,750
6-Sep	0	54,802	0	2,288	19,750
7-Sep	0	54,802	0	2,288	19,750
8-Sep	0	54,802	0	2,288	19,750
9-Sep	0	54,802	0	2,288	19,750
10-Sep	0	54,802	0	2,288	19,750
11-Sep	0	54,802	0	2,288	19,750
12-Sep	0	54,802	0	2,288	19,750
13-Sep	0	54,802	0	2,288	19,750
14-Sep	0	54,802	0	2,288	19,750
15-Sep	0	54,802	0	2,288	19,750
16-Sep	0	54,802	0	2,288	19,750
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	0	54,802	0	2,288	19,750

Kitoi Cost Recovery					
	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Kitoi Cost Recovery	Kitoi Cost Recovery	Kitoi Cost Recovery	Kitoi Cost Recovery	Kitoi Cost Recovery
1-Jun	0	0	0	0	0
2-Jun	0	0	0	0	0
3-Jun	0	0	0	0	0
4-Jun	0	0	0	0	0
5-Jun	0	0	0	0	0
6-Jun	0	0	0	0	0
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	0	0	0	0
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
1-Jul	0	0	0	0	0
2-Jul	0	0	0	0	0
3-Jul	0	0	0	0	0
4-Jul	0	0	0	0	0
5-Jul	0	0	0	0	0
6-Jul	0	0	0	0	0
7-Jul	0	0	0	0	0
8-Jul	0	0	0	0	0
9-Jul	0	0	0	0	0
10-Jul	0	0	0	0	0
11-Jul	0	0	0	0	0
12-Jul	0	0	0	0	0

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
13-Jul	0	0	0	0	0
14-Jul	0	0	0	0	0
15-Jul	0	0	0	0	0
16-Jul	0	0	0	0	0
17-Jul	0	0	0	0	0
18-Jul	0	0	0	0	0
19-Jul	0	0	0	0	0
20-Jul	0	0	0	0	0
21-Jul	0	0	0	0	0
22-Jul	0	0	0	0	0
23-Jul	0	0	0	0	0
24-Jul	0	0	0	0	0
25-Jul	0	0	0	0	0
27-Jul	0	0	0	0	0
28-Jul	0	0	0	0	0
29-Jul	0	0	0	0	0
30-Jul	0	0	0	0	0
31-Jul	0	0	0	0	0
1-Aug	0	0	0	0	0
2-Aug	0	0	0	0	0
3-Aug	0	0	0	0	0
4-Aug	0	0	0	0	0
5-Aug	0	0	0	0	0
6-Aug	0	0	0	0	0
7-Aug	0	0	0	0	0
8-Aug	0	150	0	2,972	43,570
9-Aug	0	151	0	3,428	103,454
10-Aug	0	685	204	4,560	166,033
11-Aug	0	685	204	4,560	166,033
12-Aug	0	685	204	4,560	166,033
13-Aug	0	685	204	4,560	166,033
14-Aug	0	685	204	4,560	166,033
15-Aug	0	685	204	4,560	166,033
16-Aug	0	685	204	4,560	166,033
17-Aug	0	685	204	4,560	166,033
18-Aug	0	685	204	4,560	166,033
19-Aug	0	685	204	4,560	166,033
20-Aug	0	685	204	4,560	166,033
21-Aug	0	685	204	4,560	166,033
22-Aug	0	685	204	4,560	166,033
23-Aug	0	685	204	4,560	166,033
24-Aug	0	685	204	4,560	166,033
25-Aug	0	685	204	4,560	166,033
26-Aug	0	685	204	4,560	166,033
27-Aug	0	685	1,157	4,560	251,023

	2017 Chinook	2017 Sockeye	2017 Coho	2017 Chum	2017 Pink
28-Aug	0	685	1,157	4,560	251,023
29-Aug	0	3,985	1,947	6,480	394,580
30-Aug	0	687	3,871	4,561	853,231
31-Aug	0	687	3,871	4,561	853,231
1-Sep	0	687	9,351	4,561	1,142,634
2-Sep	0	687	12,672	4,561	1,388,720
3-Sep	0	687	12,672	4,561	1,388,720
4-Sep	0	687	12,859	4,561	1,488,348
5-Sep	0	687	13,513	4,561	1,665,866
6-Sep	0	687	15,132	4,561	1,736,632
7-Sep	0	687	15,132	4,561	1,736,632
8-Sep	0	687	15,132	4,561	1,736,632
9-Sep	0	687	15,132	4,561	1,736,632
10-Sep	0	687	15,132	4,561	1,736,632
11-Sep	0	687	15,132	4,561	1,736,632
12-Sep	0	687	15,132	4,561	1,736,632
13-Sep	0	687	15,132	4,561	1,736,632
14-Sep	0	687	15,132	4,561	1,736,632
15-Sep	0	687	15,132	4,561	1,736,632
16-Sep	0	687	15,132	4,561	1,736,632
17-Sep	Confidential				
18-Sep					
19-Sep					
20-Sep	0	687	15,132	4,561	1,736,632

2017 Kodiak Chinook Harvest

	Daily	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative		Cumulative
	Total Chinook Harvest	Karluk, NW Kodiak & SW Afognak	Ayakulik, Halibut Bay & Sturgeon	Alitak Bay, Olga, Moser & Dog Salmon	Cape Alitak & Humpy-Deadman	East & Northeast Kodiak	Duck, Izhut & Kitoi Bays	NW Afognak, Shuyak & Perenosa	SE Afognak & Raspberry	Cape Igvak & Wide Bay	Mid & North Mainland	Foul Bay SHA	Waterfall SHA	Telrod Cove SHA	Telrod Cove Cost Recovery	Kitoi cost Recovery	Igvak %	Cumulative Chinook Harvest
1-Jun	28	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0		28
2-Jun	164	192	0	0	0	0	0	0	0	0	0	0	0	0	0	0		192
3-Jun	144	336	0	0	0	0	0	0	0	0	0	0	0	0	0	0		336
4-Jun	57	393	0	0	0	0	0	0	0	0	0	0	0	0	0	0		393
5-Jun	26	417	0	0	0	0	0	0	0	0	0	0	0	0	0	0		417
6-Jun	2	419	0	0	0	0	0	0	0	0	0	0	0	0	0	0		419
7-Jun	2	421	0	0	0	0	0	0	0	0	0	0	0	0	0	0		421
8-Jun	11	432	0	0	0	0	0	0	0	0	0	0	0	0	0	0		432
9-Jun	14	446	0	0	0	0	0	0	0	0	0	0	0	0	0	0		446
10-Jun	8	454	0	0	0	0	0	0	0	0	0	0	0	0	0	0		454
11-Jun	21	475	0	0	0	0	0	0	0	0	0	0	0	0	0	0		475
12-Jun	39	514	0	0	0	0	0	0	0	0	0	0	0	0	0	0		514
13-Jun	22	536	0	0	0	0	0	0	0	0	0	0	0	0	0	0		536
14-Jun	46	576	0	0	0	0	0	0	0	6	0	0	0	0	0	0		582
15-Jun	90	609	0	0	0	0	0	0	0	63	0	0	0	0	0	0		672
16-Jun	14	623	0	0	0	0	0	22	0	75	0	0	0	0	0	0		720
17-Jun	104	727	0	0	0	0	0	22	0	75	0	0	0	0	0	0		824
18-Jun	196	801	84	0	38	0	0	22	0	75	0	0	0	0	0	0		1,020
19-Jun	101	875	85	0	59	0	5	22	0	75	0	0	0	0	0	0		1,121
20-Jun	82	955	87	0	59	0	7	22	0	75	0	0	0	0	0	0		1,205
21-Jun	27	982	87	0	59	0	7	22	0	75	2	0	0	0	0	0		1,234
22-Jun	35	1,004	87	0	59	11	7	22	0	75	2	0	0	0	0	0		1,267
23-Jun	114	1,038	87	0	59	11	7	22	0	155	2	0	0	0	0	0		1,381
24-Jun	384	1,097	87	0	59	11	14	22	0	473	2	0	0	0	0	0		1,765
25-Jun	8	1,104	87	0	59	11	15	22	0	484	2	0	0	0	0	0		1,784
26-Jun	19	1,123	87	0	59	11	15	22	0	484	2	0	0	0	0	0		1,803
27-Jun	26	1,169	87	0	59	11	18	22	0	484	2	0	0	0	0	0		1,852
28-Jun	27	1,196	87	0	59	11	18	22	0	484	2	0	0	0	0	0		1,879
29-Jun	3	1,199	87	0	59	11	18	22	0	484	2	0	0	0	0	0		1,882
30-Jun	28	1,227	87	0	59	11	18	22	0	484	2	0	0	0	0	0		1,910
1-Jul	26	1,253	87	0	59	11	18	22	0	484	2	0	0	0	0	0		1,936
2-Jul	41	1,294	87	0	59	11	18	22	0	484	2	0	0	0	0	0		1,977
3-Jul	66	1,360	87	0	59	11	18	22	0	484	2	0	0	0	0	0		2,043
4-Jul	26	1,386	87	0	59	11	18	22	0	484	2	0	0	0	0	0		2,069
5-Jul	22	1,415	87	0	59	11	18	22	0	484	2	0	0	0	0	0		2,098
6-Jul	38	1,451	87	0	59	13	18	22	0	484	2	0	0	0	0	0		2,136
7-Jul	225	1,591	87	0	59	51	18	22	0	484	49	0	0	0	0	0		2,361
8-Jul	152	1,648	87	0	59	60	18	22	0	484	135	0	0	0	0	0		2,513
9-Jul	58	1,675	87	0	59	101	18	22	0	484	155	0	0	0	0	0		2,601
10-Jul	113	1,718	87	0	59	171	18	22	0	484	155	0	0	0	0	0		2,714
11-Jul	10	1,718	87	0	59	171	28	22	0	484	155	0	0	0	0	0		2,724
12-Jul	29	1,718	87	0	59	171	59	22	0	484	155	0	0	0	0	0		2,753
13-Jul	36	1,722	87	0	59	172	57	22	0	484	186	0	0	0	0	0		2,789
14-Jul	236	1,755	131	0	67	176	68	22	0	484	322	0	0	0	0	0		3,025
15-Jul	78	1,792	131	0	81	183	68	22	0	484	342	0	0	0	0	0		3,103

16-Jul	126	1,883	131	0	93	205	68	33	0	484	342	0	0	0	0	0	
17-Jul	228	1,995	131	0	83	319	70	33	0	484	342	0	0	0	0	0	
18-Jul	9	1,999	131	0	83	319	79	33	0	484	342	0	0	0	0	0	3,470
19-Jul	15	1,999	131	0	83	319	94	33	0	484	342	0	0	0	0	0	3,485
20-Jul	8	2,001	131	1	83	319	94	33	0	484	347	0	0	0	0	0	3,493
21-Jul	253	2,020	131	1	101	424	94	33	0	484	458	0	0	0	0	0	3,746
22-Jul	128	2,136	131	1	102	428	94	33	0	484	465	0	0	0	0	0	3,874
23-Jul	265	2,389	131	1	103	439	96	36	0	484	540	0	0	0	0	0	4,219
24-Jul	161	2,536	131	1	103	447	97	37	0	484	540	0	0	0	0	0	4,376
25-Jul	0	2,608	131	1	104	459	97	53	0	484	540	0	0	0	0	0	4,477
27-Jul	28	2,621	131	1	113	459	97	53	0	484	546	0	0	0	0	0	4,505
28-Jul	60	2,653	131	1	133	459	97	53	0	484	554	0	0	0	0	0	4,565
29-Jul	86	2,680	131	1	160	459	97	53	0	485	585	0	0	0	0	0	4,651
30-Jul	203	2,691	131	1	189	468	103	53	0	604	614	0	0	0	0	0	4,854
31-Jul	24	2,715	131	1	189	468	103	53	0	612	624	0	0	0	0	0	4,896
1-Aug	53	2,764	131	1	189	468	107	53	0	612	624	0	0	0	0	0	4,949
2-Aug	70	2,828	134	1	189	468	110	53	0	612	624	0	0	0	0	0	5,019
3-Aug	98	2,916	138	1	190	468	114	53	0	612	625	0	0	0	0	0	5,117
4-Aug	135	2,968	138	1	197	524	114	53	0	612	645	0	0	0	0	0	5,252
5-Aug	95	3,036	138	1	214	524	114	53	0	612	655	0	0	0	0	0	5,347
6-Aug	62	3,060	138	1	215	534	114	53	0	612	682	0	0	0	0	0	5,409
7-Aug	51	3,111	138	1	217	534	114	53	0	612	685	0	0	0	0	0	5,465
8-Aug	70	3,181	138	1	217	534	114	53	0	612	685	0	0	0	0	0	5,535
9-Aug	20	3,201	138	1	217	534	114	53	0	612	685	0	0	0	0	0	5,555
10-Aug	63	3,264	138	1	217	534	114	53	0	612	685	0	0	0	0	0	5,618
11-Aug	103	3,333	138	1	217	554	114	54	0	613	697	0	0	0	0	0	5,721
12-Aug	72	3,397	138	1	217	561	114	54	0	614	701	0	0	0	0	0	5,797
13-Aug	122	3,512	145	1	217	573	114	54	0	620	702	0	0	0	0	0	5,938
14-Aug	11	3,522	146	1	217	573	114	54	0	620	702	0	0	0	0	0	5,949
15-Aug	66	3,588	146	1	217	573	114	54	0	620	702	0	0	0	0	0	6,015
16-Aug	35	3,633	146	1	217	573	114	54	0	620	702	0	0	0	0	0	6,060
17-Aug	28	3,658	149	1	217	573	114	54	0	620	702	0	0	0	0	0	6,088
18-Aug	35	3,672	168	1	217	575	114	54	0	620	702	0	0	0	0	0	6,123
19-Aug	31	3,699	172	1	217	575	114	54	0	620	702	0	0	0	0	0	6,154
20-Aug	6	3,705	172	1	217	575	114	54	0	620	702	0	0	0	0	0	6,160
21-Aug	20	3,716	181	1	217	575	114	54	0	620	702	0	0	0	0	0	6,180
22-Aug	28	3,744	181	1	217	575	114	54	0	620	702	0	0	0	0	0	6,208
23-Aug	12	3,751	185	1	217	576	114	54	0	620	702	0	0	0	0	0	6,220
24-Aug	40	3,786	188	1	217	578	114	54	0	620	702	0	0	0	0	0	6,260
25-Aug	9	3,789	194	1	217	578	114	54	0	620	702	0	0	0	0	0	6,269
26-Aug	10	3,794	194	1	217	583	114	54	0	620	702	0	0	0	0	0	6,279
27-Aug	27	3,821	194	1	217	583	114	54	0	620	702	0	0	0	0	0	6,306
28-Aug	6	3,827	194	1	217	583	114	54	0	620	702	0	0	0	0	0	6,312
29-Aug	3	3,830	194	1	217	583	114	54	0	620	702	0	0	0	0	0	6,315
30-Aug	4	3,834	194	1	217	583	114	54	0	620	702	0	0	0	0	0	6,319
31-Aug	6	3,837	197	1	217	583	114	54	0	620	702	0	0	0	0	0	6,325
1-Sep	6	3,843	197	1	217	583	114	54	0	620	702	0	0	0	0	0	6,331
2-Sep	14	3,857	197	1	217	583	114	54	0	620	702	0	0	0	0	0	6,345
3-Sep	5	3,866	197	1	217	583	114	54	0	620	702	0	0	0	0	0	6,354
4-Sep	2	3,868	197	1	217	583	114	54	0	620	702	0	0	0	0	0	6,356
5-Sep	16	3,884	197	1	217	583	114	54	0	620	702	0	0	0	0	0	6,372

6-Sep	15	3,888	197	1	217	594	114	54	0	620	702	0	0	0	0	0	
7-Sep	209	3,914	197	1	217	594	117	54	0	620	702	0	0	0	0	0	
8-Sep	4	3,918	197	1	217	594	117	54	0	620	702	0	0	0	0	0	6,420
9-Sep	34	3,952	197	1	217	594	117	54	0	620	702	0	0	0	0	0	6,454
10-Sep	2	3,954	197	1	217	594	117	54	0	620	702	0	0	0	0	0	6,456
11-Sep	2	3,967	197	1	217	594	117	54	0	620	702	0	0	0	0	0	6,469
12-Sep	2	3,969	197	1	217	594	117	54	0	620	702	0	0	0	0	0	6,471
13-Sep	1	3,970	197	1	217	594	117	54	0	620	702	0	0	0	0	0	6,472
14-Sep	0	3,970	197	1	217	594	117	54	0	620	702	0	0	0	0	0	6,472
15-Sep	1	3,971	197	1	217	594	117	54	0	620	702	0	0	0	0	0	6,473
16-Sep	4	3,975	197	1	217	594	117	54	0	620	702	0	0	0	0	0	6477
17-Sep																	
18-Sep																	
19-Sep																	
20-Sep	0	3,975	197	1	217	594	117	54	0	620	702	0	0	0	0	0	6,477

Confidential

2017 Kodiak Sockeye Harvest

	Daily	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative		Cumulative
	Total Sockeye Harvest	Karluk, NW Kodiak & SW Afognak	Ayakulik, Halibut Bay & Sturgeon	Alitak Bay, Olga, Moser & Dog Salmon	Cape Alitak & Humpy-Deadman	East & Northeast Kodiak	Duck, Izhut & Kitoi Bays	NW Afognak, Shuyak & Perenosa	SE Afognak & Raspberry	Cape Igvak & Wide Bay	Mid & North Mainland	Foul Bay SHA	Waterfall SHA	Telrod Cove SHA	Telrod Cove Cost Recovery	Kitoi cost Recovery	Igvak %	Cumulative Sockeye Harvest
1-Jun	6,085	6,085	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%	6,085
2-Jun	35,254	33,631	0	0	0	0	0	8,807	0	0	0	8,807	0	0	0	0	0.0%	42,438
3-Jun	18,669	48,002	0	0	0	0	0	12,093	0	0	0	12,093	0	0	0	0	0.0%	60,095
4-Jun	23,792	70,755	0	0	0	0	0	13,132	0	0	0	13,132	0	0	0	0	0.0%	83,887
5-Jun	12,296	83,258	0	0	0	0	0	13,132	0	0	0	13,132	0	0	0	0	0.0%	96,390
6-Jun	16,997	98,880	0	0	0	0	0	14,507	0	0	0	14,507	0	0	0	0	0.0%	113,387
7-Jun	8,304	107,184	0	0	0	0	0	14,507	0	0	0	14,507	0	0	0	0	0.0%	121,691
8-Jun	20,023	127,049	0	0	0	0	0	14,665	0	0	0	14,665	0	0	0	0	0.0%	141,714
9-Jun	19,104	143,476	0	2,677	0	0	0	1,465	0	0	0	14,665	0	0	0	0	0.0%	160,818
10-Jun	29,512	167,014	0	5,934	1,757	0	0	15,625	0	0	0	15,625	0	0	0	0	0.0%	190,330
11-Jun	7,911	174,246	0	5,934	1,912	0	524	15,625	0	0	0	15,625	0	0	0	0	0.0%	198,241
12-Jun	27,936	200,639	0	5,934	2,044	0	668	16,892	0	0	0	16,892	0	0	0	0	0.0%	226,177
13-Jun	11,189	211,828	0	5,934	2,044	0	668	16,892	0	0	0	16,892	0	0	0	0	0.0%	237,366
14-Jun	28,951	225,690	0	5,934	2,044	0	730	18,925	0	12,994	0	18,579	0	0	0	0	0.0%	266,317
15-Jun	67,735	235,871	0	5,934	2,044	121	788	19,638	0	69,656	0	18,579	0	0	0	0	0.0%	334,052
16-Jun	9,394	245,260	0	5,934	2,044	1,455	793	20,095	0	80,614	0	18,579	0	0	0	0	0.0%	356,195
17-Jun	21,018	262,091	726	9,395	2,044	1,455	793	20,095	0	80,614	0	18,579	0	0	0	0	0.0%	377,213
18-Jun	31,098	271,999	14,841	13,855	3,656	1,455	796	21,095	0	80,614	0	19,579	0	0	0	0	0.0%	408,311
19-Jun	21,667	280,670	22,772	16,116	6,402	1,455	854	21,095	0	80,614	0	19,579	0	0	0	0	19.5%	429,978
20-Jun	5,465	285,337	23,339	16,116	6,402	1,455	873	21,874	0	80,614	0	20,358	0	0	0	0	16.6%	436,010
21-Jun	16,777	301,059	23,339	16,116	6,402	3,043	873	21,874	0	80,614	472	20,358	0	0	0	0	15.2%	453,792
22-Jun	11,462	305,665	23,339	16,116	6,402	5,259	1,055	25,127	0	80,614	672	21,032	0	0	0	0	14.3%	464,249
23-Jun	15,671	309,478	23,339	16,116	6,402	5,259	1,068	25,396	0	92,190	672	21,301	0	0	0	0	16.0%	479,920
24-Jun	39,673	314,118	23,339	16,166	6,402	5,331	1,390	25,396	0	126,829	672	21,301	0	0	0	0	20.6%	519,593
25-Jun	6,654	320,734	23,339	16,116	6,402	5,331	1,428	25,396	0	130,776	672	21,301	0	0	0	0	21.1%	530,194
26-Jun	11,389	332,123	23,339	16,116	6,402	5,331	1,428	25,396	0	130,854	672	21,301	0	0	0	0	21.1%	541,661
27-Jun	15,726	353,704	23,339	16,116	6,402	5,331	1,765	25,396	4	130,854	672	21,301	0	0	0	0	21.1%	563,583
28-Jun	18,339	372,043	23,339	16,116	6,402	5,331	1,765	25,396	4	130,854	672	21,301	0	0	0	0	21.3%	581,922
29-Jun	5,911	377,954	23,339	16,116	6,402	5,331	1,947	25,396	4	130,854	672	21,301	0	704	0	0	21.3%	588,015
30-Jun	13,823	391,777	23,339	16,116	6,402	5,331	2,185	25,396	4	130,854	672	21,301	0	2,144	0	0	21.3%	602,076
1-Jul	7,401	399,178	23,339	16,116	6,402	5,331	2,185	25,396	4	130,854	672	21,301	0	2,144	0	0	19.9%	609,477
2-Jul	11,394	410,572	23,339	16,116	6,402	5,331	2,185	25,396	4	130,854	672	21,301	0	4,186	0	0	19.9%	620,871
3-Jul	11,456	419,884	23,339	16,116	6,402	5,331	2,185	25,396	4	130,854	672	21,301	0	2,042	0	0	19.0%	630,183
4-Jul	11,172	431,056	23,339	16,116	6,402	5,331	2,185	25,396	4	130,854	672	21,301	0	2,042	0	0	18.0%	641,355
5-Jul	15,640	450,304	23,339	16,116	6,402	5,331	2,185	25,396	4	130,854	672	21,301	0	2,042	0	0	17.5%	660,603
6-Jul	14,316	463,295	23,339	16,116	6,402	5,331	2,185	25,396	4	130,854	672	21,301	0	2,042	0	0	17.1%	674,919
7-Jul	38,825	481,527	23,339	16,116	6,402	25,034	2,185	26,546	4	130,854	1,737	21,301	0	2,042	0	0	17.1%	713,744
8-Jul	19,862	494,735	23,339	16,116	6,402	28,995	2,185	26,546	4	130,854	4,430	21,301	0	3,223	0	0	16.4%	733,606
9-Jul	37,059	519,892	23,339	16,116	6,402	47,939	2,185	27,130	4	130,854	5,486	21,301	0	13,251	0	0	16.3%	779,347
10-Jul	34,918	539,911	23,339	16,116	6,402	62,054	2,228	27,510	4	130,854	5,486	21,301	0	12,449	0	0	16.3%	813,904
11-Jul	838	539,911	23,339	16,116	6,402	62,054	3,066	27,510	4	130,854	5,486	21,301	0	12,449	0	0	16.3%	814,742
12-Jul	8,835	548,168	23,339	16,116	6,402	62,054	3,655	27,510	4	130,854	5,486	21,301	0	20,706	0	0	16.3%	823,577
13-Jul	27,133	565,144	23,409	19,249	6,435	64,418	4,119	27,510	4	130,854	9,568	21,301	0	25,098	0	0	16.3%	850,710
14-Jul	59,189	593,188	29,893	21,758	10,096	71,594	5,580	27,730	4	130,854	19,202	21,301	0	25,098	0	0	16.3%	909,899
15-Jul	30,771	612,408	29,893	23,361	13,678	74,732	5,655	27,730	4	130,854	22,355	21,301	0	31,981	0	0	16.3%	940,670

16-Jul	33,405	637,473	29,893	23,361	16,227	79,176	6,493	28,239	4	130,854	22,780	21,301	0	35,526	0	0	15.0%	1,007,993
17-Jul	31,660	659,987	29,893	23,361	18,551	86,549	7,007	28,607	4	130,854	22,780	21,301	0	36,584	0	0	15.0%	1,009,342
18-Jul	492	660,318	29,893	18,551	18,551	87,475	7,499	28,607	4	130,854	22,780	21,301	0	36,854	0	0	15.0%	1,010,826
19-Jul	1,484	660,318	29,893	23,361	18,551	87,475	8,983	28,607	4	130,854	22,780	21,301	0	36,581	0	0	15.0%	1,034,659
20-Jul	23,833	674,932	29,893	28,199	20,763	88,288	8,983	28,607	4	130,854	24,136	21,301	0	44,801	0	0	14.3%	1,127,062
21-Jul	92,403	702,156	29,963	35,485	26,846	94,549	9,018	28,607	4	130,854	69,580	21,301	0	48,219	0	0	14.3%	1,150,887
22-Jul	23,825	718,311	29,963	39,126	28,428	95,321	9,018	28,607	4	130,854	71,255	21,301	0	48,318	0	0	14.2%	1,186,051
23-Jul	32,389	747,619	30,262	39,126	29,992	96,501	9,268	28,820	4	130,854	73,605	21,301	0	49,989	0	0	14.3%	1,214,906
24-Jul	29,283	772,726	30,772	39,126	31,316	97,732	9,360	29,411	4	130,854	73,605	21,301	0	49,989	0	0	14.3%	1,228,701
25-Jul	878	782,013	30,772	39,126	31,970	98,097	10,238	32,022	4	130,854	73,605	21,301	0	49,989	0	0	14.2%	1,253,876
27-Jul	25,175	796,874	30,772	43,688	33,730	98,313	10,238	32,022	4	132,043	76,192	21,301	0	53,633	0	0	14.2%	1,305,645
28-Jul	51,769	825,013	35,685	48,730	36,987	98,657	10,238	32,022	4	134,092	84,217	21,301	0	54,733	0	0	14.2%	1,348,314
29-Jul	41,683	844,839	35,685	51,989	40,297	98,657	10,374	32,022	4	137,573	96,874	21,301	0	54,733	0	0	14.2%	1,398,552
30-Jul	50,169	861,512	45,228	55,354	42,691	99,184	10,548	32,022	4	141,360	110,669	21,301	0	54,802	0	0	14.2%	1,424,361
31-Jul	17,744	876,620	47,864	55,354	43,437	99,184	10,548	32,022	4	142,057	117,271	21,301	0	54,802	0	0	14.2%	1,452,926
1-Aug	28,565	902,527	49,994	55,354	43,437	99,184	11,076	32,022	4	142,057	117,271	21,301	0	58,980	54,802	0	14.2%	1,477,748
2-Aug	24,822	920,865	56,025	55,354	43,437	99,184	11,529	32,022	4	142,057	117,271	21,301	0	58,980	54,802	0	14.2%	1,526,967
3-Aug	44,722	952,865	64,257	58,034	45,100	99,857	11,839	32,022	4	145,429	117,560	21,301	0	60,890	54,802	0	14.2%	1,570,801
4-Aug	42,927	980,228	65,165	59,397	49,278	101,860	11,839	32,022	4	147,423	123,586	21,301	0	64,086	54,802	0	14.2%	1,618,809
5-Aug	48,008	1,008,454	67,287	62,783	57,787	102,923	11,839	32,022	4	150,242	125,468	21,301	0	63,439	19,750	0	14.2%	1,649,952
6-Aug	31,143	1,026,393	67,287	65,726	60,013	105,742	11,839	32,022	4	152,870	128,056	21,301	0	65,389	54,802	0	14.2%	1,671,125
7-Aug	19,513	1,045,746	67,447	65,726	61,145	105,742	11,839	32,022	4	153,046	128,408	21,301	0	66,227	54,802	0	14.2%	1,687,613
8-Aug	16,488	1,062,084	67,447	65,726	61,145	105,742	11,989	32,022	4	153,046	128,408	21,301	0	66,623	54,802	150	14.2%	1,699,828
9-Aug	12,215	1,074,298	67,447	65,726	61,145	105,742	11,990	32,022	4	153,046	128,408	21,301	0	67,402	54,802	151	14.2%	1,710,535
10-Aug	10,707	1,083,517	68,143	65,726	61,268	105,874	12,524	32,022	4	153,046	128,411	21,301	0	67,402	54,802	685	14.2%	1,727,840
11-Aug	17,305	1,095,990	68,626	65,726	61,798	106,542	12,524	32,064	4	153,863	130,703	21,301	0	67,402	54,802	685	14.2%	1,748,504
12-Aug	17,825	1,113,920	68,626	65,726	62,119	107,199	12,524	32,064	14	153,983	132,329	21,301	0	67,402	54,802	685	14.2%	1,788,115
13-Aug	30,360	1,145,905	71,887	65,726	63,295	107,924	12,524	33,169	174	154,483	133,028	21,301	0	67,402	54,802	685	14.2%	1,822,843
14-Aug	34,728	1,176,445	76,075	65,726	63,295	107,924	12,524	33,169	174	154,483	133,028	21,301	0	67,402	54,802	685	14.2%	1,852,871
15-Aug	30,028	1,201,023	81,525	65,726	63,295	107,924	12,524	33,169	174	154,483	133,028	21,301	0	67,402	54,802	685	14.2%	1,883,834
16-Aug	29,276	1,224,765	87,450	66,571	63,545	108,125	12,524	33,169	174	154,483	133,028	21,301	0	69,490	54,802	685	14.0%	1,914,567
17-Aug	30,733	1,250,257	90,847	67,492	63,801	108,739	12,524	33,219	174	154,483	133,031	21,301	0	69,995	54,802	685	14.0%	1,942,516
18-Aug	27,949	1,271,022	96,357	67,492	64,068	109,715	12,524	33,219	174	154,812	133,133	21,301	0	69,995	54,802	685	14.0%	1,968,954
19-Aug	26,438	1,288,864	104,046	67,492	64,364	110,305	12,524	33,219	174	154,812	133,154	21,301	0	69,995	54,802	685	14.0%	2,007,396
20-Aug	38,442	1,313,398	114,263	67,492	65,366	111,397	12,524	33,219	174	155,389	134,174	21,301	0	69,995	54,802	685	14.0%	2,025,646
21-Aug	18,187	1,329,447	115,618	67,492	65,795	111,807	12,524	33,219	174	155,389	134,181	21,301	0	69,995	54,802	685	14.0%	2,050,491
22-Aug	24,049	1,348,508	116,662	71,207	66,364	112,263	12,524	33,129	174	155,389	134,181	21,301	0	69,995	54,802	685	14.0%	2,078,505
23-Aug	28,014	1,370,551	118,509	74,602	66,659	112,697	12,524	33,219	174	155,389	134,181	21,301	0	69,995	54,802	685	14.0%	2,107,208
24-Aug	28,703	1,390,446	120,928	78,862	68,409	113,076	12,524	33,219	174	155,389	134,181	21,301	0	69,995	54,802	685	14.0%	2,132,690
25-Aug	25,428	1,412,000	123,421	78,862	69,305	113,615	12,524	33,219	174	155,389	134,181	21,301	0	69,995	54,802	685	14.0%	2,154,724
26-Aug	22,034	1,430,167	125,192	78,862	70,930	114,086	12,524	33,219	174	155,389	134,181	21,301	0	69,995	54,802	685	14.0%	2,171,820
27-Aug	17,096	1,442,656	128,405	78,862	71,844	114,566	12,524	33,219	174	155,389	134,181	21,301	0	69,995	54,802	685	14.0%	2,180,151
28-Aug	8,331	1,448,355	128,781	80,645	72,168	114,715	12,524	33,219	174	155,389	134,181	21,301	0	69,995	54,802	685	14.0%	2,194,258
29-Aug	14,107	1,450,673	129,322	83,728	76,313	115,108	15,824	33,219	174	155,389	134,508	21,301	0	69,995	54,802	3,985	14.0%	2,199,212
30-Aug	8,252	1,453,977	130,913	86,058	76,969	115,439	12,526	33,219	174	155,389	134,548	21,301	0	69,995	54,802	687	14.0%	2,214,382
31-Aug	15,025	1,465,354	131,724	88,149	77,547	115,682	12,526	33,219	174	155,389	134,618	21,301	0	69,995	54,802	687	14.0%	2,222,903
1-Sep	8,521	1,471,575	131,724	89,576	78,165	115,937	12,526	33,219	174	155,389	134,618	21,301	0	69,995	54,802	687	14.0%	2,233,277
2-Sep	10,374	1,480,008	131,724	91,189	78,319	116,111	15,526	33,219	174	155,389	134,618	21,301	0	69,995	54,802	687	14.0%	2,242,092
3-Sep	8,402	1,483,772	131,724	93,346	81,129	116,195	12,526	33,219	174	155,389	134,618	21,301	0	69,995	54,802	687	14.0%	2,254,465
4-Sep	12,373	1,487,431	131,724	97,144	86,007	116,232	12,527	33,219	174	155,389	134,618	21,301	0	69,995	54,802	687	14.0%	2,283,725
5-Sep	29,260	1,509,461	131,724	99,159	91,199	116,252	12,530	33,219	174	155,389	134,618	21,301	0	69,995	54,802	687	14.0%	

6-Sep	43,511	1,549,046	131,724	101,466	92,728	116,325	12,547	33,219	174	155,389	134,618	21,301	0	69,995	54,802	68		
7-Sep	27,010	1,571,621	131,724	103,689	94,875	116,325	12,612	33,129	174	155,389	134,618	21,301	0	69,995	54,802	68		
8-Sep	19,413	1,586,453	134,653	104,674	95,533	116,325	12,612	33,219	174	155,389	134,618	21,301	0	69,995	54,802	687	14.0%	2,373,659
9-Sep	7,565	1,592,006	134,653	106,085	96,125	116,328	12,623	33,223	174	155,389	134,618	21,301	0	69,995	54,802	687	14.0%	2,381,224
10-Sep	9,899	1,600,321	134,951	107,308	96,125	116,335	12,654	33,223	174	155,389	134,643	21,301	0	69,995	54,802	687	14.0%	2,391,123
11-Sep	5,371	1,607,981	135,238	108,501	96,125	116,336	12,656	33,223	174	155,389	134,643	21,301	0	69,995	54,802	687	14.0%	2,400,266
12-Sep	14,894	1,616,342	135,238	114,294	96,864	116,336	12,657	33,223	174	155,389	134,643	21,301	0	69,995	54,802	687	14.0%	2,415,160
13-Sep	3,426	1,619,523	135,238	109,886	96,864	116,336	12,659	33,223	174	155,389	134,643	21,301	0	69,995	54,802	687	14.0%	2,413,935
14-Sep	11,369	1,629,812	135,238	110,659	97,171	116,336	12,659	33,223	174	155,389	134,643	21,301	0	69,995	54,802	687	14.0%	2,425,304
15-Sep	4,884	1,632,909	135,238	110,776	98,841	116,336	12,659	33,223	174	155,389	134,643	21,301	0	69,995	54,802	687	14.0%	2,430,188
16-Sep	6,005	1,637,811	135,238	111,879	98,841	116,336	12,659	33,223	174	155,389	134,643	21,301	0	69,995	54,802	687	14.0%	2,436,193
17-Sep																		
18-Sep																		
19-Sep																		
20-Sep	3,801	1,647,779	135,238	113,852	98,841	116,336	12,659	33,223	174	155,389	134,643	21,301	0	69,995	54,802	687	14.0%	2,448,134

Confidential

2017 Kodiak Coho Harvest

	Daily	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative		Cumulative
	Total Coho Harvest	Karluk, NW Kodiak & SW Afognak	Ayakulik, Halibut Bay & Sturgeon	Alitak Bay, Olga, Moser & Dog Salmon	Cape Alitak & Humpy-Deadman	East & Northeast Kodiak	Duck, Izhut & Kitoi Bays	NW Afognak, Shuyak & Perenosa	SE Afognak & Raspberry	Cape Igvak & Wide Bay	Mid & North Mainland	Foul Bay SHA	Waterfall SHA	Telrod Cove SHA	Telrod Cove Cost Recovery	Kitoi cost Recovery	Igvak %	Cumulative Coho Harvest
1-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
2-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
3-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
4-Jun	862	862	0	0	0	0	0	0	0	0	0	0	0	0	0	0		862
5-Jun	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0		8
6-Jun	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0		8
7-Jun	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0		8
8-Jun	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0		8
9-Jun	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0		8
10-Jun	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0		8
11-Jun	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0		8
12-Jun	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0		8
13-Jun	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0		8
14-Jun	1	8	0	0	0	0	0	0	0	1	0	0	0	0	0	0		9
15-Jun	1	8	0	0	0	0	0	0	0	2	0	0	0	0	0	0		10
16-Jun	0	8	0	0	0	0	0	0	0	2	0	0	0	0	0	0		10
17-Jun	2	8	0	2	0	0	0	0	0	2	0	0	0	0	0	0		12
18-Jun	1	9	0	2	0	0	0	0	0	2	0	0	0	0	0	0		13
19-Jun	1	10	0	2	0	0	0	0	0	2	0	0	0	0	0	0		14
20-Jun	1	11	0	2	0	0	0	0	0	2	0	0	0	0	0	0		15
21-Jun	3	14	0	2	0	0	0	0	0	2	0	0	0	0	0	0		18
22-Jun	0	14	0	2	0	0	0	0	0	2	0	0	0	0	0	0		18
23-Jun	0	14	0	2	0	0	0	0	0	2	0	0	0	0	0	0		18
24-Jun	115	17	0	2	0	0	0	0	0	114	0	0	0	0	0	0		133
25-Jun	1	18	0	2	0	0	0	0	0	114	0	0	0	0	0	0		134
26-Jun	1	19	0	2	0	0	0	0	0	114	0	0	0	0	0	0		135
27-Jun	2	20	0	2	0	0	1	0	0	114	0	0	0	0	0	0		137
28-Jun	3	23	0	2	0	0	1	0	0	114	0	0	0	0	0	0		140
29-Jun	6	29	0	2	0	0	2	0	0	114	0	0	0	0	0	0		147
30-Jun	8	37	0	2	0	0	2	0	0	114	0	0	0	0	0	0		155
1-Jul	12	49	0	2	0	0	2	0	0	114	0	0	0	0	0	0		167
2-Jul	19	68	0	2	0	0	2	0	0	114	0	0	0	0	0	0		186
3-Jul	53	121	0	2	0	0	2	0	0	114	0	0	0	0	0	0		239
4-Jul	23	106	0	2	0	0	2	0	0	114	0	0	0	0	0	0		224
5-Jul	13	122	0	2	0	0	2	0	0	114	0	0	0	0	0	0		240
6-Jul	200	158	0	2	0	164	2	0	0	114	0	0	0	0	0	0		440
7-Jul	2,754	257	0	2	0	2,814	2	5	0	114	0	0	0	0	0	0		3,194
8-Jul	2,684	638	0	2	0	5,113	2	5	0	114	4	0	0	0	0	0		5,878
9-Jul	4,180	1,091	0	2	0	9,322	2	9	0	114	4	0	0	0	0	0		10,544
10-Jul	4,494	1,567	0	2	0	13,453	2	12	0	114	4	0	0	0	0	0		15,154
11-Jul	157	1,567	0	2	0	13,453	159	12	0	114	4	0	0	0	0	0		15,311
12-Jul	125	1,567	0	2	0	13,453	284	12	0	114	4	0	0	0	0	0		15,436
13-Jul	1,027	1,596	0	5	2	14,266	466	12	0	114	4	0	0	0	0	0		16,463
14-Jul	2,138	1,890	0	43	75	15,684	751	19	0	114	25	0	0	0	0	0		18,601
15-Jul	459	2,056	0	48	157	15,888	753	19	0	114	25	0	0	0	0	0		19,060

16-Jul	1,818	2,433	0	48	173	17,047	995	43	0	114	33	0	0	0	0	0
17-Jul	2,518	2,964	0	48	186	19,022	1,252	49	0	114	33	0	0	0	0	0
18-Jul	81	2,972	0	48	186	19,566	1,333	49	0	114	33	0	0	0	0	0
19-Jul	401	2,972	0	48	186	19,566	1,734	49	0	114	33	0	0	0	0	0
20-Jul	701	3,407	0	52	187	19,824	1,734	49	0	114	36	0	0	0	0	0
21-Jul	4,558	5,197	4	60	283	21,325	1,734	49	0	114	1,195	0	0	0	0	0
22-Jul	1,609	6,508	4	73	297	21,361	1,734	49	0	114	1,430	0	0	0	0	0
23-Jul	2,539	8,618	8	73	373	21,550	1,915	70	0	114	1,509	0	0	0	0	0
24-Jul	1,591	9,838	158	73	394	21,608	1,956	161	0	114	1,509	0	0	0	0	0
25-Jul	39	10,471	158	73	395	21,608	1,995	686	0	114	1,509	0	0	0	0	0
27-Jul	1,729	10,600	158	81	404	21,618	1,995	686	0	1,058	2,138	0	0	0	0	0
28-Jul	3,483	11,247	213	99	441	21,634	1,995	686	0	2,247	3,659	0	0	0	0	0
29-Jul	5,984	12,261	213	106	458	21,634	2,070	686	0	4,939	5,838	0	0	0	0	0
30-Jul	8,407	13,393	448	117	470	21,642	2,177	686	0	8,055	9,624	0	0	0	0	0
31-Jul	1,575	14,875	541	117	503	21,642	2,177	686	0	9,284	12,123	0	0	0	0	0
1-Aug	3,755	18,089	688	117	503	21,642	2,571	686	0	9,284	12,123	0	0	0	0	0
2-Aug	3,371	20,538	1,359	117	503	21,642	2,822	686	0	9,284	12,123	0	0	0	0	0
3-Aug	4,333	24,007	1,434	121	516	21,668	3,040	686	0	10,020	12,237	0	0	0	0	0
4-Aug	5,071	26,088	1,434	131	699	21,739	3,040	686	0	10,449	14,534	0	0	0	0	0
5-Aug	3,486	28,577	1,460	151	732	21,756	3,040	686	0	11,202	14,682	0	0	0	0	0
6-Aug	3,309	30,638	1,460	190	759	22,157	3,040	686	0	11,775	14,890	0	0	0	0	0
7-Aug	2,859	33,496	1,461	190	767	22,157	3,040	686	0	11,842	15,024	0	0	0	0	0
8-Aug	1,840	35,336	1,461	190	767	22,157	3,040	686	0	11,842	15,024	0	0	0	0	0
9-Aug	2,096	37,432	1,461	190	767	22,157	3,040	686	0	11,842	15,024	0	0	0	0	0
10-Aug	2,200	39,361	1,522	190	771	22,159	3,244	686	0	11,842	15,024	0	0	0	0	204
11-Aug	10,989	47,808	1,561	190	800	22,266	3,244	803	0	12,052	17,064	0	0	0	0	204
12-Aug	4,944	54,503	1,561	190	802	22,285	3,244	803	7	12,076	17,175	0	0	0	0	204
13-Aug	4,935	60,114	1,685	190	808	22,316	3,244	1,035	53	12,270	17,199	0	0	0	0	204
14-Aug	3,565	63,401	1,963	190	808	22,316	3,244	1,035	53	12,270	17,199	0	0	0	0	204
15-Aug	4,165	66,693	2,836	190	808	22,316	3,244	1,035	53	12,270	17,199	0	0	0	0	204
16-Aug	2,603	68,552	3,854	232	829	22,324	3,244	1,035	53	12,270	17,204	0	0	0	0	204
17-Aug	4,287	71,585	4,389	322	842	22,397	3,244	1,485	53	12,270	17,297	0	0	0	0	204
18-Aug	4,195	73,654	5,521	322	855	22,590	3,244	1,485	53	12,997	17,358	0	0	0	0	204
19-Aug	3,011	75,744	6,225	322	862	22,757	3,244	1,485	53	12,997	17,401	0	0	0	0	204
20-Aug	6,829	78,332	6,760	322	906	23,425	3,244	1,485	53	15,535	17,857	0	0	0	0	204
21-Aug	3,911	81,785	6,920	322	931	23,717	3,244	1,485	53	15,535	17,857	0	0	0	0	204
22-Aug	4,771	85,791	7,151	436	945	24,186	3,244	1,485	53	15,535	17,857	0	0	0	0	204
23-Aug	6,503	90,875	7,485	573	992	25,087	3,244	1,485	53	15,535	17,857	0	0	2	0	204
24-Aug	9,144	97,980	7,935	729	1,400	26,112	3,244	1,485	53	15,535	17,857	0	0	2	0	204
25-Aug	9,391	104,787	8,579	729	1,635	27,911	3,244	1,485	53	15,535	17,857	0	0	2	0	204
26-Aug	7,883	110,370	9,201	729	1,928	29,296	3,244	1,485	53	15,535	17,857	0	0	2	0	204
27-Aug	11,451	117,441	10,007	729	2,400	31,445	4,197	1,485	53	15,535	17,857	0	0	2	0	1,157
28-Aug	3,874	120,106	10,203	924	2,544	32,119	4,197	1,485	53	15,535	17,857	0	0	2	0	1,157
29-Aug	9,538	122,281	10,398	1,342	3,064	34,876	4,987	1,485	53	15,535	20,540	0	0	2	0	1,947
30-Aug	9,345	127,124	10,967	1,716	3,376	36,947	5,768	1,485	53	15,535	20,573	0	0	2	0	3,871
31-Aug	11,356	133,200	12,490	2,233	3,907	38,796	7,300	1,485	53	15,535	20,635	0	0	2	0	3,871
1-Sep	15,524	140,562	12,490	2,411	4,674	40,532	12,780	1,485	53	15,535	20,635	0	0	2	0	9,351
2-Sep	13,668	148,536	12,490	2,656	4,891	41,634	16,911	1,485	53	15,535	20,635	0	0	2	0	12,672
3-Sep	3,849	152,033	12,490	2,814	5,964	41,954	16,101	1,485	53	15,535	20,635	0	0	2	0	12,672
4-Sep	8,390	156,688	12,490	3,359	7,192	43,007	16,949	1,485	114	15,535	20,635	0	0	2	0	12,859
5-Sep	11,591	162,886	12,490	3,609	8,211	43,867	20,213	1,485	114	15,535	20,635	0	0	2	0	13,513

6-Sep	11,449	169,175	12,490	3,853	9,142	45,198	22,867	1,485	114	15,535	20,635	0	0	2	0	15,1	
7-Sep	4,356	172,483	12,490	4,050	9,487	45,198	23,382	1,485	114	15,535	20,635	0	0	2	0	15,1	
8-Sep	5,851	176,072	13,117	4,240	9,613	45,198	24,692	1,485	114	15,535	20,635	0	0	2	0	15,132	310,701
9-Sep	2,602	177,749	13,117	4,525	9,969	45,218	24,865	1,576	114	15,535	20,635	0	0	2	0	15,132	313,303
10-Sep	7,464	181,509	13,306	4,686	9,969	47,025	26,230	1,576	114	15,535	20,817	0	0	2	0	15,132	320,767
11-Sep	4,485	186,681	14,250	4,866	9,969	47,054	27,698	1,576	114	15,535	20,817	0	0	2	0	15,132	328,560
12-Sep	10,310	194,980	14,250	5,554	10,339	47,305	28,400	1,576	114	15,535	20,817	0	0	2	0	15,132	338,870
13-Sep	2,925	197,550	14,250	5,010	10,339	47,305	28,722	1,576	114	15,535	20,817	0	0	2	0	15,132	341,218
14-Sep	7,642	204,495	14,250	5,227	10,819	47,305	28,722	1,576	114	15,535	20,817	0	0	2	0	15,132	348,860
15-Sep	2,024	205,847	14,250	5,238	11,480	47,305	28,772	1,576	114	15,535	20,817	0	0	2	0	15,132	350,884
16-Sep	2,163	207,903	14,250	5,345	11,480	47,305	28,722	1,576	114	15,535	20,817	0	0	2	0	15,132	353,047
17-Sep																	
18-Sep																	
19-Sep																	
20-Sep	647	210,556	14,250	5,497	11,480	47,305	28,966	1,576	114	15,535	20,817	0	0	2	0	15,132	356,096

Confidential

2017 Kodiak Pink Harvest

	Daily	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative		Cumulative
	Total Pink Harvest	Karluk, NW Kodiak & SW Afognak	Ayakulik, Halibut Bay & Sturgeon	Alitak Bay, Olga, Moser & Dog Salmon	Cape Alitak & Humpy-Deadman	East & Northeast Kodiak	Duck, Izhut & Kitoi Bays	NW Afognak, Shuyak & Perenosa	SE Afognak & Raspberry	Cape Igvak & Wide Bay	Mid & North Mainland	Foul Bay SHA	Waterfall SHA	Telrod Cove SHA	Telrod Cove Cost Recovery	Kitoi cost Recovery	Igvak %	Cumulative Pink Harvest
1-Jun	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0		2
2-Jun	11	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0		13
3-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		13
4-Jun	15	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0		28
5-Jun	1	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0		37
6-Jun	31	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0		68
7-Jun	0	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0		68
8-Jun	59	127	0	0	0	0	0	0	0	0	0	0	0	0	0	0		127
9-Jun	35	161	0	0	1	0	0	0	0	0	0	0	0	0	0	0		162
10-Jun	27	186	0	1	2	0	0	0	0	0	0	0	0	0	0	0		189
11-Jun	34	192	0	1	2	0	28	0	0	0	0	0	0	0	0	0		223
12-Jun	64	249	0	1	2	0	35	0	0	0	0	0	0	0	0	0		287
13-Jun	18	267	0	1	2	0	35	0	0	0	0	0	0	0	0	0		305
14-Jun	765	314	0	1	2	0	35	0	0	718	0	0	0	0	0	0		1,070
15-Jun	3,390	358	0	1	2	13	37	0	0	4,049	0	0	0	0	0	0		4,460
16-Jun	24	377	0	1	2	867	42	0	0	4,563	0	0	0	0	0	0		5,852
17-Jun	122	496	2	2	2	867	42	0	0	4,563	0	0	0	0	0	0		5,974
18-Jun	116	563	44	5	6	867	42	0	0	4,563	0	0	0	0	0	0		6,090
19-Jun	285	737	61	5	21	867	121	0	0	4,563	0	0	0	0	0	0		6,375
20-Jun	110	830	70	5	21	867	138	0	0	4,563	0	0	0	0	0	0		6,494
21-Jun	1,601	1,421	70	5	21	1,905	138	0	0	4,563	0	0	0	0	0	0		8,123
22-Jun	2,068	1,641	70	5	21	3,488	339	1	0	4,563	35	0	0	0	0	0		10,163
23-Jun	7,697	1,771	70	5	21	3,488	342	1	0	12,127	35	0	0	0	0	0		17,860
24-Jun	18,877	2,207	70	5	21	3,489	554	1	0	30,355	35	0	0	0	0	0		36,737
25-Jun	326	2,500	70	5	21	3,489	587	1	0	32,090	35	0	0	0	0	0		38,798
26-Jun	957	3,457	70	5	21	3,489	587	1	0	32,122	35	0	0	0	0	0		39,787
27-Jun	3,171	5,421	70	5	21	3,489	1,990	1	1	32,122	35	0	0	0	0	0		43,155
28-Jun	2,772	8,193	70	5	21	3,489	1,990	1	1	32,122	35	0	0	0	0	0		45,927
29-Jun	1,428	9,621	70	5	21	3,489	3,059	1	1	32,122	35	0	0	0	0	0		48,424
30-Jun	5,261	14,882	70	5	21	3,489	3,455	1	1	32,122	35	0	0	0	0	0		54,081
1-Jul	3,109	17,991	70	5	21	3,489	3,455	1	2	32,122	35	0	0	0	0	0		57,190
2-Jul	4,614	22,605	70	5	21	3,489	3,455	1	1	32,122	35	0	0	0	0	0		61,804
3-Jul	6,506	29,111	70	5	21	3,489	3,455	1	1	32,122	35	0	0	0	0	0		68,310
4-Jul	6,766	35,789	70	5	21	3,489	3,455	1	1	32,122	35	0	0	35	35	0		74,988
5-Jul	7,375	44,041	70	5	21	3,489	3,455	1	1	32,122	35	0	0	35	35	0		83,240
6-Jul	14,049	53,060	70	5	21	8,519	3,455	1	1	32,122	35	0	0	35	35	0		97,289
7-Jul	57,953	68,781	70	5	21	48,873	3,455	1,301	1	32,122	613	0	0	35	35	0		155,242
8-Jul	45,071	86,390	70	5	21	75,259	3,455	1,301	1	32,122	4,419	0	0	90	90	0		200,313
9-Jul	80,518	105,352	70	5	21	138,585	3,455	2,142	1	32,122	5,234	0	0	375	375	0		286,987
10-Jul	133,861	146,903	70	5	21	232,861	3,668	2,942	1	32,122	5,234	0	0	166	166	0		423,827
11-Jul	999	146,903	70	5	21	232,861	4,667	2,942	1	32,122	5,234	0	0	166	166	0		424,826
12-Jul	1,655	148,229	70	5	21	232,861	4,996	2,942	1	32,122	5,234	0	0	1,492	1,492	0		426,481
13-Jul	40,565	171,492	209	3,068	276	245,631	5,291	2,942	1	32,122	6,014	0	0	1,860	1,860	0		467,046
14-Jul	149,956	266,664	684	6,909	12,330	277,398	8,598	5,272	1	32,122	8,289	0	0	860	860	0		618,267
15-Jul	69,992	312,986	684	8,569	23,689	287,134	8,622	5,272	1	32,122	9,180	0	0	1,914	1,914	0		688,259

16-Jul	226,173	502,083	684	8,569	31,653	304,953	11,396	13,791	1	32,122	12,189	0	0	2,486	2,486	
17-Jul	225,795	686,838	684	8,569	40,876	334,710	13,636	18,579	1	32,122	12,189	0	0	2,632	2,632	
18-Jul	2,570	690,268	684	8,569	40,876	342,940	16,206	18,579	1	32,122	12,189	0	0	2,632	2,632	0	1,162,434
19-Jul	7,830	690,268	684	8,569	40,876	342,940	24,036	18,579	1	32,122	12,189	0	0	2,632	2,632	0	1,170,264
20-Jul	91,808	753,958	684	15,631	55,491	347,499	24,036	18,579	1	32,122	14,071	0	0	6,254	6,254	0	1,262,072
21-Jul	364,805	1,037,313	1,234	26,198	77,863	373,335	24,145	18,579	1	32,122	36,087	0	0	6,940	6,940	0	1,626,877
22-Jul	262,412	1,256,651	1,234	34,110	101,175	379,531	24,145	21,464	1	32,122	38,856	0	0	13,275	13,275	0	1,889,289
23-Jul	418,161	1,644,002	1,361	34,110	117,016	391,870	25,805	20,622	1	32,122	47,411	0	0	14,503	14,503	0	2,314,320
24-Jul	311,151	1,900,255	13,044	34,110	141,495	405,681	26,139	22,808	1	32,122	47,411	0	0	14,503	14,503	0	2,623,066
25-Jul	4,460	2,047,859	13,044	34,110	149,576	408,356	30,599	40,145	1	32,122	47,411	0	0	14,503	14,503	0	2,803,223
27-Jul	305,542	2,248,910	13,044	45,079	175,650	415,707	30,599	40,145	1	76,274	63,356	0	0	18,378	18,378	0	3,108,765
28-Jul	579,405	2,633,583	31,477	58,776	212,965	426,871	30,599	40,145	1	148,934	104,819	0	0	19,478	19,478	0	3,688,170
29-Jul	543,664	2,991,236	31,477	70,604	262,892	426,871	33,677	40,145	1	252,494	150,310	0	0	19,478	19,478	0	4,259,707
30-Jul	599,658	3,375,009	64,374	81,140	286,395	449,893	38,161	40,145	1	334,273	190,246	0	0	19,750	19,750	0	4,859,637
31-Jul	401,305	3,765,653	75,035	81,140	290,347	449,893	38,161	40,145	1	350,360	209,735	0	0	19,750	19,750	0	5,300,470
1-Aug	425,902	4,165,835	84,264	81,140	290,347	449,893	54,652	40,145	1	350,360	209,735	0	0	29,205	19,750	0	5,726,372
2-Aug	294,204	4,419,335	104,845	81,140	290,347	449,893	74,775	40,145	1	350,360	209,735	0	0	29,205	19,750	0	6,020,576
3-Aug	547,313	4,852,133	138,518	91,361	310,426	484,368	89,345	40,145	1	459,444	214,175	0	0	34,500	19,750	0	6,679,916
4-Aug	454,543	5,089,075	143,935	97,170	357,835	543,711	89,345	40,145	1	512,660	265,999	0	0	34,590	19,750	0	7,139,876
5-Aug	563,427	5,400,650	144,882	107,603	434,030	583,995	89,345	40,145	1	625,990	276,662	0	0	43,642	19,750	0	7,703,303
6-Aug	561,910	5,710,935	144,882	120,014	468,994	673,693	89,345	40,145	1	703,527	313,677	0	0	50,770	19,750	0	8,265,213
7-Aug	364,642	6,074,697	145,762	120,014	478,003	673,693	89,345	40,145	1	707,527	321,677	0	0	62,322	19,750	0	8,650,864
8-Aug	384,944	6,416,071	145,762	120,014	478,003	673,693	132,915	40,145	1	707,527	321,677	0	0	62,774	19,750	43,570	9,035,808
9-Aug	333,265	6,690,652	145,762	120,014	478,003	673,693	192,799	40,145	1	707,527	321,677	0	0	63,395	19,750	103,454	9,370,273
10-Aug	451,682	6,939,288	149,461	120,014	518,179	738,073	255,378	40,145	241	725,084	336,092	0	0	63,395	19,750	166,033	9,821,955
11-Aug	494,879	7,211,224	156,877	120,014	590,806	793,586	255,378	42,905	241	766,113	379,690	0	0	63,395	19,750	166,033	10,316,834
12-Aug	399,952	7,451,232	156,877	120,014	678,365	894,981	255,378	42,905	626	784,439	380,136	0	0	63,395	19,750	166,033	10,764,953
13-Aug	687,232	7,980,255	203,133	120,014	754,850	999,818	255,378	65,656	2,261	818,695	432,669	0	0	63,395	19,750	166,033	11,632,729
14-Aug	584,936	8,487,661	280,663	120,014	754,850	999,818	255,378	65,656	2,261	818,695	432,669	0	0	63,395	19,750	166,033	12,217,665
15-Aug	600,952	9,002,471	366,805	120,014	754,850	999,818	255,378	65,656	2,261	818,695	432,669	0	0	63,395	19,750	166,033	12,818,617
16-Aug	639,308	9,417,173	447,459	128,875	850,475	1,052,815	255,378	65,656	2,261	837,098	435,453	0	0	64,740	19,750	166,033	13,492,643
17-Aug	790,802	9,845,154	495,410	134,787	965,474	1,205,137	255,378	66,606	2,261	873,012	440,226	0	0	66,699	19,750	166,033	14,283,445
18-Aug	756,677	10,216,533	571,057	134,787	1,067,416	1,342,382	255,378	66,606	2,261	908,785	474,907	0	0	66,699	19,750	166,033	15,040,112
19-Aug	656,059	10,502,494	674,406	134,787	1,190,679	1,469,801	255,378	66,606	2,261	908,785	490,974	0	0	66,699	19,750	166,033	15,696,171
20-Aug	702,909	10,779,339	753,204	134,787	1,312,558	1,652,433	255,378	66,606	2,261	926,943	515,571	0	0	66,699	19,750	166,033	16,399,080
21-Aug	666,766	11,168,431	769,992	134,787	1,434,572	1,810,798	255,378	66,606	2,261	926,943	526,305	0	0	66,699	19,750	166,033	17,096,073
22-Aug	744,933	11,543,566	779,688	142,913	1,575,542	2,024,645	255,378	66,606	2,261	926,943	526,305	0	0	66,699	19,750	166,033	17,843,847
23-Aug	867,045	12,039,386	813,568	153,083	1,707,324	2,220,038	255,378	66,606	2,261	926,943	526,305	0	0	66,699	19,750	166,033	18,710,892
24-Aug	716,279	12,447,999	851,259	165,365	1,847,527	2,337,528	255,378	66,606	2,261	926,943	526,305	0	0	66,699	19,750	166,033	19,427,171
25-Aug	774,332	12,891,491	885,926	165,365	1,957,702	2,545,605	255,378	66,606	2,261	926,943	526,305	0	0	66,699	19,750	166,033	20,223,582
26-Aug	763,653	13,304,324	920,805	165,365	2,111,952	2,707,296	255,378	66,606	2,261	926,943	526,305	0	0	66,699	19,750	166,033	20,987,235
27-Aug	700,022	13,596,412	984,997	165,365	2,244,745	2,833,255	340,368	66,606	2,261	926,943	526,305	0	0	66,699	19,750	251,023	21,687,257
28-Aug	252,156	13,704,228	999,159	170,958	2,283,217	2,886,102	340,368	66,606	2,261	926,943	559,571	0	0	66,699	19,750	251,023	21,939,413
29-Aug	479,402	13,784,104	1,012,912	179,595	2,377,351	3,022,332	483,925	66,606	2,261	926,943	562,786	0	0	66,699	19,750	394,580	22,418,815
30-Aug	730,478	13,992,500	1,036,421	190,587	2,507,213	3,155,129	723,346	66,606	2,261	926,943	568,478	0	0	66,699	19,750	853,231	23,169,484
31-Aug	598,860	14,118,217	1,042,254	200,753	2,596,298	3,284,087	980,562	66,606	2,261	926,943	573,304	0	0	66,699	19,750	853,231	23,791,285
1-Sep	650,212	14,270,419	1,042,254	207,156	2,680,609	3,401,980	1,269,963	66,606	2,261	926,943	573,304	0	0	66,699	19,750	1,142,634	24,441,497
2-Sep	541,511	14,383,531	1,042,254	212,534	2,721,912	3,452,264	1,601,399	66,606	2,261	926,943	573,304	0	0	66,699	19,750	1,388,720	24,983,008
3-Sep	84,238	14,421,111	1,042,254	216,648	2,804,512	3,481,105	1,516,051	66,606	2,261	926,943	573,304	0	0	66,699	19,750	1,388,720	25,050,795
4-Sep	428,407	14,618,167	1,042,254	222,858	2,881,505	3,524,910	1,620,324	66,606	2,331	926,943	573,304	0	0	66,699	19,750	1,488,348	25,479,202
5-Sep	443,037	14,715,560	1,042,254	228,514	2,990,580	3,560,648	1,815,499	66,606	2,331	926,943	573,304	0	0	66,699	19,750	1,665,866	25,922,239

6-Sep	328,478	14,862,324	1,042,254	234,100	3,043,398	3,606,292	1,893,165	66,606	2,331	926,943	573,304	0	0	66,699	19,750	1,73	
7-Sep	154,700	14,962,303	1,042,254	238,638	3,076,892	3,606,292	1,909,854	66,606	2,331	926,943	573,304	0	0	66,699	19,750	1,73	
8-Sep	110,245	15,011,261	1,052,786	241,453	3,090,390	3,606,292	1,944,296	66,606	2,331	926,943	573,304	0	0	66,699	19,750	1,736,632	26,515,662
9-Sep	42,620	15,032,791	1,052,786	244,880	3,098,710	3,608,465	1,950,749	67,323	2,331	926,943	573,304	0	0	66,699	19,750	1,736,632	26,558,282
10-Sep	81,740	15,060,695	1,058,736	248,092	3,098,710	3,630,829	1,972,878	67,323	2,331	926,943	573,485	0	0	66,699	19,750	1,736,632	26,640,022
11-Sep	33,908	15,087,249	1,060,707	250,571	3,098,710	3,630,877	1,985,761	67,323	2,331	926,943	573,485	0	0	66,699	19,750	1,736,632	26,683,957
12-Sep	48,459	15,107,496	1,060,707	256,573	3,109,763	3,633,355	1,994,440	67,323	2,331	926,943	573,485	0	0	66,699	19,750	1,736,632	26,732,416
13-Sep	11,267	15,115,366	1,060,707	252,709	3,109,763	3,633,355	1,997,421	67,323	2,331	926,943	573,485	0	0	66,699	19,750	1,736,632	26,739,403
14-Sep	18,671	15,126,535	1,060,707	255,327	3,114,647	3,633,355	1,997,421	67,323	2,331	926,943	573,485	0	0	66,699	19,750	1,736,632	26,758,074
15-Sep	18,574	15,128,380	1,060,707	255,868	3,130,835	3,633,355	1,997,421	67,323	2,331	926,943	573,485	0	0	66,699	19,750	1,736,632	26,776,648
16-Sep	4,968	15,131,804	1,060,707	257,412	3,130,835	3,633,355	1,997,421	67,323	2,331	926,973	573,485	0	0	66,699	19,750	1,736,632	26,781,616
17-Sep																	
18-Sep																	
19-Sep																	
20-Sep	971	15,134,321	1,060,707	258,160	3,130,835	3,633,355	1,997,421	67,323	2,331	926,973	537,485	0	0	66,699	19,750	1,736,632	

2017 Kodiak Chum Harvest

	Daily	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative		Cumulative
	Total Chum Harvest	Karluk, NW Kodiak & SW Afognak	Ayakulik, Halibut Bay & Sturgeon	Alitak Bay, Olga, Moser & Dog Salmon	Cape Alitak & Humpy-Deadman	East & Northeast Kodiak	Duck, Izhut & Kitoi Bays	NW Afognak, Shuyak & Perenosa	SE Afognak & Raspberry	Cape Igvak & Wide Bay	Mid & North Mainland	Foul Bay SHA	Waterfall SHA	Telrod Cove SHA	Telrod Cove Cost Recovery	Kitoi cost Recovery	Igvak %	Cumulative Chum Harvest
1-Jun	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0		7
2-Jun	203	210	0	0	0	0	0	0	0	0	0	0	0	0	0	0		210
3-Jun	168	329	0	0	0	0	0	11	0	0	0	11	0	0	0	0		340
4-Jun	342	671	0	0	0	0	0	11	0	0	0	11	0	0	0	0		682
5-Jun	138	798	0	0	0	0	0	11	0	0	0	11	0	0	0	0		809
6-Jun	758	1,556	0	0	0	0	0	11	0	0	0	11	0	0	0	0		1,567
7-Jun	120	1,676	0	0	0	0	0	11	0	0	0	11	0	0	0	0		1,687
8-Jun	1,609	3,285	0	0	0	0	0	11	0	0	0	11	0	0	0	0		3,296
9-Jun	885	4,169	0	1	0	0	0	11	0	0	0	11	0	0	0	0		4,181
10-Jun	1,694	5,626	0	7	231	0	0	11	0	0	0	11	0	0	0	0		5,875
11-Jun	1,194	6,131	0	7	245	0	675	11	0	0	0	11	0	0	0	0		7,069
12-Jun	2,900	8,848	0	7	246	0	857	11	0	0	0	11	0	0	0	0		9,969
13-Jun	362	9,210	0	7	246	0	857	11	0	0	0	11	0	0	0	0		10,331
14-Jun	2,109	10,021	0	7	246	0	1,129	11	0	936	0	11	0	0	0	0		12,350
15-Jun	8,086	10,770	0	7	246	68	1,211	56	0	8,078	0	11	0	0	0	0		20,436
16-Jun	861	11,327	0	7	246	1,621	1,515	61	0	9,515	0	11	0	0	0	0		24,292
17-Jun	3,220	14,490	51	13	246	1,621	1,515	61	0	9,515	0	11	0	0	0	0		27,512
18-Jun	6,817	15,802	1,076	56	337	1,621	5,861	61	0	9,515	0	11	0	0	0	0		34,329
19-Jun	4,677	17,588	1,602	82	630	1,621	7,907	61	0	9,515	0	11	0	0	0	0		39,006
20-Jun	2,540	18,292	1,694	82	630	1,621	9,742	62	0	9,515	0	12	0	0	0	0		41,638
21-Jun	6,409	21,485	1,694	82	630	4,883	9,742	62	0	9,515	51	12	0	0	0	0		48,144
22-Jun	4,520	22,473	1,694	82	630	7,226	10,796	97	0	9,515	54	12	0	0	0	0		52,567
23-Jun	3,083	23,333	1,694	82	630	7,226	10,801	97	0	11,733	54	12	0	0	0	0		55,650
24-Jun	14,547	24,017	1,694	82	630	7,238	19,494	97	0	16,891	54	12	0	0	0	0		70,197
25-Jun	4,044	24,829	1,694	82	630	7,238	22,726	97	0	17,540	54	12	0	0	0	0		74,890
26-Jun	2,165	26,994	1,694	82	630	7,238	22,726	97	0	17,586	54	12	0	0	0	0		77,101
27-Jun	7,534	33,516	1,694	82	630	7,238	24,488	97	3	17,586	54	12	0	0	0	0		85,388
28-Jun	5,392	18,908	1,694	82	630	7,238	24,488	97	3	17,586	54	12	0	0	0	0		90,780
29-Jun	3,375	42,283	1,694	82	630	7,238	26,074	97	3	17,586	54	12	0	0	0	0		95,741
30-Jun	9,431	51,714	1,694	82	630	7,238	26,237	97	3	17,586	54	12	0	0	0	0		105,336
1-Jul	3,878	55,592	1,694	82	630	7,238	26,237	97	3	17,586	54	12	0	0	0	0		109,213
2-Jul	7,707	63,299	1,694	82	630	7,238	26,237	97	3	17,586	54	12	0	6	6	0		116,920
3-Jul	12,162	75,461	1,694	82	630	7,238	26,237	97	3	17,586	54	12	0	6	6	0		129,082
4-Jul	6,274	81,861	1,694	82	630	7,238	26,237	97	3	17,586	54	12	0	6	6	0		135,482
5-Jul	9,963	92,869	1,694	82	630	7,238	26,237	97	3	17,586	54	12	0	6	6	0		146,490
6-Jul	21,151	99,504	1,694	82	630	21,754	26,237	97	3	17,586	54	12	0	6	6	0		167,641
7-Jul	138,111	111,394	1,694	82	630	146,225	26,237	347	3	17,586	1,554	12	0	6	6	0		305,752
8-Jul	69,549	122,151	1,694	82	630	202,357	26,237	347	3	17,586	4,214	12	0	31	31	0		375,301
9-Jul	99,973	136,108	1,694	82	630	302,569	26,237	741	3	17,586	4,674	12	0	67	67	0		490,324
10-Jul	135,530	158,651	1,694	82	630	417,504	26,467	1,312	3	17,586	4,676	12	0	28	28	0		628,603
11-Jul	5,390	158,651	1,694	82	630	417,504	31,857	1,312	3	17,586	4,676	12	0	28	28	0		633,993
12-Jul	3,947	158,723	1,694	82	630	417,504	35,732	1,312	3	17,586	4,674	12	0	100	100	0		637,940
13-Jul	27,546	164,533	1,785	528	560	418,885	39,357	1,312	3	17,586	5,896	12	0	123	123	0		665,486
14-Jul	92,827	189,347	2,013	1,122	12,675	446,121	78,481	1,442	3	17,586	9,523	12	0	123	123	0		758,313
15-Jul	45,231	201,131	2,013	1,404	16,988	451,656	99,976	1,442	3	17,586	11,345	12	0	321	321	0		803,544
16-Jul	56,563	220,705	2,013	1,404	18,469	458,497	128,005	2,080	3	17,586	12,130	12	0	354	354	0		860,892

17-Jul	44,657	239,637	2,013	1,404	20,166	472,889	138,436	2,326	3	17,586	12,130	12	0	366	366	0	
18-Jul	1,835	240,509	2,013	1,404	20,166	477,922	140,271	2,326	3	17,586	12,130	12	0	366	366	0	
19-Jul	3,466	240,509	2,013	1,404	20,166	477,922	143,737	2,326	3	17,586	12,130	12	0	366	366	0	917,796
20-Jul	22,850	248,007	2,013	1,689	28,277	480,981	143,737	2,326	3	17,586	16,027	12	0	772	772	0	940,646
21-Jul	82,773	274,760	2,022	2,056	37,467	492,326	144,002	2,326	3	17,586	50,871	12	0	831	831	0	1,023,419
22-Jul	35,803	287,834	2,022	2,352	40,964	493,152	144,002	2,326	3	17,586	68,981	12	0	2,059	2,059	0	1,059,222
23-Jul	23,934	306,339	2,025	2,352	41,848	497,668	144,274	2,572	3	17,586	70,148	12	0	2,207	2,207	0	1,084,815
24-Jul	17,479	319,816	2,711	2,352	43,579	498,920	144,411	2,665	3	17,586	70,148	12	0	2,207	2,207	0	1,102,191
25-Jul	1,442	325,647	2,711	2,352	46,043	499,832	145,853	3,326	3	17,586	70,148	12	0	2,207	2,207	0	1,113,501
27-Jul	54,567	334,719	2,711	2,781	57,551	500,164	145,853	3,326	3	29,149	91,811	12	0	2,270	2,270	0	1,168,068
28-Jul	51,749	348,402	3,027	3,417	59,462	501,084	145,853	3,326	3	42,274	112,969	12	0	2,270	2,270	0	1,219,817
29-Jul	58,906	358,508	3,027	3,803	60,607	501,804	145,970	3,326	3	61,157	141,908	12	0	2,270	2,270	0	1,479,393
30-Jul	40,391	366,785	3,506	4,094	62,100	505,012	146,066	3,326	3	70,650	158,260	12	0	2,288	2,288	0	1,319,802
31-Jul	10,467	376,713	4,045	4,094	63,331	505,012	146,066	3,326	3	74,596	167,431	12	0	2,288	2,288	0	1,344,617
1-Aug	10,975	387,072	4,180	4,094	63,331	505,012	146,547	3,326	3	74,596	167,431	12	0	2,379	2,288	0	1,355,592
2-Aug	7,890	394,120	4,607	4,094	63,331	505,012	146,962	3,326	3	74,596	167,431	12	0	2,379	2,288	0	1,363,482
3-Aug	19,848	404,438	4,798	4,283	63,707	507,002	147,187	3,326	3	77,585	172,258	12	0	2,445	2,288	0	1,384,587
4-Aug	40,869	412,272	4,834	4,624	65,353	511,268	147,187	3,326	3	80,730	195,895	12	0	2,445	2,288	0	1,425,492
5-Aug	18,997	420,054	4,852	5,320	66,505	513,359	147,187	3,326	3	83,933	199,950	12	0	2,489	2,288	0	1,444,489
6-Aug	22,086	426,134	4,852	6,012	67,528	522,385	147,187	3,326	3	86,206	202,944	12	0	2,520	2,288	0	1,466,575
7-Aug	6,694	432,808	4,872	6,012	67,674	522,385	147,187	3,326	3	86,714	203,964	12	0	2,589	2,288	0	1,474,945
8-Aug	9,163	438,999	4,872	6,012	67,674	522,385	150,159	3,326	3	86,714	203,964	12	0	2,589	2,288	2,972	1,484,108
9-Aug	9,079	447,632	4,872	6,012	67,674	522,385	150,615	3,326	3	86,714	203,964	12	0	2,589	2,288	3,428	1,493,197
10-Aug	17,938	453,289	4,908	6,012	68,171	525,208	151,747	3,326	3	87,032	211,439	12	0	2,589	2,288	4,560	1,511,135
11-Aug	27,423	457,882	4,925	6,012	71,159	532,408	151,747	3,510	3	88,186	222,726	12	0	2,589	2,288	4,560	1,538,558
12-Aug	24,415	464,856	4,925	6,012	75,354	542,912	151,747	3,510	9	88,801	231,730	12	0	2,589	2,288	4,560	1,569,856
13-Aug	42,635	472,679	5,097	6,012	79,636	557,360	151,747	4,065	70	89,544	248,121	12	0	2,589	2,288	4,560	1,614,331
14-Aug	4,182	476,589	5,369	65,012	79,636	557,360	151,747	4,065	70	89,544	248,121	12	0	2,589	2,288	4,560	1,618,513
15-Aug	5,377	481,221	6,114	6,012	79,636	557,360	151,747	4,065	70	89,544	248,121	12	0	2,589	2,288	4,560	1,623,890
16-Aug	18,145	484,422	6,521	6,468	81,320	565,048	151,747	4,065	70	92,717	250,056	12	0	2,589	2,288	4,560	1,642,434
17-Aug	32,700	488,490	6,870	6,943	83,140	576,008	151,747	4,074	70	94,877	262,915	12	0	2,589	2,288	4,560	1,675,134
18-Aug	28,584	493,204	7,261	6,943	84,486	583,909	151,747	4,074	70	95,141	276,883	12	0	2,589	2,288	4,560	1,703,718
19-Aug	15,840	494,845	7,607	6,943	85,367	590,319	151,747	4,074	70	95,141	238,445	12	0	2,589	2,288	4,560	1,719,558
20-Aug	17,022	496,960	7,947	6,943	86,123	598,523	151,747	4,074	70	95,992	288,201	12	0	2,589	2,288	4,560	1,736,580
21-Aug	11,399	499,665	8,007	6,943	86,446	604,720	151,747	4,074	70	95,992	291,129	12	0	2,589	2,288	4,560	1,748,793
22-Aug	34,081	503,669	8,088	7,227	87,624	633,317	151,747	4,074	70	95,992	291,129	12	0	2,589	2,288	4,560	1,782,937
23-Aug	19,830	504,983	8,142	7,624	89,116	649,890	151,747	4,074	70	95,992	291,129	12	0	2,589	2,288	4,560	1,802,767
24-Aug	11,917	506,678	8,207	8,156	91,865	656,766	151,747	4,074	70	95,992	291,129	12	0	2,589	2,288	4,560	1,814,684
25-Aug	10,373	509,111	8,272	8,156	93,551	663,628	151,747	4,074	70	95,992	291,129	12	0	2,589	2,288	4,560	1,825,730
26-Aug	11,885	510,380	8,380	8,056	95,177	672,510	15,177	4,074	70	95,992	291,129	12	0	2,589	2,288	4,560	1,837,615
27-Aug	5,783	511,651	8,460	8,156	96,485	675,634	151,747	4,074	70	95,992	291,129	12	0	2,589	2,288	4,560	1,843,398
28-Aug	2,438	512,052	8,475	8,413	96,829	676,980	151,747	4,074	70	95,992	291,204	12	0	2,589	2,288	4,560	1,845,836
29-Aug	11,069	512,287	8,484	8,744	97,645	683,111	153,667	4,074	70	95,992	292,831	12	0	2,589	2,288	6,480	1,856,905
30-Aug	11,106	512,713	8,568	9,041	97,987	691,677	151,748	4,074	70	95,992	294,222	12	0	2,589	2,288	4,561	1,866,092
31-Aug	10,616	513,405	8,601	9,397	99,095	701,219	151,749	4,074	70	95,992	294,236	12	0	2,589	2,288	4,561	1,877,838
1-Sep	20,937	514,080	8,601	9,726	100,411	719,836	151,749	4,074	70	95,992	294,236	12	0	2,589	2,288	4,561	1,898,775
2-Sep	3,745	514,718	8,601	9,969	100,820	722,291	151,749	4,074	70	95,992	294,236	12	0	2,589	2,288	4,561	1,902,520
3-Sep	1,039	514,945	8,601	10,110	101,785	725,879	151,749	4,074	70	95,992	294,236	12	0	2,589	2,288	4,561	1,907,441
4-Sep	3,286	515,086	8,601	10,602	102,432	727,882	151,752	4,074	70	95,992	294,236	12	0	2,589	2,288	4,561	1,910,727
5-Sep	6,181	515,493	8,601	10,843	103,676	732,162	151,761	4,074	70	95,992	294,236	12	0	2,589	2,288	4,561	1,916,908
6-Sep	11,152	515,803	8,601	11,230	104,171	742,120	151,763	4,074	70	95,992	294,236	12	0	2,589	2,288	4,561	1,928,060

7-Sep	1,028	515,997	8,601	11,568	104,509	742,120	151,921	4,074	70	95,992	294,236	12	0	2,589	2,288	4,56	
8-Sep	417	516,106	8,649	11,689	104,644	742,120	151,925	4,074	70	95,992	294,236	12	0	2,589	2,288	4,56	
9-Sep	2,039	516,191	8,649	12,091	104,797	743,208	151,925	4,385	70	95,992	294,236	12	0	2,589	2,288	4,561	1,931,544
10-Sep	11,027	516,305	8,690	12,240	104,797	751,224	151,929	4,385	70	95,992	296,939	12	0	2,589	2,288	4,561	1,942,571
11-Sep	2,224	516,430	8,690	12,339	104,797	752,674	151,935	4,385	70	95,992	297,544	12	0	2,589	2,288	4,561	1,944,856
12-Sep	5,139	516,563	8,690	13,624	104,993	756,199	151,935	4,385	70	95,992	297,544	12	0	2,589	2,288	4,561	1,949,995
13-Sep	486	516,991	8,690	12,550	104,993	756,199	151,940	4,385	70	95,992	297,544	12	0	2,589	2,288	4,561	1,949,354
14-Sep	500	517,123	8,690	12,757	105,154	756,199	151,940	4,385	70	95,992	279,544	12	0	2,589	2,288	4,561	1,949,854
15-Sep	389	517,149	8,690	12,858	105,416	756,199	151,940	4,385	70	95,992	297,544	12	0	2,589	2,288	4,561	1,950,243
16-Sep	188	517,186	8,690	13,009	105,416	756,199	151,940	4,385	70	95,992	297,544	12	0	2,589	2,288	4,561	1,950,431
17-Sep																	
18-Sep																	
19-Sep																	
20-Sep	277	517,251	8,690	13,279	105,416	756,199	151,940	4,385	70	95,992	297,544	12	0	2,589	2,288	4,561	1,950,766

Confidential

Karluk, NW Kodiak & SW Afognak					
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
	Cumulative	**Cumulative**	**Cumulative**	**Cumulative**	**Cumulative**
	Karluk, NW Kodiak & SW Afognak	Karluk, NW Kodiak & SW Afognak	Karluk, NW Kodiak & SW Afognak	Karluk, NW Kodiak & SW Afognak	Karluk, NW Kodiak & SW Afognak
10-Jun	22	9,806	1	10	1,203
11-Jun	43	17,591	1	36	1,721
12-Jun	43	17,724	1	36	1,721
13-Jun	CONFIDENTIAL				
14-Jun	45	18,745	0	36	1,800
15-Jun	58	23,145	2	183	2,996
16-Jun	58	24,828	2	541	4,510
17-Jun	73	30,663	3	791	6,668
18-Jun	75	32,821	5	909	7,428
19-Jun	111	39,755	36	1,024	8,675
20-Jun	116	40,243	5	1,027	8,732
21-Jun	116	40,243	5	1,027	8,732
22-Jun	116	40,243	5	1,027	8,732
23-Jun	116	40,243	5	1,027	8,732
24-Jun	116	40,243	5	1,027	8,732
25-Jun	121	42,286	7	1,048	9,152
26-Jun	135	46,226	10	1,156	10,696
27-Jun	146	47,776	10	1,246	12,064
28-Jun	151	57,248	22	1,737	16,181
29-Jun	151	57,416	23	1,758	16,453
30-Jun	151	57,416	23	1,758	16,453
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Jul	151	57,416	23	1,758	16,453
2-Jul	CONFIDENTIAL				
3-Jul	258	79,671	122	3,843	29,885
4-Jul	290	87,293	205	5,790	33,840
5-Jul	303	107,389	387	7,088	37,014
6-Jul	331	113,870	477	9,718	41,215
7-Jul	349	122,842	744	12,433	45,179
8-Jul	442	133,451	1,114	15,625	51,198
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	442	142,158	1,114	15,669	51,256
13-Jul	444	147,101	1,213	17,762	53,524
14-Jul	494	174,204	3,865	42,254	67,248
15-Jul	575	195,209	6,197	73,373	88,547
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	575	203,803	6,543	76,981	89,743
19-Jul	575	203,803	6,543	76,981	89,743

20-Jul	575	203,803	6,543	76,981	89,743
21-Jul	575	203,803	6,543	76,981	89,743
22-Jul	575	210,997	6,543	78,131	89,830
23-Jul	578	213,593	6,647	85,426	104,839
24-Jul	603	225,827	9,211	125,573	124,146
25-Jul	619	256,220	11,102	157,475	135,444
26-Jul	621	245,328	11,226	159,679	136,946
27-Jul	621	245,328	11,226	159,679	136,946
28-Jul	621	247,946	11,226	159,778	136,962
29-Jul	621	247,946	11,226	159,778	136,962
30-Jul	621	247,946	11,226	159,778	136,962
31-Jul	321	247,946	11,226	159,778	136,962
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	621	250,874	11,226	160,187	137,025
2-Aug	621	254,600	11,230	160,897	137,099
3-Aug	621	256,607	11,232	161,380	137,244
4-Aug	667	281,423	14,074	295,066	139,994
5-Aug	865	331,723	23,174	616,924	146,815
6-Aug	935	355,760	26,241	797,185	149,658
7-Aug	948	371,947	29,658	980,190	152,597
8-Aug	1,012	402,992	33,102	1,159,035	155,554
9-Aug	1,040	455,459	36,527	1,336,624	158,106
10-Aug	1,087	478,145	41,782	1,436,213	159,650
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	1,087	484,707	44,433	1,458,073	160,122
14-Aug	1,087	484,707	44,433	1,458,073	160,122
15-Aug	1,087	484,707	44,433	1,458,073	160,122
16-Aug	1,089	493,647	45,542	1,469,130	160,461
17-Aug	1,110	532,491	57,224	1,531,717	162,647
18-Aug	1,113	540,427	58,743	1,541,539	163,207
19-Aug	1,113	546,237	62,258	1,556,280	164,377
20-Aug	1,126	583,269	66,016	1,583,531	165,153
21-Aug	1,147	619,878	74,540	1,616,175	166,214
22-Aug	1,166	662,680	79,198	1,642,154	167,175
23-Aug	1,181	719,556	84,642	1,663,162	167,980
24-Aug	1,186	737,654	88,673	1,681,118	168,626
25-Aug	1,206	807,873	99,178	1,704,989	169,681
26-Aug	1,209	826,250	103,333	1,711,312	170,176
27-Aug	1,230	865,386	108,276	1,717,904	170,639
28-Aug	1,255	889,981	113,977	1,724,317	171,275
29-Aug	1,265	915,014	119,901	1,728,645	171,552
30-Aug	1,271	920,298	120,994	1,729,388	171,586
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	1,284	939,635	124,697	1,732,579	171,932
1-Sep	1,292	960,327	128,598	1,734,377	172,149
2-Sep	1,294	965,455	129,978	1,735,076	172,259

3-Sep	1,313	995,439	136,258	1,736,612	172,471
4-Sep	1,321	1,006,456	140,291	1,737,253	172,581
5-Sep	1,324	1,032,160	145,685	1,737,808	172,674
6-Sep	1,326	1,045,272	148,329	1,738,085	172,765
7-Sep	1,340	1,065,447	151,526	1,738,367	172,834
8-Sep	1,346	1,070,382	152,738	1,738,422	172,892
9-Sep	1,349	1,094,762	155,781	1,738,716	172,972
10-Sep	1,349	1,097,360	156,069	1,738,759	172,991
11-Sep	1,349	1,118,799	160,805	1,738,861	173,022
12-Sep	1,349	1,122,526	161,218	1,738,881	173,045
13-Sep	1,349	1,141,261	163,837	1,738,927	173,090
14-Sep	1,349	1,142,483	163,895	1,738,929	173,093
15-Sep	1,350	1,167,109	165,782	1,738,980	173,128
16-Sep	1,350	1,167,677	165,822	1,738,980	173,130
17-Sep	1,350	1,186,522	167,032	1,738,997	173,157
18-Sep					
19-Sep	1,350	1,207,613	167,881	1,739,006	173,183
20-Sep	1,350	1,208,490	168,374	1,739,006	173,183
21-Sep	1,350	1,220,634	168,736	1,739,006	173,186
22-Sep	1,350	1,222,648	168,820	1,739,006	173,187
23-Sep	1,350	1,232,924	169,427	1,739,006	173,192

Ayakulik, Halibut Bay & Sturgeon Bay					
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Ayakulik, Halibut Bay & Sturgeon	Ayakulik, Halibut Bay & Sturgeon	Ayakulik, Halibut Bay & Sturgeon	Ayakulik, Halibut Bay & Sturgeon	Ayakulik, Halibut Bay & Sturgeon
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	CONFIDENTIAL				
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	28	9,818	0	146	943
27-Jun	28	12,774	0	202	1,363
28-Jun	43	27,742	0	683	4,421
29-Jun	43	32,354	4	815	5,321
30-Jun	43	32,354	4	815	5,321
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
1-Jul	43	32,354	4	815	5,321
2-Jul	CONFIDENTIAL				
3-Jul	43	32,354	4	815	5,321
4-Jul	43	32,354	4	815	5,321
5-Jul	86	40,008	12	1,327	5,889
6-Jul	86	40,008	12	1,327	5,889
7-Jul	129	43,157	56	2,923	6,723
8-Jul	141	52,404	101	5,214	7,522
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	152	54,051	131	6,049	7,677
13-Jul	152	54,051	131	6,049	7,677
14-Jul	178	80,223	281	14,924	9,053
15-Jul	213	92,089	333	24,237	10,149
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	221	94,958	374	28,174	10,424
19-Jul	221	94,958	374	28,174	10,424

20-Jul	221	94,958	374	28,174	10,424
21-Jul	221	94,958	374	28,174	10,424
22-Jul	221	94,958	374	28,174	10,424
23-Jul	221	94,958	374	28,174	10,424
24-Jul	221	94,958	374	28,174	10,424
25-Jul	221	94,958	374	28,174	10,424
26-Jul	221	94,958	374	28,174	10,424
27-Jul	221	94,958	374	28,174	10,424
28-Jul	221	94,958	374	28,174	10,424
29-Jul	221	94,958	374	28,174	10,424
30-Jul	221	94,958	374	28,174	10,424
31-Jul	221	94,958	374	28,174	10,424
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	221	94,958	374	28,174	10,424
2-Aug	221	94,958	374	28,174	10,424
3-Aug	221	94,958	374	28,174	10,424
4-Aug	221	94,958	374	28,174	10,424
5-Aug	221	94,958	374	28,174	10,424
6-Aug	221	94,958	374	28,174	10,424
7-Aug	221	97,556	488	33,714	10,510
8-Aug	221	97,556	488	33,714	10,510
9-Aug	221	98,638	499	37,219	10,511
10-Aug	222	105,884	1,040	88,208	10,695
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	222	113,202	1,435	123,524	11,268
14-Aug	222	113,202	1,435	123,524	11,268
15-Aug	222	113,202	1,435	123,524	11,268
16-Aug	222	115,697	1,805	127,956	11,273
17-Aug	241	138,960	6,074	162,434	11,417
18-Aug	241	140,177	6,506	165,661	11,452
19-Aug	241	143,825	7,509	168,143	11,422
20-Aug	241	150,107	7,788	171,764	11,441
21-Aug	241	150,107	7,788	171,764	11,441
22-Aug	241	151,267	8,029	172,763	11,465
23-Aug	241	174,092	14,591	187,142	11,936
24-Aug	241	174,867	15,150	187,700	11,940
25-Aug	241	179,210	16,070	189,273	11,969
26-Aug	242	179,975	16,180	189,425	11,974
27-Aug	242	179,975	16,180	189,425	11,974
28-Aug	242	179,975	16,180	189,425	11,974
29-Aug	242	179,975	16,180	189,425	11,974
30-Aug	242	179,975	16,180	189,425	11,974
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	242	181,096	16,448	189,549	11,987
1-Sep	257	187,858	17,465	190,087	12,013
2-Sep	257	189,290	17,752	190,260	12,044

3-Sep	257	195,166	19,010	190,615	12,053
4-Sep	257	196,860	19,483	190,670	12,069
5-Sep	258	204,421	21,016	190,919	12,168
6-Sep	258	207,291	21,461	191,016	12,187
7-Sep	286	213,382	22,442	191,141	12,224
8-Sep	286	214,322	22,607	191,155	12,230
9-Sep	286	215,203	22,722	191,168	12,232
10-Sep	286	218,111	23,098	191,208	12,248
11-Sep	286	220,393	23,595	191,232	12,249
12-Sep	286	221,823	23,905	191,242	12,253
13-Sep	286	222,408	24,024	191,250	12,253
14-Sep	286	223,122	24,129	191,254	12,256
15-Sep	286	223,878	24,231	191,254	12,256
16-Sep	286	223,878	24,231	191,254	12,256
17-Sep	286	223,878	24,231	191,254	12,256
18-Sep					
19-Sep	286	223,878	24,231	19,124	12,256
20-Sep	286	223,878	24,231	191,254	12,256
21-Sep	286	223,878	24,231	191,254	12,256
22-Sep	286	223,878	24,231	191,254	12,256
23-Sep	301	224,486	24,323	191,254	12,264

Alitak Bay, Olga, Moser & Dog Salmon					
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
	Cumulative	**Cumulative**	**Cumulative**	**Cumulative**	**Cumulative**
	Alitak Bay, Olga, Moser & Dog Salmon	Alitak Bay, Olga, Moser & Dog Salmon	Alitak Bay, Olga, Moser & Dog Salmon	Alitak Bay, Olga, Moser & Dog Salmon	Alitak Bay, Olga, Moser & Dog Salmon
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	CONFIDENTIAL				
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	3,960	1	4	38
26-Jun	0	9,221	2	16	170
27-Jun	1	12,289	2	36	249
28-Jun	1	16,352	4	40	332
29-Jun	1	16,352	4	40	332
30-Jun	1	16,352	4	40	332
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Jul	1	16,352	4	40	332
2-Jul	CONFIDENTIAL				
3-Jul	1	16,352	4	40	332
4-Jul	1	18,642	4	59	412
5-Jul	1	21,906	5	104	585
6-Jul	1	24,522	5	130	651
7-Jul	1	26,139	8	217	739
8-Jul	1	27,519	18	317	858
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	1	27,519	18	317	858
13-Jul	1	30,090	36	521	941
14-Jul	1	32,338	42	751	1,085
15-Jul	1	34,743	44	1,015	1,228
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	1	34,743	44	1,015	1,228
19-Jul	1	36,836	54	1,477	1,333

20-Jul	1	39,231	82	2,599	1,444
21-Jul	1	40,845	124	3,746	1,530
22-Jul	1	42,530	197	5,416	1,644
23-Jul	1	44,354	242	7,028	1,765
24-Jul	1	44,354	242	7,028	1,765
25-Jul	1	44,354	242	7,028	1,765
26-Jul	1	44,354	242	7,028	1,765
27-Jul	1	44,354	242	7,028	1,765
28-Jul	1	44,354	242	7,028	1,765
29-Jul	1	44,354	242	7,028	1,765
30-Jul	1	44,354	242	7,028	1,765
31-Jul	1	44,354	242	7,028	1,765
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	1	44,354	242	7,028	1,765
2-Aug	1	44,354	242	7,028	1,765
3-Aug	1	44,354	242	7,028	1,765
4-Aug	1	49,355	298	15,361	1,860
5-Aug	1	56,324	427	29,255	1,981
6-Aug	1	59,509	536	39,431	2,112
7-Aug	1	59,509	536	39,431	2,112
8-Aug	1	64,504	713	47,560	2,241
9-Aug	1	69,137	877	54,338	2,325
10-Aug	1	73,891	1,106	62,244	2,479
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	1	80,341	1,520	68,303	2,686
14-Aug	1	87,163	2,078	74,272	2,888
15-Aug	1	90,773	2,243	77,190	3,011
16-Aug	1	96,175	2,527	79,980	3,100
17-Aug	1	99,667	2,735	82,295	3,176
18-Aug	1	104,663	3,176	84,726	3,245
19-Aug	1	111,229	3,597	92,170	3,396
20-Aug	1	111,233	3,607	92,240	3,396
21-Aug	1	111,284	3,640	92,422	3,415
22-Aug	1	114,610	3,910	93,456	3,517
23-Aug	1	118,200	4,155	94,317	3,579
24-Aug	1	118,200	4,155	94,317	3,579
25-Aug	1	125,780	4,838	96,646	3,776
26-Aug	1	129,282	5,147	97,169	3,826
27-Aug	1	134,968	5,673	98,111	3,959
28-Aug	1	139,383	6,128	98,722	4,047
29-Aug	1	139,383	6,128	98,722	4,047
30-Aug	1	139,383	6,128	98,722	4,047
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	1	144,610	6,473	98,989	4,144
1-Sep	1	150,713	6,947	99,401	4,243
2-Sep	1	154,059	7,274	99,759	4,297

3-Sep	1	156,130	7,559	99,923	4,348
4-Sep	1	157,025	7,709	99,960	4,370
5-Sep	1	157,025	7,709	99,960	4,370
6-Sep	1	158,304	7,811	99,993	4,398
7-Sep	1	159,352	7,923	100,014	4,425
8-Sep	1	160,121	7,987	100,038	4,453
9-Sep	1	161,140	8,061	100,043	4,465
10-Sep	1	161,900	8,102	100,046	4,481
11-Sep	1	161,900	8,102	100,046	4,481
12-Sep	1	163,151	8,152	100,051	4,494
13-Sep	1	163,151	8,152	100,051	4,494
14-Sep	1	163,151	8,152	100,051	4,494
15-Sep	1	163,151	8,152	100,051	4,494
16-Sep	1	163,151	8,152	100,051	4,494
17-Sep	1	163,151	8,152	100,051	4,494
18-Sep					
19-Sep	1	163,151	8,152	100,051	4,494
20-Sep	1	163,151	8,152	100,051	4,494
21-Sep	1	163,151	8,152	100,051	4,494
22-Sep	1	163,151	8,152	100,051	4,494
23-Sep	1	163,151	8,152	100,051	4,494

Cape Alitak & Humpy-Deadman					
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Cape Alitak & Humpy-Deadman	Cape Alitak & Humpy-Deadman	Cape Alitak & Humpy-Deadman	Cape Alitak & Humpy-Deadman	Cape Alitak & Humpy-Deadman
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	CONFIDENTIAL				
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	4	6,346	0	80	359
27-Jun	4	8,749	0	110	553
28-Jun	10	17,895	4	248	1,152
29-Jun	12	18,663	5	287	1,215
30-Jun	12	18,663	5	287	1,215
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
1-Jul	12	18,663	5	287	1,215
2-Jul	CONFIDENTIAL				
3-Jul	12	18,663	5	287	1,215
4-Jul	12	18,663	5	287	1,215
5-Jul	29	21,799	11	416	2,097
6-Jul	29	22,769	14	467	2,267
7-Jul	30	25,381	21	629	2,609
8-Jul	31	28,171	114	934	4,137
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	31	29,071	116	1,029	4,213
13-Jul	31	30,539	120	1,369	4,288
14-Jul	31	31,998	122	2,964	4,936
15-Jul	41	36,239	265	5,235	5,707
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	63	45,939	304	8,074	6,236
19-Jul	63	46,035	304	8,343	11,269

20-Jul	73	49,685	406	14,438	13,164
21-Jul	96	54,299	434	18,936	13,512
22-Jul	106	58,135	458	25,233	13,828
23-Jul	114	61,271	494	41,991	14,341
24-Jul	114	61,478	516	52,530	16,488
25-Jul	114	61,604	565	69,124	18,022
26-Jul	114	61,817	598	79,214	18,237
27-Jul	114	61,817	598	79,214	18,237
28-Jul	114	61,817	598	79,214	18,237
29-Jul	114	61,817	598	79,214	18,237
30-Jul	114	61,817	598	79,214	18,237
31-Jul	114	61,817	598	79,214	18,237
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	114	61,817	598	79,214	18,237
2-Aug	114	61,817	598	79,214	18,237
3-Aug	114	61,187	598	79,214	18,237
4-Aug	114	61,978	605	117,302	18,398
5-Aug	129	62,552	675	186,358	18,707
6-Aug	199	65,224	1,145	232,878	18,981
7-Aug	200	70,570	2,046	293,228	21,420
8-Aug	200	71,057	2,081	294,905	21,432
9-Aug	200	71,283	2,132	299,657	21,500
10-Aug	209	72,113	2,512	305,509	21,635
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	210	72,642	2,649	311,794	21,699
14-Aug	210	73,510	2,751	327,838	22,358
15-Aug	210	74,467	3,297	336,118	22,568
16-Aug	210	76,273	4,080	629,030	22,819
17-Aug	210	79,076	4,774	644,756	22,917
18-Aug	210	79,083	4,793	650,017	22,926
19-Aug	210	81,559	5,267	659,843	23,035
20-Aug	210	81,559	5,267	659,843	23,035
21-Aug	210	81,559	5,267	659,843	23,035
22-Aug	210	82,621	5,472	660,764	23,069
23-Aug	210	85,108	6,117	663,518	23,179
24-Aug	210	86,370	6,750	667,267	23,330
25-Aug	210	87,713	7,454	669,570	23,487
26-Aug	210	90,182	10,847	671,034	23,531
27-Aug	210	91,068	11,119	671,590	23,554
28-Aug	210	92,204	11,308	671,882	23,554
29-Aug	210	92,699	11,601	671,969	23,566
30-Aug	210	92,699	11,601	671,969	23,566
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	210	92,699	11,601	671,969	23,566
1-Sep	212	96,341	13,139	672,454	23,678

2-Sep	212	96,381	13,161	672,454	23,685
3-Sep	212	96,381	13,161	672,454	23,685
4-Sep	212	96,381	13,161	672,454	23,685
5-Sep	212	96,942	13,588	672,504	24,242
6-Sep	212	96,942	13,588	672,504	24,242
7-Sep	212	96,942	13,588	672,504	24,242
8-Sep	212	96,949	13,588	672,504	24,242
9-Sep	212	96,949	13,588	672,504	24,242
10-Sep	212	96,949	13,588	672,504	24,242
11-Sep	212	96,949	13,588	672,504	24,242
12-Sep	212	96,949	13,588	672,504	24,242
13-Sep	212	96,949	13,588	672,504	24,242
14-Sep	212	96,949	13,588	672,504	24,242
15-Sep	212	98,844	13,918	672,521	24,282
16-Sep	212	98,844	13,918	672,521	24,282
17-Sep	212	98,844	13,918	672,521	24,282
18-Sep					
19-Sep	212	101,219	14,262	672,529	24,327
20-Sep	212	101,219	14,262	672,529	24,327
21-Sep	220	102,244	14,452	672,531	24,362
22-Sep	220	102,244	14,452	672,531	24,362
23-Sep	220	102,244	14,452	672,531	24,362

East & Northeast Kodiak					
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	East & Northeast Kodiak	East & Northeast Kodiak	East & Northeast Kodiak	East & Northeast Kodiak	East & Northeast Kodiak
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	CONFIDENTIAL				
14-Jun	0	0	0	0	0
15-Jun	33	1,550	0	437	6,532
16-Jun	33	1,550	0	437	6,532
17-Jun	33	1,550	0	437	6,532
18-Jun	33	1,550	0	437	6,532
19-Jun	33	1,550	0	437	6,532
20-Jun	33	1,550	0	437	6,532
21-Jun	33	1,550	0	437	6,532
22-Jun	107	4,576	2	1,611	27,594
23-Jun	108	5,666	2	2,079	24,887
24-Jun	108	5,666	2	2,079	24,887
25-Jun	108	5,666	2	2,079	24,887
26-Jun	108	5,666	2	2,079	24,887
27-Jun	108	5,666	2	2,079	24,887
28-Jun	108	5,666	2	2,079	24,887
29-Jun	108	5,666	2	2,079	24,887
30-Jun	108	5,666	2	2,079	24,887
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
1-Jul	108	5,666	2	2,079	24,887
2-Jul	CONFIDENTIAL				
3-Jul	108	5,666	2	2,079	24,887
4-Jul	108	5,666	2	2,079	24,887
5-Jul	108	5,666	2	2,079	24,887
6-Jul	110	5,694	47	2,095	24,929
7-Jul	348	9,185	2,030	3,920	32,828
8-Jul	378	11,866	2,802	5,489	38,707
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	382	12,258	2,959	5,959	39,800
13-Jul	382	12,258	2,959	5,959	39,800
14-Jul	479	15,135	5,609	8,109	46,219
15-Jul	590	17,568	9,613	11,741	51,672
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	704	17,847	11,365	12,807	52,342
19-Jul	705	17,847	11,365	12,807	52,342

20-Jul	705	17,847	11,365	12,807	52,342
21-Jul	705	17,847	11,365	12,807	52,342
22-Jul	705	17,847	11,365	12,807	52,342
23-Jul	705	17,847	11,365	12,807	52,342
24-Jul	792	20,420	15,700	32,232	55,427
25-Jul	871	22,508	21,660	49,219	59,603
26-Jul	876	23,673	25,514	61,121	61,126
27-Jul	876	23,673	25,514	61,121	61,126
28-Jul	876	23,673	25,514	61,121	61,126
29-Jul	876	23,673	25,514	61,121	61,126
30-Jul	876	23,673	25,514	61,121	61,126
31-Jul	876	23,673	25,514	61,121	61,126
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	876	23,673	25,514	61,121	61,126
2-Aug	876	23,673	25,514	61,121	61,126
3-Aug	876	23,673	25,514	61,121	61,126
4-Aug	876	23,673	25,514	61,121	61,126
5-Aug	876	23,673	25,514	61,121	61,126
6-Aug	876	23,673	25,514	61,121	61,126
7-Aug	876	23,673	25,514	61,121	61,126
8-Aug	876	23,673	25,514	61,121	61,126
9-Aug	876	23,673	25,514	61,121	61,126
10-Aug	876	23,573	25,514	61,121	61,126
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	876	23,673	25,514	61,121	61,126
14-Aug	876	23,673	25,514	61,121	61,126
15-Aug	876	23,673	25,514	61,121	61,126
16-Aug	876	23,673	25,514	61,121	61,126
17-Aug	876	23,673	25,514	61,121	61,126
18-Aug	876	23,673	25,514	61,121	61,126
19-Aug	876	23,673	25,514	61,121	61,126
20-Aug	876	23,673	25,514	61,121	61,126
21-Aug	876	23,673	25,514	61,121	61,126
22-Aug	876	23,673	25,514	61,121	61,126
23-Aug	876	23,673	25,514	61,121	61,126
24-Aug	876	23,673	25,514	61,121	61,126
25-Aug	876	23,673	25,514	61,121	61,126
26-Aug	876	23,673	25,514	61,121	61,126
27-Aug	876	23,673	25,514	61,121	61,126
28-Aug	876	23,673	25,514	61,121	61,126
29-Aug	876	23,673	25,514	61,121	61,126
30-Aug	876	23,673	25,514	61,121	61,126
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	876	23,673	25,514	61,121	61,126
1-Sep	876	23,673	25,514	61,121	61,126

2-Sep	876	23,673	25,514	61,121	61,126
3-Sep	876	23,673	25,514	61,121	61,126
4-Sep	876	23,673	25,514	61,121	61,126
5-Sep	876	23,673	25,514	61,121	61,126
6-Sep	876	23,673	25,514	61,121	61,126
7-Sep	876	23,673	25,514	61,121	61,126
8-Sep	876	23,678	28,131	61,127	61,281
9-Sep	876	23,678	29,590	61,130	61,617
10-Sep	876	23,678	29,590	61,130	61,617
11-Sep	876	23,678	29,590	61,130	61,617
12-Sep	876	23,678	29,590	61,130	61,617
13-Sep	876	23,678	29,590	61,130	61,617
14-Sep	876	23,678	29,590	61,130	61,617
15-Sep	876	23,678	32,677	61,130	61,617
16-Sep	876	23,678	41,127	61,131	61,661
17-Sep	876	23,678	41,127	61,131	61,661
18-Sep					
19-Sep	876	23,678	41,127	61,131	61,661
20-Sep	876	23,678	41,127	61,131	61,661
21-Sep	876	23,678	41,127	61,131	61,661
22-Sep	876	23,680	48,018	61,131	61,709
23-Sep	876	23,689	51,430	61,131	61,728

Duck, Izhut & Kitoi Bays					
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Duck, Izhut & Kitoi Bays	Duck, Izhut & Kitoi Bays	Duck, Izhut & Kitoi Bays	Duck, Izhut & Kitoi Bays	Duck, Izhut & Kitoi Bays
10-Jun	0	13	0	6	633
11-Jun	1	56	0	6	937
12-Jun	6	59	0	11	1,087
13-Jun	CONFIDENTIAL				
14-Jun	6	120	0	36	2,923
15-Jun	6	318	0	38	4,349
16-Jun	6	345	0	38	4,457
17-Jun	6	3,406	0	385	7,087
18-Jun	7	3,918	0	649	17,059
19-Jun	19	5,937	0	939	22,140
20-Jun	21	6,655	0	1,047	28,997
21-Jun	23	7,173	1	1,244	36,290
22-Jun	25	7,176	1	1,252	38,761
23-Jun	33	7,241	1	1,273	46,562
24-Jun	33	7,249	41	1,280	51,722
25-Jun	52	7,262	3	1,297	61,956
26-Jun	53	7,281	3	1,306	65,520
27-Jun	55	7,351	3	1,377	75,845
28-Jun	56	7,419	3	1,418	83,711
29-Jun	57	7,429	4	1,431	85,951
30-Jun	57	7,563	9	1,446	94,922
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
1-Jul	63	7,595	16	1,453	104,885
2-Jul	CONFIDENTIAL				
3-Jul	63	7,595	16	1,453	105,788
4-Jul	63	7,595	16	1,453	105,788
5-Jul	63	7,595	16	1,453	105,788
6-Jul	63	7,595	16	1,453	105,788
7-Jul	79	7,815	318	1,904	112,126
8-Jul	79	8,059	510	2,095	119,115
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	84	8,107	586	2,142	120,251
13-Jul	84	8,107	586	2,142	120,251
14-Jul	85	8,749	1,000	3,501	124,123
15-Jul	99	9,972	1,653	6,587	128,843
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	101	10,296	1,908	7,642	131,896
19-Jul	101	10,312	1,908	7,660	132,194
20-Jul	102	10,875	2,145	11,013	137,398

21-Jul	104	11,032	2,437	12,587	140,488
22-Jul	106	11,936	3,513	21,942	146,477
23-Jul	106	11,936	3,513	21,942	146,477
24-Jul	114	12,620	4,638	36,974	151,223
25-Jul	116	13,047	5,205	43,329	151,973
26-Jul	129	14,343	6,716	61,295	155,190
27-Jul	131	14,632	7,247	73,661	156,032
28-Jul	132	14,934	8,076	110,684	157,493
29-Jul	132	14,991	8,167	129,715	157,888
30-Jul	132	15,217	8,720	185,110	158,458
31-Jul	137	15,527	10,378	249,324	158,859
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	154	15,806	13,201	462,025	159,292
2-Aug	155	15,960	15,429	609,847	159,460
3-Aug	155	16,068	17,077	759,187	159,620
4-Aug	155	16,572	21,350	994,097	159,957
5-Aug	173	18,093	28,174	1,264,898	160,740
6-Aug	180	18,649	34,282	1,537,140	161,328
7-Aug	180	19,073	38,740	1,694,894	161,464
8-Aug	180	19,454	41,183	1,878,878	161,617
9-Aug	198	21,577	44,461	2,417,182	162,260
10-Aug	198	22,441	44,776	2,436,369	162,277
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	198	23,861	47,191	2,476,916	162,553
14-Aug	199	24,211	54,099	2,589,107	162,665
15-Aug	199	24,546	63,641	2,760,264	162,738
16-Aug	199	25,377	74,532	2,883,772	162,832
17-Aug	199	26,208	80,476	2,943,664	162,979
18-Aug	199	26,431	83,635	2,982,501	162,995
19-Aug	199	26,521	84,915	2,996,623	163,035
20-Aug	199	26,726	97,833	3,075,997	163,112
21-Aug	199	27,101	102,779	3,104,489	163,163
22-Aug	199	27,191	109,149	3,129,954	163,180
23-Aug	199	27,248	109,987	3,134,660	163,189
24-Aug	199	27,248	110,478	3,137,146	163,189
25-Aug	199	27,252	112,101	3,145,794	163,189
26-Aug	199	27,302	112,455	3,147,900	163,207
27-Aug	199	27,335	112,795	3,150,803	163,209
28-Aug	199	27,375	115,032	3,158,410	163,209
29-Aug	199	27,422	119,098	3,172,005	163,226
30-Aug	199	27,566	122,003	3,178,484	163,228
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	199	27,583	125,061	3,185,727	164,742
1-Sep	199	27,607	127,473	3,191,029	164,747
2-Sep	199	27,634	130,265	3,196,683	164,753

3-Sep	199	27,642	131,925	3,199,359	164,756
4-Sep	199	27,675	133,177	3,201,301	164,758
5-Sep	199	27,688	133,700	3,202,340	164,761
6-Sep	199	27,719	133,794	3,202,435	164,761
7-Sep	199	27,719	133,794	3,202,435	164,761
8-Sep	199	27,719	133,794	3,202,435	164,761
9-Sep	199	27,719	133,794	3,202,435	164,761
10-Sep	199	27,719	133,794	3,202,435	164,761
11-Sep	199	27,719	133,794	3,202,435	164,761
12-Sep	199	27,720	133,945	3,202,548	164,762
13-Sep	199	27,720	134,164	3,202,548	164,762
14-Sep	199	27,720	134,164	3,202,548	164,762
15-Sep	199	27,720	134,164	3,202,548	164,762
16-Sep	199	27,720	134,499	3,202,548	164,762
17-Sep	199	27,720	134,499	3,202,548	164,762
18-Sep					
19-Sep	199	27,720	134,499	3,202,548	164,762
20-Sep	199	28,047	134,530	3,202,548	164,762
21-Sep	199	28,047	134,530	3,202,548	164,762
22-Sep	199	28,047	134,530	3,202,548	164,762
23-Sep	199	28,047	134,530	3,202,548	164,762

NW Afognak, Shuyak & Perenosa					
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	NW Afognak, Shuyak & Perenosa	NW Afognak, Shuyak & Perenosa	NW Afognak, Shuyak & Perenosa	NW Afognak, Shuyak & Perenosa	NW Afognak, Shuyak & Perenosa
10-Jun	1	3,545	0	0	4
11-Jun	1	3,545	0	0	4
12-Jun	1	4,131	0	12	304
13-Jun	CONFIDENTIAL				
14-Jun	1	4,618	0	0	18
15-Jun	2	5,424	0	1	53
16-Jun	2	5,616	0	1	60
17-Jun	2	5,616	0	1	60
18-Jun	2	6,653	0	9	60
19-Jun	2	6,653	0	9	60
20-Jun	2	6,653	0	9	60
21-Jun	2	6,653	0	9	60
22-Jun	2	6,653	0	9	60
23-Jun	2	7,346	0	12	66
24-Jun	2	7,346	0	12	66
25-Jun	2	7,346	0	12	66
26-Jun	2	7,346	0	12	66
27-Jun	2	7,346	0	12	66
28-Jun	2	7,710	0	12	66
29-Jun	2	7,951	0	12	66
30-Jun	2	7,951	0	12	66
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
1-Jul	2	7,951	0	12	66
2-Jul	CONFIDENTIAL				
3-Jul	2	8,052	0	12	66
4-Jul	2	8,052	0	12	66
5-Jul	2	8,052	0	12	66
6-Jul	2	8,052	0	12	66
7-Jul	2	9,177	0	45	98
8-Jul	3	9,459	0	61	130
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	3	9,459	0	61	130
13-Jul	3	9,459	0	61	130
14-Jul	3	9,570	852	479	336
15-Jul	43	9,785	1,412	1,027	628
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	43	10,160	1,488	1,439	827
19-Jul	43	10,160	1,488	1,439	827

20-Jul	43	10,160	1,488	1,439	827
21-Jul	43	10,160	1,488	1,439	827
22-Jul	43	10,160	1,488	1,439	827
23-Jul	47	10,191	2,708	2,606	911
24-Jul	51	10,222	3,928	3,773	995
25-Jul	52	10,343	5,646	6,307	1,496
26-Jul	52	10,343	5,646	6,307	1,496
27-Jul	52	10,343	5,646	6,307	1,496
28-Jul	52	10,343	5,646	6,307	1,496
29-Jul	52	10,343	5,646	6,307	1,496
30-Jul	52	10,343	5,646	6,307	1,496
31-Jul	52	10,343	5,646	6,307	1,496
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	52	10,343	5,646	6,307	1,496
2-Aug	52	10,343	5,646	6,307	1,496
3-Aug	52	10,343	5,646	6,307	1,496
4-Aug	52	10,343	5,646	6,307	1,496
5-Aug	52	10,343	5,646	6,307	1,496
6-Aug	52	10,343	5,646	6,307	1,496
7-Aug	52	10,343	5,464	6,307	1,496
8-Aug	52	10,343	5,646	6,307	1,496
9-Aug	52	10,343	5,646	6,307	1,496
10-Aug	52	10,343	5,646	6,307	1,496
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	52	10,343	5,646	6,307	1,496
14-Aug	52	10,343	5,646	6,307	1,496
15-Aug	52	10,343	5,646	6,307	1,496
16-Aug	52	10,348	8,424	6,634	1,496
17-Aug	52	10,375	14,841	13,545	1,504
18-Aug	52	10,375	14,841	13,545	1,504
19-Aug	52	10,375	18,987	14,257	1,508
20-Aug	52	10,378	19,709	14,575	1,509
21-Aug	52	10,378	19,709	14,575	1,509
22-Aug	52	10,378	19,709	14,575	1,509
23-Aug	52	10,378	19,709	14,575	1,509
24-Aug	52	10,378	19,709	14,575	1,509
25-Aug	52	10,378	19,709	14,575	1,509
26-Aug	52	10,504	19,946	14,636	1,510
27-Aug	52	10,509	20,996	14,661	1,510
28-Aug	52	10,509	20,996	14,661	1,510
29-Aug	52	10,509	20,996	14,661	1,510
30-Aug	52	10,509	20,996	14,661	1,510
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	52	10,509	20,996	14,661	1,510
1-Sep	52	10,631	21,733	14,700	1,512

2-Sep	52	10,631	21,733	14,700	1,512
3-Sep	52	10,631	22,403	14,700	1,512
4-Sep	52	10,631	22,403	14,700	1,512
5-Sep	52	10,631	22,403	14,700	1,512
6-Sep	52	10,631	22,403	14,700	1,512
7-Sep	52	10,631	22,403	14,700	1,512
8-Sep	52	10,631	25,000	14,700	1,512
9-Sep	52	10,632	26,210	14,700	1,512
10-Sep	52	10,632	26,210	14,700	1,512
11-Sep	52	10,632	26,210	14,700	1,512
12-Sep	52	10,632	26,210	14,700	1,512
13-Sep	52	10,632	26,210	14,700	1,512
14-Sep	52	10,632	26,210	14,700	1,512
15-Sep	52	10,823	26,413	14,700	1,512
16-Sep	52	10,823	26,730	14,700	1,512
17-Sep	52	10,826	28,340	14,700	1,516
18-Sep					
19-Sep	52	10,826	28,340	14,700	1,516
20-Sep	52	10,826	28,340	14,700	1,516
21-Sep	52	10,826	28,340	14,700	1,516
22-Sep	52	10,826	28,340	14,700	1,516
23-Sep	52	10,826	28,340	14,700	1,516

SE Afognak & Raspberry					
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
	Cumulative	**Cumulative**	**Cumulative**	**Cumulative**	**Cumulative**
	SE Afognak & Raspberry	SE Afognak & Raspberry	SE Afognak & Raspberry	SE Afognak & Raspberry	SE Afognak & Raspberry
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	CONFIDENTIAL				
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	0	0	0	0
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Jul	0	0	0	0	0
2-Jul	CONFIDENTIAL				
3-Jul	0	0	0	0	0
4-Jul	0	0	0	0	0
5-Jul	0	0	0	0	0
6-Jul	0	0	0	0	0
7-Jul	0	0	0	0	0
8-Jul	0	0	0	0	0
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	0	0	0	0	0
13-Jul	0	0	0	0	0
14-Jul	0	0	0	0	0
15-Jul	0	0	0	0	0
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	0	0	0	0	0
19-Jul	0	0	0	0	0
20-Jul	0	0	0	0	0

21-Jul	0	0	0	0	0
22-Jul	0	0	0	0	0
23-Jul	0	0	0	0	0
24-Jul	0	0	0	0	0
25-Jul	0	0	0	0	0
26-Jul	0	0	1	420	220
27-Jul	0	0	1	420	220
28-Jul	0	0	1	420	220
29-Jul	0	0	1	420	220
30-Jul	0	0	1	420	220
31-Jul	0	0	1	420	220
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	0	0	1	420	220
2-Aug	0	0	1	420	220
3-Aug	0	0	1	420	220
4-Aug	0	0	1	420	220
5-Aug	0	0	1	420	220
6-Aug	0	0	1	420	220
7-Aug	0	0	1	420	220
8-Aug	0	0	1	420	220
9-Aug	0	0	1	420	220
10-Aug	0	0	1	420	220
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	0	0	1	420	220
14-Aug	0	0	1	420	220
15-Aug	0	0	1	420	220
16-Aug	0	0	1	420	220
17-Aug	0	0	1	420	220
18-Aug	0	0	1	420	220
19-Aug	0	0	1	420	220
20-Aug	0	0	1	420	220
21-Aug	0	0	1	420	220
22-Aug	0	0	1	420	220
23-Aug	0	0	1	420	220
24-Aug	0	0	242	420	220
25-Aug	0	0	1,137	471	220
26-Aug	0	8	3,926	735	313
27-Aug	0	8	3,926	735	313
28-Aug	0	8	3,926	735	313
29-Aug	0	8	3,926	735	313
30-Aug	0	8	3,926	735	313
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	0	8	3,926	735	313
1-Sep	0	10	4,204	918	313
2-Sep	0	10	4,204	918	313

3-Sep	0	10	4,204	918	313
4-Sep	0	10	4,204	918	313
5-Sep	0	10	4,204	918	313
6-Sep	0	10	4,204	918	313
7-Sep	0	10	4,403	938	314
8-Sep	0	10	4,403	938	314
9-Sep	0	17	6,869	955	328
10-Sep	0	17	6,869	955	328
11-Sep	0	17	6,869	955	328
12-Sep	0	17	6,869	955	328
13-Sep	0	17	6,869	955	328
14-Sep	0	17	6,869	955	328
15-Sep	0	17	6,869	955	328
16-Sep	0	17	6,869	955	328
17-Sep	0	17	6,869	955	328
18-Sep					
19-Sep	0	17	6,869	955	328
20-Sep	0	17	6,869	955	328
21-Sep	0	17	6,869	955	328
22-Sep	0	17	6,869	955	328
23-Sep	0	17	6,869	955	328

Cape Igvak, Wide Bay, Mid & North Mainland					
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
	Cumulative	**Cumulative**	**Cumulative**	**Cumulative**	**Cumulative**
	Cape Igvak & Wide Bay	Cape Igvak & Wide Bay	Cape Igvak & Wide Bay	Cape Igvak & Wide Bay	Cape Igvak & Wide Bay
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	CONFIDENTIAL				
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	0	0	0	0
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Jul	0	0	0	0	0
2-Jul	CONFIDENTIAL				
3-Jul	0	0	0	0	0
4-Jul	0	0	0	0	0
5-Jul	0	0	0	0	0
6-Jul	0	0	0	0	0
7-Jul	0	0	0	0	0
8-Jul	0	0	0	0	0
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	0	0	0	0	0
13-Jul	0	0	0	0	0
14-Jul	0	0	0	0	0
15-Jul	0	0	0	0	0
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	0	0	0	0	0
19-Jul	0	0	0	0	0
20-Jul	0	0	0	0	0

21-Jul	0	0	0	0	0
22-Jul	0	0	0	0	0
23-Jul	0	0	0	0	0
24-Jul	0	0	0	0	0
25-Jul	0	0	0	0	0
26-Jul	0	0	0	0	0
27-Jul	0	0	0	0	0
28-Jul	0	0	0	0	0
29-Jul	0	0	0	0	0
30-Jul	0	0	0	0	0
31-Jul	0	0	0	0	0
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	0	0	0	0	0
2-Aug	0	0	0	0	0
3-Aug	0	0	0	0	0
4-Aug	0	0	0	0	0
5-Aug	0	0	0	0	0
6-Aug	0	0	0	0	0
7-Aug	0	0	0	0	0
8-Aug	0	0	0	0	0
9-Aug	0	0	0	0	0
10-Aug	0	0	0	0	0
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	0	0	0	0	0
14-Aug	0	0	0	0	0
15-Aug	0	0	0	0	0
16-Aug	0	0	0	0	0
17-Aug	0	0	0	0	0
18-Aug	0	0	0	0	0
19-Aug	0	0	0	0	0
20-Aug	0	0	0	0	0
21-Aug	0	0	0	0	0
22-Aug	0	0	0	0	0
23-Aug	0	0	0	0	0
24-Aug	0	0	0	0	0
25-Aug	0	0	0	0	0
26-Aug	0	0	0	0	0
27-Aug	0	0	0	0	0
28-Aug	0	0	0	0	0
29-Aug	0	0	0	0	0
30-Aug	0	0	0	0	0
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	0	0	0	0	0
1-Sep	0	0	0	0	0
2-Sep	0	0	0	0	0

3-Sep	0	0	0	0	0
4-Sep	0	0	0	0	0
5-Sep	0	0	0	0	0
6-Sep	0	0	0	0	0
7-Sep	0	0	0	0	0
8-Sep	0	0	0	0	0
9-Sep	0	0	0	0	0
10-Sep	0	0	0	0	0
11-Sep	0	0	0	0	0
12-Sep	0	0	0	0	0
13-Sep	0	0	0	0	0
14-Sep	0	0	0	0	0
15-Sep	0	0	0	0	0
16-Sep	0	0	0	0	0
17-Sep	0	0	0	0	0
18-Sep					
19-Sep	0	0	0	0	0
20-Sep	0	0	0	0	0
21-Sep	0	0	0	0	0
22-Sep	0	0	0	0	0
23-Sep	0	0	0	0	0

Mid & North Mainland					
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
	Cumulative	**Cumulative**	**Cumulative**	**Cumulative**	**Cumulative**
	Mid & North Mainland	Mid & North Mainland	Mid & North Mainland	Mid & North Mainland	Mid & North Mainland
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	CONFIDENTIAL				
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	0	0	0	0
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Jul	0	0	0	0	0
2-Jul	CONFIDENTIAL				
3-Jul	0	0	0	0	0
4-Jul	0	0	0	0	0
5-Jul	0	0	0	0	0
6-Jul	0	0	0	0	0
7-Jul	69	2,119	195	543	1,188
8-Jul	228	4,584	195	884	2,071
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	228	4,584	195	884	2,071
13-Jul	228	4,584	195	884	2,071
14-Jul	256	6,970	268	2,637	2,854
15-Jul	265	7,504	303	3,283	3,482
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	265	7,524	307	3,305	3,492
19-Jul	265	7,524	307	3,305	3,492
20-Jul	265	7,524	307	3,305	3,492

21-Jul	265	7,524	307	3,305	3,492
22-Jul	265	7,524	307	3,305	3,492
23-Jul	272	7,809	329	4,437	7,338
24-Jul	290	10,072	623	11,551	11,645
25-Jul	312	16,076	1,292	24,185	17,019
26-Jul	370	17,528	1,565	27,325	17,816
27-Jul	370	17,528	1,565	27,325	17,816
28-Jul	370	17,528	1,565	27,325	17,816
29-Jul	370	17,528	1,565	27,325	17,816
30-Jul	370	17,528	1,565	27,325	17,816
31-Jul	370	17,528	1,565	27,325	17,816
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	370	17,528	1,565	27,325	17,816
2-Aug	370	17,528	1,565	27,325	17,816
3-Aug	370	17,528	1,565	27,325	17,816
4-Aug	370	17,528	1,565	27,325	17,816
5-Aug	370	17,528	1,565	27,325	17,816
6-Aug	370	17,528	1,565	27,325	17,816
7-Aug	370	17,528	1,565	27,325	17,816
8-Aug	370	17,528	1,565	27,325	17,816
9-Aug	370	17,528	1,565	27,325	17,816
10-Aug	370	17,528	1,565	27,325	17,816
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	370	17,528	1,565	27,325	17,816
14-Aug	370	17,528	1,565	27,325	17,816
15-Aug	370	17,528	1,565	27,325	17,816
16-Aug	370	17,528	1,565	27,325	17,816
17-Aug	370	17,528	1,565	27,325	17,816
18-Aug	370	17,528	1,565	27,325	17,816
19-Aug	370	17,528	1,565	27,325	17,816
20-Aug	370	17,528	1,565	27,325	17,816
21-Aug	370	17,528	1,565	27,325	17,816
22-Aug	370	17,528	1,565	27,325	17,816
23-Aug	370	17,528	1,565	27,325	17,816
24-Aug	370	17,528	1,565	27,325	17,816
25-Aug	370	17,528	1,565	27,325	17,816
26-Aug	370	17,528	1,565	27,325	17,816
27-Aug	370	17,528	1,565	27,325	17,816
28-Aug	370	17,528	1,565	27,325	17,816
29-Aug	370	17,528	1,565	27,325	17,816
30-Aug	370	17,528	1,565	27,325	17,816
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	370	17,528	1,565	27,325	17,816
1-Sep	370	17,528	1,565	27,325	17,816
2-Sep	370	17,528	1,565	27,325	17,816

3-Sep	370	17,528	1,565	27,325	17,816
4-Sep	370	17,528	1,565	27,325	17,816
5-Sep	370	17,528	1,565	27,325	17,816
6-Sep	370	17,528	1,565	27,325	17,816
7-Sep	370	17,528	1,565	27,325	17,816
8-Sep	370	17,528	1,565	27,325	17,816
9-Sep	370	17,528	1,565	27,325	17,816
10-Sep	370	17,528	1,565	27,325	17,816
11-Sep	370	17,528	1,565	27,325	17,816
12-Sep	370	17,528	1,565	27,325	17,816
13-Sep	370	17,528	1,565	27,325	17,816
14-Sep	370	17,528	1,565	27,325	17,816
15-Sep	370	17,528	1,565	27,325	17,816
16-Sep	370	17,528	1,565	27,325	17,816
17-Sep	370	17,528	1,565	27,325	17,816
18-Sep					
19-Sep	370	17,528	1,565	27,325	17,816
20-Sep	370	17,528	1,565	27,325	17,816
21-Sep	370	17,528	1,565	27,325	17,816
22-Sep	370	17,528	1,565	27,325	17,816
23-Sep	370	17,528	1,565	27,325	17,816

Foul Bay SHA					
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Foul Bay SHA	Foul Bay SHA	Foul Bay SHA	Foul Bay SHA	Foul Bay SHA
10-Jun	1	3,253	0	0	4
11-Jun	1	3,253	0	0	4
12-Jun	1	3,759	0	0	4
13-Jun	CONFIDENTIAL				
14-Jun	1	4,258	0	0	4
15-Jun	1	4,258	0	0	4
16-Jun	1	4,280	0	0	4
17-Jun	1	4,280	0	0	4
18-Jun	1	5,161	0	0	4
19-Jun	1	5,161	0	0	4
20-Jun	1	5,161	0	0	4
21-Jun	1	5,161	0	0	4
22-Jun	1	5,161	0	0	4
23-Jun	1	5,589	0	0	4
24-Jun	1	5,589	0	0	4
25-Jun	1	5,589	0	0	4
26-Jun	1	5,589	0	0	4
27-Jun	1	5,589	0	0	4
28-Jun	1	5,953	0	0	4
29-Jun	1	6,194	0	0	4
30-Jun	1	6,194	0	0	4
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
1-Jul	1	6,194	0	0	4
2-Jul	CONFIDENTIAL				
3-Jul	1	6,295	0	0	4
4-Jul	1	6,295	0	0	4
5-Jul	1	6,295	0	0	4
6-Jul	1	6,295	0	0	4
7-Jul	1	6,295	0	0	4
8-Jul	1	6,295	0	0	4
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	1	6,295	0	0	4
13-Jul	1	6,295	0	0	4
14-Jul	1	6,295	0	0	4
15-Jul	1	6,295	0	0	4
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	1	6,295	0	0	4
19-Jul	1	6,295	0	0	4
20-Jul	1	6,295	0	0	4
21-Jul	1	6,295	0	0	4

22-Jul	1	6,295	0	0	4
23-Jul	1	6,295	0	0	4
24-Jul	1	6,295	0	0	4
25-Jul	1	6,295	0	0	4
26-Jul	1	6,295	0	0	4
27-Jul	1	6,295	0	0	4
28-Jul	1	6,295	0	0	4
29-Jul	1	6,295	0	0	4
30-Jul	1	6,295	0	0	4
31-Jul	1	6,295	0	0	4
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	1	6,295	0	0	4
2-Aug	1	6,295	0	0	4
3-Aug	1	6,295	0	0	4
4-Aug	1	6,295	0	0	4
5-Aug	1	6,295	0	0	4
6-Aug	1	6,295	0	0	4
7-Aug	1	6,295	0	0	4
8-Aug	1	6,295	0	0	4
9-Aug	1	6,295	0	0	4
10-Aug	1	6,295	0	0	4
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	1	6,295	0	0	4
14-Aug	1	6,295	0	0	4
15-Aug	1	6,295	0	0	4
16-Aug	1	6,295	0	0	4
17-Aug	1	6,295	0	0	4
18-Aug	1	6,295	0	0	4
19-Aug	1	6,295	0	0	4
20-Aug	1	6,295	0	0	4
21-Aug	1	6,295	0	0	4
22-Aug	1	6,295	0	0	4
23-Aug	1	6,295	0	0	4
24-Aug	1	6,295	0	0	4
25-Aug	1	6,295	0	0	4
26-Aug	1	6,295	0	0	4
27-Aug	1	6,295	0	0	4
28-Aug	1	6,295	0	0	4
29-Aug	1	6,295	0	0	4
30-Aug	1	6,295	0	0	4
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	1	6,295	0	0	4
1-Sep	1	6,295	0	0	4
2-Sep	1	6,295	0	0	4
3-Sep	1	6,295	0	0	4

4-Sep	1	6,295	0	0	4
5-Sep	1	6,295	0	0	4
6-Sep	1	6,295	0	0	4
7-Sep	1	6,295	0	0	4
8-Sep	1	6,295	0	0	4
9-Sep	1	6,295	0	0	4
10-Sep	1	6,295	0	0	4
11-Sep	1	6,295	0	0	4
12-Sep	1	6,295	0	0	4
13-Sep	1	6,295	0	0	4
14-Sep	1	6,295	0	0	4
15-Sep	1	6,295	0	0	4
16-Sep	1	6,295	0	0	4
17-Sep	1	6,295	0	0	4
18-Sep					
19-Sep	1	6,295	0	0	4
20-Sep	1	6,295	0	0	4
21-Sep	1	6,295	0	0	4
22-Sep	1	6,295	0	0	4
23-Sep	1	6,295	0	0	4

Waterfall SHA					
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Waterfall SHA	Waterfall SHA	Waterfall SHA	Waterfall SHA	Waterfall SHA
10-Jun	0	292	0	0	0
11-Jun	0	292	0	0	0
12-Jun	0	372	0	12	300
13-Jun	CONFIDENTIAL				
14-Jun	0	338	0	0	0
15-Jun	0	338	0	0	0
16-Jun	0	338	0	0	0
17-Jun	0	338	0	0	0
18-Jun	0	338	0	0	0
19-Jun	0	338	0	0	0
20-Jun	0	338	0	0	0
21-Jun	0	338	0	0	0
22-Jun	0	338	0	0	0
23-Jun	0	338	0	0	0
24-Jun	0	338	0	0	0
25-Jun	0	338	0	0	0
26-Jun	0	338	0	0	0
27-Jun	0	338	0	0	0
28-Jun	0	338	0	0	0
29-Jun	0	338	0	0	0
30-Jun	0	338	0	0	0
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
1-Jul	0	338	0	0	0
2-Jul	CONFIDENTIAL				
3-Jul	0	338	0	0	0
4-Jul	0	338	0	0	0
5-Jul	0	338	0	0	0
6-Jul	0	338	0	0	0
7-Jul	0	338	0	0	0
8-Jul	0	338	0	0	0
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	0	338	0	0	0
13-Jul	0	338	0	0	0
14-Jul	0	338	0	0	0
15-Jul	0	338	0	0	0
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	0	338	0	0	0
19-Jul	0	338	0	0	0
20-Jul	0	338	0	0	0
21-Jul	0	338	0	0	0

22-Jul	0	338	0	0	0
23-Jul	0	338	0	0	0
24-Jul	0	338	0	0	0
25-Jul	0	338	0	0	0
26-Jul	0	338	0	0	0
27-Jul	0	338	0	0	0
28-Jul	0	338	0	0	0
29-Jul	0	338	0	0	0
30-Jul	0	338	0	0	0
31-Jul	0	338	0	0	0
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	0	338	0	0	0
2-Aug	0	338	0	0	0
3-Aug	0	338	0	0	0
4-Aug	0	338	0	0	0
5-Aug	0	338	0	0	0
6-Aug	0	338	0	0	0
7-Aug	0	338	0	0	0
8-Aug	0	338	0	0	0
9-Aug	0	338	0	0	0
10-Aug	0	338	0	0	0
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	0	338	0	0	0
14-Aug	0	338	0	0	0
15-Aug	0	338	0	0	0
16-Aug	0	338	0	0	0
17-Aug	0	338	0	0	0
18-Aug	0	338	0	0	0
19-Aug	0	338	0	0	0
20-Aug	0	338	0	0	0
21-Aug	0	338	0	0	0
22-Aug	0	338	0	0	0
23-Aug	0	338	0	0	0
24-Aug	0	338	0	0	0
25-Aug	0	338	0	0	0
26-Aug	0	338	0	0	0
27-Aug	0	338	0	0	0
28-Aug	0	338	0	0	0
29-Aug	0	338	0	0	0
30-Aug	0	338	0	0	0
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	0	338	0	0	0
1-Sep	0	338	0	0	0
2-Sep	0	338	0	0	0
3-Sep	0	338	0	0	0

4-Sep	0	338	0	0	0
5-Sep	0	338	0	0	0
6-Sep	0	338	0	0	0
7-Sep	0	338	0	0	0
8-Sep	0	338	0	0	0
9-Sep	0	338	0	0	0
10-Sep	0	338	0	0	0
11-Sep	0	338	0	0	0
12-Sep	0	338	0	0	0
13-Sep	0	338	0	0	0
14-Sep	0	338	0	0	0
15-Sep	0	338	0	0	0
16-Sep	0	338	0	0	0
17-Sep	0	338	0	0	0
18-Sep					
19-Sep	0	338	0	0	0
20-Sep	0	338	0	0	0
21-Sep	0	338	0	0	0
22-Sep	0	338	0	0	0
23-Sep	0	338	0	0	0

Telrod Cove SHA					
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Telrod Cove SHA	Telrod Cove SHA	Telrod Cove SHA	Telrod Cove SHA	Telrod Cove SHA
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	CONFIDENTIAL				
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	0	0	0	0
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
1-Jul	0	0	0	0	0
2-Jul	CONFIDENTIAL				
3-Jul	0	0	0	0	0
4-Jul	0	0	0	0	0
5-Jul	0	12,507	0	6	3
6-Jul	0	12,507	0	6	3
7-Jul	0	12,507	0	6	3
8-Jul	0	12,507	0	6	3
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	0	21,214	0	50	61
13-Jul	0	21,214	0	50	61
14-Jul	0	21,214	0	50	61
15-Jul	0	21,214	0	50	61
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	0	28,862	0	217	101
19-Jul	0	28,862	0	217	101
20-Jul	0	28,862	0	217	101
21-Jul	0	28,862	0	217	101

22-Jul	0	36,056	0	1,367	188
23-Jul	0	36,056	0	1,367	188
24-Jul	0	36,056	0	1,367	188
25-Jul	0	58,608	0	3,227	268
26-Jul	0	47,332	0	2,297	228
27-Jul	0	47,332	0	2,297	228
28-Jul	0	49,950	0	2,396	244
29-Jul	0	49,950	0	2,396	244
30-Jul	0	49,950	0	2,396	244
31-Jul	0	49,950	0	2,396	244
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	0	52,878	0	2,805	307
2-Aug	0	56,604	4	3,515	381
3-Aug	0	58,611	6	3,998	526
4-Aug	0	58,611	6	3,998	526
5-Aug	0	60,455	6	4,422	576
6-Aug	0	60,590	7	4,530	606
7-Aug	0	60,590	7	4,530	606
8-Aug	0	61,650	7	4,710	606
9-Aug	0	62,133	7	4,802	606
10-Aug	0	62,770	7	4,944	610
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	0	62,770	7	4,944	610
14-Aug	0	62,770	7	4,944	610
15-Aug	0	62,770	7	4,944	610
16-Aug	0	62,770	7	4,944	610
17-Aug	0	63,326	9	5,064	611
18-Aug	0	63,326	9	5,064	611
19-Aug	0	63,326	9	5,064	611
20-Aug	0	63,326	9	5,064	611
21-Aug	0	63,326	9	5,064	611
22-Aug	0	63,326	9	5,064	611
23-Aug	0	63,326	9	5,064	611
24-Aug	0	63,326	9	5,064	611
25-Aug	0	63,326	9	5,064	611
26-Aug	0	63,326	9	5,064	611
27-Aug	0	63,326	9	5,064	611
28-Aug	0	63,326	9	5,064	611
29-Aug	0	63,326	9	5,064	611
30-Aug	0	63,326	9	5,064	611
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	0	63,326	9	5,064	611
1-Sep	0	63,326	9	5,064	611
2-Sep	0	63,326	9	5,064	611
3-Sep	0	63,326	9	5,064	611

4-Sep	0	63,326	9	5,064	611
5-Sep	0	63,326	9	5,064	611
6-Sep	0	63,326	9	5,064	611
7-Sep	0	63,326	9	5,064	611
8-Sep	0	63,326	9	5,064	611
9-Sep	0	63,326	9	5,064	611
10-Sep	0	63,326	9	5,064	611
11-Sep	0	63,326	9	5,064	611
12-Sep	0	63,326	9	5,064	611
13-Sep	0	63,326	9	5,064	611
14-Sep	0	63,326	9	5,064	611
15-Sep	0	63,326	9	5,064	611
16-Sep	0	63,326	9	5,064	611
17-Sep	0	63,326	9	5,064	611
18-Sep					
19-Sep	0	63,326	9	5,064	611
20-Sep	0	63,326	9	5,064	611
21-Sep	0	63,326	9	5,064	611
22-Sep	0	63,326	9	5,064	611
23-Sep	0	63,326	9	5,064	611

Telrod Cove Cost Recovery					
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
	Cumulative Telrod Cove Cost Recovery	**Cumulative** Telrod Cove Cost Recovery	**Cumulative** Telrod Cove Cost Recovery	**Cumulative** Telrod Cove Cost Recovery	**Cumulative** Telrod Cove Cost Recovery
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	CONFIDENTIAL				
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	0	0	0	0
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Jul	0	0	0	0	0
2-Jul	CONFIDENTIAL				
3-Jul	0	0	0	0	0
4-Jul	0	0	0	0	0
5-Jul	0	12,507	0	6	3
6-Jul	0	12,507	0	6	3
7-Jul	0	12,507	0	6	3
8-Jul	0	12,507	0	6	3
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	0	21,214	0	50	61
13-Jul	0	21,214	0	50	61
14-Jul	0	21,214	0	50	61
15-Jul	0	21,214	0	50	61
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	0	28,862	0	217	101
19-Jul	0	28,862	0	217	101
20-Jul	0	28,862	0	217	101

21-Jul	0	28,862	0	217	101
22-Jul	0	36,056	0	1,367	188
23-Jul	0	36,056	0	1,367	188
24-Jul	0	36,056	0	1,367	188
25-Jul	0	47,332	0	2,297	228
26-Jul	0	47,332	0	2,297	228
27-Jul	0	47,332	0	2,297	228
28-Jul	0	49,950	0	2,396	244
29-Jul	0	49,950	0	2,396	244
30-Jul	0	49,950	0	2,396	244
31-Jul	0	49,950	0	2,396	244
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	0	49,950	0	2,396	244
2-Aug	0	51,790	0	2,652	299
3-Aug	0	51,790	0	2,652	299
4-Aug	0	51,790	0	2,652	299
5-Aug	0	51,790	0	2,652	299
6-Aug	0	51,790	0	2,652	299
7-Aug	0	51,790	0	2,652	299
8-Aug	0	51,790	0	2,652	299
9-Aug	0	51,790	0	2,652	299
10-Aug	0	51,790	0	2,652	299
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	0	51,790	0	2,652	299
14-Aug	0	51,790	0	2,652	299
15-Aug	0	51,790	0	2,652	299
16-Aug	0	51,790	0	2,652	299
17-Aug	0	51,790	0	2,652	299
18-Aug	0	51,790	0	2,652	299
19-Aug	0	51,790	0	2,652	299
20-Aug	0	51,790	0	2,652	299
21-Aug	0	51,790	0	2,652	299
22-Aug	0	51,790	0	2,652	299
23-Aug	0	51,790	0	2,652	299
24-Aug	0	51,790	0	2,652	299
25-Aug	0	51,790	0	2,652	299
26-Aug	0	51,790	0	2,652	299
27-Aug	0	51,790	0	2,652	299
28-Aug	0	51,790	0	2,652	299
29-Aug	0	51,790	0	2,652	299
30-Aug	0	51,790	0	2,652	299
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	0	51,790	0	2,652	299
1-Sep	0	51,790	0	2,652	299
2-Sep	0	51,790	0	2,652	299

3-Sep	0	51,790	0	2,652	299
4-Sep	0	51,790	0	2,652	299
5-Sep	0	51,790	0	2,652	299
6-Sep	0	51,790	0	2,652	299
7-Sep	0	51,790	0	2,652	299
8-Sep	0	51,790	0	2,652	299
9-Sep	0	51,790	0	2,652	299
10-Sep	0	51,790	0	2,652	299
11-Sep	0	51,790	0	2,652	299
12-Sep	0	51,790	0	2,652	299
13-Sep	0	51,790	0	2,652	299
14-Sep	0	51,790	0	2,652	299
15-Sep	0	51,790	0	2,652	299
16-Sep	0	51,790	0	2,652	299
17-Sep	0	51,790	0	2,652	299
18-Sep					
19-Sep	0	51,790	0	2,652	299
20-Sep	0	51,790	0	2,652	299
21-Sep	0	51,790	0	2,652	299
22-Sep	0	51,790	0	2,652	299
23-Sep	0	51,790	0	2,652	299

Kitoi Cost Recovery					
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Kitoi Cost Recovery	Kitoi Cost Recovery	Kitoi Cost Recovery	Kitoi Cost Recovery	Kitoi Cost Recovery
10-Jun	0	0	0	0	0
11-Jun	0	0	0	0	0
12-Jun	0	0	0	0	0
13-Jun	CONFIDENTIAL				
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun	0	0	0	0	0
18-Jun	0	0	0	0	0
19-Jun	0	0	0	0	0
20-Jun	0	0	0	0	0
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun	0	0	0	0	0
24-Jun	0	0	0	0	0
25-Jun	0	0	0	0	0
26-Jun	0	0	0	0	0
27-Jun	0	0	0	0	0
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
	2018 Chinook	2018 Sockeye	2018 Coho	2018 Pink	2018 Chum
1-Jul	0	0	0	0	0
2-Jul	CONFIDENTIAL				
3-Jul	0	0	0	0	0
4-Jul	0	0	0	0	0
5-Jul	0	0	0	0	0
6-Jul	0	0	0	0	0
7-Jul	0	0	0	0	0
8-Jul	0	0	0	0	0
9-Jul	KMA CLOSED				
10-Jul					
11-Jul					
12-Jul	0	0	0	0	0
13-Jul	0	0	0	0	0
14-Jul	0	0	0	0	0
15-Jul	0	0	0	0	0
16-Jul	KMA CLOSED				
17-Jul					
18-Jul	0	0	0	0	0
19-Jul	0	0	0	0	0
20-Jul	0	0	0	0	0

21-Jul	0	0	0	0	0
22-Jul	0	0	0	0	0
23-Jul	0	0	0	0	0
24-Jul	0	0	0	0	0
25-Jul	0	0	0	0	0
26-Jul	0	0	0	0	0
27-Jul	0	0	0	0	0
28-Jul	0	0	0	0	0
29-Jul	0	0	0	0	0
30-Jul	0	0	0	0	0
31-Jul	0	0	0	0	0
	2018 Chinook	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
1-Aug	0	0	0	0	0
2-Aug	0	0	0	0	0
3-Aug	0	0	0	0	0
4-Aug	0	0	0	0	0
5-Aug	0	0	0	0	0
6-Aug	0	0	0	0	0
7-Aug	0	0	0	0	0
8-Aug	0	0	0	0	0
9-Aug	0	0	0	0	0
10-Aug	0	0	0	0	0
11-Aug	KMA CLOSED				
12-Aug					
13-Aug	0	0	0	0	0
14-Aug	0	0	0	0	0
15-Aug	0	0	0	0	0
16-Aug	0	0	0	0	0
17-Aug	0	0	0	0	0
18-Aug	0	0	0	0	0
19-Aug	0	0	0	0	0
20-Aug	0	0	0	0	0
21-Aug	0	0	0	0	0
22-Aug	0	0	0	0	0
23-Aug	0	0	0	0	0
24-Aug	0	0	0	0	0
25-Aug	0	0	0	0	0
26-Aug	0	0	0	0	0
27-Aug	0	0	0	0	0
28-Aug	0	0	0	0	0
29-Aug	0	0	0	0	0
	0	0	0	0	0
30-Aug	**2018 Chinook**	**2018 Sockeye**	**2018 Coho**	**2018 Pink**	**2018 Chum**
31-Aug	0	0	0	0	0
1-Sep	0	0	0	0	0
2-Sep	0	0	0	0	0
3-Sep	0	0	0	0	0

4-Sep	0	0	0	0	0
5-Sep	0	0	0	0	0
6-Sep	0	0	0	0	0
7-Sep	0	0	0	0	0
8-Sep	0	0	0	0	0
9-Sep	0	0	0	0	0
10-Sep	0	0	0	0	0
11-Sep	0	0	0	0	0
12-Sep	0	0	0	0	0
13-Sep	0	0	0	0	0
14-Sep	0	0	0	0	0
15-Sep	0	0	0	0	0
16-Sep	0	0	0	0	0
17-Sep	0	0	0	0	0
18-Sep					
19-Sep	0	0	0	0	0
20-Sep	0	0	0	0	0
21-Sep	0	0	0	0	0
22-Sep	0	0	0	0	0
23-Sep	0	0	0	0	0

2018 Kodiak Chinook Harvest

	Daily	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative		Cumulative
	Total Chinook Harvest	Karluk, NW Kodiak & SW Afognak	Ayakulik, Halibut Bay & Sturgeon	Alitak Bay, Olga, Moser & Dog Salmon	Cape Alitak & Humpy-Deadman	East & Northeast Kodiak	Duck, Izhut & Kitoi Bays	NW Afognak, Shuyak & Perenosa	SE Afognak & Raspberry	Cape Igvak & Wide Bay	Mid & North Mainland	Foul Bay SHA	Waterfall SHA	Telrod Cove SHA	Telrod Cove Cost Recovery	Kitoi cost Recovery	Igvak %	Cumulative Chinook Harvest
10-Jun	21	22	0	0	0	0	0	1	0	0	0	1	0	0	0	0		23
11-Jun	22	43	0	0	0	0	1	1	0	0	0	1	0	0	0	0		45
12-Jun	5	43	0	0	0	0	6	1	0	0	0	1	0	0	0	0		50
13-Jun																		
14-Jun	2	45	0	0	0	0	6	1	0	0	0	1	0	0	0	0		52
15-Jun	47	58	0	0	0	33	6	2	0	0	0	1	0	0	0	0		99
16-Jun	0	58	0	0	0	33	6	2	0	0	0	1	0	0	0	0		99
17-Jun	15	73	0	0	0	33	6	2	0	0	0	1	0	0	0	0		114
18-Jun	3	75	0	0	0	33	7	2	0	0	0	1	0	0	0	0		117
19-Jun	48	111	0	0	0	33	19	2	0	0	0	1	0	0	0	0		165
20-Jun	2	116	0	0	0	33	21	2	0	0	0	1	0	0	0	0		172
21-Jun	2	116	0	0	0	33	23	2	0	0	0	1	0	0	0	0		174
22-Jun	76	116	0	0	0	107	25	2	0	0	0	1	0	0	0	0		250
23-Jun	8	116	0	0	0	108	33	2	0	0	0	1	0	0	0	0		259
24-Jun	0	116	0	0	0	108	33	2	0	0	0	1	0	0	0	0		259
25-Jun	24	121	0	0	0	108	52	2	0	0	0	1	0	0	0	0		283
26-Jun	47	135	28	0	4	108	53	2	0	0	0	1	0	0	0	0		330
27-Jun	14	146	28	1	4	108	55	2	0	0	0	1	0	0	0	0		344
28-Jun	27	151	43	1	10	108	56	2	0	0	0	1	0	0	0	0		371
29-Jun	1	151	43	1	12	108	57	2	0	0	0	1	0	0	0	0		374
30-Jun	0	151	43	1	12	108	57	2	0	0	0	1	0	0	0	0		374
1-Jul	6	151	43	1	12	108	63	2	0	0	0	1	0	0	0	0		380
2-Jul																		
3-Jul	106	258	43	1	12	108	63	2	0	0	0	1	0	0	0	0		487
4-Jul	32	290	43	1	12	108	63	2	0	0	0	1	0	0	0	0		519
5-Jul	73	303	86	1	29	108	63	2	0	0	0	1	0	0	0	0		592
6-Jul	30	331	86	1	29	110	63	2	0	0	0	1	0	0	0	0		622
7-Jul	385	349	129	1	30	348	79	2	0	0	69	1	0	0	0	0		1,007
8-Jul	295	442	141	1	31	378	79	3	0	0	228	1	0	0	0	0		1,303
9-Jul																		
10-Jul																		
11-Jul																		
12-Jul	0	442	152	1	31	382	84	3	0	0	228	1	0	0	0	0		1,323
13-Jul	2	444	152	1	31	382	84	3	0	0	228	1	0	0	0	0		1,235
14-Jul	202	494	178	1	31	479	85	3	0	0	256	1	0	0	0	0		1,527
15-Jul	300	575	213	1	41	590	99	43	0	0	265	1	0	0	0	0		1,827
16-Jul																		
17-Jul																		
18-Jul	2	575	221	1	63	702	101	43	0	0	265	1	0	0	0	0		1,974
19-Jul	0	575	221	1	63	705	101	43	0	0	265	1	0	0	0	0		1,974
20-Jul	14	575	221	1	76	705	102	43	0	0	265	1	0	0	0	0		1,988
21-Jul	8	575	221	1	96	705	104	43	0	0	265	1	0	0	0	0		2,010
22-Jul	12	575	221	1	106	705	106	43	0	0	265	1	0	0	0	0		2,022
23-Jul	22	578	221	1	114	705	106	47	0	0	272	1	0	0	0	0		2,044
24-Jul	144	603	221	1	114	792	114	51	2	0	290	1	0	0	0	0		2,188
25-Jul	116	619	221	1	114	871	116	52	0	0	312	1	0	0	0	0		2,306

26-Jul	12	621	221	1	114	876	129	52	0	0	370	1	0	0	0	0
27-Jul	1	621	221	1	114	876	131	52	0	0	370	1	0	0	0	0
28-Jul	1	621	221	1	114	876	132	52	0	0	370	1	0	0	0	0	2,387
29-Jul	0	621	221	1	114	876	132	52	0	0	370	1	0	0	0	0	2,387
30-Jul	0	621	221	1	114	876	132	52	0	0	370	1	0	0	0	0	2,387
31-Jul	5	621	221	1	114	876	137	52	0	0	370	1	0	0	0	0	2,392
1-Aug	17	621	221	1	114	876	154	52	0	0	370	1	0	0	0	0	2,409
2-Aug	1	621	221	1	114	876	155	52	0	0	370	1	0	0	0	0	2,410
3-Aug	0	621	221	1	114	876	155	52	0	0	370	1	0	0	0	0	2,410
4-Aug	46	667	221	1	114	876	155	52	0	0	370	1	0	0	0	0	2,456
5-Aug	231	865	221	1	129	876	173	52	0	0	370	1	0	0	0	0	2,687
6-Aug	147	935	221	1	199	876	180	52	0	0	370	1	0	0	0	0	2,834
7-Aug	14	948	221	1	200	876	180	52	0	0	370	1	0	0	0	0	2,848
8-Aug	55	1,012	221	1	200	876	180	52	0	0	370	1	0	0	0	0	2,912
9-Aug	46	1,040	221	1	200	876	198	52	0	0	370	1	0	0	0	0	2,958
10-Aug	57	1,087	222	1	209	876	198	52	0	0	370	1	0	0	0	0	3,015
11-Aug																	
12-Aug																	
13-Aug	1	1,087	222	1	210	876	198	52	0	0	370	1	0	0	0	0	3,016
14-Aug	1	1,087	222	1	210	876	199	52	0	0	370	1	0	0	0	0	3,017
15-Aug	0	1,087	222	1	210	876	199	52	0	0	370	1	0	0	0	0	3,017
16-Aug	2	1,089	222	1	210	876	199	52	0	0	370	1	0	0	0	0	3,019
17-Aug	40	1,110	241	1	210	876	199	52	0	0	370	1	0	0	0	0	3,059
18-Aug	3	1,113	241	1	210	876	199	52	0	0	370	1	0	0	0	0	3,062
19-Aug	0	1,113	241	1	210	876	199	52	0	0	370	1	0	0	0	0	3,062
20-Aug	13	1,126	241	1	210	876	199	52	0	0	370	1	0	0	0	0	3,075
21-Aug	21	1,147	241	1	210	876	199	52	0	0	370	1	0	0	0	0	3,096
22-Aug	19	1,166	241	1	210	876	199	52	0	0	370	1	0	0	0	0	3,115
23-Aug	15	1,181	241	1	210	876	199	52	0	0	370	1	0	0	0	0	3,130
24-Aug	5	1,186	241	1	210	876	199	52	0	0	370	1	0	0	0	0	3,135
25-Aug	11	1,206	241	1	210	876	199	52	0	0	370	1	0	0	0	0	3,155
26-Aug	2	1,209	242	1	210	876	199	52	0	0	370	1	0	0	0	0	3,159
27-Aug	14	1,230	242	1	210	876	199	52	0	0	370	1	0	0	0	0	3,180
28-Aug	25	1,255	242	1	210	876	199	52	0	0	370	1	0	0	0	0	3,205
29-Aug	10	1,265	242	1	210	876	199	52	0	0	370	1	0	0	0	0	3,215
30-Aug	6	1,271	242	1	210	876	199	52	0	0	370	1	0	0	0	0	3,221
31-Aug	3	1,284	242	1	210	876	199	52	0	0	370	1	0	0	0	0	3,234
1-Sep	25	1,292	257	1	212	876	199	52	0	0	370	1	0	0	0	0	3,259
2-Sep	2	1,297	257	1	212	876	199	52	0	0	370	1	0	0	0	0	3,261
3-Sep	11	1,313	257	1	212	876	199	52	0	0	370	1	0	0	0	0	3,280
4-Sep	8	1,321	257	1	212	876	199	52	0	0	370	1	0	0	0	0	3,288
5-Sep	4	1,324	258	1	212	876	199	52	0	0	370	1	0	0	0	0	3,292
6-Sep	2	1,326	258	1	212	876	199	52	0	0	370	1	0	0	0	0	3,294
7-Sep	42	1,340	286	1	212	876	199	52	0	0	370	1	0	0	0	0	3,336
8-Sep	6	1,346	286	1	212	876	199	52	0	0	370	1	0	0	0	0	3,342
9-Sep	3	1,349	286	1	212	876	199	52	0	0	370	1	0	0	0	0	3,345
10-Sep	0	1,349	286	1	212	876	199	52	0	0	370	1	0	0	0	0	3,345
11-Sep	0	1,349	286	1	212	876	199	52	0	0	370	1	0	0	0	0	3,345
12-Sep	0	1,349	286	1	212	876	199	52	0	0	370	1	0	0	0	0	3,345
13-Sep	0	1,349	286	1	212	876	199	52	0	0	370	1	0	0	0	0	3,345
14-Sep	0	1,349	286	1	212	876	199	52	0	0	370	1	0	0	0	0	3,345
15-Sep	0	1,350	286	1	212	876	199	52	0	0	370	1	0	0	0	0	3,346

16-Sep	1	1,350	286	1	212	876	199	52	0	0	370	1	0	0	0	0	
17-Sep	0	1,350	286	1	212	876	199	52	0	0	370	1	0	0	0	0	
18-Sep																	
19-Sep	0	1,350	286	1	212	876	199	52	0	0	370	1	0	0	0	0	3,346
20-Sep	0	1,350	286	1	212	876	199	52	0	0	370	1	0	0	0	0	3,346
21-Sep	8	1,350	286	1	220	876	199	52	0	0	370	1	0	0	0	0	3,354
22-Sep	0	1,350	286	1	220	876	199	52	0	0	370	1	0	0	0	0	3,354
23-Sep	15	1,350	301	1	220	876	199	52	0	0	370	1	0	0	0	0	3,369

2018 Kodiak Sockeye Harvest

	Daily	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative		Cumulative
	Total Sockeye Harvest	Karluk, NW Kodiak & SW Afognak	Ayakulik, Halibut Bay & Sturgeon	Alitak Bay, Olga, Moser & Dog Salmon	Cape Alitak & Humpy-Deadman	East & Northeast Kodiak	Duck, Izhut & Kitoi Bays	NW Afognak, Shuyak & Perenosa	SE Afognak & Raspberry	Cape Igvak & Wide Bay	Mid & North Mainland	Foul Bay SHA	Waterfall SHA	Telrod Cove SHA	Telrod Cove Cost Recovery	Kitoi cost Recovery	Igvak %	Cumulative Sockeye Harvest
10-Jun	11,908	9,806	0	0	0	0	13	3,545	0	0	0	3,253	292	0	0	0	0.0%	13,364
11-Jun	7,831	17,594	0	0	0	0	56	3,545	0	0	0	3,253	292	0	0	0	0.0%	21,195
12-Jun	589	17,724	0	0	0	0	59	4,131	0	0	0	3,759	372	0	0	0	0.0%	21,914
13-Jun	CONFIDENTIAL																	
14-Jun	821	18,745	0	0	0	0	120	4,618	0	0	0	4,258	338	0	0	0	0.0%	23,483
15-Jun	6,954	23,145	0	0	0	1,550	318	5,424	0	0	0	4,258	338	0	0	0	0.0%	30,437
16-Jun	1,902	24,828	0	0	0	1,550	345	5,616	0	0	0	4,280	338	0	0	0	0.0%	32,339
17-Jun	8,896	30,663	0	0	0	1,550	3,406	5,616	0	0	0	4,280	338	0	0	0	0.0%	41,235
18-Jun	3,707	32,821	0	0	0	1,550	3,918	6,653	0	0	0	5,161	338	0	0	0	0.0%	44,942
19-Jun	8,953	39,755	0	0	0	1,550	5,937	6,653	0	0	0	5,161	338	0	0	0	0.0%	53,895
20-Jun	718	40,243	0	0	0	1,550	6,655	6,653	0	0	0	5,161	338	0	0	0	0.0%	55,101
21-Jun	518	40,243	0	0	0	1,550	7,173	6,653	0	0	0	5,161	338	0	0	0	0.0%	55,619
22-Jun	3,029	40,243	0	0	0	4,576	7,176	6,653	0	0	0	5,161	338	0	0	0	0.0%	58,648
23-Jun	493	40,243	0	0	0	5,666	7,241	7,346	0	0	0	5,589	338	0	0	0	0.0%	60,496
24-Jun	8	40,243	0	0	0	5,666	7,249	7,346	0	0	0	5,589	338	0	0	0	0.0%	60,504
25-Jun	6,016	42,286	0	3,960	0	5,666	7,262	7,346	0	0	0	5,589	338	0	0	0	0.0%	66,520
26-Jun	25,384	46,226	9,818	9,221	6,346	5,666	7,281	7,346	0	0	0	5,589	338	0	0	0	0.0%	91,904
27-Jun	10,047	47,776	12,774	12,289	8,749	5,666	7,351	7,346	0	0	0	5,589	338	0	0	0	0.0%	101,951
28-Jun	36,442	57,248	27,742	16,352	17,895	5,666	7,419	7,710	0	0	0	5,953	338	0	0	0	0.0%	140,032
29-Jun	251	57,416	32,354	16,352	18,663	5,666	7,429	7,951	0	0	0	6,194	338	0	0	0	0.0%	145,831
30-Jun	134	57,416	32,354	16,352	18,663	5,666	7,563	7,951	0	0	0	6,194	338	0	0	0	0.0%	145,965
1-Jul	32	57,416	32,354	16,352	18,663	5,666	7,595	7,951	0	0	0	5,194	338	0	0	0	0.0%	145,997
2-Jul	CONFIDENTIAL																	
3-Jul	19,478	79,671	32,354	16,352	18,663	5,666	7,595	8,052	0	0	0	6,295	338	0	0	0	0.0%	168,353
4-Jul	9,912	87,293	32,354	18,642	18,663	5,666	7,595	8,052	0	0	0	6,295	338	0	0	0	0.0%	178,265
5-Jul	34,150	107,389	40,008	21,906	21,799	5,666	7,595	8,052	0	0	0	6,295	338	12,507	12,507	0	0.0%	212,415
6-Jul	10,095	113,870	40,008	24,522	22,769	5,694	7,595	8,052	0	0	0	6,295	338	12,507	12,507	0	0.0%	222,510
7-Jul	20,054	122,842	43,157	26,139	25,381	9,185	7,815	9,177	0	0	2,119	6,295	338	12,507	12,507	0	0.0%	245,815
8-Jul	28,039	133,451	52,404	27,519	28,171	11,866	8,059	9,459	0	0	4,584	6,295	338	12,507	12,507	0	0.0%	275,513
9-Jul	KMA CLOSED																	
10-Jul																		
11-Jul																		
12-Jul	8,707	142,158	54,051	27,519	29,071	12,258	8,107	9,459	0	0	4,584	6,295	338	21,214	21,214	0	0.0%	287,207
13-Jul	8,982	147,101	54,051	30,090	30,539	12,258	8,107	9,459	0	0	4,584	6,295	338	21,214	21,214	0	0.0%	296,189
14-Jul	62,998	174,204	80,223	32,338	31,998	15,135	8,749	9,570	0	0	6,970	6,295	338	21,214	21,214	0	0.0%	359,187
15-Jul	43,922	195,209	92,089	34,743	36,239	17,568	9,972	9,785	0	0	7,504	6,295	338	21,216	21,214	0	0.0%	403,109
16-Jul	KMA CLOSED																	
17-Jul																		
18-Jul	7,964	203,803	94,958	34,743	45,939	17,847	10,296	10,160	0	0	7,524	6,295	338	28,862	28,862	0	0.0%	425,270
19-Jul	2,204	203,803	94,958	36,835	46,035	17,847	10,312	10,160	0	0	7,524	6,295	338	28,862	28,862	0	0.0%	427,474
20-Jul	6,609	203,803	94,958	39,231	49,685	17,847	10,875	10,160	0	0	7,524	6,295	338	28,862	28,862	0	0.0%	434,083
21-Jul	5,309	203,803	94,958	40,845	54,299	17,847	11,032	10,160	0	0	7,524	6,295	338	28,862	28,862	0	0.0%	440,468
22-Jul	6,425	210,997	94,958	42,530	58,135	17,847	11,936	10,160	0	0	7,524	6,295	338	36,056	36,056	0	0.0%	454,087
23-Jul	7,872	213,593	94,958	44,354	61,271	17,847	11,936	10,191	0	0	7,809	6,295	338	36,056	36,056	0	0.0%	461,959
24-Jul	18,278	225,827	94,958	44,354	61,478	20,420	12,620	10,222	286	0	10,072	6,295	338	36,056	36,056	0	0.0%	480,237
25-Jul	38,582	256,220	94,958	44,354	61,604	22,508	13,047	10,343	0	0	16,076	6,295	338	58,608	47,332	0	0.0%	519,110
26-Jul	1,099	245,328	94,958	44,354	61,817	23,673	14,343	10,343	0	0	17,582	6,295	338	47,332	47,332	0	0.0%	512,344

27-Jul	92	245,328	94,958	44,354	61,817	23,673	14,632	10,343	0	0	17,528	6,295	338	47,332	47,332	0	
28-Jul	302	247,946	94,958	44,354	61,817	23,673	14,934	10,343	0	0	17,528	6,295	338	49,950	49,950	0	
29-Jul	57	247,946	94,958	44,354	61,817	23,673	14,991	10,343	0	0	17,528	6,295	338	49,950	49,950	0	0.0%	515,610
30-Jul	226	247,946	94,958	44,354	61,817	23,673	15,217	10,343	0	0	17,528	6,295	338	49,950	49,950	0	0.0%	515,836
31-Jul	310	247,946	94,958	44,354	61,817	23,673	15,527	10,343	0	0	17,528	6,295	338	49,950	49,950	0	0.0%	516,146
1-Aug	3,207	250,874	94,958	44,354	61,817	23,673	15,806	10,343	0	0	17,528	6,285	338	52,878	49,950	0	0.0%	519,353
2-Aug	3,880	254,600	94,958	44,354	61,817	23,673	15,960	10,343	0	0	17,528	6,295	338	56,604	51,790	0	14.2%	523,233
3-Aug	2,115	256,607	94,958	44,354	61,817	23,673	16,068	10,343	0	0	17,528	6,295	338	58,611	51,790	0		525,348
4-Aug	30,482	281,423	94,958	49,355	61,978	23,673	16,572	10,343	0	0	17,528	6,295	338	58,611	51,790	0		555,830
5-Aug	59,364	331,723	94,958	56,324	62,552	23,673	18,093	10,343	0	0	17,528	6,295	338	60,455	51,790	0		615,194
6-Aug	30,450	355,760	94,958	59,509	65,224	23,673	18,649	10,343	0	0	17,528	6,295	338	60,590	51,790	0		645,644
7-Aug	24,555	371,947	97,556	59,509	70,570	23,673	19,073	10,343	0	0	17,528	6,295	338	60,590	51,790	0		670,199
8-Aug	26,729	402,992	97,556	64,504	71,057	23,673	19,454	10,343	0	0	17,528	6,295	338	61,650	51,790	0		707,107
9-Aug	60,531	455,459	98,638	69,137	71,283	23,673	21,577	10,343	0	0	17,528	6,295	338	62,133	51,790	0		767,638
10-Aug	36,380	478,145	105,844	73,891	72,113	23,673	22,441	10,343	0	0	17,528	6,295	338	62,770	51,790	0		804,018
11-Aug	KMA CLOSED																	
12-Aug																		
13-Aug	6,885	484,707	113,202	80,341	72,642	23,673	23,861	10,343	0	0	17,528	6,295	338	62,770	51,790	0		826,297
14-Aug	8,040	484,707	113,202	87,163	73,510	23,673	24,211	10,343	0	0	17,528	6,295	338	62,770	51,790	0		834,337
15-Aug	4,902	484,707	113,202	90,773	74,467	23,673	24,546	10,343	0	0	17,528	6,295	338	62,770	51,790	0		839,239
16-Aug	19,479	493,647	115,697	96,175	76,273	23,673	25,377	10,348	0	0	17,528	6,295	338	62,770	51,790	0		858,718
17-Aug	69,260	532,491	138,690	99,667	79,076	23,673	26,208	10,375	0	0	17,528	6,295	338	63,326	51,790	0		927,978
18-Aug	14,379	540,427	140,177	104,663	79,083	23,673	26,431	10,375	0	0	17,528	6,295	338	63,326	51,790	0		942,357
19-Aug	17,661	546,237	148,825	111,229	81,559	23,673	26,521	10,375	0	0	17,528	6,295	338	63,326	51,790	0		960,947
20-Aug	37,244	583,269	150,107	111,233	81,559	23,673	26,726	10,378	0	0	17,528	6,295	338	63,326	51,790	0		1,004,473
21-Aug	37,035	619,878	150,107	111,284	81,559	23,673	27,101	10,378	0	0	17,528	6,295	338	63,326	51,790	0		1,041,508
22-Aug	48,440	662,680	151,267	114,610	82,621	23,673	27,191	10,378	0	0	17,528	6,295	338	63,326	51,790	0		1,089,948
23-Aug	85,835	719,556	174,092	118,200	85,108	23,673	27,248	10,378	0	0	17,528	6,295	338	63,326	51,790	0		1,175,783
24-Aug	20,135	737,654	174,867	118,200	86,370	23,673	27,248	10,378	0	0	17,528	6,295	338	63,326	51,790	0		1,195,918
25-Aug	49,485	807,873	179,210	125,780	87,713	23,673	27,252	10,378	0	0	17,528	6,295	338	63,326	51,790	0		1,279,407
26-Aug	15,993	826,250	179,975	129,282	90,182	23,673	27,302	10,504	8	0	17,528	6,295	338	63,326	51,790	0		1,304,704
27-Aug	44,243	865,386	179,975	134,968	91,068	23,673	27,335	10,509	8	0	17,528	6,295	338	63,326	51,790	0		1,350,450
28-Aug	30,186	889,981	179,975	139,383	92,204	23,673	27,375	10,509	8	0	17,528	6,295	338	63,326	51,790	0		1,380,636
29-Aug	25,575	915,014	179,975	139,383	92,699	23,673	27,422	10,509	8	0	17,528	6,295	338	63,326	51,790	0		1,406,211
30-Aug	5,428	920,298	179,975	139,383	92,699	23,673	27,566	10,509	8	0	17,528	6,295	338	63,326	51,790	0		1,411,639
31-Aug	19,637	939,635	181,096	144,610	92,699	23,673	27,583	10,509	8	0	17,528	6,295	338	63,326	51,790	0		1,437,341
1-Sep	37,347	960,327	187,858	150,713	96,341	23,673	27,607	10,631	10	0	17,528	6,295	338	63,326	51,790	0		1,474,688
2-Sep	9,973	965,455	189,290	154,059	96,381	23,673	27,634	10,631	10	0	17,528	6,295	338	63,326	51,790	0		1,484,661
3-Sep	35,641	995,439	195,166	156,130	96,381	23,673	27,642	10,631	10	0	17,528	6,295	338	63,326	51,790	0		1,522,600
4-Sep	10,528	1,006,456	196,860	157,025	96,381	23,673	27,675	10,631	10	0	17,528	6,295	338	63,326	51,790	0		1,536,239
5-Sep	33,839	1,032,160	204,421	157,025	96,942	23,673	27,688	10,631	10	0	17,528	6,295	338	63,326	51,790	0		1,570,078
6-Sep	17,292	1,045,272	207,291	158,304	96,942	23,673	27,719	10,631	10	0	17,528	6,295	338	63,326	51,790	0		1,587,370
7-Sep	27,314	1,065,447	213,382	159,352	96,942	23,673	27,719	10,631	10	0	17,528	6,295	338	63,326	51,790	0		1,614,684
8-Sep	6,656	1,070,382	214,322	160,121	96,949	23,678	27,719	10,631	10	0	17,528	6,295	338	63,326	51,790	0		1,621,340
9-Sep	26,288	1,094,762	215,203	161,140	96,949	23,678	27,719	10,632	17	0	17,528	6,295	338	63,326	51,790	0		1,647,628
10-Sep	6,266	1,097,360	218,111	161,900	96,949	23,678	27,719	10,632	17	0	17,528	6,295	338	63,326	51,790	0		1,653,894
11-Sep	23,721	1,118,799	220,393	161,900	96,949	23,678	27,719	10,632	17	0	17,528	6,295	338	63,326	51,790	0		1,677,615
12-Sep	5,158	1,122,526	221,823	163,151	96,949	23,678	27,720	10,632	17	0	17,528	6,295	338	63,326	51,790	0		1,684,024
13-Sep	19,320	1,141,261	222,408	163,151	96,949	23,678	27,720	10,632	17	0	17,528	6,295	338	63,326	51,790	0		1,703,344
14-Sep	1,936	1,142,486	223,122	163,151	96,949	23,678	27,720	10,632	17	0	17,528	6,295	338	63,326	51,790	0		1,705,280
15-Sep	27,468	1,167,109	223,878	163,151	98,844	23,678	27,720	10,823	17	0	17,528	6,295	338	63,326	51,790	0		1,732,748
16-Sep	568	1,167,677	223,878	161,151	98,844	23,678	27,720	10,823	17	0	17,528	6,295	338	63,326	51,790	0		1,733,316
17-Sep	18,845	1,186,522	223,878	163,151	98,844	23,678	27,720	10,826	17	0	17,528	6,295	338	63,326	51,790	0		1,752,164

18-Sep																	
19-Sep	20,631	1,207,613	223,878	163,151	101,219	23,678	27,720	10,826	17	0	17,528	6,295	338	63,326	51,790	0	[illegible]
20-Sep	1,204	1,208,490	223,878	163,151	101,219	23,678	28,047	10,826	17	0	17,528	6,295	338	63,326	51,790	0	1,776,834
21-Sep	13,169	1,220,634	223,878	163,151	102,244	23,678	28,047	10,826	17	0	17,528	6,295	338	63,326	51,790	0	1,790,003
22-Sep	2,016	1,222,648	223,878	163,151	102,244	23,680	28,047	10,826	17	0	17,528	6,295	338	63,326	51,790	0	1,792,019
23-Sep	10,893	1,232,924	224,486	163,151	102,244	23,689	28,047	10,826	17	0	17,528	6,295	338	63,326	51,790	0	1,802,912

2018 Kodiak Coho Harvest

	Daily	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative		Cumulative
	Total Coho Harvest	Karluk, NW Kodiak & SW Afognak	Ayakulik, Halibut Bay & Sturgeon	Alitak Bay, Olga, Moser & Dog Salmon	Cape Alitak & Humpy-Deadman	East & Northeast Kodiak	Duck, Izhut & Kitoi Bays	NW Afognak, Shuyak & Perenosa	SE Afognak & Raspberry	Cape Igvak & Wide Bay	Mid & North Mainland	Foul Bay SHA	Waterfall SHA	Telrod Cove SHA	Telrod Cove Cost Recovery	Kitoi cost Recovery	Igvak %	Cumulative Coho Harvest
10-Jun	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0		1
11-Jun	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0		1
12-Jun	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0		1
13-Jun																		
14-Jun	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0		1
15-Jun	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0		2
16-Jun	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0		2
17-Jun	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0		3
18-Jun	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0		5
19-Jun	31	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0		36
20-Jun	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0		5
21-Jun	1	5	0	0	0	0	1	0	0	0	0	0	0	0	0	0		6
22-Jun	2	5	0	0	0	2	1	0	0	0	0	0	0	0	0	0		8
23-Jun	0	5	0	0	0	2	1	0	0	0	0	0	0	0	0	0		8
24-Jun	40	5	0	0	0	2	41	0	0	0	0	0	0	0	0	0		48
25-Jun	5	7	0	1	0	2	3	0	0	0	0	0	0	0	0	0		13
26-Jun	4	10	0	2	0	2	3	0	0	0	0	0	0	0	0	0		17
27-Jun	0	10	0	2	0	2	3	0	0	0	0	0	0	0	0	0		17
28-Jun	18	0	4	4	2	3	0	0	0	0	0	0	0	0	0	0		35
29-Jun	1	23	4	4	5	2	4	0	0	0	0	0	0	0	0	0		42
30-Jun	5	23	4	4	5	2	9	0	0	0	0	0	0	0	0	0		47
1-Jul	7	23	4	4	5	2	16	0	0	0	0	0	0	0	0	0		54
2-Jul																		
3-Jul	88	122	4	4	5	2	16	0	0	0	0	0	0	0	0	0		153
4-Jul	83	205	4	4	5	2	16	0	0	0	0	0	0	0	0	0		236
5-Jul	197	387	12	5	11	2	16	0	0	0	0	0	0	0	0	0		433
6-Jul	138	477	12	5	14	47	16	0	0	0	0	0	0	0	0	0		571
7-Jul	2,801	744	56	8	21	2,030	318	0	0	0	195	0	0	0	0	0		3,372
8-Jul	1,354	1,114	101	18	114	2,802	510	0	0	0	195	0	0	0	0	0		4,854
9-Jul																		
10-Jul																		
11-Jul																		
12-Jul	0	11,174	131	18	116	2,959	586	0	0	0	195	0	0	0	0	0		5,119
13-Jul	121	1,213	131	36	120	2,959	586	0	0	0	195	0	0	0	0	0		5,240
14-Jul	6,789	3,865	271	42	122	5,609	1,000	852	0	0	268	0	0	0	0	0		12,029
15-Jul	7,791	6,197	333	44	265	9,613	1,653	1,412	0	0	303	0	0	0	0	0		19,820
16-Jul																		
17-Jul																		
18-Jul	247	6,543	374	44	304	11,365	1,908	1,488	0	0	307	0	0	0	0	0		22,333
19-Jul	10	6,543	374	54	304	11,365	1,908	1,488	0	0	307	0	0	0	0	0		22,343
20-Jul	367	6,543	374	82	106	11,365	2,145	1,488	0	0	307	0	0	0	0	0		22,710
21-Jul	358	6,543	374	124	434	11,365	2,437	1,488	0	0	307	0	0	0	0	0		23,072
22-Jul	1,173	6,543	374	197	458	11,365	3,513	1,488	0	0	307	0	0	0	0	0		24,245
23-Jul	1,427	6,647	374	242	494	11,365	3,513	2,708	0	0	329	0	0	0	0	0		25,672
24-Jul	9,880	9,211	374	242	516	15,700	4,638	3,928	320	0	623	0	0	0	0	0		35,552

25-Jul	10,471	11,102	374	242	565	21,660	5,205	5,646	0	0	1,292	0	0	0	0	0	
26-Jul	1,300	11,226	374	242	598	25,514	6,716	5,646	1	0	1,565	0	0	0	0	0	
27-Jul	320	11,226	374	242	598	25,514	7,247	5,646	1	0	1,565	0	0	0	0	0	52,413
28-Jul	829	11,226	374	242	598	25,514	8,076	5,646	1	0	1,565	0	0	0	0	0	53,242
29-Jul	91	11,226	374	242	598	25,514	8,167	5,646	1	0	1,565	0	0	0	0	0	53,333
30-Jul	553	11,226	374	242	598	25,514	8,720	5,646	1	0	1,565	0	0	0	0	0	53,886
31-Jul	1,658	11,226	374	242	598	25,514	10,378	5,646	1	0	1,565	0	0	0	0	0	55,544
1-Aug	2,823	11,226	374	242	598	25,514	13,201	5,646	1	0	1,565	0	0	0	0	0	58,367
2-Aug	2,232	11,230	374	242	598	25,514	15,429	5,646	1	0	1,565	0	0	4	0	0	60,599
3-Aug	1,650	11,232	374	242	598	25,514	17,077	5,646	1	0	1,565	0	0	6	0	0	62,249
4-Aug	7,178	14,074	374	298	605	25,514	21,350	5,646	1	0	1,565	0	0	6	0	0	69,427
5-Aug	16,123	23,174	374	427	675	25,514	28,174	5,646	1	0	1,565	0	0	6	0	0	85,550
6-Aug	9,754	26,241	374	536	1,145	25,514	34,282	5,646	1	0	1,565	0	0	7	0	0	95,304
7-Aug	8,890	29,658	488	536	2,046	25,514	38,740	5,646	1	0	1,565	0	0	7	0	0	104,194
8-Aug	5,409	33,102	488	713	2,081	25,514	41,183	5,646	1	0	1,565	0	0	7	0	0	110,293
9-Aug	6,929	36,527	499	877	2,132	25,514	44,461	5,646	1	0	1,565	0	0	7	0	0	117,222
10-Aug	6,720	41,782	1,040	1,106	2,512	25,514	44,776	5,646	1	0	1,565	0	0	7	0	0	123,942
11-Aug																	
12-Aug																	
13-Aug	1,761	44,433	1,435	1,520	2,649	25,514	47,191	5,646	1	0	1,565	0	0	7	0	0	129,954
14-Aug	7,568	44,433	1,435	2,078	2,751	25,514	54,099	5,646	1	0	1,565	0	0	7	0	0	137,522
15-Aug	10,253	44,433	1,435	2,243	3,297	25,514	63,641	5,646	1	0	1,565	0	0	7	0	0	147,775
16-Aug	16,215	45,542	1,805	2,527	4,080	25,514	74,532	8,424	1	0	1,565	0	0	7	0	0	163,990
17-Aug	29,214	57,224	6,074	2,735	4,774	25,514	80,476	14,841	1	0	1,565	0	0	9	0	0	193,204
18-Aug	5,570	58,743	6,506	3,176	4,793	25,514	83,635	14,841	1	0	1,565	0	0	9	0	0	198,774
19-Aug	10,117	62,258	7,509	3,597	5,267	25,514	84,915	18,987	1	0	1,565	0	0	9	0	0	209,613
20-Aug	17,408	66,016	7,788	3,607	5,267	25,514	97,833	19,709	1	0	1,565	0	0	9	0	0	227,300
21-Aug	13,503	74,540	7,788	3,640	5,267	25,514	102,779	19,709	1	0	1,565	0	0	9	0	0	240,803
22-Aug	11,744	79,198	8,029	3,910	5,472	25,514	109,149	19,709	1	0	1,565	0	0	9	0	0	252,547
23-Aug	13,716	84,624	14,591	4,155	6,117	25,514	109,987	19,709	1	0	1,565	0	0	9	0	0	266,263
24-Aug	5,973	88,673	15,150	4,155	6,750	25,514	110,478	19,709	242	0	1,565	0	0	9	0	0	272,236
25-Aug	11,992	99,178	16,070	4,838	7,454	25,514	112,101	19,709	1,137	0	1,565	0	0	9	0	0	287,566
26-Aug	6,296	103,333	16,180	5,147	10,847	25,514	112,455	19,946	3,926	0	1,565	0	0	9	0	0	298,913
27-Aug	6,357	108,276	16,180	5,673	11,119	25,514	112,795	20,996	3,926	0	1,565	0	0	9	0	0	306,044
28-Aug	8,582	113,977	16,180	6,128	11,308	25,514	115,032	20,996	3,926	0	1,565	0	0	9	0	0	314,626
29-Aug	10,283	119,901	16,180	6,128	11,601	25,514	119,098	20,996	3,926	0	1,565	0	0	9	0	0	324,909
30-Aug	3,998	120,994	16,180	6,128	11,601	25,514	122,003	20,996	3,926	0	1,565	0	0	9	0	0	328,907
31-Aug	6,236	124,697	16,448	6,473	11,601	25,514	125,061	20,996	3,926	0	1,565	0	0	9	0	0	336,281
1-Sep	10,357	128,598	17,465	6,947	13,139	25,514	127,473	21,733	4,204	0	1,565	0	0	9	0	0	346,638
2-Sep	4,808	129,978	17,752	7,274	13,161	25,514	130,265	21,733	4,204	0	1,565	0	0	9	0	0	351,446
3-Sep	9,928	136,258	19,010	7,559	13,161	25,514	131,925	22,403	4,204	0	1,565	0	0	9	0	0	361,599
4-Sep	5,203	140,291	19,483	7,709	13,161	25,514	133,177	22,403	4,204	0	1,565	0	0	9	0	0	367,507
5-Sep	7,877	145,685	21,016	7,709	13,588	25,514	133,700	22,403	4,204	0	1,565	0	0	9	0	0	375,384
6-Sep	3,285	148,329	21,461	7,811	13,588	25,514	133,794	22,403	4,204	0	1,565	0	0	9	0	0	378,669
7-Sep	4,489	151,526	22,442	7,923	13,588	25,514	133,794	22,403	4,403	0	1,565	0	0	9	0	0	383,158
8-Sep	6,655	152,738	22,607	7,987	13,588	28,131	133,794	25,000	4,403	0	1,565	0	0	9	0	0	389,813
9-Sep	8,367	155,781	22,722	8,061	13,588	29,590	133,794	26,210	6,869	0	1,565	0	0	9	0	0	398,180
10-Sep	705	156,069	23,098	8,102	13,588	29,590	133,794	26,210	6,869	0	1,565	0	0	9	0	0	398,885
11-Sep	5,233	160,805	23,595	8,102	13,588	29,590	133,794	26,210	6,869	0	1,565	0	0	9	0	0	404,118
12-Sep	874	161,218	24,024	8,152	13,588	29,590	133,945	26,210	6,869	0	1,565	0	0	9	0	0	405,042
13-Sep	2,957	163,837	24,024	8,152	13,588	29,590	134,164	26,210	6,869	0	1,565	0	0	9	0	0	407,999
14-Sep	163	163,895	24,129	8,152	13,588	29,590	134,164	26,210	6,869	0	1,565	0	0	9	0	0	408,162

15-Sep	5,609	165,782	24,231	8,152	13,918	32,677	134,164	26,413	6,869	0	1,565	0	0	9	0	0	
16-Sep	9,142	165,822	24,231	8,152	13,918	41,127	134,499	26,730	6,869	0	1,565	0	0	9	0	0	
17-Sep	1,210	167,032	24,231	8,152	13,918	41,127	134,499	28,340	6,869	0	1,565	0	0	9	0	0	425,733
18-Sep																	
19-Sep	785	167,881	24,231	8,152	14,262	41,127	134,521	28,340	6,869	0	1,565	0	0	9	0	0	426,948
20-Sep	502	168,374	24,231	8,152	14,262	41,127	134,530	28,340	6,869	0	1,565	0	0	9	0	0	427,450
21-Sep	552	168,736	24,131	8,152	14,452	41,127	134,530	28,340	6,869	0	1,565	0	0	9	0	0	428,002
22-Sep	6,975	168,820	24,231	8,152	14,452	48,018	134,530	28,340	6,869	0	1,565	0	0	9	0	0	434,977
23-Sep	4,111	169,427	24,323	8,152	14,452	51,430	134,530	28,340	6,869	0	1,565	0	0	9	0	0	439,088

2018 Kodiak Pink Harvest

	Daily	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative		Cumulative
	Total Pink Harvest	Karluk, NW Kodiak & SW Afognak	Ayakulik, Halibut Bay & Sturgeon	Alitak Bay, Olga, Moser & Dog Salmon	Cape Alitak & Humpy-Deadman	East & Northeast Kodiak	Duck, Izhut & Kitoi Bays	NW Afognak, Shuyak & Perenosa	SE Afognak & Raspberry	Cape Igvak & Wide Bay	Mid & North Mainland	Foul Bay SHA	Waterfall SHA	Telrod Cove SHA	Telrod Cove Cost Recovery	Kitoi cost Recovery	Igvak %	Cumulative Pink Harvest
10-Jun	10	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0		16
11-Jun	26	36	0	0	0	0	6	0	0	0	0	0	0	0	0	0		42
12-Jun	17	36	0	0	0	0	11	12	0	0	0	0	12	0	0	0		59
13-Jun	CONFIDENTIAL																	
14-Jun	13	36	0	0	0	0	0	36	0	0	0	0	0	0	0	0		72
15-Jun	587	183	0	0	0	437	38	1	0	0	0	0	0	0	0	0		659
16-Jun	358	541	0	0	0	437	38	1	0	0	0	0	0	0	0	0		1,017
17-Jun	597	791	0	0	0	437	385	1	0	0	0	0	0	0	0	0		1,614
18-Jun	390	909	0	0	0	437	649	9	0	0	0	0	0	0	0	0		2,004
19-Jun	405	1,024	0	0	0	437	939	9	0	0	0	0	0	0	0	0		2,409
20-Jun	108	1,027	0	0	0	437	1,047	9	0	0	0	0	0	0	0	0		2,520
21-Jun	197	1,027	0	0	0	437	1,244	9	0	0	0	0	0	0	0	0		2,717
22-Jun	1,182	1,027	0	0	0	1,611	1,252	9	0	0	0	0	0	0	0	0		3,899
23-Jun	21	1,027	0	0	0	2,079	1,273	12	0	0	0	0	0	0	0	0		4,391
24-Jun	7	1,027	0	0	0	2,079	1,280	12	0	0	0	0	0	0	0	0		4,398
25-Jun	42	1,048	0	40	0	2,079	1,297	12	0	0	0	0	0	0	0	0		4,440
26-Jun	355	1,156	146	16	80	2,079	1,306	12	0	0	0	0	0	0	0	0		4,795
27-Jun	267	1,246	202	36	110	2,079	1,377	12	0	0	0	0	0	0	0	0		5,062
28-Jun	1,123	1,737	683	40	248	2,079	1,418	12	0	0	0	0	0	0	0	0		6,217
29-Jun	13	1,758	815	40	287	2,079	1,431	12	0	0	0	0	0	0	0	0		6,422
30-Jun	15	1,758	815	40	287	2,079	1,446	12	0	0	0	0	0	0	0	0		6,437
1-Jul	7	1,758	815	40	287	2,079	1,453	12	0	0	0	0	0	0	0	0		6,444
2-Jul	CONFIDENTIAL																	
3-Jul	2,029	3,843	815	40	287	2,079	1,453	12	0	0	0	0	0	0	0	0		8,529
4-Jul	1,966	5,790	815	59	287	2,079	1,453	12	0	0	0	0	0	0	0	0		10,495
5-Jul	1,984	7,088	1,327	104	416	2,079	1,453	12	0	0	0	0	0	6	6	0		12,479
6-Jul	2,723	9,718	1,327	130	467	2,095	1,453	12	0	0	0	0	0	6	6	0		15,202
7-Jul	6,888	12,433	2,923	217	629	3,920	1,904	45	0	0	543	0	0	6	6	0		22,614
8-Jul	7,631	15,625	5,214	317	934	5,489	2,095	61	0	0	884	0	0	6	6	0		30,619
9-Jul	KMA CLOSED																	
10-Jul																		
11-Jul																		
12-Jul	44	15,669	6,049	317	1,029	5,959	2,142	61	0	0	884	0	0	50	50	0		32,110
13-Jul	2,637	17,762	6,049	521	1,369	5,959	2,142	61	0	0	884	0	0	50	50	0		34,747
14-Jul	40,872	42,254	14,924	751	2,964	8,109	3,501	479	0	0	2,637	0	0	50	50	0		75,619
15-Jul	50,879	73,373	24,237	1,015	5,235	11,741	6,587	1,027	0	0	3,283	0	0	50	50	0		126,498
16-Jul	KMA CLOSED																	
17-Jul																		
18-Jul	1,194	76,981	28,174	1,015	8,074	12,807	7,642	1,439	0	0	3,305	0	0	217	217	0		139,437
19-Jul	749	76,981	28,174	1,477	8,343	12,807	7,660	1,439	0	0	3,305	0	0	217	217	0		140,186
20-Jul	10,570	76,981	28,174	2,599	14,438	12,807	11,013	1,439	0	0	3,305	0	0	217	217	0		150,756
21-Jul	6,612	76,981	28,174	3,746	18,936	12,807	12,587	1,439	0	0	3,305	0	0	217	217	0		157,975
22-Jul	17,322	78,131	28,174	5,416	25,233	12,807	21,942	1,439	0	0	3,305	0	0	1,367	1,367	0		176,447
23-Jul	27,964	85,426	28,174	7,028	41,991	12,807	21,942	2,606	0	0	4,437	0	0	1,367	1,367	0		204,411
24-Jul	97,532	125,573	28,174	7,028	52,530	32,232	36,974	3,773	4,108	0	11,551	0	0	1,367	1,367	0		301,943

25-Jul	80,422	157,475	28,174	7,028	69,124	49,219	43,329	6,307	0	0	24,185	0	0	3,227	2,297		
26-Jul	14,291	159,679	28,174	7,028	79,214	61,121	61,295	6,307	420	0	27,325	0	0	2,297	2,297	0	[illegible]
27-Jul	8,691	159,679	28,174	7,028	79,214	61,121	73,661	6,307	420	0	27,325	0	0	2,297	2,297	0	442,929
28-Jul	37,023	159,778	28,174	7,028	79,214	61,121	110,684	6,307	420	0	27,325	0	0	2,396	2,396	0	480,051
29-Jul	19,031	159,778	28,174	7,028	79,214	61,121	129,715	6,307	420	0	27,325	0	0	2,396	2,396	0	499,082
30-Jul	55,395	159,778	28,174	7,028	79,214	61,121	185,110	6,307	420	0	27,325	0	0	2,396	2,396	0	554,477
31-Jul	64,214	159,778	28,174	7,028	79,214	61,121	249,324	6,307	420	0	27,325	0	0	2,396	2,396	0	618,691
1-Aug	213,110	160,187	28,174	7,028	79,214	61,121	462,025	6,307	420	0	27,325	0	0	2,805	2,396	0	831,801
2-Aug	148,532	160,897	28,174	7,028	79,214	61,121	609,847	6,307	420	0	27,325	0	0	3,515	2,652	0	980,333
3-Aug	149,823	161,380	28,174	7,028	79,214	61,121	759,187	6,307	420	0	27,325	0	0	3,998	2,652	0	1,130,156
4-Aug	415,017	295,066	28,174	15,361	117,302	61,121	994,097	6,307	420	0	27,325	0	0	3,998	2,652	0	1,545,173
5-Aug	675,609	616,924	28,174	29,255	186,358	61,121	1,264,898	6,307	420	0	27,325	0	0	4,422	2,652	0	2,220,782
6-Aug	509,199	797,185	28,174	39,431	232,878	61,121	1,537,140	6,307	420	0	27,325	0	0	4,530	2,652	0	2,729,981
7-Aug	406,649	980,190	33,714	39,431	293,228	61,121	1,694,894	6,307	420	0	27,325	0	0	4,530	2,652	0	3,136,630
8-Aug	310,998	1,159,035	33,714	47,560	294,905	61,121	1,878,878	6,307	420	0	27,325	0	0	4,710	2,652	0	3,509,265
9-Aug	730,928	1,336,624	37,219	54,338	299,657	61,121	2,417,182	6,307	420	0	27,325	0	0	4,802	2,652	0	4,240,193
10-Aug	183,523	1,436,213	88,208	62,244	305,509	61,121	2,436,369	6,307	420	0	27,325	0	0	4,944	2,652	0	4,423,716
11-Aug	KMA CLOSED																
12-Aug																	
13-Aug	37,719	1,458,073	123,524	68,303	311,794	61,121	2,476,916	6,307	420	0	27,325	0	0	4,944	2,652	0	4,533,783
14-Aug	134,204	1,458,073	123,524	74,272	327,838	61,121	2,589,107	6,307	420	0	27,325	0	0	4,944	2,652	0	4,667,987
15-Aug	182,355	1,458,073	123,524	77,190	336,118	61,121	2,760,264	6,307	420	0	27,325	0	0	4,944	2,652	0	4,850,342
16-Aug	435,026	1,469,130	127,956	79,980	629,030	61,121	2,883,772	6,634	420	0	27,325	0	0	4,944	2,652	0	5,285,368
17-Aug	181,909	1,531,717	162,434	82,295	644,756	61,121	2,943,664	13,545	420	0	27,325	0	0	5,064	2,652	0	5,467,277
18-Aug	59,578	1,541,539	165,661	84,726	650,017	61,121	2,982,501	13,545	420	0	27,325	0	0	5,064	2,652	0	5,526,855
19-Aug	45,859	1,556,280	168,143	92,170	659,843	61,121	2,996,623	14,257	420	0	27,325	0	0	5,064	2,652	0	5,576,182
20-Aug	107,013	1,583,531	171,764	92,240	359,843	61,121	3,075,997	14,575	420	0	27,325	0	0	5,064	2,652	0	5,686,816
21-Aug	61,318	1,616,175	171,764	92,422	659,843	61,121	3,104,489	14,575	420	0	27,325	0	0	5,064	2,652	0	5,748,134
22-Aug	54,398	1,642,154	172,763	93,456	660,764	61,121	3,129,954	14,575	420	0	27,325	0	0	5,064	2,652	0	5,802,532
23-Aug	43,708	1,663,162	187,142	94,317	663,518	61,121	3,134,660	14,575	420	0	27,325	0	0	5,064	2,652	0	5,846,240
24-Aug	24,749	1,681,118	187,700	94,317	667,267	61,121	3,137,146	14,575	420	0	27,325	0	0	5,064	2,652	0	5,870,989
25-Aug	29,385	1,704,989	189,273	96,646	669,570	61,121	3,145,794	14,575	471	0	27,325	0	0	5,064	2,652	0	5,909,764
26-Aug	6,610	1,711,312	189,425	97,169	671,034	61,121	3,147,900	14,636	735	0	27,325	0	0	5,064	2,652	0	5,920,657
27-Aug	10,727	1,717,904	189,425	98,111	671,590	61,121	3,150,803	14,661	735	0	27,325	0	0	5,064	2,652	0	5,931,675
28-Aug	14,923	1,724,317	189,425	98,722	671,882	61,121	3,158,410	14,661	735	0	27,325	0	0	5,064	2,652	0	5,946,598
29-Aug	18,010	1,728,645	189,425	98,722	671,969	61,121	3,172,005	14,661	735	0	27,325	0	0	5,064	2,652	0	5,964,608
30-Aug	7,222	1,729,388	189,425	98,722	671,969	61,121	3,178,484	14,661	735	0	27,325	0	0	5,064	2,652	0	5,971,830
31-Aug	10,242	1,732,579	189,549	98,989	671,969	61,121	3,185,727	14,661	735	0	27,325	0	0	5,064	2,652	0	5,982,655
1-Sep	8,757	1,734,377	190,087	99,401	672,454	61,121	3,191,029	14,700	918	0	27,325	0	0	5,064	2,652	0	5,991,412
2-Sep	6,884	1,735,076	190,260	99,759	672,454	61,121	3,196,683	14,700	918	0	27,325	0	0	5,064	2,652	0	5,998,296
3-Sep	4,656	1,736,612	190,615	99,923	672,454	61,121	3,199,359	14,700	918	0	27,325	0	0	5,064	2,652	0	6,003,027
4-Sep	2,462	1,737,253	190,670	99,960	672,454	61,121	3,201,301	14,700	918	0	27,325	0	0	5,064	2,652	0	6,005,702
5-Sep	1,893	1,737,808	190,919	99,960	672,504	61,121	3,202,340	14,700	918	0	27,325	0	0	5,064	2,652	0	6,007,595
6-Sep	502	1,738,085	191,016	99,993	672,504	61,121	3,202,435	14,700	918	0	27,325	0	0	5,064	2,652	0	6,008,097
7-Sep	448	1,738,367	191,141	100,014	672,504	61,121	3,202,435	14,700	938	0	27,325	0	0	5,064	2,652	0	6,008,545
8-Sep	99	1,738,422	191,155	100,038	672,504	61,127	3,202,435	14,700	938	0	27,325	0	0	5,064	2,652	0	6,008,644
9-Sep	332	1,738,716	191,168	100,043	672,504	61,130	3,202,435	14,700	955	0	27,325	0	0	5,064	2,652	0	6,008,976
10-Sep	86	1,738,759	191,208	100,046	672,504	61,130	3,202,435	14,700	955	0	27,325	0	0	5,064	2,652	0	6,009,062
11-Sep	126	1,738,861	191,232	100,046	672,504	61,130	3,202,435	14,700	955	0	27,325	0	0	5,064	2,652	0	6,009,188
12-Sep	143	1,738,881	191,242	100,051	672,504	61,130	3,202,548	14,700	955	0	27,325	0	0	5,064	2,652	0	6,009,336
13-Sep	54	1,738,927	191,250	100,051	672,504	61,130	3,202,548	14,700	955	0	27,325	0	0	5,064	2,652	0	6,009,390
14-Sep	6	1,738,929	191,254	100,051	672,504	61,130	3,202,548	14,700	955	0	27,325	0	0	5,064	2,652	0	3,009,396

15-Sep	68	1,738,980	191,254	100,051	672,521	61,130	3,202,548	14,700	955	0	27,325	0	0	5,064	2,652	
16-Sep	1	1,738,980	191,254	100,051	672,521	61,131	3,202,548	14,700	955	0	27,325	0	0	5,064	2,652	
17-Sep	17	1,738,997	191,254	100,051	682,521	61,131	3,202,548	14,700	955	0	27,325	0	0	5,064	2,652	0	6,009,482
18-Sep																	
19-Sep	9	1,739,006	191,254	100,051	672,529	61,131	3,202,548	14,700	955	0	27,325	0	0	5,064	2,652	0	6,009,499
20-Sep	0	1,739,006	191,254	100,051	672,529	61,131	3,202,548	14,700	955	0	27,325	0	0	5,064	2,652	0	6,009,499
21-Sep	2	1,739,006	191,254	100,051	672,531	61,131	3,202,548	14,700	955	0	27,325	0	0	5,064	2,652	0	6,009,501
22-Sep	0	1,739,006	191,254	100,051	672,531	61,131	3,202,548	14,700	955	0	27,325	0	0	5,064	2,652	0	6,009,501
23-Sep	0	1,739,006	191,254	100,051	672,531	61,131	3,202,548	14,700	955	0	27,325	0	0	5,064	2,652	0	6,009,501

2018 Kodiak Chum Harvest

	Daily	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative		Cumulative
	Total Chum Harvest	Karluk, NW Kodiak & SW Afognak	Ayakulik, Halibut Bay & Sturgeon	Alitak Bay, Olga, Moser & Dog Salmon	Cape Alitak & Humpy-Deadman	East & Northeast Kodiak	Duck, Izhut & Kitoi Bays	NW Afognak, Shuyak & Perenosa	SE Afognak & Raspberry	Cape Igvak & Wide Bay	Mid & North Mainland	Foul Bay SHA	Waterfall SHA	Telrod Cove SHA	Telrod Cove Cost Recovery	Kitoi cost Recovery	Igvak %	Cumulative Chum Harvest
10-Jun	1,776	1,203	0	0	0	0	0	633	4	0	0	4	0	0	0	0		1,840
11-Jun	822	1,721	0	0	0	0	937	4	0	0	0	4	0	0	0	0		2,662
12-Jun	450	1,721	0	0	0	0	1,087	304	0	0	0	4	300	0	0	0		3,112
13-Jun	CONFIDENTIAL																	
14-Jun	1,604	1,800	0	0	0	0	2,923	18	0	0	0	4	0	0	0	0		4,741
15-Jun	9,189	2,996	0	0	0	6,532	4,349	53	0	0	0	4	0	0	0	0		13,930
16-Jun	1,629	4,510	0	0	0	6,532	4,457	60	0	0	0	4	0	0	0	0		15,559
17-Jun	4,788	6,668	0	0	0	6,532	7,087	60	0	0	0	4	0	0	0	0		20,347
18-Jun	10,732	7,428	0	0	0	6,532	17,059	60	0	0	0	4	0	0	0	0		31,079
19-Jun	6,328	8,675	0	0	0	6,532	22,140	60	0	0	0	4	0	0	0	0		37,407
20-Jun	6,857	8,732	0	0	0	6,532	28,997	60	0	0	0	4	0	0	0	0		44,321
21-Jun	7,293	8,732	0	0	0	6,532	36,290	60	0	0	0	4	0	0	0	0		51,614
22-Jun	23,533	8,732	0	0	0	27,594	38,761	60	0	0	0	4	0	0	0	0		75,147
23-Jun	7,801	8,732	0	0	0	24,887	46,562	66	0	0	0	4	0	0	0	0		80,247
24-Jun	5,160	8,732	0	0	0	24,887	51,722	66	0	0	0	4	0	0	0	0		85,407
25-Jun	10,652	9,152	0	38	0	24,887	61,956	66	0	0	0	4	0	0	0	0		96,099
26-Jun	6,542	10,696	943	170	359	24,887	65,520	66	0	0	0	4	0	0	0	0		102,641
27-Jun	12,386	12,064	1,363	249	553	24,887	75,845	66	0	0	0	4	0	0	0	0		115,027
28-Jun	15,425	16,181	4,421	332	1,152	24,887	83,711	66	0	0	0	4	0	0	0	0		130,750
29-Jun	2,240	16,453	5,321	332	1,215	24,887	85,951	66	0	0	0	4	0	0	0	0		134,225
30-Jun	8,971	16,453	5,321	332	1,215	24,887	94,922	66	0	0	0	4	0	0	0	0		143,196
1-Jul	9,963	16,453	5,321	332	1,215	24,887	104,885	66	0	0	0	4	0	0	0	0		153,159
2-Jul	CONFIDENTIAL																	
3-Jul	12,972	29,885	5,321	332	1,215	24,887	105,788	66	0	0	0	4	0	0	0	0		167,494
4-Jul	4,035	33,840	5,321	412	1,215	24,887	105,788	66	0	0	0	4	0	0	0	0		171,529
5-Jul	4,797	37,014	5,889	585	2,097	24,887	105,788	66	0	0	0	4	0	3	3	0		176,326
6-Jul	4,479	41,215	5,889	651	2,267	24,929	105,788	66	0	0	0	4	0	3	3	0		180,805
7-Jul	19,917	45,179	6,732	739	2,609	32,828	112,126	98	0	0	1,188	4	0	3	3	0		201,499
8-Jul	18,167	51,198	7,522	858	4,137	38,707	119,115	130	0	0	2,071	4	0	3	3	0		223,738
9-Jul	KMA CLOSED																	
10-Jul																		
11-Jul																		
12-Jul	58	51,256	7,677	858	4,213	39,800	120,251	130	0	0	2,071	4	0	61	61	0		226,256
13-Jul	2,426	53,524	7,677	941	4,288	39,800	120,251	130	0	0	2,071	4	0	61	61	0		228,682
14-Jul	27,172	67,248	9,053	1,085	4,936	46,219	124,123	336	0	0	2,854	4	0	61	61	0		255,854
15-Jul	34,402	88,547	10,149	1,228	5,707	51,672	128,843	628	0	0	3,482	4	0	61	61	0		290,256
16-Jul	KMA CLOSED																	
17-Jul																		
18-Jul	2,987	89,743	10,424	1,228	6,236	52,342	131,896	827	0	0	3,492	4	0	101	101	0		296,188
19-Jul	5,436	89,743	10,424	1,333	11,269	52,342	132,194	827	0	0	3,492	4	0	101	101	0		301,624
20-Jul	7,210	89,743	10,424	1,444	13,164	52,342	137,398	827	0	0	3,492	4	0	101	101	0		308,834
21-Jul	3,425	89,743	10,424	1,530	13,512	52,342	140,488	827	0	0	3,492	4	0	101	101	0		312,358
22-Jul	6,419	89,830	10,424	1,644	13,828	52,342	146,477	827	0	0	3,492	4	0	188	188	0		318,864
23-Jul	19,573	104,839	10,424	1,765	14,341	52,342	146,477	911	0	0	7,338	4	0	188	188	0		338,437
24-Jul	33,886	124,146	10,424	1,765	16,488	55,427	151,223	995	210	0	11,645	4	0	188	188	0		372,323
25-Jul	22,449	135,444	10,424	1,765	18,022	59,603	151,973	1,496	0	0	17,019	4	0	268	228	0		395,746

26-Jul	2,912	136,946	10,424	1,765	18,237	61,126	155,190	1,496	220	0	17,816	4	0	228	228	0	
27-Jul	537	136,946	10,424	1,765	18,237	61,126	156,032	1,496	220	0	17,816	4	0	228	228	0	
28-Jul	1,461	136,962	10,424	1,765	18,237	61,126	157,493	1,496	220	0	17,816	4	0	244	244	0	405,539
29-Jul	395	136,962	10,424	1,765	18,237	61,126	157,888	1,496	220	0	17,816	4	0	244	244	0	405,934
30-Jul	570	136,962	10,424	1,765	18,237	61,126	158,458	1,496	220	0	17,816	4	0	244	244	0	406,504
31-Jul	401	139,962	10,424	1,765	18,237	61,126	158,859	1,496	220	0	17,816	4	0	244	244	0	406,905
1-Aug	496	137,025	10,424	1,765	18,237	61,126	159,292	1,496	220	0	17,816	4	0	307	244	0	407,401
2-Aug	242	137,099	10,424	1,765	18,237	61,126	159,460	1,496	220	0	17,816	4	0	381	299	0	407,643
3-Aug	305	137,244	10,424	1,765	18,237	61,126	159,620	1,496	220	0	17,816	4	0	526	299	0	407,948
4-Aug	3,343	139,994	10,424	1,860	18,398	61,126	159,957	1,496	220	0	17,816	4	0	526	299	0	411,291
5-Aug	8,035	146,815	10,424	1,981	18,707	61,126	160,740	1,496	220	0	17,816	4	0	576	299	0	419,325
6-Aug	3,836	149,658	10,424	2,112	18,981	61,126	161,328	1,496	220	0	17,816	4	0	606	299	0	423,161
7-Aug	5,600	152,597	10,510	2,112	21,420	61,126	161,464	1,496	220	0	17,816	4	0	606	299	0	428,761
8-Aug	2,223	155,554	10,510	2,241	21,432	61,126	161,617	1,496	220	0	17,816	4	0	606	299	0	432,012
9-Aug	3,348	158,106	10,511	2,325	21,500	61,126	162,260	1,496	220	0	17,816	4	0	606	299	0	435,360
10-Aug	2,034	159,650	10,695	2,479	21,635	61,126	162,277	1,496	220	0	17,816	4	0	610	299	0	437,394
11-Aug	KMA CLOSED																
12-Aug																	
13-Aug	285	160,122	11,268	2,686	21,699	61,126	162,553	1,496	220	0	17,816	4	0	610	299	0	438,986
14-Aug	973	160,122	11,268	2,888	22,358	61,126	162,665	1,496	220	0	17,816	4	0	610	299	0	439,959
15-Aug	406	160,122	11,268	3,011	22,568	61,126	162,738	1,496	220	0	17,816	4	0	610	299	0	440,365
16-Aug	778	160,461	11,273	3,100	22,819	61,126	162,832	1,496	220	0	17,816	4	0	610	299	0	441,143
17-Aug	2,659	162,647	11,417	3,176	22,917	61,126	162,979	1,504	220	0	17,816	4	0	611	299	0	443,802
18-Aug	689	163,207	11,452	3,245	22,926	61,126	162,995	1,504	220	0	17,816	4	0	611	299	0	444,491
19-Aug	1,165	164,377	11,422	3,396	23,035	61,126	163,035	1,508	220	0	17,816	4	0	611	299	0	445,935
20-Aug	854	165,153	11,441	3,396	23,035	61,126	163,112	1,509	220	0	17,816	4	0	611	299	0	446,808
21-Aug	1,131	166,214	11,441	3,415	23,035	61,126	163,163	1,509	220	0	17,816	4	0	611	299	0	447,939
22-Aug	1,138	167,175	11,465	3,517	23,069	61,126	163,180	1,509	220	0	17,816	4	0	611	299	0	449,077
23-Aug	1,457	167,980	11,936	3,579	23,179	61,126	163,189	1,509	220	0	17,806	4	0	611	299	0	450,534
24-Aug	801	168,626	11,940	3,579	23,330	61,126	163,189	1,509	220	0	17,816	4	0	611	299	0	451,335
25-Aug	1,109	169,691	11,969	3,776	23,487	61,126	163,189	1,509	220	0	17,816	4	0	611	299	0	452,773
26-Aug	561	170,176	11,974	3,826	23,531	61,126	163,207	1,510	313	0	17,816	4	0	611	299	0	453,479
27-Aug	582	170,639	11,974	3,959	23,554	61,126	163,209	1,510	313	0	17,816	4	0	611	299	0	454,100
28-Aug	724	171,275	11,974	4,047	23,554	61,126	163,209	1,510	313	0	17,816	4	0	611	299	0	454,824
29-Aug	306	171,522	11,974	4,047	23,566	61,126	163,226	1,510	313	0	17,816	4	0	611	299	0	455,130
30-Aug	36	171,586	11,974	4,047	23,566	61,126	163,228	1,510	313	0	17,816	4	0	611	299	0	455,166
31-Aug	1,865	171,932	11,987	4,144	23,566	61,126	164,742	1,510	313	0	17,816	4	0	611	299	0	457,136
1-Sep	461	172,149	12,013	4,243	23,678	61,126	164,747	1,512	313	0	17,816	4	0	611	299	0	457,597
2-Sep	208	172,259	12,044	4,297	23,685	61,126	164,753	1,512	313	0	17,816	4	0	611	299	0	457,805
3-Sep	250	172,471	12,053	4,348	23,685	61,126	164,756	1,512	313	0	17,816	4	0	611	299	0	458,080
4-Sep	135	172,581	12,069	4,370	23,685	61,126	164,758	1,512	313	0	17,816	4	0	611	299	0	458,230
5-Sep	752	172,674	12,168	4,370	24,242	61,126	164,761	1,512	313	0	17,816	4	0	611	299	0	458,982
6-Sep	138	172,765	12,187	4,398	24,242	61,126	164,761	1,512	313	0	17,816	4	0	611	299	0	459,120
7-Sep	134	172,834	12,224	4,425	24,242	61,126	164,761	1,512	314	0	17,816	4	0	611	299	0	459,254
8-Sep	247	172,892	12,230	4,453	24,242	61,281	164,761	1,512	314	0	17,816	4	0	611	299	0	459,501
9-Sep	444	172,972	12,232	4,465	24,242	61,617	164,761	1,512	328	0	17,816	4	0	611	299	0	459,945
10-Sep	51	172,991	12,248	4,481	24,242	61,617	164,761	1,512	328	0	17,816	4	0	611	299	0	459,996
11-Sep	32	173,022	12,249	4,481	24,242	61,617	164,761	1,512	328	0	17,816	4	0	611	299	0	460,028
12-Sep	28	173,045	12,253	4,494	24,242	61,617	164,762	1,512	328	0	17,816	4	0	611	299	0	460,069
13-Sep	45	173,090	12,253	4,494	24,242	61,617	164,762	1,512	328	0	17,816	4	0	611	299	0	460,114
14-Sep	6	173,093	12,256	4,494	24,242	61,617	164,762	1,512	328	0	17,816	4	0	611	299	0	460,120
15-Sep	75	173,128	12,256	4,494	24,282	61,617	164,762	1,512	328	0	17,816	4	0	611	299	0	460,195
16-Sep	46	173,130	12,256	4,494	24,282	61,661	164,762	1,512	328	0	17,816	4	0	611	299	0	460,241

17-Sep	27	173,157	12,256	4,494	24,282	61,661	164,762	1,516	328	0	17,826	4	0	611	299	0
18-Sep																
19-Sep	26	173,183	12,256	4,494	24,327	61,661	164,762	1,516	328	0	17,816	4	0	611	299	0
20-Sep	0	173,183	12,256	4,494	24,327	61,661	164,762	1,516	328	0	17,816	4	0	611	299	0
21-Sep	38	173,186	12,256	4,494	24,362	61,661	164,762	1,516	328	0	17,816	4	0	611	299	0
22-Sep	49	173,187	12,256	4,494	24,362	61,709	164,762	1,516	328	0	17,816	4	0	611	299	0
23-Sep	32	173,192	12,264	4,494	24,362	61,728	164,762	1,516	328	0	17,816	4	0	611	299	0

460,343
460,343
460,381
460,430
460,462

Karluk, NW Kodiak & SW Afognak					
	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Karluk, NW Kodiak & SW Afognak	Karluk, NW Kodiak & SW Afognak	Karluk, NW Kodiak & SW Afognak	Karluk, NW Kodiak & SW Afognak	Karluk, NW Kodiak & SW Afognak
7-Jun	444	1,915	0	168	73
8-Jun	656	7,749	0	1,504	352
9-Jun	886	15,648	0	2,685	933
10-Jun					
11-Jun					
12-Jun					
13-Jun	891	15,824	0	2,887	1,008
14-Jun	907	16,271	1	3,064	1,091
15-Jun	1,047	19,086	2	6,243	1,986
16-Jun	1,158	24,827	6	12,364	4,041
17-Jun					
18-Jun					
19-Jun	1,161	25,176	6	12,455	4,059
20-Jun					
21-Jun	1,161	25,176	6	12,455	4,059
22-Jun	1,161	25,176	6	12,455	4,059
23-Jun					
24-Jun					
25-Jun					
26-Jun					
27-Jun					
28-Jun	1,170	28,318	19	18,028	5,022
29-Jun	1,563	57,854	59	151,497	10,274
30-Jun	1,937	80,243	190	259,309	16,277
	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
1-Jul					
2-Jul					
3-Jul					
4-Jul	2,085	86,172	202	284,278	16,628
5-Jul	2,085	86,172	202	284,278	16,628
6-Jul	2,105	94,137	262	366,155	18,524
7-Jul	2,283	131,116	792	812,943	27,267
8-Jul	2,320	152,216	1,084	1,065,717	33,337
9-Jul	2,410	191,826	2,101	1,509,812	42,629
10-Jul	2,453	230,647	3,361	1,877,603	58,832
11-Jul					
12-Jul					
13-Jul	2,461	247,497	4,096	1,983,999	62,394
14-Jul	2,503	279,716	6,053	2,329,800	75,680
15-Jul	2,602	296,895	7,032	2,492,732	84,381
16-Jul	2,817	331,888	8,808	2,806,342	98,085

17-Jul	2,987	365,132	10,504	3,111,462	112,012
18-Jul	3,066	376,153	10,875	3,215,144	115,362
19-Jul					
20-Jul	3,072	385,519	11,017	3,296,086	118,414
21-Jul	3,182	413,179	11,842	3,775,610	129,288
22-Jul	3,262	428,372	12,318	3,973,073	135,782
23-Jul	3,470	460,049	13,311	4,377,536	147,489
24-Jul	3,527	488,799	13,840	4,707,442	156,793
25-Jul	3,610	530,551	14,901	5,144,513	167,598
26-Jul	3,652	556,035	15,461	5,399,153	172,757
27-Jul	3,712	580,529	16,250	5,592,993	181,558
28-Jul	3,735	592,632	16,943	5,780,651	189,773
29-Jul	3,794	609,545	18,171	6,149,189	199,243
30-Jul	3,861	617,256	18,703	6,321,160	204,008
31-Jul	3,906	633,156	19,779	6,661,487	211,849
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
1-Aug	3,916	644,442	20,456	6,850,644	218,476
2-Aug	3,954	665,250	21,752	7,211,538	225,984
3-Aug	3,966	678,897	22,679	7,378,037	231,170
4-Aug	4,003	697,581	24,410	7,673,544	241,777
5-Aug	4,027	715,764	25,470	7,925,702	246,497
6-Aug	4,061	731,848	27,348	8,250,859	250,360
7-Aug	4,085	745,821	28,816	8,541,387	254,475
8-Aug	4,117	757,416	30,682	8,841,753	357,567
9-Aug	4,128	763,648	31,819	9,088,187	259,207
10-Aug	4,146	769,107	34,066	9,364,387	261,262
11-Aug	4,195	781,585	35,556	9,638,182	263,543
12-Aug	4,210	792,281	37,763	9,936,476	266,337
13-Aug	4,235	804,614	40,381	10,253,778	269,572
14-Aug	4,256	819,875	51,064	10,631,522	272,495
15-Aug	4,270	835,995	53,957	11,109,555	274,656
16-Aug	4,273	850,430	58,139	11,660,856	278,559
17-Aug	4,280	860,422	60,440	12,096,216	280,586
18-Aug	4,286	865,870	63,080	12,522,250	282,310
19-Aug	4,294	875,577	65,721	13,068,316	284,217
20-Aug	4,298	880,402	68,220	13,354,838	286,295
21-Aug	4,300	885,939	73,572	13,615,643	290,434
22-Aug	4,303	891,576	76,732	13,829,811	292,143
23-Aug	4,306	893,717	81,148	14,099,091	293,442
24-Aug	4,312	903,992	86,360	14,455,922	295,050
25-Aug	4,315	912,023	91,629	14,794,056	296,478
26-Aug	4,317	920,175	95,644	15,066,737	297,374
27-Aug	4,320	927,983	99,690	15,261,905	298,413
28-Aug	4,322	929,054	99,853	15,267,985	298,473
29-Aug					
30-Aug					
31-Aug	4,324	958,352	109,717	15,497,657	299,724

	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
1-Sep	4,324	931,364	101,470	15,296,536	298,666
2-Sep	4,330	972,418	119,450	15,594,389	300,420
3-Sep	4,333	1,005,418	137,700	15,812,268	301,550
4-Sep	4,335	1,011,279	143,755	15,916,823	302,002
5-Sep	4,345	1,030,920	156,516	16,055,023	303,011
6-Sep	4,352	1,035,943	160,117	16,088,103	303,517
7-Sep	4,355	1,048,902	166,860	16,152,111	303,995
8-Sep	4,357	1,050,700	168,848	16,205,908	304,111
9-Sep	4,360	1,061,656	176,425	16,269,131	304,536
10-Sep	4,361	1,066,889	179,348	16,292,256	304,614
11-Sep	4,362	1,074,811	183,748	16,326,403	304,881
12-Sep	4,363	1,076,957	185,279	16,331,034	304,954
13-Sep	4,363	1,085,316	188,954	16,342,239	305,119
14-Sep	4,363	1,094,371	190,982	16,346,658	305,174
15-Sep	4,364	1,098,023	192,944	16,349,237	305,231
16-Sep	4,364	1,101,601	194,539	16,352,734	305,285
17-Sep					
18-Sep					
19-Sep					
20-Sep					
21-Sep					
22-Sep					
23-Sep					

Ayakulik, Halibut Bay & Sturgeon Bay					
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
	Cumulative	**Cumulative**	**Cumulative**	**Cumulative**	**Cumulative**
	Ayakulik, Halibut Bay & Sturgeon	Ayakulik, Halibut Bay & Sturgeon	Ayakulik, Halibut Bay & Sturgeon	Ayakulik, Halibut Bay & Sturgeon	Ayakulik, Halibut Bay & Sturgeon
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun					
11-Jun					
12-Jun					
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun					
18-Jun					
19-Jun	0	0	0	0	0
20-Jun					
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun					
24-Jun					
25-Jun					
26-Jun					
27-Jun					
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
1-Jul					
2-Jul					
3-Jul					
4-Jul	0	0	0	0	0
5-Jul	0	0	0	0	0
6-Jul	0	0	0	0	0
7-Jul	0	0	0	0	0
8-Jul	0	0	0	0	0
9-Jul	0	0	0	0	0
10-Jul	0	0	0	0	0
11-Jul					
12-Jul					
13-Jul	0	0	0	0	0
14-Jul	15	52,207	102	21,234	141
15-Jul	16	67,806	145	28,529	221
16-Jul	24	82,436	190	45,893	371

17-Jul	24	82,436	190	45,893	371
18-Jul	24	82,436	190	45,893	371
19-Jul					
20-Jul	24	83,166	190	47,651	394
21-Jul	59	97,454	337	110,304	1,139
22-Jul	62	102,730	376	140,251	1,395
23-Jul	76	105,691	439	152,964	1,808
24-Jul	76	105,691	439	152,964	1,808
25-Jul	95	145,005	505	224,845	2,071
26-Jul	111	215,702	634	302,310	2,303
27-Jul	113	231,667	695	350,308	2,449
28-Jul	133	262,241	786	400,604	2,664
29-Jul	134	273,917	954	450,997	2,968
30-Jul	141	281,461	974	469,007	3,066
31-Jul	141	281,461	974	469,007	3,066
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
1-Aug	141	281,461	974	469,007	3,066
2-Aug	141	281,461	974	469,007	3,066
3-Aug	143	288,317	1,091	480,916	3,375
4-Aug	143	297,602	1,117	506,756	3,530
5-Aug	146	315,790	1,703	598,692	4,498
6-Aug	146	315,790	1,703	598,692	4,498
7-Aug	146	317,270	1,778	610,395	4,595
8-Aug	146	317,270	1,778	610,395	4,595
9-Aug	153	317,963	1,847	618,671	4,684
10-Aug	159	322,298	2,157	683,557	5,328
11-Aug	161	324,904	2,265	694,843	5,499
12-Aug	166	328,278	2,365	714,788	5,756
13-Aug	171	334,732	2,561	760,909	6,317
14-Aug	171	337,182	2,717	786,867	6,592
15-Aug	171	343,624	2,914	818,670	6,913
16-Aug	171	344,317	2,956	823,376	6,950
17-Aug	171	350,521	3,350	893,978	7,426
18-Aug	171	353,226	3,525	919,553	7,675
19-Aug	171	353,723	3,585	926,802	7,739
20-Aug	171	356,600	3,728	956,314	7,942
21-Aug	171	359,665	3,907	979,672	8,010
22-Aug	171	364,267	4,338	1,006,612	8,189
23-Aug	171	365,205	4,471	1,012,734	8,204
24-Aug	174	365,865	4,588	1,017,432	8,214
25-Aug	171	369,525	4,706	1,044,242	8,301
26-Aug	171	369,525	4,706	1,044,242	8,301
27-Aug	171	370,674	5,018	1,073,596	8,361
28-Aug	171	371,046	5,121	1,078,341	8,380
29-Aug					
30-Aug					
31-Aug	171	371,046	5,121	1,078,341	8,380

	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
1-Sep	171	371,182	5,939	1,079,172	8,380
2-Sep	171	371,182	5,939	1,079,172	8,380
3-Sep	171	371,182	5,939	1,079,172	8,380
4-Sep	171	371,182	5,939	1,079,172	8,380
5-Sep	171	371,182	5,939	1,079,172	8,380
6-Sep	171	371,182	5,939	1,079,172	8,380
7-Sep	171	371,182	5,939	1,079,172	8,380
8-Sep	171	371,182	5,939	1,079,172	8,380
9-Sep	171	371,182	5,939	1,079,172	8,380
10-Sep	171	371,371	5,971	1,079,805	8,380
11-Sep	171	371,371	5,971	1,079,805	8,380
12-Sep	171	371,371	5,971	1,079,805	8,380
13-Sep	171	371,371	5,971	1,079,805	8,380
14-Sep	171	371,371	5,971	1,079,805	8,380
15-Sep	171	371,371	5,971	1,079,805	8,380
16-Sep	171	371,371	5,971	1,079,805	8,380
17-Sep					
18-Sep					
19-Sep					
20-Sep					
21-Sep					
22-Sep					
23-Sep					

Alitak Bay, Olga, Moser & Dog Salmon					
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
	Cumulative	**Cumulative**	**Cumulative**	**Cumulative**	**Cumulative**
	Alitak Bay, Olga, Moser & Dog Salmon	Alitak Bay, Olga, Moser & Dog Salmon	Alitak Bay, Olga, Moser & Dog Salmon	Alitak Bay, Olga, Moser & Dog Salmon	Alitak Bay, Olga, Moser & Dog Salmon
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun					
11-Jun					
12-Jun					
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun					
18-Jun					
19-Jun	0	0	0	0	0
20-Jun					
21-Jun	0	7,186	0	0	1
22-Jun	0	16,055	0	0	8
23-Jun					
24-Jun					
25-Jun					
26-Jun					
27-Jun					
28-Jun	1	55,669	2	250	59
29-Jun	3	60,220	2	542	99
30-Jun	3	65,661	2	1,162	188
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
1-Jul					
2-Jul					
3-Jul					
4-Jul	3	72,623	7	2,669	293
5-Jul	3	75,728	24	4,124	354
6-Jul	3	79,903	24	5,900	474
7-Jul	4	83,039	48	7,582	602
8-Jul	4	87,155	73	10,486	772
9-Jul	4	87,155	73	10,486	772
10-Jul	4	87,155	83	10,486	772
11-Jul					
12-Jul					
13-Jul	4	91,813	97	15,319	1,163
14-Jul	4	97,832	131	22,049	2,155
15-Jul	4	99,679	134	26,130	2,454
16-Jul	4	102,736	140	30,794	2,852

17-Jul	5	105,013	147	35,140	3,135
18-Jul	5	107,629	159	40,646	3,633
19-Jul					
20-Jul	5	113,996	176	50,776	4,214
21-Jul	5	117,283	184	55,307	4,447
22-Jul	5	118,927	199	57,735	4,696
23-Jul	5	122,201	208	63,424	5,135
24-Jul	5	123,524	210	67,221	5,415
25-Jul	5	125,873	230	72,006	5,692
26-Jul	5	128,822	257	78,129	6,191
27-Jul	5	131,743	280	84,805	6,632
28-Jul	5	136,236	309	88,475	7,017
29-Jul	5	136,064	331	92,580	7,347
30-Jul	5	137,427	348	95,581	7,601
31-Jul	5	138,946	363	98,865	7,811
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
1-Aug	5	139,771	374	101,426	7,869
2-Aug	5	140,502	397	104,002	7,979
3-Aug	5	141,896	452	108,385	8,358
4-Aug	5	143,478	505	111,361	8,562
5-Aug	5	145,198	563	115,688	8,915
6-Aug	5	145,198	563	115,688	8,915
7-Aug	5	145,198	563	115,688	8,915
8-Aug	5	145,198	563	115,688	8,915
9-Aug	5	145,198	563	115,688	8,915
10-Aug	5	145,198	563	115,688	8,915
11-Aug	5	145,198	563	115,688	8,915
12-Aug	5	145,198	563	115,688	8,915
13-Aug	5	145,198	563	115,688	8,915
14-Aug	5	145,198	563	115,688	8,915
15-Aug	5	145,198	563	115,688	8,915
16-Aug	5	145,198	563	115,688	8,915
17-Aug	5	145,198	563	115,688	8,915
18-Aug	5	145,198	563	115,688	8,915
19-Aug	5	145,198	563	115,688	8,915
20-Aug	5	145,198	563	115,688	8,915
21-Aug	5	145,198	563	115,688	8,915
22-Aug	5	145,198	563	115,688	8,915
23-Aug	5	145,198	563	115,688	8,915
24-Aug	5	145,198	563	115,688	8,915
25-Aug	5	145,198	563	115,688	8,915
26-Aug	5	145,198	563	115,688	8,915
27-Aug	5	145,198	563	115,688	8,915
28-Aug	5	145,198	563	115,688	8,915
29-Aug					
30-Aug					
31-Aug	5	145,198	563	115,688	8,915

	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
1-Sep	5	145,198	563	115,688	8,915
2-Sep	5	145,198	563	115,688	8,915
3-Sep	5	145,198	563	115,688	8,915
4-Sep	5	145,198	563	115,688	8,915
5-Sep	5	145,198	563	115,688	8,915
6-Sep	5	145,198	563	115,688	8,915
7-Sep	5	145,198	563	115,688	8,915
8-Sep	5	145,198	563	115,688	8,915
9-Sep	5	145,198	563	115,688	8,915
10-Sep	5	145,198	563	115,688	8,915
11-Sep	5	145,198	563	115,688	8,915
12-Sep	5	145,198	563	115,688	8,915
13-Sep	5	145,198	563	115,688	8,915
14-Sep	5	145,198	563	115,688	8,915
15-Sep	5	145,198	563	115,688	8,915
16-Sep	5	145,198	563	115,688	8,915
17-Sep					
18-Sep					
19-Sep					
20-Sep					
21-Sep					
22-Sep					
23-Sep					

Cape Alitak & Humpy-Deadman					
	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Cape Alitak & Humpy-Deadman	Cape Alitak & Humpy-Deadman	Cape Alitak & Humpy-Deadman	Cape Alitak & Humpy-Deadman	Cape Alitak & Humpy-Deadman
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun					
11-Jun					
12-Jun					
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun					
18-Jun					
19-Jun	0	0	0	0	0
20-Jun					
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun					
24-Jun					
25-Jun					
26-Jun					
27-Jun					
28-Jun	0	0	0	0	0
29-Jun	15	18,403	17	4,523	349
30-Jun	22	25,105	20	7,724	626
	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
1-Jul					
2-Jul					
3-Jul					
4-Jul	44	35,637	153	34,207	1,094
5-Jul	65	50,115	362	59,174	1,629
6-Jul	79	62,451	486	79,834	2,042
7-Jul	94	71,204	541	99,439	2,678
8-Jul	153	89,343	784	157,896	4,529
9-Jul	153	89,452	801	159,524	4,618
10-Jul	153	89,452	801	159,524	4,618
11-Jul					
12-Jul					
13-Jul	158	90,830	801	161,236	4,651
14-Jul	211	102,090	820	183,341	5,685
15-Jul	216	105,167	838	190,996	5,794
16-Jul	217	111,556	914	212,512	6,471

17-Jul	221	118,943	991	227,132	6,775
18-Jul	221	120,680	1,009	241,300	6,950
19-Jul					
20-Jul	221	121,044	1,010	250,595	7,062
21-Jul	222	122,304	1,047	270,873	7,340
22-Jul	224	122,921	1,052	285,676	7,608
23-Jul	232	124,104	1,070	314,077	7,968
24-Jul	233	125,464	1,083	338,754	8,290
25-Jul	233	129,148	1,101	344,260	8,368
26-Jul	244	130,716	1,189	355,597	8,643
27-Jul	244	130,952	1,189	365,825	8,736
28-Jul	245	132,834	1,200	407,301	9,338
29-Jul	245	133,384	1,227	434,214	9,648
30-Jul	269	133,877	1,279	462,472	9,891
31-Jul	275	134,509	1,295	499,309	10,378
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
1-Aug	286	135,471	1,315	522,694	10,686
2-Aug	298	136,800	1,341	553,344	11,070
3-Aug	298	137,374	1,345	576,597	11,294
4-Aug	298	138,568	1,365	624,892	11,834
5-Aug	301	142,487	1,395	709,984	12,573
6-Aug	301	142,670	1,398	728,921	12,652
7-Aug	302	143,610	1,476	804,943	13,072
8-Aug	304	144,188	1,503	879,729	13,501
9-Aug	306	144,537	1,516	911,890	13,839
10-Aug	306	144,899	1,579	956,202	14,054
11-Aug	306	145,429	1,623	997,926	14,346
12-Aug	306	145,937	1,650	1,029,365	14,486
13-Aug	306	146,367	1,682	1,063,584	14,773
14-Aug	306	146,812	1,721	1,104,406	14,984
15-Aug	306	147,185	1,746	1,142,046	15,133
16-Aug	306	148,263	2,077	1,221,232	15,598
17-Aug	306	148,932	2,244	1,285,658	16,109
18-Aug	306	149,508	2,602	1,343,163	16,529
19-Aug	306	150,266	3,353	1,413,628	17,248
20-Aug	306	150,658	3,929	1,460,310	17,685
21-Aug	306	151,877	5,554	1,522,960	18,692
22-Aug	306	152,466	5,964	1,562,012	18,999
23-Aug	307	155,842	8,493	1,657,793	20,093
24-Aug	307	157,761	10,356	1,734,069	20,962
25-Aug	307	159,135	11,340	1,778,626	21,429
26-Aug	307	160,443	12,392	1,822,486	21,941
27-Aug	307	162,365	13,970	1,887,047	22,636
28-Aug	307	162,365	13,970	1,887,047	22,636
29-Aug					
30-Aug					
31-Aug	307	162,368	14,033	1,889,321	22,640

	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
1-Sep	307	163,170	16,084	1,937,964	23,236
2-Sep	307	163,174	16,177	1,939,122	23,245
3-Sep	307	163,758	17,142	1,960,895	24,318
4-Sep	307	163,758	17,142	1,960,895	24,318
5-Sep	307	163,758	17,142	1,960,895	24,318
6-Sep	307	163,758	17,142	1,960,895	24,318
7-Sep	307	163,790	17,158	1,961,465	24,322
8-Sep	307	163,790	17,158	1,961,465	24,322
9-Sep	307	163,790	17,158	1,961,465	24,322
10-Sep	307	163,790	17,158	1,961,465	24,322
11-Sep	307	163,760	17,158	1,961,465	24,322
12-Sep	307	163,760	17,158	1,961,465	24,322
13-Sep	307	163,760	17,158	1,961,465	24,322
14-Sep	307	163,760	17,158	1,961,465	24,322
15-Sep	307	163,760	17,158	1,961,465	24,322
16-Sep	307	163,760	17,158	1,961,465	24,322
17-Sep					
18-Sep					
19-Sep					
20-Sep					
21-Sep					
22-Sep					
23-Sep					

East & Northeast Kodiak					
	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	East & Northeast Kodiak	East & Northeast Kodiak	East & Northeast Kodiak	East & Northeast Kodiak	East & Northeast Kodiak
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun					
11-Jun					
12-Jun					
13-Jun	0	0	0	0	0
14-Jun	0	213	0	4,718	378
15-Jun	71	5,833	26	67,973	10,867
16-Jun	71	6,725	26	71,669	11,512
17-Jun					
18-Jun					
19-Jun	71	6,725	26	71,669	11,512
20-Jun					
21-Jun	71	6,725	26	71,669	11,512
22-Jun	430	11,534	58	109,992	20,478
23-Jun					
24-Jun					
25-Jun					
26-Jun					
27-Jun					
28-Jun	499	12,904	112	118,696	26,425
29-Jun	499	12,904	112	118,696	26,425
30-Jun	499	12,904	112	118,696	26,425
	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
1-Jul					
2-Jul					
3-Jul					
4-Jul	499	12,904	112	118,696	26,425
5-Jul	499	12,904	112	118,696	26,425
6-Jul	499	14,504	585	122,910	26,525
7-Jul	656	21,797	3,644	160,638	30,222
8-Jul	656	22,062	3,655	162,238	30,314
9-Jul	961	34,738	7,107	208,620	34,023
10-Jul	1,092	47,168	9,970	258,136	36,655
11-Jul					
12-Jul					
13-Jul	1,092	49,074	10,284	266,364	37,830
14-Jul	1,110	56,364	10,794	284,351	38,924
15-Jul	1,144	58,322	10,930	305,965	39,180
16-Jul	1,154	59,713	11,423	311,361	39,258

17-Jul	1,154	59,768	11,429	311,762	39,259
18-Jul	1,154	59,768	11,429	311,762	39,259
19-Jul					
20-Jul	1,154	59,768	11,429	311,762	39,259
21-Jul	1,204	60,545	11,493	316,333	39,415
22-Jul	1,204	60,545	11,493	316,333	39,415
23-Jul	1,204	60,545	11,493	316,333	39,415
24-Jul	1,204	60,545	11,493	316,333	39,415
25-Jul	1,204	60,545	11,493	316,333	39,415
26-Jul	1,204	60,545	11,493	316,333	39,415
27-Jul	1,204	60,545	11,493	316,333	39,415
28-Jul	1,205	60,932	11,541	324,187	39,474
29-Jul	1,205	61,132	11,541	328,039	39,524
30-Jul	1,205	61,132	11,541	328,039	39,524
31-Jul	1,205	61,132	11,541	328,039	39,524
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
1-Aug	1,205	61,132	11,541	328,039	39,524
2-Aug	1,206	61,683	11,730	337,342	39,733
3-Aug	1,206	61,683	11,730	337,342	39,733
4-Aug	1,216	63,000	11,957	358,846	40,453
5-Aug	1,240	63,527	12,228	381,868	41,151
6-Aug	1,248	64,941	12,802	429,044	42,046
7-Aug	1,268	66,135	13,858	543,936	43,328
8-Aug	1,268	67,460	15,646	648,715	44,063
9-Aug	1,279	68,967	16,729	833,960	45,254
10-Aug	1,279	70,323	17,799	1,105,705	45,806
11-Aug	1,279	71,308	18,619	1,297,185	46,778
12-Aug	1,280	72,177	19,505	1,530,331	47,504
13-Aug	1,280	72,800	20,372	1,697,048	48,419
14-Aug	1,280	73,512	21,275	1,903,691	49,256
15-Aug	1,281	73,918	22,020	2,036,155	49,817
16-Aug	1,281	74,126	22,680	2,135,470	50,044
17-Aug	1,281	74,369	23,669	2,260,379	50,563
18-Aug	1,281	74,660	24,545	2,412,568	51,217
19-Aug	1,281	74,909	25,253	2,550,239	51,842
20-Aug	1,281	75,102	26,130	2,729,703	52,558
21-Aug	1,281	75,377	27,462	2,926,970	53,793
22-Aug	1,281	75,649	28,988	3,066,866	54,877
23-Aug	1,281	75,856	30,103	3,299,281	55,609
24-Aug	1,281	76,067	31,361	3,393,564	56,441
25-Aug	1,281	76,206	33,158	3,563,352	57,314
26-Aug	1,281	76,285	34,293	3,679,119	58,046
27-Aug	1,281	76,470	35,892	3,735,446	58,489
28-Aug	1,281	76,470	35,892	3,735,446	58,489
29-Aug					
30-Aug					
31-Aug	1,281	76,507	38,012	3,811,117	58,910

	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
1-Sep	1,281	76,567	39,395	3,905,928	59,539
2-Sep	1,281	76,604	42,229	3,950,010	59,842
3-Sep	1,281	76,631	44,865	3,975,562	60,194
4-Sep	1,281	76,631	44,865	3,975,562	60,194
5-Sep	1,281	76,631	44,865	3,975,562	60,194
6-Sep	1,281	76,631	44,865	3,975,562	60,194
7-Sep	1,281	76,696	45,703	3,983,593	60,348
8-Sep	1,281	76,750	47,496	4,000,287	61,057
9-Sep	1,281	76,783	48,068	4,007,747	61,127
10-Sep	1,281	76,859	49,635	4,025,438	61,692
11-Sep	1,281	76,859	49,635	4,025,438	61,692
12-Sep	1,281	76,859	49,635	4,025,438	61,692
13-Sep	1,281	76,859	49,635	4,025,438	61,692
14-Sep	1,281	76,859	49,635	4,025,438	61,692
15-Sep	1,281	76,859	49,635	4,025,438	61,692
16-Sep	1,281	76,859	49,635	4,025,438	61,692
17-Sep					
18-Sep					
19-Sep					
20-Sep					
21-Sep					
22-Sep					
23-Sep					

Duck, Izhut & Kitoi Bays					
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
	Cumulative	**Cumulative**	**Cumulative**	**Cumulative**	**Cumulative**
	Duck, Izhut & Kitoi Bays	Duck, Izhut & Kitoi Bays	Duck, Izhut & Kitoi Bays	Duck, Izhut & Kitoi Bays	Duck, Izhut & Kitoi Bays
7-Jun	0	0	0	0	0
8-Jun	0	185	0	881	128
9-Jun	0	254	0	1,109	141
10-Jun					
11-Jun					
12-Jun					
13-Jun	10	1,179	3	3,952	547
14-Jun	10	1,179	3	3,952	547
15-Jun	11	1,585	3	4,970	1,021
16-Jun	15	1,733	7	5,639	1,156
17-Jun					
18-Jun					
19-Jun	48	2,596	10	8,683	3,466
20-Jun					
21-Jun	58	2,983	47	10,010	4,650
22-Jun	71	3,334	51	11,787	5,656
23-Jun					
24-Jun					
25-Jun					
26-Jun					
27-Jun					
28-Jun	71	3,334	51	11,787	5,656
29-Jun	71	3,334	51	11,787	5,656
30-Jun	71	3,334	51	11,787	5,656
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
1-Jul					
2-Jul					
3-Jul					
4-Jul	71	3,334	51	11,787	5,656
5-Jul	71	3,334	51	11,787	5,656
6-Jul	71	3,334	51	11,787	5,656
7-Jul	71	3,334	51	11,787	5,656
8-Jul	71	3,334	51	11,787	5,656
9-Jul	71	3,334	51	11,787	5,656
10-Jul	71	3,334	51	11,787	5,656
11-Jul					
12-Jul					
13-Jul	71	3,334	51	11,787	5,656
14-Jul	71	3,334	51	11,787	5,656
15-Jul	71	3,334	51	11,787	5,656
16-Jul	71	3,334	51	11,787	5,656
17-Jul	71	3,334	51	11,787	5,656

18-Jul	72	3,580	83	17,190	6,574
19-Jul					
20-Jul	72	4,018	225	22,718	8,395
21-Jul	72	4,018	226	24,306	8,801
22-Jul	77	4,492	401	31,573	10,526
23-Jul	77	4,769	429	35,438	12,029
24-Jul	77	4,988	470	39,273	12,990
25-Jul	77	5,225	533	43,852	13,424
26-Jul	77	5,571	610	51,326	13,826
27-Jul	78	5,888	666	56,127	14,156
28-Jul	78	5,919	674	56,847	14,172
29-Jul	79	6,379	777	69,562	14,577
30-Jul	79	6,425	786	72,262	14,667
31-Jul	79	6,955	889	95,293	15,008
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
1-Aug	79	7,162	945	111,584	15,086
2-Aug	79	7,218	958	115,715	15,105
3-Aug	79	7,218	958	115,715	15,105
4-Aug	79	7,218	958	115,715	15,105
5-Aug	79	7,218	958	115,715	15,105
6-Aug	79	7,218	958	115,715	15,105
7-Aug	79	7,218	958	115,715	15,105
8-Aug	79	7,408	958	181,628	15,201
9-Aug	79	7,408	958	181,628	15,201
10-Aug	79	7,408	958	181,628	15,201
11-Aug	79	7,408	958	181,628	15,201
12-Aug	79	7,408	958	181,628	15,201
13-Aug	79	7,408	958	181,628	15,201
14-Aug	79	7,408	958	282,529	15,201
15-Aug	79	7,463	958	349,834	15,201
16-Aug	79	7,463	958	349,834	15,201
17-Aug	79	7,463	958	349,834	15,201
18-Aug	79	7,463	958	349,834	15,201
19-Aug	79	7,463	958	349,834	15,201
20-Aug	79	7,463	658	349,834	15,201
21-Aug	79	7,463	958	349,834	15,201
22-Aug	79	7,463	958	349,834	15,201
23-Aug	79	7,463	958	349,834	15,201
24-Aug	79	7,463	958	349,834	15,201
25-Aug	79	7,775	2,693	836,977	15,379
26-Aug	79	8,805	6,060	1,669,321	15,776
27-Aug	79	8,986	8,334	2,160,654	15,952
28-Aug	79	9,313	13,042	2,769,749	16,111
29-Aug					
30-Aug					
31-Aug	79	9,313	13,042	3,231,452	16,111
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**

1-Sep	79	9,313	13,042	3,231,452	16,111
2-Sep	79	9,313	13,042	3,450,026	16,111
3-Sep	79	9,313	13,042	3,680,478	16,111
4-Sep	79	9,313	13,042	3,860,521	16,111
5-Sep	79	10,932	17,460	4,188,457	16,407
6-Sep	79	11,004	19,264	4,478,204	16,428
7-Sep	79	11,452	26,008	4,781,168	16,461
8-Sep	79	11,474	28,390	4,841,397	16,468
9-Sep	79	11,500	31,240	4,886,640	16,479
10-Sep	79	11,514	34,374	4,913,516	16,483
11-Sep	79	11,514	34,374	4,913,516	16,483
12-Sep	79	11,514	34,374	4,913,516	16,483
13-Sep	79	11,514	34,374	4,913,516	16,483
14-Sep	79	11,514	34,374	4,913,516	16,483
15-Sep	79	11,514	34,374	4,913,516	16,483
16-Sep	79	11,514	34,374	4,913,516	16,483
17-Sep					
18-Sep					
19-Sep					
20-Sep					
21-Sep					
22-Sep					
23-Sep					

NW Afognak, Shuyak & Perenosa					
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
	Cumulative	**Cumulative**	**Cumulative**	**Cumulative**	**Cumulative**
	NW Afognak, Shuyak & Perenosa	NW Afognak, Shuyak & Perenosa	NW Afognak, Shuyak & Perenosa	NW Afognak, Shuyak & Perenosa	NW Afognak, Shuyak & Perenosa
7-Jun	0	0	0	0	0
8-Jun	1	2,853	0	2	1
9-Jun	1	285	0	12	5
10-Jun					
11-Jun					
12-Jun					
13-Jun	2	695	0	12	5
14-Jun	2	695	0	12	5
15-Jun	2	2,366	0	12	5
16-Jun	2	2,420	0	64	17
17-Jun					
18-Jun					
19-Jun	2	2,420	0	64	17
20-Jun					
21-Jun	2	2,420	0	64	17
22-Jun	5	3,409	0	877	606
23-Jun					
24-Jun					
25-Jun					
26-Jun					
27-Jun					
28-Jun	8	3,457	0	1,156	627
29-Jun	8	3,457	0	1,156	627
30-Jun	8	3,471	2	1,401	639
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
1-Jul					
2-Jul					
3-Jul					
4-Jul	8	3,471	2	1,401	639
5-Jul	8	3,471	2	1,401	639
6-Jul	8	3,471	2	1,401	639
7-Jul	8	4,468	35	14,084	925
8-Jul	8	4,468	35	14,084	925
9-Jul	9	7,836	98	44,471	1,232
10-Jul	9	8,415	134	47,837	1,245
11-Jul					
12-Jul					
13-Jul	9	8,415	134	47,837	1,245
14-Jul	9	8,415	134	47,837	1,245
15-Jul	9	8,415	134	47,837	1,245
16-Jul	9	8,699	183	53,649	1,368

17-Jul	9	10,916	236	55,148	1,561
18-Jul	15	11,832	250	64,233	2,034
19-Jul					
20-Jul	15	11,832	250	64,233	2,034
21-Jul	20	15,562	343	101,532	2,500
22-Jul	20	15,836	357	106,181	2,544
23-Jul	22	32,000	885	159,595	3,271
24-Jul	22	32,679	914	161,452	3,283
25-Jul	22	54,362	1,074	206,639	3,563
26-Jul	22	56,660	1,096	210,060	3,584
27-Jul	23	71,496	1,231	230,107	3,868
28-Jul	23	71,496	1,231	230,107	3,868
29-Jul	23	73,184	1,303	238,033	3,956
30-Jul	23	73,184	1,303	238,033	3,956
31-Jul	23	73,184	1,303	238,033	3,956
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
1-Aug	23	73,184	1,303	238,033	3,956
2-Aug	23	73,184	1,303	238,033	3,956
3-Aug	23	73,184	1,303	238,033	3,956
4-Aug	23	73,184	1,303	238,033	3,956
5-Aug	23	73,184	1,303	238,033	3,956
6-Aug	23	73,701	1,508	259,918	4,138
7-Aug	23	73,701	1,508	259,918	4,138
8-Aug	23	73,701	1,508	259,918	4,138
9-Aug	24	73,944	1,690	288,415	4,202
10-Aug	24	74,137	2,023	311,752	4,262
11-Aug	24	74,419	2,243	341,878	4,326
12-Aug	24	74,530	2,345	355,667	4,373
13-Aug	24	74,530	2,345	355,667	4,373
14-Aug	24	75,613	2,412	364,002	4,455
15-Aug	24	75,779	2,672	393,988	4,580
16-Aug	24	75,851	2,903	423,635	4,676
17-Aug	24	75,851	2,903	423,635	4,676
18-Aug	24	75,851	2,903	423,635	4,676
19-Aug	24	75,893	3,038	440,971	4,732
20-Aug	24	75,940	3,103	448,056	4,741
21-Aug	24	76,052	3,262	459,745	4,791
22-Aug	24	76,072	3,272	461,053	4,792
23-Aug	24	76,072	3,272	461,053	4,792
24-Aug	24	76,072	3,272	461,053	4,792
25-Aug	24	76,072	3,377	495,345	4,792
26-Aug	24	76,072	3,377	495,345	4,792
27-Aug	24	76,072	3,377	495,345	4,792
28-Aug	24	76,072	3,377	495,345	4,792
29-Aug					
30-Aug					
31-Aug	24	76,072	3,377	495,345	4,792

	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
1-Sep	24	76,072	3,377	495,345	4,792
2-Sep	24	76,072	3,377	495,345	4,792
3-Sep	24	76,072	3,377	495,345	4,792
4-Sep	24	76,072	3,377	495,345	4,792
5-Sep	24	76,072	3,377	495,345	4,792
6-Sep	24	76,072	3,377	495,345	4,792
7-Sep	24	76,072	3,377	495,345	4,792
8-Sep	24	76,072	3,978	495,532	4,797
9-Sep	24	76,072	3,978	495,532	4,797
10-Sep	24	76,072	5,187	521,826	4,800
11-Sep	24	76,072	5,187	521,826	4,800
12-Sep	24	76,072	5,187	521,826	4,800
13-Sep	24	76,072	5,187	521,826	4,800
14-Sep	24	76,072	5,187	521,826	4,800
15-Sep	24	76,072	5,187	521,826	4,800
16-Sep	24	76,072	5,187	521,826	4,800
17-Sep					
18-Sep					
19-Sep					
20-Sep					
21-Sep					
22-Sep					
23-Sep					

SE Afognak & Raspberry					
	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	SE Afognak & Raspberry	SE Afognak & Raspberry	SE Afognak & Raspberry	SE Afognak & Raspberry	SE Afognak & Raspberry
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun					
11-Jun					
12-Jun					
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun					
18-Jun					
19-Jun	0	0	0	0	0
20-Jun					
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun					
24-Jun					
25-Jun					
26-Jun					
27-Jun					
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
1-Jul					
2-Jul					
3-Jul					
4-Jul	0	0	0	0	0
5-Jul	0	0	0	0	0
6-Jul	0	0	0	0	0
7-Jul	0	0	0	0	0
8-Jul	0	0	0	0	0
9-Jul	0	0	0	0	0
10-Jul	0	13	0	0	0
11-Jul					
12-Jul					
13-Jul	0	13	0	0	0
14-Jul	0	13	0	0	0
15-Jul	0	13	0	0	0
16-Jul	0	13	0	0	0
17-Jul	0	222	46	2,222	109

18-Jul	0	222	46	2,222	109
19-Jul					
20-Jul	0	222	46	2,222	109
21-Jul	0	222	46	2,222	109
22-Jul	0	222	46	2,222	109
23-Jul	0	555	73	7,214	223
24-Jul	0	555	73	7,214	223
25-Jul	0	555	73	7,214	223
26-Jul	0	555	73	7,214	223
27-Jul	0	555	73	7,214	223
28-Jul	0	555	73	7,214	223
29-Jul	0	555	73	7,214	223
30-Jul	0	2,080	384	19,747	1,267
31-Jul	0	2,080	384	19,747	1,267
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
1-Aug	0	2,080	384	19,747	1,267
2-Aug	0	2,080	384	19,747	1,267
3-Aug	0	2,080	384	19,747	1,267
4-Aug	0	2,080	384	19,747	1,267
5-Aug	0	2,088	396	22,313	1,270
6-Aug	0	2,130	1,391	38,204	1,292
7-Aug	6	2,204	1,509	66,164	1,315
8-Aug	10	2,266	1,661	106,885	1,343
9-Aug	10	2,356	1,923	153,338	1,379
10-Aug	14	2,485	2,178	193,176	1,435
11-Aug	17	2,527	2,291	218,346	1,458
12-Aug	35	2,673	2,614	268,268	1,527
13-Aug	35	2,673	2,614	268,268	1,527
14-Aug	35	2,673	2,614	268,268	1,527
15-Aug	35	2,673	2,614	268,268	1,527
16-Aug	35	2,681	2,661	286,617	1,528
17-Aug	35	2,713	2,815	329,268	1,549
18-Aug	35	2,756	3,237	395,589	1,588
19-Aug	35	2,878	3,698	504,732	1,632
20-Aug	35	3,025	4,353	615,855	1,741
21-Aug	35	3,081	4,836	678,821	1,795
22-Aug	35	3,160	5,536	784,771	1,844
23-Aug	35	3,190	7,546	855,457	1,875
24-Aug	35	3,381	8,359	997,427	1,933
25-Aug	35	3,405	8,599	1,034,898	1,990
26-Aug	35	3,422	8,791	1,059,712	2,068
27-Aug	35	3,438	8,965	1,083,597	2,112
28-Aug	35	3,438	8,965	1,083,597	2,112
29-Aug					
30-Aug					
31-Aug	35	3,438	8,965	1,083,597	2,112
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**

1-Sep	35	3,438	8,965	1,083,597	2,112
2-Sep	35	3,438	8,965	1,083,597	2,112
3-Sep	35	3,438	8,965	1,083,597	2,112
4-Sep	35	3,438	8,965	1,083,597	2,112
5-Sep	35	3,438	8,965	1,083,597	2,112
6-Sep	35	3,438	8,965	1,083,597	2,112
7-Sep	35	3,438	8,965	1,083,597	2,112
8-Sep	35	3,438	8,965	1,083,597	2,112
9-Sep	35	3,698	9,053	1,085,353	2,115
10-Sep	35	3,700	9,054	1,095,317	2,116
11-Sep	35	3,700	9,054	1,095,317	2,116
12-Sep	35	3,700	9,054	1,095,317	2,116
13-Sep	35	3,700	9,054	1,095,317	2,116
14-Sep	35	3,700	9,054	1,095,317	2,116
15-Sep	35	3,700	9,054	1,095,317	2,116
16-Sep	35	3,700	9,054	1,095,317	2,116
17-Sep					
18-Sep					
19-Sep					
20-Sep					
21-Sep					
22-Sep					
23-Sep					

Cape Igvak, Wide Bay, Mid & North Mainland					
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
	Cumulative	**Cumulative**	**Cumulative**	**Cumulative**	**Cumulative**
	Cape Igvak & Wide Bay	Cape Igvak & Wide Bay	Cape Igvak & Wide Bay	Cape Igvak & Wide Bay	Cape Igvak & Wide Bay
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun					
11-Jun					
12-Jun					
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun					
18-Jun					
19-Jun	0	0	0	0	0
20-Jun					
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun					
24-Jun					
25-Jun					
26-Jun					
27-Jun					
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
1-Jul					
2-Jul					
3-Jul					
4-Jul	0	0	0	0	0
5-Jul	0	0	0	0	0
6-Jul	0	0	0	0	0
7-Jul	0	0	0	0	0
8-Jul	0	0	0	0	0
9-Jul	0	0	0	0	0
10-Jul	0	0	0	0	0
11-Jul					
12-Jul					
13-Jul	0	0	0	0	0
14-Jul	0	0	0	0	0
15-Jul	0	0	0	0	0
16-Jul	0	0	0	0	0
17-Jul	0	0	0	0	0

18-Jul	0	0	0	0	0
19-Jul					
20-Jul	0	0	0	0	0
21-Jul	0	0	0	0	0
22-Jul	0	0	0	0	0
23-Jul	0	0	0	0	0
24-Jul	0	0	0	0	0
25-Jul	0	0	0	0	0
26-Jul	0	0	0	0	0
27-Jul	0	2,561	496	47,989	2,294
28-Jul	6	8,871	1,104	156,178	4,977
29-Jul	6	13,887	1,619	236,724	11,029
30-Jul	18	17,425	2,180	265,260	13,024
31-Jul	18	17,425	2,180	265,260	13,024
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
1-Aug	18	18,453	2,197	345,892	14,302
2-Aug	23	27,664	3,447	479,697	20,288
3-Aug	23	29,198	4,179	572,797	24,847
4-Aug	23	34,969	5,342	661,080	29,114
5-Aug	23	37,732	7,122	704,305	32,969
6-Aug	23	37,732	7,122	704,305	32,969
7-Aug	23	37,732	7,122	704,305	32,969
8-Aug	23	37,732	7,122	704,305	32,969
9-Aug	23	37,732	7,122	704,305	32,969
10-Aug	23	37,732	7,122	704,305	32,969
11-Aug	23	38,812	7,487	766,896	34,166
12-Aug	23	41,853	9,990	857,877	35,502
13-Aug	23	44,254	12,647	948,825	37,191
14-Aug	23	46,789	15,452	1,069,356	38,711
15-Aug	25	47,379	16,011	1,097,553	39,033
16-Aug	25	48,405	16,857	1,158,959	39,757
17-Aug	25	50,409	18,268	1,237,047	40,608
18-Aug	25	53,334	21,495	1,323,293	41,616
19-Aug	25	55,521	24,131	1,394,225	42,316
20-Aug	25	59,401	29,623	1,583,447	43,517
21-Aug	25	64,376	33,664	1,717,514	44,586
22-Aug	25	68,552	37,492	1,973,718	45,715
23-Aug	25	69,986	40,525	2,069,574	46,137
24-Aug	33	71,231	43,566	2,189,787	46,776
25-Aug	38	72,029	45,768	2,238,829	47,069
26-Aug	42	72,559	47,552	2,257,900	47,207
27-Aug	45	74,740	54,703	2,279,761	47,523
28-Aug	45	74,740	54,703	2,279,761	47,523
29-Aug					
30-Aug					
31-Aug	45	74,740	54,703	2,279,761	47,523
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**

1-Sep	45	74,740	54,703	2,279,761	47,523
2-Sep	45	74,740	54,703	2,279,761	47,523
3-Sep	45	74,740	54,703	2,279,761	47,523
4-Sep	45	74,740	54,703	2,279,761	47,523
5-Sep	45	74,740	54,703	2,279,761	47,523
6-Sep	45	74,740	54,703	2,279,761	47,523
7-Sep	45	74,740	54,703	2,279,761	47,523
8-Sep	45	74,740	54,703	2,279,761	47,523
9-Sep	45	74,740	54,703	2,279,761	47,523
10-Sep	45	74,740	54,703	2,279,761	47,523
11-Sep	45	74,740	54,703	2,279,761	47,523
12-Sep	45	74,740	54,703	2,279,761	47,523
13-Sep	45	74,740	54,703	2,279,761	47,523
14-Sep	45	74,740	54,703	2,279,761	47,523
15-Sep	45	74,740	54,703	2,279,761	47,523
16-Sep	45	74,740	54,703	2,279,761	47,523
17-Sep					
18-Sep					
19-Sep					
20-Sep					
21-Sep					
22-Sep					
23-Sep					

Mid & North Mainland					
	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Mid & North Mainland	Mid & North Mainland	Mid & North Mainland	Mid & North Mainland	Mid & North Mainland
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun					
11-Jun					
12-Jun					
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun					
18-Jun					
19-Jun	0	0	0	0	0
20-Jun					
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun					
24-Jun					
25-Jun					
26-Jun					
27-Jun					
28-Jun	0	166	0	162	16
29-Jun	0	166	0	162	16
30-Jun	0	166	0	162	16
	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
1-Jul					
2-Jul					
3-Jul					
4-Jul	0	166	0	162	16
5-Jul	0	166	0	162	16
6-Jul	0	166	0	162	16
7-Jul	0	1,806	128	5,436	297
8-Jul	0	1,806	128	5,436	297
9-Jul	0	1,806	141	6,396	317
10-Jul	0	1,806	141	6,396	317
11-Jul					
12-Jul					
13-Jul	0	1,806	141	6,396	317
14-Jul	0	2,992	243	8,227	660
15-Jul	53	5,359	460	17,956	1,831
16-Jul	53	5,359	460	17,956	1,831
17-Jul	53	5,359	460	17,956	1,831

18-Jul	53	5,359	460	17,956	1,831
19-Jul					
20-Jul	53	5,359	460	17,956	1,831
21-Jul	144	15,419	755	22,692	2,720
22-Jul	144	16,719	755	27,516	6,462
23-Jul	184	21,786	908	38,527	7,169
24-Jul	184	21,786	908	38,527	7,169
25-Jul	184	21,786	908	38,527	7,169
26-Jul	184	21,786	908	38,527	7,169
27-Jul	186	32,469	1,582	67,897	8,040
28-Jul	188	48,997	2,731	99,570	10,956
29-Jul	188	59,967	3,519	113,447	11,029
30-Jul	188	62,124	3,638	118,163	12,549
31-Jul	188	62,124	3,638	118,163	12,549
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
1-Aug	188	62,124	3,638	121,856	12,829
2-Aug	188	62,124	3,638	138,182	17,669
3-Aug	198	63,415	3,881	182,972	18,335
4-Aug	199	65,242	4,761	205,798	22,828
5-Aug	228	66,905	5,286	231,505	23,761
6-Aug	228	66,905	5,286	231,505	23,761
7-Aug	228	66,905	5,286	231,505	23,761
8-Aug	228	66,905	5,286	231,505	23,761
9-Aug	228	66,905	5,286	231,505	23,761
10-Aug	228	66,905	5,286	231,505	23,761
11-Aug	228	66,905	5,286	231,505	23,761
12-Aug	230	67,315	5,507	245,338	24,465
13-Aug	230	67,315	5,507	245,338	24,465
14-Aug	230	67,315	5,507	245,338	24,465
15-Aug	230	67,315	5,507	245,338	24,465
16-Aug	230	69,659	6,192	261,719	25,101
17-Aug	230	69,677	6,194	263,820	28,717
18-Aug	230	69,677	6,194	294,711	30,245
19-Aug	230	70,760	7,665	367,962	34,495
20-Aug	230	71,619	7,984	390,706	34,677
21-Aug	230	71,619	7,984	405,530	35,577
22-Aug	230	72,169	9,114	438,453	35,807
23-Aug	230	72,169	9,114	438,453	35,807
24-Aug	230	72,299	9,256	453,652	35,843
25-Aug	230	72,389	9,416	477,022	35,876
26-Aug	230	72,389	9,416	482,762	35,876
27-Aug	230	72,389	9,416	504,368	36,526
28-Aug	230	72,389	9,416	504,368	36,526
29-Aug					
30-Aug					
31-Aug	230	72,389	9,416	504,368	36,526
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**

1-Sep	230	72,389	9,416	504,368	36,526
2-Sep	230	72,389	9,416	504,368	36,526
3-Sep	230	72,389	9,416	504,368	36,526
4-Sep	230	72,389	9,416	504,368	36,526
5-Sep	230	72,389	9,416	504,368	36,526
6-Sep	230	72,389	9,416	504,368	36,526
7-Sep	230	72,389	9,416	504,368	36,526
8-Sep	230	72,389	9,416	504,368	36,526
9-Sep	230	72,389	9,416	504,368	36,526
10-Sep	230	72,389	9,416	504,368	36,526
11-Sep	230	72,389	9,416	504,368	36,526
12-Sep	230	72,389	9,416	504,368	36,526
13-Sep	230	72,389	9,416	504,368	36,526
14-Sep	230	72,389	9,416	504,368	36,526
15-Sep	230	72,389	9,416	504,368	36,526
16-Sep	230	72,389	9,416	504,368	36,526
17-Sep					
18-Sep					
19-Sep					
20-Sep					
21-Sep					
22-Sep					
23-Sep					

Foul Bay SHA					
	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Foul Bay SHA	Foul Bay SHA	Foul Bay SHA	Foul Bay SHA	Foul Bay SHA
7-Jun	0	0	0	0	0
8-Jun	1	253	0	2	1
9-Jun	1	285	0	12	5
10-Jun					
11-Jun					
12-Jun					
13-Jun	2	685	0	12	5
14-Jun	2	685	0	12	5
15-Jun	2	933	0	12	5
16-Jun	2	933	0	12	5
17-Jun					
18-Jun					
19-Jun	2	933	0	12	5
20-Jun					
21-Jun	2	933	0	12	5
22-Jun	2	933	0	12	5
23-Jun					
24-Jun					
25-Jun					
26-Jun					
27-Jun					
28-Jun	2	933	0	12	5
29-Jun	2	933	0	12	5
30-Jun	2	933	0	12	5
	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
1-Jul					
2-Jul					
3-Jul					
4-Jul	2	933	0	12	5
5-Jul	2	933	0	12	5
6-Jul	2	933	0	12	5
7-Jul	2	933	0	12	5
8-Jul	2	933	0	12	5
9-Jul	2	933	0	12	5
10-Jul	2	933	0	12	5
11-Jul					
12-Jul					
13-Jul	2	933	0	12	5
14-Jul	2	933	0	12	5
15-Jul	2	933	0	12	5
16-Jul	2	933	0	12	5
17-Jul	2	933	0	12	5

18-Jul	2	933	0	12	5
19-Jul					
20-Jul	2	933	0	12	5
21-Jul	2	933	0	12	5
22-Jul	2	933	0	12	5
23-Jul	2	933	0	12	5
24-Jul	2	933	0	12	5
25-Jul	2	933	0	12	5
26-Jul	2	933	0	12	5
27-Jul	2	933	0	12	5
28-Jul	2	933	0	12	5
29-Jul	2	933	0	12	5
30-Jul	2	933	0	12	5
31-Jul	2	933	0	12	5
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
1-Aug	2	933	0	12	5
2-Aug	2	933	0	12	5
3-Aug	2	933	0	12	5
4-Aug	2	933	0	12	5
5-Aug	2	933	0	12	5
6-Aug	2	933	0	12	5
7-Aug	2	933	0	12	5
8-Aug	2	933	0	12	5
9-Aug	2	933	0	12	5
10-Aug	2	933	0	12	5
11-Aug	2	933	0	12	5
12-Aug	2	933	0	12	5
13-Aug	2	933	0	12	5
14-Aug	2	933	0	12	5
15-Aug	2	933	0	12	5
16-Aug	2	933	0	12	5
17-Aug	2	933	0	12	5
18-Aug	2	933	0	12	5
19-Aug	2	933	0	12	5
20-Aug	2	933	0	12	5
21-Aug	2	933	0	12	5
22-Aug	2	933	0	12	5
23-Aug	2	933	0	12	5
24-Aug	2	933	0	12	5
25-Aug	2	933	0	12	5
26-Aug	2	933	0	12	5
27-Aug	2	933	0	12	5
28-Aug	2	933	0	12	5
29-Aug					
30-Aug					
31-Aug	2	933	0	12	5
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**

1-Sep	2	933	0	12	5
2-Sep	2	933	0	12	5
3-Sep	2	933	0	12	5
4-Sep	2	933	0	12	5
5-Sep	2	933	0	12	5
6-Sep	2	933	0	12	5
7-Sep	2	933	0	12	5
8-Sep	2	933	0	12	5
9-Sep	2	933	0	12	5
10-Sep	2	933	0	12	5
11-Sep	2	933	0	12	5
12-Sep	2	933	0	12	5
13-Sep	2	933	0	12	5
14-Sep	2	933	0	12	5
15-Sep	2	933	0	12	5
16-Sep	2	933	0	12	5
17-Sep					
18-Sep					
19-Sep					
20-Sep					
21-Sep					
22-Sep					
23-Sep					

Waterfall SHA					
	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Waterfall SHA	Waterfall SHA	Waterfall SHA	Waterfall SHA	Waterfall SHA
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun					
11-Jun					
12-Jun					
13-Jun	0	10	0	0	0
14-Jun	0	10	0	0	0
15-Jun	0	10	0	0	0
16-Jun	0	10	0	0	0
17-Jun					
18-Jun					
19-Jun	0	10	0	0	0
20-Jun					
21-Jun	0	10	0	0	0
22-Jun	0	10	0	0	0
23-Jun					
24-Jun					
25-Jun					
26-Jun					
27-Jun					
28-Jun	0	10	0	0	0
29-Jun	0	10	0	0	0
30-Jun	0	10	0	0	0
	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
1-Jul					
2-Jul					
3-Jul					
4-Jul	0	10	0	0	0
5-Jul	0	10	0	0	0
6-Jul	0	10	0	0	0
7-Jul	0	10	0	0	0
8-Jul	0	10	0	0	0
9-Jul	0	10	0	0	0
10-Jul	0	10	0	0	0
11-Jul					
12-Jul					
13-Jul	0	10	0	0	0
14-Jul	0	10	0	0	0
15-Jul	0	10	0	0	0
16-Jul	0	10	0	0	0
17-Jul	0	10	0	0	0

18-Jul	0	10	0	0	0
19-Jul					
20-Jul	0	10	0	0	0
21-Jul	0	10	0	0	0
22-Jul	0	10	0	0	0
23-Jul	0	10	0	0	0
24-Jul	0	10	0	0	0
25-Jul	0	10	0	0	0
26-Jul	0	10	0	0	0
27-Jul	0	10	0	0	0
28-Jul	0	10	0	0	0
29-Jul	0	10	0	0	0
30-Jul	0	10	0	0	0
31-Jul	0	10	0	0	0
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
1-Aug	0	10	0	0	0
2-Aug	0	10	0	0	0
3-Aug	0	10	0	0	0
4-Aug	0	10	0	0	0
5-Aug	0	10	0	0	0
6-Aug	0	10	0	0	0
7-Aug	0	10	0	0	0
8-Aug	0	10	0	0	0
9-Aug	0	10	0	0	0
10-Aug	0	10	0	0	0
11-Aug	0	10	0	0	0
12-Aug	0	10	0	0	0
13-Aug	0	10	0	0	0
14-Aug	0	10	0	0	0
15-Aug	0	10	0	0	0
16-Aug	0	10	0	0	0
17-Aug	0	10	0	0	0
18-Aug	0	10	0	0	0
19-Aug	0	10	0	0	0
20-Aug	0	10	0	0	0
21-Aug	0	10	0	0	0
22-Aug	0	10	0	0	0
23-Aug	0	10	0	0	0
24-Aug	0	10	0	0	0
25-Aug	0	10	0	0	0
26-Aug	0	10	0	0	0
27-Aug	0	10	0	0	0
28-Aug	0	10	0	0	0
29-Aug					
30-Aug					
31-Aug	0	10	0	0	0
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**

1-Sep	0	10	0	0	0
2-Sep	0	10	0	0	0
3-Sep	0	10	0	0	0
4-Sep	0	10	0	0	0
5-Sep	0	10	0	0	0
6-Sep	0	10	0	0	0
7-Sep	0	10	0	0	0
8-Sep	0	10	0	0	0
9-Sep	0	10	0	0	0
10-Sep	0	10	0	0	0
11-Sep	0	10	0	0	0
12-Sep	0	10	0	0	0
13-Sep	0	10	0	0	0
14-Sep	0	10	0	0	0
15-Sep	0	10	0	0	0
16-Sep	0	10	0	0	0
17-Sep					
18-Sep					
19-Sep					
20-Sep					
21-Sep					
22-Sep					
23-Sep					

Telrod Cove SHA					
	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Telrod Cove SHA	Telrod Cove SHA	Telrod Cove SHA	Telrod Cove SHA	Telrod Cove SHA
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun					
11-Jun					
12-Jun					
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun					
18-Jun					
19-Jun	0	0	0	0	0
20-Jun					
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun					
24-Jun					
25-Jun					
26-Jun					
27-Jun					
28-Jun	0	0	0	0	0
29-Jun	0	4,848	0	917	0
30-Jun	0	4,848	0	917	0
	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
1-Jul					
2-Jul					
3-Jul					
4-Jul	0	8,990	0	4,071	6
5-Jul	0	8,990	0	4,071	6
6-Jul	0	8,990	0	4,071	6
7-Jul	0	8,990	0	4,071	6
8-Jul	0	11,379	0	7,884	18
9-Jul	0	11,379	0	7,884	18
10-Jul	0	12,900	0	9,224	18
11-Jul					
12-Jul					
13-Jul	0	18,157	0	12,747	28
14-Jul	0	18,157	0	12,747	28
15-Jul	0	20,712	0	13,684	71
16-Jul	0	20,712	0	13,684	71
17-Jul	0	20,712	0	13,684	71

18-Jul	0	26,683	0	15,236	126
19-Jul					
20-Jul	0	29,142	0	18,480	534
21-Jul	0	29,142	0	18,480	534
22-Jul	0	29,142	0	18,480	534
23-Jul	0	33,700	0	19,693	561
24-Jul	0	33,700	0	19,693	561
25-Jul	0	33,700	0	19,693	561
26-Jul	0	33,700	0	19,693	561
27-Jul	0	34,887	0	20,340	567
28-Jul	0	34,887	0	20,340	567
29-Jul	0	35,163	0	20,487	569
30-Jul	0	35,163	0	20,487	569
31-Jul	0	36,218	0	25,388	771
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
1-Aug	0	36,309	1	28,963	892
2-Aug	0	36,581	1	42,540	1,149
3-Aug	0	36,581	1	42,540	1,149
4-Aug	0	36,793	1	52,935	1,424
5-Aug	0	36,816	1	54,272	1,432
6-Aug	0	36,876	1	56,704	1,470
7-Aug	0	36,881	1	56,850	1,471
8-Aug	0	36,881	1	56,850	1,471
9-Aug	0	36,881	1	56,850	1,471
10-Aug	0	36,881	1	56,850	1,471
11-Aug	0	36,881	1	56,850	1,471
12-Aug	0	36,881	1	56,850	1,471
13-Aug	0	36,881	1	56,850	1,471
14-Aug	0	36,881	1	56,850	1,471
15-Aug	0	36,881	1	56,850	1,471
16-Aug	0	36,881	1	56,850	1,471
17-Aug	0	36,881	1	56,850	1,471
18-Aug	0	36,881	1	56,850	1,471
19-Aug	0	36,881	1	56,850	1,471
20-Aug	0	36,881	1	56,850	1,471
21-Aug	0	36,881	1	56,850	1,471
22-Aug	0	36,881	1	56,850	1,471
23-Aug	0	36,881	1	56,850	1,471
24-Aug	0	36,881	1	56,850	1,471
25-Aug	0	36,881	1	56,850	1,471
26-Aug	0	36,881	1	56,850	1,471
27-Aug	0	36,881	1	56,850	1,471
28-Aug	0	36,881	1	56,850	1,471
29-Aug					
30-Aug					
31-Aug	0	36,881	1	56,850	1,471
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**

1-Sep	0	36,881	1	56,850	1,471
2-Sep	0	36,881	1	56,850	1,471
3-Sep	0	36,881	1	56,850	1,471
4-Sep	0	36,881	1	56,850	1,471
5-Sep	0	36,881	1	56,850	1,471
6-Sep	0	36,881	1	56,850	1,471
7-Sep	0	36,881	1	56,850	1,471
8-Sep	0	36,881	1	56,850	1,471
9-Sep	0	36,881	1	56,850	1,471
10-Sep	0	36,881	1	56,850	1,471
11-Sep	0	36,881	1	56,850	1,471
12-Sep	0	36,881	1	56,850	1,471
13-Sep	0	36,881	1	56,850	1,471
14-Sep	0	36,881	1	56,850	1,471
15-Sep	0	36,881	1	56,850	1,471
16-Sep	0	36,881	1	56,850	1,471
17-Sep					
18-Sep					
19-Sep					
20-Sep					
21-Sep					
22-Sep					
23-Sep					

Telrod Cove Cost Recovery					
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
	Cumulative Telrod Cove Cost Recovery	**Cumulative** Telrod Cove Cost Recovery	**Cumulative** Telrod Cove Cost Recovery	**Cumulative** Telrod Cove Cost Recovery	**Cumulative** Telrod Cove Cost Recovery
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun					
11-Jun					
12-Jun					
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun					
18-Jun					
19-Jun	0	0	0	0	0
20-Jun					
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun					
24-Jun					
25-Jun					
26-Jun					
27-Jun					
28-Jun	0	0	0	0	0
29-Jun	0	4,848	0	917	0
30-Jun	0	4,848	0	917	0
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
1-Jul					
2-Jul					
3-Jul					
4-Jul	0	8,990	0	4,071	6
5-Jul	0	8,990	0	4,071	6
6-Jul	0	8,990	0	4,071	6
7-Jul	0	8,990	0	4,071	6
8-Jul	0	11,379	0	7,884	18
9-Jul	0	11,379	0	7,884	18
10-Jul	0	12,900	0	9,224	18
11-Jul					
12-Jul					
13-Jul	0	15,580	0	10,804	24
14-Jul	0	18,157	0	12,747	28
15-Jul	0	20,712	0	13,684	71
16-Jul	0	20,712	0	13,684	71
17-Jul	0	20,712	0	13,684	71

18-Jul	0	26,683	0	15,236	126
19-Jul					
20-Jul	0	29,142	0	18,480	534
21-Jul	0	29,142	0	18,480	534
22-Jul	0	29,142	0	18,480	534
23-Jul	0	33,700	0	19,693	561
24-Jul	0	33,700	0	19,693	561
25-Jul	0	33,700	0	19,693	561
26-Jul	0	33,700	0	19,693	561
27-Jul	0	34,887	0	20,340	567
28-Jul	0	34,887	0	20,340	567
29-Jul	0	35,163	0	20,487	569
30-Jul	0	35,163	0	20,487	569
31-Jul	0	36,218	0	25,388	771
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
1-Aug	0	36,218	0	25,388	771
2-Aug	0	36,218	0	25,388	771
3-Aug	0	36,218	0	25,388	771
4-Aug	0	36,218	0	25,388	771
5-Aug	0	36,218	0	25,388	771
6-Aug	0	36,218	0	25,388	771
7-Aug	0	36,218	0	25,388	771
8-Aug	0	36,218	0	25,388	771
9-Aug	0	36,218	0	25,388	771
10-Aug	0	36,218	0	25,388	771
11-Aug	0	36,218	0	25,388	771
12-Aug	0	36,218	0	25,388	771
13-Aug	0	36,218	0	25,388	771
14-Aug	0	36,218	0	25,388	771
15-Aug	0	36,218	0	25,388	771
16-Aug	0	36,218	0	25,388	771
17-Aug	0	36,218	0	25,388	771
18-Aug	0	36,218	0	25,388	771
19-Aug	0	36,218	0	25,388	771
20-Aug	0	36,218	0	25,388	771
21-Aug	0	36,218	0	25,388	771
22-Aug	0	36,218	0	25,388	771
23-Aug	0	36,218	0	25,388	771
24-Aug	0	36,218	0	25,388	771
25-Aug	0	36,218	0	25,388	771
26-Aug	0	36,218	0	25,388	771
27-Aug	0	36,218	0	25,388	771
28-Aug	0	36,218	0	25,388	771
29-Aug					
30-Aug					
31-Aug	0	36,218	0	25,388	771
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**

1-Sep	0	36,218	0	25,388	771
2-Sep	0	36,218	0	25,388	771
3-Sep	0	36,218	0	25,388	771
4-Sep	0	36,218	0	25,388	771
5-Sep	0	36,218	0	25,388	771
6-Sep	0	36,218	0	25,388	771
7-Sep	0	36,218	0	25,388	771
8-Sep	0	36,218	0	25,388	771
9-Sep	0	36,218	0	25,388	771
10-Sep	0	36,218	0	25,388	771
11-Sep	0	36,218	0	25,388	771
12-Sep	0	36,218	0	25,388	771
13-Sep	0	36,218	0	25,388	771
14-Sep	0	36,218	0	25,388	771
15-Sep	0	36,218	0	25,388	771
16-Sep	0	36,218	0	25,388	771
17-Sep					
18-Sep					
19-Sep					
20-Sep					
21-Sep					
22-Sep					
23-Sep					

Kitoi Cost Recovery					
	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Kitoi Cost Recovery	Kitoi Cost Recovery	Kitoi Cost Recovery	Kitoi Cost Recovery	Kitoi Cost Recovery
7-Jun	0	0	0	0	0
8-Jun	0	0	0	0	0
9-Jun	0	0	0	0	0
10-Jun					
11-Jun					
12-Jun					
13-Jun	0	0	0	0	0
14-Jun	0	0	0	0	0
15-Jun	0	0	0	0	0
16-Jun	0	0	0	0	0
17-Jun					
18-Jun					
19-Jun	0	0	0	0	0
20-Jun					
21-Jun	0	0	0	0	0
22-Jun	0	0	0	0	0
23-Jun					
24-Jun					
25-Jun					
26-Jun					
27-Jun					
28-Jun	0	0	0	0	0
29-Jun	0	0	0	0	0
30-Jun	0	0	0	0	0
	2019 Chinook	2019 Sockeye	2019 Coho	2019 Pink	2019 Chum
1-Jul					
2-Jul					
3-Jul					
4-Jul	0	0	0	0	0
5-Jul	0	0	0	0	0
6-Jul	0	0	0	0	0
7-Jul	0	0	0	0	0
8-Jul	0	0	0	0	0
9-Jul	0	0	0	0	0
10-Jul	0	0	0	0	0
11-Jul					
12-Jul					
13-Jul	0	0	0	0	0
14-Jul	0	0	0	0	0
15-Jul	0	0	0	0	0
16-Jul	0	0	0	0	0
17-Jul	0	0	0	0	0

18-Jul	0	0	0	0	0
19-Jul					
20-Jul	0	0	0	0	0
21-Jul	0	0	0	0	0
22-Jul	0	0	0	0	0
23-Jul	0	0	0	0	0
24-Jul	0	0	0	0	0
25-Jul	0	0	0	0	0
26-Jul	0	0	0	0	0
27-Jul	0	0	0	0	0
28-Jul	0	0	0	0	0
29-Jul	0	0	0	0	0
30-Jul	0	0	0	0	0
31-Jul	0	0	0	0	0
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**
1-Aug	0	0	0	0	0
2-Aug	0	0	0	0	0
3-Aug	0	0	0	0	0
4-Aug	0	0	0	0	0
5-Aug	0	0	0	0	0
6-Aug	0	0	0	0	0
7-Aug	0	0	0	0	0
8-Aug	0	190	0	65,913	96
9-Aug	0	190	0	65,913	96
10-Aug	0	190	0	65,913	96
11-Aug	0	190	0	65,913	96
12-Aug	0	190	0	65,913	96
13-Aug	0	190	0	65,913	96
14-Aug	0	190	0	166,814	96
15-Aug	0	245	0	234,119	96
16-Aug	0	245	0	234,119	96
17-Aug	0	245	0	234,119	96
18-Aug	0	245	0	234,119	96
19-Aug	0	245	0	234,119	96
20-Aug	0	245	0	234,119	96
21-Aug	0	245	0	234,119	96
22-Aug	0	245	0	234,119	96
23-Aug	0	245	0	234,119	96
24-Aug	0	245	0	234,119	96
25-Aug	0	245	0	465,986	96
26-Aug	0	245	0	465,986	96
27-Aug	0	245	0	465,986	96
28-Aug	0	245	0	465,986	96
29-Aug					
30-Aug					
31-Aug	0	245	0	1,009,074	96
	2019 Chinook	**2019 Sockeye**	**2019 Coho**	**2019 Pink**	**2019 Chum**

1-Sep	0	245	0	1,009,074	96
2-Sep	0	245	0	1,227,648	96
3-Sep	0	245	0	1,447,623	96
4-Sep	0	245	0	1,627,666	96
5-Sep	0	245	0	1,761,139	96
6-Sep	0	245	0	1,761,139	96
7-Sep	0	245	0	1,761,139	96
8-Sep	0	245	0	1,761,139	96
9-Sep	0	245	0	1,761,139	96
10-Sep	0	245	0	1,761,139	96
11-Sep	0	245	0	1,761,139	96
12-Sep	0	245	0	1,761,139	96
13-Sep	0	245	0	1,761,139	96
14-Sep	0	245	0	1,761,139	96
15-Sep	0	245	0	1,761,139	96
16-Sep	0	245	0	1,761,139	96
17-Sep					
18-Sep					
19-Sep					
20-Sep					
21-Sep					
22-Sep					
23-Sep					

2019 Kodiak Chinook Harvest

	Daily	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative		Cumulative
	Total Chinook Harvest	Karluk, NW Kodiak & SW Afognak	Ayakulik, Halibut Bay & Sturgeon	Alitak Bay, Olga, Moser & Dog Salmon	Cape Alitak & Humpy-Deadman	East & Northeast Kodiak	Duck, Izhut & Kitoi Bays	NW Afognak, Shuyak & Perenosa	SE Afognak & Raspberry	Cape Igvak & Wide Bay	Mid & North Mainland	Foul Bay SHA	Waterfall SHA	Telrod Cove SHA	Telrod Cove Cost Recovery	Kitoi cost Recovery	Igvak %	Cumulative Chinook Harvest
7-Jun	444	444	0	0	0	0	0	0	0	0	0	0	0	0	0	0		444
8-Jun	213	656	0	0	0	0	0	1	0	0	0	1	0	0	0	0		657
9-Jun	230	886	0	0	0	0	0	1	0	0	0	1	0	0	0	0		887
10-Jun	7	891	0	0	0	0	10	2	0	0	0	2	0	0	0	0		903
11-Jun																		
12-Jun																		
13-Jun																		
14-Jun	16	907	0	0	0	0	10	2	0	0	0	2	0	0	0	0		919
15-Jun	212	1,047	0	0	0	71	11	2	0	0	0	2	0	0	0	0		1,131
16-Jun	115	1,158	0	0	0	71	15	2	0	0	0	2	0	0	0	0		1,246
17-Jun																		
18-Jun																		
19-Jun	14	1,161	0	0	0	71	48	2	0	0	0	2	0	0	0	0		1,282
20-Jun																		
21-Jun	0	1,161	0	0	0	71	58	2	0	0	0	2	0	0	0	0		1,292
22-Jun	375	1,161	0	0	0	430	71	5	0	0	0	2	0	0	0	0		1,667
23-Jun																		
24-Jun																		
25-Jun																		
26-Jun																		
27-Jun																		
28-Jun	10	1,170	0	1	0	499	71	8	0	0	0	2	0	0	0	0		1,749
29-Jun	410	1,563	0	3	15	499	71	8	0	0	0	2	0	0	0	0		2,159
30-Jun	381	1,937	0	3	22	499	71	8	0	0	0	2	0	0	0	0		2,540
1-Jul																		
2-Jul																		
3-Jul																		
4-Jul	22	2,085	0	3	44	499	71	8	0	0	0	2	0	0	0	0		2,710
5-Jul	21	2,085	0	3	65	499	71	8	0	0	0	2	0	0	0	0		2,731
6-Jul	34	2,105	0	3	79	499	71	8	0	0	0	2	0	0	0	0		2,765
7-Jul	351	2,283	0	4	94	656	71	8	0	0	0	2	0	0	0	0		3,116
8-Jul	96	2,320	0	4	153	656	71	8	0	0	0	2	0	0	0	0		3,212
9-Jul	396	2,410	0	4	153	961	71	9	0	0	0	2	0	0	0	0		3,608
10-Jul	174	2,453	0	4	153	1,092	71	9	0	0	0	2	0	0	0	0		3,782
11-Jul																		
12-Jul																		
13-Jul	13	2,461	0	4	158	1,092	71	9	0	0	0	2	0	0	0	0		3,795
14-Jul	128	2,503	15	4	211	1,110	71	9	0	0	0	2	0	0	0	0		3,923
15-Jul	192	2,602	16	4	216	1,144	71	9	0	0	53	2	0	0	0	0		4,115
16-Jul	234	2,817	24	4	217	1,154	71	9	0	0	53	2	0	0	0	0		4,349
17-Jul	175	2,987	24	5	221	1,154	71	9	0	0	53	2	0	0	0	0		4,524
18-Jul	1	3,066	24	5	221	1,154	72	15	0	0	53	2	0	0	0	0		4,610
19-Jul																		
20-Jul	6	3,072	24	5	221	1,154	72	15	0	0	53	2	0	0	0	0		4,616
21-Jul	292	3,182	59	5	222	1,204	72	20	0	0	144	2	0	0	0	0		4,908

22-Jul	90	3,262	62	5	224	1,204	77	20	0	0	144	2	0	0	0	0	
23-Jul	232	3,470	76	5	232	1,204	77	22	0	0	184	2	0	0	0	0	
24-Jul	58	3,527	76	5	233	1,204	77	22	0	0	184	2	0	0	0	0	5,328
25-Jul	102	3,610	95	5	233	1,204	77	22	0	0	184	2	0	0	0	0	5,430
26-Jul	69	3,652	111	5	244	1,204	77	22	0	0	184	2	0	0	0	0	5,499
27-Jul	66	3,712	113	5	244	1,204	78	23	0	0	186	2	0	0	0	0	5,565
28-Jul	53	3,735	133	5	245	1,205	78	23	0	6	188	2	0	0	0	0	5,618
29-Jul	61	3,794	134	5	245	1,205	79	23	0	6	188	2	0	0	0	0	5,679
30-Jul	90	3,861	141	5	269	1,205	79	23	0	18	188	2	0	0	0	0	5,789
31-Jul	51	3,906	141	5	275	1,205	79	23	0	18	188	2	0	0	0	0	5,840
1-Aug	21	3,916	141	5	286	1,205	79	23	0	18	188	2	0	0	0	0	5,861
2-Aug	56	3,954	141	5	298	1,206	79	23	0	23	188	2	0	0	0	0	5,917
3-Aug	24	3,966	143	5	298	1,206	79	23	0	23	198	2	0	0	0	0	5,941
4-Aug	48	4,003	143	5	298	1,216	79	23	0	23	199	2	0	0	0	0	5,989
5-Aug	83	4,027	146	5	301	1,240	79	23	0	23	228	2	0	0	0	0	6,072
6-Aug	42	4,061	146	5	301	1,248	79	23	0	23	228	2	0	0	0	0	6,114
7-Aug	51	4,085	146	5	302	1,268	79	23	6	23	228	2	0	0	0	0	6,165
8-Aug	38	4,117	146	5	304	1,268	79	23	10	23	228	2	0	0	0	0	6,203
9-Aug	32	4,128	153	5	306	1,279	79	24	10	23	228	2	0	0	0	0	6,235
10-Aug	28	4,146	159	5	306	1,279	79	24	14	23	228	2	0	0	0	0	6,263
11-Aug	51	4,195	161	5	306	1,279	79	24	17	23	228	2	0	0	0	0	6,317
12-Aug	41	4,210	166	5	306	1,280	79	24	35	23	230	2	0	0	0	0	6,358
13-Aug	30	4,235	171	5	306	1,280	79	24	35	23	230	2	0	0	0	0	6,388
14-Aug	21	4,256	171	5	306	1,280	79	24	35	23	230	2	0	0	0	0	6,409
15-Aug	17	4,270	171	5	306	1,281	79	24	35	25	230	2	0	0	0	0	6,426
16-Aug	3	4,273	171	5	306	1,281	79	24	35	25	230	2	0	0	0	0	6,429
17-Aug	7	4,280	171	5	306	1,281	79	24	35	25	230	2	0	0	0	0	6,436
18-Aug	6	4,286	171	5	306	1,281	79	24	35	25	230	2	0	0	0	0	6,442
19-Aug	8	4,294	171	5	306	1,281	79	24	35	25	230	2	0	0	0	0	6,450
20-Aug	4	4,298	171	5	306	1,281	79	24	35	25	230	2	0	0	0	0	6,454
21-Aug	2	4,300	171	5	306	1,281	79	24	35	25	230	2	0	0	0	0	6,456
22-Aug	3	4,303	171	5	306	1,281	79	24	35	25	230	2	0	0	0	0	6,459
23-Aug	4	4,306	171	5	307	1,281	79	24	35	25	230	2	0	0	0	0	6,463
24-Aug	4	4,312	171	5	307	1,281	79	24	35	33	230	2	0	0	0	0	6,477
25-Aug	8	4,315	171	5	307	1,281	79	24	35	38	230	2	0	0	0	0	6,485
26-Aug	6	4,317	171	5	307	1,281	79	24	35	42	230	2	0	0	0	0	6,491
27-Aug	6	4,320	171	5	307	1,281	79	24	35	45	230	2	0	0	0	0	6,497
28-Aug	0	4,322	171	5	307	1,281	79	24	35	45	230	2	0	0	0	0	6,499
29-Aug																	
30-Aug																	
31-Aug	2	4,324	171	5	307	1,281	79	24	35	45	230	2	0	0	0	0	6,501
1-Sep	0	4,324	171	5	307	1,281	79	24	35	45	230	2	0	0	0	0	6,501
2-Sep	6	4,330	171	5	307	1,281	79	24	35	45	230	2	0	0	0	0	6,507
3-Sep	3	4,333	171	5	307	1,281	79	24	35	45	230	2	0	0	0	0	6,510
4-Sep	2	4,335	171	5	307	1,281	79	24	35	45	230	2	0	0	0	0	6,512
5-Sep	9	4,345	171	5	307	1,281	79	24	35	45	230	2	0	0	0	0	6,522
6-Sep	7	4,352	171	5	307	1,281	79	24	35	45	230	2	0	0	0	0	6,529
7-Sep	3	4,355	171	5	307	1,281	79	24	35	45	230	2	0	0	0	0	6,532
8-Sep	2	4,357	171	5	307	1,281	79	24	35	45	230	2	0	0	0	0	6,534
9-Sep	3	4,360	171	5	307	1,281	79	24	35	45	230	2	0	0	0	0	6,537
10-Sep	1	4,361	171	5	307	1,281	79	24	35	45	230	2	0	0	0	0	6,538

11-Sep	1	4,362	171	5	307	1,281	79	24	35	45	230	2	0	0	0	0
12-Sep	1	4,363	171	5	307	1,281	79	24	35	45	230	2	0	0	0	0
13-Sep	0	4,363	171	5	307	1,281	79	24	35	45	230	2	0	0	0	0
14-Sep	0	4,363	171	5	307	1,281	79	24	35	45	230	2	0	0	0	0
15-Sep	1	4,364	171	5	307	1,281	79	24	35	45	230	2	0	0	0	0
16-Sep	0	4,364	171	5	307	1,281	79	24	35	45	230	2	0	0	0	0
17-Sep																
18-Sep																
19-Sep																
20-Sep																
21-Sep																
22-Sep																
23-Sep																

6,540
6,540
6,541
6,541

2019 Kodiak Sockeye Harvest

	Daily	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative		Cumulative
	Total Sockeye Harvest	Karluk, NW Kodiak & SW Afognak	Ayakulik, Halibut Bay & Sturgeon	Alitak Bay, Olga, Moser & Dog Salmon	Cape Alitak & Humpy-Deadman	East & Northeast Kodiak	Duck, Izhut & Kitoi Bays	NW Afognak, Shuyak & Perenosa	SE Afognak & Raspberry	Cape Igvak & Wide Bay	Mid & North Mainland	Foul Bay SHA	Waterfall SHA	Telrod Cove SHA	Telrod Cove Cost Recovery	Kitoi cost Recovery	Igvak %	Cumulative Sockeye Harvest
7-Jun	1,915	1,915	0	0	0	0	0	0	0	0	0	0	0	0	0	0		1,915
8-Jun	6,272	7,749	0	0	0	0	185	253	0	0	0	253	0	0	0	0		8,187
9-Jun	8,000	15,648	0	0	0	0	254	285	0	0	0	285	0	0	0	0		16,187
10-Jun	750	15,824	0	0	0	0	1,179	695	0	0	0	685	10	0	0	0		17,698
11-Jun																		
12-Jun																		
13-Jun																		
14-Jun	660	16,271	0	0	0	213	1,179	695	0	0	0	688	10	0	0	0		18,358
15-Jun	10,512	19,086	0	0	0	5,833	1,585	2,366	0	0	0	933	10	0	0	0		28,870
16-Jun	5,889	24,827	0	0	0	6,725	1,733	2,420	0	0	0	933	10	0	0	0		35,705
17-Jun																		
18-Jun																		
19-Jun	314	25,176	0	0	0	6,725	2,596	2,420	0	0	0	933	10	0	0	0		36,917
20-Jun																		
21-Jun	4,934	25,176	0	7,186	0	6,725	2,983	2,420	0	0	0	933	10	0	0	0		44,490
22-Jun	15,018	25,176	0	16,055	0	11,534	3,334	3,409	0	0	0	933	10	0	0	0		59,508
23-Jun																		
24-Jun																		
25-Jun																		
26-Jun																		
27-Jun																		
28-Jun	11,530	28,318	0	55,669	0	12,904	3,334	3,457	0	0	166	933	10	0	0	0		103,848
29-Jun	49,523	57,854	0	60,220	18,403	12,904	3,334	3,457	0	0	166	933	10	4,848	4,848	0		156,338
30-Jun	34,546	80,243	0	65,661	25,105	12,904	3,334	3,471	0	0	166	933	10	4,848	4,848	0		190,884
1-Jul																		
2-Jul																		
3-Jul																		
4-Jul	15,290	86,172	0	72,623	35,637	12,904	3,334	3,471	0	0	166	933	10	8,990	8,990	0		214,307
5-Jul	17,583	86,172	0	75,728	50,115	12,904	3,334	3,471	0	0	166	933	10	8,990	8,990	0		231,890
6-Jul	26,076	94,137	0	79,903	62,451	14,504	3,334	3,471	0	0	166	933	10	8,990	8,990	0		257,966
7-Jul	58,798	131,116	0	83,039	71,204	21,797	3,334	4,468	0	0	1,806	933	10	8,990	8,990	0		316,764
8-Jul	43,620	152,216	0	87,155	89,343	22,062	3,334	4,468	0	0	1,806	933	10	11,379	11,379	0		360,384
9-Jul	55,763	191,826	0	87,155	89,452	34,738	3,334	7,836	0	0	1,806	933	10	11,379	11,379	0		416,147
10-Jul	51,843	230,647	0	87,155	89,452	47,168	3,334	8,415	13	0	1,806	933	10	12,900	12,900	0		467,990
11-Jul																		
12-Jul																		
13-Jul	17,432	247,497	0	91,813	90,830	49,074	3,334	8,415	13	0	1,806	933	10	18,157	15,580	0		492,782
14-Jul	110,181	279,716	52,207	97,832	102,090	56,364	3,334	8,415	13	0	2,992	933	10	18,157	15,157	0		602,963
15-Jul	42,027	296,895	67,806	99,679	105,167	58,322	3,334	8,415	13	0	5,359	933	10	20,712	20,712	0		644,990
16-Jul	60,744	331,888	82,436	102,736	111,556	59,713	3,334	8,699	13	0	5,359	933	10	20,712	20,712	0		705,734
17-Jul	45,392	365,135	82,436	105,013	118,943	59,768	3,334	10,916	222	0	5,359	933	10	20,712	20,712	0		751,126
18-Jul	9,155	376,153	82,436	107,629	120,680	59,768	3,580	11,832	222	0	5,359	933	10	26,683	26,683	0		767,659
19-Jul																		
20-Jul	13,014	385,519	83,166	113,996	121,044	59,768	4,018	11,832	222	0	5,359	933	10	29,142	29,142	0		784,924
21-Jul	61,062	413,179	97,454	117,293	122,304	60,545	4,018	15,562	222	0	15,419	933	10	29,142	29,142	0		845,986
22-Jul	24,778	428,372	102,730	118,927	122,921	60,545	4,492	15,836	222	0	16,719	933	10	29,142	29,142	0		870,764

23-Jul	54,870	460,049	105,691	122,201	124,104	60,545	4,769	32,000	555	0	21,876	933	10	33,700	33,700	0	
24-Jul	32,331	488,799	105,691	123,524	125,464	60,545	4,988	32,679	555	0	21,786	933	10	33,700	33,700	0	
25-Jul	109,019	530,551	145,005	125,873	129,148	60,545	5,225	54,362	555	0	21,786	933	10	33,700	33,700	0	1,073,050
26-Jul	103,342	556,035	215,702	128,822	130,716	60,545	5,571	56,660	555	0	21,786	933	10	33,700	33,700	0	1,176,392
27-Jul	68,792	580,529	231,667	161,743	130,952	60,545	5,888	71,496	555	2,561	32,469	933	10	34,887	34,887	0	1,248,405
28-Jul	70,308	592,632	262,241	134,236	132,834	60,932	5,919	71,496	555	8,871	48,997	933	10	34,887	34,887	0	1,318,713
29-Jul	49,301	609,545	273,917	136,064	133,384	61,132	6,379	73,184	555	13,887	59,967	933	10	35,163	35,163	0	1,368,014
30-Jul	9,262	617,256	281,461	137,427	133,877	61,132	6,425	73,184	2,080	17,425	62,124	933	10	35,163	35,163	0	1,392,391
31-Jul	18,581	633,156	281,461	138,946	134,509	61,132	6,955	73,184	2,080	17,425	62,124	933	10	36,218	36,218	0	1,410,972
1-Aug	14,308	644,442	281,461	139,771	135,471	61,132	7,162	73,184	2,080	18,453	62,124	933	10	36,309	36,218	0	1,425,280
2-Aug	32,686	665,250	281,461	140,502	136,800	61,683	7,218	73,184	2,080	27,664	62,124	933	10	36,581	36,218	0	1,457,966
3-Aug	25,280	678,897	288,317	141,896	137,374	61,683	7,218	73,184	2,080	29,198	63,412	933	10	36,581	36,218	0	1,483,259
4-Aug	39,663	697,581	297,602	143,478	138,568	63,000	7,218	73,184	2,080	34,969	65,242	933	10	36,793	36,218	0	1,522,922
5-Aug	46,971	715,764	315,790	145,198	142,487	63,527	7,218	73,184	2,088	37,732	66,905	933	10	36,816	36,218	0	1,569,893
6-Aug	18,240	731,848	315,790	145,198	142,670	64,941	7,218	73,701	2,130	37,732	66,905	933	10	36,876	36,218	0	1,588,133
7-Aug	17,661	745,821	317,270	145,198	143,610	66,135	7,218	73,701	2,204	37,732	66,905	933	10	36,881	36,218	0	1,605,794
8-Aug	13,750	757,416	317,270	145,198	144,188	67,460	7,408	73,701	2,266	37,732	66,905	933	10	36,881	36,218	190	1,619,544
9-Aug	9,114	763,648	317,963	145,198	144,537	68,967	7,408	73,944	2,356	37,732	66,905	933	10	36,881	36,218	190	1,628,658
10-Aug	10,885	769,107	322,298	145,198	144,899	70,323	7,408	74,137	2,485	37,732	66,905	933	10	36,881	36,218	190	1,640,492
11-Aug	17,838	781,585	324,904	145,198	145,429	71,308	7,408	74,419	2,527	38,812	66,905	933	10	36,881	36,218	190	1,658,495
12-Aug	19,155	792,281	328,278	145,198	145,937	72,177	7,408	74,530	2,673	41,853	67,315	933	10	36,881	36,218	190	1,677,650
13-Aug	22,241	804,614	334,732	145,198	146,367	72,800	7,408	74,530	2,673	44,254	67,315	933	10	36,881	36,218	190	1,699,891
14-Aug	22,486	819,875	337,182	145,198	146,812	73,512	7,408	75,613	2,673	46,789	67,315	933	10	36,881	36,218	190	1,722,377
15-Aug	24,152	835,995	343,624	145,198	147,185	73,918	7,463	75,779	2,673	47,379	67,315	933	10	36,881	36,218	245	1,746,529
16-Aug	19,424	850,430	344,617	145,198	148,263	74,126	7,463	75,851	2,681	48,405	69,659	933	10	36,881	36,218	245	1,766,693
17-Aug	18,862	860,422	350,521	145,198	148,932	74,369	7,463	75,851	2,713	50,409	69,677	933	10	36,881	36,218	245	1,785,555
18-Aug	11,988	865,870	353,226	145,198	149,508	74,660	7,463	74,851	2,756	53,334	69,677	933	10	368,881	36,218	245	1,797,543
19-Aug	14,645	875,577	353,723	145,198	150,266	74,909	7,463	75,893	2,878	55,521	70,760	933	10	36,881	36,218	245	1,812,188
20-Aug	12,489	880,402	356,600	145,198	150,658	75,102	7,463	75,940	3,025	59,401	71,619	933	10	36,881	36,218	245	1,825,408
21-Aug	15,239	885,939	359,665	145,198	151,877	75,377	7,463	76,052	3,081	64,376	71,619	933	10	36,881	36,218	245	1,840,647
22-Aug	15,925	891,576	364,267	145,198	152,466	75,649	7,463	76,072	3,160	68,552	72,169	933	10	36,881	36,218	245	1,856,572
23-Aug	8,126	893,717	365,205	145,198	155,842	75,856	7,463	76,072	3,190	69,986	72,169	933	10	36,881	36,218	245	1,864,698
24-Aug	11,316	903,992	365,865	145,198	157,761	76,067	7,463	76,072	3,381	71,231	72,299	933	10	36,881	36,218	245	1,879,329
25-Aug	14,428	912,023	369,525	145,198	159,135	76,206	7,775	76,072	3,405	72,029	72,389	933	10	36,881	36,218	245	1,893,757
26-Aug	11,116	920,175	369,525	145,198	160,443	76,285	8,805	76,072	3,422	72,559	72,389	933	10	36,881	36,218	245	1,904,873
27-Aug	13,442	927,983	370,674	145,198	162,365	76,470	8,986	76,072	3,438	74,740	72,389	933	10	36,881	36,218	245	1,918,315
28-Aug	327	929,054	371,046	145,198	162,365	76,470	9,313	76,072	3,438	74,740	72,389	933	10	36,881	36,218	245	1,920,085
29-Aug																	
30-Aug																	
31-Aug	2,350	931,364	371,046	145,198	162,368	76,507	9,313	76,072	3,438	74,740	72,389	933	10	36,881	36,218	245	1,922,435
1-Sep	27,986	958,352	371,182	145,198	163,170	76,567	9,313	76,072	3,438	74,740	72,389	933	10	36,881	36,218	245	1,950,421
2-Sep	14,107	972,418	371,182	145,198	163,174	76,604	9,313	76,072	3,438	74,740	72,389	933	10	36,881	36,218	245	1,964,528
3-Sep	33,611	1,005,418	371,182	145,198	163,758	76,631	9,313	76,072	3,438	74,740	72,389	933	10	36,881	36,218	245	1,998,139
4-Sep	5,861	1,011,279	371,182	145,198	163,758	76,631	9,313	76,072	3,438	74,740	72,389	933	10	36,881	36,218	245	2,004,000
5-Sep	15,233	1,030,920	371,182	145,198	163,758	76,631	10,932	76,072	3,438	74,740	72,389	933	10	36,881	36,218	245	2,025,260
6-Sep	5,095	1,035,943	371,182	145,198	163,758	76,631	11,004	76,072	3,438	74,740	72,389	933	10	36,881	36,248	245	2,030,355
7-Sep	13,474	1,048,902	371,182	145,198	163,760	76,696	11,452	76,072	3,438	74,740	72,389	933	10	36,881	36,218	245	2,043,829
8-Sep	1,874	1,050,700	371,182	145,198	163,760	76,750	11,474	76,072	3,438	74,740	72,389	933	10	36,881	36,218	245	2,045,703
9-Sep	11,275	1,061,656	371,182	145,198	163,760	76,783	11,500	76,072	3,698	74,740	72,389	933	10	36,881	36,218	245	2,056,978
10-Sep	4,891	1,066,889	371,371	145,198	163,760	76,859	11,514	76,072	3,700	74,740	72,389	933	10	36,881	36,218	245	2,062,492
11-Sep	7,922	1,074,811	371,371	145,198	163,760	76,859	11,514	76,072	3,700	74,740	72,389	933	10	36,881	36,218	245	2,070,414

12-Sep	2,146	1,076,957	371,371	145,198	163,760	76,859	11,514	76,072	3,700	74,740	72,389	933	10	36,881	36,218	245
13-Sep	8,359	1,085,316	371,371	145,198	163,760	76,859	11,514	76,072	3,700	74,740	72,389	933	10	36,881	36,218	245
14-Sep	9,055	1,094,371	371,371	145,198	163,760	76,859	11,514	76,072	3,700	74,740	72,389	933	10	36,881	36,218	245
15-Sep	3,607	1,098,023	371,371	145,198	163,760	76,859	11,514	76,072	3,700	74,740	72,389	933	10	36,881	36,218	245
16-Sep	3,578	1,101,601	371,371	145,198	163,760	76,859	11,514	76,072	3,700	74,740	72,389	933	10	36,881	36,218	245
17-Sep																
18-Sep																
19-Sep																
20-Sep																
21-Sep																
22-Sep																
23-Sep																

2,089,974
2,093,626
2,097,204

2019 Kodiak Coho Harvest

	Daily	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative		Cumulative
	Total Coho Harvest	Karluk, NW Kodiak & SW Afognak	Ayakulik, Halibut Bay & Sturgeon	Alitak Bay, Olga, Moser & Dog Salmon	Cape Alitak & Humpy-Deadman	East & Northeast Kodiak	Duck, Izhut & Kitoi Bays	NW Afognak, Shuyak & Perenosa	SE Afognak & Raspberry	Cape Igvak & Wide Bay	Mid & North Mainland	Foul Bay SHA	Waterfall SHA	Telrod Cove SHA	Telrod Cove Cost Recovery	Kitoi cost Recovery	Igvak %	Cumulative Coho Harvest
7-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
8-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
9-Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0
10-Jun	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0		3
11-Jun																		
12-Jun																		
13-Jun																		
14-Jun	4	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0		4
15-Jun	27	2	0	0	0	26	3	0	0	0	0	0	0	0	0	0		31
16-Jun	8	6	0	0	0	26	7	0	0	0	0	0	0	0	0	0		39
17-Jun																		
18-Jun																		
19-Jun	0	6	0	0	0	26	10	0	0	0	0	0	0	0	0	0		42
20-Jun																		
21-Jun	0	6	0	0	0	26	47	0	0	0	0	0	0	0	0	0		79
22-Jun	36	6	0	0	0	58	51	0	0	0	0	0	0	0	0	0		115
23-Jun																		
24-Jun																		
25-Jun																		
26-Jun																		
27-Jun																		
28-Jun	15	19	0	2	0	112	51	0	0	0	0	0	0	0	0	0		184
29-Jun	57	59	0	2	17	112	51	0	0	0	0	0	0	0	0	0		241
30-Jun	136	190	0	2	20	112	51	2	0	0	0	0	0	0	0	0		377
1-Jul																		
2-Jul																		
3-Jul																		
4-Jul	138	202	0	7	153	112	51	2	0	0	0	0	0	0	0	0		527
5-Jul	226	202	0	24	362	112	51	2	0	0	0	0	0	0	0	0		753
6-Jul	657	262	0	24	486	585	51	2	0	0	0	0	0	0	0	0		1,410
7-Jul	3,829	792	0	48	541	3,644	51	35	0	0	128	0	0	0	0	0		5,239
8-Jul	571	1,084	0	73	784	3,655	51	35	0	0	128	0	0	0	0	0		5,810
9-Jul	4,549	2,101	0	73	801	7,107	51	98	0	0	141	0	0	0	0	0		10,372
10-Jul	4,159	3,361	0	73	801	9,970	51	134	0	0	141	0	0	0	0	0		14,531
11-Jul																		
12-Jul																		
13-Jul	603	4,096	0	97	801	10,284	51	134	0	0	141	0	0	0	0	0		15,604
14-Jul	2,724	6,053	102	131	820	10,794	51	134	0	0	243	0	0	0	0	0		18,328
15-Jul	1,396	7,032	145	134	838	10,930	51	134	0	0	460	0	0	0	0	0		19,724
16-Jul	2,445	8,808	190	140	914	11,423	51	183	0	0	460	0	0	0	0	0		22,169
17-Jul	1,885	10,504	190	147	991	11,429	51	236	46	0	460	0	0	0	0	0		24,054
18-Jul	49	10,875	190	159	1,009	11,429	83	250	46	0	460	0	0	0	0	0		24,501
19-Jul																		
20-Jul	285	11,017	190	176	1,010	11,429	225	250	46	0	460	0	0	0	0	0		24,803
21-Jul	1,472	11,842	337	186	1,047	11,493	226	343	46	0	755	0	0	0	0	0		26,275
22-Jul	722	12,318	376	199	1,052	11,493	401	357	46	0	755	0	0	0	0	0		26,997

23-Jul	1,646	13,311	439	208	1,070	11,493	429	885	73	0	908	0	0	0	0	0	
24-Jul	614	13,840	439	210	1,083	11,493	470	914	73	0	908	0	0	0	0	0	
25-Jul	1,388	14,901	505	230	1,101	11,493	533	1,074	73	0	908	0	0	0	0	0	30,818
26-Jul	903	15,461	634	257	1,189	11,493	610	1,096	73	0	908	0	0	0	0	0	31,721
27-Jul	2,153	16,250	695	280	1,189	11,493	666	1,231	73	496	1,582	0	0	0	0	0	33,955
28-Jul	2,637	16,943	786	309	1,200	11,541	674	1,231	73	1,104	2,731	0	0	0	0	0	36,592
29-Jul	2,923	18,171	954	331	1,227	11,541	777	1,303	73	1,619	3,519	0	0	0	0	0	39,515
30-Jul	597	18,703	974	348	1,279	11,541	786	1,303	384	2,180	3,638	0	0	0	0	0	41,136
31-Jul	1,210	19,779	974	33	1,295	11,541	889	1,303	384	2,180	3,638	0	0	0	0	0	42,346
1-Aug	781	20,456	974	374	1,315	11,541	945	1,303	384	2,197	3,638	0	0	1	0	0	43,127
2-Aug	2,797	21,752	974	397	1,341	11,730	958	1,303	384	3,447	3,638	0	0	1	0	0	45,924
3-Aug	2,078	22,679	1,091	452	1,345	11,730	958	1,303	384	4,179	3,881	0	0	1	0	0	48,002
4-Aug	4,100	24,410	1,117	505	1,365	11,957	958	1,303	384	5,342	4,761	0	0	1	0	0	52,102
5-Aug	4,322	25,470	1,703	563	1,395	12,228	958	1,303	396	7,122	5,286	0	0	1	0	0	56,424
6-Aug	3,655	27,348	1,703	563	1,398	12,802	958	1,508	1,391	7,122	5,286	0	0	1	0	0	60,079
7-Aug	2,795	28,816	1,778	563	1,476	13,858	958	1,508	1,509	7,122	5,286	0	0	1	0	0	62,874
8-Aug	3,833	30,682	1,778	563	1,503	15,646	958	1,508	1,661	7,122	5,286	0	0	1	0	0	66,707
9-Aug	2,746	31,819	1,847	563	1,516	16,729	958	1,690	1,923	7,122	5,286	0	0	1	0	0	69,453
10-Aug	4,243	34,066	2,157	563	1,579	17,799	958	2,023	2,178	7,122	5,286	0	0	1	0	0	73,731
11-Aug	3,076	35,556	2,265	563	1,623	18,619	958	2,243	2,291	7,487	5,286	0	0	1	0	0	76,891
12-Aug	6,369	37,732	2,365	563	1,650	19,505	958	2,345	2,614	9,990	5,507	0	0	1	0	0	83,260
13-Aug	6,370	41,381	2,561	563	1,682	20,372	958	2,345	2,614	12,647	5,507	0	0	1	0	0	89,630
14-Aug	14,653	51,064	2,717	563	1,721	21,275	958	2,412	2,614	15,452	5,507	0	0	1	0	0	104,283
15-Aug	4,679	53,957	2,914	563	1,746	22,020	958	2,672	2,614	16,011	5,507	0	0	1	0	0	108,962
16-Aug	6,752	58,139	2,956	563	2,077	22,680	658	2,903	2,661	16,857	6,192	0	0	1	0	0	115,986
17-Aug	5,418	60,440	3,350	563	2,244	23,669	958	2,903	2,815	18,268	6,194	0	0	1	0	0	121,404
18-Aug	7,698	63,080	3,525	563	2,602	24,545	958	2,903	3,237	21,495	6,194	0	0	1	0	0	129,102
19-Aug	8,863	65,721	3,585	563	3,353	25,253	958	3,038	3,698	24,131	7,665	0	0	1	0	0	137,965
20-Aug	10,576	68,220	3,728	563	3,929	26,130	958	3,103	4,353	29,623	7,984	0	0	1	0	0	148,591
21-Aug	13,171	73,572	3,907	563	5,554	27,462	958	3,262	4,836	33,664	7,984	0	0	1	0	0	161,762
22-Aug	11,195	76,732	4,338	563	5,964	28,988	958	3,272	5,536	37,492	9,114	0	0	1	0	0	172,957
23-Aug	13,236	81,148	4,471	563	8,493	30,103	958	3,272	7,546	40,525	9,114	0	0	1	0	0	186,193
24-Aug	11,374	86,360	4,588	563	10,356	31,361	958	3,272	8,359	43,566	9,256	0	0	1	0	0	198,639
25-Aug	12,610	91,629	4,706	563	11,340	33,158	2,693	3,377	8,599	45,768	9,416	0	0	1	0	0	211,249
26-Aug	11,545	95,644	4,706	563	12,392	34,293	6,060	3,377	8,791	47,552	9,416	0	0	1	0	0	222,794
27-Aug	17,134	99,690	5,018	563	13,970	35,892	8,334	3,377	8,965	54,703	9,416	0	0	1	0	0	239,928
28-Aug	4,708	99,853	5,121	563	13,970	35,892	13,042	3,377	8,965	54,703	9,416	0	0	1	0	0	244,902
29-Aug																	
30-Aug																	
31-Aug	3,800	101,470	5,121	563	14,033	38,012	13,042	3,377	8,965	54,703	9,416	0	0	1	0	0	248,702
1-Sep	12,499	109,717	5,939	563	16,084	39,395	13,042	3,377	8,965	54,703	9,416	0	0	1	0	0	261,201
2-Sep	12,660	119,450	5,939	563	16,177	42,229	13,042	3,377	8,965	54,703	9,416	0	0	1	0	0	273,861
3-Sep	21,851	137,700	5,939	563	17,142	44,865	13,042	3,377	8,965	54,703	9,416	0	0	1	0	0	295,712
4-Sep	6,055	143,755	5,939	563	17,142	44,865	13,042	3,377	8,965	54,703	9,416	0	0	1	0	0	301,767
5-Sep	14,182	156,516	5,939	563	17,142	44,865	17,460	3,377	8,965	54,703	9,416	0	0	1	0	0	318,946
6-Sep	5,405	160,117	5,939	563	17,142	44,865	19,264	3,377	8,965	54,703	9,416	0	0	1	0	0	324,351
7-Sep	14,341	166,860	5,939	563	17,158	45,703	26,008	3,377	8,965	54,703	9,416	0	0	1	0	0	338,692
8-Sep	6,764	168,848	5,939	563	17,158	47,496	28,390	3,978	8,965	54,703	9,416	0	0	1	0	0	345,456
9-Sep	11,087	176,425	5,939	563	17,158	48,068	31,240	3,978	9,053	54,703	9,416	0	0	1	0	0	356,543
10-Sep	8,572	179,348	5,971	563	17,158	49,635	34,374	5,187	9,054	54,703	9,416	0	0	1	0	0	365,409
11-Sep	4,400	183,748	5,971	563	17,158	49,635	34,374	5,187	9,054	54,703	9,416	0	0	1	0	0	369,809

12-Sep	1,531	185,279	5,971	563	17,158	49,635	34,374	5,187	9,054	54,703	9,416	0	0	1	0	0	
13-Sep	3,675	188,954	5,971	563	17,158	49,635	34,374	5,187	9,054	54,703	9,416	0	0	1	0	0	
14-Sep	2,028	190,982	5,971	563	17,158	49,635	34,374	5,187	9,054	54,703	9,416	0	0	1	0	0	377,043
15-Sep	1,944	192,944	5,971	563	17,158	49,635	34,374	5,187	9,054	54,703	9,416	0	0	1	0	0	379,005
16-Sep	1,595	194,529	5,971	563	17,158	49,635	34,374	5,187	9,054	54,703	9,416	0	0	1	0	0	380,600
17-Sep																	
18-Sep																	
19-Sep																	

2019 Kodiak Pink Harvest

	Daily	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative		Cumulative
	Total Pink Harvest	Karluk, NW Kodiak & SW Afognak	Ayakulik, Halibut Bay & Sturgeon	Alitak Bay, Olga, Moser & Dog Salmon	Cape Alitak & Humpy-Deadman	East & Northeast Kodiak	Duck, Izhut & Kitoi Bays	NW Afognak, Shuyak & Perenosa	SE Afognak & Raspberry	Cape Igvak & Wide Bay	Mid & North Mainland	Foul Bay SHA	Waterfall SHA	Telrod Cove SHA	Telrod Cove Cost Recovery	Kitoi cost Recovery	Igvak %	Cumulative Pink Harvest
7-Jun	168	168	0	0	0	0	0	0	0	0	0	0	0	0	0	0		168
8-Jun	2,219	1,504	0	0	0	0	881	2	0	0	0	2	0	0	0	0		2,387
9-Jun	1,419	2,685	0	0	0	0	1,109	12	0	0	0	12	0	0	0	0		3,806
10-Jun	1,621	2,887	0	0	0	0	3,952	12	0	0	0	12	0	0	0	0		6,851
11-Jun																		
12-Jun																		
13-Jun																		
14-Jun	4,895	3,064	0	0	0	4,718	3,952	12	0	0	0	12	0	0	0	0		11,746
15-Jun	67,458	6,243	0	0	0	69,973	4,970	12	0	0	0	12	0	0	0	0		79,198
16-Jun	6,790	12,364	0	0	0	71,669	5,639	64	0	0	0	12	0	0	0	0		89,736
17-Jun																		
18-Jun																		
19-Jun	541	12,455	0	0	0	71,669	8,683	64	0	0	0	12	0	0	0	0		92,871
20-Jun																		
21-Jun	144	12,455	0	0	0	71,669	10,010	64	0	0	0	12	0	0	0	0		94,198
22-Jun	40,913	12,455	0	0	0	109,992	11,787	877	0	0	0	12	0	0	0	0		135,111
23-Jun																		
24-Jun																		
25-Jun																		
26-Jun																		
27-Jun																		
28-Jun	5,747	18,028	0	250	0	118,696	11,787	1,156	0	0	162	12	0	0	0	0		150,079
29-Jun	137,799	151,497	0	542	4,523	118,696	11,787	1,156	0	0	162	12	0	917	917	0		288,363
30-Jun	111,878	259,309	0	1,162	7,724	118,696	11,787	1,401	0	0	162	12	0	917	917	0		400,241
1-Jul																		
2-Jul																		
3-Jul																		
4-Jul	29,725	284,278	0	2,669	34,207	118,696	11,787	1,401	0	0	162	12	0	4,071	4,071	0		453,200
5-Jul	26,422	284,278	0	4,124	59,174	118,696	11,787	1,401	0	0	162	12	0	4,071	4,071	0		479,622
6-Jul	108,527	366,155	0	5,900	79,834	122,910	11,787	1,401	0	0	162	12	0	4,071	4,071	0		588,149
7-Jul	523,760	812,943	0	7,582	99,439	160,638	11,787	14,084	0	0	5,436	12	0	4,071	4,071	0		1,111,909
8-Jul	315,735	1,065,717	0	10,486	157,896	162,238	11,787	14,084	0	0	5,436	12	0	7,884	7,884	0		1,427,644
9-Jul	522,492	1,509,812	0	10,486	159,524	208,620	11,787	44,471	0	0	6,396	12	0	7,884	7,884	0		1,951,096
10-Jul	420,673	1,877,603	0	10,486	159,524	258,136	11,787	47,837	0	0	6,396	12	0	9,224	9,224	0		2,371,769
11-Jul																		
12-Jul																		
13-Jul	72,423	1,983,999	0	15,319	161,236	266,364	11,787	47,837	0	0	6,396	12	0	12,747	10,804	0		2,492,938
14-Jul	415,688	2,329,800	21,234	22,049	183,341	284,351	11,787	47,837	0	0	8,227	12	0	12,747	12,747	0		2,908,626
15-Jul	213,306	2,492,732	28,529	26,130	190,996	305,965	11,787	47,837	0	0	17,956	12	0	13,684	13,684	0		3,121,932
16-Jul	368,362	2,806,342	45,893	30,794	212,512	311,361	11,787	53,649	0	0	17,956	12	0	13,684	13,684	0		3,490,294
17-Jul	328,208	3,111,462	45,893	35,140	227,132	311,762	11,787	55,148	2,222	0	17,956	12	0	13,684	13,684	0		3,818,502
18-Jul	15,213	3,215,144	45,893	40,646	241,300	311,762	17,190	64,233	2,222	0	17,956	12	0	15,236	15,236	0		3,956,346
19-Jul																		
20-Jul	100,809	3,296,086	47,651	50,776	250,595	311,762	22,718	64,233	2,222	0	17,956	12	0	18,480	18,480	0		4,063,999
21-Jul	615,180	3,775,610	110,304	55,307	270,873	316,333	24,306	101,532	2,222	0	22,692	12	0	18,480	18,480	0		4,679,179
22-Jul	261,381	3,973,073	140,251	57,735	385,676	316,333	31,573	106,181	2,222	0	27,516	12	0	18,480	18,480	0		4,940,560
23-Jul	511,780	4,377,536	152,964	63,424	314,077	316,333	35,438	159,595	7,214	0	38,527	12	0	19,693	19,693	0		5,465,108
24-Jul	364,072	4,707,442	152,964	67,221	338,754	316,333	39,273	161,452	7,214	0	38,527	12	0	19,693	19,693	0		5,829,180
25-Jul	569,069	5,144,513	224,845	72,066	344,260	316,333	43,852	206,639	7,214	0	38,527	12	0	19,693	19,693	0		6,398,249
26-Jul	360,400	5,399,153	302,310	78,129	355,597	316,333	51,326	210,060	7,214	0	38,527	12	0	19,693	19,693	0		6,758,649
27-Jul	352,317	5,592,993	350,308	84,805	365,825	316,333	56,127	230,107	7,214	47,989	67,897	12	0	20,340	20,340	0		7,119,598
28-Jul	431,536	5,780,651	400,604	88,475	407,301	324,187	56,847	230,107	7,214	156,178	99,570	12	0	20,340	20,340	0		7,551,134
29-Jul	568,865	6,149,189	450,997	92,580	434,214	328,039	69,562	238,033	7,214	236,724	113,447	12	0	20,487	20,487	0		8,119,999
30-Jul	201,475	6,321,160	469,007	95,581	462,472	328,039	72,262	238,033	19,747	265,260	118,163	12	0	20,487	20,487	0		8,389,724
31-Jul	403,479	6,661,487	469,007	98,865	499,309	328,039	95,293	238,033	19,747	265,260	118,163	12	0	25,388	25,388	0		8,793,203
1-Aug	315,719	6,850,644	469,007	101,426	522,694	328,039	111,584	238,033	19,747	345,892	121,856	12	0	28,963	25,388	0		9,108,922
2-Aug	557,685	7,211,538	469,007	104,002	553,344	337,342	115,715	238,033	19,747	479,697	138,182	12	0	42,540	25,388	0		9,666,607
3-Aug	305,634	7,378,037	480,916	108,385	576,597	337,342	115,715	283,033	19,747	572,797	182,972	12	0	42,540	25,388	0		10,010,541
4-Aug	505,231	7,673,544	506,756	111,361	624,892	358,846	115,715	238,033	19,747	661,080	205,798	12	0	52,935	25,388	0		10,515,772

5-Aug	528,033	7,925,702	598,692	115,688	709,984	381,868	115,715	238,033	22,313	704,305	231,505	12	0	54,272	25,388	0	11,043,805
6-Aug	429,046	8,250,859	598,692	115,688	728,921	429,044	115,715	259,918	38,204	704,305	231,505	12	0	56,704	25,388	0	11,472,851
7-Aug	521,105	8,541,387	610,395	115,688	804,943	543,536	115,705	259,918	66,164	704,305	231,505	12	0	56,850	25,388	0	11,993,956
8-Aug	586,565	8,841,753	610,395	115,688	879,729	648,715	181,628	259,918	106,885	704,305	231,505	12	0	56,850	25,388	65,913	12,580,521
9-Aug	547,066	9,088,187	618,671	115,688	911,890	833,960	181,628	288,415	153,338	704,305	231,505	12	0	56,850	25,388	65,913	13,127,587
10-Aug	622,172	9,364,387	683,557	115,688	956,202	1,105,705	181,628	311,752	193,176	704,305	231,505	12	0	56,850	25,388	65,913	13,847,905
11-Aug	631,023	9,638,182	694,843	115,688	997,926	1,297,185	181,628	341,878	218,346	766,896	231,505	12	0	56,850	25,388	65,913	14,484,077
12-Aug	751,349	9,936,476	714,788	115,688	1,029,365	1,530,331	181,628	355,667	268,268	857,877	245,338	12	0	56,850	25,388	65,913	15,235,426
13-Aug	655,307	10,253,778	760,909	115,688	1,063,584	1,697,048	181,628	355,667	268,268	948,825	245,338	12	0	56,850	25,388	65,913	15,890,733
14-Aug	880,934	10,631,522	786,867	115,688	1,104,406	1,903,691	282,529	364,002	268,268	1,069,356	245,338	12	0	56,850	25,388	166,814	16,771,667
15-Aug	805,438	11,109,555	818,670	115,688	1,142,046	2,036,155	349,834	393,998	268,268	1,097,553	245,338	12	0	56,850	25,388	234,119	17,577,105
16-Aug	813,347	11,660,856	823,376	115,688	1,221,232	2,135,470	349,834	423,635	286,617	1,158,959	261,719	12	0	56,850	25,388	234,119	18,437,386
17-Aug	818,047	12,096,216	893,978	115,688	1,285,568	2,260,379	349,834	423,635	329,268	1,237,047	263,820	12	0	56,820	25,388	234,119	19,255,433
18-Aug	844,851	12,522,250	919,553	115,688	1,343,163	2,412,568	349,834	423,635	395,589	1,323,293	294,711	12	0	56,850	25,388	234,119	20,100,284
19-Aug	1,032,113	13,068,316	926,802	115,688	1,413,628	2,550,239	349,834	440,971	504,732	1,394,225	367,962	12	0	56,850	25,388	234,119	21,132,397
20-Aug	862,320	13,354,838	956,314	115,688	1,460,310	2,729,730	349,834	448,056	615,855	1,583,447	390,706	12	0	56,850	25,388	234,119	22,004,751
21-Aug	776,626	13,615,643	979,672	115,688	1,522,960	2,926,970	349,834	459,745	687,821	1,717,514	405,530	12	0	56,850	25,388	234,119	22,781,377
22-Aug	807,441	13,829,811	1,006,612	115,688	1,562,012	3,066,866	349,834	461,053	784,771	1,973,718	438,453	12	0	56,850	25,388	234,119	23,588,818
23-Aug	700,140	14,099,091	1,012,734	115,688	1,657,793	3,229,281	349,834	461,053	855,457	2,069,574	438,453	12	0	56,850	25,388	234,119	24,288,958
24-Aug	822,623	14,455,922	1,017,432	115,688	1,734,069	3,393,561	349,834	461,053	997,427	2,189,787	453,652	12	0	56,850	25,388	234,119	25,168,428
25-Aug	1,210,607	14,794,056	1,044,242	115,688	1,778,626	3,563,352	836,977	495,345	1,034,898	2,238,829	477,022	12	0	56,850	25,388	465,986	26,379,035
26-Aug	1,314,277	15,066,737	1,044,242	115,688	1,822,486	3,679,119	1,669,321	495,345	1,059,712	2,257,900	482,762	12	0	56,850	25,388	465,986	27,693,312
27-Aug	904,095	15,261,905	1,073,596	115,688	1,887,047	3,735,446	2,160,654	495,345	1,083,597	2,279,761	504,368	12	0	56,850	25,388	465,986	28,597,407
28-Aug	609,095	15,267,985	1,078,341	115,688	1,887,047	3,735,446	2,767,749	495,345	1,083,597	2,279,761	504,368	12	0	56,850	25,388	465,986	29,217,327
29-Aug																	
30-Aug																	
31-Aug	237,600	15,296,536	1,078,341	115,688	1,889,321	3,811,117	3,231,452	495,345	1,083,597	2,279,761	504,368	12	0	56,850	25,388	1,009,074	29,785,526
1-Sep	345,406	15,497,657	1,079,172	115,688	1,937,964	3,905,928	3,231,452	495,345	1,083,597	2,279,761	504,368	12	0	56,850	25,388	1,009,074	30,130,932
2-Sep	360,546	15,594,389	1,079,172	115,688	1,939,122	3,950,010	3,450,026	495,345	1,083,597	2,279,761	504,368	12	0	56,850	25,388	1,227,648	30,491,478
3-Sep	495,656	15,812,268	1,079,172	115,688	1,960,895	3,975,562	3,680,478	495,345	1,083,597	2,279,761	504,368	12	0	56,850	25,388	1,447,623	30,987,134
4-Sep	284,598	15,916,823	1,079,172	115,688	1,960,895	3,975,562	3,860,521	495,345	1,083,597	2,279,761	504,368	12	0	56,850	25,388	1,627,666	31,271,732
5-Sep	455,028	16,055,023	1,079,172	115,688	1,960,895	3,975,562	4,188,457	495,345	1,083,597	2,279,761	504,568	12	0	56,850	25,388	1,761,139	31,737,868
6-Sep	322,827	16,088,103	1,079,172	115,688	1,960,895	3,975,562	4,478,204	495,345	1,083,597	2,279,761	504,368	12	0	56,850	25,388	1,761,139	32,060,695
7-Sep	375,573	16,152,111	1,079,172	115,688	1,961,465	3,983,593	4,781,168	495,345	1,083,597	2,279,761	504,368	12	0	56,850	25,388	1,761,139	32,436,268
8-Sep	130,907	16,205,908	1,079,172	115,688	1,961,465	4,000,287	4,841,397	495,532	1,083,597	2,279,761	504,368	12	0	56,850	25,388	1,761,139	32,567,175
9-Sep	117,682	16,269,131	1,079,172	115,688	1,961,465	4,007,747	4,886,640	495,532	1,085,353	2,279,761	504,368	12	0	56,850	25,388	1,761,139	32,684,857
10-Sep	93,065	16,292,256	1,079,805	115,688	1,961,465	4,025,438	4,913,516	521,826	1,095,317	2,279,761	504,368	12	0	56,850	25,388	1,761,139	32,789,440
11-Sep	34,147	16,326,403	1,079,805	115,388	1,961,465	4,025,438	4,913,516	521,826	1,095,317	2,279,761	504,368	12	0	56,850	25,388	1,761,139	32,823,587
12-Sep	4,631	16,331,034	1,079,805	115,388	1,961,465	4,025,438	4,913,516	521,826	1,095,317	2,279,761	504,368	12	0	56,850	25,388	1,761,139	32,828,218
13-Sep	11,205	16,342,239	1,079,805	115,388	1,961,465	4,025,438	4,913,516	521,826	1,095,317	2,279,761	504,368	12	0	56,850	25,388	1,761,139	32,839,423
14-Sep	4,419	16,346,658	1,079,805	115,388	1,961,465	4,025,438	4,913,516	521,826	1,095,317	2,279,761	504,368	12	0	56,850	25,388	1,761,139	32,843,842
15-Sep	2,543	16,349,237	1,079,805	115,388	1,961,465	4,025,438	4,913,516	521,826	1,095,317	2,279,761	504,368	12	0	56,850	25,388	1,761,139	32,846,421
16-Sep	3,497	16,352,734	1,079,805	115,388	1,961,465	4,025,438	4,913,516	521,826	1,095,317	2,279,761	504,368	12	0	56,850	25,388	1,761,139	32,849,918
17-Sep																	
18-Sep																	
19-Sep																	
20-Sep																	
21-Sep																	
22-Sep																	
23-Sep																	

2019 Kodiak Chum Harvest

	Daily	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative	Cumulative
	Total Chum Harvest	Karluk, NW Kodiak & SW Afognak	Ayakulik, Halibut Bay & Sturgeon	Alitak Bay, Olga, Moser & Dog Salmon	Cape Alitak & Humpy-Deadman	East & Northeast Kodiak	Duck, Izhut & Kitoi Bays	NW Afognak, Shuyak & Perenosa	SE Afognak & Raspberry	Cape Igvak & Wide Bay	Mid & North Mainland	Foul Bay SHA	Waterfall SHA	Telrod Cove SHA	Telrod Cove Cost Recovery	Kitoi cost Recovery	Igvak %	Cumulative Chum Harvest
7-Jun	73	73	0	0	0	0	0	0	0	0	0	0	0	0	0	0		73
8-Jun	408	352	0	0	0	0	128	1	0	0	0	1	0	0	0	0		481
9-Jun	598	933	0	0	0	0	141	5	0	0	0	5	0	0	0	0		1,079
10-Jun	288	1,008	0	0	0	0	547	5	0	0	0	5	0	0	0	0		1,560
11-Jun																		
12-Jun																		
13-Jun																		
14-Jun	461	1,091	0	0	0	378	547	5	0	0	0	5	0	0	0	0		2,021
15-Jun	11,858	1,986	0	0	0	10,876	1,021	5	0	0	0	5	0	0	0	0		13,879
16-Jun	2,190	4,041	0	0	0	11,512	1,156	17	0	0	0	5	0	0	0	0		16,726
17-Jun																		
18-Jun																		
19-Jun	1,364	4,059	0	0	0	11,512	3,466	17	0	0	0	5	0	0	0	0		19,054
20-Jun																		
21-Jun	36	4,059	0	1	0	11,512	4,650	17	0	0	0	5	0	0	0	0		20,239
22-Jun	10,568	4,059	0	8	0	20,478	5,656	606	0	0	0	5	0	0	0	0		30,807
23-Jun																		
24-Jun																		
25-Jun																		
26-Jun																		
27-Jun																		
28-Jun	986	5,022	0	59	0	26,425	5,656	627	0	0	16	5	0	0	0	0		37,805
29-Jun	5,641	10,274	0	99	349	26,425	5,656	627	0	0	16	5	0	0	0	0		43,446
30-Jun	6,381	16,277	0	188	626	26,425	5,656	639	0	0	16	5	0	0	0	0		49,827
1-Jul																		
2-Jul																		
3-Jul																		
4-Jul	524	16,628	0	293	1,094	26,425	5,656	639	0	0	16	5	0	6	6	0		50,751
5-Jul	596	16,628	0	354	1,629	26,425	5,656	639	0	0	16	5	0	6	6	0		51,347
6-Jul	2,529	18,524	0	474	2,042	26,525	5,656	639	0	0	16	5	0	6	6	0		53,876
7-Jul	13,771	27,267	0	602	2,678	30,222	5,656	925	0	0	297	5	0	6	6	0		67,647
8-Jul	8,183	33,337	0	772	4,529	30,314	5,656	925	0	0	297	5	0	18	18	0		75,830
9-Jul	13,397	42,629	0	772	4,618	34,023	5,656	1,232	0	0	317	5	0	18	18	0		89,247
10-Jul	18,848	58,832	0	772	4,618	36,655	5,656	1,245	0	0	317	5	0	18	18	0		108,095
11-Jul																		
12-Jul																		
13-Jul	2,605	62,394	0	1,163	4,651	37,830	5,656	1,245	0	0	317	5	0	28	24	0		113,256
14-Jul	16,890	75,680	141	2,155	5,685	38,924	5,656	1,245	0	0	660	5	0	28	28	0		130,146
15-Jul	10,616	84,381	221	2,454	5,794	39,180	5,656	1,245	0	0	1,831	5	0	71	71	0		140,762
16-Jul	15,130	98,085	371	2,852	6,471	39,258	5,656	1,368	0	0	1,831	5	0	71	71	0		155,892
17-Jul	14,817	112,012	371	3,135	6,775	39,259	5,656	1,561	109	0	1,831	5	0	71	71	0		170,709
18-Jul	1,517	115,362	371	3,633	6,950	39,259	6,574	2,034	109	0	1,831	5	0	126	126	0		176,123
19-Jul																		
20-Jul	5,189	118,414	394	4,214	7,062	39,259	8,395	2,034	109	0	1,831	5	0	534	534	0		181,712
21-Jul	14,047	129,288	1,139	4,447	7,340	39,415	8,801	2,500	109	0	2,720	5	0	534	534	0		195,759
22-Jul	12,778	135,782	1,395	4,696	7,608	39,415	10,526	2,544	109	0	6,462	5	0	534	534	0		208,537

23-Jul	15,020	147,489	1,808	5,135	7,968	39,415	12,029	3,271	223	0	7,169	5	0	561	561	0	
24-Jul	10,879	156,793	1,808	5,415	8,290	39,415	12,990	3,283	223	0	7,169	5	0	561	561	0	
25-Jul	12,137	167,596	2,071	5,692	8,368	39,415	13,424	3,563	223	0	7,169	5	0	561	561	0	247,523
26-Jul	6,588	172,757	2,303	6,191	8,643	39,415	13,826	3,584	223	0	7,169	5	0	561	561	0	254,111
27-Jul	12,450	181,558	2,449	6,632	8,736	39,415	14,156	3,868	223	2,294	8,040	5	0	567	567	0	267,371
28-Jul	15,091	189,773	2,664	7,017	9,338	39,474	14,172	3,868	223	4,977	10,956	5	0	567	567	0	282,462
29-Jul	18,344	199,243	2,968	7,347	9,648	39,524	14,577	3,956	223	11,029	12,291	5	0	569	569	0	300,806
30-Jul	5,313	204,008	3,066	7,601	9,891	39,524	14,667	3,956	1,267	13,024	12,549	5	0	569	569	0	309,553
31-Jul	8,879	211,849	3,066	7,811	10,378	39,524	15,008	3,956	1,267	13,024	12,549	5	0	771	771	0	318,432
1-Aug	8,629	218,476	3,066	7,869	10,686	39,524	15,086	3,956	1,267	14,302	12,829	5	0	892	771	0	327,061
2-Aug	19,056	225,984	3,066	7,979	11,070	39,733	15,105	3,956	1,267	20,288	17,669	5	0	1,149	771	0	346,117
3-Aug	8,990	231,170	3,375	8,358	11,294	39,733	15,105	3,956	1,267	24,847	18,335	5	0	1,149	771	0	357,440
4-Aug	20,986	241,777	3,530	8,562	11,834	40,453	15,105	3,956	1,267	29,114	22,828	5	0	1,424	771	0	378,426
5-Aug	12,269	246,497	4,498	8,915	12,573	41,151	15,105	3,956	1,270	32,969	23,761	5	0	1,432	771	0	390,695
6-Aug	5,041	250,360	4,498	8,915	12,652	42,046	15,105	4,138	1,292	32,969	23,761	5	0	1,470	771	0	395,736
7-Aug	5,937	254,475	4,595	8,915	13,072	43,328	15,105	4,138	1,315	32,969	23,761	5	0	1,471	771	0	401,693
8-Aug	4,380	257,567	4,595	8,915	13,501	44,063	15,201	4,138	1,343	32,969	23,761	5	0	1,471	771	96	406,053
9-Aug	3,358	259,207	4,684	8,915	13,839	45,254	15,201	4,202	1,379	32,969	23,761	5	0	1,471	771	96	409,411
10-Aug	3,949	261,262	5,238	8,915	14,054	45,806	15,201	4,265	1,435	32,969	23,761	5	0	1,471	771	96	412,993
11-Aug	4,886	263,543	5,499	8,915	14,346	45,778	15,201	4,326	1,458	34,166	23,761	5	0	1,471	771	96	417,993
12-Aug	6,073	266,337	5,756	8,915	14,486	47,504	15,201	4,373	1,527	35,502	24,465	5	0	1,471	771	96	424,066
13-Aug	6,687	269,572	6,317	8,915	14,773	48,419	15,201	4,373	1,527	37,191	24,465	5	0	1,471	771	96	430,753
14-Aug	5,848	272,495	6,592	8,915	14,984	49,256	15,201	4,455	1,527	38,711	24,465	5	0	1,471	771	96	436,601
15-Aug	3,639	274,656	6,913	8,915	15,133	49,817	15,201	4,580	1,527	39,033	24,465	5	0	1,471	771	96	440,240
16-Aug	5,901	278,559	6,950	8,915	15,598	50,044	15,201	4,676	1,528	39,757	25,101	5	0	1,471	771	96	446,329
17-Aug	8,021	280,586	7,426	8,915	16,109	50,563	15,201	4,676	1,549	40,608	28,717	5	0	1,471	771	96	454,350
18-Aug	5,622	282,310	7,675	8,915	16,529	51,217	15,201	4,676	1,588	41,616	30,245	5	0	1,471	771	96	459,972
19-Aug	8,365	284,217	7,739	8,915	17,248	51,842	15,201	4,732	1,632	42,316	34,495	5	0	1,471	771	96	468,337
20-Aug	4,931	286,295	7,942	8,915	17,685	52,558	15,201	4,741	1,741	43,517	34,677	5	0	1,471	771	96	473,272
21-Aug	8,522	290,434	8,010	8,915	18,692	53,793	15,201	4,791	1,795	44,586	35,577	5	0	1,471	771	96	481,794
22-Aug	4,688	292,143	8,189	8,915	18,999	54,877	15,201	4,792	1,844	45,715	35,807	5	0	1,471	771	96	486,482
23-Aug	3,593	293,442	8,204	8,915	20,093	55,609	15,201	4,792	1,875	46,137	35,807	5	0	1,471	771	96	490,075
24-Aug	3,560	295,050	8,214	8,915	20,962	56,441	15,201	4,792	1,933	46,776	35,843	5	0	1,471	771	96	494,127
25-Aug	2,753	297,374	8,301	8,915	21,941	58,046	15,776	4,792	2,068	47,207	35,876	5	0	1,471	771	96	497,543
26-Aug	2,753	297,374	8,301	8,915	21,941	58,046	15,776	4,792	2,068	47,207	35,876	5	0	1,471	771	96	500,296
27-Aug	3,423	298,413	8,361	8,915	22,636	58,489	15,952	4,792	2,112	47,523	36,526	5	0	1,471	771	96	503,719
28-Aug	159	298,473	8,380	8,915	22,636	58,489	16,111	4,792	2,112	47,523	36,526	5	0	1,471	771	96	503,957
29-Aug																	
30-Aug																	
31-Aug	618	298,666	8,380	8,915	22,640	58,910	16,111	4,792	2,112	47,523	36,526	5	0	1,471	771	96	504,575
1-Sep	2,283	299,724	8,380	8,915	23,236	59,539	16,111	4,792	2,112	47,523	36,526	5	0	1,471	771	96	506,858
2-Sep	1,008	300,420	8,380	8,915	23,245	59,842	16,111	4,792	2,112	47,523	36,526	5	0	1,471	771	96	507,866
3-Sep	2,555	301,550	8,380	8,915	24,318	60,194	16,111	4,792	2,112	47,523	36,526	5	0	1,471	771	96	510,421
4-Sep	452	302,002	8,380	8,915	24,318	60,194	16,111	4,792	2,112	47,523	36,526	5	0	1,471	771	96	510,873
5-Sep	1,144	303,011	8,380	8,915	24,318	60,194	16,407	4,792	2,112	47,523	36,526	5	0	1,471	771	96	512,178
6-Sep	527	303,517	8,380	8,915	24,318	60,194	16,428	4,792	2,112	47,523	36,526	5	0	1,471	771	96	512,705
7-Sep	669	303,995	8,380	8,915	24,322	60,348	16,461	4,792	2,112	47,523	36,526	5	0	1,471	771	96	513,374
8-Sep	837	304,111	8,380	8,915	24,322	61,057	16,468	4,797	2,112	47,523	36,526	5	0	1,471	771	96	514,211
9-Sep	509	304,536	8,380	8,915	24,322	61,127	16,479	4,797	2,115	47,523	36,526	5	0	1,171	771	96	514,720
10-Sep	650	304,614	8,380	8,915	24,322	61,692	16,483	4,800	2,116	47,523	36,526	5	0	1,471	771	96	515,371
11-Sep	267	304,881	8,380	8,915	24,322	61,692	16,483	4,800	2,116	47,523	36,526	5	0	1,471	771	96	515,638

12-Sep	73	304,954	8,380	8,915	24,322	61,692	16,483	4,800	2,116	47,523	36,526	5	0	1,471	771	96
13-Sep	165	305,119	8,380	8,915	24,322	61,692	16,483	4,800	2,116	47,523	36,526	5	0	1,471	771	96
14-Sep	55	305,174	8,380	8,915	24,322	61,692	16,483	4,800	2,116	47,523	36,526	5	0	1,471	771	96
15-Sep	48	305,231	8,380	8,915	24,322	61,692	16,483	4,800	2,116	47,523	36,526	5	0	1,471	771	96
16-Sep	54	305,285	8,380	8,915	24,322	61,692	16,483	4,800	2,116	47,523	36,526	5	0	1,471	771	96
17-Sep																
18-Sep																
19-Sep																
20-Sep																
21-Sep																
22-Sep																
23-Sep																

515,931
515,988
516,042

Salmon Migration Timing
Kodiak Management Area to Area H

Salmon Stock	Kodiak	Area H
Kenai Early Run Chinook	April - May	May- June
Susitna Chinook	April - May	May- June
Little Su Chinook	April - May	May- June
Westside Chinook	May	May- June
Big River Chinook	May	May- June
South Peninsula Chinook	May	May- June
Tyonek Chinook	May - June	Late May - Early June
Kenai Late Run Chinook	June - July	July - August
Kasilof Chinook	May - July	June - August
Kenai Early Run Sockeye	April - May	June
Kasilof Early Run Sockeye	April - May	May- June
Mitfik Sockeye	May - June	July
Kasilof Sockeye	June	June - July
Kenai Sockeye	June - July	July - August
Susitna Sockeye	June	July - August
Westside Sockeye	June	July - August
Packers Creek Sockeye	June	July - Early August
Crescent River Sockeye	June - July	July - August
Susitna Chum	June	July
McNeil Chum	Late June - July	July - Early August
Chinitna Bay Chum	July	August
Westside Coho	June - July	July - August
Kenai Coho	July - August	August - September
Northern Pinks	July	Mid July - Early August
Kenai Pinks	July - August	Late July - Early August
Lower Cook Inlet Pinks	July - August	Mid July - August

Discussion:

1. Mid-April thru August are the four months during which salmon natal to Area H migrate thru the Kodiak Management Area.
2. Area H includes Upper, Lower and Northern Cook Inlet, Outer Districts and Resurrection Bay.
3. Salmon passage time thru the Kodiak Management Area varies from 3 - 4 weeks, depending on species, physical vigor and water temperatures.
4. Continuous 100-plus, 24-hour a day seine fishing in the Kodiak Management Area assures maximum exploitation of non-local salmon stocks.

Proposal 37 – Comments

5AAC 18.xx – New Section – New King Salmon Management Plan

If proposal 37 is revised as indicated below, UCIDA may support such a plan; however, as written, **UCIDA IS OPPOSED TO PROPOSAL 37.**

1. Kodiak and Area H application is too limiting. Doesn't include Area L.

2. Doesn't include Prince William Sound or Southeast Alaska

3. Limits are only for commercial fisheries. Recreational fisheries for Chinook must be included

4. Should include all salmon stocks: sockeye, coho, chum and pink

5. Agree on the need for some coordinated "conservation management measures" for all salmon in Areas E, H, K and L, in all districts, for all user groups.

UCIDA suggests the BOF adopt the following language For the Kodiak and Lower Cook Inlet Management Areas:

5 AAC 18.xxx. Kodiak Area Salmon Management Plan (adopted from 5 AAC 21.363. Upper Cook Inlet Salmon Management Plan).

(a) Provides the department long-term direction in the management of non-local and local salmon stocks. Divisions within the department must receive long-term direction in order to accomplish their mission and plan management, research, administrative and other programs. Kodiak, Area L and Area H stakeholders should be informed of the long-term management objectives of the Board of Fisheries (BOF) for the management, development and conservation of these salmon stocks;

(1) consistent with the statutory priority for subsistence, the harvest of Kodiak Management Area salmon for customary and traditional subsistence uses will be provided for specific species in appropriate areas, seasons, and periods to satisfy subsistence needs; other beneficial uses, to the extent they are consistent with the public interest;

(2) the purpose of this Kodiak Area Salmon Management Plan is to allow harvests of Kodiak Area salmon stocks, while minimizing directed harvest of Area L, Area H and other non-local salmon stocks. The board recognized that some incidental harvest of other stocks has and will occur in this area while the seine fishery is managed for harvests of local Kodiak Area salmon stocks. The BOF intends, however, to prevent the harvest patterns which began in the late 1980s;

(3) to provide for the management and allocation of the Kodiak Management Area resources, the harvest of the Kodiak Management Area salmon will be governed by specific and

comprehensive management plans adopted by the board for salmon stocks and species, on Kodiak Management Area-wide basis, for different areas, and drainages and for different types of fisheries;

(4) in adopting the specific management plans described in (2) of this subsection the BOF will consider:

(A) the need for sustainable fisheries for all salmon stocks and salmon species throughout Area L, Area H the Kodiak Management Area;

(B) the protection of the fisheries habitat both in the fresh water and the marine environment throughout Area L, Area H the Kodiak Management Area;

(C) the various needs and demands of the user groups of the salmon resources of the Area L, Area H the Kodiak Management Area.

(5) In these management plans, the BOF may, as appropriate, address the following considerations:

(A) the need to allocate the harvestable surplus among Federal subsistence, commercial and recreational fisheries; and

(B) the need to allocate the harvestable surplus within user groups;

(6) in the absence of a specific management plan, it is the intent of the BOF that salmon be harvested in the fisheries that have historically harvested them, according to the methods, means, times, locations and natal origins of those fisheries;

(7) consistent with 5 AAC 39.220(b), it is the intent of the BOF that, in the absence of a specific management plan, where there are known conservation problems, the burden of conservation shall, to the extent practicable, be shared among all user groups in close proportion to their respective harvest on the stock of concern.

(b) In this section, in the absence of a specific management plan, "Area L, Area H the Kodiak Management Area" means those salmon that move through these waters and spawn in waters draining into those areas.

(c) Notwithstanding any other provision of this chapter, it is the intent of the BOF that, while in most circumstances the department will adhere to the management plans in this chapter, no provision within a specific management plan is intended to limit the commissioner's use of emergency authority under AS 16.050.060 to achieve established escapement goals for the management plans as the primary management objective. For the purpose of this subsection, "escapement goals" includes inriver goal, biological escapement goal, sustainable escapement goal, and optimal escapement goal as defined in 5 AAC 39.222.

(d) This plan will be in effect for the entire year, January 1 through December 31.

Kodiak Management Area Commercial Chinook Removals 2017 - 2019

1. Cape Igvak and Mainland Districts ONLY

- **June 1 thru Sept 30**

Chinoook	2017	2018	2019
Delivered	1,322	374	275
Discarded	1,869	538	396
Total Removals	3,191	912	671

2. Kodiak Island ONLY

- **June 1 thru Sept 30**

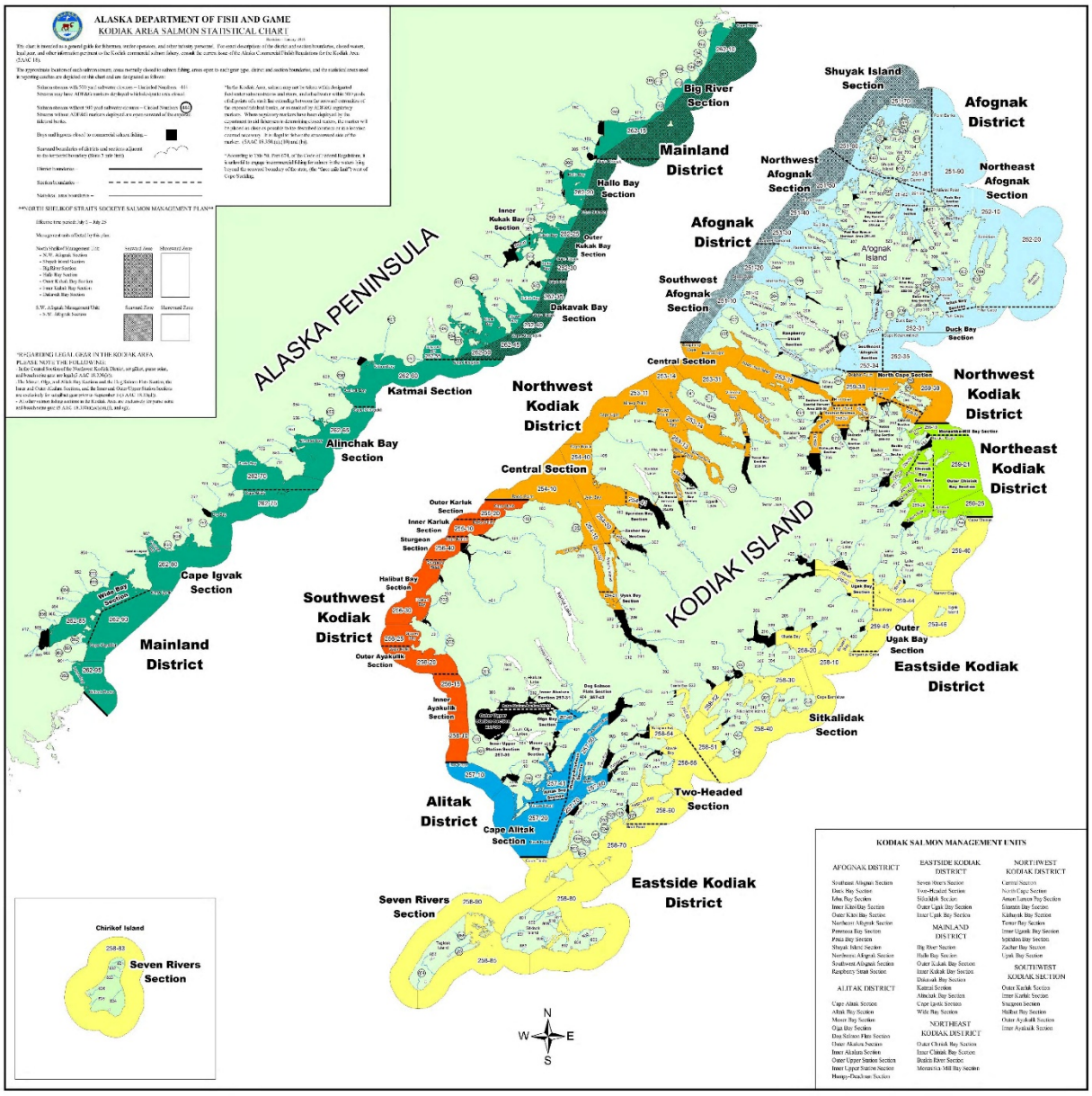
Chinoook	2017	2018	2019
Delivered	5,155	2,999	6,266
Discarded	7,423	4,318	9,023
Total Removals	12,578	7,317	15,289

Total Chinook Removals - Kodiak Management Area Only

- **Entire Season - June 1 thru Sept 30**

Chinoook - commercial	2017	2018	2019	Totals
Catch	19,400	10,000	19,600	*49,000*
Delivered	6,477	3,373	6,541	16,391
Discards (72% Mortality)	9,326	4,857	9,420	23,603
Total	15,803	8,230	15,961	39,994
Chinook - sport				
Salt Water Catch	32,229	*30,000*	*30,000*	*92,229*
Salt Water Harvest	11,065	*10,000*	*10,000*	*31,065*
Discards (15% Mortality)	3,175	*3,000*	*3,000*	*9,175*
Total	14,240	*13,000*	*13,000*	*40,240*
Total Removals	**30,043**	***21,230***	***28,961***	***80,234***

Note #1: Estimated Values in Italics


ALASKA DEPARTMENT OF FISH AND GAME
KODIAK AREA SALMON STATISTICAL CHART
ALASKA PENINSULA
KODIAK ISLAND
Mainland District
Cape Igvak Section
Alinchak Bay Section
Katmai Section
Southwest Kodiak District
Outer Karluk Section
Inner Karluk Section
Sturgeon Section
Halibut Bay Section
Outer Ayakulik Section
Inner Ayakulik Section
Alitak District
Cape Alitak Section
Seven Rivers Section
Eastside Kodiak District
Two-Headed Section
Sitkalidak Section
Outer Ugak Bay Section
Northwest Kodiak District
Central Section
Big River Section
Hallo Bay Section
Inner Kukak Bay Section
Outer Kukak Bay Section
Dakavak Bay Section
Northeast Kodiak District
Afognak District
Shuyak Island Section
Northwest Afognak Section
Northeast Afognak Section
Southwest Afognak Section
Duck Bay Section
Chirikof Island
KODIAK SALMON MANAGEMENT UNITS
AFOGNAK DISTRICT
EASTSIDE KODIAK DISTRICT
NORTHWEST KODIAK DISTRICT
MAINLAND DISTRICT
ALITAK DISTRICT
NORTHEAST KODIAK DISTRICT
SOUTHWEST KODIAK SECTION
N
W
E
S

Proposal 63 Cape Igvak, North Shelikof and Mainland District

Substitute wording for Salmon Management Plan (SMP)

Delete reference to 5AAC 18.363. North Shelikof Strait SMP

5AAC 18.363. North Shelikof Strait SMP; and

5AAC 18.369. Mainland District SMP

The following is substitute language:

Management Plan (5 AAC 18.369) as follows:

During the June 1 – July 31 period, the seaward zones of the Cape Igvak, Alinchak Bay and Katmai Sections of the Mainland District will have no regular fishing periods. Fishing in the shoreward zones will be as scheduled in the current management plans, plus additional emergency orders as necessary to harvest local mainland salmon stocks; these coordinates will define the outer boundary of the shoreward zone:

Beginning at the SW corner of Dakavak Bay at 58° 01.00’ N lat, 154° 43.60’ N long. to a point

in Katmai Bay at 57° 59.82’ N lat. 154° 56.16’ W long.; to a point near

Cape Kubugaki at 57° 53.21’ N lat. 155° 04.12’ W long.; to a point near

Cape Kekurano at 57° 43.50’ N lat. 154° 18.08’ W long.; to a point near

Cape Aklek at 57° 39.50’ N lat. 155° 35.60’ W long.; to a point near

Cape Unalishagvak at 57° 32.51’ N lat. 155° 43.78’ W long.; to a point near

Cape Kanatak at 57° 31.87’ N lat. 155° 54.92’ W long.; a point near

Cape Igvak at 57° 26.03’ N lat. 156° 01.40’ W long.; to a point on

Terrace Island at 57° 22.70’ N lat. 156° 18.81’ W long.; to a point on

Cape Kayakliut at 57° 17.66’ N lat. 156° 18.87’ W long.; to a point near

Mast Island at 57° 11.16’ N lat. 156° 19.70’ W long.; a point on

Kilokak Rocks at 57° 09.12’ N lat. 156° 15.95’ W long.; to a line extending

South 3 NM ending at 57° 06.30’ N lat. 156° 16.60’ W long.

Discussion:

Create “seaward” and “shoreward” zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1 – July 31 based on those zones, as follows:

Amend the current North Shelikof Management Plan 5 AAC 18.363, Mainland District Salmon Plan 5 AAC 18.369, and the Cape Igvak Salmon Plan 5 AAC 18.360. Current management plans do not give enough protection to non-local Chinook stocks

Currently in regulation there is a non-retention of King (Chinook) salmon, over 28” in length, in the KMA (Kodiak Management Area) salmon seine fishery.

Per the Pacific Salmon Commission Joint Technical Committee Report (report TCCHINOOK (97)-1) the mortality of catch and release of Chinook salmon in seine gear is accepted to be 72%. In the 3 years prior to 2014 when the non-retention rules of Chinooks over 28” went into effect, the KMA harvest of Chinook salmon was 60,720 fish. The following 3 years the harvest was 19,740 fish 28” or less, under the non-retention rule. During the latter 3 years there were also several windows of no retention. This was enacted because of concerns for the Karluk and Ayakulik systems not meeting their respective escapement goals. In looking at any of the recent Chinook data one should keep in mind comparisons to previous year’s harvest are somewhat deceiving in that when the AMR’s speak to xxxx fish was below the 10-year average, non-retention mortality must be added to the harvest number total. If retention was allowed more fish certainly would have been enumerated.

If one were to assume that the Chinook catch rates remained similar the 3 years following the non-retention of Chinook rule over 28”, it would look like this.

Seasons KMA seine Chinook harvest total

2011-2013 60,720 fish under full retention

2014-2016 19,740 fish with retention of 28” and less only

40,980 fish released

÷ 3 years

13,660 total fish per year released

X 72% the scientifically accepted mortality rate

9,835 total number of Chinook catch and release mortalities per year in the KMA salmon seine fishery, with the first interaction with seine gear. This number must be added to reported harvest numbers when calculating the total resource extraction.

Per the 2014-2016 AMR's (KMA annual management reports) 2 of the 3 years, the mainland district is noted as having a greater proportion of the Chinook harvest, particularly in June and July. Also included in the 2016 AMR was a table of the streams known to have salmon by specie present in them. The mainland has no streams with Chinook present in them (documented use by anadromous fish Johnson and Litchfield 2016).

A fish is harvested fish whether it goes over the dock or over the rail to the bottom, while not being enumerated.

Understanding the Chinooks harvested in the mainland district of the KMA are not returning to any streams on the mainland, per the above table. Previous genetic work done on Chinooks in the KMA indicate their origin to be British Columbia, West coast stocks, Southeast Alaska/Northeast Gulf of Alaska, Cook Inlet, then Kodiak in that order. In both the commercial and sport fisheries, the annual harvest of Kodiak-origin Chinook salmon, in the KMA was below 5% of the total harvest (Chinook salmon in the Westward Region, 2014-2016 Shedd et al 2016). The Chinook population has been spiraling down in the Pacific region, California to the Yukon River. From the endangered southern resident killer whales of Puget Sound on the west coast, that depend on these fish for food, to the regions in Alaska where cultural, sport, and commercial fisheries are regulated based on these returning salmon. I find myself wondering if this is a wise practice.

Two things come to my mind, first and foremost is the waste of the Chinook resource. Secondly, not being able to quantify these wasteful discards. One solution would be to institute full retention of Chinook salmon in the mainland district. With this we would be able to quantify and find the origin of these Chinook with genetics. Unfortunately, I'm somewhat concerned this would promote a scenario similar to the Chum chucking that was said to once go on in some western areas of Alaska. This would most likely multiply the waste of the Chinook resource.

Currently, at the time of this draft (March 2019), most systems that produce Chinook salmon in Cook Inlet are under harvest restrictions, some 3 to 4 months before a Chinook angler in the Cook Inlet drainage wets a line with the intention to harvest a Chinook. Major restrictions have been announced on the opportunity to have a successful fishing experience, from the Mat-Su area to the Anchor River. These various origin Chinook need an opportunity to find their natal streams.

When considering the information in this proposal and the KMA AMR's (annual management reports) from the last six (6) years, I believe it is past due to have the KMA seine fishery share in the burden of conservation of the various Chinook stocks in the KMA. Especially considering that other fisheries have and continue to do so.

Amend the North Shelikof Management Plan (NSSSSMP; 5 AAC 18.363) and the Cape Igvak Salmon Management Plan (5 AAC 18.360). Then blend it into the Mainland District Salmon

What is the issue you would like the board to address and why?

In the Kodiak Management Area (KMA) Chinook Seine catch and release of fish 28" and over. The various agencies are unable to quantify the released Chinooks or their origin. The current KMA management plans don't give enough protection to non-local Chinook salmon stocks.

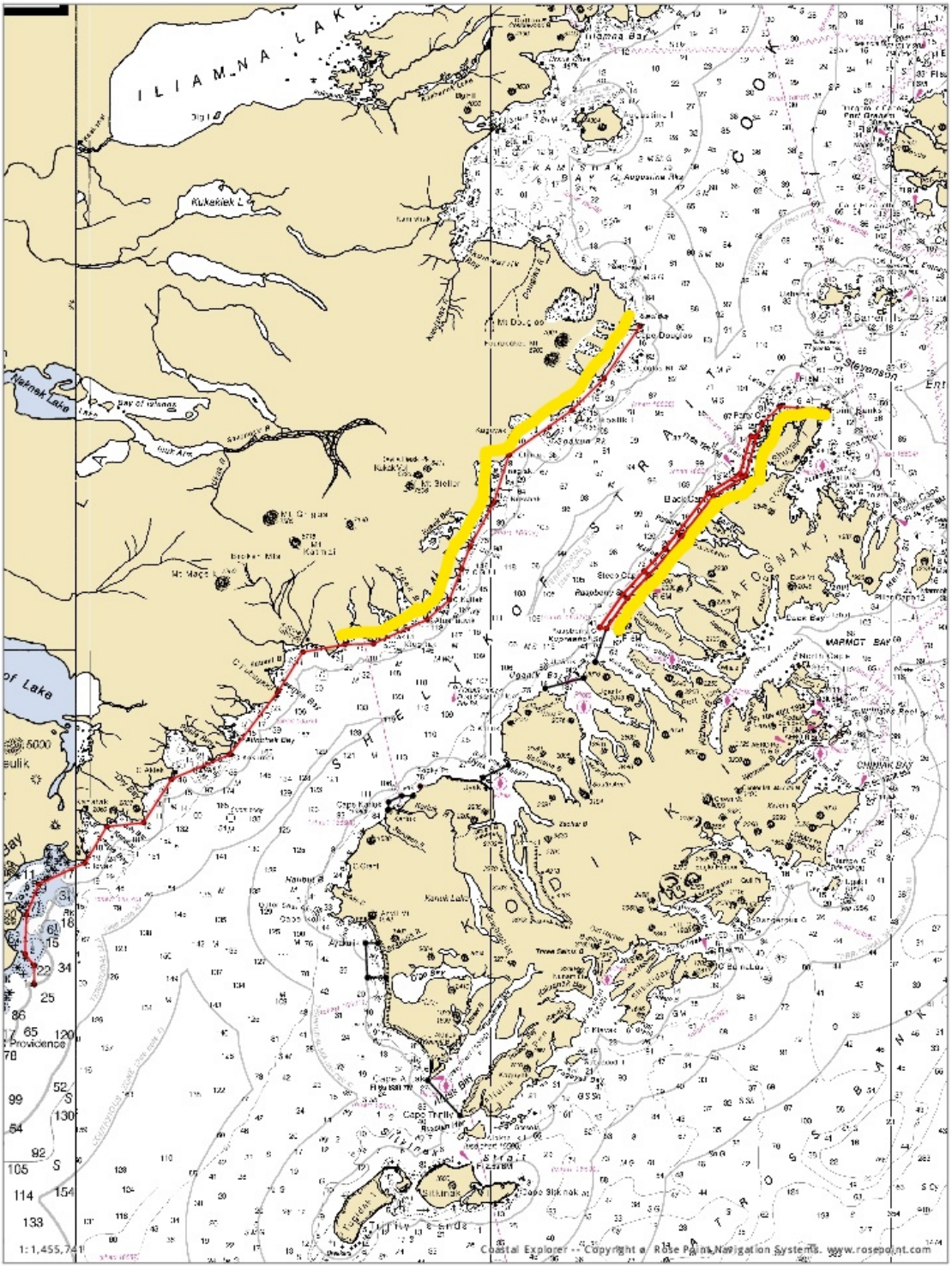
The revised dates of June 1 – July 31 is necessary due to the later Chinook, sockeye and coho run timings in the Northern, Central, Lower and Outer Districts of Area H. In the last decade, many Cook Inlet salmon stocks have displayed both extended and delayed run timings. The travel time from the Kilokak Rocks to just above the Anchor Point line in the Central District is 21 days. This is about a week longer than in the 1980s and is due to smaller salmon weights. In the 1980s, Upper Cook Inlet (UCI) sockeye stocks averaged 7.5 lbs.; now they have a 5.3 lb. average. The UCI sockeyes, on average, have lost 2.2 lbs. per fish. Smaller salmon take more time, one week, to make the journey from Kilokak Rocks into Cook Inlet. Warmer sea temperature is an additional factor that slows down the salmon movements.

Some of the shoreward zones described in the original proposal are included in the current regulations and do not need to be included in Proposal 64. Therefore, these descriptions are removed.

The adoption of this proposal will also provide a significant savings of various runs of sockeye, chum, coho and pink salmon stocks in Area H.

See attached map with notes as follows:

1. Red lines, enhanced with yellow, are currently in regulation.
2. The new red line from Dakavak to Kilokak Rocks is not highlighted in yellow.
3. The new black line from Raspberry Point to Cape Trinity is not highlighted in yellow.
4. This proposal concerns the Mainland District. Kodiak Island is included but not referenced in this proposal.


ILIAMNA LAKE
Kukaklek L.
Naknek Lake
Bay of Islands
South Arm
Iliamna Bay
KAMISHAK BAY
COOK
Mt. Douglas
Douglas
Steevenson Ent
Back Cape
KODIAK
AFOGNAK I.
MARMOT BAY
Uganik Bay
Uganik
Kaguyak Bay
Kaguyak
Deadman Bay
Deadman
Alitak Bay
Alitak
Kanatak
Kanatak Lake
Aydulik
Aydulik Bay
Cape Karluk
Karluk
Karluk Lake
Three Saints Bay
Three Saints
Cape Ikolik
Ikolik
Cape Trinity
Trinity Islands
Spruce I.
Chiniak Bay
Providence
Coastal Explorer -- Copyright © Rose Point Navigation Systems. www.rosepoint.com

Cape Igvak & Mid & North Mainland Districts by Species & Time

June 1 thru July 31

Species	2017	2018	2019
Chinook Delivered	1,236	370	206
Chinook Discarded	1,780	532	296
Sockeye	259,328	17,528	79,549
Coho	21,407	1,565	5,818
Pink	560,095	27,325	383,423
Chum	242,027	17,816	25,573
Total	1,085,873	65,136	494,865

Aug 1 thru Sept 30

Species	2017	2018	2019
Chinook Delivered	86	0	69
Chinook Discarded	123	0	99
Sockeye	30,708	0	67,580
Coho	334,689	0	58,301
Pink	940,363	0	2,400,708
Chum	1,708,739	0	15,704
Total	3,014,708	0	2,542,461

Entire Season - June 1 thru Sept 30

Species	2017	2018	2019
Chinook Delivered	1,322	370	275
Chinook Discarded	1,903	532	395
Sockeye	290,036	17,528	147,129
Coho	356,096	1,565	64,119
Pink	1,500,458	27,325	2,784,131
Chum	1,950,766	17,816	41,277
Total	4,100,581	65,136	3,037,326

- Chinook numbers have remained similar to the 2011-2013 timeframe.
- Mortality rate for seined Chinook Salmon remains at 72%

Proposal 64, Substitute for 5 AAC 18.360. Cape Igvak Salmon Management Plan; 5 AAC 18.363. North Shelikof Strait Sockeye Salmon Management Plan; and 5 AAC 18.369. Mainland District Salmon Management Plan.

Create "seaward" and "shoreward" zones in the Kodiak Management Area and amend management plans to restrict the commercial seine fishery June 1 – July 31 based on those zones, as follows:

Beginning at the SW corner of Dakavak Bay at 58° 01.00' N lat, 154° 43.60' N long.; to a point

in Katmai Bay at 57° 59.82' N lat. 154° 56.16' W long.; to a point near

Cape Kubugaki at 57° 53.21' N lat. 155° 04.12' W long.; to a point near

Cape Kekurano at 57° 43.50' N lat. 154° 18.08' W long.; to a point near

Cape Aklek at 57° 39.50' N lat. 155° 35.60' W long.; to a point near

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Cape Igvak at 57° 26.03' N lat. 156° 01.40' W long.; to a point on

Terrace Island at 57° 22.70' N lat. 156° 18.81' W long.; to a point on

Cape Kayakliut at 57° 17.66' N lat. 156° 18.87' W long.; to a point near

Mast Island at 57° 11.16' N lat. 156° 19.70' W long.; to a point on

Kilokak Rocks at 57° 09.12' N lat. 156° 15.95' W long.; to a line extending

South 3 NM ending at 57° 06.30' N lat. 156° 16.60' W long.

Discussion:

Amend the current Salmon Management Plan North Shelikof Management Plan 5 AAC 18.363, Mainland District Salmon Management Plan 5 AAC 18.369, and the Cape Igvak Salmon Management Plan 5 AAC 18.360. To address some of the incorrect assumptions revealed by the recently released (2016) sockeye genetic study.

In the middle stratum (6/28-7/25) of the study, in the Igvak section of the mainland, the sockeye harvest was assumed to be of Chignik origin. Genetic samples taken from this area and time period revealed 54% Cook Inlet sockeye in 2015, and 93.2% Cook Inlet sockeye in 2016. Sampling in this area did not take place the first year (2014) of the genetic sockeye study. Other areas in the KMA also were shown to have considerable interactions with Cook Inlet stocks. Several versions of North Shelikof Strait Sockeye Management Plan in the past had tried to

address the Cook Inlet stock issue (Barrett 1989 also Barrett and Swanton 1991, 1992) (Vining 1996). Also swimming with the Cook Inlet drainage sockeyes are some other Cook Inlet stocks (Chinooks, Coho, Chums, and Pinks). Of which some are in stock of concern status.

In 2015 and 2016 when all 6 sampling areas in the KMA completed sampling across all three sampling strata. The results were as follows 36.6%, 626,476 Sockeyes in 2015, and 29.6%, 384,089 Sockeyes in 2016 were attributed to Cook Inlet (per 2014-2016 sockeye genetic sampling effort in the KMA) One has to also understand the sampled KMA represents less than one half (1/2) of the available fishing area in the KMA.

This is an excerpt from the genetic report summary of non-local sockeye in the KMA. The vast majority of nonlocal sockeye harvest in this study was attributed to the Cook Inlet Reporting group. While nonlocal sockeye salmon harvest occurred in all sampling areas, it was most prominent in Ayakulik-Halibut Bay, Alitak, and Igvak sampling areas. (Fishery Manuscript Series No. 16-10)

Considering the information in the last 8 years of the KMA AMR's (annual management reports), and the Genetic Stock Composition of the Commercial Harvest of Sockeye Salmon in Kodiak Management Area, 2014-2016(Fishery Manuscript Series No. 16-10). With this information I believe it's time to have the KMA seine fishery share in the burden of conversation of Cook Inlet salmon stocks. Limiting fishing time and area is certainly easier and less costly than monitoring harvest caps on the grounds as currently done under the North Shelikof Management Plan 5 AAC.18.363.

Appendix M1.–Peak salmon escapements in the Kodiak Management Area, by district and species, 2016.

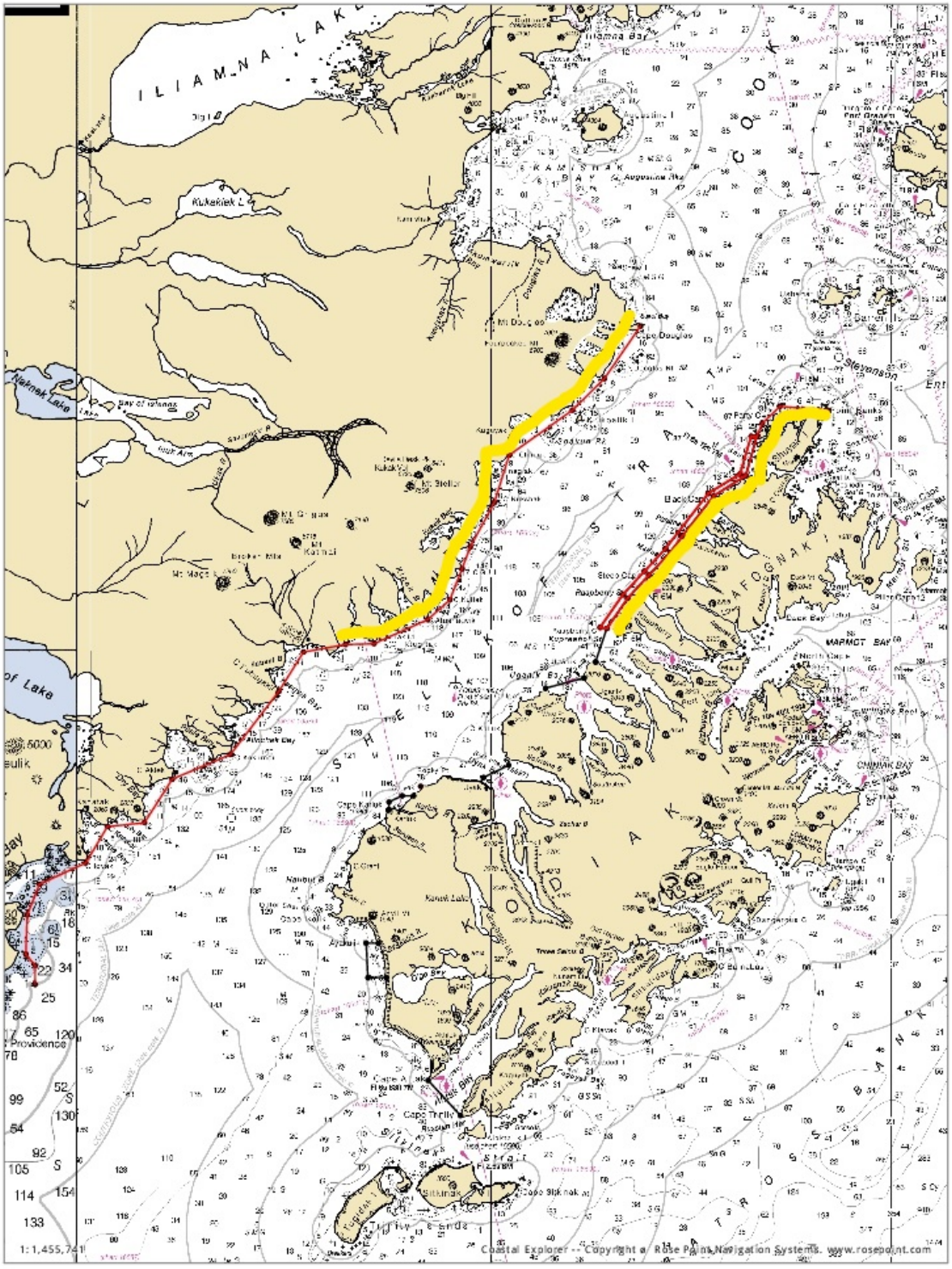
	Number of Fish				
District	Chinook	Sockeye	Coho	Pink	Chum
Afognak	0	58,014	15,614	379,500	327
Northwest	0	42,880	0	358,550	40,400
Southwest	8,028	743,776	14,003	436,269	1,753
Alitak	95	356,029	9,170	311,878	14,770
Eastside Kodiak	3	63,180	6,832	134,642	68,301
Northeast Kodiak	0	11,584	6,018	78,442	3,034
Mainland	0	9,900	14,200	65,305	68,700
Area Total	8,126	1,285,363	65,837	1,764,586	197,285

The anadromous stream chart found in the 2016 KMA AMR reflects 7 streams known to once have sockeye present in them, of the 7 streams; an area biologist shared with me that only 2 of them make it to minor stream production status.

Please see Table 1, attached, that describes the salmon harvests at Cape Igvak and Mid & North Mainland Districts by Species and Time.

See attached map with notes as follows:

1. Black and red lines, highlighted in yellow, are currently in regulation.
2. The new red line from Dakavak to Kilokak Rocks is not highlighted in yellow.
3. This proposal concerns the Mainland District. Kodiak Island is included but not referenced in this proposal.


ILIAMNA LAKE
Iliamna Bay
COOK
Kukaklek L.
Nakenek Lake
Bay of Islands
Mt. Douglas
Mt. Stellar
Mt. Gregg
Mt. Kaiser
Mt. Magee
Mt. Keller
Steep Cliff
Back Cape
Pedestal Rock
Lake Bay
MARMOT BAY
CHINIAK BAY
Kamishak Bay
Cape Kasilof
Cape Douglas
Cape Trilby
Cape Stikinak
Tileva Islands
Providence
1:1,455,741
Coastal Explorer -- Copyright © Rose Point Navigation Systems. www.rosepoint.com

Cape Igvak & Mid & North Mainland Districts by Species & Time

June 1 thru July 31

Species	2017	2018	2019
Chinook Delivered	1,236	370	206
Chinook Discarded	1,780	532	296
Sockeye	259,328	17,528	79,549
Coho	21,407	1,565	5,818
Pink	560,095	27,325	383,423
Chum	242,027	17,816	25,573
Total	1,085,873	65,136	494,865

Aug 1 thru Sept 30

Species	2017	2018	2019
Chinook Delivered	86	0	69
Chinook Discarded	123	0	99
Sockeye	30,708	0	67,580
Coho	334,689	0	58,301
Pink	940,363	0	2,400,708
Chum	1,708,739	0	15,704
Total	3,014,708	0	2,542,461

Entire Season - June 1 thru Sept 30

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Sockeye	290,036	17,528	147,129
Coho	356,096	1,565	64,119
Pink	1,500,458	27,325	2,784,131
Chum	1,950,766	17,816	41,277
Total	4,100,581	65,136	3,037,326

- Chinook numbers have remained similar to the 2011-2013 timeframe.
- Mortality rate for seined Chinook Salmon remains at 72%

Proposal 65 Substitute language for 5AAC 18.360

Close the seaward zones in the Katmai, Alinchak and Cape Igvak sections to commercial fishing during the June 1 – July 31 period (substitute for June 28 – July 25 period).

The new seaward zones of the Katmai, Alinchak and Cape Igvak Sections of the Mainland District are as follows:

Beginning at the SW corner of Dakavak Bay at 58° 01.00' N lat, 154° 43.60' N long.; to a point

in Katmai Bay at 57° 59.82' N lat. 154° 56.16' W long.; to a point near

Cape Kubugaki at 57° 53.21' N lat. 155° 04.12' W long.; to a point near

Cape Kekurano at 57° 43.50' N lat. 154° 18.08' W long.; to a point near

Cape Aklek at 57° 39.50' N lat. 155° 35.60' W long.; to a point near

Cape Unalishagvak at 57° 32.51' N lat. 155° 43.78' W long.; to a point near

Cape Kanatak at 57° 31.87' N lat. 155° 54.92' W long.; a point near

Cape Igvak at 57° 26.03' N lat. 156° 01.40' W long.; to a point on

Terrace Island at 57° 22.70' N lat. 156° 18.81' W long.; to a point on

Cape Kayakliut at 57° 17.66' N lat. 156° 18.87' W long.; to a point near

Mast Island at 57° 11.16' N lat. 156° 19.70' W long.; to a point on

Kilokak Rocks at 57° 09.12' N lat. 156° 15.95' W long.; to a line extending

South 3 NM ending at 57° 06.30' N lat. 156° 16.60' W long.

Discussion:

What is the issue you would like the board to address and why? Restrict the harvest of Upper Cook Inlet (UCI) sockeye salmon in the Kodiak Mainland District west of the Dakavak Bay Section when UCI stocks are known to be present, June 1 – July 31.

Recent genetic data definitely shows that the Kodiak salmon fishery intercepts UCI sockeye salmon at a relatively high degree (Shedd et al ADF&G 2016). While Kodiak has many major local salmon stocks, natural and hatchery supported, it is reasonable that Kodiak be required to reel back its 'bycatch' on UCI salmon stocks at least in its nonterminal fisheries. There is no basis for Kodiak to have an UCI fishery harvest entitlement, and while it is recognized that most salmon fisheries support a bycatch of non-local fish, as a component of terminal stock management, in the Kodiak Mainland District sections of Katmai, Alinchak, and Cape Igvak there are no local sockeye stocks and yet substantial numbers of UCI sockeye salmon are

harvested. To offset some of Kodiak's bycatch of UCI sockeye in terminal stock fisheries, Kodiak's Mainland District west of the Dakavak Bay Section should be closed to salmon fishing between June 1st and July 31st, where again, there are no local Kodiak sockeye runs in a known UCI sockeye-migration corridor.

To illustrate the degree of UCI sockeye salmon interception in the Kodiak Mainland District west of the Dakavak Section, in 2016 in the Cape Igvak fishery alone, 165,214 UCI sockeye salmon were harvested in the period June 28 through July 25, amounting to 93% of the total catch (Shedd et al ADF&G 2016). Only 1,498 Kodiak-bound sockeye were harvested during that period.

There are no local Kodiak sockeye runs and genetic data indicate an overwhelming migration of UCI sockeye salmon, June 1st and July 31st (Shedd et. al. ADF&G 2016).

The proposed limit to salmon fishing in the Katmai, Alinchak, and Cape Igvak sections of the Mainland District June 1st and July 31st is in align with 5 AAC 39.222 Policy for Management of Sustainable Salmon Fisheries. Kodiak does not have an inherent entitlement or need culturally or economically to substantially harvest sockeye salmon destined to UCI or should not be required to share in the burden of conservation in fully recruited fisheries outside of the Kodiak Management Area including where stocks of concern.

Proposal 66 Substitute

Part 1

This proposal will create a new Kodiak Area Salmon Management Plan. This substitute proposal addresses the harvest of non-local Area L and Area H stocks in the Kodiak Management Area.

Part A: Adopt the following Kodiak Area Management Plan

5 AAC 18.370. Kodiak Area Salmon Management Plan (adopted from 5 AAC 21.363. Upper Cook Inlet Salmon Management Plan).

(a) Provides the department long-term direction in the management of non-local and local salmon stocks. Divisions within the department must receive long-term direction in order to accomplish their mission and plan management, research, administrative and other programs. Kodiak, Area L and Area H stakeholders should be informed of the long-term management objectives of the Board of Fisheries (BOF) for the management, development and conservation of these salmon stocks;

(1) consistent with the statutory priority for subsistence, the harvest of Kodiak Management Area salmon for customary and traditional subsistence uses will be provided for specific species in appropriate areas, seasons, and periods to satisfy subsistence needs; other beneficial uses, to the extent they are consistent with the public interest;

(2) the purpose of this Kodiak Area Salmon Management Plan is to allow harvests of Kodiak Area salmon stocks, while minimizing directed harvest of Area L, Area H and other non-local salmon stocks. The board recognized that some incidental harvest of other stocks has and will occur in this area while the seine fishery is managed for harvests of local Kodiak Area salmon stocks. The BOF intends, however, to prevent the harvest patterns which began in the late 1980s;

(3) to provide for the management and allocation of the Kodiak Management Area resources, the harvest of the Kodiak Management Area salmon will be governed by specific and comprehensive management plans adopted by the board for salmon stocks and species, on Kodiak Management Area-wide basis, for different areas, and drainages and for different types of fisheries;

(4) in adopting the specific management plans described in (2) of this subsection the BOF will consider:

(A) the need for sustainable fisheries for all salmon stocks and salmon species throughout Area L, Area H the Kodiak Management Area;

(B) the protection of the fisheries habitat both in the fresh water and the marine environment throughout Area L, Area H the Kodiak Management Area;

(C) the various needs and demands of the user groups of the salmon resources of the Area L, Area H the Kodiak Management Area.

(5) In these management plans, the BOF may, as appropriate, address the following considerations:

(A) the need to allocate the harvestable surplus among Federal subsistence, commercial and recreational fisheries; and

(B) the need to allocate the harvestable surplus within user groups;

(6) in the absence of a specific management plan, it is the intent of the BOF that salmon be harvested in the fisheries that have historically harvested them, according to the methods, means, times, locations and natal origins of those fisheries;

(7) consistent with 5 AAC 39.220(b), it is the intent of the BOF that, in the absence of a specific management plan, where there are known conservation problems, the burden of conservation shall, to the extent practicable, be shared among all user groups in close proportion to their respective harvest on the stock of concern.

(b) In this section, in the absence of a specific management plan, "Area L, Area H the Kodiak Management Area" means those salmon that move through these waters and spawn in waters draining into those areas.

(c) Notwithstanding any other provision of this chapter, it is the intent of the BOF that, while in most circumstances the department will adhere to the management plans in this chapter, no provision within a specific management plan is intended to limit the commissioner's use of emergency authority under AS 16.050.060 to achieve established escapement goals for the management plans as the primary management objective. For the purpose of this subsection, "escapement goals" includes inriver goal, biological escapement goal, sustainable escapement goal, and optimal escapement goal as defined in 5 AAC 39.222.

(d) This plan will be in effect for the entire year, January 1 through December 31.

Part 2

Section 1 (d) will have the following "shoreward and seaward lines" applied for sockeye salmon, see attached maps:

A. 5 AAC 18.360 Cape Igvak – Not addressed in this proposal, see proposals 63, 64 & 65.
B. 5 AAC 18.361 Alitak District – see 18.362 West Side Kodiak
C. 5 AAC 18.362 Westside Kodiak Salmon Management Plan to create "seaward and shoreward zones" and terminal harvest areas as follows:

1. The department shall restrict salmon fishing seaward of the following boundary from June 1 – July 31 starting at:

Raspberry Cape at 58° 03.58' N lat. 153° 25.20' W long.; to a point at

Cape Uganik at 57° 58.23' N lat. 153° 26.62' W long.; following the mean high water tide line to a point on

Uganik Island at 57° 54.06' N lat. 153° 43.62' W long.; to

Miners Point at 57° 51.57' N lat. 153° 42.37' W long.; following the mean high water tide line on Kodiak Island to

Bird Rock at 57° 46.61' N lat. 153° 54.68' W long.; to a point near

Bear Island at 57° 39.83' N lat. 154° 02.27' W long.; following the mean high water tide line on Kodiak Island to a point near

Cape Alitak at 56° 50.60' N lat. 154° 18.80' W long.; to a point ending near

Cape Trinity at 56° 44.81' N lat. 154° 09.06' W long

2. Within the seaward zones described in (1.) above, create two terminal harvest areas as follows:

(a) Ayakulik Terminal Harvest Area:

Starting on the shore north of the mouth of the Ayakulik River at 57° 13.03' N lat. 154° 33.73' W long.;

West to a point at 57° 13.03' N lat. 154° 37.37' W long.;

South to a point at 57° 07.40’ N lat. 154° 36.84’ W long.;

East ending at a point on the shore at 57° 07.40’ N lat. 154° 31.27’ W long.

(b) Karluk Terminal Harvest Area:

Starting on the shore north of the mouth of the Karluk River at 57° 36.84’ N lat. 154° 23.17’ W long.;

West to a point at 57° 36.84’ N lat. 154° 26.58’ W long.;

Southwest to a point 57° 35.83’ N lat. 154° 30.54’ W long.;

South to a point ending on 57° 34.26’ N lat. 154° 30.54’ W long.

(c) The seaward zone shall be closed to salmon fishing from June 1 – July 31. The Karluk and Ayakulik terminal harvest areas shall be opened by Emergency Order as needed to harvest local stocks.

Alitak, SW & NW Kodiak Island District

- Cape Igvak and Mainland Districts NOT Included

1. June 1 thru July 31

Species	2017	2018	2019	Totals
Chinook Delivered	2,864	1,503	4,322	8,689
Chinook Discarded	4,124	2,164	6,223	12,511
Sockeye	967,924	1,192,972	1,051,206	3,212,102
Coho	15,919	148,775	35,932	200,626
Chum	444,089	211,512	226,560	882,161
Pink	4,131,035	249,073	7,576,727	11,956,835
Total	5,565,955	1,805,999	8,900,970	16,272,924

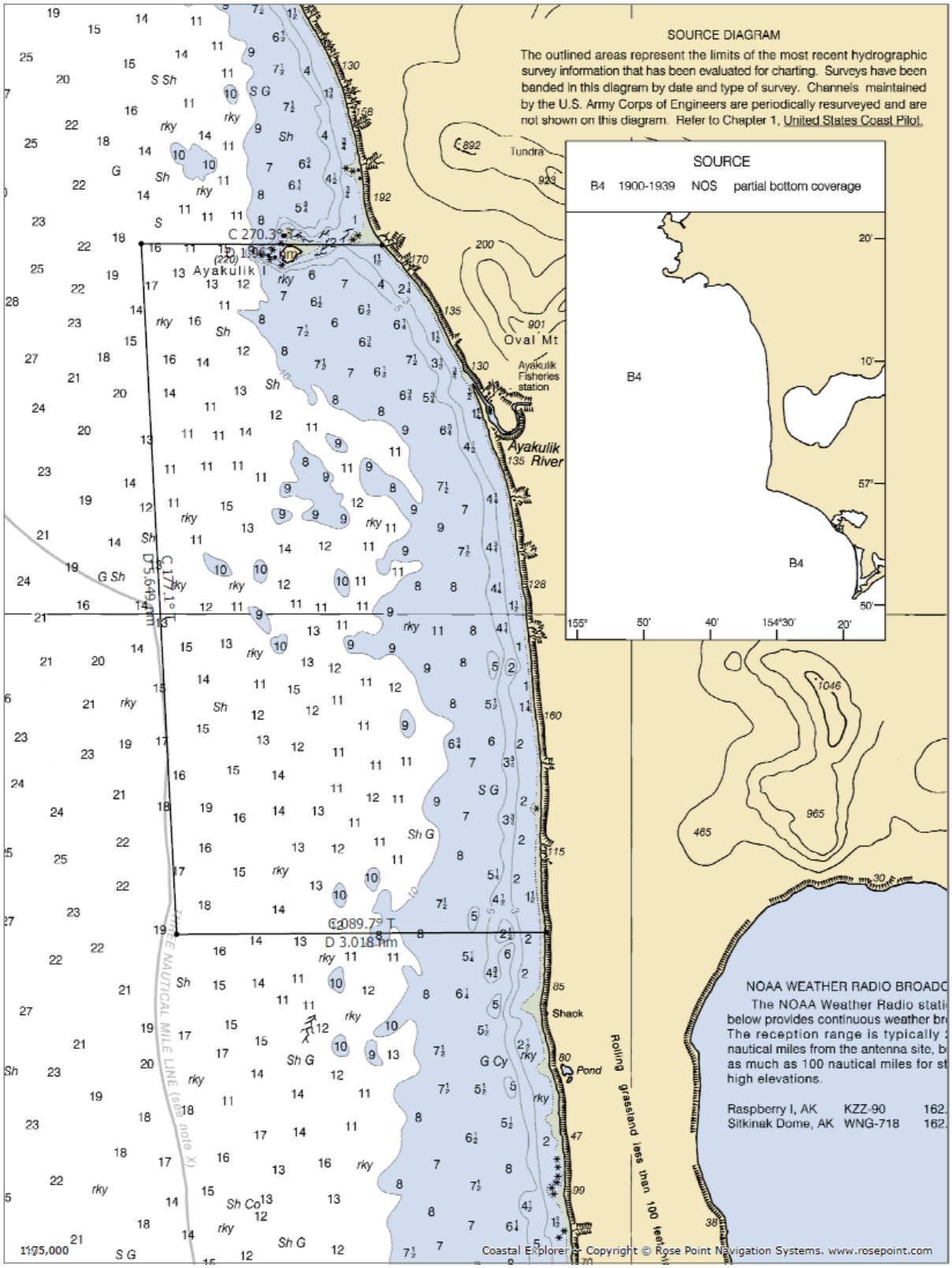
2. August 1 - September 30

Species	2017	2018	2019	Totals
Chinook Delivered	1,525	368	555	2,448
Chinook Discarded	2,196	530	800	3,526
Sockeye	913,934	366,683	589,226	1,869,843
Coho	217,714	59,427	223,619	500,760
Chum	187,203	35,672	113,543	336,418
Pink	15,194,828	1,742,318	14,385,618	31,322,764
Total	16,517,400	2,204,998	15,313,361	34,035,759

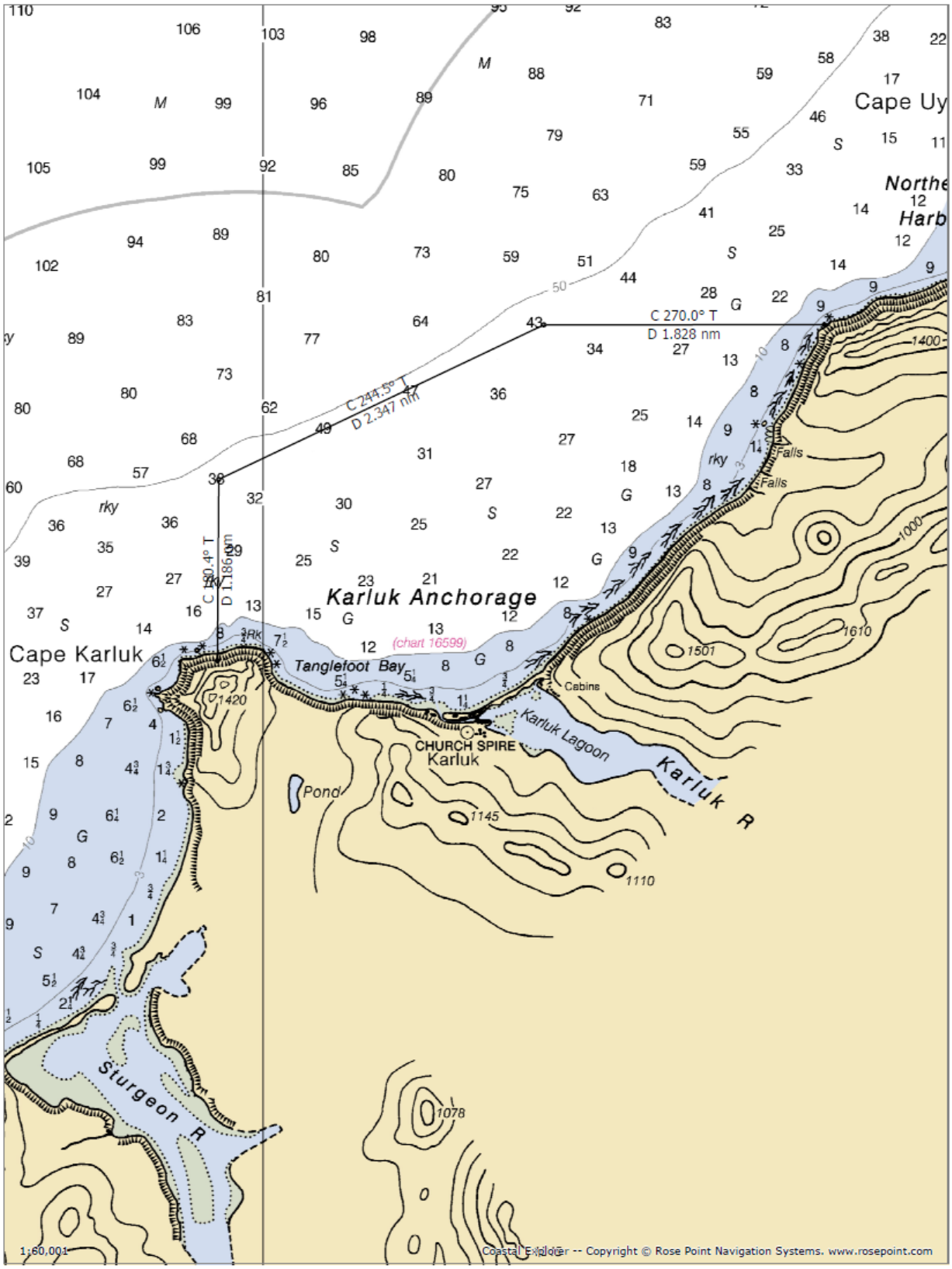
3. Entire Season - June 1 - September 30

Species	2017	2018	2019	Totals
Chinook Delivered	4,389	1,871	4,877	11,137
Chinook Discarded	6,320	2,694	7,023	16,037
Sockeye	1,881,858	1,559,655	1,640,432	5,081,945
Coho	233,633	208,202	259,551	701,386
Chum	631,292	247,184	340,103	1,218,579
Pink	19,325,863	1,991,391	21,962,345	43,279,599
Total	22,083,355	4,010,997	24,214,331	50,308,683

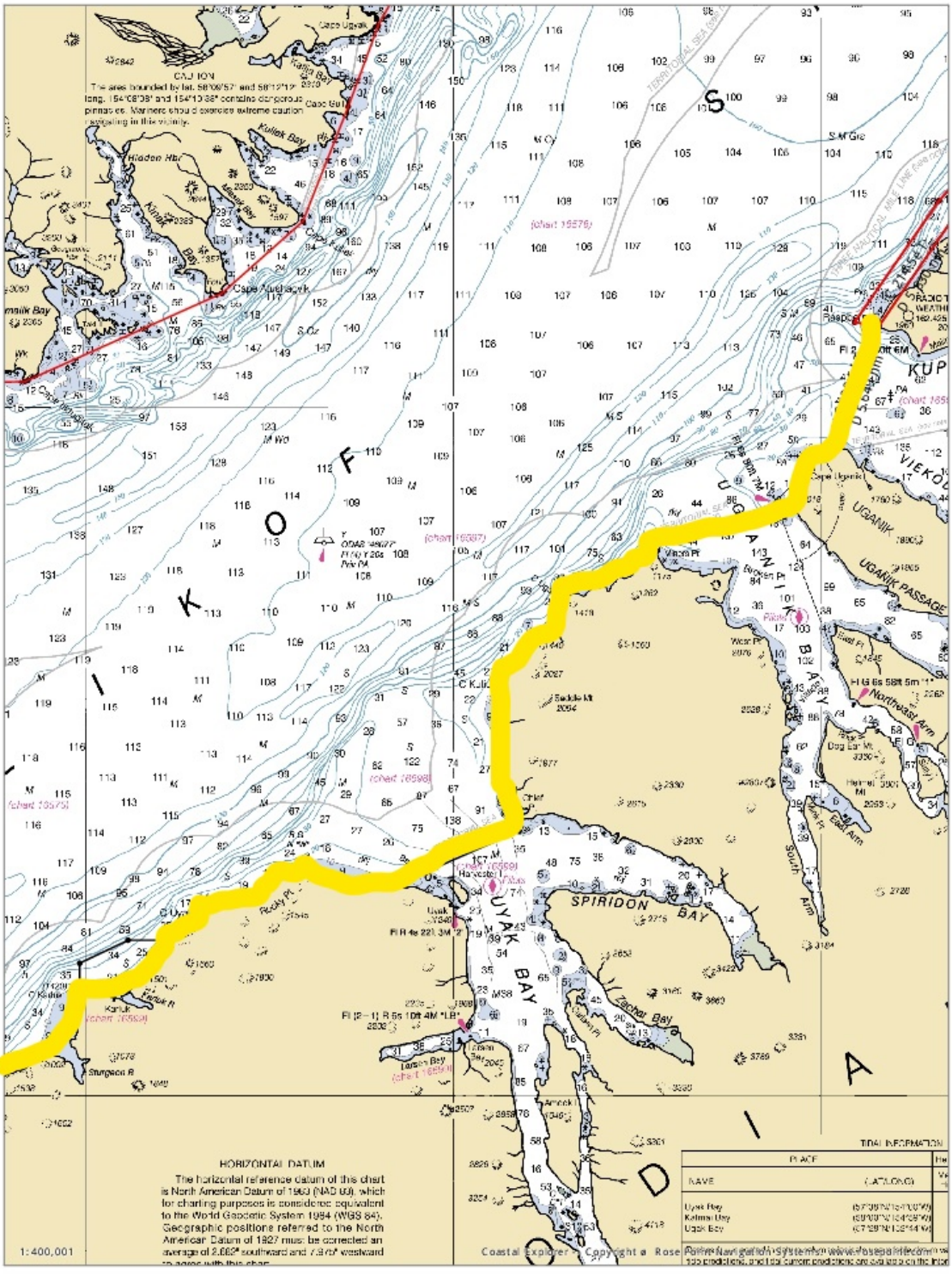
Proposed Ayakulik Terminal Harvest Area



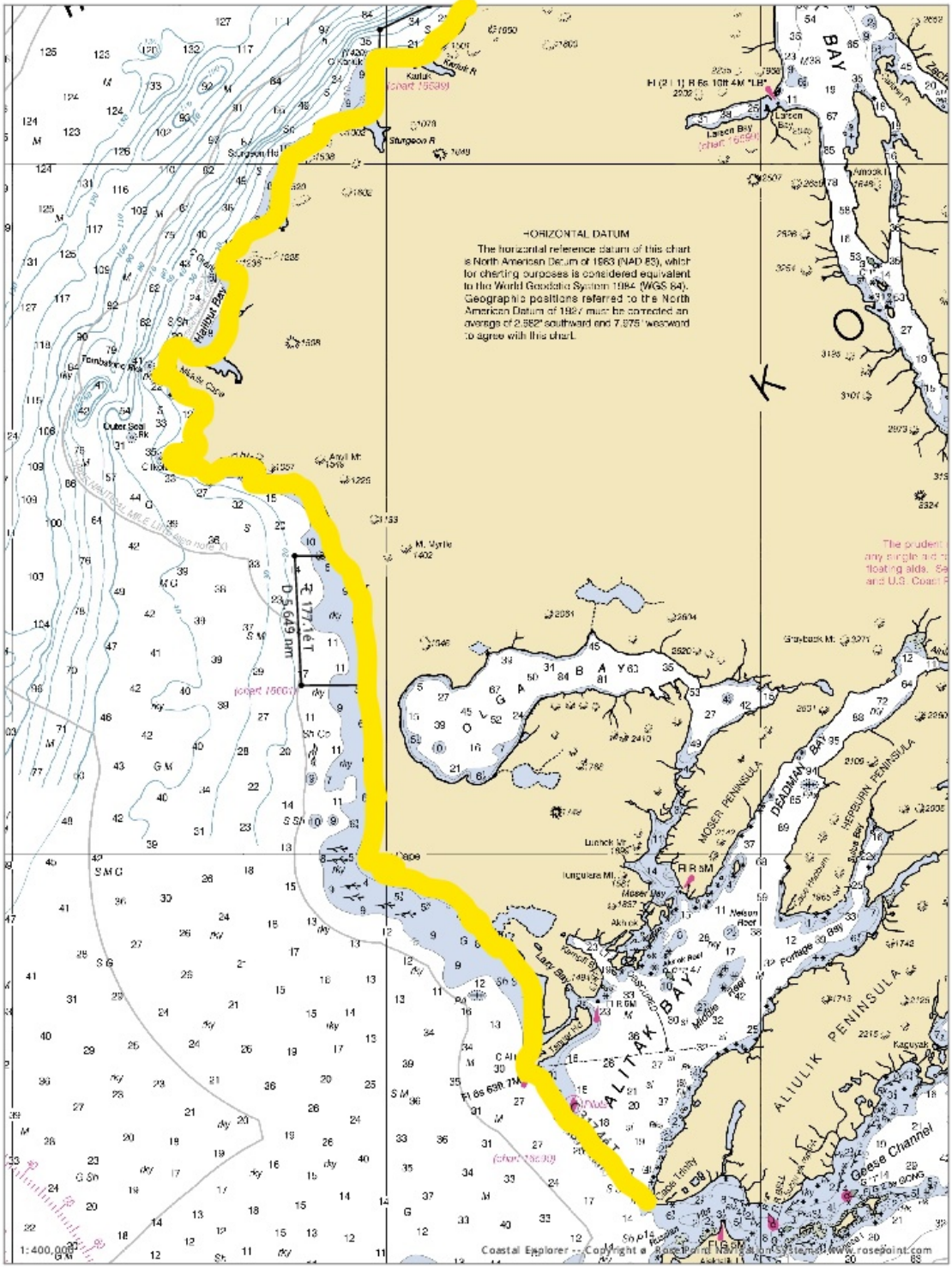
Proposed Karluk Terminal Harvest Area



North Kodiak Island



South Kodiak Island



Part 3

D. 5 AAC 18.363 North Shelikof Strait Sockeye Salmon Management Plan

1. Maintain current sockeye salmon caps as follows:

   5 AAC 18.363 (b)(2),(3) Afognak/Shuyak/Mainland
   Sockeye salmon cap – 15,000

   5 AAC 18.363 (c)(3) SW Afognak Section
   Sockeye salmon cap – 50,000

2. Return to original latitudes and longitudes created by the 1990 Board of Fish regulations as follows, see attached map xx:

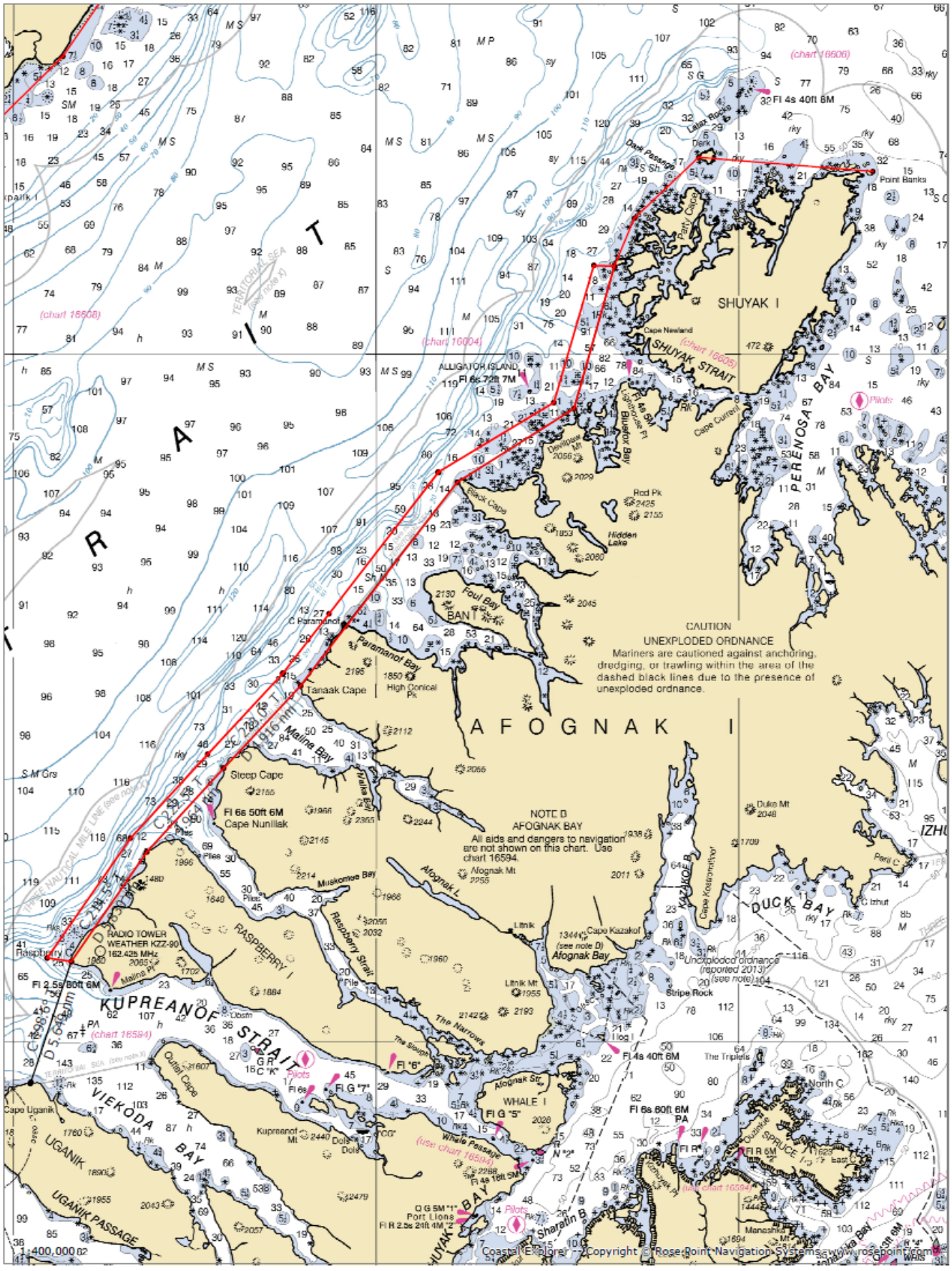
   Northwest Afognak Section south and east of a line from the northern entrance of Big Bay at 58° 33.85' N lat., 152° 40.30' W long., to the entrance of Blue Fox Bay at 58° 27.68' N lat., 152° 43.65' W long., to Black Cape at 58° 24.50' N lat., 152° 53.30' W long., to cape Paramanof at 58° 18.33' N lat., 153° 02.65' W long.

   Southwest Afognak Section east of a line Cape Paramanof at 58° 18.33' N lat., 153° 02.65' W long., to Tanaak Cape at 58° 15.53' N lat., 153° 06.25' W long., to Steep Cape at 58° 12.05' N lat., 153° 12.65' W long., to a point on Raspberry Island at 58° 08.38' N lat., 153° 19.00' W long., to a Raspberry Cape at 58° 03.58' N lat., 153° 25.20' W long.

3. **Amend all dates in the North Shelikof Strait Sockeye Salmon Management Plan to allow harvest opportunity in the seaward zone from June 1 – August 5**

   Discussion:

   All the regulatory points on or near the capes were modified to extend the seaward zone one half mile westward. This opened up all these areas to fishing around the capes. Additionally, any salmon harvested in this extended half mile fishery were not counted against either the 50,000 or the 15,000 sockeye limit.


SHUYAK I
SHUYAK STRAIT
PERENOSA BAY
AFOGNAK I
CAUTION
UNEXPLODED ORDNANCE
Mariners are cautioned against anchoring, dredging, or trawling within the area of the dashed black lines due to the presence of unexploded ordnance.
NOTE D
AFOGNAK BAY
All aids and dangers to navigation are not shown on this chart. Use chart 16594.
KUPREANOF STRAIT
RASPBERRY I
DUCK BAY
KAZAKOF B
VIEKODA BAY
UGANIK
UGANIK PASSAGE
WHALE I
Steep Cape
Fl 6s 50ft 6M
Cape Nunillak
RADIO TOWER
WEATHER KZZ-90
162.425 MHz
Fl 2.5s 80ft 6M
Cape Uganik
Tanaak Cape
Paramanof Bay
Foul Bay
Hidden Lake
Alligator Island
Fl 6s 72ft 7M
Cape Newland
Point Banks
Bluefox Bay
Cape Current
Black Capa
Red Pk
High Conical Pk
Malina Bay
Muskomee Bay
Afognak L
Afognak Mt
Raspberry Strait
Litnik
Litnik Mt
Cape Kazakof
(see note D)
Afognak Bay
Stripe Rock
Unexploded ordnance (reported 2013) (see note)
The Narrows
The Slough
Outlet Cape
Kupreanof Mt
Whale Passage
(use chart 16594)
Sheratin B
Manoshka Bay
Duke Mt
Peril C
North C
The Triplets
Fl 4s 40ft 6M
Fl 6s 60ft 6M
PA
Fl G "7"
Fl G "5"
Fl "6"
Fl R "4"
Fl R 6M
Fl R 2.5s 24ft 4M
Q G 5M "1"
Port Lions
(chart 16594)
(chart 16606)
(chart 16604)
(chart 16605)
1:400,000
Coastal Explorer - Copyright © Rose Point Navigation Systems - www.rosepoint.com

Alitak, SW & NW Kodiak Island District

- Cape Igvak and Mainland Districts NOT Included

1. June 1 thru July 31

Species	2017	2018	2019	Totals
Chinook Delivered	2,864	1,503	4,322	8,689
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2. August 1 - September 30

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Sockeye	913,934	366,683	589,226	1,869,843
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Chum	187,203	35,672	113,543	336,418
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Total	16,517,400	2,204,998	15,313,361	34,035,759

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Pink	19,325,863	1,991,391	21,962,345	43,279,599
Total	22,083,355	4,010,997	24,214,331	50,308,683

Issues Concerning Salmon Yields in Upper Cook Inlet, Alaska



United Cook Inlet Drift Association

September 2019

Abstract

This report presents new biological and economic information and analysis concerning sockeye salmon stocks of Upper Cook Inlet. Other Upper Cook Inlet salmon populations are also referenced. In the last decade, the commercial drift fleet has seen a drastic reduction in both the annual and daily catch per unit of effort. The Kenai River sockeyes now have a pronounced August entry timing pattern. The mid-eye to mid-fork tail length, as measured by the offshore test fishery, drift fleet and the Kenai River Mile 19.5 counter all demonstrate a 5cm (2 inch) shorter sockeye at age 1.3 and 2.3. The corresponding weights are .5k (1 lb) less at the same ages. Excess spawning escapements and changing environmental conditions are discussed as forcing, perturbing and stochastic drivers of these smaller and later entry patterns. The economics associated with these decade-long trends are identified and discussed. Recommendations are put forward concerning revised escapement goals involved incorporating ecosystem approaches, multi-empirical and modeling-based approaches.

Acknowledgements

UCIDA recognizes the following for reviewing drafts, providing suggestions, introducing new material and on-the-water observations. Many of these individuals and their families have been involved with the UCI Fisheries for over 30 years.

Dan Anderson – F/V Paragon
Nate Berga – Processor
Jeff Berger – Processor
Catherine Cassidy – F/V Williwaw
Jeff Fox – Fisheries Biologist
Bruce Gabrys – F/V Blue Chip II
John Gucer – F/V Talisman
Erik Huebsch – F/V Williwaw
Wes Humbyrd – F/V Maria B
Ilia Kuzmin – F/V Currency
David Martin – F/V Kaguyak
Adam Maw – F/V Ryan J
Robert Maw – F/V Ocean Cat
Roland Maw – F/V Americanus
John McCombs – F/V Rayo Verde
Matt Oxford – F/V Blue Ox
Ian Pitzman – F/V Stephanie Anne
Brian Ranguette – F/V Jade X
Eric Ranguette – F/V Jade IV
Audrey Salmon – UCIDA Office
Scott Steger – F/V Sea Venture
Dino Sutherland – F/V Rivers End
Ken Tarbox – Fisheries Biologist
Steve Tvenstrup – F/V Alaskan Lady
Dyer VanDevere – F/V Swift Arrow
Steve Vanek – F/V Monica J
Teague Vanek – F/V Proud Mary
Paul Warner – F/V Papa Whiskey
Marty Weiser - Processor
Brent Western – F/V Roulette
Tony Western – F/V Roulette
Bob Wolfe – F/V Aghileen
Fr. Nikolai Yakunin – F/V Little Dolphin

Errata

The majority of the data for this paper comes from ADFG. A portion is the annual management reports. In some selected figures, this will be an original presentation.

In the figures and tables, the 2019 data has been included. However, much of the 2019 data was unavailable at the time of this printing as the Cook Inlet commercial salmon season was still open. The sport fish harvests will not be available until the fall of 2020. Some of the 2018 sport fish harvest data is included, but only as estimates.

Glossary of Acronyms

ADFG – Alaska Department of Fish & Game
Area H – Federally designated fishing area encompassing Cook Inlet
BEG – Biological Escapement Goal
BOF – Board of Fisheries
CIAA – Cook Inlet Aquaculture Association
CPUE – Catch Per Unit of Effort
DIDSON – Dual-frequency IDentification SONar
EGC – Escapement Goal Committee
EZD – Euphotic Zone Depth in meters
FMP – Fishery Management Plan
GHL – Guideline Harvest Level
KasR – Kasilof River
KR – Kenai River
KRLRS – Kenai River Late-Run Sockeye (July & August)
lbs – Imperial Pounds, 16oz = 1 pound
m – meters
MEFL – Mid-Eye to Mid-Fork Tail Length in millimeters
mg - milligrams
mm – millimeters
MSA – Magnuson Stevens Act
MSY – Maximum Sustained Yield
NGOs - Non-Governmental Organizations
NMFS – National Marine Fisheries Association
OTF – Offshore Test Fishery
OY – Optimum Yield
RM – River Mile
R/S – Return per Spawner
SAC – Salmon Advisory Committee
UCI – Upper Cook Inlet
Zoop Biomass – Zooplankton Population Biomass in mg/m^3

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I. Introduction

This paper presents historical, biological, yield and harvest data concerning the 23 major sockeye salmon populations that are natal to UCI, Alaska. Currently, there are federal, state, municipal and legally recognized subsistence stakeholders that are involved in salmon management, research and allocation discussions and decisions.

In addition, there are numerous NGOs and several user groups in the fishery that have historic and legal rights to harvest these salmon stocks of UCI. Indeed, the legal harvesting of these salmon stocks are complex due to the myriad of overlapping contradictory regulatory environments created by the various levels of government, including respective agencies. These governments and respective agencies often compete and push back on each other. In this myriad of competing, often contradictory legal and regulatory environment, there are two victims: the fish and the commercial fishing industry. Without exception, every level of government, elected and appointed agency officials, proffer a preferred action to salmon management issues in UCI.

The fishing industry is seeking to bring science, clarity and hopefully meaningful solutions so that these salmon, a national treasure of UCI, can, once again, achieve MSY/OY outcomes. This will fulfill the national mandate of MSY, incorporating OY as Congress has mandated in the MSA. It is difficult for the fishing industry to achieve the MSY/OY mandate of Congress when those involved have unique or conflicting personal or agency opinions.

This paper will deal with harvesting (food production) and biological (MSY/OY) issues.

There are a number of assumptions that are often made when managing salmon populations, not exhaustive, but rather obvious include:

1. Independent spawning events, year-to-year. Spawning events and subsequent progeny do interact with each other and prior years' fry.
2. Mathematical relationship between spawners, eggs, fry, smolt and returning adults.
3. Food – quantity, quality, temporal and spacial distribution and size is understandable and somewhat constant.
4. Parasites, disease, virus and bacterial effects are known and constant (no thresholds).
5. Predator-Prey complexes are understood and or constant.
6. Forcings and Perturbations: ecosystem stability has had no forcing functions or random perturbation
7. Stochastic: ecosystem stability may have stochastic changes that have no, or a minor, effect.

II. History of Area H: Cook Inlet

To get an appreciation of the overlapping, regulatory mechanisms, reference is made to Figures 1 – 4.

Area H is the original Federal Commercial Fisheries Bureau map from the late 1940s. Area H designation precedes Alaska Statehood in 1959. Shortly after 1959, alpha designations were incorporated statewide. The Central Region was designated as Area H – Cook Inlet, Area E – Prince William Sound and Area K – Kodiak.

In Area H, there were federally designated districts, Northern and Central, see Figures 1 & 2. The State also adopted these federal districts. Additionally, each district has sub-districts and individual fishing areas. Some of the sub-districts were created by the Federal Government and some new fishing areas were added by the State of Alaska.

The State, to further complicate these area designations, created management plans that have new/revised/combined fishing areas, see Figure 3. Then, if the foregoing isn't enough, the State has created new fishing areas called "Corridors" and Sections, see Figure 4.

One of the points to be made is that over the last 140 years, area designations, revisions and new fishing areas have made it impossible to separate harvest, economic and biological data relative to the EEZ boundary. Since the 1880s, this EEZ boundary has been non-existent in the management of this fishery. However, the Set Net fishery has been relatively stable during this same 140 year history.

Figure 1. Area H: Cook Inlet

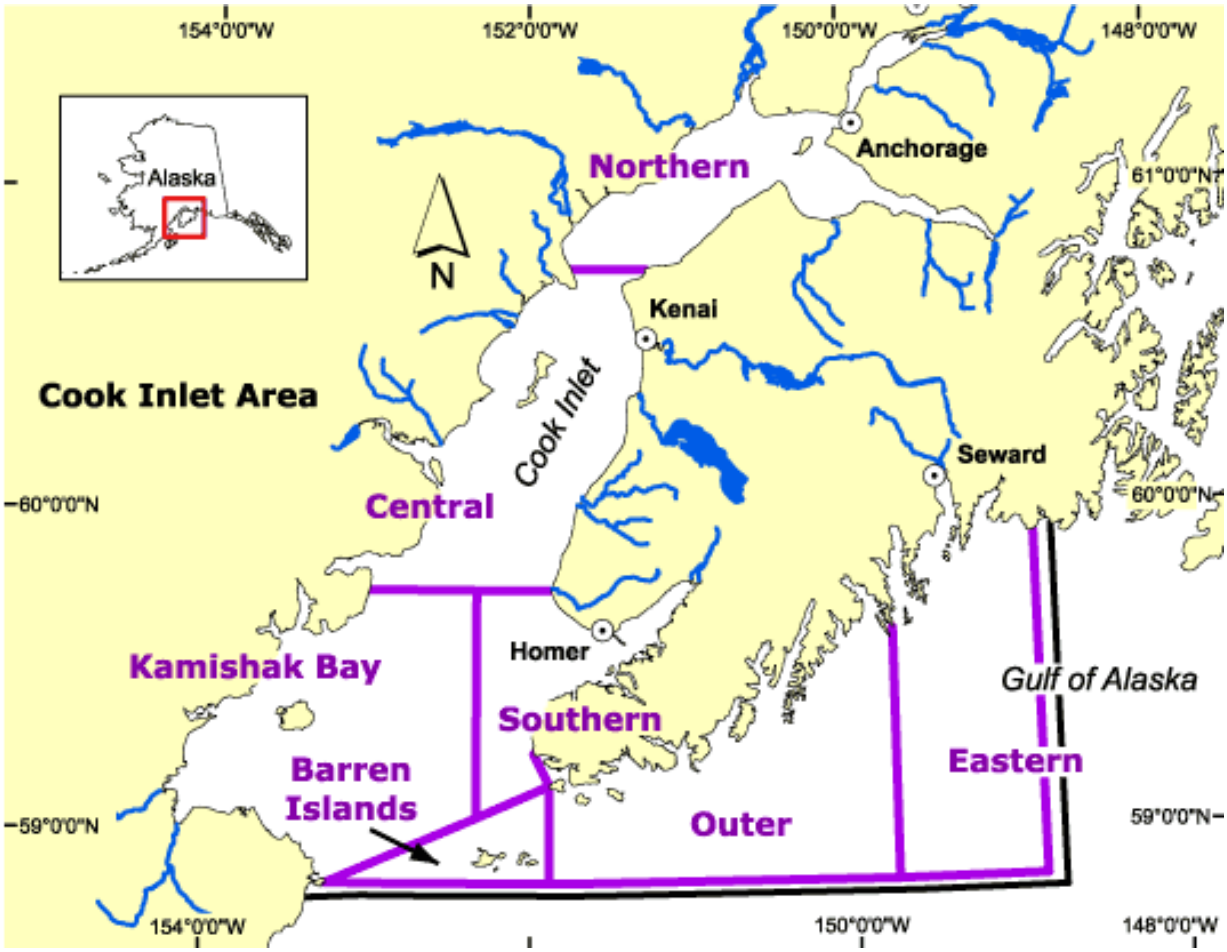


Figure 2. Central District Statistical Areas

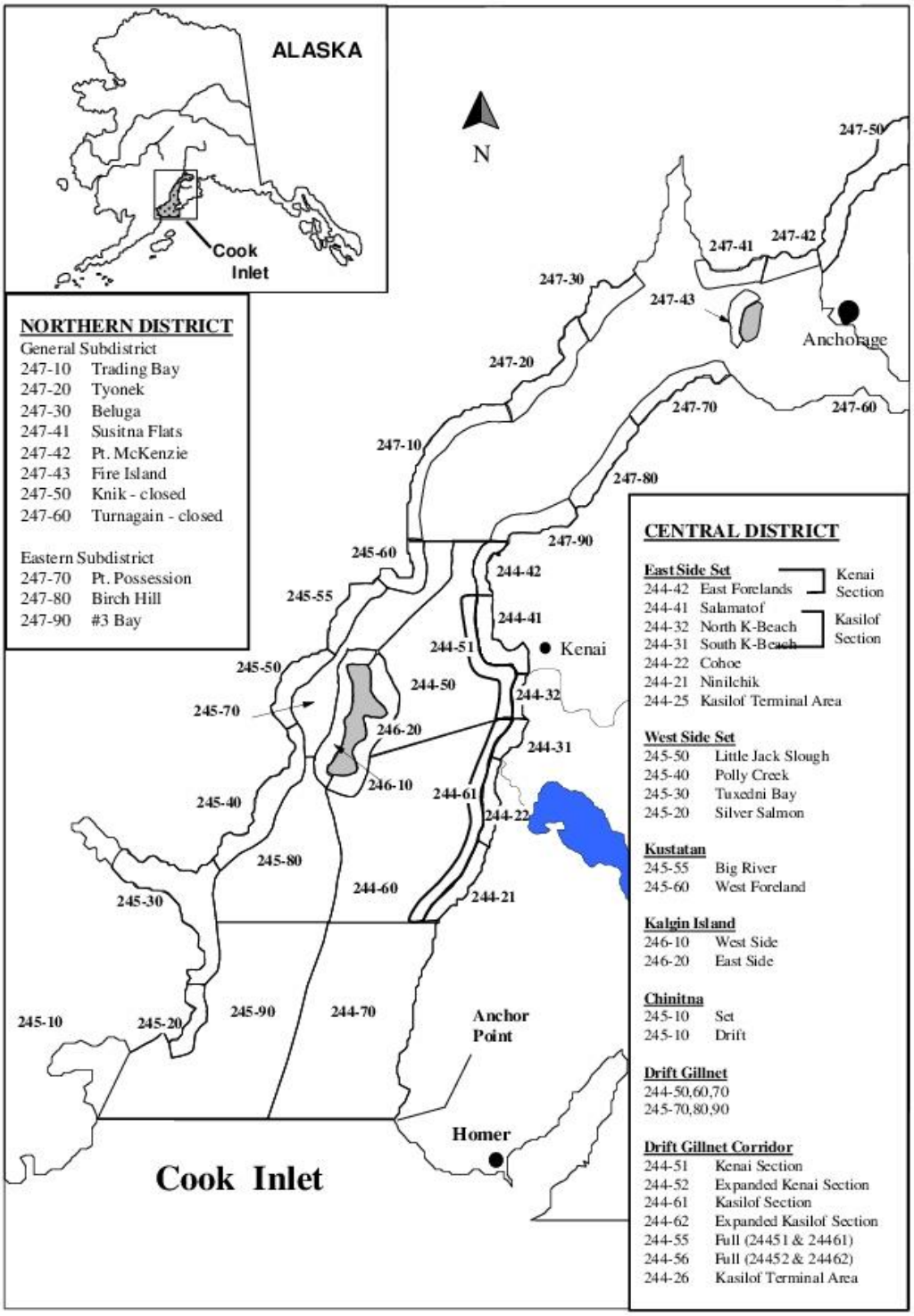
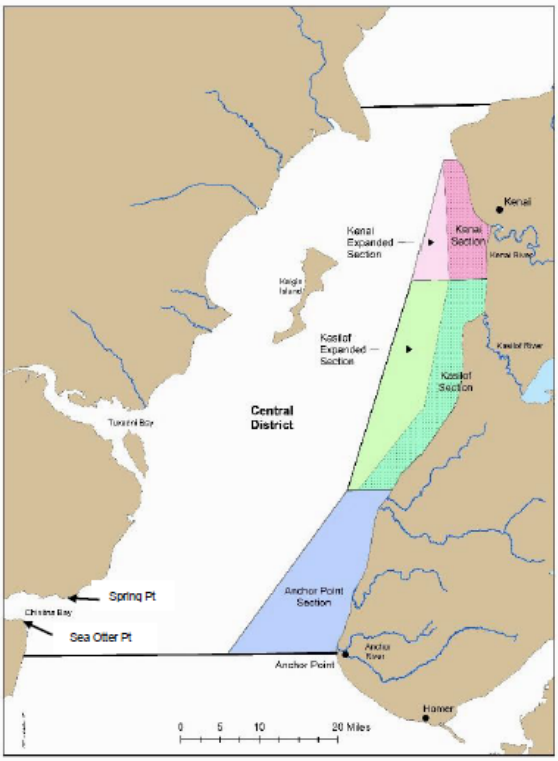


Figure 3. Drift Gillnet Area Waypoints

	Latitude	Longitude
N Boundary – Boulder Pt	60°46.39'	
NW Kenai Section	60°40.35'	151°26.33
SW Reg Kenai Section	60°27.10'	151°25.70'
SW Exp Kenai Section	60°27.10'	151°33.76'
Midpoint Reg Kasilof Section	60°12.75'	151°32.05'
SW Kasilof Section	60°04.02'	151°46.60'
Shell C Platform (approx.)	60°45.60'	151°30.40'
West Foreland (approx.)	60°42.75'	151°43.00'
East Foreland	60°43.20'	151°24.30'
Drift River Terminal	60°33.25'	152°08.00'
Harriet Point	60°23.70'	152°14.40'
Kalgin Buoy	60°04.70'	152°09.90'
NW AP/SW Exp Kasilof Section	60°04.02'	151°49.00'
SW Anchor Point Section	59°46.15'	152°15.80'
S Boundary – Anchor Pt Light	59°46.15'	151°52.06'

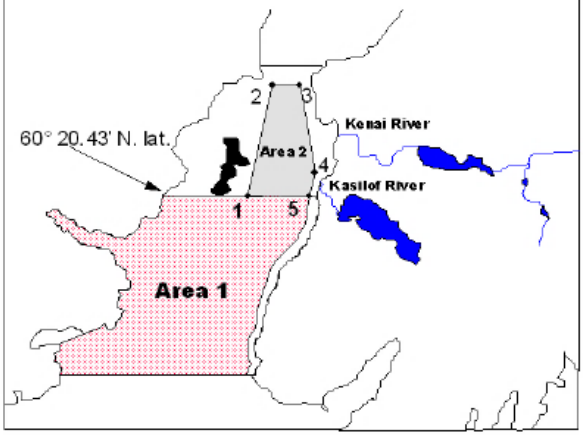
UCIDA presents the accompanying graphics as a convenience to drift fishermen. UCIDA accepts no liability for any actions where an individual makes a judgment based upon information provided by these graphics and coordinates.



Cook Inlet, Alaska ~ 2019

Drift Gillnet Area 1 & Area 2 Descriptions

AREA 2 DESCRIPTION	COORDINATES
1. Southwest Corner	60° 20.43' N. lat., 151° 54.83'W. long.
2. Northwest Corner	60° 41.08' N. lat., 151° 39.00'W. long.
3. Northeast Corner	60° 41.08' N. lat., 151° 24.00'W. long.
4. Blanchard Line Corridor Boundary	60° 27.10' N. lat., 151° 25.70'W. long.
5. Southeast Corner	60° 20.43' N. lat., 151° 28.55'W. long.



Drift Gillnet Areas 3 & Area 4

AREA 4 LOCATION	COORDINATES
A. SW Corner	A. 59° 46.15' N 153° 00.20' W
B. NW Corner	B. 60° 04.70' N 152° 34.74' W
C. NE Corner (Kalgin Buoy)	C. 60° 04.70' N 152° 09.90' W
D. SE Corner	D. 59° 46.15' N 152° 18.62' W

Area 3 – West Side
Those waters within one mile of mean lower low water (zero tide) South of a point on the West Foreland at 60° 42.70', 151° 42.30'

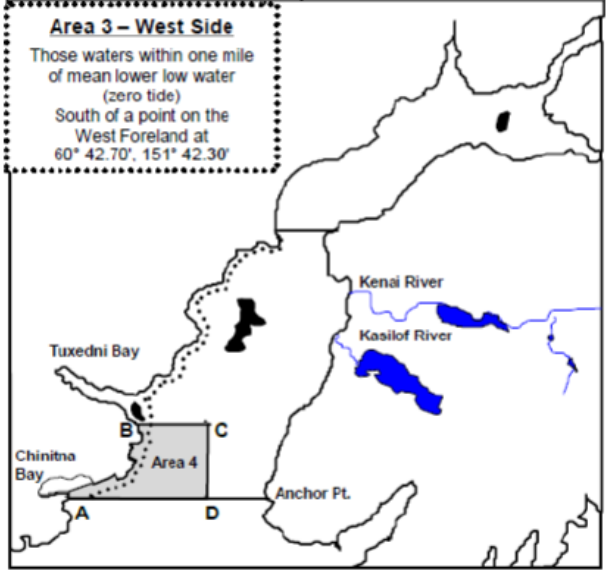
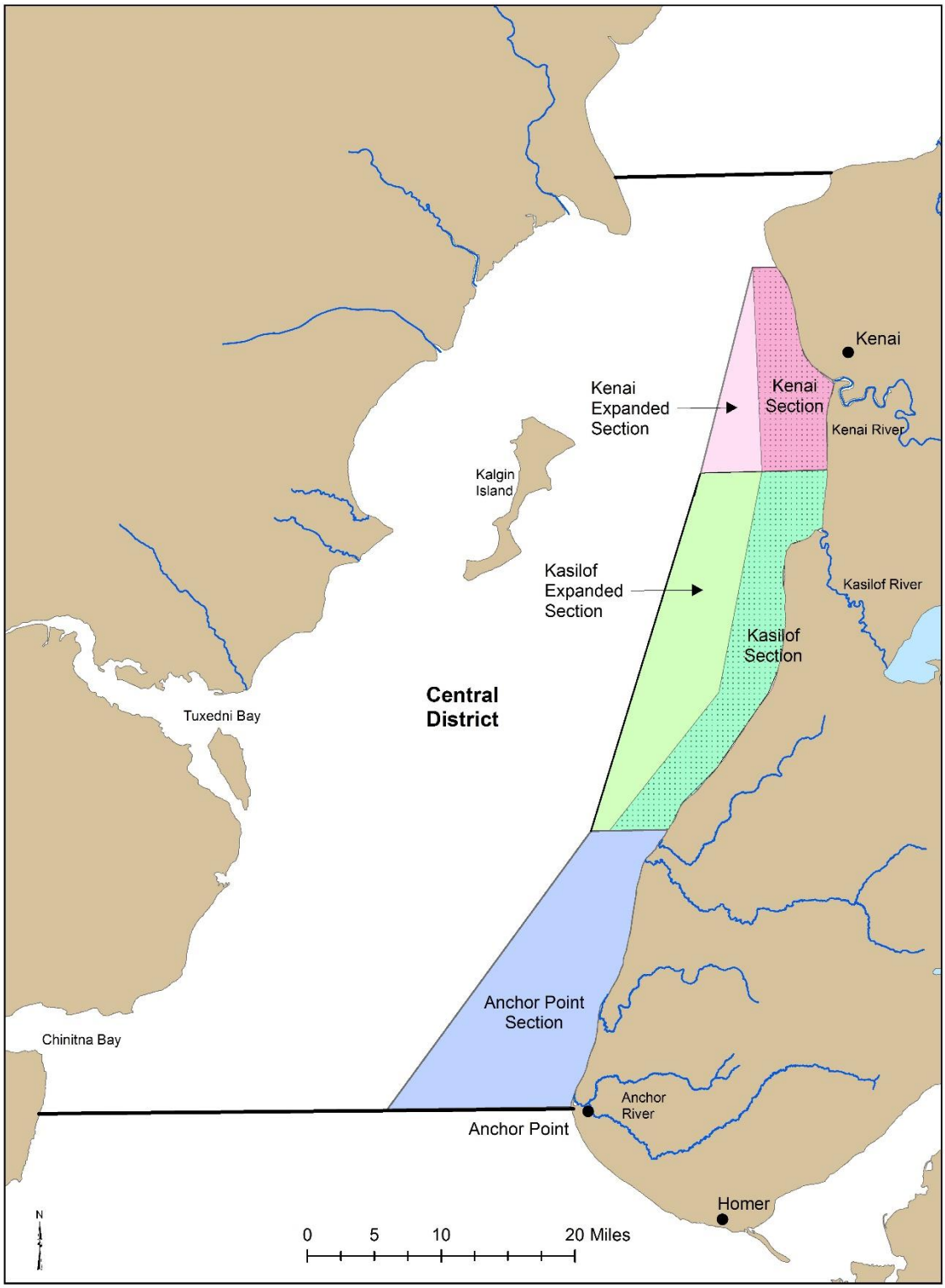


Figure 4. Central District Drift Gillnet Sections



III. KRLRS and KasR Sockeye Salmon Brood Tables, 1968 – 2019

Table 1A-1C, Figure 1A-1B

1. Brood Tables

Table 1A is one of many brood tables reported by ADFG. This particular brood table omits the fry abundance, weights, EZD, and Zoop Biomass. Table 1A does not subtract Hidden Lake enhanced spawners.

Table 1A: Explanation of Column Data, left to right:

A. YEAR OF THE SPAWNING EVENT, 1968-2019
B. SPAWNER ESTIMATES, not an actual fish count, only an index
C. AGE of returning adults 0.2 – 3.3, fourteen possible age combinations
The first number indicates the number of years in fresh water, the second indicates the number of years in saltwater. Lastly, there needs to be one (1) year added to arrive at the total age of the fish since being spawned and fertilized.
   - EXAMPLE: An adult returning salmon designated as a 0.2 would be 0 years in freshwater and 2 years in saltwater, then add the year it was spawned and fertilized. The life sequence would be: spawned & fertilized in August 2016, emerge from gravel in May 2017 and immediately go to the ocean (smolt). Spend 2 years in the ocean, from May 2017 until July 2019, return as an adult to its natal stream and spawn in August 2019. Total age 3 years from spawned egg to spawning eggs. The 3 year life cycle is designated, for the purposes of this brood table, as a 0.2 adult return. To get the time, number of years from spawned to spawning, add one year to all the adult return age class designations.
   - EXAMPLE: 1.2 is one year spawn, plus one year freshwater, plus two years in the ocean for a 4 year old sockeye.
   - EXAMPLE: 2.2 is one year spawn, plus two years in freshwater, plus two years in the ocean for a 5 year old sockeye.
   - EXAMPLE: 2.3 is one year spawn, plus two years in freshwater, plus three years in the ocean for a 6 year old sockeye.
D. RETURN is the additive sum of all the age classes that came back as adult sockeyes from that spawn or brood year.
E. THE RETURN PER SPAWNER is the number of adults returning from a particular spawning year. Expressed as a positive value, see 1968 – 8.3 returning adults per spawning adult. See Table 1A, year 1968.
   - EXAMPLE: 1968: 115,545 spawners produced 960,169 returning adults. Divide 960,169 by 115,545 for a total of 8.3 returning sockeye adults per spawning adult.

F. RUN is the total number of sockeye that returned in a calendar year. The run has multiple age classes from different brood, or spawn years.
G. TOTAL HARVEST is the number of sockeye harvested in that calendar year, by all user groups.
H. HARVEST RATE is the exploitation rates of the run for that year.
   - EXAMPLE: In 1975, the harvest rate was .62, or 62% of the run. The remaining .38, or 38% went on to spawn. Mean, 1975-2011, provides the reader and average number for the columns.
I. MEAN 1975-2011 is the adult return by age class. Located at bottom of page
   - EXAMPLE: The 1.2 age class has contributed 10.6% of the annual returns.
   - EXAMPLE: The 1.3 age class has contributed 60.5% of the annual returns.

2. Observations from the KR Brood Table 1975-2018

   A. From 2010 thru 2019, the number of spawners has exceeded or been near one million. See Table 16

3. Table 1B. KRLRS Salmon Brood Table

   Table 1B included the fall fry abundances, fall fry weight, EZD and Zoop Biomass.

   Explanation of column data:

   A. FALL FRY ABUNDANCE – age 0. These values are the fall fry estimates arrived at thru conducting hydro-acoustic surveys and net sampling techniques. These age 0 fry are from the prior years' spawning event.
   B. FALL FRY ABUNDANCE – age 1. The numeric values are the fall fry estimates.
   C. FALL FRY WEIGHTS – units are expressed in grams of body weight. Age 0 has the same age meaning as above. Table 1B.
   D. EZD in the euphotic zone depth recorded in meters using a 30cm black & white quadrant secchi disk.
   E. ZOOPLANKTON BIOMASS is the milligrams per cubic meter of water volume, expressed in mg/m^3. This value is an average of numerous samples taken throughout Skilak Lake.
   F. ADULT RETURN – Return per spawner, run, total harvest and harvest rate. (0.2 thru 3.3 age classes have the same meaning as described in Table 1A descriptions.)

      Discussion/Observation: In 1989, the largest number of spawners, 2,026,637 produced 24,601,413 age 0 and 387,673 age 1 fall fry. In 2011, 1,280,733 spawners produced 23,560,643 age 0 and 2,857,684 age 1 fall fry. There were 745,000 fewer spawners in 2011 as compared to 1989, yet the fry numbers are nearly the same. There were 745,000 sockeye lost to yield/harvest.

Brood year interactions. During the months of April, May and June, there are four brood years of fry competing for the same resources, food, space and escape cover in Skilak Lake.

Three different spawn years are in Skilak Lake during this April, May and June period. These fry are competing for every necessary resource. Both depredation and predation are occurring.

**** Nearly all of the models currently being used do not include a variable or mix of variables identified for this brood year interaction. Skilak and Kenai Lakes as well as the KR are both unique in the brood year interactions.**

4. In Table 1A, the 35-year (1975-2010) yearly average return for the 1.3 age class is 2,292,896 sockeye (highlighted in yellow for the reader's reference). That is to say, over the last 35 years of various escapement/spawner counts, this sockeye population has, on average, returned 2,292,896 age 1.3 (5 year old) sockeyes.

5. In 2018, the age 1.3 sockeye return was 699,561. (Highlighted in yellow for reader's reference). This is to say, that in 2018, 699,561 age 1.3 sockeyes returned in comparison to 35-year average return of 2,292,896. The age 1.3 return of 699,561 is 30.5 % of the 35-year average of 2,292,896. In a less positive light, 1,593,355, or 70%, of the 1.3 age class were simply missing in 2018.

6. In 2018, the 2.3 age class, or 6 year old sockeye return was 69,055. The 35-year average return is 766,088 (highlighted in yellow for reader's ease). In 2018, 766,088 sockeyes were expected, however, 69,055 were determined to be in the return. There were 697,073, or 91%, of the 2.3 age class of sockeyes missing in the 2018 return.

7. In 2018, there were two significant age class failures: 1.3 and 2.3. Together, these two age class failures represent 2,300,000 sockeye salmon that failed to return, when compared to the 35-year historic averages.

8. In further examination of Table 1A, note the erratic age classes: 0.2, 0.2, 0.4, 3.1, 3.2, 2.4 and 3.3. These age classes potentially provide ecological plasticity and ecological diversity. In recent years of over one million spawners, these age classes have nearly disappeared in the KRLRS runs.

9. It is unknown how the above diminished age classes are distributed in the KR Watershed. It needs to be noted that some tributary waterways have had no, or very little, spawning activity for over a decade. The ecological roles, spacial or temporal distributions of these diminished age classes are not known. The point being, some discrete stocks may have already been extirpated from UCI.

10. Table 1C. Kasilof sockeye salmon brood table.

    It is interesting to note that in this brood table, there are two age classes that are 34% and 32% of the runs, ages 1.4 and 1.3 respectively, while age 2.2 contributes 23% of the annual run. Collectively, these three age classes contribute 89% of the annual run. There are no missing sockeye age classes in the Kasilof River as is seen in the Kenai River.

Table 1A.	Late-run Kenai sockeye salmon brood table. Note: Hidden enhanced was not subtracted to estimate spawners.																			
Brood		Adult Return														Return	Return per		Total	Harvest
Year	Spawners	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3		Spawner	Run	Harvest	Rate
1968	115,545			0	169,641	894	0	657,176	77,265	0	1,456	53,737	0	0	0	960,169	8.3			
1969	72,901	0	894	0	37,929	7,740	0	209,347	94,190	0	10,719	66,771	3,356	0	0	430,947	5.9			
1970	101,794	0	1,548	0	65,999	6,143	0	195,322	136,422	0	0	136,620	8,869	0	0	550,923	5.4			
1971	406,714	0	4,472	0	57,003	10,019	0	338,382	299,954	0	10,340	266,227	0	0	0	986,397	2.4			
1972	431,058	0	5,738	0	564,078	17,738	0	1,656,310	182,117	0	1,140	120,729	0	0	0	2,547,851	5.9			
1973	507,072	0	8,966	0	153,573	0	0	1,825,724	87,313	0	0	50,410	0	0	0	2,125,986	4.2			
1974	209,836	0	0	0	59,726	1,710	0	488,947	94,517	0	0	143,167	0	0	0	788,067	3.8			
1975	184,262	0	0	0	162,573	0	0	623,465	209,203	0	0	60,132	0	0	0	1,055,373	5.7	485,350	301,088	0.62
1976	507,440	0	1,391	0	457,669	6,092	0	804,033	95,053	1,142	2,930	136,815	0	888	0	1,506,012	3.0	1,374,607	867,167	0.63
1977	951,038	0	41,798	0	212,799	3,251	0	2,421,274	67,308	0	18,530	347,053	0	0	607	3,112,620	3.3	2,268,567	1,317,529	0.58
1978	511,781	0	0	0	136,820	0	0	3,250,866	67,217	0	38,048	285,747	6,343	0	0	3,785,040	7.4	2,096,342	1,584,561	0.76
1979	373,810	0	1,295	29,452	259,051	4,699	0	565,799	149,644	0	11,216	292,947	4,810	2,125	0	1,321,039	3.5	797,838	424,028	0.53
1980	615,382	0	3,655	18,199	218,853	2,613	690	1,597,876	271,442	0	14,942	545,024	0	0	0	2,673,295	4.3	1,481,394	866,012	0.58
1981	535,524	825	0	7,818	301,195	2,217	0	1,244,961	295,294	0	6,783	605,230	0	0	0	2,464,323	4.6	1,176,410	640,886	0.54
1982	755,672	4,413	1,392	36,636	803,813	1,950	2,978	7,661,502	297,352	0	23,314	744,869	0	9,482	0	9,587,700	12.7	2,766,442	2,010,770	0.73
1983	792,765	1,216	0	22,901	795,150	0	0	4,465,204	262,695	0	49,747	3,878,906	0	10,975	0	9,486,794	12.0	3,981,411	3,188,646	0.80
1984	446,297	0	0	2,383	547,407	4,517	0	1,662,723	701,759	7,674	19,946	905,800	6,291	609	0	3,859,109	8.6	1,286,678	840,381	0.65
1985	573,761	0	4,130	4,862	314,370	20,065	0	1,568,911	297,302	0	4,858	372,746	678	0	0	2,587,921	4.5	2,496,016	1,922,255	0.77
1986	555,207	1,727	4,959	15,702	390,370	3,222	2,037	834,890	140,049	0	11,395	752,587	0	8,200	0	2,165,138	3.9	2,945,961	2,390,754	0.81
1987	2,011,657	0	5,664	48,620	771,535	4,509	0	7,009,121	300,271	0	105,416	2,096,054	1,114	14,322	0	10,356,627	5.1	9,391,896	7,380,239	0.79
1988	1,212,865	405	1,146	0	150,926	7,079	0	1,491,076	292,223	596	21,861	573,931	2,853	4,544	0	2,546,639	2.1	6,054,519	4,841,654	0.80
1989	2,026,619	3,919	0	16,807	352,278	77,839	0	2,469,188	555,383	1,407	17,207	948,211	0	16,440	0	4,458,679	2.2	6,656,274	4,629,655	0.70
1990	794,616	1,133	3,459	5,931	222,285	13,834	0	771,248	189,043	0	10,973	283,961	2,423	3,405	0	1,507,693	1.9	3,224,183	2,429,567	0.75
1991	727,146	1,592	4,331	10,275	662,798	22,619	0	2,764,304	251,886	1,839	17,583	689,932	2,928	2,958	3,030	4,436,074	6.1	2,182,082	1,454,936	0.67
1992	1,207,382	0	2,610	8,468	345,350	10,423	0	3,442,905	140,639	0	19,992	293,917	2,775	4,497	0	4,271,576	3.5	8,235,298	7,027,916	0.85
1993	997,693	0	0	14,950	288,883	7,055	0	816,311	196,799	1,642	12,461	330,508	14,864	6,306	0	1,689,779	1.7	4,446,195	3,448,502	0.78
1994	1,309,669	0	1,762	0	484,075	77,318	0	1,727,282	439,229	1,822	17,644	291,648	9,532	0	2,322	3,052,634	2.3	3,886,918	2,577,249	0.66
1995	776,847	0	3,402	8,637	429,006	16,262	0	1,039,246	154,484	0	15,060	230,897	0	2,266	610	1,899,870	2.4	2,628,555	1,851,708	0.70
1996	963,108	0	0	13,177	254,663	26,314	0	1,532,580	157,933	0	25,384	246,751	2,554	2,402	0	2,261,757	2.3	3,696,067	2,732,959	0.74
1997	1,365,676	0	1,765	0	230,281	16,857	0	2,141,616	327,086	1,220	16,829	873,668	0	10,985	6,095	3,626,402	2.7	4,610,042	3,244,366	0.70
1998	929,090	0	3,740	3,017	701,989	12,436	0	2,710,969	314,136	1,356	30,290	677,566	6,351	3,477	0	4,465,328	4.8	1,902,219	973,129	0.51
1999	949,276	1,833	0	11,713	499,236	4,232	0	3,957,730	426,477	0	18,160	807,582	14,996	10,825	2,279	5,755,063	6.1	2,984,568	2,035,292	0.68
2000	696,899	4,396	634	19,641	562,552	7,454	0	4,988,074	123,670	0	67,227	1,253,952	2,279	23,772	4,682	7,058,333	10.1	1,814,779	1,117,880	0.62
2001	738,229	0	0	12,693	133,740	4,837	0	1,102,407	103,974	0	52,226	279,858	4,682	3,540	0	1,697,957	2.3	2,189,670	1,451,441	0.66
2002	1,126,616	1,906	38	13,104	281,726	10,825	0	2,837,840	156,677	0	95,584	227,610	0	3,403	0	3,628,712	3.2	3,466,762	2,340,146	0.68
2003	1,402,292	0	0	4,682	213,585	23,772	0	1,267,159	150,560	0	20,902	235,750	3,403	0	0	1,919,813	1.4	4,439,571	3,037,279	0.68
2004	1,690,547	0	0	7,289	315,905	14,785	0	1,764,966	239,153	0	8,272	858,115	4,316	8,142	15,658	3,236,600	1.9	5,705,141	4,014,594	0.70
2005	1,654,003	0	0	3,403	148,984	3,403	0	1,598,266	168,314	0	23,800	2,857,849	0	0	0	4,804,018	2.9	6,109,173	4,455,170	0.73
2006	1,892,090	0	7,048	4,316	841,212	101,060	0	2,438,848	340,712	0	79,654	1,172,388	0	21,043	0	5,006,280	2.6	2,848,597	956,507	0.34
2007	964,243	4,316	8,272	0	498,542	71,399	0	2,151,603	739,778	0	21,043	876,917	0	0	6,808	4,378,678	4.5	3,601,777	2,637,535	0.73
2008	708,805	0	8,142	0	591,917	11,447	0	1,987,848	261,588	0	0	519,456	0	0	0	3,380,397	4.8	2,082,431	1,373,626	0.66
2009	848,117	0	22,894	0	438,640	14,150	0	2,160,200	246,112	0	14,894	903,197	0	9,368	0	3,809,455	4.5	2,430,414	1,582,297	0.65
2010	1,038,302	0	6,893	13,616	416,994	27,232	0	1,671,965	314,687	0	21,515	1,121,581	0	28,965	1,939	3,625,388	3.5	3,596,458	2,558,156	0.71
2011	1,280,733	0	13,616	0	895,559	18,713	0	2,119,496	185,225	0	45,340	1,221,727	3,113	9,777	1,248	4,513,815	3.5	6,263,091	4,982,359	0.80
2012	1,212,921	0	0	2,230	240,206	10,283	0	1,057,626	75,078	0	29,565	69,055	0			1,484,043		4,769,681	3,556,760	0.75
2013	980,208	0	1,938	992	147,848	8,094	0	699,561	220,225	0						1,078,658		3,628,121	2,647,914	0.73
2014	1,218,342	1,530	3,468	0	790,594	44,325												3,404,034	2,185,693	0.64
2015	1,400,047	1,050	2,598															3,819,016	2,418,969	0.63
2016	1,118,155																	3,711,842	2,593,688	0.70
2017	1,056,773																	2,595,720	1,538,947	0.59
2018	831,096																	1,867,998	1,036,902	0.56
Mean (1975-2010)	967,631	769	3,901	9,953	401,033	17,660	158	2,292,896	262,365	519	25,991	766,088	2,589	5,915	1,223	3,791,059	4.4	3,370,572	2,402,941	0.68
Percentage of Return					**11%**			**61%**	**7%**			**20%**								
Values less than 1% not shown																				
3.1 + 3.2 + 3.3 less than 1%														Data Source: ADF&G						

Table 1B. Late-run Kenai sockeye salmon brood table. Note: Hidden enhanced was not subtracted to estimate spawners.

Brood		Fall Fry Abundance		Fall Fry Weight		EZD	Zoop Biomass	Smolt Abundance		Smolt Weight		Adult Return															Return per		Total	Harvest
Year	Spawners	Age 0	Age 1	Age 0	Age 1	(m)	(mg/m2)	Age 1	Age 2	Age 1	Age 2	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	2.4	3.3	Return	Spawner	Run	Harvest	Rate
1968	115,545													0	169,641	894	0	657,176	77,265	0	1,456	53,737	0	0	0	960,169	8.3			
1969	72,901											0	894	0	37,929	7,740	0	209,347	94,190	0	10,719	66,771	3,356	0	0	430,947	5.9			
1970	101,794											0	1,548	0	65,999	6,143	0	195,322	136,422	0	0	136,620	8,869	0	0	550,923	5.4			
1971	406,714											0	4,472	0	57,003	10,019	0	338,382	299,954	0	10,340	266,227	0	0	0	986,397	2.4			
1972	431,058											0	5,738	0	564,078	17,738	0	1,656,310	182,117	0	1,140	120,729	0	0	0	2,547,851	5.9			
1973	507,072											0	8,966	0	153,573	0	0	1,825,724	87,313	0	0	50,410	0	0	0	2,125,986	4.2			
1974	209,836											0	0	0	59,726	1,710	0	488,947	94,517	0	0	143,167	0	0	0	788,067	3.8			
1975	184,262											0	0	0	162,573	0	0	623,465	209,203	0	0	60,132	0	0	0	1,055,373	5.7	485,350	301,088	0.62
1976	507,440											0	1,391	0	457,669	6,092	0	804,033	95,053	1,142	2,930	136,815	0	888	0	1,506,012	3.0	1,374,607	867,167	0.63
1977	951,038											0	41,798	0	212,799	3,251	0	2,421,274	67,308	0	18,530	347,053	0	0	607	3,112,620	3.3	2,268,567	1,317,529	0.58
1978	511,781											0	0	0	136,820	0	0	3,250,866	67,217	0	38,048	285,747	6,343	0	0	3,785,040	7.4	2,096,342	1,584,561	0.76
1979	373,810											0	1,295	29,452	259,051	4,699	0	565,799	149,644	0	11,216	292,947	4,810	2,125	0	1,321,039	3.5	797,838	424,028	0.53
1980	615,382											0	3,655	18,199	218,853	2,613	690	1,597,876	271,442	0	14,942	545,024	0	0	0	2,673,295	4.3	1,481,394	866,012	0.58
1981	535,524											825	0	7,818	301,195	2,217	0	1,244,961	295,294	0	6,783	605,230	0	0	0	2,464,323	4.6	1,176,410	640,886	0.54
1982	755,672											4,413	1,392	36,636	803,813	1,950	2,978	7,661,502	297,352	0	23,314	744,869	0	9,482	0	9,587,700	12.7	2,766,442	2,010,770	0.73
1983	792,765											1,216	0	22,901	795,150	0	0	4,465,204	262,695	0	49,747	3,878,906	0	10,975	0	9,486,794	12.0	3,981,411	3,188,646	0.80
1984	446,297		2,536,536									0	0	2,383	547,407	4,517	0	1,662,723	701,759	7,674	19,946	905,800	6,291	609	0	3,859,109	8.6	1,286,678	840,381	0.65
1985	573,761	22,217,486	0	1.7		8.9	560.6			4.5		0	4,130	4,862	314,370	20,065	0	1,568,911	297,302	0	4,858	372,746	678	0	0	2,587,921	4.5	2,496,016	1,922,255	0.77
1986	555,207	10,182,400	94,089			8.3	615.4					1,727	4,959	15,702	390,370	3,222	2,037	834,890	140,049	0	11,395	752,587	0	8,200	0	2,165,138	3.9	2,945,961	2,390,754	0.81
1987	2,011,657	37,071,211	11,066,228	0.9	2.8	12.4	586.0			2.1	3.2	0	5,664	48,620	771,535	4,509	0	7,009,121	300,271	0	105,416	2,096,054	1,114	14,322	0	10,356,627	5.1	9,391,896	7,380,239	0.79
1988	1,212,865	13,987,502	782,393	1.2	4.0	10.5	693.2			3.0	4.9	405	1,146	0	150,926	7,079	0	1,491,076	292,223	596	21,861	573,931	2,853	4,544	0	2,546,639	2.1	6,054,519	4,841,654	0.80
1989	2,026,619	24,601,413	387,673	1.3	4.7	5.5	495.4			3.3	5.9	3,919	0	16,807	352,278	77,839	0	2,469,188	555,383	1,407	17,207	948,211	0	16,440	0	4,458,679	2.2	6,656,274	4,629,655	0.70
1990	794,616	7,126,711	104,391	1.5	7.0	6.3	368.8			3.9	9.0	1,133	3,459	5,931	222,285	13,834	0	771,248	189,043	0	10,973	283,961	2,423	3,405	0	1,507,693	1.9	3,224,183	2,429,567	0.75
1991	727,146	9,540,536	1,732,650	1.8	4.5	9.2	557.9			4.8	5.6	1,592	4,331	10,275	662,798	22,619	0	2,764,304	251,886	1,839	17,583	689,932	2,928	2,958	3,030	4,436,074	6.1	2,182,082	1,454,936	0.67
1992	1,207,382	35,687,389	1,280,854	1.2	3.6	7.0	761.9			3.0	4.3	0	2,610	8,468	345,350	10,423	0	3,442,905	140,639	0	19,992	293,917	2,775	4,497	0	4,271,576	3.5	8,235,298	7,027,916	0.85
1993	997,693	11,159,398	473,111	1.4	5.7	5.6	428.2			3.6	7.2	0	0	14,950	288,883	7,055	0	816,311	196,799	1,642	12,461	330,508	14,864	6,306	0	1,689,779	1.7	4,446,195	3,448,502	0.78
1994	1,309,669	8,812,895	368,644	1.7	4.0	8.0	507.0			4.5	4.9	0	1,762	0	484,075	77,318	0	1,727,282	439,229	1,822	17,644	291,648	9,532	0	2,322	3,052,634	2.3	3,886,918	2,577,249	0.66
1995	776,847	5,582,452	239,582	1.6	3.1	3.5	378.6			4.2	3.7	0	3,402	8,637	429,006	16,262	0	1,039,246	154,484	0	15,060	230,897	0	2,266	610	1,899,870	2.4	2,628,555	1,851,708	0.70
1996	963,108	25,316,385	2,459,746	0.9	1.7	5.5	342.5			2.1	1.7	0	0	13,177	254,663	26,314	0	1,532,580	157,933	0	25,384	246,751	2,554	2,402	0	2,261,757	2.3	3,696,067	2,732,959	0.74
1997	1,365,676	21,193,560	629,011	0.7	4.0	4.2	273.4			1.5	4.9	0	1,765	0	230,281	16,857	0	2,141,616	327,086	1,220	16,829	873,668	0	10,985	6,095	3,626,402	2.7	4,610,042	3,244,366	0.70
1998	929,090	8,330,506	472,469	1.3	4.1	7.4	421.7			3.3	5.0	0	3,740	3,017	701,989	12,436	0	2,710,969	314,136	1,356	30,290	677,566	6,351	3,477	0	4,465,328	4.8	1,902,219	973,129	0.51
1999	949,276	19,950,396	520,673	1.2	3.2	6.7	489.8			3.0	3.8	1,833	0	11,713	499,236	4,232	0	3,957,730	426,477	0	18,160	807,582	14,996	10,825	2,279	5,755,063	6.1	2,984,568	2,035,292	0.68
2000	696,899	22,509,586	3,342,145	1.0	2.6	8.6	386.3			2.4	2.9	4,396	634	19,641	562,552	7,454	0	4,988,074	123,670	0	67,227	1,253,952	2,279	23,772	4,682	7,058,333	10.1	1,814,779	1,117,880	0.62
2001	738,229	8,748,692	434,724	1.0	2.8	9.0	535.5			2.4	3.2	0	0	12,693	133,740	4,837	0	1,102,407	103,974	0	52,226	279,858	4,682	3,540	0	1,697,957	2.3	2,189,670	1,451,441	0.66
2002	1,126,616	12,750,428	711,475	1.3	2.1	4.1	344.9			3.3	2.3	1,906	38	13,104	281,726	10,825	0	2,837,840	156,677	0	95,584	227,610	0	3,403	0	3,628,712	3.2	3,466,762	2,340,146	0.68
2003	1,402,292	27,574,335	106,971	0.6	1.5	5.9	407.1	25,676,000	269,000	1.1	1.8	0	0	4,682	213,585	23,772	0	1,267,159	150,560	0	20,902	235,750	3,403	0	0	1,919,813	1.4	4,439,571	3,037,279	0.68
2004	1,690,547	41,936,000	7,859,788	0.5	2.0	6.0	489.9	10,000,000	5,000,000	1.3	1.9	0	0	7,289	315,905	14,785	0	1,764,966	239,153	0	8,272	858,115	4,316	8,142	15,658	3,236,600	1.9	5,705,141	4,014,594	0.70
2005	1,654,003	29,563,865	8,945,317	0.7	1.8	6.6	592.6	10,000,000	7,195,124	1.3	4.5	0	0	3,403	148,984	3,403	0	1,598,266	168,314	0	23,800	2,857,849	0	0	0	4,804,018	2.9	6,109,173	4,455,170	0.73
2006	1,892,090	9,138,282	186,842	0.9	4.0	5.4	563.9	3,421,732	5,489,669	3.0	5.0	0	7,048	4,316	841,212	101,060	0	2,438,848	340,712	0	79,654	1,172,388	0	21,043	0	5,006,280	2.6	2,848,597	956,507	0.34
2007	964,243	20,154,463	688,401	1.3	4.8	10.9	834.7	2,457,046	7,643,437	2.7	6.0	4,316	8,272	0	498,542	71,399	0	2,151,603	739,778	0	21,043	876,917	0	0	6,808	4,378,678	4.5	3,601,777	2,637,535	0.73
2008	708,805	10,755,096	460,689	1.6	3.4	9.4	987.4	6,321,696	4,773,071	5.1	4.1	0	8,142	0	591,917	11,447	0	1,987,848	261,588	0	0	519,456	0	0	0	3,380,397	4.8	2,082,431	1,373,626	0.66
2009	848,117	17,778,081	3,796,914	1.2	3.4	6.1	509.6	11,005,963	7,630,742	2.7	4.1	0	22,894	0	438,640	14,150	0	2,160,200	246,112	0	14,894	903,197	0	9,368	0	3,809,455	4.5	2,430,414	1,582,297	0.65
2010	1,038,302	11,809,877	5,442,363	1.2	3.6	7.8	573.2	8,301,983	5,591,152	2.6	4.2	0	6,893	13,616	416,994	27,232	0	1,671,965	314,687	0	21,515	1,121,581	0	28,965	1,939	3,625,388	3.5	3,596,458	2,558,156	0.71
2011	1,280,733	23,560,643	2,857,684	1.2	3.3	6.9	778.8	8,326,589		2.5		0	13,616	0	895,559	18,713	0	2,119,496	185,225	0	45,340	1,221,727	3,113	9,777	1,248	4,513,815	3.5	6,263,091	4,982,359	0.80
2012	1,212,921	9,515,604	1,402,592	1.1	2.7	5.4	391.7					0	0	2,230	240,206	10,283	0	1,057,626	75,078	0	29,565	69,055	0	5,062	1,029	1,490,134	1.2	4,769,681	3,556,760	0.75
2013	980,208	16,200,661	996,398	0.8	2.4	4.3	507.1					0	1,938	992	147,848	8,094	0	699,561	220,225	0								3,628,121	2,647,914	0.73
2014	1,218,342	22,171,908	1,405,944	1.0	2.5							1,530	3,468	0	790,594	44,325												3,404,034	2,185,693	0.64
2015	1,400,047	26,128,228	3,751,209	0.8	3.2							1,050	2,598															3,819,016	2,418,969	0.63
2016	1,118,155	19,730,476	4,997,740	1.1	4.2																							3,711,842	2,593,688	0.70
2017	1,056,773	14,383,343		1.4																								2,595,720	1,538,947	0.59
2018	831,096																											1,867,998	1,036,902	0.56
Mean (1968-2018)	897,606	18,634,524	2,450,467	1.1	3.1	6.6	515.8	9,501,223	5,449,024			644	3,908	7,692	374,879	16,201	124	1,995,481	236,901	406	22,983	660,169	2,412	5,062	1,029	3,352,720	4	3,440,912	2,442,434	0.68
Percentage of Return	Values less than 1% not shown														11%			61%	7%		1%	20%								
	Genetic estimates of stock-specific harvests.																													
	Preliminary age composition catch allocation model estimates of stock-specific harvests.																													
	1968-2012 average was used as an estimate in order to complete 2012 brood year for the EG analysis in 2019																											Data Source: ADF&G		

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Table 1C. Kasilof sockeye salmon brood table.

Brood		Smolt Abundance			Smolt Weight (g)		Adult Return														Return per		Total	Harvest
Year	Spawners	Age 1	Age 2	Total	Age 1	Age 2	0	1	0	1	2	0	1	2	3	1	2	3	2	3	Return	Spawner	Run	Harvest	Rate
1968	90,958				.	.			0	86,418	115	0	42,653	14,079	0	0	2,588	0	0	0	145,853	1.6			
1969	46,964				.	.	0	231	0	12,833	204	0	85,255	6,389	0	0	5,484	0	522	0	110,919	2.4			
1970	38,797				.	.	0	0	0	38,507	299	0	8,744	69,392	0	0	51,297	0	0	0	168,239	4.3			
1971	91,887				.	.	0	0	0	36,811	268	0	107,438	101,308	0	0	49,258	0	0	0	295,083	3.2			
1972	115,486				.	.	49	494	0	115,995	0	0	103,393	114,377	0	0	38,332	0	0	0	372,639	3.2			
1973	40,880				.	.	0	473	0	119,001	2,433	0	176,558	38,748	0	0	4,521	0	0	0	341,734	8.4			
1974	71,540				.	.	0	2,753	0	206,299	0	0	80,966	34,636	0	1,350	16,890	0	0	0	342,896	4.8			
1975	48,884				.	.	0	0	0	180,735	0	0	111,456	20,631	0	0	8,677	0	0	0	321,500	6.6	121,242	72,358	0.60
1976	142,058				.	.	440	1,801	0	246,019	0	0	368,132	33,934	0	0	41,369	0	0	0	691,693	4.9	377,033	234,975	0.62
1977	158,410				.	.	0	4,087	0	149,225	0	0	358,492	51,558	0	0	46,809	0	0	0	610,171	3.9	391,215	232,805	0.60
1978	119,165		401,000		.	5.1	0	0	0	172,123	465	0	364,997	104,687	0	0	53,408	0	0	0	695,679	5.8	459,937	340,772	0.74
1979	155,527	1,865,000	1,010,000	2,875,000	2.8	4.8	0	2,465	0	407,690	0	0	204,991	112,060	0	2,937	52,479	0	1,199	0	783,821	5.0	303,099	147,572	0.49
1980	188,314	4,140,000	1,328,000	5,468,000	2.9	5.0	0	0	0	264,207	577	0	485,118	258,171	0	3,504	71,144	0	0	0	1,082,721	5.7	400,433	212,119	0.53
1981	262,271	6,817,000	2,869,000	9,686,000	2.9	5.2	0	0	0	854,061	1,742	0	679,270	220,031	0	0	95,613	236	2,489	0	1,853,442	7.1	559,968	297,697	0.53
1982	184,204	11,390,000	4,001,000	15,391,000	3.3	4.3	0	2,187	0	529,984	267	0	345,805	266,602	0	1,718	141,028	0	0	0	1,287,592	7.0	626,472	442,268	0.71
1983	215,730	12,580,000	2,223,000	14,803,000	2.6	4.6	748	0	0	348,596	484	0	353,642	239,227	0	244	65,366	0	0	0	1,008,308	4.7	924,183	708,453	0.77
1984	238,413	5,268,000	3,540,000	8,808,000	2.6	3.4	0	709	0	255,882	382	0	163,788	252,891	0	1,476	90,632	934	0	0	766,694	3.2	635,243	396,830	0.62
1985	512,827	1,074,000	2,549,000	3,623,000	2.2	3.6	0	143	0	62,021	129	0	133,572	123,311	0	769	49,795	0	0	0	369,740	0.7	1,656,695	1,143,868	0.69
1986	283,054	2,056,000	3,009,000	5,065,000	2.5	4.1	0	0	596	101,750	0	0	232,645	189,244	0	0	150,016	0	0	0	674,252	2.4	1,506,147	1,223,093	0.81
1987	256,707	3,109,000	3,521,000	6,630,000	2.7	4.4	0	656	775	133,031	162	0	330,225	248,546	0	0	174,387	0	0	0	887,782	3.5	1,058,045	801,338	0.76
1988	204,336	3,961,000	2,320,000	6,281,000	2.6	4.0	214	0	0	159,892	738	0	197,694	173,302	0	0	133,336	0	0	0	665,176	3.3	994,511	790,175	0.79
1989	164,952	2,353,000	1,973,000	4,326,000	2.6	5.3	0	0	0	63,863	590	0	189,085	145,680	0	0	113,166	0	0	0	512,385	3.1	544,439	379,487	0.70
1990	147,663	2,058,000	1,833,000	3,891,000		4.2	0	567	0	147,703	0	0	110,369	174,950	0	0	68,223	0	0	0	501,812	3.4	452,927	305,264	0.67
1991	233,646	7,189,000	1,717,000	8,906,000	2.6	4.9	0	0	0	222,798	0	0	414,977	205,588	0	0	102,874	0	0	0	946,237	4.0	606,635	372,989	0.61
1992	188,819	7,174,000	2,342,000	9,516,000	2.8	4.4	0	386	0	185,940	0	0	453,802	122,402	0	1,496	51,892	0	0	0	815,919	4.3	889,417	700,598	0.79
1993	151,801	4,593,000	1,041,000	5,634,000	2.8	4.7	0	0	0	145,659	0	0	155,518	125,775	0	1,801	92,168	441	0	0	521,361	3.4	610,403	458,602	0.75
1994	218,826	3,924,000	1,617,000	5,541,000	3.2	5.2	0	0	0	195,201	1,883	0	297,531	196,873	0	0	74,041	0	0	0	765,529	3.5	615,804	396,978	0.64
1995	202,428	2,971,000	942,000	3,913,000	3.9	5.4	682	388	0	237,182	373	0	190,926	56,162	0	1,141	42,235	1,019	491	0	530,599	2.6	621,669	419,241	0.67
1996	264,511	3,654,000	1,026,000	4,680,000	3.8	5.8	0	0	0	208,276	1,202	0	377,605	109,373	0	1,958	53,153	0	0	0	751,566	2.8	874,728	610,217	0.70
1997	263,780	3,474,000	804,000	4,278,000	3.9	5.0	0	403	0	217,593	707	0	279,338	118,996	0	0	65,542	0	0	0	682,580	2.6	824,737	560,957	0.68
1998	259,045	3,496,000	2,025,000	5,521,000	3.2	5.1	0	1,386	0	206,816	4,941	0	264,189	248,417	0	1,194	65,365	0	0	0	792,308	3.1	532,835	273,790	0.51
1999	312,481	3,217,000	2,121,000	5,338,000	3.3	5.2	0	1,542	0	279,767	1,343	0	224,666	511,584	0	0	139,448	538	0	0	1,158,888	3.7	826,369	513,888	0.62
2000	263,631	1,379,000	3,328,000	4,707,000	3.7	7.2	0	2,972	0	614,279	1,272	0	468,763	191,547	0	0	109,599	0	0	0	1,388,432	5.3	531,010	267,379	0.50
2001	318,735	9,572,000	2,245,760	11,817,760	4.8	6.6	966	1,287	0	420,057	1,918	0	573,939	515,285	0	0	114,216	0	0	0	1,627,669	5.1	751,059	432,324	0.58
2002	235,732	4,127,860	1,010,152	5,138,012	4.3	6.4	0	4,747	0	663,235	7,708	0	292,890	222,994	0	0	58,449	0	0	0	1,250,022	5.3	667,235	431,503	0.65
2003	353,526	10,213,764	255,924	10,469,688	3.9	7.4	0	10,152	0	517,851	1,852	0	603,710	282,320	0	1,989	142,431	0	0	0	1,560,304	4.4	862,230	508,704	0.59
2004	523,653	2,587,676	710,558	3,298,234	4.5	5.9	0	7,406	0	622,458	2,836	0	501,436	298,674	0	0	58,286	0	0	0	1,491,097	2.8	1,420,613	896,960	0.63
2005	360,065	3,029,221	1,137,780	4,167,001	3.5	7.1	0	5,672	0	128,287	24,088	0	255,738	255,738	0	0	209,155	0	0	0	878,678	2.4	1,227,018	866,953	0.71
2006	389,645	4,280,220	1,517,880	5,798,100	3.9	6.8	0	8,066	0	226,513	12,034	0	249,075	207,535	0	0	41,424	0	0	0	744,647	1.9	1,879,917	1,490,272	0.79
2007	365,184	2,096,120	240,000	2,336,120	4.7	9.0	1,719	8,596	0	110,448	21,782	0	66,847	237,982	0	0	37,013	0	0	0	484,387	1.3	1,157,209	792,025	0.68
2008	327,018	1,760,000			5.0	12.0	0	11,741	0	215,278	28,080	0	268,221	318,776	0	0	31,544	0	0	0	873,640	2.7	1,575,445	1,248,427	0.79
2009	326,283		2,488,632		5.9	12.3	0	42,815	0	346,060	11,636	0	324,152	227,315	0	0	83,653	0	0	0	1,035,630	3.2	1,104,972	778,689	0.70
2010	295,265	5,288,344	3,047,410		5.8	9.6	1,906	19,460	0	467,313	29,448	0	409,452	415,209	0	720	32,518	639	929	0	1,377,594	4.7	818,623	523,358	0.64
2011	245,721	4,039,590			5.4		4,191	18,970	0	246,611	12,219	0	97,688	188,641	0	954	117,098	0	0	0	686,373	2.8	809,736	564,015	0.70
2012	374,523		4,522,960			7.6	2,232	5,522	0	143,497	9,406	0	152,743	191,458	0	0	4,579	0	128	0	509,565	1.4	632,426	257,903	0.41
2013	489,654	5,309,562			5.2		0	7,664	0	284,613	32,073	0	73,061	242,906	0								1,003,071	513,417	0.51
2014	440,192		901,464			6.6	0	22,034	0	368,806	9,001												1,102,934	662,742	0.60
2015	470,677	2,854,638	1,326,426		4.6	11.4	0	4,649															1,174,899	704,222	0.60
2016	239,981	3,080,305			5.9																		480,774	240,793	0.50
2017	358,724																						801,902	443,178	0.55
2018	388,009																						703,002	314,993	0.45
Mean (1968-2018)	247,855	4,134,409	1,510,353	5,777,846	3.7	5.8	254	3,780	31	253,870	3,959	0	272,835	182,976	0	528	73,771	87	128	0	792,127	3.9	816,737	563,161	0.66
Percentage of Return	Values less than 1% not shown									32%			34%	23%			9%								

Genetic estimates of stock-specific harvests.

Preliminary age composition catch allocation model estimates of stock-specific harvests.

1968-2012 average was used as an estimate in order to complete 2012 broody year for the EG analysis in 2019

Data Source: ADF&G

Figure 5A. KRLRS Smolting in May, June and July 2020

		Number of Age Classes
Spawned in 2019 ⟷	0.2, 0.3, 0.4	3
Spawned in 2018 ⟷	1.1. 1.2, 1.3, 1.4	4
Spawned in 2017 ⟷	2.1, 2.2, 2.3, 2.4	4
Spawned in 2016 ⟷	3.1, 3.2, 3.3	3
Total number of fry age groups from the four spawn years		14

The Age 1.3, 2.3 and 1.2 comprise 92% of the Kenai River Sockeye Returns

IV. UCI Drift Gillnet Sockeye Salmon Annual CPUE, 1999-2019

Figure 6

Figure 6 displays the annual CPUE for the entire UCI Drift Fleet by year from 1999-2019. This CPUE includes all districts, all sub-districts, all areas and all sections. One drift gillnet vessel is one 'Unit of Effort'. The mean of the annual average CPUE figure is 3,239 sockeye salmon. This does not include any kings, chums, cohos or pinks harvested in any single year.

It is readily observable that since the 6,944 CPUE in 2011, there has been a steady decline to where in 2018, the UCI Drift Fleet's CPUE was **900 sockeye per vessel for the entire salmon season**. The UCI drift gillnet season starts the third Monday in June or June 19th, whichever is later. The vast majority of the drift area closes August 15th. A small portion of the drift area, basically confined to within 1 mile of the west shoreline, closes by emergency order, usually in October.

In 2019, the annual CPUE for the UCI drift fleet was 1,710 sockeye salmon, all 23 major stocks included.

The UCI Drift Fleet harvest CPUE of 1,710 in 2019 was below the average CPUE of 3,239, which is economically unstable.

With an annual sockeye CPUE of less than 3,239, the drift fleet is below marginal costs of operation. The costs of securing a vessel, maintenance, insurance, fuel, oil, nets, deckhands and permit purchase or lease, are about equal to the revenue generated by the harvest and sale of approximately 3,000 sockeye salmon.

For the major processors, hiring staff, trucks, forklifts, scale systems, totes, ice machines and permits, $1.5 to $2.5 million is a marginal start-up cost for the season.


Figure 6. Annual Sockeye CPUE, UCI Drift Gillnet, 1999-2019
Annual CPUE, Drift Fleet 1999-2019
Year
Data Source: ADF&G
AVG: 3,239
2,903
1,282
1,808
3,343
3,794
5,736
5,340
1,987
4,373
2,308
2,390
4,189
6,944
5,919
3,352
3,028
2,058
2,707
1,952
900
1,710
0
1000
2000
3000
4000
5000
6000
7000
8000
1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019

V. Highest Daily CPUE, UCI Drift Gillnet Sockeye Salmon District Wide and Area 1, 2010-2019

Figure 7 provides the highest daily, regular, 12-hour fishing period CPUE catches by the UCI Drift Fleet, District Wide or Area 1.

Beginning in 2010, the highest, single day, 12-hour fishing period CPUE were as follows:

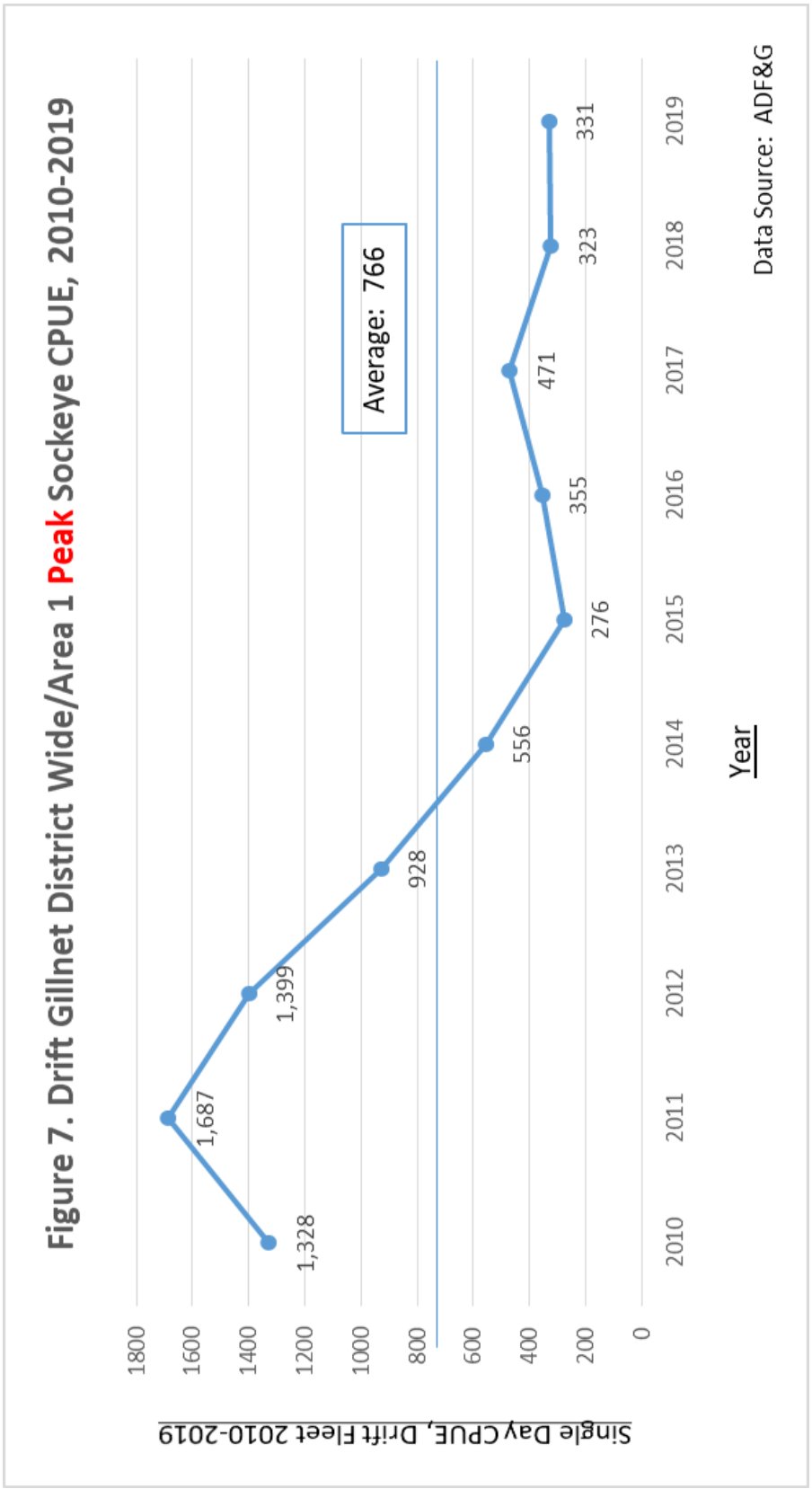
- 1,328 on July 12, 2010;
- 1,687 on July 14, 2011;
- 1,399 on July 19, 2012; and
- 929 on July 15, 2013.

In 2012, the UCI Set Net fishery was restricted or closed due to the low return of Chinook salmon to the KR.

Beginning in 2014, the highest, single day, 12-hour CPUE were as follows:

- 556 on July 17, 2014;
- 276 on July 20, 2015;
- 355 on July 18, 2016;
- 471 on July 13, 2017;
- 323 on July 12, 2018 and
- 331 on July 18, 2019.

One drift gillnet vessel is equal to one unit of effort. It should be noted that the highest, single 12-hour CPUE was 1,687 in 2011, while a CPUE of just 323 occurred in 2018. That is a reduction of 1,364 sockeyes harvested per drift vessel in a 12-hour fishing period. Economically, this reduced CPUE represents over $15,000 per vessel in just this single best day CPUE comparison.


Figure 7. Drift Gillnet District Wide/Area 1 Peak Sockeye CPUE, 2010-2019
Single Day CPUE, Drift Fleet 2010-2019
1800
1600
1400
1200
1000
800
600
400
200
0
1,328
1,687
1,399
928
556
276
355
471
323
331
Average: 766
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
Year
Data Source: ADF&G

VI. Sockeye Salmon Run Timing to the KR Mouth, 2010 – 2018

Figures 8A – 8E

There are three figures, 8A, 8B and 8C, which display the late-run sockeye salmon entry patterns, sonar counts and sockeye movements into the KR. Information in each figure is the result of applying appropriate shifts to sonar counts and sockeye movements in the KR.

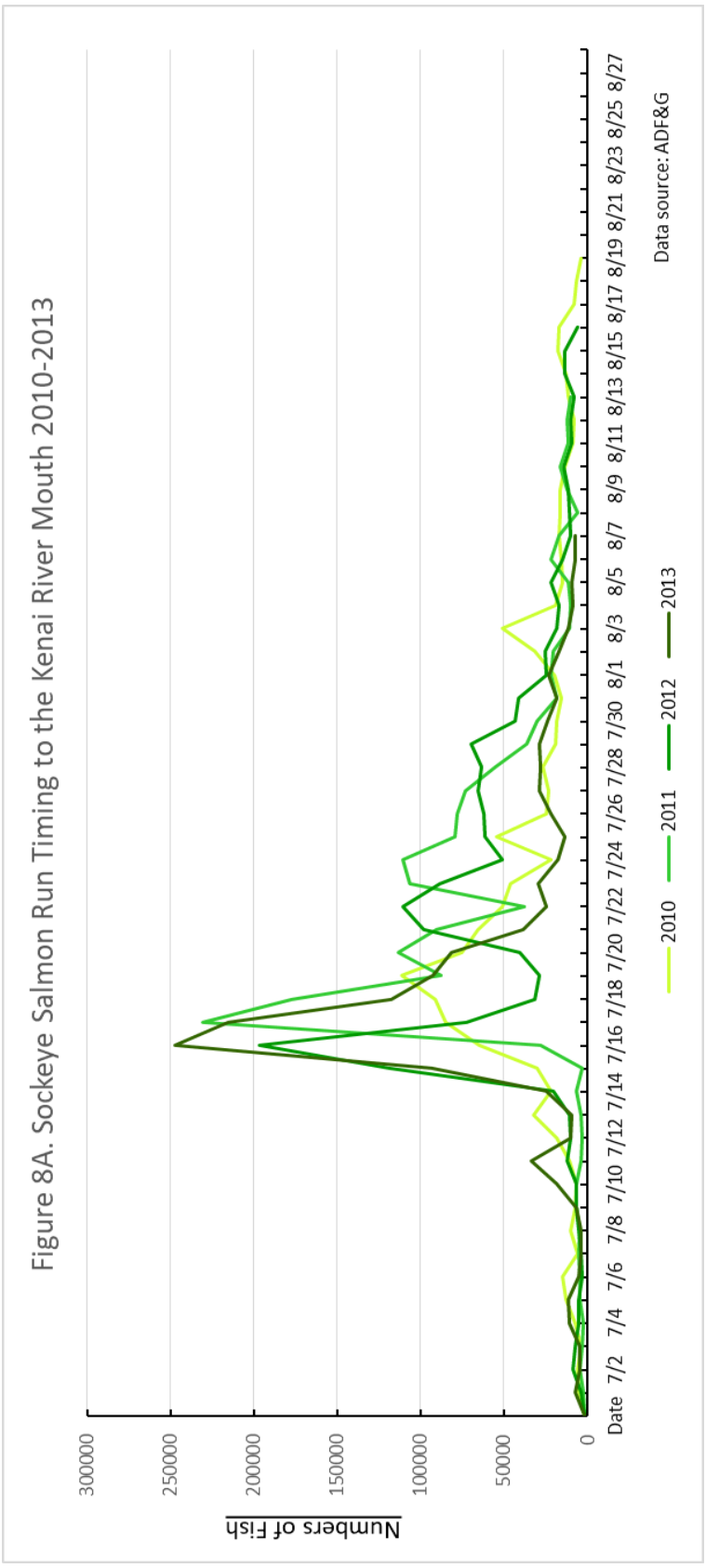
Figure 8A displays the run timing for the years 2010-2013 into the KR. It is readily apparent that in the 2010-2013 timeframe, there were large, daily entry patterns of 250,000-300,000 between July 14 and July 18.

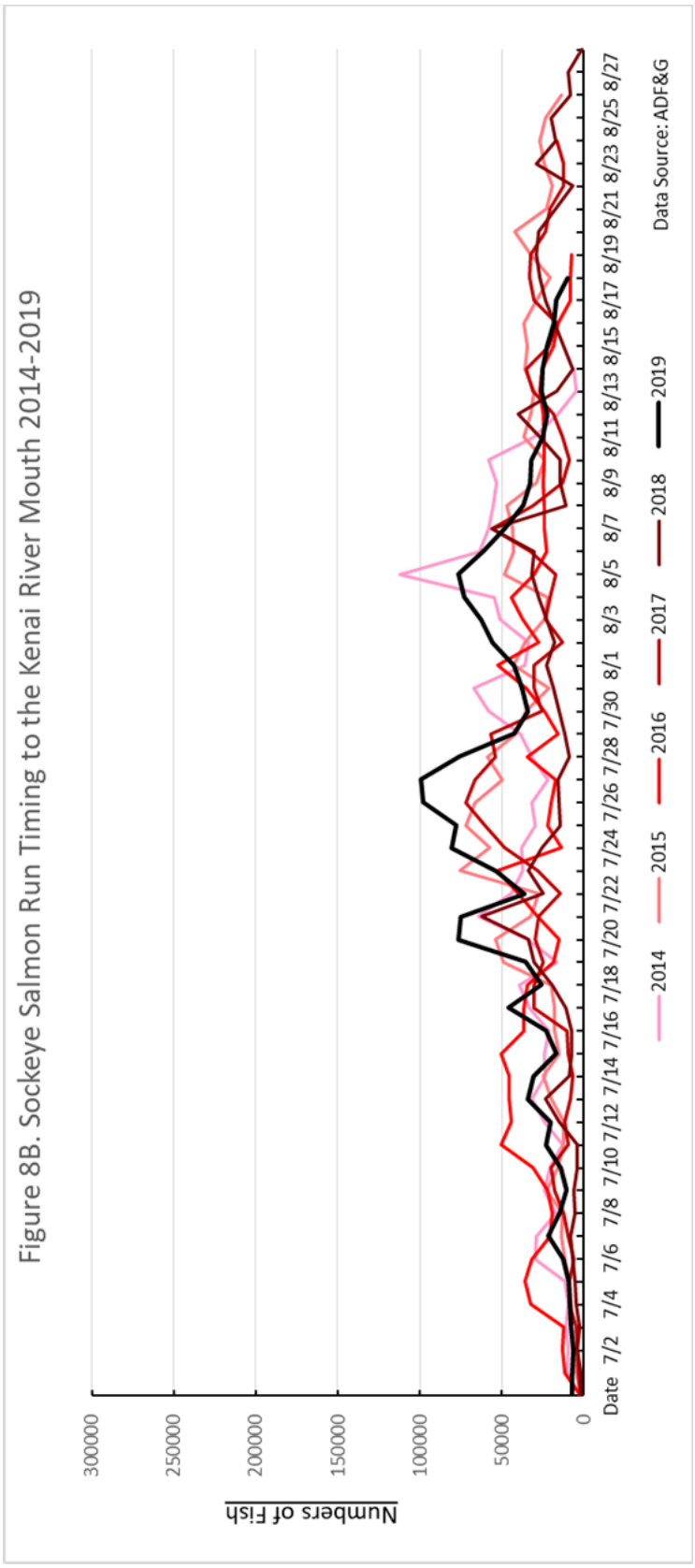
Figure 8B displays the run timing for the years 2014-2019 into the KR. It is readily apparent that there are no single-day, large sockeye salmon entry patterns into the KR. There is only one 90,000-plus day entry into the KR.

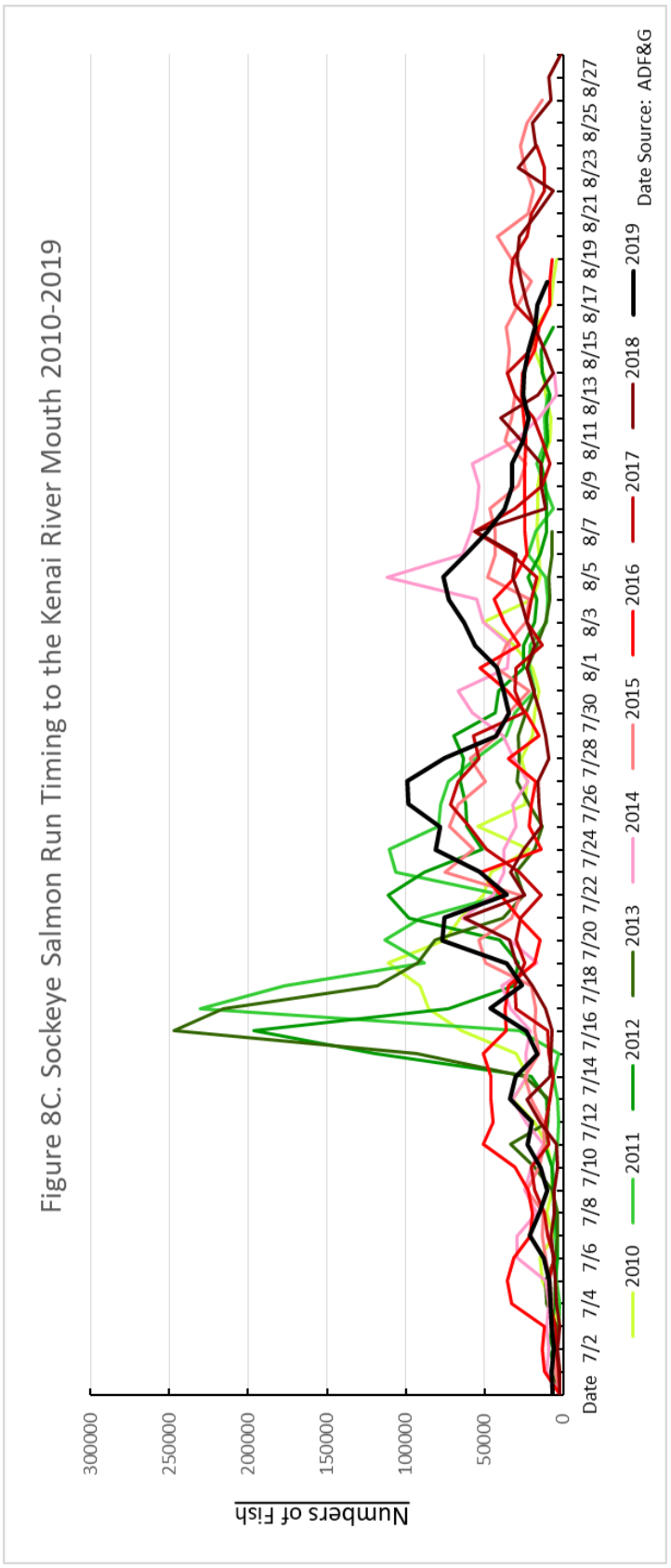
Figure 8C displays the daily entry patterns into the KR for the entire 2010-2019 time frame. Even the casual observer can see that the daily sockeye entry patterns have changed. Also note the later entry patterns into the end of August in the later years, 2014-2019.

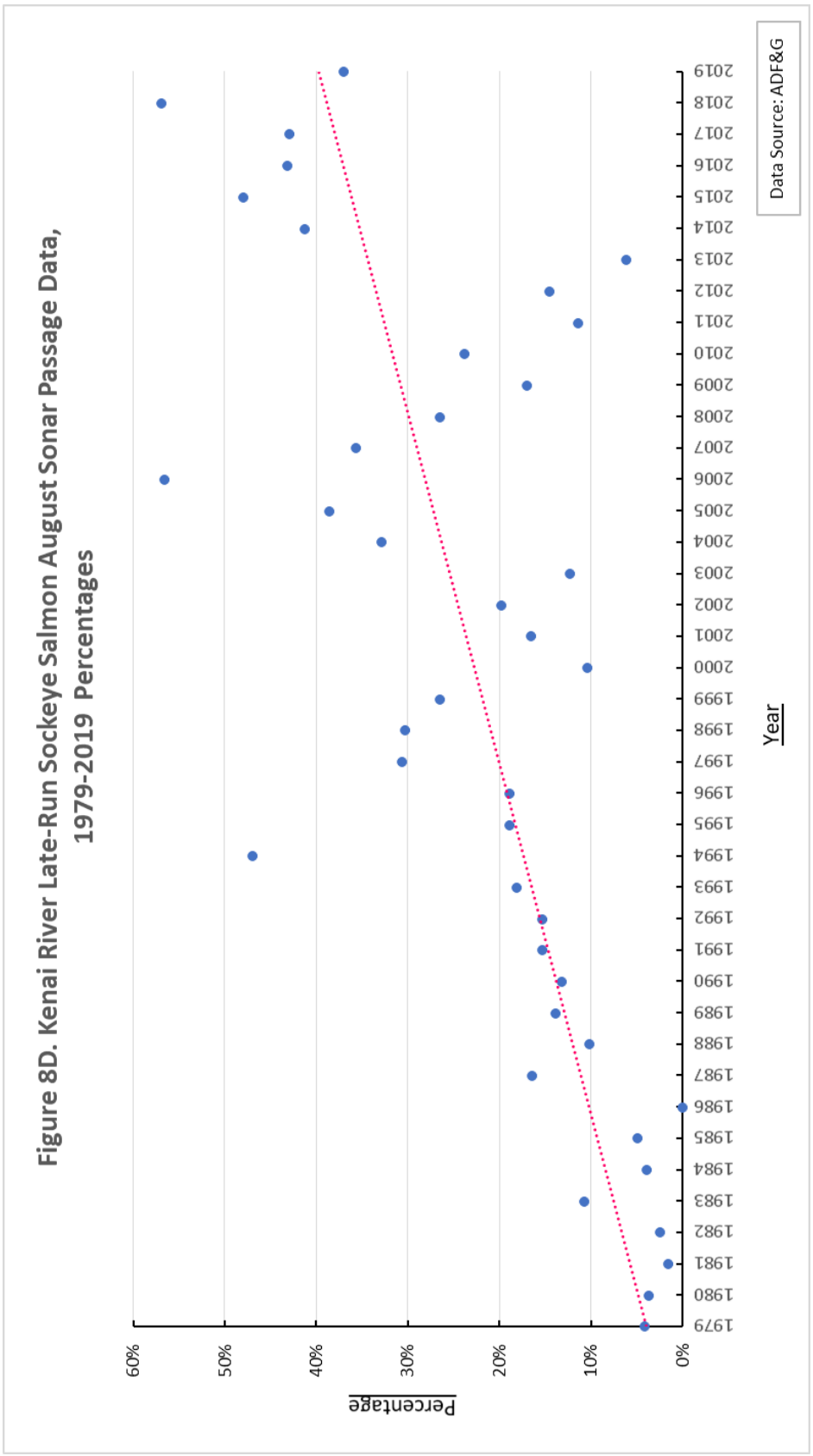
Figures 8D & 8E display the total seasonal KR sonar passage percentages and numbers for sockeye salmon. Figures 8D & 8E also display the August component in percentages and numbers, as well as the last day the counter was operating. It is rather obvious that there is a trend toward increasing percentages and numbers of sockeye are entering the KR in August.

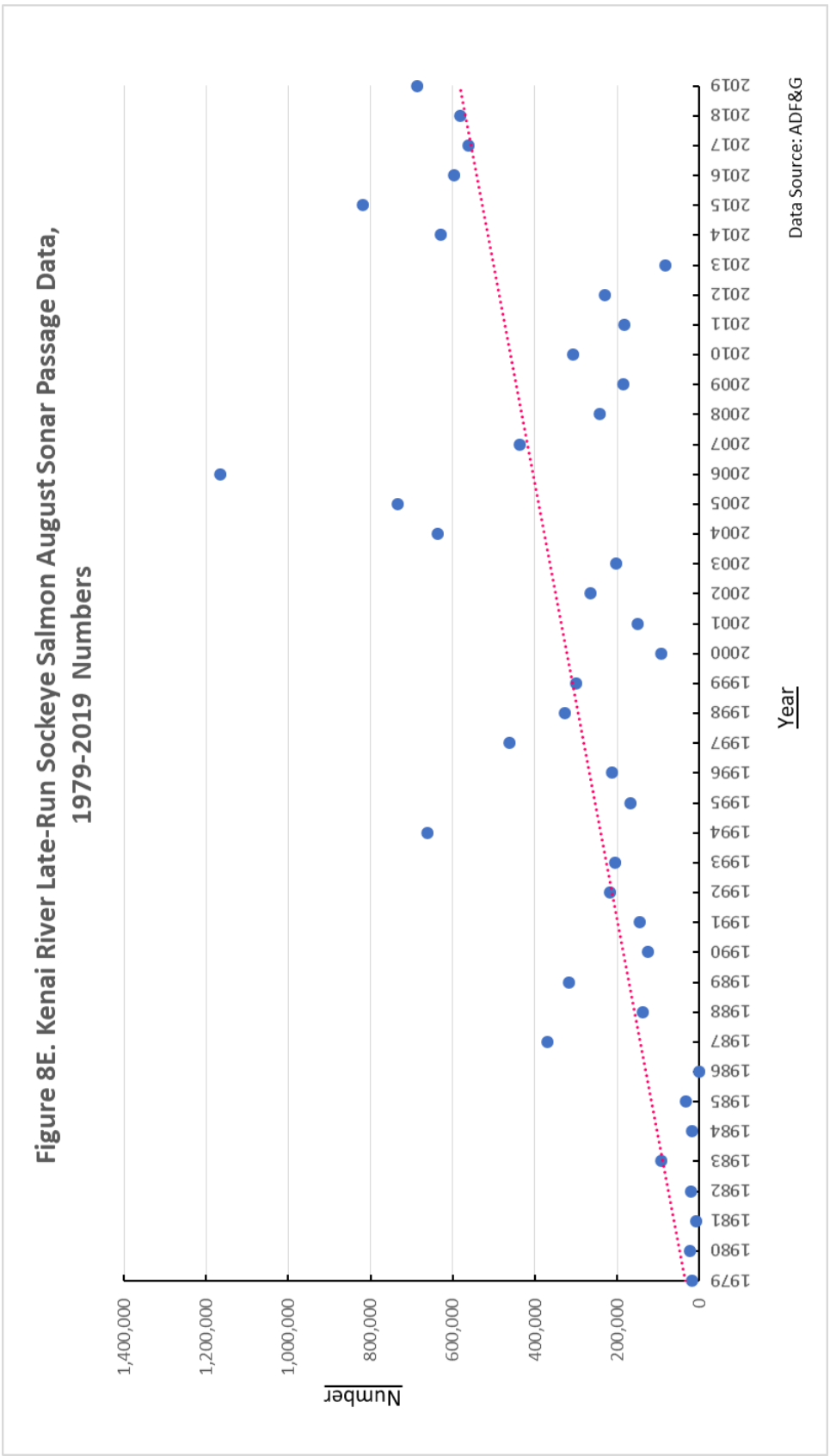
In the 1980s, an average of 7% of the KRLRS entered the river in August. In the last five years, 2014-2019, 46% of the sockeye entered the KR in August. While not a direct year by year analysis, the 2014-2019 time period represents over a six-fold, or 600%, increase in the August entry pattern when compared to the early 1980s. The reasons and consequences of this 46% August component are real and have socio-economic-biological consequences for the entire Kenai, Alaska and national economies.


Figure 8A. Sockeye Salmon Run Timing to the Kenai River Mouth 2010-2013
Numbers of Fish
300000
250000
200000
150000
100000
50000
0
Date
7/2 7/4 7/6 7/8 7/10 7/12 7/14 7/16 7/18 7/20 7/22 7/24 7/26 7/28 7/30 8/1 8/3 8/5 8/7 8/9 8/11 8/13 8/15 8/17 8/19 8/21 8/23 8/25 8/27
2010
2011
2012
2013
Data source: ADF&G


Figure 8B. Sockeye Salmon Run Timing to the Kenai River Mouth 2014-2019
Numbers of Fish
300000
250000
200000
150000
100000
50000
0
Date 7/2 7/4 7/6 7/8 7/10 7/12 7/14 7/16 7/18 7/20 7/22 7/24 7/26 7/28 7/30 8/1 8/3 8/5 8/7 8/9 8/11 8/13 8/15 8/17 8/19 8/21 8/23 8/25 8/27
2014
2015
2016
2017
2018
2019
Data Source: ADF&G


Figure 8C. Sockeye Salmon Run Timing to the Kenai River Mouth 2010-2019
Numbers of Fish
300000
250000
200000
150000
100000
50000
0
Date
7/2 7/4 7/6 7/8 7/10 7/12 7/14 7/16 7/18 7/20 7/22 7/24 7/26 7/28 7/30 8/1 8/3 8/5 8/7 8/9 8/11 8/13 8/15 8/17 8/19 8/21 8/23 8/25 8/27
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
Date Source: ADF&G


Figure 8D. Kenai River Late-Run Sockeye Salmon August Sonar Passage Data,
1979-2019 Percentages
Data Source: ADF&G
Year
Percentage
0%
10%
20%
30%
40%
50%
60%
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019


Figure 8E. Kenai River Late-Run Sockeye Salmon August Sonar Passage Data,
1979-2019 Numbers
Number
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
Year
2019
2018
2017
2016
2015
2014
2013
2012
2011
2010
2009
2008
2007
2006
2005
2004
2003
2002
2001
2000
1999
1998
1997
1996
1995
1994
1993
1992
1991
1990
1989
1988
1987
1986
1985
1984
1983
1982
1981
1980
1979
Data Source: ADF&G

VII. Anchor Point OTF Average Sockeye Salmon MEFL

Figures 9 & 10

Figure 9 displays the MEFL data that comes from the OTF that operates during the month of July. The MEFLs represent data from all the 23 major sockeye stocks occurring in UCI. The OTF vessel has been operating since the early 1980s. Currently, there are six prescribed locations where a 200 fathom, 45 mesh deep, 5 1/8" drift gillnet is set for 30 minutes and retrieved back on the vessel. At each of these six locations, salmon may be caught, see Figure 10. These salmon, all species, are assessed and sampled with various biological data recorded. Figure 9 is the historic data for the MEFL by year. Each year in July, a daily MEFL is calculated for a monthly average.

As you can observe, there may be some length variability from year to year. For instance, in 1992, the July average was 570 mm MEFL. In 1994, the July average was 538 mm MEFL.

* Note: 570 mm MEFL = 22.4 inches

538 mm MEFL = 21.2 inches

Please note, the OTF reported MEFL in 2012, 581 mm (22.87 inches), decreasing in 2019 to 532 mm (20.94 inches). Also note the returning sockeye MEFLs have steadily declined over the most recent eight year period. The OTF MEFLs declining since 2012 most likely occurred prior to 2012, as these sockeye salmon are the returning adults.

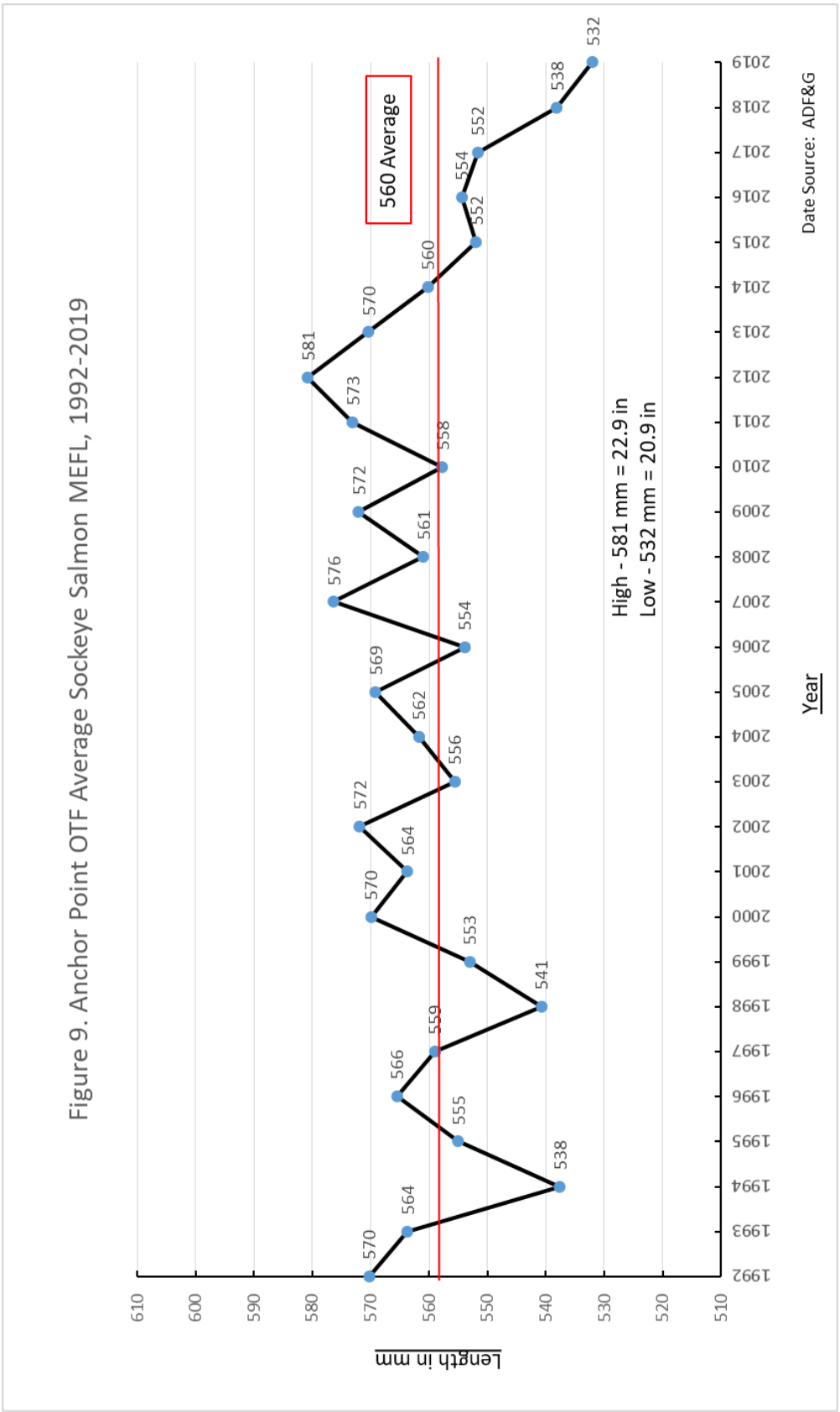
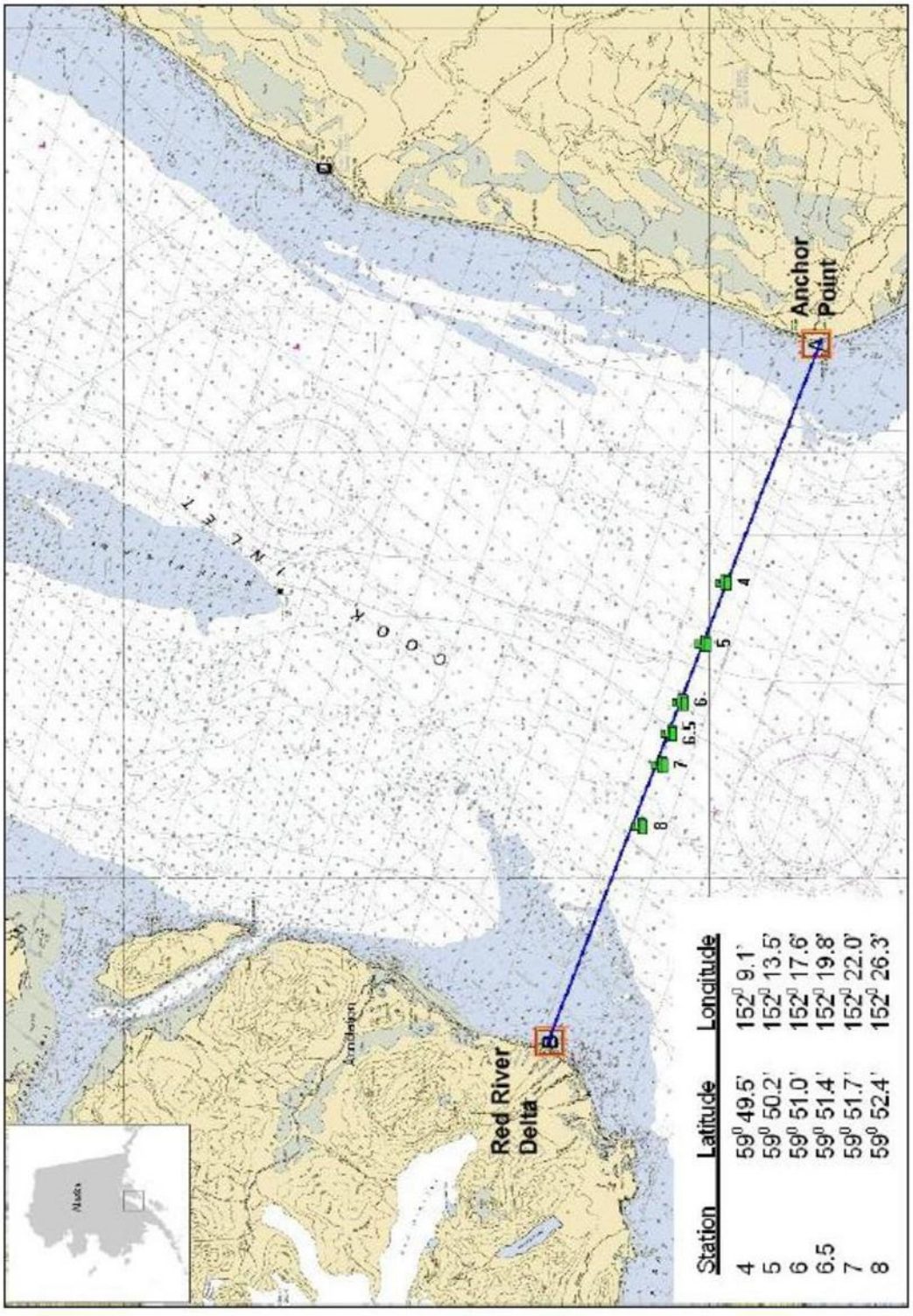

Figure 9. Anchor Point OTF Average Sockeye Salmon MEFL, 1992-2019
560 Average
High - 581 mm = 22.9 in
Low - 532 mm = 20.9 in
Date Source: ADF&G
Length in mm
Year
610
600
590
580
570
560
550
540
530
520
510
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
570
564
538
555
566
559
541
553
570
564
572
556
562
569
554
576
561
572
558
573
581
570
560
552
554
552
538
532

Figure 10. Location of the Upper Cook Inlet offshore Test Fishing Stations



Data Source: ADFG

VIII. Sockeye Salmon MEFL, Drift Gillnet Fishery, 1992-2018

Figures 11A – 11C

Figure 11A is the MEFL for the 1.3 (5 year) age class. Figure 11A displays 5-year old sockeyes taken from the drift fleet harvests that include all 23 UCI stocks. The 1.3 age class that returned in 2006 were from the 2001 brood year.

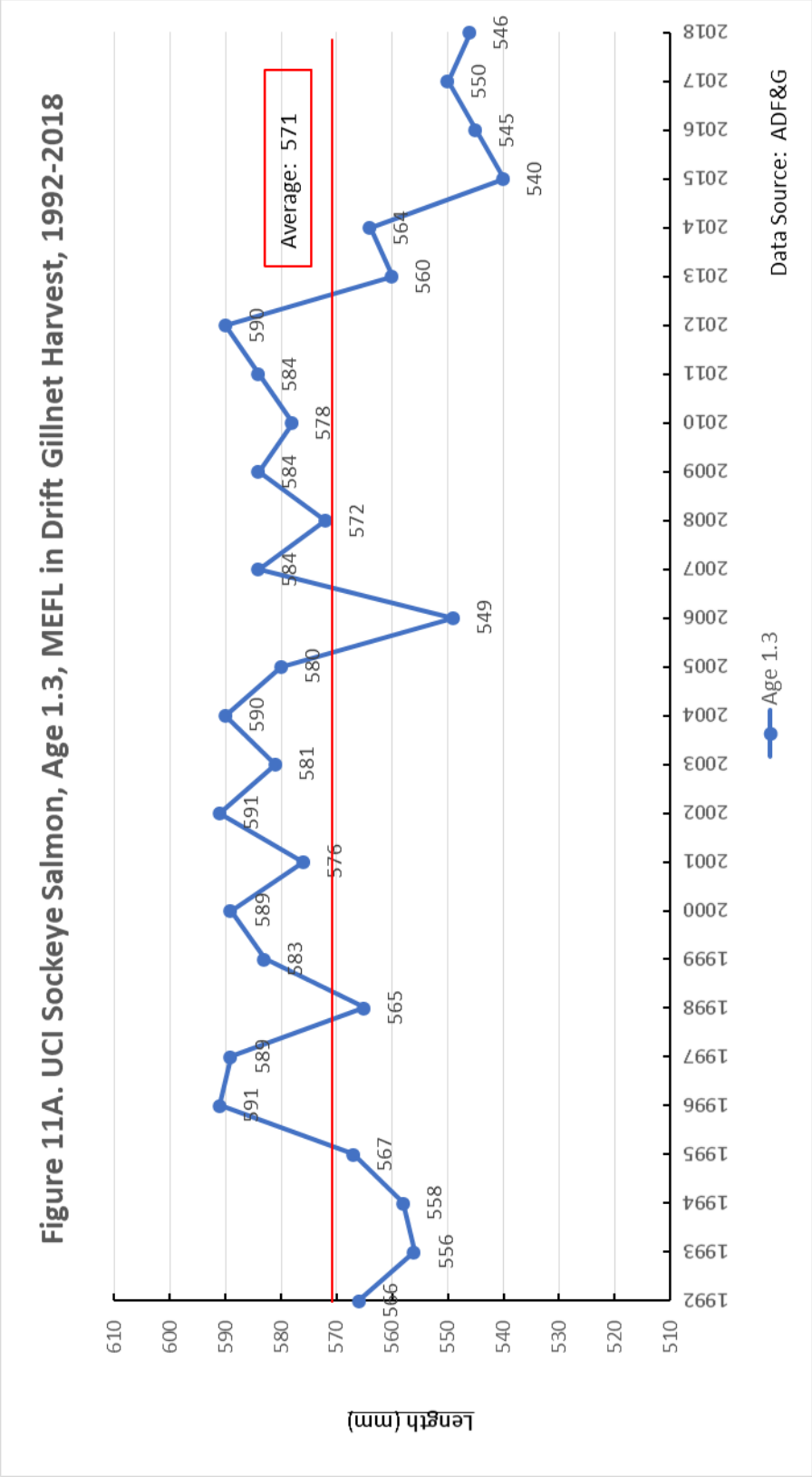
Figure 11B is the MEFL for the 2.3 (6 year) age class. Figure 11B displays 6 year-old sockeyes taken from drift fleet harvests and includes all 23 UCI sockeye stocks. The 2.3 age class in 2006 show some minor changes in MEFL. However, in the 2006 run, these reduced lengths of 564 mm in the 2.3 age class is not as pronounced when compared to the length of 549 mm in the 1.3 age class. The 1.3 and 2.3 age classes are from different brood years. However, both of these brood years smolted and reared in ocean environments at the same time.

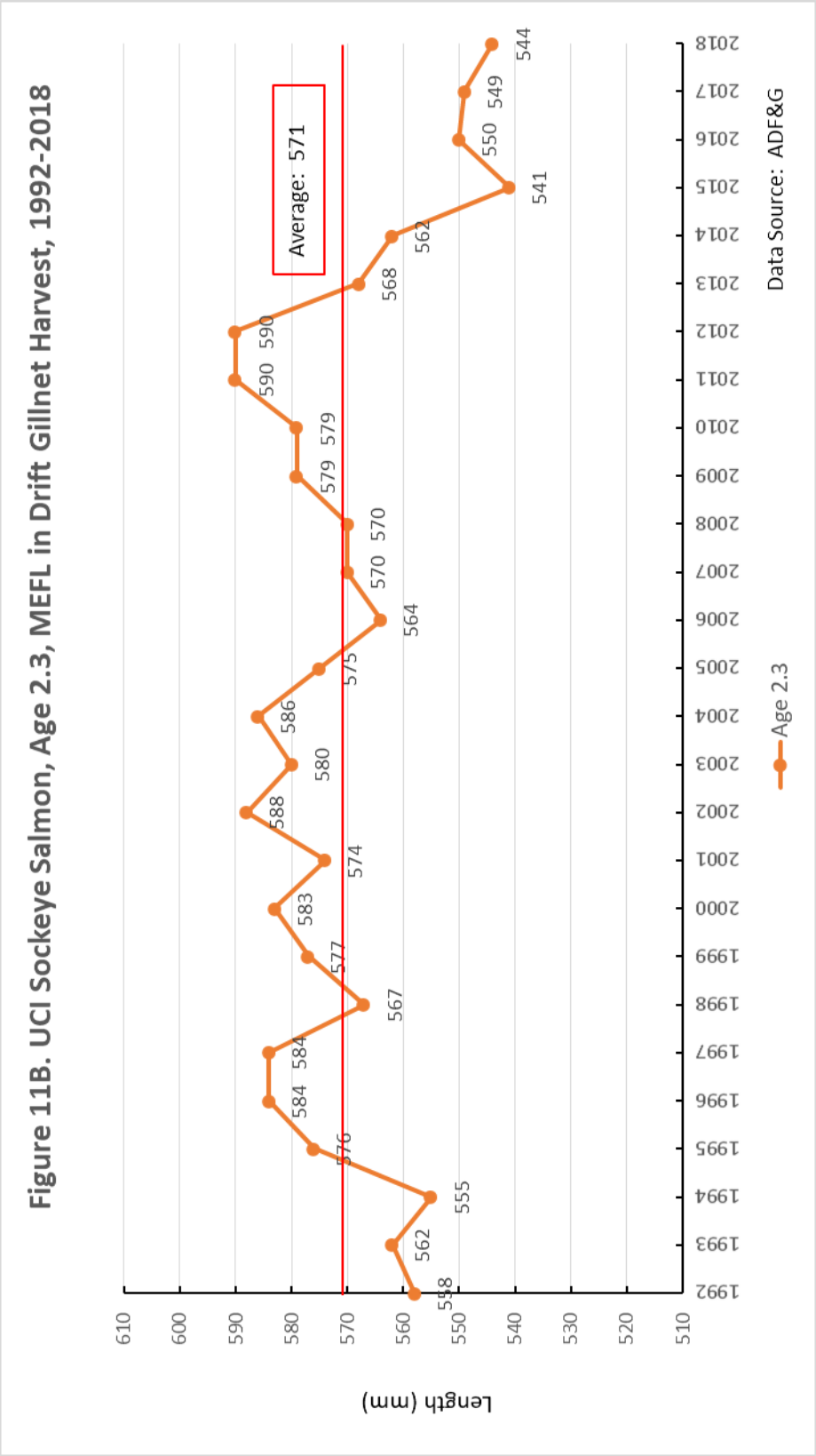
Figure 11C displays the MEFL taken from the drift gillnet harvest for the age class 1.3 and the 2.3 sockeye salmon 1992 – 2018. This 1.3 age class of sockeye salmon averaged 571 MEFL during this time period. All 23 major sockeye salmon stocks natal to UCI are included. The average MEFL of 571 applies to both age classes. Even though there is some yearly variations between the two age classes, the average MEFL is nearly identical.

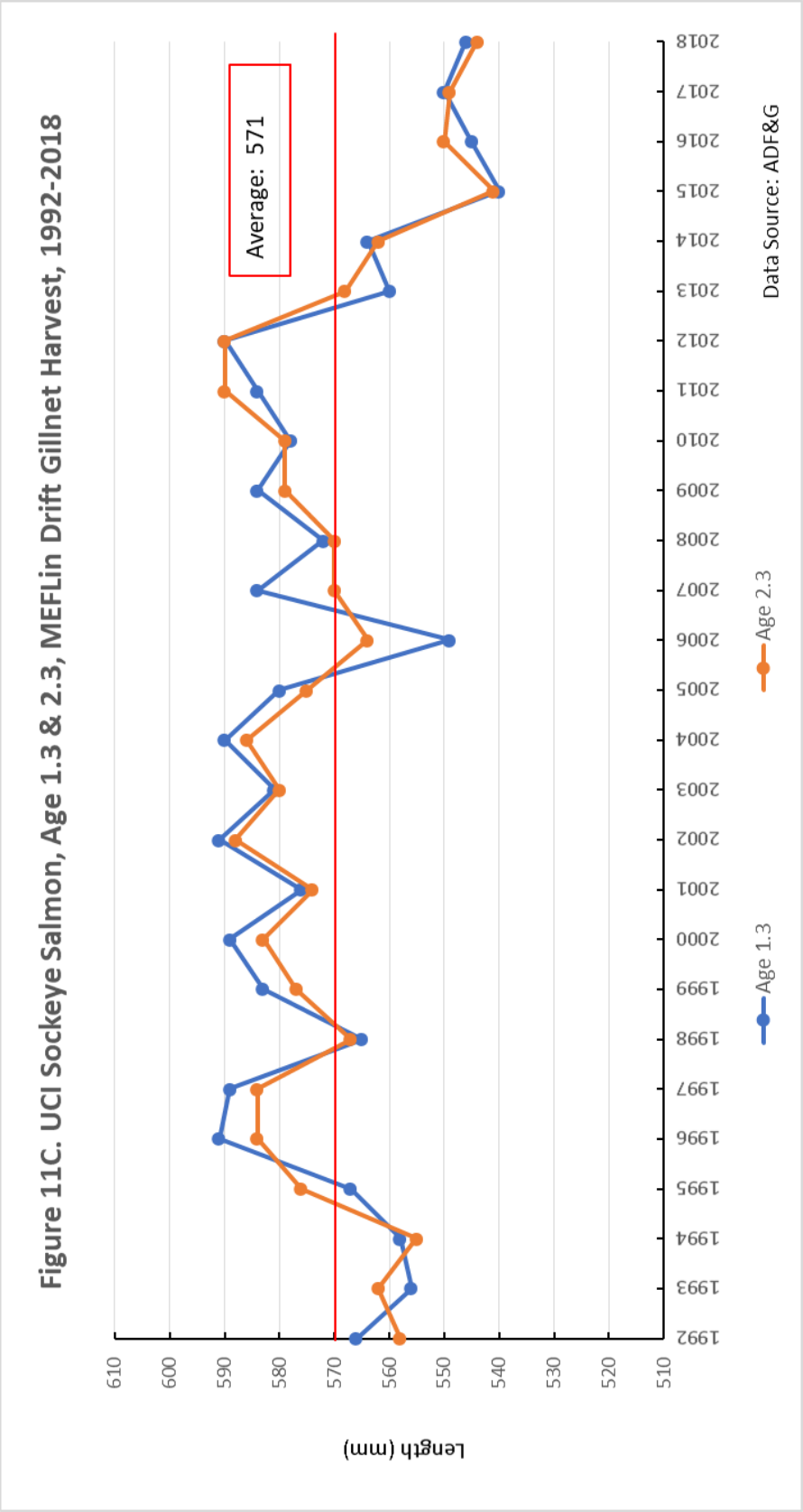
These two age classes smolted with different weights and lengths only to return as adults with virtually identical MEFL of 571.

The 2006 and 2015 through 2019 runs all had large August sonar passage patterns. Since 2012, there has been a significant decline in the MEFLs.

It has been reported by many fishermen and processors that the 2019 sockeye salmon had numerous (10-200) red-colored, maybe infected, spotted areas randomly occurring on the sides of these fish. Additionally, less than 10% of these spotted sockeyes had gray-colored, mushy flesh. These spotted sockeye appeared to show up in the August 2019 catches.


Figure 11A. UCI Sockeye Salmon, Age 1.3, MEFL in Drift Gillnet Harvest, 1992-2018
Average: 571
Age 1.3
Data Source: ADF&G
Length (mm)
610
600
590
580
570
560
550
540
530
520
510
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
566
556
558
567
591
589
565
583
589
576
591
581
590
580
549
584
572
584
578
584
590
560
564
540
545
550
546


Figure 11B. UCI Sockeye Salmon, Age 2.3, MEFL in Drift Gillnet Harvest, 1992-2018
Average: 571
Age 2.3
Data Source: ADF&G
Length (mm)
610
600
590
580
570
560
550
540
530
520
510
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
558
562
555
576
584
584
584
567
577
583
574
588
580
586
575
564
570
570
579
579
590
590
568
562
541
550
549
544


Figure 11C. UCI Sockeye Salmon, Age 1.3 & 2.3, MEFLin Drift Gillnet Harvest, 1992-2018
Average: 571
Length (mm)
610
600
590
580
570
560
550
540
530
520
510
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
Age 1.3
Age 2.3
Data Source: ADF&G

IX. MEFL, KR and KasR Sockeye Salmon, RM 19.5 Sonar

Figures 12A – 12F

It is noted that the MEFLs at RM 19.5 are a reflection of the sockeye after the commercial, personal use and recreational harvest below the RM 19.5 sonar site.

Figure 12A displays the weighted average MEFL of all sockeyes migrating past the KR sonar site at RM 19.5. As one can see, there can be large MEFL variations from year to year between 1980 and 2018. The weighted mean length is 556 mm. Since 2009/2010, all salmon MEFLs have decreased, on average, by 15%. That is to say that during the past 9 years, all sockeye salmon going past the sonar counter at RM 19.5 have decreased by 15% in MEFL.

Figure 12B displays the KR age 1.3 sockeye salmon MEFL is displayed over the same 1980-2018 timeframe.

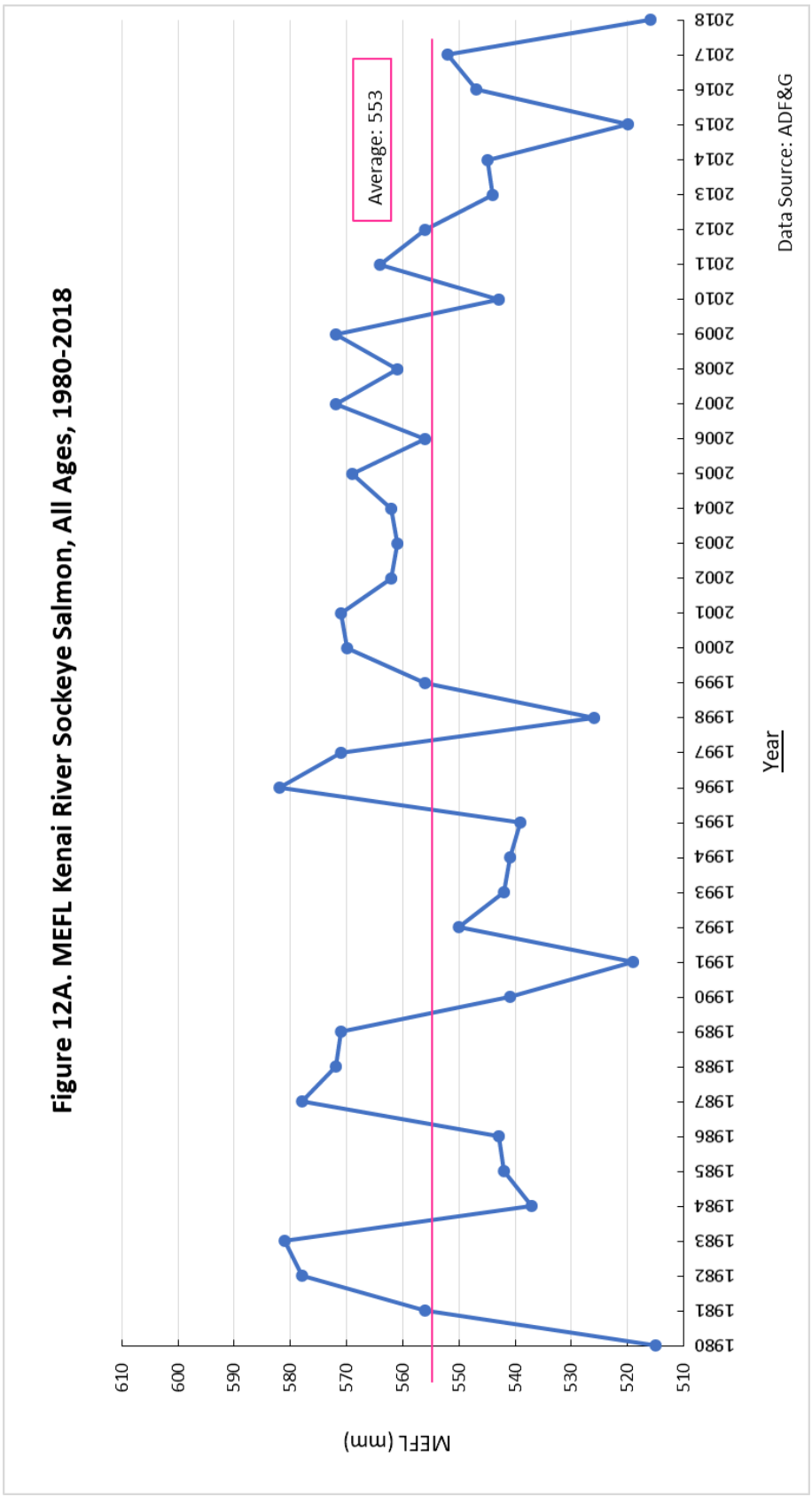
Figure 12C displays the Kenai River age 2.3 sockeye salmon lengths at RM 19.5. Both the 1.3 and 2.3 age classes reveal a decrease in length of 15% over the last 9 years.

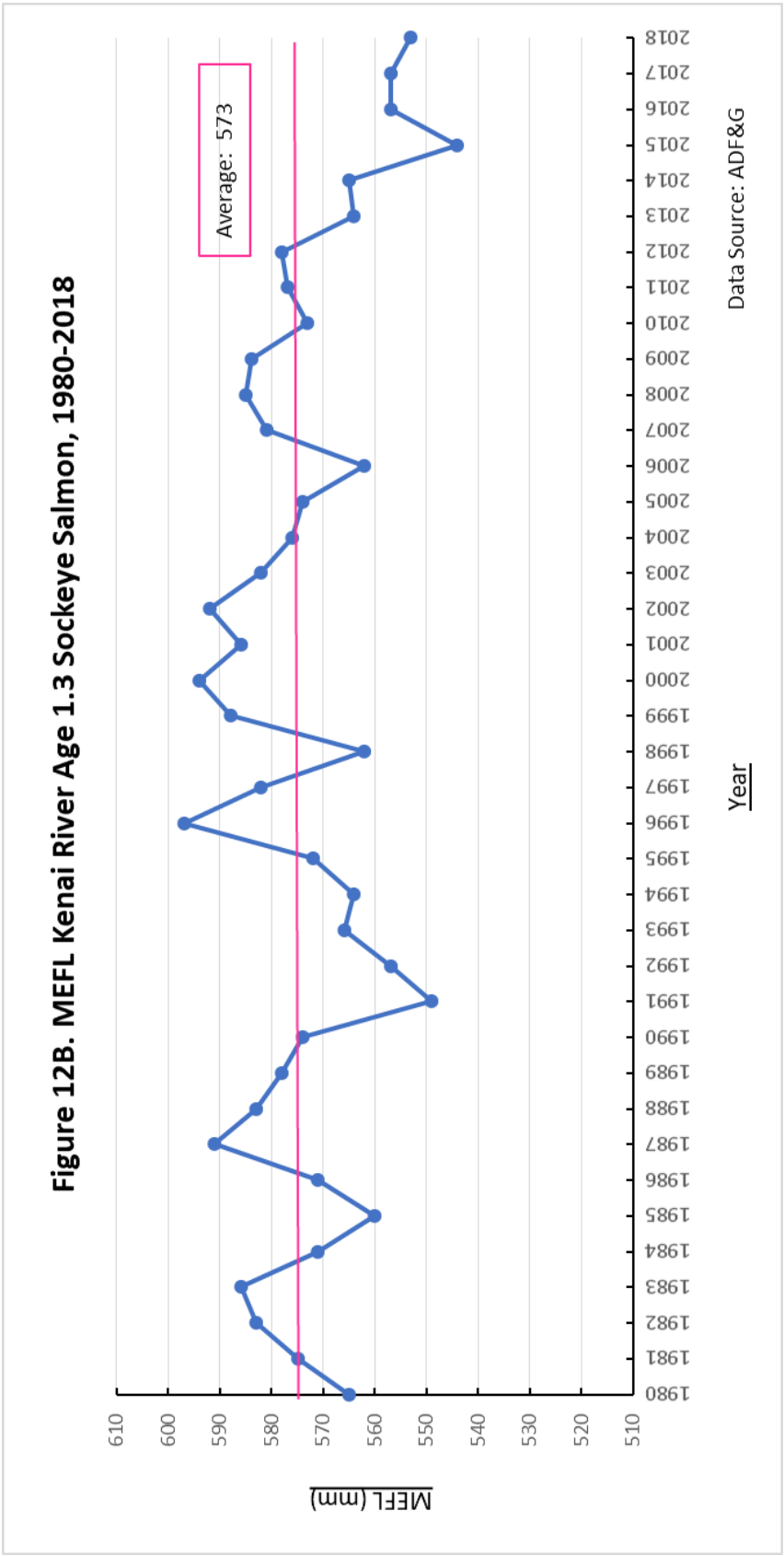
These age classes are one year apart in brood years and did smolt and presumably rear together in the ocean environments.

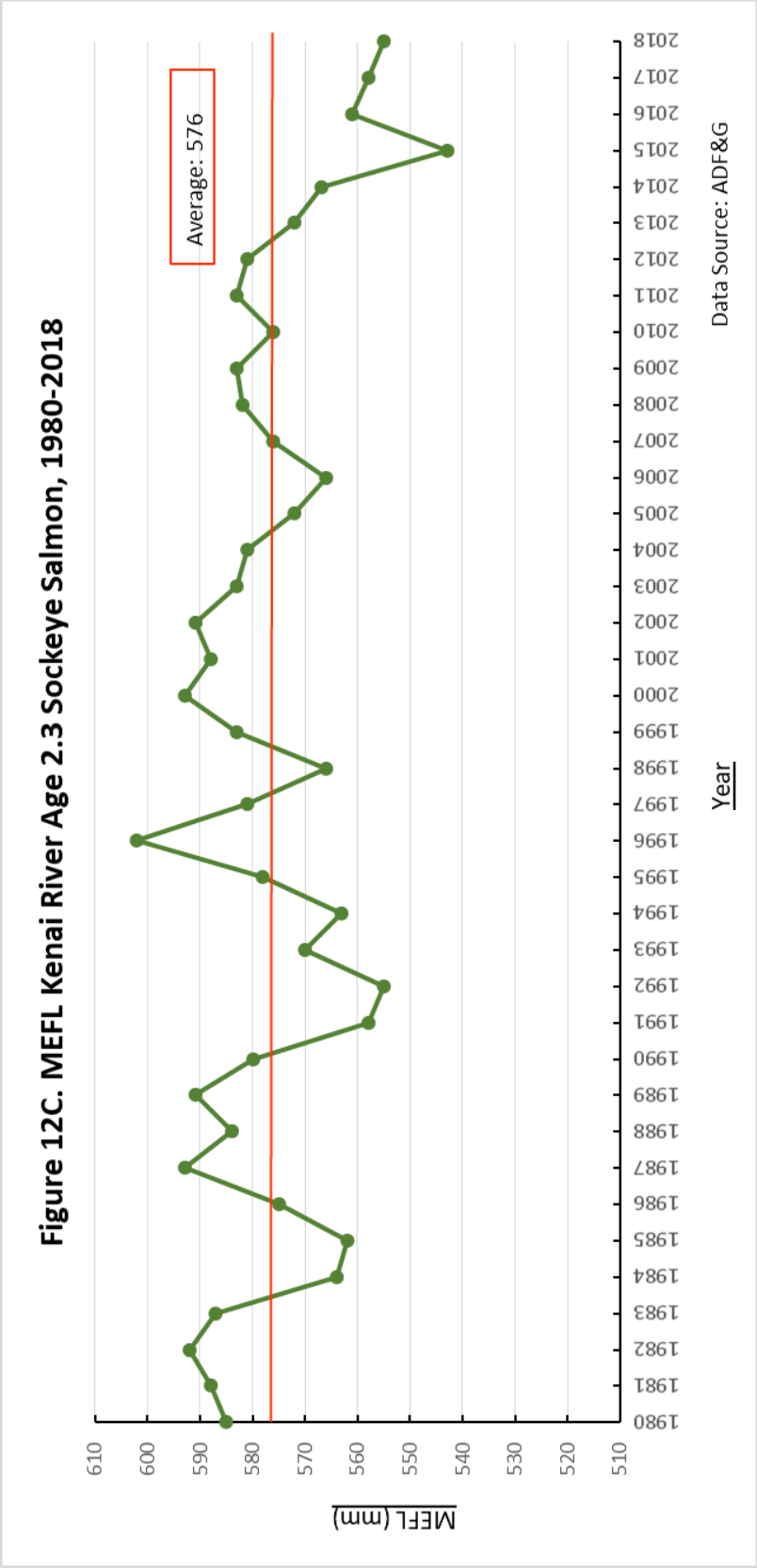
Figure 12D displays the KasR sockeye, all ages, passage MEFL. These lengths are for all sockeye stocks and all age classes. Again, there are annual variations of up to 20-30 mm. Please note that there has been an approximate 20% decline in the MEFL during the past 8 years. This 20% decline in the KasR sockeye stocks is larger than the 15% decline in the KR sockeye stocks. The rate of MEFL decline in these KasR stocks is economically problematic.

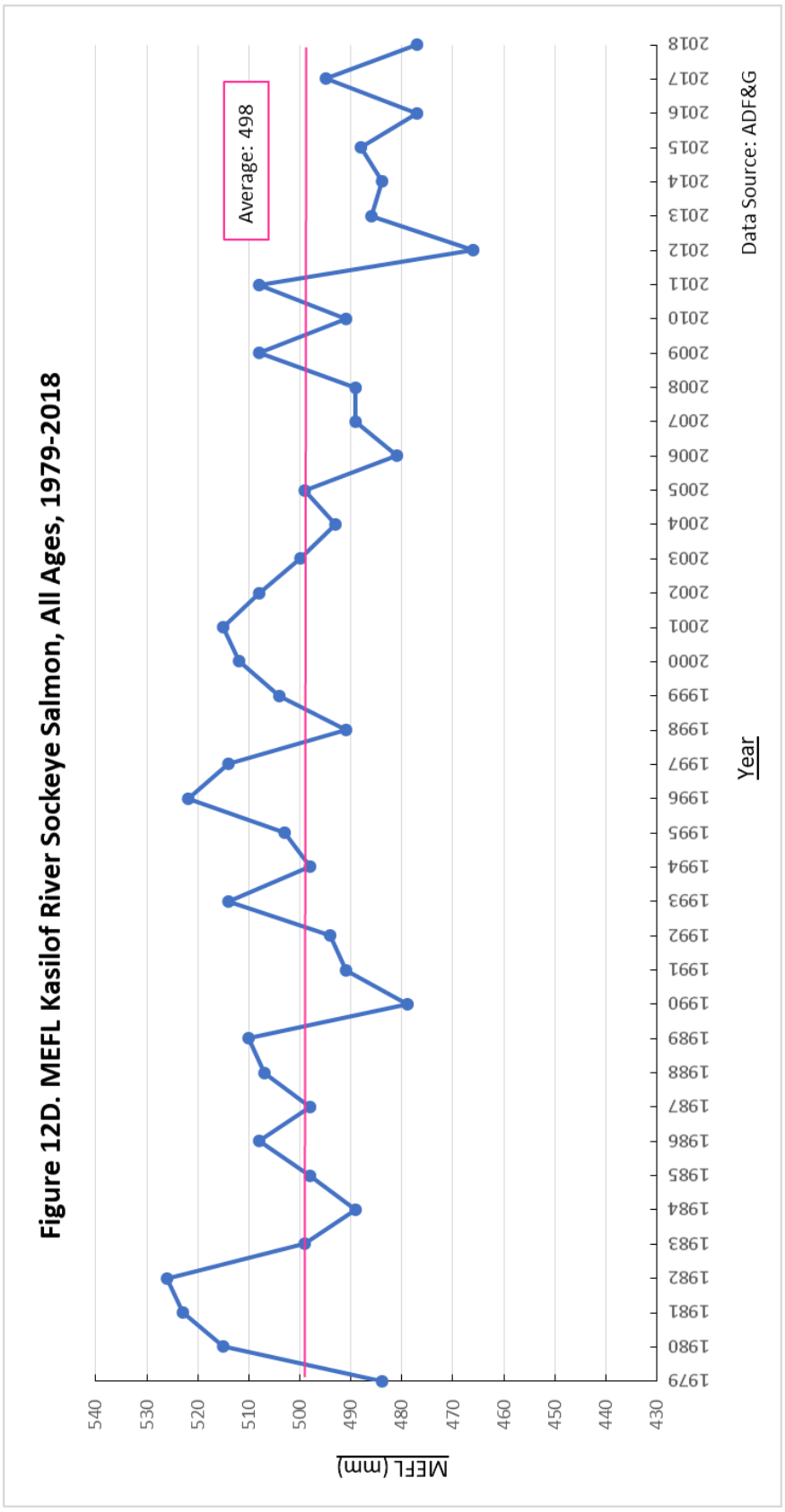
Figure 12E displays the KasR, age 1.3 sockeye salmon average MEFL, no weights are displayed.

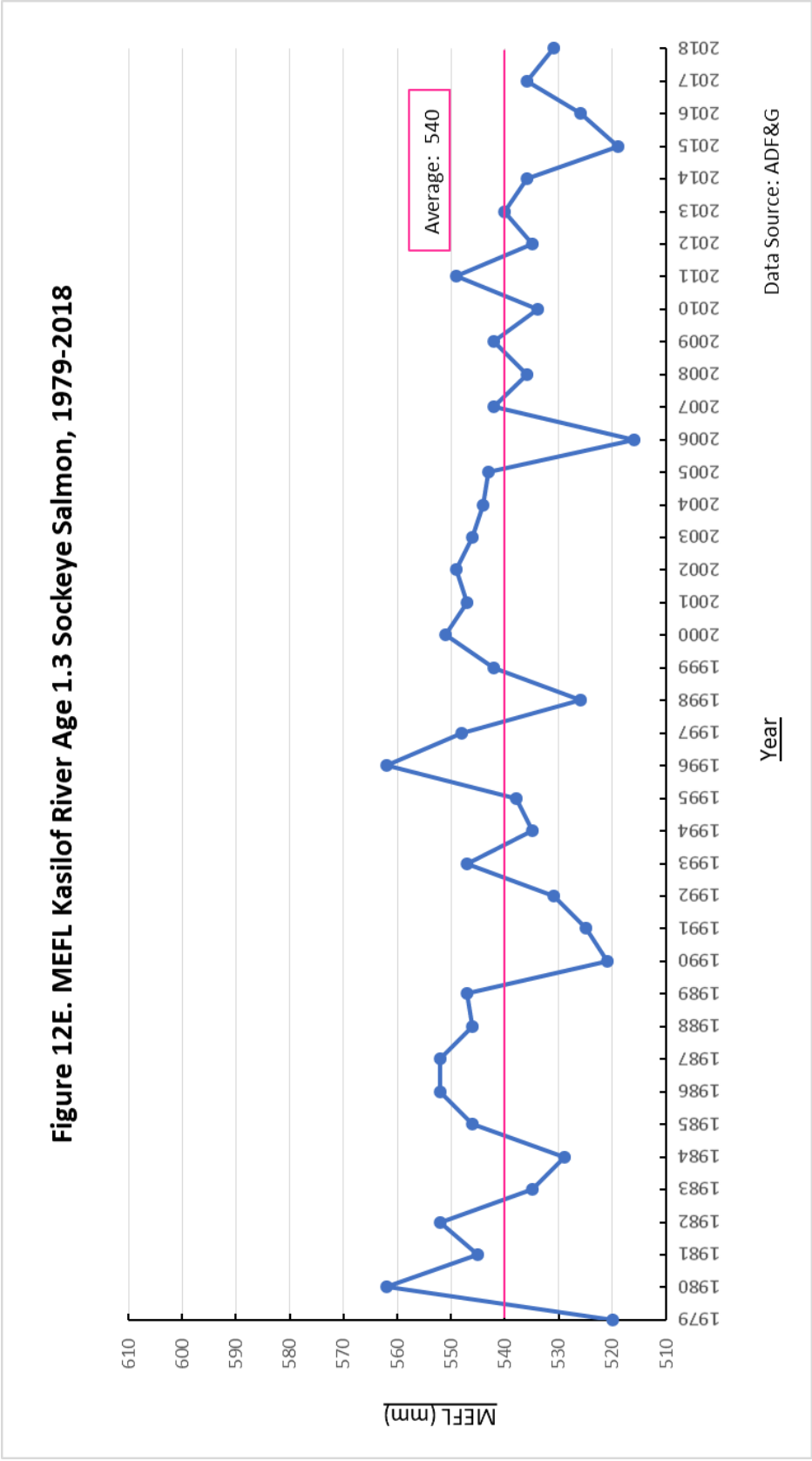
Figure 12F displays the lengths of the age 2.3 sockeye salmon in the KasR, 1979-2018. The average, non-weighted length is 534 mm. These age 2.3 sockeyes are, on average, 6 mm less in length than the age 1.3. These two age classes came from different brood years, however, the age 1.3 and 2.3 smolted together and have reared together for 3 years in the ocean environments.

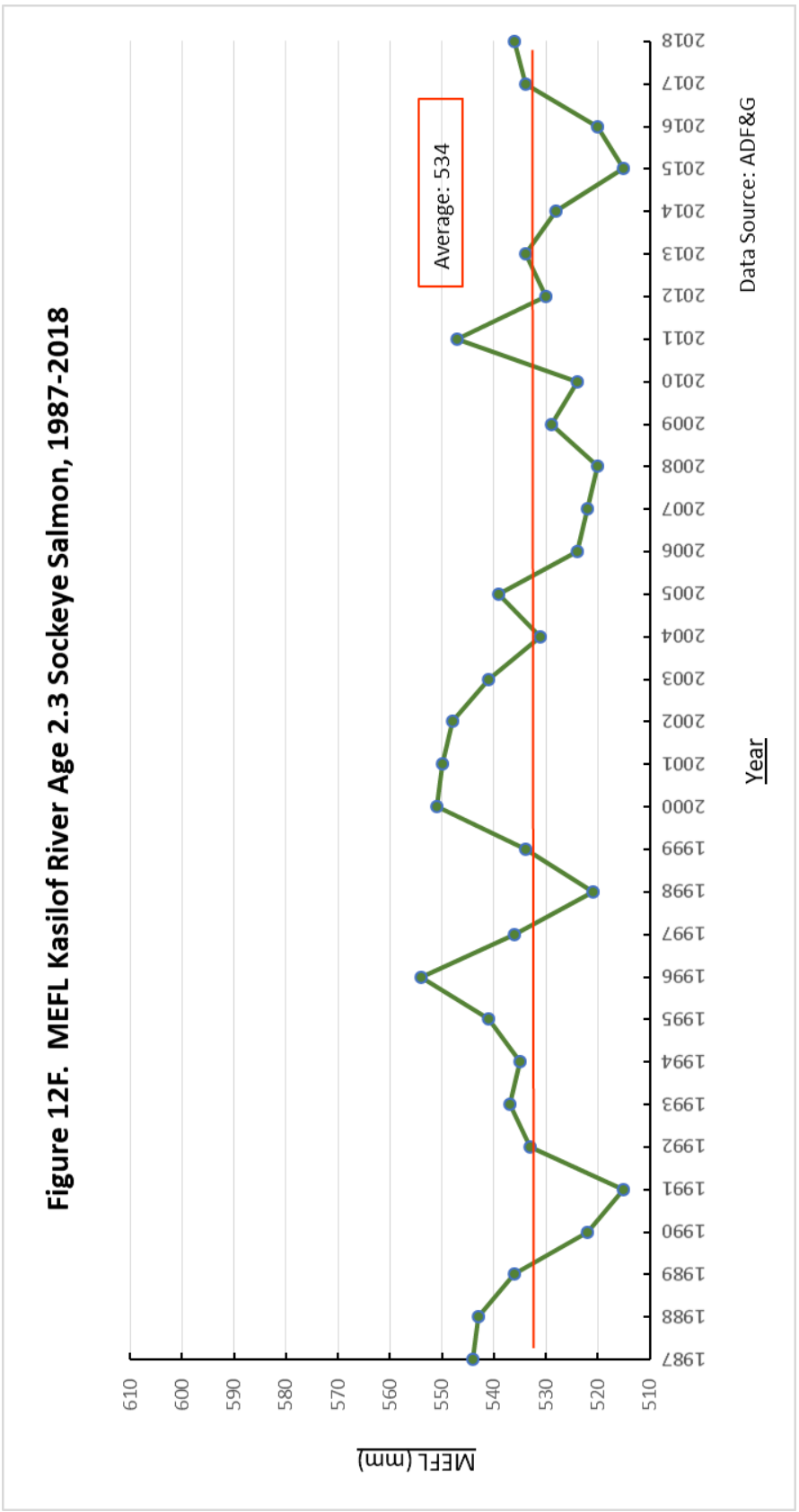

Figure 12A. MEFL Kenai River Sockeye Salmon, All Ages, 1980-2018
Average: 553
Data Source: ADF&G
Year
MEFL (mm)
610
600
590
580
570
560
550
540
530
520
510
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018


Figure 12B. MEFL Kenai River Age 1.3 Sockeye Salmon, 1980-2018
Average: 573
MEFL (mm)
610
600
590
580
570
560
550
540
530
520
510
Year
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
Data Source: ADF&G


Figure 12C. MEFL Kenai River Age 2.3 Sockeye Salmon, 1980-2018
Average: 576
MEFL (mm)
610
600
590
580
570
560
550
540
530
520
510
Year
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
Data Source: ADF&G


Figure 12D. MEFL Kasilof River Sockeye Salmon, All Ages, 1979-2018
Average: 498
MEFL (mm)
Year
Data Source: ADF&G
540
530
520
510
500
490
480
470
460
450
440
430
2018
2017
2016
2015
2014
2013
2012
2011
2010
2009
2008
2007
2006
2005
2004
2003
2002
2001
2000
1999
1998
1997
1996
1995
1994
1993
1992
1991
1990
1989
1988
1987
1986
1985
1984
1983
1982
1981
1980
1979


Figure 12E. MEFL Kasilof River Age 1.3 Sockeye Salmon, 1979-2018
Average: 540
Data Source: ADF&G
MEFL (mm)
Year
610
600
590
580
570
560
550
540
530
520
510
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018


Figure 12F. MEFL Kasilof River Age 2.3 Sockeye Salmon, 1987-2018
MEFL (mm)
610
600
590
580
570
560
550
540
530
520
510
Year
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
Average: 534
Data Source: ADF&G

X. UCI Gillnet Harvest Average Sockeye Salmon Weight in lbs. 1999-2018

Figure 13

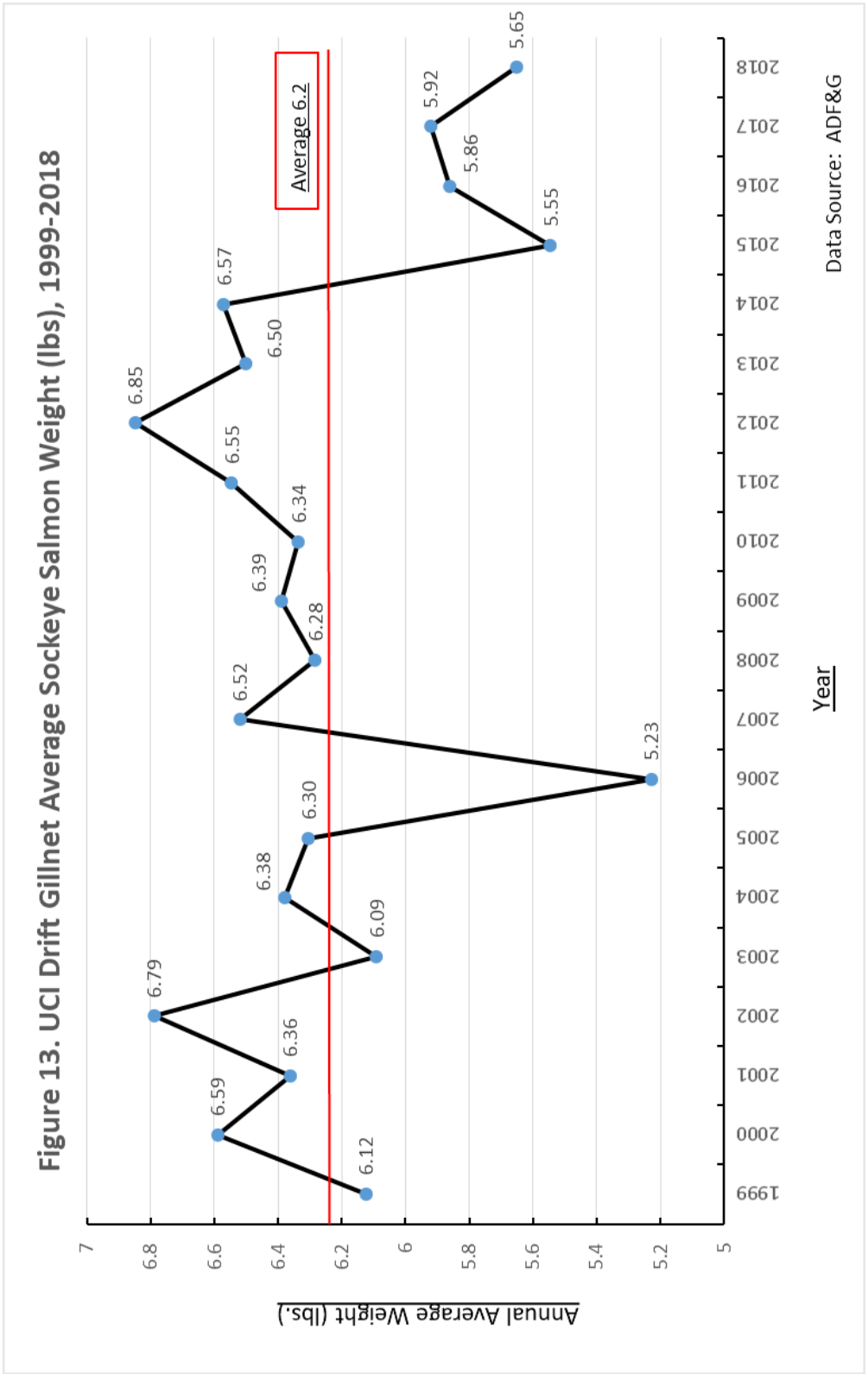
Figure 13 provides the historical weights in lbs. of all age classes in the sockeye harvest by the UCI Drift Gillnet Fleet from 1999-2018. The average harvested weight for this time period was 6.2 lbs., including the 2006 and 2015-2018 harvests. In 2006, the average weight was 5.2 lbs.; the lowest in 40 years.

Note: In 2015-2018, all averages are below the 20 year average weight of 6.2 lbs. Also, it is anticipated that the 2019 harvest average weights will be in the 5.4 lb range.

In a September, 2019 Bristol Bay salmon season summary, an average weight of 5.2 lbs is reported for the 56.5 million harvest.

When examining the average sockeye harvested in UCI, not only are the salmon getting shorter in length, but they also weigh less. It is a straight forward loss of one lb per salmon, which equates to a loss of 2 million pounds on a 2 million harvest.

Two million lbs @ $2 per lb equals a 4 million ex-vessel value, with 4 million dollars less at the first wholesale value. These 2 and 4 million dollar ex-vessel value reductions directly relate to permits, fees and local taxes. Additionally, the ad valorem taxes are reduced.


Figure 13. UCI Drift Gillnet Average Sockeye Salmon Weight (lbs), 1999-2018
Annual Average Weight (lbs.)
Year
Average 6.2
Data Source: ADF&G
7
6.8
6.6
6.4
6.2
6
5.8
5.6
5.4
5.2
5
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
6.12
6.59
6.36
6.79
6.09
6.38
6.30
5.23
6.52
6.28
6.39
6.34
6.55
6.85
6.50
6.57
5.55
5.86
5.92
5.65

XI. Markov Table, KRLRS

Tables 14A & Figures 14B – 14C

Table 14A is a condensed KRLRS brood table for years 1969-2019. IT is notes that is takes 6 to 7 years from a particular brood spawning event for all the adults to return. For this reason, many of the brood table values remain open.

Table 14B is a Markov Table for years 1969-2019. This Markov Table uses data from Table 14A with 200,000 increments, with 100,000 overlaps. As readily apparent, the 600-800,000 spawning interval had the highest mean return. At an average, an escapement of 734,000 spawners brought back a 4,636,000 return and a 3,902,000 mean yield. This is highlighted in yellow for the reader's reference. In the 500-700,000 spawning interval, mean yields drop to 2,483,000. In the 700-900,000 spawning interval, mean yields are 3,729,000, a decrease of about 200,000. In the 800-1,000,000 spawning interval, mean yields are 1,200,000 less than the 600-800,000 spawning interval.

The Markov Table 14B indicates the MSY spawner range should be 600-900,000.

Table *14A*. Kenai late-run sockeye salmon brood table, brood years 1969-*2019*.
Hidden enhanced escapement was not substracted to estimate spawners.

Brood Year	Spawners	Returns	Yield	Return per Spawner	Harvest Rate
1968	115.545	960.169			
1969	72.901	430.947	358.046	5.91	0.83
1970	101.794	550.923	449.129	5.41	0.82
1971	406.714	986.397	579.683	2.43	0.59
1972	431.058	2,547.851	2,116.793	5.91	0.83
1973	507.072	2,125.986	1,618.914	4.19	0.76
1974	209.836	788.067	578.231	3.76	0.73
1975	184.262	1,055.373	871.111	5.73	0.83
1976	507.440	1,506.012	998.572	2.97	0.66
1977	951.038	3,112.620	2,161.582	3.27	0.69
1978	511.781	3,785.040	3,273.259	7.40	0.86
1979	373.810	1,321.039	947.229	3.53	0.72
1980	615.382	2,673.295	2,057.913	4.34	0.77
1981	535.523	2,464.323	1,928.800	4.60	0.78
1982	755.672	9,587.700	8,832.028	12.69	0.92
1983	792.765	9,486.794	8,694.029	11.97	0.92
1984	446.397	3,859.109	3,412.712	8.65	0.88
1985	573.836	2,587.921	2,014.085	4.51	0.78
1986	555.207	2,165.138	1,609.931	3.90	0.74
1987	2,011.772	10,356.627	8,344.855	5.15	0.81
1988	1,213.047	2,546.639	1,333.592	2.10	0.52
1989	2,026.637	4,458.679	2,432.042	2.20	0.55
1990	794.754	1,507.693	712.939	1.90	0.47
1991	727.159	4,436.074	3,708.915	6.10	0.84
1992	1,207.382	4,271.576	3,064.194	3.54	0.72
1993	997.730	1,689.779	692.049	1.69	0.41
1994	1,309.695	3,052.634	1,742.939	2.33	0.57
1995	776.880	1,899.870	1,122.990	2.45	0.59
1996	963.125	2,261.757	1,298.632	2.35	0.57
1997	1,365.746	3,626.402	2,260.656	2.66	0.62
1998	929.091	4,465.328	3,536.237	4.81	0.79
1999	949.276	5,755.063	4,805.787	6.06	0.84
2000	696.899	7,058.348	6,361.449	10.13	0.90
2001	738.229	1,698.142	959.913	2.30	0.57
2002	1,126.642	3,630.740	2,504.098	3.22	0.69
2003	1,402.340	1,922.165	519.825	1.37	0.27
2004	1,690.547	3,240.428	1,549.881	1.92	0.48
2005	1,654.003	4,802.362	3,148.359	2.90	0.66
2006	1,892.090	5,003.585	3,111.495	2.64	0.62
2007	964.261	4,376.406	3,412.145	4.54	0.78
2008	708.833	3,377.884	2,669.051	4.77	0.79
2009	848.117	3,983.872	3,135.755	4.70	0.79
2010	1,037.666	3,625.388	2,587.722	3.49	0.71
2011	1,284.486	4,513.815	3,229.329	3.51	0.72
2012	1,212.837	1,490.134	277.297	1.23	0.19
2013	980.403				
2014	1,219.124				
2015	1,325.673		2,541.668	4.45	0.70
2016	*1,383.692*				
2017	*1,308.492*				
2018	*1,035.761*				
2019	*1,548.157*				

Data Source: ADF&G

Italicized Values: UCIDA

Table 14B. Markov yield table for Kenai late-run sockete salmon constructed using data from brood years 1969-2009

Escapement Interval	Number of Years	Mean Spawners	Mean Returns	Return per Spawner	Mean	Yield Range
0 - 200	4	119	749	6.3	631	358 - 871
100 - 300	4	153	839	5.8	686	449 - 871
200 - 400	2	292	1,055	4.4	763	478 - 947
300 - 500	4	414	2,179	5.1	1,764	580 - 3,413
400 - 600	9	497	2,448	4.9	1,950	580 - 3,413
500 - 700	8	563	3,046	5.3	2,483	999 - 6,361
600 - 800	9	734	4,636	6.3	3,902	713 - 8,694
700 - 900	8	768	4,497	5.9	3,729	713 -8,694
800 - 1,000	7	943	3,664	3.9	2,720	692 - 4,806
900 - 1,100	6	959	3,610	3.8	2,641	692 - 4,806
1,000 - 1,200	1	1,127	3,631	3.2	2,604	2,504 - 2,504
1,100 - 1,300	3	1,182	3,483	3.0	2,301	1,334 - 3,064
1,200 - 1 400	4	1,274	3,374	2.7	2,100	1,334 - 3,064
> 1,300	8	1,669	4,558	2.6	2,889	520 - 8,345

Note: Numbers in thousands of fish.

Data Source: Erickson, Willette and McKinley, 2016 Review of Salmon Escapement Goals in Upper Cook Inlet, Alaska

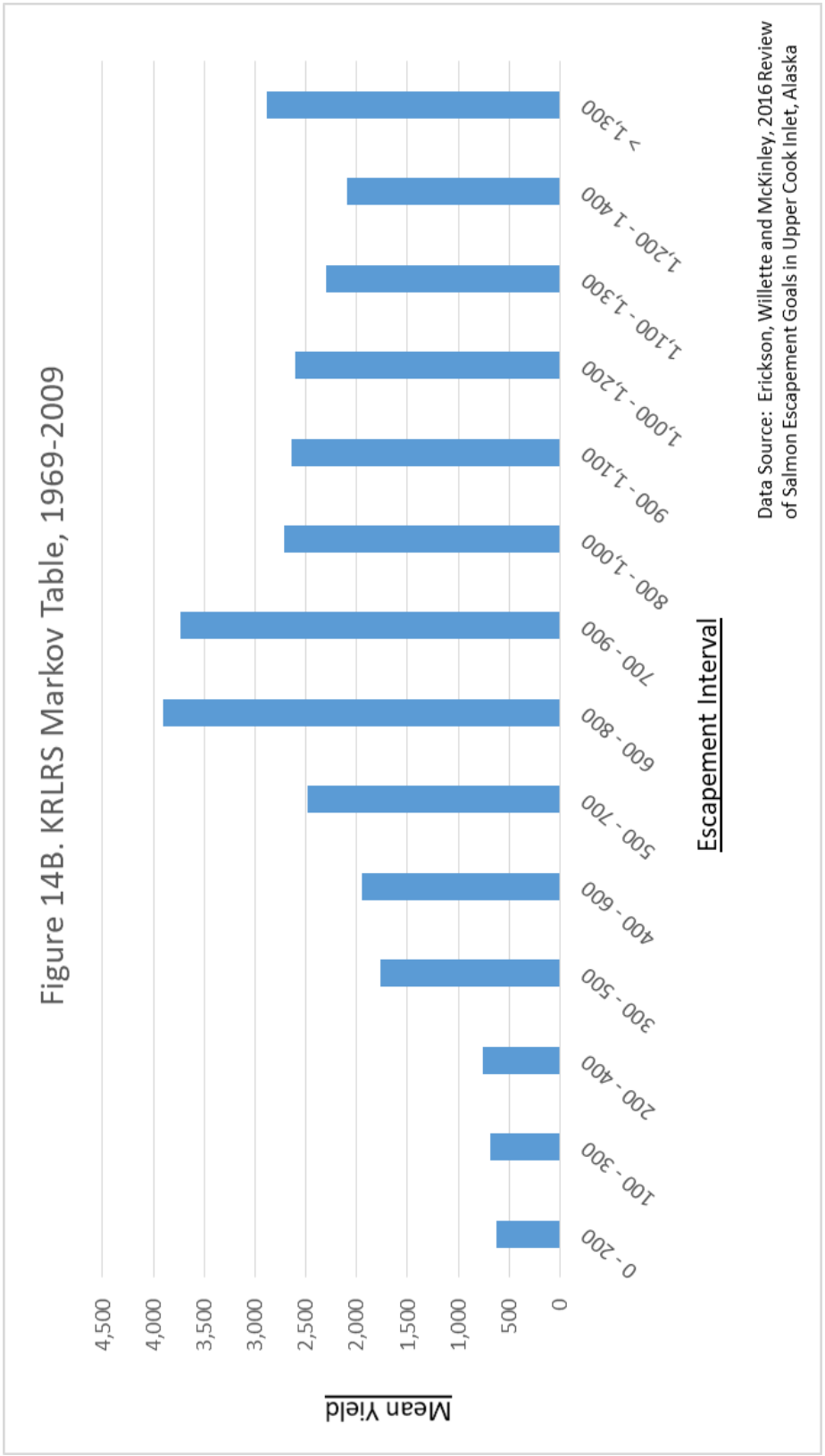
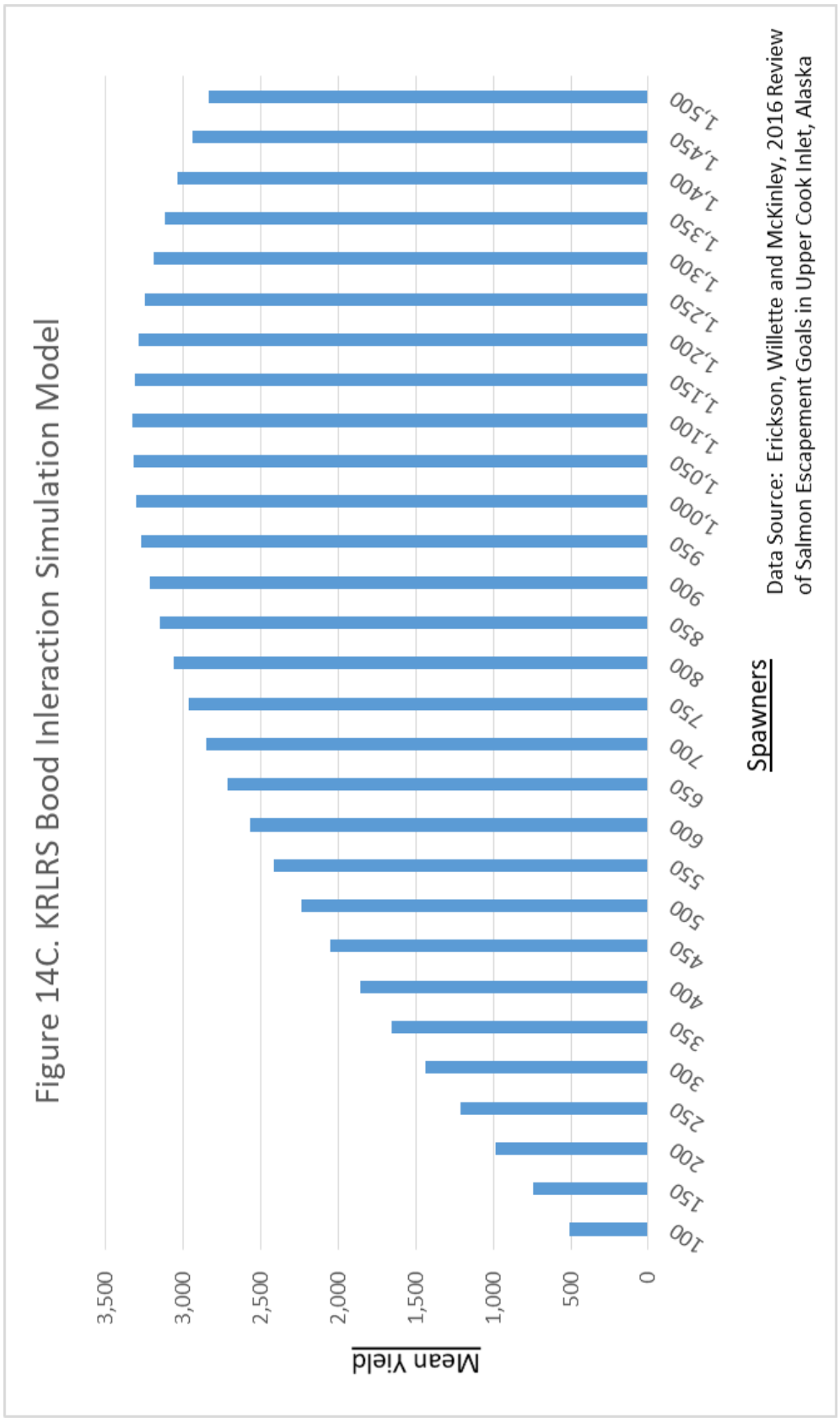

Figure 14B. KRLRS Markov Table, 1969-2009
Mean Yield
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0 - 200
100 - 300
200 - 400
300 - 500
400 - 600
500 - 700
600 - 800
700 - 900
800 - 1,000
900 - 1,100
1,000 - 1,200
1,100 - 1,300
1,200 - 1,400
> 1,300
Escapement Interval
Data Source: Erickson, Willette and McKinley, 2016 Review of Salmon Escapement Goals in Upper Cook Inlet, Alaska

Table 14C results from the Kenai River Brood Interaction Simulation Model. Bold cells indicate a spawner range with less than a 6% probability of a commercial harvest of less than 1,000,000. Shaded cells indicate a spawner range of capable of producing a harvest that is 90% of MSY. The brood interaction model indicates a spawner escapement range of 700,000-1,100,000 (DIDSON counts). Data Source: Erickson, Willette and McKinley, 2016 Review of Salmon Escapement Goals in Upper Cook Inlet, Alaska.

Table 14C. - Simulation results from a brood-interaction model for Kenai River late-run sockeye salmon.

	Brood Years 1969-2009			
Number Spawners	Mean Run	Mean Yield	Yield CV	$P < 1{,}000$
100	606	506	0.65	0.953
150	896	746	0.56	0.820
200	1,182	982	0.53	0.596
250	1,463	1,213	0.52	0.431
300	1,736	1,436	0.51	0.304
350	2,002	1,652	0.51	0.219
400	2,258	1,858	0.51	0.157
450	2,504	2,054	0.51	0.121
500	2,739	2,239	0.51	0.086
550	2,961	2,411	0.51	0.070
600	3,171	2,571	0.52	0.065
650	**3,366**	**2,716**	**0.52**	**0.057**
700	**3,547**	**2,847**	**0.52**	**0.052**
750	**3,712**	**2,962**	**0.52**	**0.051**
800	**3,862**	**3,062**	**0.53**	**0.048**
850	**3,996**	**3,146**	**0.53**	**0.046**
900	**4,114**	**3,214**	**0.54**	**0.043**
950	**4,216**	**3,266**	**0.54**	**0.044**
1,000	**4,302**	**3,302**	**0.55**	**0.047**
1,050	**4,371**	**3,321**	**0.55**	**0.050**
1,100	**4,425**	**3,325**	**0.56**	**0.052**
1,150	**4,463**	**3,313**	**0.56**	**0.052**
1,200	**4,485**	**3,285**	**0.57**	**0.057**
1,250	4,493	3,243	0.58	0.062
1,300	4,487	3,187	0.59	0.067
1,350	4,467	3,118	0.60	0.071
1,400	4,434	3,035	0.61	0.081
1,450	4,390	2,941	0.62	0.099
1,500	4,334	2,836	0.64	0.118

Note: Numbers are in thousands of fish. Model parameters were obtained from regression analyses conducted using brood year 1669-2009. Tanges corresponding to the original criteria (6% risk of a yield, 1 million salmon; Carlson et.al 1999) used to establish the sustainable escapement goal range are indicated in bold. Ranges corresponding to escapement needed to produce 90-100% of maximum yield (asuming a constant escapement goal policy) are shaded.


Figure 14C. KRLRS Bood Inleraction Simulation Model
Mean Yield
3,500
3,000
2,500
2,000
1,500
1,000
500
0
Spawners
100
150
200
250
300
350
400
450
500
550
600
650
700
750
800
850
900
950
1,000
1,050
1,100
1,150
1,200
1,250
1,300
1,350
1,400
1,450
1,500
Data Source: Erickson, Willette and McKinley, 2016 Review of Salmon Escapement Goals in Upper Cook Inlet, Alaska

XII. KRLRS Salmon: Mortality – Eggs to Age 0 Fry and Adults

1. Assumptions:
   A. 50:50 male to female ratio
   B. Each female fecundity is 3,500 eggs, on average
   C. Ocean Survival is 20%

The mortality from adult, eggs, fry, smolt to returning adult ranges from 99.77% (4 million return, 20 million fry) up to 99.83% (3 million return, 20 million fry). The ability to accurately model and predict the adult to adult cycle over a 4, 5 or 6 year life cycle is mathematically very difficult. The probability of accurately forecasting or predicting a future event of adult spawners forces one into a negative probability art form. This is especially true due to not knowing the mortality, variables and or their effects.

The difference between a 4 million and a 3 million adult return is a 99.77% and a 99.83% mortality (See Scenario A and Scenario B, 20 million age 0 fall fry is 00.06%, or six one-hundredths of one percent).

2. Scenarios

Scenario A:

100% spawn – 1.0 million spawners, 500,000 females, 4.0 million return
500,000 x 3,500 = 1.75 Billion eggs spawned

Eggs		Age 0 Fall Fry		Egg to Fry Mortality		4 Million Return
1.75B	=	20 million	=	98.86%	=	99.77% mortality
1.75B	=	15 million	=	99.14%	=	99.77% mortality

Scenario B:

100% spawn – 1.0 million spawners, 500,000 females, 3.0 million return
500,000 x 3,500 = 1.75 billion eggs spawned

Eggs		Age 0 Fall Fry		Egg to Fry Mortality		3 Million Return
1.75B	=	20 million	=	98.86% mortality	=	99.83% mortality
1.75B	=	15 million	=	98.93% mortality	=	99.83% mortality

XIII. In-River Goals, KRLRS, 2000-2019

The State of Alaska BOF and regulatorily adopted management plans for the KRLRS and included in-river passage goals. A passage goal is the desired number of KRLRS that are to pass upriver of the Bendix, or now DIDSON sonar site at RM 19.5 of the Kenai River. The BOF has, in regulation, established three goals depending on the number of KRLRS. The three tiers are as follows:

(1) at run strengths of less than 2,300,000 sockeye salmon,

(A) the department shall manage for an inriver goal range of 900,000 – 1,100,000 sockeye salmon past the sonar counter at river mile 19; and

(B) subject to the provisions of other management plans, the Upper Subdistrict set gillnet fishery will fish regular weekly fishing periods, as specified in 5 AAC 21.320, through July 20, unless the department determines that the minimum inriver goal will not be met, at which time the fishery shall be closed or restricted as necessary; the commissioner may, by emergency order, allow extra fishing periods of no more than 24 hours per week, except as provided in 5 AAC 21.365;

(2) at run strengths of 2,300,000 – 4,600,000 sockeye salmon,

(A) the department shall manage for an inriver goal range of 1,000,000 – 1,300,000 sockeye salmon past the sonar counter at river mile 19;

(B) subject to the provisions of other management plans, the Upper Subdistrict set gillnet fishery will fish regular weekly fishing periods, as specified in 5 AAC 21.320, through July 20, or until the department makes a determination of run strength, whichever occurs first; if the department determines that the minimum inriver goal will not be met, the fishery shall be closed or restricted as necessary; the commissioner may, by emergency order, allow extra fishing periods of no more than 51 hours per week, except as provided in 5 AAC 21.365; and

(C) the Upper Subdistrict set gillnet fishery will be closed for one continuous 36-hour period per week beginning between 7:00 p.m. Thursday and 7:00 a.m. Friday and for one continuous 24-hour period per week beginning between 7:00 p.m. Monday and 7:00 a.m. Wednesday;

(3) at run strengths greater than 4,600,000 sockeye salmon,

(A) the department shall manage for an inriver goal range of 1,100,000 – 1,500,000 sockeye salmon past the sonar counter at river mile 19;

B) subject to the provisions of other management plans, the Upper Subdistrict set gillnet fishery will fish regular weekly fishing periods, as specified in 5 AAC 21.320, through July 20, or until the department makes a determination of run strength, whichever occurs first; if the department determines that the minimum inriver goal will not be met, the fishery shall be closed or restricted as necessary; the commissioner may, by emergency

order, allow extra fishing periods of no more than 84 hours per week, except as provided in 5 AAC 21.365; and

(C) the Upper Subdistrict set gillnet fishery will be closed for one continuous 36-hour period per week, beginning between 7:00 p.m. Thursday and 7:00 a.m. Friday.

Each year ADFG begin the UCI fishery using the preseason forecast and outlook public notices. IF the forecast papers indicate the KRLRS to be in Tier 2, as described above, all fishing harvests are as directed above by the BOF regulations. If, however, the in-river harvests and the OTF program indicate either a smaller or larger run, than forecasted, then an in-season run adjustment will be made. These in-season run-adjustments are often made in late July. If the in-season run is smaller than forecasted, then there is very little opportunity to reduce harvest. This results in overharvest occurring up to that assessment date and underharvest on the remaining portion of the run. Conversely, if the run is above forecast, this results in underharvest occurring up to that assessment date and overharvest on the remaining portion of the run.

Table 15 reflects how in-river goals change by year depending on the use of the Bendix or the DIDSON sonar counter. The Bendix was used from 2000 to 2010. The DIDSON has been used from 2011 to present. The 'Made' or 'Exceeded' result is the comparison of the passage estimates to the in-river goal. In 9 of the last 10 years, 90%, and 14 of the last 20 years, 70%, of these times the in-river goals were exceeded.

If more/larger escapements were considered to be a solution to decreasing MEFL, weight at age and optimum yields, then the events described earlier in this paper would not have happened. Exceeding the in-river goals are most of the problem, not the solution.

It is not understood how an in-river goal complies with a BEG, GHL or ACL and MSY or OY management.

Table 15. Kenai River Sockeye Salmon - Past 20 Years			
	Inriver	Passage	
Year	Goal	Estimate	Result
2000	600,000-850,000	624,578	Made
2001	600,000-850,000	650,036	Made
2002	750,000-950,000	957,924	Exceeded
2003	750,000-950,000	1,181,309	Exceeded
2004	850,000-1,100,000	1,385,981	Exceeded
2005	850,000-1,100,000	1,376,452	Exceeded
2006	750,000-950,000	1,499,692	Exceeded
2007	750,000-950,000	867,572	Made
2008	650,000-850,000	614,946	Made
2009	650,000-850,000	745,170	Made
2010	750,000-950,000	970,662	Exceeded
2011	1,100,000-1,350,000	1,599,217	Exceeded
2012	1,100,000-1,350,000	1,581,555	Exceeded
2013	1,000,000-1,200,000	1,359,893	Exceeded
2014	1,000,000-1,200,000	1,520,340	Exceeded
2015	1,000,000-1,200,000	1,709,051	Exceeded
2016	1,100,000-1,350,000	1,383,692	Exceeded
2017	1,000,000-1,300,000	1,308,498	Exceeded
2018	900,000-1,100,000	1,035,761	Made
2019	1,000,000-1,300,000	1,848,157	Exceeded
		Made 6	30%
		Exceeded 14	70%

Note: prior to 2011, goals were Bendix based and assessed; in 2011 goals are DIDSON-based and assessed

Note: spawning escapement for 2018 is an estimate; 2019 spawning esc unknown, but will exceed SEG

Data Source: ADF&G (Unpublished)

XIV. Yields from the KRLRS Brood Table for 2012 and 2013

For the 2012 brood year, the following is noted:

Spawners	Return	R/S
1,212,921	1,484,043	1.22 : 1

The R/S of 1.22 : 1 is the lowest since 1968, 45 years. In this 2012 brood year, there was a yield of 136,000 KRLRS. This is pathetic in that these 136,000 KRLRS are to support a commercial, sport and subsistence fisheries through all of UCI.

Again, if larger escapements are to produce larger harvests, then larger escapements are the problem, not the solution.

For the 2013 brood year Return to Date, the following is noted:

Spawners	Return	R/S
980,208	1,078,658	1.10 : 1

The R/S of 1.10 : 1, again, is the lowest now in 46 years. Even lower than the 2012 brood year. The yield to date for the 2013 brood is 98,450 KRLRS. This is pathetic in that this yield of 98,450 supported the commercial, sport and subsistence through all of UCI. A portion of this brood year returned in 2019. However, ADFG does not have that data at this time.

Again, if larger escapements are to produce larger harvests, then larger escapements are the problem, not the solution.

The 2012 and 2013 brood years also demonstrate the negative interaction between brood years. In 2010, 2011 and 2012, in-river goals were exceeded. The effect on yields from back-to-back exceeding of the in-river goals has potentially devastated the 2012 and 2013 yields.

In 2019, the KRLRS sonar passage was nearly 1.9 million sockeyes. This is equal to the entire UCI harvest of 1.95 million sockeyes, all 23 major stocks. This year, as many KRLRS passed the RM 19.5 sonar counter as the entire commercial fishery harvests in UCI.

XV. BENDIX to DIDSON/ARIES Hydroacoustics Counters

In the Kenai, Kasilof and Yentna Rivers there have been a few different echo-location or sonar systems used to enumerate adult salmon runs. The Bendix system relied on echo-location, electronic signal processing to record the presence of objects passing through a transducer produced electronic beam. The state of propogation, echo reception and processing of these electrical signals were reflections of the electrical engineering sofistication of 1960's and early 1970's. These Bendix units were often made of military-grade components. These Bendix units, early on, relied on ocilloscopes, audible alarms and hand-held counters (finger-clickers). These units were required constant calibration, sometimes several times per hour. This historical description is not intended to be derogatory, rather a depiction of the state of echo-location systems systems in the 1960-1970's. In the late 1980's, other echo-location developments occurred both in the research and commercial markets. The commercial and recreational sectors saw numerous manufacturers and markets develop. Gone were the old flashers – paper-carbon recorders were replaced with new higher power, multi-frequency video display units.

Research markets also had new technologies in echo-location developments. One of these was the DIDSON. The DIDSON systems were selected by the ADF&G for testing and possible replacement for the Bendix systems. In the rearly 2000's, units were tested and deployed. A full-scale side-by-side comparative field test was undertaken by ADF&G from 2004-2008. Abstract of this side-by-side study is provided below:

> "Fishery managers have long relied on the use of active hydroacoustic systems to assess salmon (Oncorhynchus spp.) populations. Long-term datasets extending more than 20 years obtained from Bendix echo-counting sonars have provided the primary data used to assess migrating adult salmon escapement in several Alaska rivers. When it became necessary to replace the echo counters with a newer technology, a DIDSON was selected as the replacement. Changing and using data from the new system required an understanding of the relationship between salmon escapement estimates obtained from the 2 sonars. Although salmon estimates from the 2 sonars were shown to be equivalent in a clear river ground-truth study, in the larger, more turbid rivers where the echo counters were used, the relationship between estimates from the 2 sonar systems was site-specific. At most sites, DIDSON estimates were either higher than the echo counter or very similar. Because of the DIDSON's larger beam, better target resolution, and ability to subtract bottom echoes, salmon estimates from this system should be closer to the true migrating salmon populations. **Environmental differences between sites helped explain the variation and bias observed between the 2 technologies and show why the groundtruth study was not transferrable to the new sites.**"

Results of this side-by-side study in the Kenai River were:

> "Ratios of DIDSON and echo-counter estimates were not similar to a ratio of 1.0, nor were they the same between the north and south banks, with overall ratios of 1.59 from north bank and 1.25 from south bank and annual ratios varying from 1.41–1.78 for north bank and 1.20–1.30 for south bank (Table 3). More fish were estimated by the DIDSON than the echo counter during each year along both sides of the river. The north-bank echo counter estimated a total of 1,632,227 fish during the comparison study, the DIDSON 2,600,687 fish for an overall difference of 968,460 fish; with a south-bank estimate of 2,562,056 fish (echo counter) and 3,209,661 fish (DIDSON) for an overall difference of 647,605 fish."

Discussion includes:

> "The 1:1 ratio between echo-counter and DIDSON counts of migrating salmon observed at the Wood River (Maxwell and Gove 2007) was not observed at the Kenai River, nor was the relationship between the 2 sonars the same for both banks. The divergence between counts was greater along the north bank. Because of the advantages of the DIDSON over the echo counter, our conclusion is that the echo counter has been underestimating salmon on both sides of the Kenai River, but the relative consistency between regression slopes (Figures 35 and 37) and annual ratios (Table 3) suggests that the echo counter provided a reasonable index of abundance at this site.
>
> We observed more variation in the north-bank estimates. Confidence intervals for the slope and intercept were wider (Table 5), regression lines were more variable between years (Figures 35 and 37), as were the annual ratios (Table 3).
>
> There are many environmental differences between the north and south banks of the Kenai River including river bottom topography, current speed, and water depth. The assumptions used when designing the echo counter have been addressed by other studies.
>
> The 2 sonar systems differ markedly in their design and capabilities. There are several differences between the 2 systems that could account for the variation between salmon estimates. The most plausible explanation for the variation in the south-bank estimates is the larger water column, with fish swimming over the beam. Knowing the vertical distribution at this site would confirm whether or not this is true. The most plausible explanation for the differences in the north-bank estimates is the image resolution of the 2 sonars, which is compromised for the echocounter because of the longer range ensonified. The longer range coupled with high density schools passing at close range add to the complexity of assessing fish at this site. The higher bias at this site is likely due to the difficulty operators have in distinguishing and counting

voltage spikes during the calibrations, and higher variation may in part be due to differences between operators.

The historical echo-counter estimates were converted to DIDSON equivalents using the regression coefficients (Table 5) applied to the square root of the historical data, and then squaring the predicted estimates. The predicted estimates were then apportioned using the fish wheel data (Westerman and Willette (2006, 2007a, 2007b, 2010a), and error bounds were determined for the estimates. Over the 28 years of annual estimates, the 2 estimates differed by an overall average of 347,534 fish per year, an average ratio of 1.42, with DIDSON estimates higher than echo-counter estimates (Table 10). The largest deviation between the 2 estimates occurred in 1989 when predicted DIDSON estimates were 695,573 fish higher than echo-counter estimates; the smallest deviation was in 1979 with a difference of 129,122 fish (Table 10). The average CV across all historical years was 0.016. The annual historical estimates were substantially smaller than the predicted DIDSON estimates, and the error bounds were barely visible on the scale of the data (Figure 40). During the historical years, the bank preference of migrating salmon shifted between banks, but the average favored the north bank (north/south ratio of 1.24)." (Maxwell, Faulkner, Fair and Zhang, 2011).

There are eight issues that need pointing out:

(1) The historical Bendix counts had up to a ± 20% error etimate. This error estimate was determined by internal calibartion comparisons and independent control studies above RM 19.5. The Bendix-derived fish counts were always considered an index of salmon passage. The ± 20% Bendix error estimate, in part, explains the wide range in the escapement goals. The ± 20% error was acceptable for management pruposes.

(2) Lack of calibration of Bendix systems across the historic Bendix derived salmon enumerations. The calibration accuracy and frequencies during the side-by-side comparisons was not the same as during the prior 30 years.

(3) In the Kvichak, Kasilof and Copper Rivers, the Bendix-DIDSON comparisons were close to 1:1. Why in the Kenai River is the side-by-side comparison so different?

(4) During the side-by-side comparative experiment, there was NO independent assessments made as to the real-actual numbers of fish. It was **assumed** that the DIDSON equipment was 100% acccurate at counting targets, or fish.

(5) The historic Bendix counts were published, right down to the individual spawner. These historic Bendix-derived spawner counts were meant to be an index, not the actual count of fish.

(6) The Bendix to DIDSON correction factors were applied to the daily passage rates for the prior 30 years. Based on a three-year bendix-DIDSON comparison, brood tables were retrospectively adjusted for the prior 30 years. These retrospective adjustments amount to hundreds of thousands of salmon. The biological-economic-social aspects of this retrospective adjustment is a big deal. Hundreds of thousands fo salmon were added into the management scenarios.

(7) The x1.4 retrospective expansion factor was directly applied to the escapement goals.

(8) In the last decade, there have been NO follow-up studies done to assess the accuracy or consistency of the DIDSON-derived enumerations.

XVI. General Discussion

UCIDA chooses to combine several topics into one presentaion. These discussion topics are organized around the issues presented earlier.

1. Review of Assumptions
   The Introduction on page one lists 7 assumptions:

   A. Independent spawning events, year-to-year. Spawning events and subsequent progeny do interact with each other and prior years' fry. In the KR and the KAsR, clearly the annual spawning events are not independent. Both prior and successive progenies are interacting. The exact energetics, biological, predatory or competitive nature of these interacting broods are evident but remain largely unknown. The mechanisms for these brood interactions have been examined by some ADFG staff, past and present. There remains much to be done in order to have a better understanding of these issues for all salmon stocks natal to UCI. In the present Alaskan budgetary environment, future research is unlikely.

      All the spawning and predictive models that fail to incorporate brood interactions are doomed to providing misleading estimates. Both spawning and return estimates will have unreliable and high return predictions.

   B. Mathematical relationship between spawners, eggs, fry, smolt and returning adults. There is a huge mortality of 98.77% up to 99.83%, from eggs to either 4 million or 3 million returning adults. The mortalities across the KR and KasR salmon life-cycle are poorly understood.

   C. Food – quantity, quality, temporal and spacial distribution and size is understandable and somewhat constant.
      There are no life-cycle longitudinal food studies for any of these salmon stocks that occur in UCI. There are some isolated, unconnected salmon dietary studies for salmon natal to UCI.

   D. Parasites, disease, virus and bacterial effects are known and constant (no thresholds).
      The mortality, growth limiting vectors, are poorly understood in the salmon stocks natal to UCI. By in large because these vectors have had little assessments and monitoring. This is especially true of the wild, natal stocks. A substantial portion of the research, assessments and monitoring is conducted by CIAA.

E. Thresholds – In the last decade, CIAA has discovered and verified new diseases never before identified in UCI stocks. Additionally, there are significant elodea and northern pike population expansions in UCI. Many of these newly discovered plants and diseases are now occurring and expanding distributions with the fore mentioned forcing, perturbation and stochastic events.

F. Predator-Prey complexes are understood and or constant.
There are at least 5 historical salmon producing lakes that have no salmon populations. Salmon populations occur in over a thousand lakes, rivers and aquatic areas in UCI. The state has expended limited management response and limited resources to address this issue in Northern UCI water bodies. The State of Alaska has severe budgetary restrictions. These budgetary issues will continue for an unspecified number of years.

G. Forcing Functions and Perturbations: ecosystem stability has had no forcing functions or random perturbations.

UCIDA is of the opinion that global warming is a forcing function on such a grand scale that the human experience is powerless to change them, even if we wished.

UCIDA is of the opinion that perturbation events such as the 'Blob' and now the 'Blob 2' are a part of our human and environmental conditions. We might, in the short term, define management responses. This does not include human management of avoidances, but how to accommodate this perturbation. As resource managers, how do we move into the future? It is an open question as to whether the Blobs will be the new normal and change into a forcing function.

H. Stochastic: ecosystem stability may have stochastic changes that have no, or a minor, effect.
The UCI watershed has had hundreds of square miles experiencing spruce bark beetle infestation and forest fires. This is especially true in the last 2 decades. Entire watersheds have been changed from climatic to an earlier ecological state. The changes to earlier ecological serial stages have and will change aquatic populations, production, food chains and food webs. The stochastic events have and will affect UCI salmon productions. How do we move forward? What are the correct management responses?

2. Escapement Goals and Data

In this paper, UCIDA put into the public record the following:

A. The Bendix derived enumeration numbers have a ± 20% error estimates.

B. There is no reliable mathmatical or statistical transformation to correct this ± variance in the Bendix estimates or 'fish counts'.

C. The Bendix derived fish counts are reported to the single fish, giving a representation of accuracy that simply does not exist.

D. There is no reliable understanding of the distribution of the ± 20% variance across hours, days, years or passage rates.

E. The DIDSON derived passage estimates have not had an independent assessment as to the accuracy of passage over time or accuracy of passage density.

F. The DIDSON produced hourly estimates of fish passage rates, however, the hourly rates were combined to arrive at the daily passage rate. No internal verificaiton occurred concerning these hourly to daily passsage rates.

G. The Markov Table, by using 100,000 fish increments, does provide up to a 100,000 fish variance estimate.

H. None of the escapement goal methodoligies consider the actual imperical date:

- Declining sockeye MEFL of 15-20%
- Declining sockeye weight of 15-20%
- August entry pattern of 60% for KRLRS
- Degraded fish quality, including the presence of surface infected areas associated with scale loss and mushy, gray colored flesh.

3. Biological Issues

Some of these issues are directly linked to anthrogentic management decisions, practices and policies. The specific issues put forward included:

A. Over the past decade, the sockeye in UCI are shorter in length by 15-20%.

B. UCI sockeye salmon weights have decreased by 1 lb per sockeye. See economic discussion for significance.

C. An August portion of the KRLRS have gray-colored, mushy flesh. The eggs in these fish remain undeveloped and are noticably smaller than usual. See economic discussion for significance.

D. The UCI sockeye runs start in late June and continue through late August, 60 days, which reduces the overall densities of fish which has caused the annual and daily CPUE to be reduced to a marginal economic performance.

E. In 9 of the last 10 years, escapement goals were grossly exceeded. This has caused marginally fit and marginally developed smolt. They, in turn, cause marginally fit adults, both in quality and quantity. There are 3 effects of exceeding escapement goals:

- Reduced harvestable and saleable biomass
- Some age classes are retuning in very low numbers, such as the 2012-2013 brood years
- Spawner recruit ratios of 1.1-1.2 returning adults per spawner

F. Mortality rate of 99% in 'Adult to Fry to Smolt to Adult'

G. The following models may be utilized:

- Ricker-spawner recruit analysis – This model was first introduced in Ricker (1954) where it was used to model stock dynamics and recruitment in fisheries. The model is similar to (in terms of formulization and dynamical behavior) and inspired by the logistic growth equation. Consequently, it is somewhat more realistic and "safer" to use.
- Markov table(s)
- Beverton-Holt model – The Beverton-Holt model is a classic discrete-time population model which gives the expected number or density of individuals in a generation as a function of the number of individuals in the previous generation.
- KRLRS Brood interaction models developed by the Soldotna ADFG Office
- Percentile techniques and analysis developed by ADFG
- In order to use the Percentile Technique, a fishery or stock complex must have a minimum of a 40% exploitation rate.
- A fishery stock or complex must have the following minimum of spawning salmon:
  - Chinook: 1,000
  - Sockeye: 20,000
  - Coho: 10,000
  - Chum: 20,000
  - Pink: 50,000

4. Optimum Yield (OY)

A. Optimum Yield – NOAA Fisheries Glossary, page 34. The harvest level for a species that achieves the greatest overall benefits, including economic, social, and biological considerations. Optimum yield is different from MSY in that MSY considers primarily the

biology of the species. The term includes both commercial and sport yields; 2. The amount of fish that will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities and taking into account the protection of marine ecosystems. MSY constitutes a "ceiling" for OY. OY may be lower than MSY, depending on relevant economic, social, or ecological factors. In the case of an overfished fishery, OY should provide for the rebuilding of the stock to B_{MSY};

B. Optimum Yield. Magnuson-Stevens Act section (3)(33) defines "optimum," with respect to the yield from a fishery, as the amount of fish that will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities and taking into account the protection of marine ecosystems; that is prescribed on the basis of the MSY from the fishery, as reduced by any relevant economic, social, or ecological factor; and, in the case of an overfished fishery, that provides for rebuilding to a level consistent with producing the MSY in such fishery.

C. The number of spawning salmon that will result, on average, the maximum returns in a fishery or stock complex;

D. spawning ranges will be at 85% to 100% of MSY spawning goal (UCIDA Proposal);

E. spawning goals will be assessed in season on a weekly, monthly and seasonal basis (UCIDA Proposal);

F. spawning goals will be utilized when there are competing MSY spawning goals;

G. spawning goals may be developed when the quantity or quality of the data in a fishery or stock complex is based on the recommendation of the EGC or SAC;

H. spawning goals, when recommended, may be utilized for a period of time not to exceed 5 years (UCIDA Proposal);

I. spawning goals will be developed using as guides:

- Applying Eco-Based Fishery Management Policy 0-120
- Incorporate Advisory Committee and Escapement Goal Committee local knowledge
- Ricker-spawner recruit analysis
- Markov table(s)
- Beverton-Holt model
- KRLRS Brood interaction models

J. Percentile techniques and analysis

- In order to use the Percentile Technique, a fishery or stock complex must have a minimum of a 40% exploitation rate.

- A fishery stock or complex must have the following minimum of spawning salmon:
  - Chinook: 2,000
  - Sockeye: 20,000
  - Coho: 20,000
  - Chum: 20,000
  - Pink: 50,000

5. Annual Catch Limit (ACL)

A. Definitions - The following definitions were taken from the NOAA Fisheries Glossary, 2006 Revised Edition

- Catch- page 5
  To undertake any activity that results in taking fish out of its environment dead or alive. To bring fish on board a vessel [or on shore] dead or alive; 2. The total number (or weight) of fish caught by fishing operations. Catch should include all fish killed by the act of fishing, not just those landed; 3. The component of fish encountering fishing gear, which is retained by the gear [drop-outs, break-offs].
- Acceptable Biological Catch – page 1
  A scientific calculation of the sustainable harvest level for a species or species group, and is used to set the upper limit on the range of potential annual total allowable catch (TAC).
- Annual Total Mortality (Rate) – page 2
  The rate of death, usually in terms of a percentage of fish dying from a population in one year, due to both fishing and natural causes; 2. The ratio of the number of fish which die during a year divided by the number alive at the beginning of that year.
- Carrying Capacity – page 5
  The maximum population of a species that an area or specific ecosystem can support indefinitely without deterioration of the character and quality of the resource; 2. The level of use, at a given level of management, at which a natural or man-made resource can sustain itself over a long period of time. For example, the maximum level of recreational use, in terms of numbers of people and types of activity that can be accommodated before the ecological value of the area declines.
- Limit Reference Points – page 25
  Benchmarks used to indicate when harvests should be constrained substantially so that the stock remains within safe biological limits. The probability of exceeding limits should be low. In the National Standard Guidelines, limits are referred to as thresholds. In much of the international literature (e.g. United Nations Food and Agricultural Organization, FAO) thresholds are used as buffer points that signal when a limit is being approached. (See National Standard Guidelines)
- Spawning numbers needed to maintain and not negatively affec2t the carrying capacity of a particular fishery or stock complex;
- spawning goals will may be utilized when there are competing MSY spawning goals;

- yields (harvests) will be in the 50% to 70% range of estimated MSY/OY;
- yields will occur so that underutilization or overfishing do not occur;
- the necessary scientific data need to establish MSY or OY spawning goals is weak, sporadic non-existent;
- may utilize catch per unit effort(s) or proxy modeling between fisheries, stock complex(es) or species.

6. Guideline Harvest Level (GHL)

A. Definitions taken from NOAA Fisheries Glossary

- Harvest Guideline – page 21
  A numerical harvest level that is a general objective, but not a quota. Attainment of a harvest guideline does not require a management response, but does prompt review of a fishery.
- Quota – page 39
  A specified numerical harvest objective, the attainment (or expected attainment) of which causes closure of the fishery for that species or species group.
- Catch Per Unit (of) Effort (CPUE) – page 6
  The quantity of fish caught (in number or in weight) with one standard unit of fishing effort; e.g. [number or salmon caught per 12 hour fishing period per one standard length of gillnet,] number of fish taken per 1,000 hooks per day or weight of fish, in tons, taken per hour of trawling. CPUE is often considered an index of fish biomass (or abundance). Sometimes referred to as catch rate. CPUE may be used as a measure of economic efficiency of fishing as well as an index of fish abundance. Also called: catch per effort, fishing success, availability.
- Results in the number of spawning salmon that well result in yields and protect against underutilization and over fishing in a fishery or stock complex.
- Are developed due to lack of enumeration(s), data on run timing, run strength, spatial or temporal information.
- Spawning numbers and yields will be achieved through the use of CPUE's [and indexes].
- Spawning numbers and yields will be achieved by maintaining a 30% to 70% exploitation rate(s).

7. Economic and Social Consideration

A. The economic impact of salmon that have a smaller MEFL and less weight at age is, in our opinion, economically devistating. Three million sockeye averaging 1 lb less per fish equates to a loss of $12,000,000 annually for the commercial fishing industry. The

absence of the sockeye salmon over 6 lbs has taken Cook Inlet out of the premium market. Now, UCI sockeye are competing with the marketplace where 3-5 and 4-6 lb sockeye are plentiful. Cook Inlet has lost the premium market position.

B. The August component of the sockeye harvest no longer are graded #1; now it's mostly #2 and dog food grades. Annually, the August sockeye component costs the industry in excess of $2 million.

C. The smaller sockeye and lower grade sockeye cost the industry $14 million annually. Historically, UCI salmon were of premium size and quality worth 50-75¢ more per pound than Bristol Bay. This diminished sockeye size and quality has had negative effects on Chinook, Chums, Pinks, and Silvers, even though the size and quality issue was less pronounced. This $14 million in diminished economic activity spill over into the retail, transportation, local, state and national taxes paid. Crew members, process workers and labor markets become less attractive making the hiring of entry-level labor much more difficult. Capital investments are restructured and redirected. These costs are real and diffucult to quantify.

D. Tables 16A and 16B provide the total ex-vessel value, adjusted for inflation value and the first wholesale value of all salmon harvested by the UCI commercial salmon industry, 1960-2018. The ex-vessel total values were normalized by using th US Inflation Calculator found at ww.usinflationcalculator.com, published by the US Dept. fo Commerce. The ex-vessel total values are the result of lbs of salmon sold at a given price per pound. In the 2000-2009 decade, salmon prices were severely depressed.

Table 16A. Approximate exvessel value of UCI commercial salmon harvest, 1960-2018

58 Years - Totals & Averages - Exvessel Values 1960-2017 - Drift & Set

Year	Total	2018 Value	First Wholesale	*Historic Events*
1960	2,787,000	23,727,727	47,455,454	*ADFG Management Begins*
1961	2,125,000	17,910,125	35,820,250	
1962	3,981,000	32,219,731	64,439,462	
1963	1,919,000	15,803,906	31,607,812	
1964	3,678,000	29,899,293	59,798,586	
1965	2,558,000	20,464,489	40,928,978	
1966	4,233,000	32,924,117	65,848,234	
1967	2,586,000	19,511,602	39,023,204	
1968	4,355,000	31,536,958	63,073,916	
1969	1,755,394	12,053,674	24,107,348	
1970	2,984,840	19,386,536	38,773,072	
1971	2,050,974	12,761,920	25,523,840	
1972	3,543,192	21,361,379	42,722,758	
1973	6,163,635	34,983,636	69,967,272	
1974	6,562,535	33,545,602	67,091,204	
1975	6,702,612	31,395,881	62,791,762	
1976	13,677,413	60,576,413	121,152,826	*MSA Passed & Implemented*
1977	21,537,920	89,565,760	179,131,520	
1978	32,581,114	125,930,003	251,860,006	
1979	14,632,021	50,790,042	101,580,084	*Initial Alaska State FMP*
1980	12,871,810	39,366,181	78,732,362	
1981	18,448,596	51,145,840	102,291,680	
1982	31,437,716	82,098,374	164,196,748	
1983	29,360,152	74,286,490	148,572,980	
1984	17,335,160	42,045,855	84,091,710	
1985	34,359,478	177,260,685	354,521,370	
1986	46,430,522	106,758,851	213,517,702	
1987	101,099,156	224,274,594	448,549,188	
1988	122,177,017	260,264,931	520,529,862	
1989	59,174,188	120,260,084	240,520,168	
1990	40,671,938	78,420,600	156,841,200	*West Area FMP*
1991	15,242,649	28,202,929	56,405,858	
1992	100,068,258	179,741,991	359,483,982	
1993	30,026,815	52,366,349	104,732,698	
1994	34,453,264	58,585,892	117,171,784	
1995	22,014,944	36,403,530	72,807,060	
1996	29,712,117	47,722,318	95,444,636	
1997	32,394,427	50,863,448	101,726,896	
1998	8,685,145	13,427,660	26,855,320	
1999	20,975,713	31,728,724	63,457,448	
2000	8,147,307	11,932,172	23,864,344	
2001	7,732,881	11,009,787	22,019,574	
2002	11,643,925	16,635,071	33,270,142	
2003	12,875,310	17,633,996	35,267,992	
2004	20,701,093	27,616,726	55,233,452	
2005	31,677,341	40,874,961	81,749,922	
2006	13,904,377	17,380,855	34,761,710	
2007	23,423,367	28,423,064	56,846,128	
2008	16,696,717	19,543,029	39,086,058	
2009	14,573,854	17,119,185	34,238,370	
2010	33,168,113	38,332,188	76,664,376	
2011	53,121,708	59,513,864	119,027,728	
2012	34,955,955	38,368,208	76,736,416	
2013	40,241,970	43,532,574	87,065,148	
2014	35,079,504	37,342,210	74,684,420	
2015	24,164,211	25,692,360	51,384,720	
2016	22,384,437	23,503,437	47,006,874	
2017	23,838,446	24,508,124	49,016,248	
2018	9,124,911	9,124,911	18,249,822	*Lowest value since 1960 (59 yrs)*
Total $$	***1,384,808,142***	***2,979,660,842***	***5,959,321,684***	
Average $$	***23,471,324***	***50,502,726***	***101,005,452***	

Data Source: ADF&G Annual Manaagement Reports

Table 16B. Economic Performance of UCI Salmon Fishery			
10-year Averages			
Years	**Ex-Vessel**	**2018 Value**	**2018 First Wholesale**
1960-1969	2,997,739	23,605,162	47,210,324
1970-1979	11,043,626	48,029,717	96,059,434
1980-1989	47,269,379	117,776,189	235,552,377
1990-1999	33,424,527	57,746,344	115,492,688
2000-2009	16,137,617	20,816,885	41,633,769
2010-2018	29,065,311	33,324,208	66,648,417
			Source: ADFG

8. Maximum Sustainable Yield (MSY)

A. Definitions - The following definitions were taken from the NOAA Fisheries Glossary, 2006 Revised Edition, NFMS's Guidelines and National Standards Guidelines 50 CFR 600.305 et. seq.

- Maximum Sustained Yield (MSY) – page 28
  The largest average catch or yield that can continuously be taken from a stock under existing environmental conditions. For species with fluctuating recruitment, the maximum might be obtained by taking fewer fish in some years than in others. Also called: maximum equilibrium catch; maximum sustained yield; sustainable catch.
- Sustainability – page 52
  Ability to persist in the long-term. Often used as "short hand" for sustainable development; 2. Characteristic of resources that are managed so that the natural capital stock is non-declining through time, while production opportunities are maintained for the future.
- Sustainable Catch (Yield) – page 52
  The number (weight) of fish in a stock that can be taken by fishing without reducing the stock biomass from year to year, assuming that environmental conditions remain the same.
- Sustainable Fishing – page 52
  Fishing activities that do not cause or lead to undesirable changes in the biological and economic productivity, biological diversity, or ecosystem structure and functioning from one human generation to the next.
- Sustainable Yield – page 53
  Equilibrium yield; 2. The amount of biomass or the number of units that can be harvested currently in a fishery without compromising the ability of the population/ecosystem to regenerate itself.

XVII. Spawning Goals

1. UCIDA Recommendations

A. The number of spawning salmon that will result in the maximum yield, catch or harvest in a salmon fishery or stock complex.

B. Spawning goal(s) ranges will be 90% to 100% of the MSY number of spawners needed, unless otherwise justified.

C. Spawning goal ranges may be developed for index stock(s) or stock complex(es).

D. Spawning goals will be assessed in season on a daily, weekly or seasonal schedule?

E. Spawning goals may be developed by utilizing one or more of the following:

- Applying Eco-Based Fishery Management Policy 0-120
- Incorporate Advisory Committee and Escapement Goal Committee local knowledge
- Ricker-spawner recruit analysis
- Markov table(s)
- Beverton-Holt model
- KRLRS Brood interaction models

F. Apply the Ecosystem-Based Fisheries Management Policy, 0-120, to the Salmon FMP.

G. Strongly consider applying the Precautionalry Principal to the setting of UCI Escapement Goals.

H. Develop accountability and security measures in the event the managers violate or ignore the Salmon Fishery Management Plan instructions or provisions. Example: If the State is the on-site manager, posting of a $100 million performance bond.

I. Strongly encourage the creation of a standing salmon advisory committee to include multi-federal and state agencies, federal subsistence groups, commercial, recreational and local government officials.

J. Strongly encourage an escapement goal committee including Federal and State agencies and UCI stakeholders. Preferrable an 8 person committee.

K. Establish interim escapement goals for UCI.

L. Adopt fishing sector ACL, GHL and Allocations. See Table 17.

M. Adopt fishing sector priorities, ACLs, GHLs and Allocations.

Table 17. Fishing Sector Priorities, Spawners, ACL's and GHL's

Stock Complex	Commercial %		Recreational %		Subsistence %		ABC, ACL Yield %*	
Stock Complex #1	Chinook	50	Chinook	48	Chinook	2	Chinook	100
May 1 thru June 20	Sockeye	50	Sockeye	48	Sockeye	2	Sockeye	100
	Coho	0	Coho	0	Coho	0	Coho	0
	Pink	0	Pink	0	Pink	0	Pink	0
	Chum	0	Chum	0	Chum	0	Chum	0
Stock Complex #2	Chinook	48	Chinook	48	Chinook	4	Chinook	100
June 20 thru	Sockeye	85	Sockeye	14	Sockeye	1	Sockeye	100
15-Aug	Coho	50	Coho	48	Coho	2	Coho	100
	Pink	95	Pink	3	Pink	2	Pink	100
	Chum	80	Chum	18	Chum	2	Chum	100
Stock Complex #3	Chinook	0	Chinook	0	Chinook	0	Chinook	0
August 16 thru	Sockeye	95	Sockeye	3	Sockeye	2	Sockeye	100
October 30	Coho	50	Coho	49	Coho	1	Coho	100
	Pink	95	Pink	3	Pink	2	Pink	100
	Chum	95	Chum	5	Chum	0	Chum	100

ABC - Annual Biological Catch
ACL - Annual Catch Limit
GHL - Guideline Harvest Level

- The primary objective is to achieve MSY/OY spawning goals where established.
- All percentages determined at Anchor Point line.
- All percentages to be applied as Spawning Goals, ACL's or GHL's are met.
- All percentages unique to inriver situations.
- No intra-river transfers for recreational sector

***** After MSY/OY spawning goals, ACL and GHL achieves spawning needs.

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3. Maxwell, et al, A Comparison of Estimates from 2 Hydroacoustic Systems Used to Assess Sockeye Salmon Escapement in 5 Alaska Rivers, 2011, Fishery Manuscript Series No. 11-02.

4. Shields & Dupuis, Upper Cook Inlet Commercial Fisheries Annual Management Report, 2017. Fishery Manuscript Series 17-05.
   Special Note: The Annual Management Reports from the last 20 years were also reviewed.

Fishery Manuscript Series No. 16-11

Genetic Stock Composition of the Commercial and Sport Harvest of Chinook Salmon in Westward Region, 2014–2016

by

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Divisions of Sport Fish and Commercial Fisheries

Columbia, and 10) West Coast US (Table 3; Figures 5–6). The final baseline contains 29,001 individuals from 403 collections representing 211 populations in 10 reporting groups. The Chignik group corresponds to one of CSRI's 12 indicator stocks, whereas another (Karluk River) is included within the Kodiak group.

Commercial Fisheries

The experimental design for the commercial fisheries component of this project is laid out in 2 Operational Plans (Foster and Dann 2014, 2015). The principal objective of this effort was to sample Chinook salmon commercial harvest in marine waters of the Westward Region. In 2014, the first year of this project, sampling of Chinook salmon in the commercial salmon fisheries of the Westward Region took place in the ports of Kodiak, Larsen Bay, and Alitak in KMA, Chignik in the Chignik Management Area, and Sand Point, King Cove, and Port Moller in the Alaska Peninsula Management Area. A total of 2,201 fish were sampled for age, sex, and length information and genetic tissue during the early strata and 2,908 fish were sampled during the late strata (Appendix A).

Due to reduction in the budget for CSRI, in late 2014, CSRI cut the Alaska Peninsula- and Chignik-based portions of this project (although a subsample of the original plan was ultimately analyzed; ADF&G Chinook Salmon Research Team 2013). As a result, the scope of this project was reduced to collect genetic tissue and age, sex, and length data from Chinook salmon harvested in the commercial salmon fisheries in the Kodiak area only during the 2015 and 2016 seasons.

Designated sampling areas in KMA encompass districts or partial districts as outlined below in Sampling Area Descriptions and are based on geographic location, harvest magnitude, and management, with consideration given to port delivery location. Overall, 2 general temporal strata were chosen (early and late). The early stratum (~June) coincides with the commercial fisheries targeting early-run sockeye salmon. The late stratum (~July) coincides with the commercial fisheries targeting early-run sockeye and/or pink and chum salmon (Table 4).

Sampling Area Descriptions

Sampling areas defined in this project were Northwest Kodiak/Afognak, Southwest Kodiak/Alitak, Eastside Kodiak/Afognak, and Mainland (Figure 7). District numbers represented within each sampling area are represented in Table 4. All were sampled during the early and late strata.

Northwest Kodiak/Afognak (251, 253, 254)

This area stratum consists of the Northwest Kodiak District and the western portions of the Afognak District (Figure 7), and includes statistical areas 251, 253, and 254. Both purse seine and set gillnet gear can be used in the majority of the Northwest Kodiak District, but Afognak District is limited to seine gear only. This area historically represents the largest Chinook salmon harvests in KMA. Samples for Northwest Kodiak/Afognak were collected at the processing plants in Larsen Bay and Kodiak.

Southwest Kodiak/Alitak (255, 256, 257)

This area stratum consists of the Southwest Kodiak and Alitak districts (Figure 7) and includes statistical areas 255, 256, and 257. Only seine gear can be used in Southwest Kodiak District and this district contains fishing areas terminal to Karluk and Ayakulik rivers. Both seine and set

gillnet gear can be used in Alitak district but are segregated by sections within the district. Samples for Southwest Kodiak/Alitak were collected at the processing plants in Larsen Bay, Kodiak, and Alitak.

Eastside Kodiak/Afognak (258, 259, 252)

This area stratum consists of the Eastside Kodiak District, eastern portions of the Afognak District, and western portions of the Northwest Kodiak District (Figure 7), and includes statistical areas 258, 259, and 252. A majority of this sampling area is limited to seine gear only but there is a gillnet area in statistical area 259 of the Northwest Kodiak District. Samples for Eastside Kodiak/Afognak were collected at the processing plants in Kodiak and Alitak.

Mainland (262)

This area stratum is the Mainland District (Figure 7), statistical area 262. Only seine gear can be used in this area. Samples for Mainland were collected at the processing plants in Kodiak, Larsen Bay, and Alitak.

Sport Fisheries

The experimental design for the sport fisheries component of this project is outlined in 2 Operational Plans (Tracy and Dann 2014; Tracy et al. 2015). The primary objectives were to estimate the stock composition, stock-specific harvest, and age composition of Chinook salmon harvests for the KRA marine recreational fishery. Initially in 2014, samples were to be taken at the Port of Kodiak and in the village of Larsen Bay; however, a reduction in budget and number of samplers resulted in sampling only harvests landed at the Port of Kodiak during 2015 and 2016. Due to the low availability of samples, each year had a single spatiotemporal stratum to represent the entire Kodiak Archipelago (Figure 4). Samples collected from Larsen Bay in 2014 are included in the pooled samples for the entire Kodiak Archipelago.

OBJECTIVES

The overall goal of this project is to provide information on commercial and marine sport harvest of Alaska Chinook salmon stocks, specifically of indicator stocks within the Westward Region (ADF&G Chinook Salmon Research Team 2013). This information will be useful for reconstructing runs, building accurate brood tables to define escapement goals, and refining management by identifying spatial and temporal harvest patterns of *local* and *nonlocal* stocks. This document has 2 objectives:

1. Report estimated stock proportions and stock-specific harvests of Chinook salmon sampled from Kodiak area commercial fisheries, 2014–2016.
2. Report estimated stock proportions of Chinook salmon sampled from Kodiak area sport fisheries, 2014–2016.

In addition, we report the estimated stock proportions of Chinook salmon sampled from South Peninsula and Chignik commercial fisheries in 2014 (Appendix B).

DEFINITIONS

To reduce confusion associated with the methods, results, and interpretation of this study, basic definitions of commonly used genetic and salmon management terms are offered here.

Allele. Alternative form(s) of a given gene or DNA sequence.

laboratory analysis were selected from the available harvest samples postseason by subsampling within each stratum proportional to the daily catches. This ensures that the stock compositions estimated from the MSA analysis are representative of the catch in the stratum. Sampling proportional to catch does come with caveats since it entails not only tracking daily harvest but projecting harvest throughout the stratum and oversampling to facilitate postseason subsampling. In postseason sample selection, some samples were excluded from analysis to most closely approximate the daily catch proportions of a stratum's harvest.

Chinook salmon tissue samples (pelvic fin axillary processes from the left side of fish) were collected by individual sampling procedures. In these procedures, sampled tissues from each fish were placed in individual, ethanol-filled cryovials with a unique individual sample number to allow pairing with age, sex, and length and CWT data. Samplers obtained fish ticket information before collecting samples to determine whether the fish were exclusively harvested from the area and timeframe designated to be sampled. If fish ticket data were not available, the processing facility dock foreman or tender operator was interviewed. Once fish ticket information became available, the origin of the catch was confirmed.

Sport Fisheries

A single catch sampler collected tissue samples at 4 locations in the Port of Kodiak: a seafood processing plant, St. Paul's Harbor, St. Herman's Harbor (Dog Bay), and the U.S. Coast Guard Base recreational boating launch. During 2014, additional catch samplers were available in Larsen Bay and sport fishing harvests were collected in conjunction with sampling of the commercial catch. Due to the low number of fish available for sampling, all samples were used in the analysis and no subsampling was necessary.

The methodology for tissue collection was the same as that of the commercial sampling. When available, sport anglers were interviewed to estimate the timing of harvest and geographic distribution of effort; CWT samples were collected if the adipose fin was clipped. The majority of samples collected came from 1 seafood processor that most Kodiak-based charter boats deliver their catch to. This precluded interviewing anglers, but was a central location for sampling charter-caught Chinook salmon. Sampling was conducted throughout the sampler's shift and rotated between the 4 locations. As a further cost-saving measure, sampling on the U.S. Coast Guard Base was limited due to the time and fuel needed to access this location.

AGE, SEX, AND LENGTH SAMPLING

The most common method of age determination in Pacific salmon is the analysis of the concentric rings (circuli) on the scale. Scales, when possible, were collected from the preferred area of each fish following the methods described by International North Pacific Fish Commission (1963) and Welander (1940) for both commercial and sport fishery samples. Four scales per fish were collected and mounted on scale "gum" cards and impressions made on acetate/diacetate cards (Clutter and Whitesel 1956). Fish ages were assigned by examining scale impressions for annual growth increments using a microfiche reader fitted with a 48X lens following designation criteria established by Mosher (1968). Ages were recorded using European notation (Koo 1962), with a decimal separating the number of winters spent in fresh water (after emergence) from the number of winters spent in salt water. Sex was determined, normally by visual inspection of gonads and by examining the fish for secondary sexual characteristics. Length (mid eye to tail fork; METF) was measured to the nearest millimeter.

5% of the harvest in any strata (Figure 13). Harvest by stock during 2015 consisted of 1,462 British Columbia fish, 799 West Coast US fish, and 152 Kodiak fish (Table 21; Figure 14).

In 2016, the first and second stratum were very consistent, with both showing a higher proportion of British Columbia stock relative to West Coast US. The first stratum included 67.1% British Columbia and 24.6% West Coast US (Table 22), which was nearly identical to the second stratum with 69.2% British Columbia and 24.7% West Coast US (Table 23). No other groups represented over 5% of the harvest in any strata (Figure 13). Overall, the harvest of British Columbia stocks was 528 fish, followed by the West Coast US with 191 fish (Table 24; Figure 14).

Eastside Kodiak/Afognak (258, 259, 252)

The stock composition of commercial harvest from Eastside Kodiak/Afognak sampling area was largely consistent with other areas—it was dominated by British Columbia and West Coast US stocks; however, it appeared that there was less temporal variation within years compared to other areas in KMA (Tables 25–33; Figures 15–16). During 2014, there was almost no appreciable temporal variation between the first and second strata: the majority of the harvest was attributed to British Columbia (51.2% and 51.7%), followed by West Coast US (35.3% and 37.5%; Tables 25–26; Figure 15). While present in small numbers, no other stocks represented over 5% of the harvest in any strata (Figure 15). Stock-specific harvest in the Eastside Kodiak/Afognak area consisted of 1,514 British Columbia fish and 1,091 West Coast US fish (Table 27; Figure 16).

In 2015, the relative contribution of British Columbia and West Coast US stocks flipped for the first stratum, with the West Coast US reporting group representing 46.8% and British Columbia 36.5% of the harvest, followed by Cook Inlet with 7.8% (Table 28). In the second strata, British Columbia increased to just shy of the majority of the catch with 49.4%, followed by the West Coast US with 40.7% (Table 29). No other groups represented over 5% of the harvest in any strata (Figure 15). Overall, commercial harvest from Eastside Kodiak/Afognak consisted of 984 West Coast US fish, 910 British Columbia fish, and 120 Cook Inlet fish (Table 30; Figure 16).

In 2016, stock compositions were similar to those of 2014. In the first stratum, British Columbia consisted of 57.0% of the harvest, followed by West Coast US with 27.4% and Southeast Alaska/Northeast Gulf of Alaska with 6.4% (Table 31). The second strata saw a relative increase of West Coast US stocks with 39.5%, followed by British Columbia with 51.5% (Table 32; Figure 15). No other stocks contributed over 5% to the harvest in any strata (Figure 15). Overall, 655 British Columbia and 431 West Coast US fish were harvested (Table 33; Figure 16).

Mainland (262)

The stock composition of the Mainland District was similar to other areas; the harvest was largely from British Columbia and West Coast US stocks, with low numbers from Southeast Alaska/Northeast Gulf of Alaska (Tables 34–40; Figures 17–18). In 2014, fishing only occurred in the second stratum with 51.2% of the catch attributed to British Columbia and 39.5% to West Coast US (Tables 34–35). No other reporting groups represented over 5% of the harvest (Figure 17). Overall, harvest was low in 2014 and stock-specific harvest consisted of 216 British Columbia fish and 167 West Coast US fish (Table 35; Figure 18).

In 2015, similar to 2014, there was no fishing in the early stratum and overall harvest was low (Figure 18). The second stratum was dominated by British Columbia, with 64.0% of the catch,

followed by West Coast US with 19.6%, and Cook Inlet with 12.8% (Tables 36–37). No other stocks contributed over 5% to the harvest in any strata (Figure 15).Overall harvest was low in 2015, with 147 fish from British Columbia, 45 from West Coast US, and 29 from Cook Inlet (Table 37; Figure 18).

In 2016, fishing occurred in both strata and harvests were up relative to 2014 and 2015; however, stock composition was similar to other KMA areas—dominated by British Columbia and West Coast US. The first stratum harvest was evenly split between British Columbia with 46.6% and West Coast US with 44.1% (Table 38). In the late stratum, British Columbia increased to 54.1% and West Coast US decreased to 37.1%, with minor contributions from Southeast Alaska/Northeast Gulf of Alaska with 5.1% (Table 39). No other groups contributed over 5% of the harvest in any strata (Figure 17). Overall, harvest in 2015 consisted of 1,362 British Columbia fish and 1,088 West Coast US fish (Table 40; Figure 18).

Commercial Harvest Estimates by Year

All the commercial harvest results for each year were combined to estimate total KMA stock composition and stock-specific harvest summaries for commercial harvest from June 1 through August 5, 2014–2016. Overall, the results are surprisingly consistent across years with KMA commercial harvest dominated by British Columbia and West Coast US stocks, with minor contributions from Southeast Alaska/Northeast Gulf of Alaska, Cook Inlet, and Kodiak (Tables 41–43; Figures 19–20).

In 2014, the total KMA harvest of 6,867 Chinook salmon consisted of 55.6% British Columbia, 34.0% West Coast US, 3.4% Southeast Alaska/Northeast Gulf of Alaska, 2.6% Cook Inlet, 1.9% Kodiak, and 1.6% Eastern Bering Sea group fish (Table 41; Figure 19). The British Columbia group harvest was 3,815 fish, West Coast US group was 2,333 fish, Southeast Alaska/Northeast Gulf of Alaska was 233 fish, Cook Inlet group was 182 fish, Kodiak group was 134 fish, and the Eastern Bering Sea group was 113 fish (Table 41; Figure 20).

In 2015, the total KMA harvest of 7,477 Chinook salmon consisted of 51.6% British Columbia, 33.9% West Coast US, 4.9% Southeast Alaska/Northeast Gulf of Alaska, 4.5% Cook Inlet, and 4.5% Kodiak group fish (Table 42; Figure 19). The British Columbia group harvest was 3,840 fish, West Coast US group was 2,526 fish, Southeast Alaska/Northeast Gulf of Alaska was 368 fish, Cook Inlet group was 334 fish, and the Kodiak group was 333 fish (Table 42; Figure 20).

In 2016, the total KMA harvest of 6,791 Chinook salmon consisted of 56.6% British Columbia, 30.6% West Coast US, 6.2% Southeast Alaska/Northeast Gulf of Alaska, 3.8% Cook Inlet, and 1.3% Kodiak group fish (Table 43; Figure 19). The British Columbia group harvest was 3,842 fish, West Coast US group was 2,075 fish, Southeast Alaska/Northeast Gulf of Alaska was 424 fish, Cook Inlet group was 260 fish, and the Kodiak group was 91 fish (Table 43; Figure 20).

Sport Harvest Estimates by Year

The stock composition of KRA marine sport fisheries largely paralleled those of commercial fisheries; the harvest was dominated by British Columbia and West Cost US stocks, with minor contributions from Southeast Alaska/Northeast Gulf of Alaska and Kodiak stocks (Tables 44–46; Figure 21). In 2014, when sampling occurred in both Larsen Bay and Kodiak, harvest was evenly split between British Columbia (46.1%) and West Coast US (44.1%), followed by Southeast Alaska/Northeast Gulf of Alaska with 6.8%. The British Columbia group harvest was 3,712

Table 4.–Chinook salmon, 2014–2016, Kodiak Management Area, Westward Region: Summary of commercial and sport fishery harvests and number of fish sampled and genotyped by area and temporal strata. Sample goals for all strata in the plan were 380 fish.

Geographic	District or	Temporal	2014				2015				2016			
Area	Section(s)	Stratum	Period	Harvest	Samp.	Anlyz.	Period	Harvest	Samp.	Anlyz.	Period	Harvest	Samp.	Anlyz.
NW Kodiak/Afognak	251, 253, 254	Early	6/1–7/5	975	657	379	6/1–7/5	1,526	567	380	6/1–7/5	1,004	583	379
		Late	7/6–8/5	846	406	380	7/6–8/5	932	404	380	7/6–8/5	1,094	453	379
		Post Sampling	>8/5	806	Not in Plan		>8/5	384	Not in Plan		>8/5	496	Not in Plan	
SW Kodiak/Alitak	255, 256, 257	Early	6/1–7/5	414	287	287	6/1–7/5	511	307	376[a]	6/1–7/5	347	310	310
		Late	7/6–8/5	1,280	426	378	7/6–8/5	2,042	496	378	7/6–8/5	427	291	291
		Post Sampling	>8/5	653	Not in Plan		>8/5	98	Not in Plan		>8/5	172	Not in Plan	
Eastside Kodiak/Afognak	258, 259, 252	Early	6/1–7/5	377	294	293	6/1–7/5	1,400	434	380	6/1–7/5	446	316	316
		Late	7/6–8/5	2,553	505	379	7/6–8/5	807	285	285	7/6–8/5	779	322	322
		Post Sampling	>8/5	56	Not in Plan		>8/5	71	Not in Plan		>8/5	12	Not in Plan	
Mainland	262	Early	6/1–7/5	Closed	No Samples		6/1–7/5	Closed	No Samples		6/1–7/5	1,263	461	379
		Late	7/6–8/5	422	475	379	7/6–8/5	229	282	282	7/6–8/5	1,431	453	379
		Post Sampling	>8/5	0	Not in Plan		>8/5	87	Not in Plan		>8/5	0	Not in Plan	
	Commercial Fishery Total			8,382	3,050	2,475		8,087	2,775	2,461		7,471	3,189	2,755
Sport Fishery	Kodiak Area	Annual	4/16–8/29	8,049	417	414	5/17–8/14	6,709	282	283	5/22–8/13	NA	441	441
	Commercial and Sport Fishery Total			16,431	3,467	2,889		14,796	3,057	2,744		7,471	3,630	3,196

[a] In 2015, 70 fish sampled on 7/6/2015 were included in the Early stratum.

Harvests Not Catch

Catch 3 times larger than harvests

Harvests

See page 4

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Non-Comment Responses

Non-Comment responses are respondents who selected the “Support” or "Oppose" button but did not leave a written comment through the ADF&G comments site.

Proposal	Position	Name
37	Oppose	Ann Mcwethy
37	Oppose	Bonny Mcwethy
37	Oppose	Charlie Johnson
37	Oppose	Charlie Johnson
37	Oppose	Chuck Mcwethy
37	Oppose	David Little
37	Oppose	Dylan Kavanaugh
39	Oppose	Samuel Holes Sr
45	Oppose	Samuel Holes Sr
46	Oppose	Samuel Holes Sr
47	Oppose	Samuel Holes Sr
48	Oppose	Samuel Holes Sr
49	Oppose	Samuel Holes Sr
51	Support	Brian Blondin
54	Oppose	Brian Blondin
55	Support	Brian Blondin
58	Oppose	Ann Mcwethy
58	Oppose	Bonny Mcwethy
58	Oppose	Brian Blondin
58	Oppose	Charles Mcwethy
58	Oppose	David Little
58	Oppose	Dylan Kavanaugh
58	Oppose	Leonard Carpenter
59	Oppose	Ann Mcwethy
59	Oppose	Bonny Mcwethy
59	Oppose	Brian Blondin
59	Oppose	Charles Mcwethy
59	Oppose	Charlie Johnson
59	Oppose	David Little
59	Oppose	Dylan Kavanaugh
59	Oppose	Leonard Carpenter
59	Oppose	Tollef Monson
60	Oppose	Ann Mcwethy
60	Oppose	Bonny Mcwethy
60	Oppose	Brian Blondin
60	Oppose	Charles Mcwethy
60	Oppose	Charlie Johnson
60	Oppose	David Little
60	Oppose	Dylan Kavanaugh
60	Oppose	Leonard Carpenter

60	Oppose	Tollef Monson
61	Oppose	Ann Mcwethy
61	Oppose	Bonny Mcwethy
61	Oppose	Brian Blondin
61	Oppose	Charlie Johnson
61	Oppose	Chuck Mcwethy
61	Oppose	David Little
61	Oppose	Dylan Kavanaugh
61	Oppose	Leonard Carpenter
61	Oppose	Tollef Monson
62	Oppose	Adelia Myrick
62	Oppose	Ann Mcwethy
62	Oppose	Bonny Mcwethy
62	Oppose	Charles Mcwethy
62	Oppose	David Little
62	Oppose	Dylan Kavanaugh
62	Oppose	Dylan Kavanaugh
62	Oppose	Leonard Carpenter
62	Oppose	Tollef Monson
63	Oppose	Ann Mcwethy
63	Oppose	Bonny Mcwethy
63	Oppose	Charlie Johnson
63	Oppose	Chuck Mcwethy
63	Oppose	David Little
63	Oppose	Dylan Kavanaugh
63	Oppose	Leonard Carpenter
63	Oppose	Tollef Monson
64	Oppose	Ann Mcwethy
64	Oppose	Bonny Mcwethy
64	Oppose	Brian Blondin
64	Oppose	Charlie Johnson
64	Oppose	Chuck Mcwethy
64	Oppose	David Little
64	Oppose	Dylan Kavanaugh
64	Oppose	Leonard Carpenter
64	Oppose	Ron Kavanaugh
64	Oppose	Tollef Monson
65	Oppose	Ann Mcwethy
65	Oppose	Bonny Mcwethy
65	Oppose	Charlie Johnson
65	Oppose	Chuck Mcwethy
65	Oppose	David Little
65	Oppose	Dylan Kavanaugh
65	Oppose	Leonard Carpenter
65	Oppose	Ron Kavanaugh
66	Oppose	Ann Mcwethy
66	Oppose	Bonny Mcwethy

66	Oppose	Charlie Johnson
66	Oppose	Chuck Mcwethy
66	Oppose	David Little
66	Oppose	Dylan Kavanaugh
66	Oppose	Leonard Carpenter
67	Support	Celeste Beck-Goodell
70	Oppose	Ann Mcwethy
70	Oppose	Bonny Mcwethy
70	Oppose	Chuck Mcwethy
71	Oppose	Ann Mcwethy
71	Oppose	Bonny Mcwethy
71	Oppose	Chuck Mcwethy
71	Support	Anitra Winkler
72	Oppose	Ann Mcwethy
72	Oppose	Bonny Mcwethy
72	Oppose	Charlie Johnson
72	Oppose	Chuck Mcwethy
73	Oppose	Ann Mcwethy
73	Oppose	Bonny Mcwethy
73	Oppose	Chuck Mcwethy
74	Oppose	Ann Mcwethy
74	Oppose	Brian Blondin
74	Oppose	Charles Mcwethy
74	Oppose	Charlie Johnson
74	Oppose	Chuck Mcwethy
75	Oppose	Ann Mcwethy
75	Oppose	Bonny Mcwethy
75	Oppose	Brian Blondin
75	Oppose	Chuck Mcwethy
76	Oppose	Ann Mcwethy
76	Oppose	Bonny Mcwethy
76	Oppose	Chuck Mcwethy
77	Oppose	Ann Mcwethy
77	Oppose	Bonny Mcwethy
77	Oppose	Chuck Mcwethy
283	Oppose	Dylan Kavanaugh
RC9/37 as amended	Oppose	Charlie Johnson
RC9/37 as amended	Oppose	Dylan Kavanaugh