Findings and Results from a Modified Optimum Numbers Study on the Cook Inlet Eastside Set Gillnet Fishery

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INTRODUCTION

One of the primary functions of the Alaska Commercial Fisheries Entry Commission (CFEC or "the commission") is to monitor the economic health of fisheries in Alaska. One of the main tools for monitoring economic health of a fishery previously limited by CFEC is called an "optimum numbers study" as defined in Alaska Statute (AS) 16.43.290. The statute reads in full:

> **AS 16.43.290. Optimum number of entry permits.**
> Following the issuance of entry permits under AS 16.43.270, the commission shall establish the optimum number of entry permits for each fishery based upon a reasonable balance of the following general standards:
>
> (1) the number of entry permits sufficient to maintain an economically healthy fishery that will result in a reasonable average rate of economic return to the fishermen participating in that fishery, considering time fished and necessary investments in vessels and gear;
>
> (2) the number of entry permits necessary to harvest the allowable commercial take of the fishery resource during all years in an orderly, efficient manner, and consistent with sound fishery management techniques;
>
> (3) the number of entry permits sufficient to avoid serious economic hardship to those currently engaged in the fishery, considering other economic opportunities reasonably available to them.

In late 2019, CFEC embarked on an optimum numbers study of the Cook Inlet salmon set gillnet permit category (S04H). As outlined in this report, permit holders in the Cook Inlet salmon set gillnet fishery are currently navigating a complex natural resource allocation situation. As the population of Alaskans residing in areas north of the east side of Cook Inlet increases, fishing time allocated to east side set gillnet permit holders has declined while harvests by non-commercial uses have increased. This, coupled with conservation issues related to the Kenai River king salmon, is both diminishing harvest opportunity and increasing economic distress for set gillnet permit holders on the east side of Cook Inlet.

While the 2019 study aimed to collect enough data to make informed decisions and recommendations, it achieved only a 12% response rate from participants. As a result of this small sample size, no significant statistical analysis could be performed, or reliable conclusions drawn to the high level of variance within the data.

In May 2022 CFEC renewed study efforts. Following visits with multiple set gillnet operators on the east side of Cook Inlet in July, CFEC determined there was adequate interest in continuing the work with two key changes as outlined below.

The first key change was that the revised study would not cover the entire Cook Inlet salmon set gillnet permit holder category, but rather focus exclusively on the east side set gillnet fishery. It is impossible to, in good judgement, treat the issues in the east side of Cook Inlet as equivocal to other areas of the Cook Inlet gillnet fishery, also referred to in this report interchangeably as the Upper Subdistrict of the Central District or simply the East Side Set Net fishery (ESSN). In making this decision, CFEC determined the results would not be entered into regulation which is common when an optimum numbers study is completed for a limited fishery.

Second, results would not prescribe an optimum number of permits for the fishery, but rather an optimum number of permits based on a level of fish harvested. It is impossible to accurately predict with any certainty what amount of harvest opportunity may be allowed under the current and future fisheries management regimes. Thus, any attempt at predicting how much an individual permit holder may harvest is confounded.

Optimum numbers studies typically look at decades worth of harvest information to come up with long term average harvests, which can be used to make a reasonable guess as to what future harvests may entail. It is impossible to come up with harvest projections based upon past averages due to the lack of a consistently prosecuted fishery over the recent years. The problem for the ESSN permit holders is not one of markets or resource availability, but rather access to the resource, and a rapidly changing allocative situation. With the exception of management measures taken from 2020 through 2022 linked to the conservation of Kenai River Chinook, the ESSN fishery has sustained constant reallocation away from it through policy decisions made by the Alaska Board of Fisheries (BOF, or "the board"), which are outlined in chapter 4 of this document. Arriving at a singular optimum number in this environment using standard methodology is simply unfeasible given these conditions.

Realizing the constraints mentioned previously, a new survey was designed and provided to permit holders in August of 2022. This new survey achieved a significantly higher response rate (40%). Subsequently, the survey results are reliable and numerous enough to draw conclusions from.

As previously mentioned, this report is not designed to determine the optimum number of set gillnet permit holders that should fish in the Upper Cook Inlet management area. Rather, this report provides an estimate of how many ESSN set gillnet permits could achieve minimum economic viability based on levels of sockeye harvest at various price points.

The long-term systemic problem faced by permit holders in this commercial fishery is the changing demographics in Alaska that continue to harvest increasing numbers of sockeye salmon. Conservation measures related to king salmon, coupled with declining fishing time, brings many in the fleet to voice concerns about the long-term financial health of the fishery. The ranges of permits provided here are meant to inform policy makers, both at the legislative level and in the Board of Fisheries, of the approximate number of permits that could be seen to achieve economic viability on a yearly basis, based upon the level of allocation afforded to the ESSN fishery.

CHAPTER 1: PARTICIPATION TRENDS IN THE COOK INLET COMMERCIAL SALMON FISHERY, 1975-2021

Commercial salmon fishing in Cook Inlet first occurred in the 1880's. Early settlers flocked to the region, tapping into the abundant fish runs. Canneries and fish traps became the norm, and subsequently salmon run failures in the 1940's and 50's.[1]

At statehood, the Alaska Department of Fish and Game (ADFG or "the department") began managing the fishery with policy direction from the Alaska Board of Game and Fisheries.[2] The Cook Inlet set gillnet fishery was one of the original fisheries listed as distressed in the original Limited Entry Act (Act) passed in 1973. The Act created CFEC and by the close of 1975 the commission issued 652 permanent permits with 377 pending interim-use permits for the Cook Inlet set gillnet fleet. By 1980 most disputes were settled and the number of permits rests at 746 as of 2022.

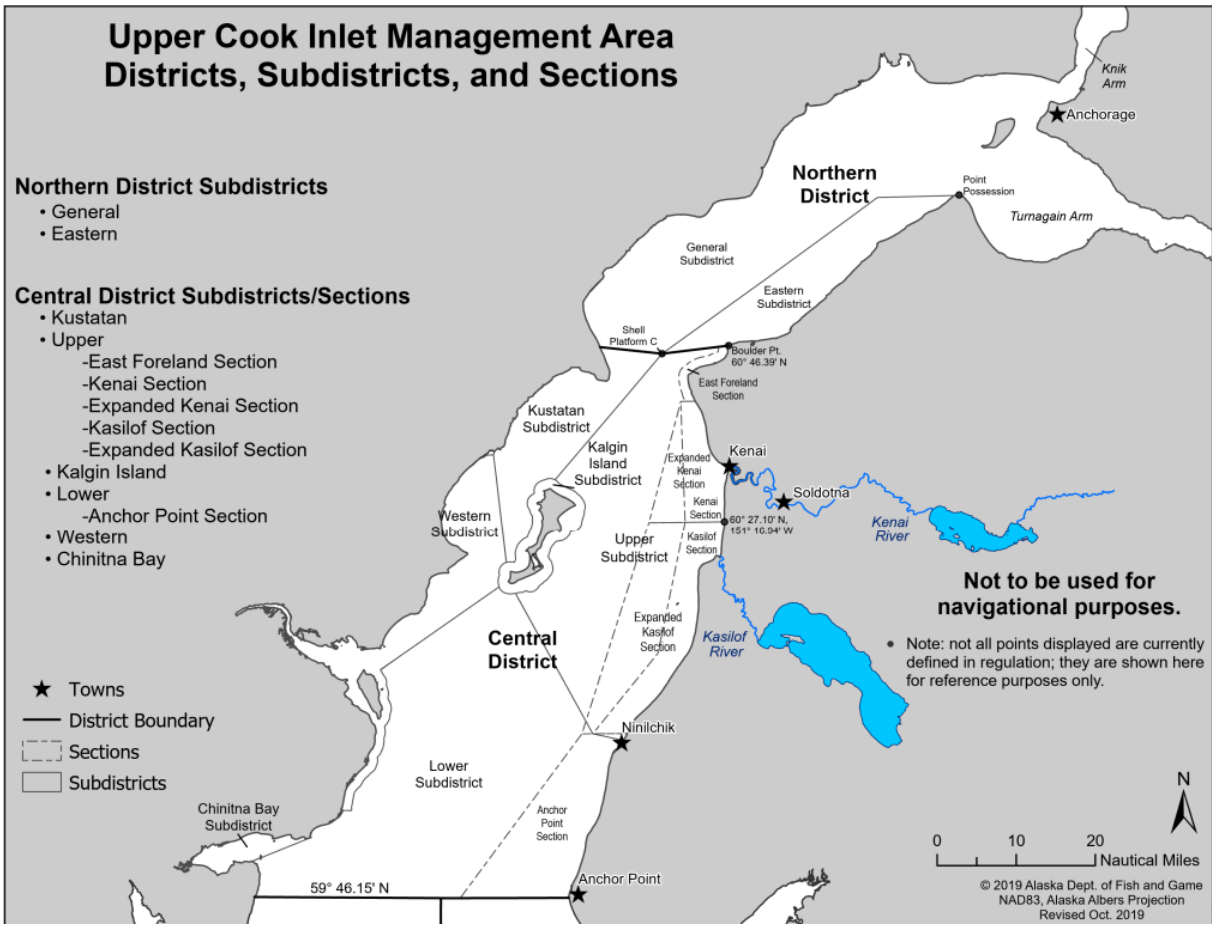

Figure 1. Upper Cook Inlet Salmon Management Areas
(https://www.adfg.alaska.gov/static/fishing/PDFs/commercial/maps/UCI_Districts_Subdistricts_Sections.pdf)

[1] Secrist, Katie, Rutz, Joe. 2014. The History of Upper Cook Inlet Salmon Fisheries: A Century of Salmon. Alaska Department of Fish & Game.
[2] In 1975 the Alaska Legislature separated the Alaska Board of Game and Fisheries into two boards, the Board of Game and the Board of Fisheries.

Following limited entry, early fishing in Cook Inlet was disbursed between the three districts: Northern, Central, and Southern[3] (Figure 1). Each of the districts are made up of subdistricts. At the beginning of limited entry, any set gillnet permit holder could fish in any district by moving in-season to fish elsewhere. In 1977, two years into limited entry, the number of permit holders who reported harvests in each of the districts was 145 in the Northern District, 377 in the Central District, and 22 in the Southern District. Within the Central District, of the 377 total permits with deliveries, 279 fished in the Upper Subdistrict, also referred to as the ESSN (Table 1).

The general distribution of harvest patterns remained consistent through the 80's. Starting in 1988, the Kenai and Kasilof Rivers began sustaining significant increases in sockeye salmon runs. Set gillnet operations followed in mass to the East Side of the Upper Subdistrict (Figure 1). In 1984 a total of 423 permits made deliveries in the ESSN fishery; in 1989 that number increased to 511 permits that made deliveries. Starting in 1993, to address this substantial shift in harvest effort, the Board of Fisheries ("the board") required preseason registration of set gillnet permit holders that prevented migration to different districts in-season. Table 1 highlights the number of set net permits reporting harvest in the Cook Inlet districts.

The changing distribution of harvest effort logically tracts with harvest amounts with one notable exception. Table 2 provides harvest levels by district with the Upper Subdistrict separated out in five-year averages. It can be noted starting in periods after 2000 the harvest levels for the Northern, Southern, and all non-Upper Subdistricts of the Central districts had fairly consistent harvest patterns, increasing and decreasing to some degree although maintaining certain harvest strength. Over the same period the number of permit holders with deliveries in those districts remained reasonably stable (Table 1).

In contrast, the Upper Subdistrict enjoyed relatively consistent harvests for the first decade of the 21st century before annual harvests fell precipitously. When juxtaposing falling harvests with consistent participation levels in the Upper Subdistrict, it demonstrates that operators continue to show up to the fishing grounds, but harvest levels shared among those operators are much declined.

[3] The Southern District is located in the Lower Cook Inlet management area.

Table 1. Commercial Setnet Permit (S04H) Holders with Deliveries by District and Select Subdistricts, 1975 – 2021

Year	Central District						Northern District			Southern District
	Chinitna and Lower Bay Subdistricts	Kalgin Island Subdistrict	Kustatan Subdistrict	Western Subdistrict	Upper Subdistrict	Total Central District	General Subdistrict	Eastern Subdistrict	Northern District Total	
1975	7	42	15	57	279	388	91	54	144	22
1976	9	43	11	53	273	380	92	56	145	23
1977	7	36	12	62	279	377	100	48	145	22
1978	6	45	20	70	318	436	121	59	169	33
1979	11	48	20	75	306	431	126	58	174	34
1980	10	43	14	69	288	412	111	53	159	35
1981	5	46	9	64	297	410	103	53	153	37
1982	10	45	10	65	297	414	106	49	151	38
1983	9	42	17	65	315	433	120	50	168	36
1984	5	37	16	70	306	423	125	54	177	34
1985	4	40	17	79	315	439	117	54	169	34
1986	7	35	28	73	330	457	129	54	181	34
1987	5	40	20	56	361	472	126	55	175	29
1988	9	45	23	92	429	508	146	66	194	27
1989	8	33	53	55	418	511	131	52	169	22
1990	9	45	37	53	447	528	128	50	173	20
1991	7	30	50	50	425	505	137	48	181	20
1992	4	31	47	52	443	523	134	46	174	20
1993	Confidential	27	22	40	434	509	90	39	121	17
1994	6	30	24	42	423	494	85	36	114	15
1995	Confidential	33	17	32	413	487	90	35	118	23
1996	Confidential	30	18	29	403	470	84	35	113	24
1997	Confidential	25	14	20	429	482	91	34	118	23
1998	Confidential	26	9	24	376	434	72	33	97	24
1999	Confidential	23	11	28	376	432	68	37	102	20
2000	.	23	14	29	353	408	68	31	96	24
2001	.	24	9	26	336	390	59	37	88	18
2002	.	19	9	25	344	394	39	22	61	24
2003	.	22	8	25	338	386	35	22	57	24
2004	.	18	10	29	351	399	37	24	60	19
2005	.	25	8	26	350	404	45	23	65	17
2006	Confidential	22	9	26	333	387	35	26	60	19
2007	.	22	9	25	336	387	42	28	70	16
2008	.	27	8	24	322	373	50	30	79	18
2009	.	24	10	26	323	366	53	30	78	19
2010	.	29	10	26	327	380	54	31	81	21
2011	.	28	11	24	381	438	57	25	81	21
2012	Confidential	25	8	24	295	351	39	28	65	15

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Year	Central District						Northern District			Southern District
	Chinitna and Lower Bay Subdistricts	Kalgin Island Subdistrict	Kustatan Subdistrict	Western Subdistrict	Upper Subdistrict	Total Central District	General Subdistrict	Eastern Subdistrict	Northern District Total	
2013	Confidential	28	9	21	348	405	37	27	64	18
2014	.	26	10	19	360	411	44	31	75	19
2015	Confidential	28	9	21	371	427	46	31	77	24
2016	Confidential	30	10	22	381	438	39	27	66	23
2017	Confidential	28	10	20	363	417	44	32	76	23
2018	Confidential	29	14	21	357	416	38	34	71	24
2019	Confidential	24	13	20	363	415	40	31	71	22
2020	Confidential	26	17	25	316	375	36	32	68	23
2021	.	26	13	21	344	399	34	26	60	21
1982 - 1991 Avg	.	*39*	*27*	*66*	*364*	*469*	*127*	*53*	*174*	*29*
1992 - 2001 Avg	.	*27*	*19*	*32*	*399*	*463*	*84*	*36*	*114*	*21*
2002 - 2011 Avg	.	*24*	*9*	*26*	*341*	*391*	*45*	*26*	*69*	*20*
2012 - 2021 Avg	.	*27*	*11*	*21*	*350*	*405*	*40*	*30*	*69*	*21*

Table 2. Harvest in Pounds of Sockeye Salmon for Cook Inlet Management Area Districts in 5-Year Averages, 1975 – 2021

District	1975–1979	1980–1984	1985–1989	1990–1994	1995–1999	2000–2004	2005–2009	2010–2014	2015–2019	2020–2021
Northern District	1,441,781	2,424,636	2,696,834	1,737,691	1,032,046	611,752	401,716	405,101	636,415	635,229
% Change		68%	11%	-36%	-41%	-41%	-34%	1%	57%	0%
Central District										
Upper Subdistrict	4,578,525	6,528,156	18,911,927	11,041,935	7,769,985	8,431,757	9,078,222	6,324,408	5,089,318	1,715,762
% Change		43%	190%	-42%	-30%	9%	8%	-30%	-20%	-66%
All other Central District	1,418,680	1,725,509	2,180,611	1,086,678	700,679	765,273	823,383	800,508	709,802	577,374
% Change		22%	26%	-50%	-36%	9%	8%	-3%	-11%	-19%
Southern District	527,875	467,932	259,457	183,162	426,197	333,307	185,533	181,142	341,868	172,697
% Change		-11%	-45%	-29%	133%	-22%	-44%	-2%	89%	-49%
Upper Cook Inlet Total	7,966,860	11,146,232	24,048,829	14,049,467	9,928,907	10,142,089	10,488,854	7,711,159	6,777,403	3,101,061
% Change		40%	116%	-42%	-29%	2%	3%	-26%	-12%	-54%

CHAPTER 2: EAST SIDE SET NET FISHERY

In the Upper Cook Inlet commercial salmon fishery there are drift gillnet, set gillnet, and purse seine fisheries.[4] No purse seine deliveries have occurred in Upper Cook Inlet since 1988, and effectively the only two gear types in Upper Cook Inlet are set gillnets and drift gillnets. A large majority of the set gillnet permit holders operate in the Central District's Upper Subdistrict, or ESSN. This section describes the ESSN regulatory structure, the area, and how the fishery generally occurs.

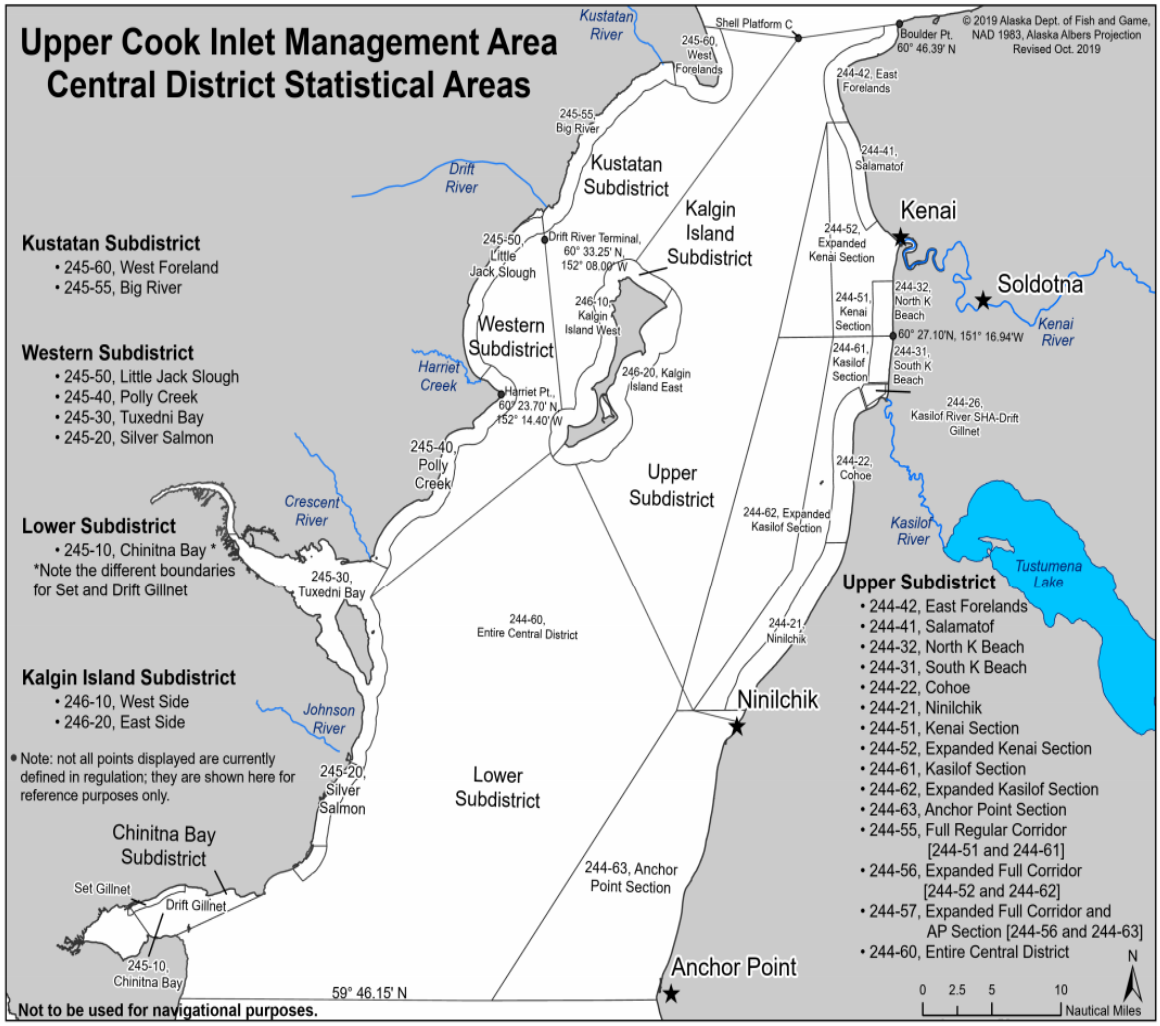


Figure 2: Map of the Upper Cook Inlet Salmon Management Area Central District from the Alaska Department of Fish and Game (https://www.adfg.alaska.gov/static/fishing/PDFs/commercial/maps/UCI_Central_District_StatAreas.pdf)

The Regulatory Structure and Fishing Areas

The Alaska Board of Fisheries established in regulation two districts in the Upper Cook Inlet salmon fishery, the Central District, and the Northern District (Figure 1).

[4] Purse seine fishing is allowed only in the Chintina Bay Subdistrict, however this fishery has not occurred since 1988.

There are many subdistricts in the Central District including the Upper Subdistrict (Figure 2). The ESSN fishery is contained entirely within the Upper Subdistrict along the northwest coast of the Kenai Peninsula. For the purposes of managing the set gillnet fishery in the Upper Subdistrict, it is divided into three sections: the Kasilof Section, the Kenai Section, and the East Foreland Section. Management actions are often taken in accordance with these geographical divisors; however, the Kenai Section and the East Foreland Section are often included in management actions together.

The ESSN fishery is broken down further by 6 distinct fishing statistical areas. The six statistical areas, running from south to north include: Ninilchik, Cohoe, South Kalifornsky Beach (or "South-K Beach"), North Kalifornsky Beach (or "North-K Beach"), Salamatof, and East Foreland. The southernmost three statistical areas are in the Kasilof Section. The North-K Beach and Salamatof statistical areas are in the Kenai Section. The East Foreland Section is comprised solely of the East Foreland statistical area. Figure 3 illustrates a more detailed view of the ESSN, with leased DNR tracts shown in green. As will be seen in following maps of each statistical area, it is noted that a greater concentration of leased DNR sites can be observed in the center of the ESSN fishery area near the mouths of the Kenai and Kasilof rivers.

Current regulations provide that the Kasilof Section may generally fish from June 25-August 15, while the Kenai and East Foreland Sections fish from July 8-August 15, provided ADFG does not modify the openings based upon the abundance of local salmon stocks at the time. With these dates in regulation, set gillnet

Figure 3: The East Side Set Gillnet (ESSN) fishery highlighted through Alaska Department of Natural Resource's (DNR) Alaska Mapper. DNR leased tracts highlighted in green.

operations in Ninilchik, Cohoe, and South-K Beach will start fishing before their counterparts in the East Foreland and Kenai sections (5 AAC 21.310)[5].

Unless modified by ADFG through emergency order, set gillnet sites may extend out to one mile from shore (mean high tide mark) in the Salamatof and East Foreland statistical areas, and one and one-half miles in the remaining ESSN statistical areas.

Table 3. Coordinates and Shore Fishery Lease Data by Statistical Area, 2022

		Location Boundaries			
Stat Area	**Name**	**South**	**North**	**DNR Leases**	**DNR Tracts**
244-21	Ninilchik	60⁰ 04.02'	60⁰ 12.75'	16	27
244-22	Cohoe	60⁰ 12.75'	1 mile south of Kasilof River	37	50
244-31	South K. Beach	1 mile north of Kasilof River	60⁰ 27.10'	49	69
244-32	North K. Beach	60⁰ 27.10'	60⁰ 30.32'	52	59
244-41	Salamatof	60⁰ 34.09'	60⁰ 40.35'	52	61
244-42	East Foreland	60⁰ 40.35'	60⁰ 46.39'	12	17
			Total	218	283

Note: The outside boundary for these setnet locations is as follows: South of the Kenai River, setnets may fish out to 1.5 miles from mean high tide: North of the Kenai River, they may only fish out to 1.0 miles from mean high tide.

Alaska set gillnet operators may lease tracts of marine water sites from the Alaska Department of Natural Resources (DNR). Essentially, a lessee of a tract has priority to fish in that site, but in their absence, another permitted commercial operator may fish in that location. Leased tracts in Cook Inlet are long-standing. Not all waters are leased, but prime fishing locations are generally long established, have associated infrastructure, and portray the most attractive spots. A single lease can have up to three associated tracts. As of December 2022, there are 218 leased sites in the ESSN, containing a total of 283 tracts (Table 3).

Prior to each season permit holders register with ADFG to fish one of three specific registration areas: the Northern District Area, the Upper Subdistrict Area, and the Greater Cook Inlet Area (5 AAC 21.345). Starting in 2014, ESSN permit holders could indicate if they are fishing in groups, also referred to as "operations" in this report. When registering online, permit holders also indicate which statistical area they are planning to fish. When an operation makes a delivery, the fish ticket records the statistical area where the harvest occurred. Through this reporting procedure, harvest statistics in each statistical area are tracked.

Table 4. ESSN Permit Holders Registration by Statistical Area, 2010-2021

Year	**Ninilchik**	**Cohoe**	**South K Beach**	**North and South K Beach***	**North K Beach**	**Salamantof**	**East Foreland**	**Total**
2010	96	106	61	42	24	54	12	395
2011	103	95	59	31	40	61	39	428
2012	101	95	54	31	46	59	30	416
2013	114	103	55	34	43	65	31	445
2014	117	98	52	31	51	64	34	447
2015	115	108	37	34	43	56	36	429
2016	100	126	40	39	51	58	39	453
2017	96	113	32	37	56	58	37	429
2018	99	120	35	35	52	60	36	437
2019	98	120	32	36	54	62	38	440
2020	97	115	28	37	42	55	33	407
2021	107	116	59	-	49	59	38	428
Annual Average	104	110	45	35	46	59	34	432

Note: Starting in 2020, the option to register in a combined North and South Kalifornsky Beach area was no longer available.

From 2000 through 2021, anywhere from 550 to 650 set gillnet permit holders registered to fish the entire Upper Cook Inlet Management Area, with an average of 597 permits registered per year. Since 2010 an

[5] ADFG. 2020. 2020 – 2022 Cook Inlet Area Salmon Commercial Fishing Regulations. Alaska Department of Fish and Game, Juneau.

average of 432 permits have operated per year. A higher proportion of permits operated in the southernmost sections of Ninilchik and Cohoe, with the remaining areas somewhat evenly divided with 35 to 60 permits operating, varying by year (Table 4).

General Attributes of the East Side Set Net Fishery

Each statistical area within the ESSN fishery has unique patterns of salmon migration, tidal influences, and other considerations. Fishing techniques are uniquely developed for specific areas to harvest sockeye as they migrate towards the Kasilof and Kenai rivers.

While ESSN operations harvest all five salmon species, the targeted species are sockeye salmon bound for the Kasilof and Kenai rivers. Kasilof River sockeye salmon begin entering the river in early June and run through the middle of August with the majority of the run occurring from the end of June through the latter half of July. Kenai River sockeye salmon run slightly later, traveling 12 miles further north they typically enter the river starting in late June. Kenai River sockeye salmon surge quickly reaching a peak towards the end of July, mostly completing their migration into freshwater by the middle of August.

The Kenai River sockeye salmon run is significantly larger than the Kasilof River sockeye salmon run. As of 2021, the 10-year average for Kenai River sockeye escapement was 1,322,234 fish. The Kasilof River's average escapement over the same time was 420,769 fish (Appendix A).

Tides are watched closely by ESSN operators. Tidal forces are swift and greatly impact the routes traveled as well as migration timing of sockeye salmon. The strong tidal forces in Cook Inlet cause outflowing freshwater from the Kenai and Kasilof rivers to be pushed north. As salmon migrate towards their natal rivers, they follow the scent of the water from their streams of origin. As a result, salmon often pass the mouth of their target river. As salmon follow the scent to its point of origin, they head south, and eventually the salmon head to their river, often hugging the shore.

As sockeye salmon enter Cook Inlet swimming towards their natal river, they move closer to shore the closer they get to their home river system. While a great deal of sockeye salmon are caught by the drift gillnet fleet off shore, set gillnet sites are successful because they line up on or near the shore where the fish are swimming. Set gillnet sites that are closest to the river enjoy most of their success near shore, while operators further south find success farther off the beach.

Dependence on Sockeye Salmon

As mentioned, sockeye salmon is the targeted species for the ESSN fishery. Table 5 provides harvest totals by ESSN operators from 1975 through 2021. Up until the 1990's, sockeye made up anywhere between 70-80% of total harvest poundage, and 80-90% of the total value of the fishery. However, once large sockeye salmon runs started to hit the Kasilof and Kenai Rivers in the late 80's, that proportion of sockeye salmon increased well into the 90 to 95 percentiles. Remarkably, with shortened seasons in 2020 and 2021 due to king salmon conservation measures, sockeye harvests were upwards of 98% of the total salmon harvest.

Table 5. East Side Set Gillnet Fishery Sockeye Salmon Harvest and Value, 1975-2021

Year	Sockeye Pounds	Other Pounds	Sockeye % of Total Harvest	5-Year Average Sockeye Harvest	Sockeye Value	Other Salmon Value	Sockeye % of Total Value	5-Year Average Sockeye Value
1975	1,001,638	894,437	53%		$ 631,032	$ 405,006	61%	
1976	2,982,343	2,688,768	53%		$ 2,266,581	$ 1,207,266	65%	
1977	5,418,657	904,159	86%		$ 4,687,138	$ 650,529	88%	
1978	4,792,415	2,205,506	68%		$ 6,325,988	$ 1,255,191	83%	
1979	1,490,157	533,771	74%	67%	$ 2,101,121	$ 653,750	76%	75%
1980	3,101,554	1,663,000	65%	69%	$ 2,636,321	$ 841,753	76%	78%
1981	3,056,221	554,673	85%	76%	$ 3,679,690	$ 576,165	86%	82%
1982	6,534,453	3,029,922	68%	72%	$ 7,174,829	$ 1,466,117	83%	81%
1983	9,733,792	847,525	92%	77%	$ 7,241,941	$ 619,552	92%	83%
1984	2,668,547	1,450,563	65%	75%	$ 2,585,822	$ 636,718	80%	84%
1985	8,331,792	1,144,211	88%	80%	$ 10,714,685	$ 1,046,646	91%	87%
1986	8,859,812	3,255,476	73%	77%	$ 12,766,989	$ 1,295,532	91%	87%
1987	22,623,089	1,508,870	94%	82%	$ 35,043,165	$ 1,438,603	96%	90%
1988	15,809,921	1,686,139	90%	82%	$ 40,252,059	$ 1,775,330	96%	91%
1989	30,251,162	1,080,839	97%	88%	$ 52,062,250	$ 897,260	98%	94%
1990	7,040,415	1,167,415	86%	88%	$ 12,032,069	$ 577,915	95%	95%
1991	4,478,526	339,473	93%	92%	$ 4,729,323	$ 263,264	95%	96%
1992	18,550,640	1,683,206	92%	91%	$ 29,588,271	$ 763,883	97%	96%
1993	11,272,505	807,915	93%	92%	$ 11,644,498	$ 593,883	95%	96%
1994	7,849,669	2,019,816	80%	89%	$ 11,421,268	$ 976,969	92%	95%
1995	5,152,435	835,574	86%	89%	$ 6,095,331	$ 532,041	92%	94%
1996	9,134,441	993,541	90%	88%	$ 10,915,657	$ 472,694	96%	95%
1997	11,723,129	561,038	95%	89%	$ 13,598,830	$ 378,753	97%	94%
1998	2,635,092	1,547,675	63%	83%	$ 2,924,952	$ 338,845	90%	93%
1999	5,888,614	341,919	95%	86%	$ 7,961,406	$ 325,040	96%	94%
2000	3,222,959	253,982	93%	87%	$ 2,858,765	$ 156,524	95%	95%
2001	4,899,710	254,806	95%	88%	$ 3,209,310	$ 139,639	96%	95%
2002	7,922,250	1,349,582	85%	86%	$ 4,476,071	$ 351,761	93%	94%
2003	9,966,302	452,693	96%	93%	$ 6,717,288	$ 381,912	95%	95%
2004	12,687,730	1,148,258	92%	92%	$ 9,338,169	$ 746,361	93%	94%
2005	14,520,952	724,934	95%	93%	$ 13,504,485	$ 758,900	95%	94%
2006	6,514,479	1,182,488	85%	91%	$ 6,944,435	$ 541,074	93%	93%
2007	8,166,310	665,943	92%	92%	$ 8,149,977	$ 681,681	92%	93%
2008	7,404,417	572,844	93%	91%	$ 9,277,762	$ 636,520	94%	93%
2009	5,277,884	358,795	94%	92%	$ 6,681,801	$ 331,341	95%	94%
2010	6,543,763	979,265	87%	90%	$ 11,451,585	$ 635,266	95%	94%
2011	12,043,717	315,815	97%	93%	$ 17,258,646	$ 566,212	97%	95%
2012	621,805	692,360	47%	84%	$ 924,624	$ 285,774	76%	91%
2013	5,411,586	98,520	98%	85%	$ 11,764,788	$ 188,194	98%	92%
2014	4,025,489	888,206	82%	82%	$ 8,417,297	$ 390,874	96%	92%
2015	7,536,914	319,811	96%	84%	$ 11,296,526	$ 501,862	96%	93%
2016	5,686,220	742,567	88%	82%	$ 8,536,594	$ 593,813	93%	92%
2017	4,668,996	524,893	90%	91%	$ 8,629,806	$ 732,754	92%	95%
2018	1,386,263	149,238	90%	89%	$ 2,954,178	$ 173,022	94%	94%
2019	4,260,758	168,918	96%	92%	$ 8,240,739	$ 187,261	98%	95%
2020	1,401,157	52,532	96%	92%	$ 2,223,416	$ 51,874	98%	95%
2021	1,941,240	36,594	98%	94%	$ 3,714,528	$ 61,261	98%	96%

Area Descriptions

Ninilchik (Statistical Area 244-21)

The southernmost section in the ESSN, the Ninilchik statistical area, starts along the beach at longitude 60° 04.02' N. and runs north to latitude 60° 12.75' N. Locals describe the area as starting just north of Ninilchik at about Milepost 133 on the Sterling Highway continuing north to Milepost 119 just south of Clam Gulch for just over 13 miles (Figure 4).

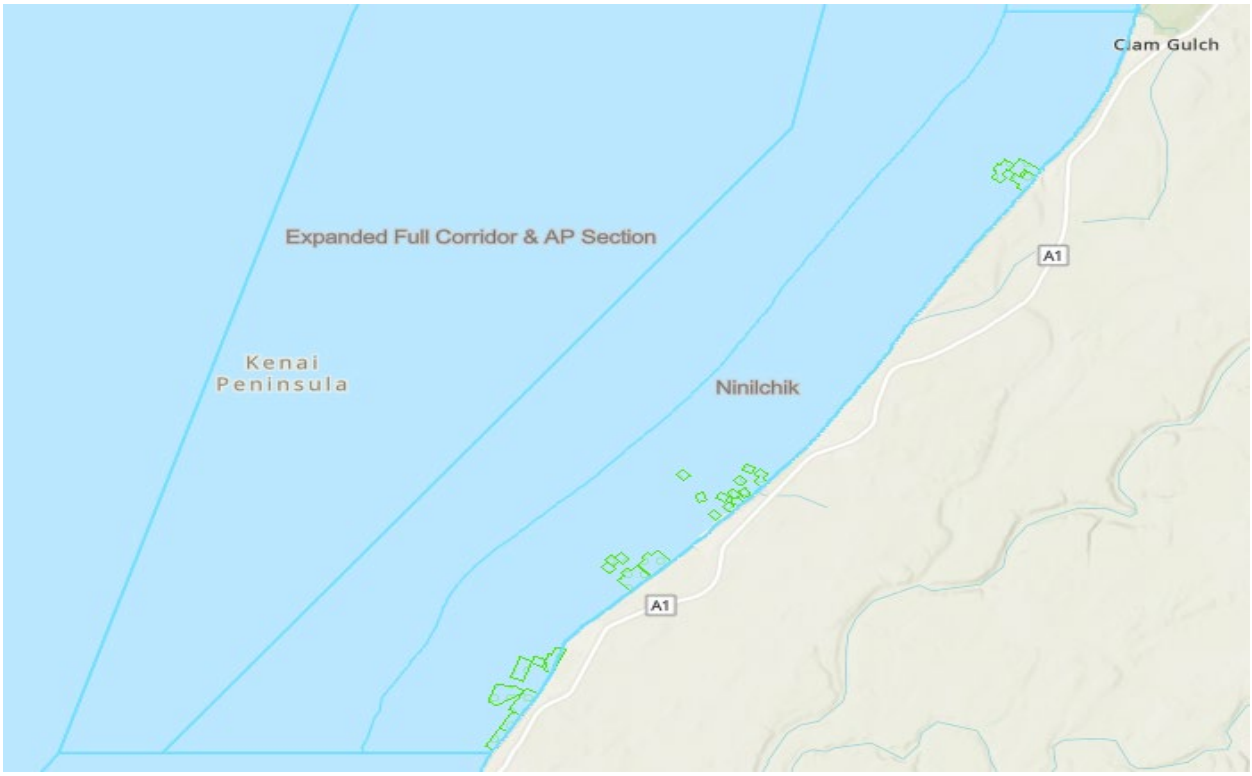


Figure 4: Ninilchik Statistical Area (244-21), DNR Alaska Mapper. DNR leased track are outlined in green.

In contrast to fishing near the mouths of the rivers, fishing at the southern end is more successful when nets are anchored further out into the water to intercept migrating salmon before they work their way closer towards shore. Operations are also often able to set up their sites off a portion of beach, and fish adjacent waters without other permit holders coming in.

Unlike operations closer to the mouth of the Kenai River, the Ninilchik fishery is more methodical. Harvests are steady throughout the season and fishing time is valuable throughout.

Operators in Ninilchik target sockeye bound for both rivers. However, given that these operators are afforded an earlier start date and are more proximate to the Kasilof River, that stock of fish is important to make their operation profitable. On average there are just over 100 permit holders registered to fish in the Ninilchik area. Roughly 60% of the permit holders register as a group. The average number of groups per year is 13, with almost five permits in each group. There are 16 DNR shoreside fisheries leases, making up 27 separate tracts. These tracts are set in five distinct areas and belong to several of the longtime family operations in the area.

Cohoe (Statistical Area 244-22)

Starting at its southernmost point at latitude 60° 12.75' N., a little south of Clam Gulch, the Cohoe statistical area runs due north up the coast, rounds Cape Kasilof and goes until one mile south of the Kasilof River. The area runs along approximately 11.5 miles of coast (Figure 5).

Operations condense throughout the Cohoe statistical area as they move north. Leases further offshore are in a good position to harvest Kenai River bound sockeye salmon as they move around the cape heading north; this is evidenced by DNR leased sites further off the coast. The effort to harvest Kasilof River bound sockeye salmon closer to the river is evident in the number of set gillnet lease sites closer to the mouth.

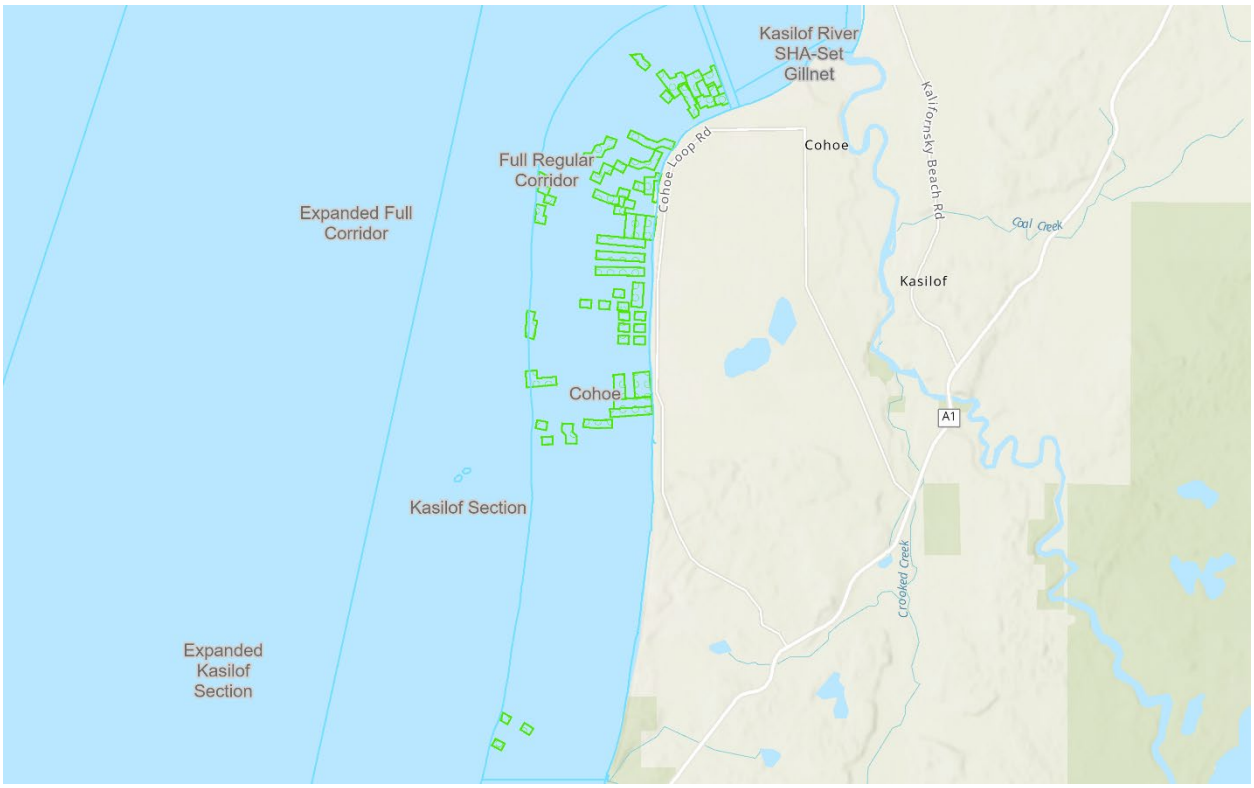


Figure 5: Cohoe Statistical Area (244-22): DNR Alaska Mapper. Lease DNR tracts highlighted in green.

As noted earlier, this area normally has the most permits registered to fish, with an annual average of 114 over the last ten years. The typical number of groups is upwards of 18 with between four to five permits per group. Approximately 70% of the permit holders who are registered to fish in this statistical area report fishing in groups, higher than Ninilchik. After both the South and North Kalifornsky Beach statistical areas, this is the most densely packed fishing area. There are 37 DNR lease sites in the Cohoe statistical area making up to 50 tracts.

South Kalifornsky Beach (Statistical Area 244-31)

Starting a mile north of the Kasilof River, the South-K Beach statistical area runs less than three and a half miles up the beach to the "Blanchard Line" – a regulatory boundary named after a long-time family operation in the area that sits at 60° 27.10' N. This statistical area is the smallest of the six within the ESSN (Figure 6).

Operators here indicate that returning Kasilof River sockeye are an important targeted stock, as well as Kenai River sockeye salmon returning later in the season. As described in general terms earlier, returning Kasilof

River salmon follow the scent of their natal streams as it is pushed north in a strong tidal surge that pushes outflowing freshwater further into the Cook Inlet. Sockeye salmon will return southbound on their way back as the tide ebbs and are harvested in this area.

While the South K-Beach statistical area is small, many set net operations exist. From 2014 through 2020, operators in the South Kalifornsky Beach statistical area had the option of registering in a combined North and South Kalifornsky Beach statistical area; this option was not available after 2020. When taking the steady operators who reported harvest for the combined area in 2021 and apportioning them accordingly, the average number of permits in this area increased from the 45 listed on Table 4 to approximately 51 permits. Typically, upwards of eight groups fished in this statistical area with an annual average of just over four permits per group. Similar to the Cohoe statistical area, just under 70% of the permit holders report as groups. With approximately 14 permits for every mile of beach, this is the most densely fished area. There are 49 DNR leases which include a total of 69 tracts.

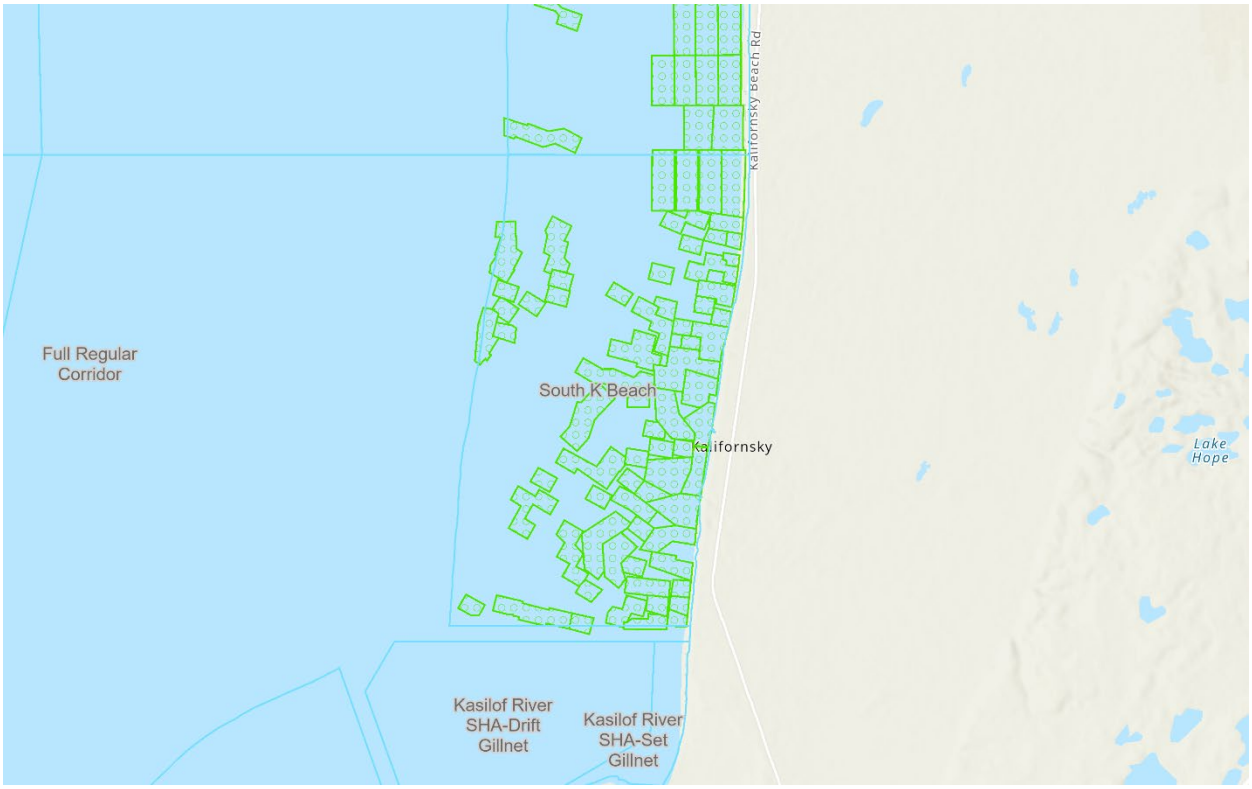


Figure 6: South Kalifornsky Beach Statistical Area (244-31): DNR Alaska Mapper. Leased DNR tracts highlighted in green.

North Kalifornsky Beach (Statistical Area 244-32)

The North-K Beach statistical area takes off north of the Blanchard Line and runs until reaching the southern closed waters marker near the mouth of the Kenai River at 60° 30.32' N. This statistical area is just slightly longer than the South-K Beach statistical area and is just under four miles in length (Figure 7).

As the southernmost area of the Kenai Section, this area is where we start to see a great deal of Kenai River bound sockeye salmon harvested. Kenai sockeye salmon pulse into the river over a shorter timeframe than Kasilof sockeye salmon, making the fishery both shorter and more intense in nature.

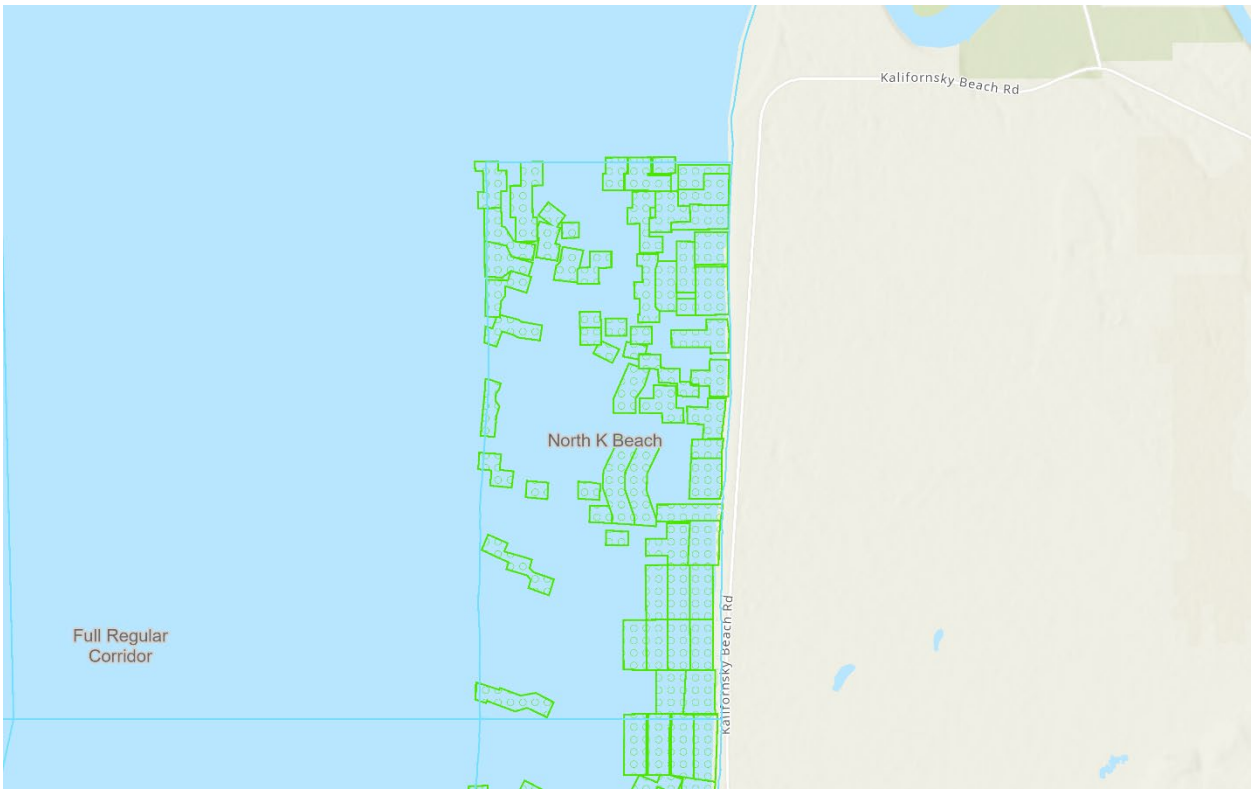


Figure 7: North Kalifornsky Beach Statistical Area (244-32): DNR Alaska Mapper. Leased DNR tracts highlighted in green.

After reassigning traditional North-K Beach harvesters who signed up for the combined area back to North-K Beach, there are on average about 57 permit holders in this area annually. There is a great focus on fishing in groups in this area, with 7 groups normally registering, and 5 to 6 permits per group. Currently there are 52 DNR shoreside fishery leases accounting for 57 tracts.

Salamatof (Statistical Area 244-41)

The Salamatof statistical area starts from the closed waters mark north of the Kenai River and pushes about 8 miles up the coast. This gently curving beach is home to some the oldest fishing operations in the Kenai area (Figure 8).

Similar to the South-K Beach statistical area, the Salamatof statistical area is the recipient of strong tides pushing outflowing freshwater north and causing significant mixing. Schools of Kenai River sockeye often pass the Kenai River, with the ebb tide bringing them back. Prime locations are near shore with very little activity occurring with any success farther from the beach according to area fishers. The window for a successful season here is more condensed than elsewhere and openings when the tides are strong are important. When sockeye returns and tidal conditions are good, some operations report more fish in a single opening than what other operations in other areas get in a season.

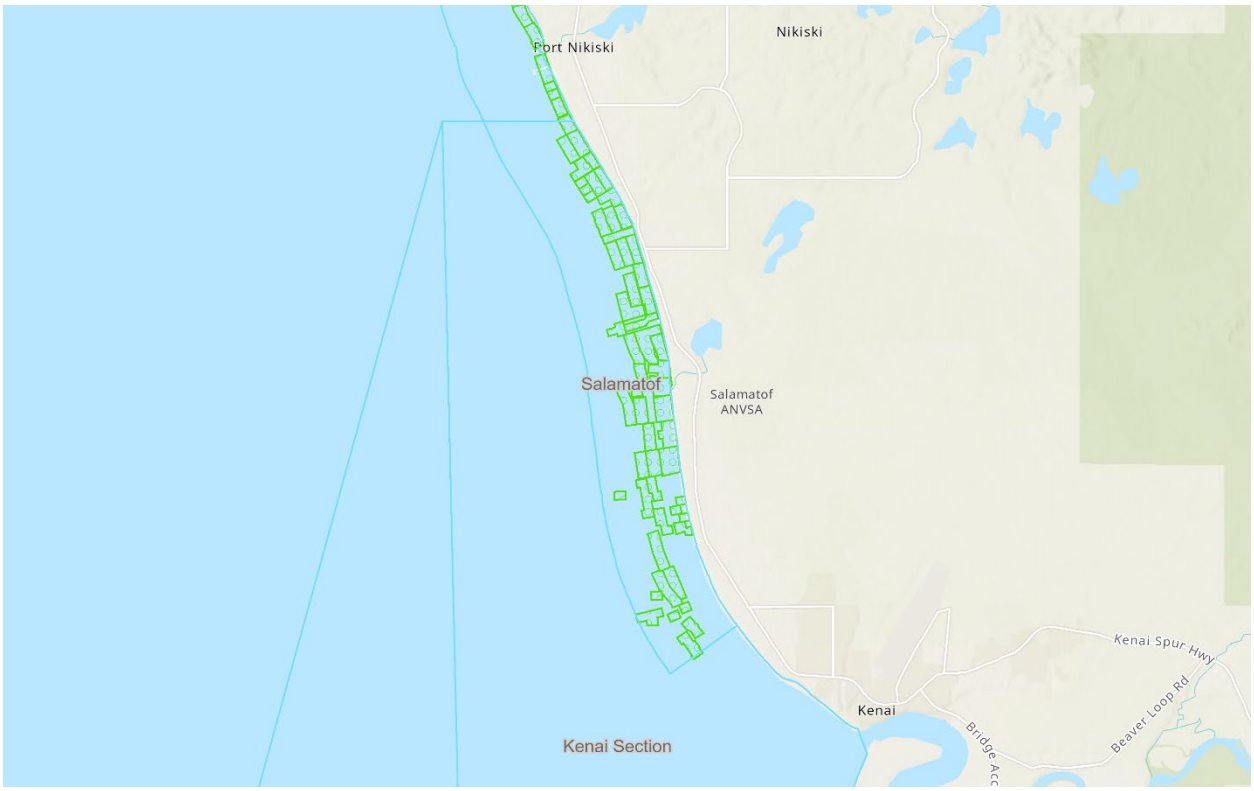


Figure 8: Salamatof Statistical Area (244-41): DNR Alaska Mapper

There are similar numbers of permit holders fishing the Salamatof statistical area as in South and North Kalifornsky Beach statistical areas, with 59 registrations as an annual average. Numbers indicate group fishing is more prevalent here than in other places, albeit by a small margin, with about 71% of the permits registering as a group. While group registration is more common – some 11 groups usually – these groups are much smaller, with an average of just under four permits per group, due to the relative ineffectiveness of fishing further offshore. DNR reports there are 52 leases making up 61 tracts.

East Foreland (Statistical Area 244-42)

The northernmost statistical area within the ESSN, East Foreland, runs from the north end of Salamatof Beach around the eastern forelands, and ending just past Boulder Point. At close to 11 miles of beach, this portion of the fishery overlooks Kenai's oil producing sector (Figure 8).

This is generally as far north as Kenai sockeye salmon run as they are pushed north by the powerful incoming tides. One might think operations may harvest salmon bound for more northern Matanuska-Susitna rivers, but those salmon stocks are not typically reported as a large proportion of permit holders' harvest.

The Eastern Foreland is the most sparsely fished region in the ESSN fishery with about 36 permit fishing annually on average. There is less of an emphasis on registering in groups in this area, with just over 60% of the permits registered to a group. Group sizes are also small, at just over three permits per group, similar to what is seen in Salamatof. There are 12 leases making 17 tracts in this statistical area.

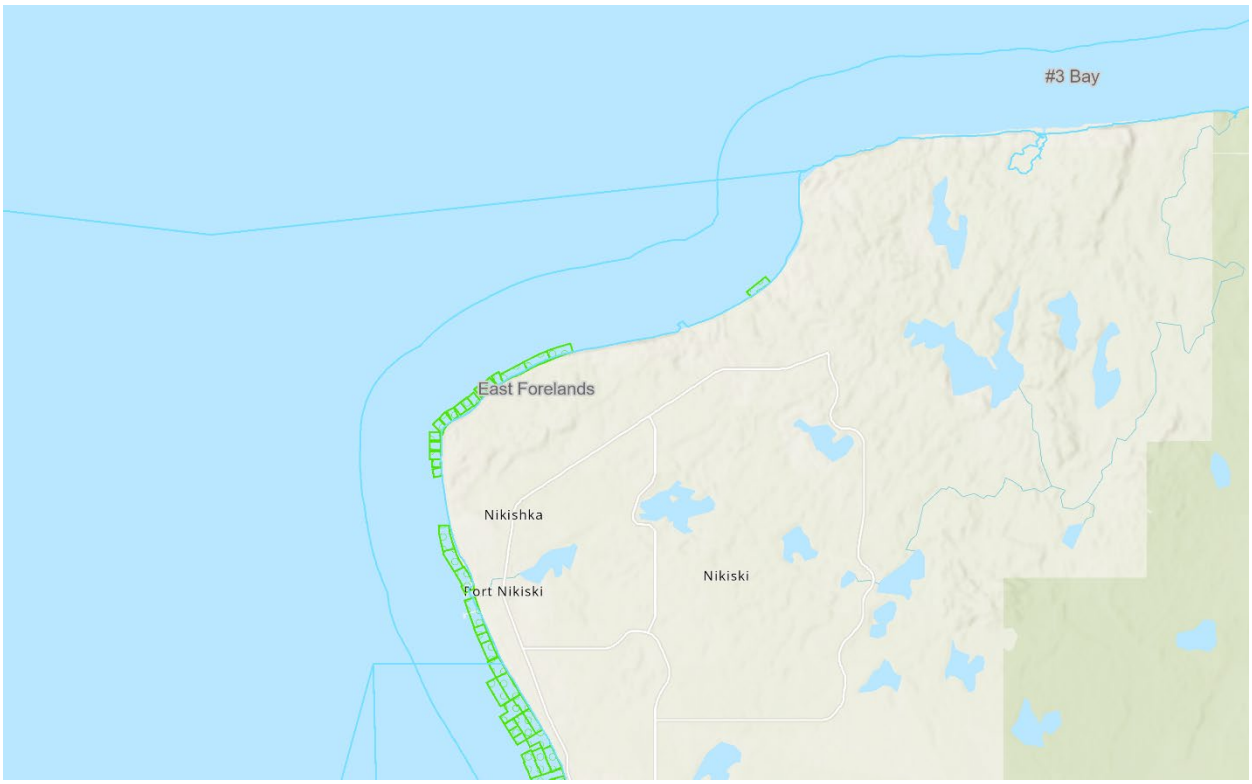


Figure 9: East Foreland Statistical Area (244-42): DNR Alaska Mapper. Leased DNR tracts highlighted in green.

CHAPTER 3: CHANGES TO USE PATTERNS OF KENAI AND KASILOF RIVER SOCKEYE SALMON

Along with set gillnet harvesters, the other main users of Kenai and Kasilof River sockeye salmon are commercial drift gillnet operators, and sport and personal use harvesters. Over the last 25 years use patterns in Cook Inlet have changed dramatically.

Escapement Goals

Before looking at human uses of sockeye salmon in Cook Inlet it is important to review escapement levels. Sockeye salmon are managed across the state of Alaska with escapement goals. While the following is overly simplistic, essentially fishery managers limit or increase human harvest efforts on stocks of salmon to achieve a determined escapement goal into the natal river. Escapement goals are set to maximize the potential harvest available to harvesters while providing long term sustainability[6]. Using an escapement-based harvest strategy, the number of fish entering spawning grounds from year to year typically stays near the same number, and the harvest varies in proportion to the run size. In years of abundance, there are many fish in excess of escapement goals which are harvested by stakeholders. In years of small returns, few fish are harvested to prioritize sustainability.

For the purposes of this discussion, there are three distinct types of escapement goals: biological escapement goals (BEG), sustainable escapement goals (SEG), and optimum escapement goals (OEG). Biological escapement goals are typically proposed by the department when the system in question is well studied, and a wide range of information is available with which to develop an escapement goal. Sustainable escapement goals are used when less information is available. Optimum escapement goals are set by the Board of Fisheries and are set considering the escapement goals that were set by the department, as well as additional information outside of biological or environmental variables, such as economics, the needs of stakeholders, additional subsistence harvest requirements, allocations between user groups, and more. The board may also set inriver goals. An inriver goal is set to provide a certain number of fish for inriver use or harvest.

Recently ADFG set the BEG for Kasilof River sockeye salmon at a range of 140,000-320,000 sockeye salmon. The SEG for Kenai River sockeye salmon is 750,000-1,300,000 fish.[7] In addition to the goal set by the department, the Board of Fisheries set an OEG of 140,000 – 370,000 sockeye salmon for the Kasilof River. For the Kenai River, the Board of Fish implemented a management strategy that adjusts the inriver goal range within three tiers based upon the estimated size of the total run of sockeye salmon (5 AAC 21.360 (c)).

Kasilof River sockeye escapements have often exceeded the goals because management decisions are often tied to the relative strength or weakness of the Kenai River Chinook and sockeye salmon stocks which come later and lately have required conservative management actions. In recent years, early closures occurring within ESSN areas due to Chinook salmon conservation measures have resulted in escapements into both rivers in excess of the escapement goals, as well as foregone harvestable surplus.

Commercial Fishery

The counterpart to set gillnet operations in the commercial fishery is the drift gillnet fleet. The fleet is composed of 567 permit holders which typically have more than 400 participating in any given year. Starting in 2020 the number of drift gillnet participants has fallen below 400 active permit holders with 364 and 343

[6] For an review of escapement goals and their use in salmon management, see ADFG's Sport Fishery Northern Kenai Peninsula web page: https://www.adfg.alaska.gov/index.cfm?adfg=ByAreaSouthcentralUpperKenai.management.
[7] See ADFG's Upper Cook Inlet Escapement Goal Memorandum, March 26, 2019. https://www.adfg.alaska.gov/static/fishing/pdfs/sport/byarea/southcentral/2019_UCI_EG_memo.pdf.

participating in 2020 and 2021 respectively. Unlike the more stationary set gillnet operators, the drift fleet works aboard boats and has the ability to move and target different stocks of migrating salmon as they progress through Cook Inlet. While sockeye salmon from the Kenai and Kasilof rivers are very important to the drift fleet, so are other stocks that run to other watersheds in Cook Inlet.

Personal Use

Starting in 1996, the Board of Fisheries created personal use fisheries on the Kenai and Kasilof Rivers. In the Kasilof River, individuals may use a set gillnet from mid- to late-June off the mouth of the river. Starting in late June, that activity shifts in river with the use of a dipnet through the first week of August. The Kenai River personal use fishery occurs from July 10-31, and is prosecuted with a dipnet either by shore or from a boat. Fishing is most concentrated at the mouth of the river. In 1996, ADFG recorded the use of 10,168 Cook Inlet personal use permits. Participation increased to a high of 30,075 permits in use in 2011 but has since fallen and leveled out to over 22,000 for the last several years.[8]

Sport Fishery

Along with commercial and personal use fisheries, sockeye salmon are also harvested in the sport fishery. The sport fishery in the Kenai Peninsula is tracked generally as guided or unguided. With long-established guide businesses in the area, a significant portion of all sport fish harvest is in the guided sector. However, that is changing to some degree. The Kasilof River guided harvest was up to 10 times the unguided harvest in some years in the past. Unguided sockeye harvests have exceeded guided harvests since 2014, although both continue to grow.

Guided sport fish harvest on the Kenai is large and growing larger. Since the mid 90's, the guided harvest increased from a five-year average of 15,234 sockeye salmon, to 80,534 sockeye salmon harvested in 2021. The guided sector on the Kenai harvests less sockeye salmon than the unguided sector, about 15% of the total unguided sector. That said, guided harvest totals are trending upward overall. In the last three years with early closures of the ESSN fishery, the level of Kenai River sockeye salmon harvest in the sport fishery is up significantly due to liberalization of sport fishing bag limits for sockeye salmon in an effort to harvest sockeye salmon runs in excess of the escapement goal.

Impacts of Shifting Uses

In all of this, the amount of sockeye harvested by ESSN permit holders has fallen in both real numbers and as a percentage of total harvest. Table 6 provides an approximation of uses of Kenai and Kasilof rivers sockeye salmon by the main user groups highlighted in this section[9]. From the years 1996 – 2000, the ESSN fishery harvested 26% of the estimated sockeye salmon return. That five-year average increased to 30% from 2001-2005 and back to 26% in 2006-2010. Since 2011, that average declined to 18% through 2020, and in considering the years 2017-2021, that five-year average declined to 14% of the total estimated sockeye salmon return. With severe restrictions in 2021, the ESSN harvested 8% of the total estimated sockeye salmon return.

The changes in ESSN harvest are in sharp contrast to personal use harvests which has tripled in percentage of the total sockeye harvest; sockeye salmon harvest in the Cook Inlet personal use fisheries rose from 6% between 1996 and 2000, to 19% between 2016 and 2020. The total sport fishing harvest increased from its five-year average of 11% of the total harvest between 1996 and 2000, to 19% from 2016 through 2020.

Another area to note is the impacts on returning sockeye salmon that will spawn. In recent years, the total escapement to both river systems has been significantly over the escapement goals. To what extent this will

[8] A portion of activity on these permits takes place at the Fish Creek personal use fishery located in Anchorage. Harvest surveys estimate between 3-8% of the effort is accounted for by the Fish Creek personal use fishery.
[9] This approximation does not include certain sockeye harvests that may come from Kenai, Kasilof, or other river system stocks. Such uses include education, test fishing, subsistence, and saltwater sportfishing.

impact future returns remains to be seen, but the combined drift gillnet fleet, personal use harvesters, and sport fisher harvesters did not replace the targeted harvesting power of set gillnet operations. In 2020 and 2021, years when the ESSN fleet was closed prior to the peak of the Kenai River sockeye run, escapement levels exceeded the high end of the Kenai River escapement goal by 16% and 65%, respectively. The Kasilof River high end goal was exceeded 60% and 53% over 2020 and 2021 respectively.

A by year estimation of Kenai and Kasilof sockeye salmon use can be seen in Appendix A.

Table 6. Estimation of Kenai and Kasilof River Sockeye Salmon Use, 1996-2021 (Number of Fish)

	1996-2000	2001-2005	2006-2010	2011-2015	2016-2020	2017-2021	2021
Estimated Escapement							
Kenai River	980,810	1,322,337	1,090,311	1,218,450	1,193,799	1,399,959	2,148,955
Kasilof River	272,690	358,342	340,679	404,153	382,157	438,532	521,859
Total Escapements	1,253,499	1,680,680	1,430,990	1,622,604	1,575,956	1,838,491	2,670,814
% of Total Return	32%	30%	31%	29%	45%	49%	53%
Personal Use							
Kenai Dip Net	113,811	222,540	276,511	433,867	262,081	275,568	326,491
Kasilof Dip Net	25,430	43,943	59,459	77,245	80,672	88,308	96,454
Kasilof Gillnet	14,217	20,583	23,162	21,398	18,693	17,085	18,497
Total Personal Use	153,457	287,066	359,133	532,510	361,446	380,961	441,442
% of Total Return	4%	5%	8%	9%	10%	10%	9%
% of Harvest	6%	7%	12%	14%	19%	21%	19%
Sport Fishing							
Kasilof Unguided	580	797	956	5,885	9,011	10,537	13,553
Kasilof Guided	3,485	5,160	5,024	6,552	4,773	6,723	11,990
Kenai Unguided	176,630	238,961	235,044	358,911	271,669	308,339	478,169
Kenai Guided	15,234	18,140	17,700	44,423	32,927	42,063	80,534
Russian River	62,652	59,989	65,296	42,439	43,965	47,918	44,394
Total Sport Fishing	258,581	323,047	324,019	458,210	362,345	415,581	628,640
% of Total Return	7%	6%	7%	8%	10%	11%	13%
% of Harvest	11%	9%	11%	12%	19%	21%	27%
Commercial Fishing							
Drift Gillnet	1,414,569	1,771,427	1,229,457	2,060,420	716,021	633,052	851,901
Set Gillnet - East Side Only	1,090,173	1,738,035	1,189,912	1,020,376	639,907	521,738	407,007
Total Commercial Fishing	2,504,742	3,509,461	2,419,369	3,080,797	1,355,928	1,154,790	1,258,908
% of Total Return	57%	59%	53%	53%	36%	30%	25%
% of Harvest	83%	84%	78%	75%	62%	58%	54%
ESSN % of Total Return	26%	30%	26%	18%	18%	14%	8%
ESSN % of Harvest	37%	42%	38%	25%	31%	27%	17%
Total Estimated Kenai and Kasilof Sockeye	4,170,279	5,800,254	4,533,511	5,694,120	3,655,675	3,789,823	4,999,804
Total Estimated Harvest Kenai and Kasilof Sockeye	2,916,780	4,119,575	3,102,521	4,071,517	2,079,719	1,951,331	2,328,990
% Harvested of Total Return	70%	71%	68%	72%	57%	51%	47%

Note: Data sources are cited for this table in Appendix A.

CHAPTER 4: IMPACT OF ALASKA'S REGULATORY SYSTEM AND THE KENAI RIVER CHINOOK SALMON

Much of the report up until this point details trends and changes to use patterns and fishing activity on the east side of Cook Inlet over the past several decades, only indirectly speaking to the cause for this and the impacts upon the ESSN fishery.

Shifting Allocations

Prior to statehood, Alaska designed a publicly led citizen board charged with conservation and development of its fish and game resources. The Boards of both Fisheries and Game functioned as one through 1975 until it split into their current forms as two separate boards, the Board of Fish and the Board of Game.

The Board of Fisheries reflects Alaska's changing demographics. While there is ample discussion about which user groups or regions the seven seats on the board are meant to represent, that discussion is counter to the statutes that create the board. With AS 16.05.221(a) it reads in part:

> "… The governor shall appoint each member on the basis of interest in public affairs, good judgment, knowledge, and ability in the field of action of the board, and with a view to providing diversity of interest and points of view in the membership. The appointed members shall be residents of the state and shall be appointed without regard to political affiliation or geographical location of residence. …"

As a public citizen-based board, and not one that is appointed based on specific backgrounds or location of residency, it can be said the board in general reflects Alaska's changing demographics.

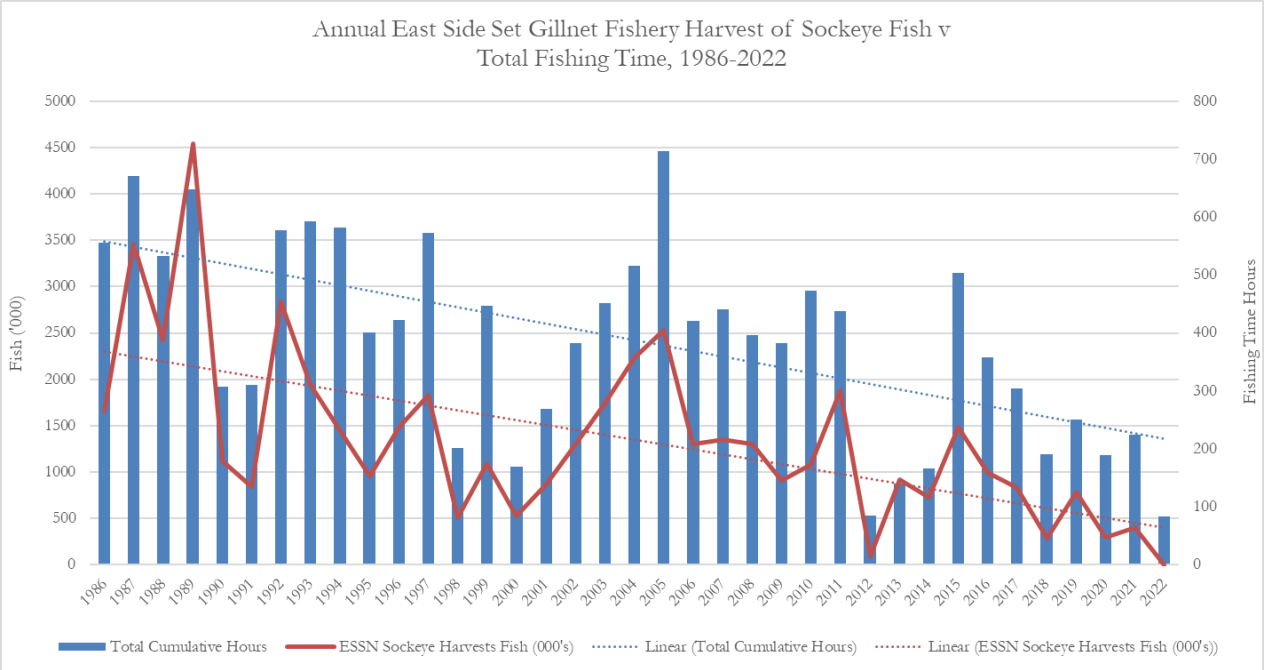
At the start of the 1900's almost all users of salmon in the Cook Inlet area were commercial or subsistence users. In 1923 the Alaska Railroad was built allowing increased access to formerly isolated parts of the Kenai Peninsula. In 1950 the Sterling Highway was completed, again allowing more access to formerly isolated areas. This caused an increase in population and in tourism, which also led to increased diversity amongst salmon user groups.

These changes in population are significant for a variety of reasons. Alaska is currently experiencing a shift towards a greater concentration of residents living in urban areas, and in particular Anchorage and the Matanuska Valley. This change in population demographics has a direct impact on fishing activity, especially the ESSN. There is a growing fisheries user base that is keenly interested in Cook Inlet stocks. With this fundamental shift in demographics, it is unsurprising that actions taken by the Board of Fisheries over the decades would gradually shift allocation away from the long-time established commercial fisheries to a growing population base of personal use and sport fish users in Alaska. Appendix B outlines recent regulatory changes by the Board of Fish that have influenced the ESSN fishery.

The impacts of shifting demographics can be seen by observing the long-term trends in total fishing time provided to the ESSN fleet. Figure 10 provides a look at the ESSN fleet's fishing hours from 1986 through 2022, compared to the harvest of sockeye salmon for the same years. A time series of this length is important because several factors in any given year impact the time allotted, including disaster years of low sockeye salmon returns in 2012

and 2018. With this decades long review, the ESSN fishery has seen reduced fishing time, and as a result a reduced harvest of its target species, sockeye salmon.

Figure 10: Comparison of Fishing Time and Sockeye Harvests for the East Side Set Gillnet Fleet, 1986-2022



Kenai River Late-Run Chinook Salmon

With this gradual erosion of harvest activity for the set gillnet fleet, more recently all users are feeling the impacts of failing runs of the vaulted Kenai River Chinook salmon. Prized by many, Chinook salmon runs have collapsed, and fisheries management measures are in place which in 2020, 2021, and 2022 effectively eliminate much of what remains of the set gillnet fishing season.

Chinook salmon that run to the Kenai River are much like their sockeye counterparts in that they migrate close to the shoreline. With this migration pattern, they are harvested incidentally by the set gillnet fleet. With continued declines in Chinook salmon stocks, in 2014 the Board of Fisheries established "paired-restrictions" between the in-river king salmon sport fishery and the ESSN fishery in the *Kenai River Late-Run King Salmon Management Plan* (5 AAC 21.359). With paired restrictions, when conservation measures are taken for King Salmon in sport fisheries, reductions in time and restrictions in gear are now required concurrently. These restrictions occurred intermittently in the years immediately after the enactment of the regulation. In recent years restrictions have occurred each season (2018 – 2022).

When the late-run Kenai River Chinook salmon escapement goals appear unlikely to be achieved, all users are ratcheted back on harvest power. When management measures are at their most restrictive, which has occurred since 2020, all ESSN fishing comes to a halt.

There is very little anyone can do about this situation save for working towards restoring the Chinook salmon runs on the Kenai. Absent a return of Chinook salmon runs, fishing for the ESSN fleet will remain diminished. At the time of this writing, early 2023 Kenai River late-run Chinook salmon projections are below the escapement goal and ADFG has effectively closed both the in-river sport fishery on Chinook salmon and the entire Upper Subdistrict commercial salmon set gillnet fishery for 2023.

In all, the cumulative effect of these impacts is taking a toll on ESSN operators. Appendix C provides the CFEC 2022 survey, and Appendix D provides respondents answers to the open-ended questions from CFEC's 2022 survey regarding financial risk and season length.

CHAPTER 5: FINANCIAL ANALYSIS OF THE FISHING OPERATIONS AND SURVEY METHODOLOGY

Designing a methodology to measure the finances of a Cook Inlet set gillnet permit holder that would lend itself to an eventual optimum number of permits for the entire fleet is problematic. In most Alaska fisheries there is a fishing vessel with a prescribed set of gear. There is some variability in the profitability of these floating businesses based on the skill or aggressive nature of the captain and crew. Perhaps a larger vessel lends itself to more fishing time, can hold more fish and advanced equipment, or travel further to more lucrative grounds. Despite these differences, reasonable assumptions may be drawn, and a reliable average financial snapshot determined.

This is not the case with set gillnet permit holders on the east side of Cook Inlet. As described in Chapter 2, there are many unique characteristics in the ESSN fishery that lead to the conclusion that all permits are not made equal. Proximity to the river systems greatly impacts fishing activity. A permit fishing in Ninilchik should expect to fish longer seasons and to harvest fish throughout a longer period than a permit on the North Kalifornsky Beach which will sustain the brunt of its harvest in two weeks at the end of July.

An individual may hold and fish two permits in Cook Inlet. Permit holders fish in groups that typically range between two and ten permits per group, sometimes more. Groups pool permits and resources and share in both costs and profits. Some groups might run a buying station for a local processor, while others might direct market a portion of their harvest to the end consumer rather than sell to a processor. There are permit holders that own land adjacent to their operations, and other permit holders stake a spot on the beach with easy access through agreement with a landowner. There are many permit holders with long-time shore leases that provide consistent locations to work from and others still may fish in different spots in different years. For permit holders operating in groups, there are some locations on the water that will perform better than other locations within that group. Official harvest records may reflect deliveries to one permit in a group and not others. For all these reasons, developing an economic apples to apples comparison of set gillnet permits is challenging.

When CFEC first initiated an optimum numbers study of the Cook Inlet set gillnet permit holders in 2019, it cast a survey to all permit holders, including those operating in other districts not included in the ESSN fishery. The survey sought very detailed financial information from the last three years including specific revenue and expense data. Permit holders were guarded when it came to communicating detailed financial information to CFEC without a strong stated purpose. At the conclusion of the survey time period CFEC had only received a 12% response rate from permit holders. The response rate was low, and the quality of information was questionable as a result. The study did not advance.

In May 2022 CFEC reviewed the 2019 study and decided to reassess the purpose and setup. The first effort was outreach to the fleet, specifically to ESSN permit holders. In July 2022, CFEC traveled the east side of the Inlet and met with upwards of 10 set gillnet operators. Each operator openly discussed how they operate in their area, the nature of the fishery, and how they fared over the years. Each was asked if they wanted CFEC to renew efforts to complete the optimum numbers study. While not universal, there was a lot of support expressed, and an obvious demand for additional efforts.

In August of 2022, CFEC issued a revised survey (Appendix C). Instead of surveying the entire Cook Inlet area, the survey was sent to those permit holders that had registered in the Upper Subdistrict of the Central District – or the ESSN fishery. It was recognized that the results of this survey would not be put into regulation as part of a normal optimum numbers study that focuses on an entire limited fishery. Furthermore, it was understood that the serious economic and social issues impacting this subset of the entire permit class was a primary concern, and including other non-ESSN permit holders would not address the identified issue. There was also a long-standing

legislative bill attempting to develop a buyback for ESSN permit holders and tailored data from CFEC research would help inform that effort.

Given the fishery is bound by allocative and conservation measures unrelated to its target species, it is difficult to assign a reliable harvestable biomass to base a decision. Allocative and conservation measures taken over the last few years have resulted in a lack of information on which to build reliable future harvest estimates. Without clarity on harvestable amounts, the analysis sought to determine how many permits could stay fishing at varying levels of harvest. The results of this report are intended to say, "if the total harvest amount of the ESSN fleet is X_1, then Y_1 number of permits can continue fishing viably. If the harvest amount is X_2, then Y_2 number of permits can continue fishing viably."

In the survey, CFEC sought to identify what statistical area the respondent fished, whether they fished as a group, and if the responding individual was the group leader. CFEC received over 60 completed responses out of 311 unique permit holders (recall some permit holders own and fish more than one permit) for a response rate of 22%. When reviewing initial responses, some were incomplete while others were members of a group that responded more than once. After removing incomplete or duplicative responses, there were 43 unique survey responses used. The number of permits these group leaders attested to representing was 166 permits leading to an effective response rate of almost 40% of the ESSN permit holders.

Given the complexities of the fishing operations and the difficulties observed when seeking detailed business information in the initial 2019 survey, the 2022 survey questions related to the financial analysis were more akin to using a cleaver versus a scalpel. The 2022 survey attempted to answer three simple questions.

1. How much revenue do you need to make in a typical year to breakeven?
2. What are your fixed costs? Meaning one-time costs for the season that must be covered. This could include permit fees, nets, maintenance, other costs.
3. In order to continue and consider your operation viable as a Cook Inlet set gillnet operator on the East Side, how much money do you need to make annually after accounting for your total costs?

By asking these three questions and using breakeven analysis calculations as a starting point, CFEC determined the number of operations that could stay in business based on a harvest level of fish at an assumed price.

A breakeven analysis tells a business how many units of production are needed to breakeven before it can begin sustaining profits. It assumes known fixed costs as well as the variable costs that go into each unit of production. A typical breakeven formula is:

$$Breakeven\ Sales\ Units\ (lb) = \frac{Fixed\ Costs}{Contribution\ Margin}$$

$$Where: Contibution\ Margin = \ \ Revenue\ per\ Unit - Variable\ Cost\ per\ Unit$$

A contribution margin is how much revenue per unit is earned after deducting variable costs per unit. For example a set gillnet operation may have fixed costs of $10,000 and a variable cost per pound of $0.50. If the market is paying $1.00/lb, then for every pound of fish caught, $0.50 goes to paying down the fixed costs. The formula reads:

$$Breakeven\ Sales\ Units\ (lb)\ =\ \$10{,}000\ /\ (1.00\$/lb\ -\ 0.50\$/lb)\ =\ 20{,}000lb$$

In our example, in order to breakeven with fixed costs at $10,000, a price for fish at $1.00/lb and the variable costs at $0.50/lb, a set gillnet operation must sell at least 20,000 lbs or $20,000 worth of fish to a processor, before any profit occurs.

The first question is: what is the variable cost per unit? Using our previous example, if the respondents indicate $20,000 as the breakeven sales, and $10,000 as fixed costs, variable costs are the difference at $10,000 (breakeven sales less fixed costs). Assuming a market price of $1.00/lb, the operation must harvest 20,000lbs to obtain the breakeven level. Therefore, the variable cost per pound is $0.50/lb ($10,000/20,000lb).

Recalling that this study is attempting to determine how much harvest is needed to make a desired level of profit, the first two questions in the survey helped to solve for a variable cost per unit. The third question asked how much profit the operation wants to make to remain viable. With those elements solved the analysis becomes a simple net income statement that indicates needed harvest levels for a given amount of profit.

With this information, and knowing the operation wants to make $25,000 net income, the next step is using the information to solve for the total pounds of harvest needed to generate the desired net income. A simple income statement is:

$$Gross\ Revenues\$ - Variable\ Costs\$ - Fixed\ Costs\$ = Net\ Income\$$$

Given the following equations for gross revenue and variable costs:

$$Gross\ Revenues\$ = \frac{Price\$}{lb} * Total\ Harvest\ lb$$

$$Variable\ Costs\$ = \frac{Variable\ Cost\$}{lb} * Total\ Harvest\ lb$$

We can rearrange our net income equation to solve for total harvest required for a given net income as follows:

$$Total\ Harvest\ lb = (Net\ Income\$ + Fixed\ Costs\$)/(\frac{Price\$ - \ Variable\ Cost\$}{lb})$$

Subsequently, we can substitute in our known values for price/lb, variable cost/lb, and desired net income, to solve for the required harvest for a given level of net income:

$$Total\ Harvest\ lb = (25{,}000\$ + 10{,}000\$)/(\frac{1.00\$ - \ 0.50\$}{lb})$$

$$Total\ Harvest\ lb = 70{,}000\ lb$$

With the assumption the market is paying $1.00/lb, this operation needs to harvest 70,000lbs in order to make enough money to continue fishing. A total of 20,000lbs are required to breakeven, and following that with every pound caught $0.50 goes to a net income. To achieve $25,000 net income, one needs to catch an additional 50,000lbs above the breakeven amount of 20,000lbs for a total of 70,000lbs.

The analysis performs this calculation for every respondent (as a fishing group). After obtaining the total harvest pounds needed for each operation, the poundage is divided by the number of permits in the group to obtain the pounds needed per permit. This was averaged across all the respondents for an average poundage per permit. With this figure the analysis can determine how many permits would stay in the fishery at various levels of harvest.

CHAPTER 6: OPTIMUM NUMBERS FOR THE COOK INLET EASTSIDE SET GILLNET SECTOR

Through analysis of the August 2022 survey, CFEC determined the average desired ***minimum*** net income per permit from the ESSN fleet: $14,842. This was based on the response of 44 group leaders representing 166 permits total, or approximately 40% of the ESSN permits, and in response to the question –

> *In order to continue and consider your operation viable as a Cook Inlet set gillnet operator on the East Side, how much money do you need to make annually after accounting for your total costs?*

Net income is after all expenses are accounted for and subtracted from the gross income. The level of harvest necessary to obtain the desired net income fluctuates based upon price. The lower the price, the more harvest is needed. The higher the price, the less harvest that is needed.

Given that so much hinges on the price per pound, the assumed price must be reasonable. To determine the best price predictor, Table 7 offers the average inflation adjusted price of sockeye salmon in Cook Inlet over a range of stated years. The reviewer may lean more heavily on price impacts of more recent years, more to the mid-range of the highs and lows of $1.68/lb versus $2.68/lb. Ultimately, each of these prices are presented as possibly hypothetical scenarios, and it is reasonable to assume that future prices will closely reflect past inflation adjusted prices.

Table 7. Historical Price per Pound of Cook Inlet Sockeye Salmon

Time Frame	Average Price
1975-2021	$ 2.68
1992-2021	$ 1.88
1996-2021	$ 1.68
2002-2021	$ 1.61
2012-2021	$ 2.09

This analysis occurs in two steps. The first is to outline the number of permits that might operate in the fishery at various ranges of harvest levels based on an initial price per pound assumption that sets the variable cost per pound. Table 8 provides a matrix of the number of operations that would sustain the minimum level of profitability based on pounds harvested using the most recent 10-year average of $2.09/lb to set the variable cost per pound which is approximately $1.02/lb. The table highlights in grey roughly the number of traditional ESSN permits (an average of about 433 permits each year), and in yellow the number of permits, about 230, that would be viable at a given level of harvest and price per pound.

Table 8. Matrix of Number of Viable ESSN Permits Based on Price and Harvest

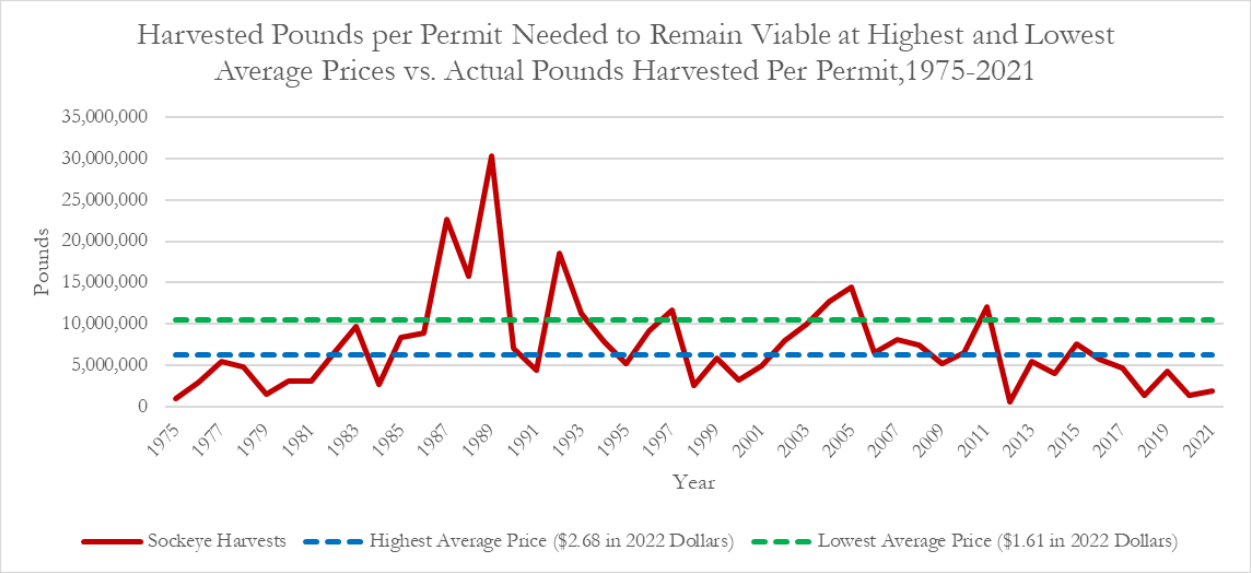
Total Harvest Pounds	Price/Pound							
	$1.25	$1.50	$1.75	$2.00	$2.09	$2.25	$2.50	$2.75
500,000	6	12	18	24	26	30	37	43
1,000,000	11	24	36	48	53	61	73	85
1,500,000	17	36	54	73	79	91	110	128
2,000,000	23	47	72	97	106	122	146	171
2,500,000	28	59	90	121	132	152	183	214
3,000,000	34	71	108	145	159	182	219	256
3,500,000	40	83	126	169	185	213	256	299
4,000,000	45	95	144	194	211	243	292	342
4,500,000	51	107	162	218	237	273	329	385
5,000,000	57	119	180	242	264	304	366	427
5,500,000	62	130	198	266	290	334	402	470
6,000,000	68	142	216	290	316	365	439	513
6,500,000	74	154	234	315	343	395	475	555
7,000,000	80	166	252	339	369	425	512	598
7,500,000	85	178	270	363	395	456	548	641
8,000,000	91	190	288	387	422	486	585	684
8,500,000	97	202	307	411	448	516	621	726
9,000,000	102	213	325	436	474	547	658	769
9,500,000	108	225	343	460	501	577	695	812
10,000,000	114	237	361	484	527	608	731	855
10,500,000	119	249	379	508	554	638	768	897
11,000,000	125	261	397	532	580	668	804	940
11,500,000	131	273	415	557	606	699	841	983
12,000,000	136	285	433	581	633	729	877	1025
12,500,000	142	296	451	605	659	759	914	1068

The second step in this analysis is to see how these numbers fare based on past harvest levels. Figure 11 provides the ESSN fleet's harvest of sockeye in pounds from 1975-2021, in contrast to the survey findings of how large a harvest is needed to keep all 428 permits viable in the fishery. Referring to Table 7 and using the highest price of $2.68/lb for all the years 1975-2021, the fleet would need to harvest between 5.5 and 6 million pounds to achieve a minimum desired level of profit. At the lowest price $1.61/lb from 2002-2021, the fleet would need to harvest over 12.0 million pounds to achieve the minimum desired level of profit. When looking at the more current price of $2.09/lb the fleet would need more than 8 million pounds of sockeye to remain fully viable. That level of harvest has not been achieved since 2011. It is worth repeating that this is based on a minimum level of profit to remain viable.

It should be noted that the average harvest for 2020 and 2021 was only 1.7 million pounds, and that when looking at the most recent price of $2.09/lb someplace between 79 and 106 permits would be able to obtain the desired profit level of $14,482/permit (Table 8).

Figure 11 is consistent with anecdotal input from the ESSN permit holders. In one conversation with a long-time participant, the individual offered the last good year for his operation was in 2011. It can be noted that the harvest amount crests above that higher threshold line.

Figure 11. High and Low Harvest Levels Needed for the ESSN Fleet to Remain Viable



APPENDIX A: ESTIMATED HARVEST OF KENAI AND KASILOF RIVER SALMON (NUMBERS OF FISH)

	1996	1997	1998	1999	2000	2001	2002	2003	2004
Estimated Escapement									
Kenai River	963,108	1,365,676	929,090	949,276	696,899	738,229	1,126,616	1,402,292	1,690,547
Kasilof River	264,511	263,780	259,045	312,481	263,631	318,735	235,732	353,526	523,653
Total Escapements	1,227,619	1,629,456	1,188,135	1,261,757	960,530	1,056,964	1,362,348	1,755,818	2,214,200
% of total	23%	27%	44%	30%	37%	33%	30%	31%	29%
Personal Use									
Kenai Dip Net	102,821	114,619	103,847	149,504	98,262	150,766	180,028	223,580	262,831
Kasilof Dip Net	11,197	9,737	45,161	37,176	23,877	37,612	46,769	43,870	48,315
Kasilof Gillnet	9,506	17,997	15,975	12,832	14,774	17,201	17,980	15,706	25,417
Total Personal Use	123,524	142,353	164,983	199,512	136,913	205,579	244,777	283,156	336,563
% of Total	2%	2%	6%	5%	5%	6%	5%	5%	4%
% of Harvest	3%	3%	11%	7%	8%	9%	8%	7%	6%
Sport Fishing									
Kasilof Unguided	815	585	410	292	800	932	462	1,137	911
Kasilof Guided	1,687	3,543	3,034	4,362	4,799	5,073	3,962	4,834	6,496
Kenai Unguided	169,549	159,547	147,923	190,676	215,456	188,491	210,520	265,407	269,426
Kenai Guided	16,742	17,526	16,477	9,898	15,527	12,271	15,397	20,518	19,871
Russian River	58,211	49,698	67,770	66,618	70,961	53,950	84,138	51,071	55,144
Cook Inlet Saltwater	2,433	2,368	2,754	4,002	4,321	6,672	5,570	6,107	3,532
Total Sport Fishing	249,437	233,267	238,368	275,848	311,864	267,389	320,049	349,074	355,380
% of Total	5%	4%	9%	6%	12%	8%	7%	6%	5%
% of Harvest	6%	5%	16%	9%	19%	12%	10%	9%	7%
Commercial Fishing									
Drift Gillnet	2,205,067	2,197,961	599,396	1,413,995	656,427	846,275	1,367,251	1,593,638	2,529,642
Set Gillnet - East Side Only	1,483,008	1,832,856	512,306	1,092,946	529,747	870,019	1,303,158	1,746,841	2,235,810
Total Commercial Fishing	3,688,075	4,030,817	1,111,702	2,506,941	1,186,174	1,716,294	2,670,409	3,340,479	4,765,452
% of Total	70%	67%	41%	59%	46%	53%	58%	58%	62%
% of Harvest	91%	91%	73%	84%	73%	78%	83%	84%	87%
Total Estimated Kenai and Kasilof Sockeye	5,288,655	6,035,893	2,703,188	4,244,058	2,595,481	3,246,226	4,597,583	5,728,527	7,671,595
Total Estimated Harvest Kenai and Kasilof Sockeye	4,061,036	4,406,437	1,515,053	2,982,301	1,634,951	2,189,262	3,235,235	3,972,709	5,457,395

Appendix A: Estimated Harvest of Kenai and Kasilof River Sockeye Salmon (number of fish)

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimated Escapement									
Kenai River	1,654,003	1,892,090	964,243	708,805	848,117	1,038,302	1,280,733	1,212,921	980,208
Kasilof River	360,065	389,645	365,184	327,018	326,283	295,265	245,721	374,523	489,654
Total Escapements	2,014,068	2,281,735	1,329,427	1,035,823	1,174,400	1,333,567	1,526,454	1,587,444	1,469,862
% of total	26%	47%	25%	26%	31%	28%	20%	28%	29%
Personal Use									
Kenai Dip Net	295,496	127,630	291,270	234,109	339,993	389,552	537,765	526,992	347,222
Kasilof Dip Net	43,151	56,144	43,293	54,051	73,035	70,774	49,766	73,419	85,528
Kasilof Gillnet	26,609	28,867	14,943	23,432	26,646	21,924	26,780	15,638	14,439
Total Personal Use	365,256	212,641	349,506	311,592	439,674	482,250	614,311	616,049	447,189
% of Total	5%	4%	7%	8%	11%	10%	8%	11%	9%
% of Harvest	6%	8%	9%	11%	16%	14%	10%	15%	13%
Sport Fishing									
Kasilof Unguided	545	948	739	576	1,692	826	1,730	2,660	3,980
Kasilof Guided	5,437	6,555	2,954	6,894	5,071	3,644	6,084	4,080	8,277
Kenai Unguided	260,959	152,168	287,503	216,458	233,189	285,900	367,795	400,173	396,092
Kenai Guided	22,643	15,753	21,309	13,572	19,130	18,735	28,045	55,281	40,896
Russian River	55,642	80,861	53,668	66,172	93,032	32,745	37,109	30,305	47,308
Cook Inlet Saltwater	5,164	4,921	7,277	7,381	7,963	9,560	6,972	7,245	10,430
Total Sport Fishing	350,390	261,206	373,450	311,053	360,077	351,410	447,735	499,744	506,983
% of Total	5%	5%	7%	8%	9%	7%	6%	9%	10%
% of Harvest	6%	10%	10%	11%	13%	10%	7%	12%	14%
Commercial Fishing									
Drift Gillnet	2,520,327	784,771	1,823,481	983,303	968,075	1,587,657	3,201,035	2,924,144	1,662,561
Set Gillnet - East Side Only	2,534,345	1,301,275	1,353,407	1,303,236	905,853	1,085,789	1,877,939	96,675	921,533
Total Commercial Fishing	5,054,672	2,086,046	3,176,888	2,286,539	1,873,928	2,673,446	5,078,974	3,020,819	2,584,094
% of Total	65%	43%	61%	58%	49%	55%	66%	53%	52%
% of Harvest	88%	81%	81%	79%	70%	76%	83%	73%	73%
Total Estimated Kenai and Kasilof Sockeye	7,784,386	4,841,628	5,229,271	3,945,007	3,848,079	4,840,673	7,667,474	5,724,056	5,008,128
Total Estimated Harvest Kenai and Kasilof Sockeye	5,770,318	2,559,893	3,899,844	2,909,184	2,673,679	3,507,106	6,141,020	4,136,612	3,538,266

Appendix A: Estimated Harvest of Kenai and Kasilof River Sockeye Salmon (number of fish)

	2014	2015	2016	2017	2018	2019	2020	2021	2012 – 2021 Avg
Estimated Escapement									
Kenai River	1,218,342	1,400,047	1,118,155	1,056,773	831,096	1,457,031	1,505,940	2,441,825	1,322,234
Kasilof River	440,192	470,677	239,981	358,724	388,009	378,416	545,654	521,859	420,769
Total Escapements	1,658,534	1,870,724	1,358,136	1,415,497	1,219,105	1,835,447	2,051,594	2,963,684	1,743,003
% of total	34%	35%	31%	37%	50%	42%	62%	56%	40%
Personal Use									
Kenai Dip Net	379,823	377,532	259,057	297,049	165,028	331,408	257,864	326,491	326,847
Kasilof Dip Net	88,513	89,000	58,273	78,260	92,034	80,730	94,064	96,454	83,628
Kasilof Gillnet	22,567	27,567	26,539	21,927	14,390	15,864	14,745	18,212	19,189
Total Personal Use	490,903	494,099	343,869	397,236	271,452	428,002	366,673	441,157	429,663
% of Total	10%	9%	8%	10%	11%	10%	11%	8%	10%
% of Harvest	16%	14%	12%	16%	23%	17%	29%	19%	17%
Sport Fishing									
Kasilof Unguided	12,664	8,389	5,920	6,245	10,357	11,070	11,462	13,553	8,630
Kasilof Guided	7,155	7,164	2,239	2,155	5,661	6,158	7,653	11,990	6,253
Kenai Unguided	315,601	314,896	294,820	263,173	154,637	417,025	228,690	478,169	326,328
Kenai Guided	45,231	52,660	34,852	28,232	18,035	56,414	27,102	80,534	43,924
Russian River	53,734	43,741	24,629	37,701	42,343	78,056	37,094	44,394	43,931
Cook Inlet Saltwater	7,471	6,254	6,646	10,151	8,753	12,409	6,929	11,531	8,782
Total Sport Fishing	441,856	433,104	369,106	347,657	239,786	581,132	318,930	640,171	437,847
% of Total	9%	8%	9%	9%	10%	13%	10%	12%	10%
% of Harvest	14%	13%	12%	14%	20%	23%	25%	27%	17%
Commercial Fishing									
Drift Gillnet	1,501,678	1,012,684	1,266,746	880,279	400,269	749,101	283,711	851,901	1,153,307
Set Gillnet - East Side Only	724,398	1,481,336	997,853	832,220	289,841	784,279	295,341	407,007	683,048
Total Commercial Fishing	2,226,076	2,494,020	2,264,599	1,712,499	690,110	1,533,380	579,052	1,258,908	1,836,356
% of Total	46%	47%	52%	44%	29%	35%	17%	24%	40%
% of Harvest	70%	73%	76%	70%	57%	60%	46%	54%	65%
Total Estimated Kenai and Kasilof Sockeye	4,817,369	5,291,947	4,335,710	3,872,889	2,420,453	4,377,961	3,316,249	5,303,920	4,446,868
Total Estimated Harvest Kenai and Kasilof Sockeye	3,158,835	3,421,223	2,977,574	2,457,392	1,201,348	2,542,514	1,264,655	2,340,236	2,703,866

Appendix A: Estimated Harvest of Kenai and Kasilof River Sockeye Salmon (number of fish)
Sources:

Kasilof and Kenai River Escapements

McKinley, T., N. DeCovich, J. W. Erickson, T. Hamazaki, R. Begich, and T. L. Vincent. 2020. Review of salmon escapement goals in Upper Cook Inlet, Alaska, 2019. Alaska Department of Fish and Game, Fishery Manuscript No. 20-02, Anchorage.

Personal Use Harvests

Marston, B., and A. Frothingham. 2022. Upper Cook Inlet commercial fisheries annual management report, 2021. Alaska Department of Fish and Game, Fishery Management Report No. 22-16, Anchorage.

Sport Fish Harvests

(ADFG) Alaska Department of Fish and Game. 2023. Alaska sport fishing survey results, 1996–2021. ADFG Division of Sport Fish, Alaska Statewide Harvest Survey project. https://www.adfg.alaska.gov/sf/sportfishingsurvey/index.cfm?ADFG=region.home (Accessed February 10, 2023).

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Shields, P., and A. Dupuis. 2015. Upper Cook Inlet commercial fisheries annual management report, 2014. Alaska Department of Fish and Game, Fishery Management Report No. 15-20, Anchorage.

Appendix A: Estimated Harvest of Kenai and Kasilof River Sockeye Salmon (number of fish)

Shields, P., and A. Dupuis. 2013. Upper Cook Inlet commercial fisheries annual management report, 2012. Alaska Department of Fish and Game, Fishery Management Report No. 13-21, Anchorage.

Shields, P. and A. Dupuis. 2013. Upper Cook Inlet commercial fisheries annual management report, 2013. Alaska Department of Fish and Game, Fishery Management Report No. 13-49, Anchorage.

Shields, P. and A. Dupuis. 2012. Upper Cook Inlet commercial fisheries annual management report, 2011. Alaska Department of Fish and Game, Fishery Management Report No. 12-25, Anchorage.

Shields, P., and A. Frothingham. 2018. Upper Cook Inlet commercial fisheries annual management report, 2017. Alaska Department of Fish and Game, Fishery Management Report No. 18-10, Anchorage.

Marston, B., and A. Frothingham. 2022. Upper Cook Inlet commercial fisheries annual management report, 2021. Alaska Department of Fish and Game, Fishery Management Report No. 22-16, Anchorage

Marston, B., and A. Frothingham. 2022. Upper Cook Inlet commercial fisheries annual management report, 2020. Alaska Department of Fish and Game, Fishery Management Report No. 22-12, Anchorage.

Marston, B., and A. Frothingham. 2021. Upper Cook Inlet commercial fisheries annual management report, 2019. Alaska Department of Fish and Game, Fishery Management Report No. 21-26, Anchorage.

Marston, B., and A. Frothingham. 2019. Upper Cook Inlet commercial fisheries annual management report, 2018. Alaska Department of Fish and Game, Fishery Management Report No. 19-25, Anchorage.

APPENDIX B: RECENT CHANGES 2005 – 2020

2020 Board of Fish Regulatory Changes	Citations

• Kenai River Sockeye Salmon SEG raised to 750,000–1,300,000 fish.
  o Inriver goal (Tiers) raised:
  ▪ 1.0–1.3 million (for runs < 2.3 million)
  ▪ 1.1–1.4 million (for runs of 2.3–4.6 million)
  ▪ 1.2–1.6 million (for runs > 4.6 million)
• Kenai River late-run king salmon optimal escapement goal (OEG) created:
  o 15,000–30,000 large king salmon
• Kasilof River sockeye salmon BEG lowered to 140,000–320,000 fish.
• Kasilof River sockeye salmon OEG lowered to 140,000–370,000 fish.
• Kasilof Section season opens on June 20, but on any day between June 20 and June 24, the fishery will be closed by emergency order (EO) if < 30,000 sockeye salmon are in the Kasilof River.
• 600-foot openers are possible for all ESSN sections and do not include hour restrictions.
• North Kalifornsky Beach (NKB) stat area can open July 1 to July 8 restricted to within 600 feet of shore, including net restrictions (no more than 4.75 in. mesh and 29 or less meshes deep).
• East Foreland Section now affected by all restrictions of the Kenai River Late-Run King Salmon Management Plan (KRLKSMP).
• One-percent rule: In the Upper Subdistrict set gillnet fishery, the calculation to determine if less than one-percent of the total sockeye salmon harvest has occurred for 2 consecutive periods now begins after August 1 and includes 600-foot openings for the calculation.
• All fishing periods restricted by the KRLKSMP, other than those restricted to within 600 feet of shore, shall be conducted with gear restriction options.
• KRLKSMP includes a new paired restriction provision for ESSN fishery and sport fishery.
  o If king salmon sport fishery is closed to retention of fish > 34 inches, the ESSN fishery is restricted to 36 hours by EO only, including a Friday no fishing window.
• ESSN restricted to 36 hours per week by EO after August 1, without a closed fishery window if the sport fishery is restricted on July 31; ESSN fishery remains restricted until the king salmon OEG is achieved.
• Hours fished in the Kasilof River Special Harvest Area (KRSHA) apply to weekly hourly restrictions in the KRLKSMP.
	Brian Marston, "Upper Cook Inlet 2020 Outlook for Commercial Salmon Fishing Season" memo, April 16 2020. https://www.adfg.alaska.gov/static-f/applications/dcfnewsrelease/1147242096.pdf

2017 Board of Fish Regulatory Changes	Citations
• One-percent rule: In the Upper Subdistrict set gillnet fishery, the calculation to determine if less than one-percent of the total sockeye salmon harvest has occurred for 2 consecutive periods now begins after August 7 instead of after July 31. • Kasilof River Special Harvest Area (KRSHA): When this area is open to commercial fishing, dual set gillnet permit holders may now fish with one net per permit, or 2 nets total. The provision limiting how much gear vessels may have on board while fishing in the KRSHA was repealed; however, the limit on the amount of gear that may be fished in the KRSHA was not changed, which is one 35-fathom set gillnet per permit holder and no more than 50 fathoms per drift gillnet vessel. Drifters are reminded that 5 AAC 21.331 and 5 AAC 39.240 are still in effect, limiting the amount of drift gillnet gear that may be aboard to no more than 150 fathoms for single permit vessels or no more than 200 fathoms for dual permit vessels. Except for nets which may not be in the water after the close of a fishing period, set gillnet gear, including running lines, shore leads, anchors, and buoys must be removed from the water and the beach prior to the first opening of the KRSHA, no more than 4 hours after any closure of the KRSHA, and may not be placed back in the water or on the beach prior to the next opening of the KRSHA. The boundaries of the KRSHA, including the areas open exclusively to either set or drift gillnetting, are composed of a series of waypoints that have now been placed into regulation. • Closed waters at the mouths of the Kasilof and Kenai rivers are now described by a series of waypoints. • Kasilof River Salmon Management Plan: Set gillnetting in the Kasilof Section may be limited to fishing within 600 feet of mean high tide in lieu of fishing in the KRSHA or in combination with the KRSHA. When the fishery is open in this area, hours fished will not count toward the restrictive hourly provisions in either the Kenai River Late-Run King Salmon Management Plan or the Kenai River Late-Run Sockeye Salmon Management Plan. • Kenai River Late-Run Sockeye Salmon Management Plan: Kenai River sockeye salmon are to be managed to meet abundance-based inriver goals and to achieve the SEG of 700,000–1,200,000 spawners. The OEG was removed from the management plan. Inriver goal ranges were modified as follows: for runs less than 2.3 million sockeye salmon, the inriver goal range is 900,000–1,100,000 fish; for runs between 2.3 million and 4.6 million fish, the inriver goal range is 1,000,000–1,300,000 fish; and for runs greater than 4.6 million fish, the inriver goal range is 1,100,000–1,500,000 fish. • Kenai Section (North of Blanchard Line and South of Kenai River mouth): On or after July 8, any time the Kasilof Section is open, but the Kenai and East Foreland sections are closed, set gillnetting may be allowed within 600 feet of the mean high tide mark in statistical area 244-32, which is that portion of the Kenai Section north of the Blanchard Line and south of the Kenai River mouth. • Kenai River Late-Run King Salmon Management Plan: Beginning with the 2017 season, Kenai River late-run Chinook salmon will be managed to meet a sustainable escapement goal (SEG) of 13,500–27,000 large (>75 cm mid eye to tail fork) fish. From July 1–31, in order to achieve the SEG, if the sport fishery is restricted to fishing with no bait, then the Upper Subdistrict set gillnet fishery will be managed with the following provisions: o No Monday/Thursday regular fishing periods. o No more than 48 hours of fishing time per week with a 36-hour Friday window. o The following gear modifications are options for ADFG to consider: ▪ gear restrictions where fishermen would be allowed to fish up to 4 set gillnets that are each not more than 35 fathoms in length and 29 meshes in depth and 105 fathoms in the aggregate, or 2 set gillnets that are each not more than 35 fathoms in length and 45 meshes in depth; ▪ gear restrictions where fishermen would be allowed to fish 2 set gillnets that are each not more than 35 fathoms in length and 29 meshes in depth or one set gillnet that is not more than 35 fathoms in length and 45 meshes in depth; o If the sport fishery is restricted to no bait and no retention of Chinook salmon, then the Upper Subdistrict set gillnet fishery is open for no more than 24 hours per week in July, with a 36-hour "Friday" window. No additional restrictions on gear would occur during this time period. o The East Foreland Section set gillnet fishery is now exempt from the "paired" restrictive provisions in the Kenai River Late-Run King Salmon Management Plan.	Shields, P., and A. Frothingham. 2018. Upper Cook Inlet commercial fisheries annual management report, 2017. Alaska Department of Fish and Game, Fishery Management Report No. 18-10, Anchorage.

○ In August, the Upper Subdistrict set gillnet fishery will be managed to achieve the Kenai River late-run Chinook salmon SEG and Kenai and Kasilof river sockeye salmon goals. Weekly EO hour limitations and no-fishing "windows" will follow the provisions found in the Kenai River Late-Run Sockeye Salmon Management Plan. • Pink Salmon Management Plan: The harvest triggers needed to open the fishery were reduced. Based upon the number of pink salmon that are harvested by the Upper Subdistrict set gillnet fishery from August 6–10, a pink salmon fishery may be opened in even years only for up to 2 fishing periods from August 11–15. The first pink salmon commercial fishing period will occur only if, during the regular fishing periods from August 6–10, the daily harvest of pink salmon in the Upper Subdistrict set gillnet fishery exceeds 25,000 fish (changed from 50,000 fish) or the cumulative harvest is 50,000 (changed from 100,000 fish) or more pink salmon. The second pink salmon commercial fishing period will occur only if 25,000 (changed from 50,000 fish) or more pink salmon and no more than 2,500 coho salmon are harvested in the Upper Subdistrict set gillnet fishery during the first pink salmon commercial fishing period. The gear restriction limiting nets to a mesh size no larger than 4.75-inch remains for both set and drift gillnets while operating under the provisions of the Pink Salmon Management Plan.	

2014 Board of Fish Regulatory Changes and 2013 BOF Work Session Results	Citations

• Set gillnet permit stacking: In Cook Inlet, 1 person may own 2 set gillnet permits (S04H) and operate 2 full complements of gear. However, in the Upper Subdistrict only, if 1 person owns and operates 2 permits, 105 fathoms of the 210 fathoms of total gear must be fished with nets that are not more than 29 meshes in depth and marked with a blue buoy on either end of the net. The buoy must be at least 9.5 inches in diameter.
• One-percent rule: The one-percent rule in the Upper Subdistrict was changed so that it applies separately to the Kasilof Section and the combined Kenai and East Foreland sections. Drifters are restricted to fishing only in Drift Areas 3 and 4 (Figure 5) beginning on August 11 if the entire Upper Subdistrict is closed under the one percent rule.
• 24-hour Tuesday window: For Kenai River sockeye salmon runs of 2.3 million to 4.6 million fish, the 24 hour window that was fixed in time on Tuesdays may now be started anytime between 7:00 PM on Mondays and 7:00 AM on Wednesdays. The window is still 24 hours in duration.
• Kasilof River Special Harvest Area (KRSHA): Boundaries were modified where set and drift gillnetting occurs in the KRSHA. Set gillnetting is now opened within the first 1,200 feet from mean high tide, instead of the first 600 feet. Drift gillnetting is now opened only beyond 1,200 feet from the mean high tide mark.
• Kasilof River Sockeye Salmon Biological Escapement Goal (BEG): The BOF clarified that ADFG should manage Kasilof River sockeye salmon to attain the BEG of 160,000–340,000 fish, unless the lower end of the Kenai River sockeye salmon escapement goal is not being achieved. In this situation, the department will manage to achieve the Kasilof River sockeye salmon optimal escapement goal (OEG) of 160,000-390,000 fish.
• Kenai River Late-Run King Salmon Management Plan (KRLKSMP): Restrictive actions were paired in the Kenai River Chinook salmon (king salmon) sport fishery, personal use fishery, and the Upper Subdistrict commercial set gillnet fishery. Specifically from July 1 to 31, if the inriver run of late-run Chinook salmon is projected to be less than 22,500 fish, in order to achieve the sustainable escapement goal (SEG), the sport fishery may be restricted to fishing with no bait or to no bait and no retention of Chinook salmon. If the sport fishery is prosecuted under a no-bait restriction, then the Upper Subdistrict set gillnet fishery will be managed as follows:
  ○ No Monday/Thursday regular fishing periods.
  ○ No mandatory 24 hour window per week, but the 36 hour "Friday" window remains.
  ○ No more than 36 hours of fishing time per week with the following options:
  ▪ no additional restrictions on amount of gear and depth of nets;
  ▪ gear restrictions where fishermen would be allowed to fish 3 set gillnets that are each not more than 35 fathoms in length and 29 meshes in depth or 2 set gillnets that are each not more than 35 fathoms in length and 45 meshes in depth;
  ▪ gear restrictions where fishermen would be allowed to fish 2 set gillnets that are each not more than 35 fathoms in length and 29 meshes in depth or 1 set gillnet that is not more than 35 fathoms in length and 45 meshes in depth;
• If the sport fishery is restricted to no bait and no retention, then the Upper Subdistrict set gillnet fishery is open for no more than 12 hours per week, with a 36 hour "Friday" window. No additional restrictions on gear would occur during this time period.
• From July 1 to 31, both the inriver sport fishery and the commercial set gillnet fishery are to be managed to meet a Kenai River late-run Chinook salmon SEG of 15,000–30,000 fish.
• Beginning August 1, if Kenai River late-run Chinook salmon escapement is projected to be less than 16,500 fish, the Upper Subdistrict set gillnet fishery will be closed. If the Kenai River late-run Chinook salmon escapement is projected to be 16,500–22,500 fish, the Upper Subdistrict set gillnet fishery may be opened for no more than 36 hours during August 1 to 15. If Chinook salmon escapement is projected to exceed 22,500 fish, then management of the Upper Subdistrict set gillnet fishery will be based on Kenai and Kasilof rivers sockeye salmon run strength.
• Marking of 29 mesh nets: All set gillnets that are 29 meshes in depth or less that are being fished under the restrictive provisions in the KRLRKSMP or as part of dual permit operations in the Upper Subdistrict must be marked with a blue buoy on either end of the net. The buoy must be at least 9.5 inches in diameter, which is the size of an A-0 buoy.
	Shields, P., and A. Dupuis. 2015. Upper Cook Inlet commercial fisheries annual management report, 2014. Alaska Department of Fish and Game, Fishery Management Report No. 15-20, Anchorage

• At the BOF work session in October, 2012, a task force was created to identify a set of recommended adjustments to the Kenai River Late-Run King Salmon Management Plan (5 AAC 21.359) that would result in the best mix of inriver (sport, guided sport, and personal use) and Upper Subdistrict set gillnet fishing opportunity, while providing the best means of attaining the escapement goal for Kenai River late-run Chinook salmon during times of low abundance. The task force met three times during the winter of 2012–2013 and developed a list of discussion points for the full BOF to address at the March 2013 Statewide Finfish BOF meeting. After much deliberation, the BOF voted to keep the Chinook salmon management plan unchanged, other than accepting the new escapement goal developed by ADFG. The new sustainable escapement goal (SEG) for Kenai River Late-Run Chinook salmon was changed from 17,800– 35,700 to 15,000–30,000 fish.	

Appendix B: Recent Changes

2011 Board of Fish Regulatory Changes	Citations
• In the Kasilof River, the BEG was changed from 150,000–250,000 fish in Bendix units to 160,000–340,000 fish in DIDSON units. The BOF added an OEG for the Kasilof River of 160,000–390,000 fish. In the Kenai River, the SEG range was changed from 500,000–800,000 fish in Bendix units to 700,000–1,200,000 fish in DIDSON units. The BOF added an OEG for the Kenai River of 700,000 to 1.4 million fish. The abundance based, 3-tiered escapement goal (inriver goal) for the Kenai River was also modified. The 3 tiers were set at (1) less than 2.3 million fish; (2) 2.3 to 4.6 million fish; and (3) over 4.6 million fish. Specific actions were tied to each of these tiers, which will be discussed under the Upper Subdistrict Set Gillnet Fishery section below. The escapement goal at Crescent River remained a BEG of 30,000–70,000 fish, enumerated with Bendix sonar. While in the Susitna River drainage, the 3 sockeye salmon SEG's at Judd, Chelatna, and Larson lakes, enumerated by weir, remained unchanged. • The BOF modified the abundance based 3-tiered management system in the Kenai River to reflect the new DIDSON-based inriver goal for this system. The 3 tiers were delineated at (a) less than 2.3 million fish; (b) 2.3–4.6 million fish; and (c) over 4.6 million fish. • The sockeye salmon escapement trigger for opening the Kasilof River Special Harvest Area (KRSHA) to commercial fishing without limitation was changed to 365,000 fish. • In the Kasilof Section, after July 8, if further restrictions beyond the one-half mile fishery were necessary to aid in achieving the lower end of the Kenai River escapement goal, this area could be further restricted to fishing within 600 feet of the high tide mark in the Kasilof Section. • After July 8, if the Kasilof Section has been limited to fishing within one-half mile of shore, the KRSHA may be opened to set and drift gillnetting for up to 48 hours, followed by a 24-hour closure, without an escapement trigger. • The BOF redefined what constituted a fishing period for determining when the Upper Subdistrict set gillnet fishery closed based on the 1% rule. A fishing period was now defined as a period open to commercial fishing not to exceed 24-hours per calendar day.	Shields, P., and A. Dupuis. 2012. Upper Cook Inlet commercial fisheries annual management report, 2011. Alaska Department of Fish and Game, Fishery Management Report No. 12-25, Anchorage.

Appendix B: Recent Changes

2008 Board of Fish Regulatory Changes	Citations
• The BOF instructed the department to follow the guidelines of specific management plans unless doing so would jeopardize achieving an established escapement goal. The BOF stated it was their intent that meeting escapement objectives had a higher priority than strict adherence to management plans. • Beginning with the 2008 season, all commercial fishermen in Upper Cook Inlet were allowed to fish their full allotment of gear using single strand (monofilament) mesh. • The BOF modified the no-fishing window in the Kasilof Section set gillnet fishery. From the opening of the fishery through July 7, or until the Kenai and East Foreland Sections set gillnet fisheries are opened, there was to be a weekly no-fishing window of 36-hours in duration. The BOF directed the department to make this a fixed window, that is, it was to begin sometime between 7:00 p.m. on Thursdays and 7:00 a.m. on Fridays (prior to 2008, the window was 48-hours in duration and could be implemented anytime during the week). The maximum number of emergency order hours that could be utilized during this time frame remained at 48-hours per week. The BOF also changed how the department was to use the Kasilof River Special Harvest Area (KRSHA). The board clarified their intention for using this area by stating that it should only be utilized on rare occasions and only after the department had used its emergency order authority to fish in traditional areas with more time than allowed for in existing management plans. In summary, the KRSHA was to be used only in cases when fishing in the more traditional areas did not provide for meeting escapement objectives. • Board changes OEG to 5,300 fish for the Kenai River early-run of Chinook salmon.	Shields, P. 2009. Upper Cook Inlet commercial fisheries annual management report, 2008. Alaska Department of Fish and Game, Fishery Management Report No. 09-32, Anchorage.

Appendix B: Recent Changes

2005 Board of Fish Regulatory Changes	Citations
• BOF directed that commercial harvest of sockeye salmon be allowed if inriver projections for the Kenai River are for more than 600,000 sockeye salmon and king salmon escapement goals are met. Previously commercial harvest was tied to exceeding the upper limits on escapement for sockeye salmon and Chinook salmon. • Several changes to the KRLRSSMP which included a clarification that it was the intent of the board that the department will adhere to the management plan, but that this adherence to the management plan does not over-ride the commissioner's emergency order authority in the light of exigent circumstance or new information. Several points were made in addition: o Eliminated priority for closure 'windows' over the ability to harvest fish more than the inriver run goal regarding set net fishing. o Provided a season opener when sonar counts are less than 50,000 which occurs from the Blanchard line south in the proximity of the Kasilof River. o The department is no longer obligated to manage fisheries to minimize the incidental take of coho salmon stocks, coho salmon fishing is prohibited from Nov 1 through June 30 and all coho must be returned to the water unharmed. • Removed requirement to open set gillnet fishery before the drift gillnet fishery if the fisheries are management independently for product quality. • Removed restrictions on late-run sockeye salmon into the Russian River. • Moved the offshore line defining the boundary of the Kenai and Kasilof Sections west 0.2 miles (about 1200 feet). • The Packers Creek closed water marker was moved. • The use of monofilament in gillnet webbing is allowed for up to 35 fathoms in a set gillnet in Cook Inlet, with a sunset to this regulation of December 31, 2007. • The use of spotter aircraft to assist drift gillnet fishermen was allowed in the central district. • An early season, area description, and guidelines were created for the Kalgin Island Subdistrict. • Guiding principles for the management of Upper Cook Inlet salmon were removed, as they were redundant and included in many other policies already. • The management plan was returned to pre-1999 language, the main effect of this was that language stating that "prior to July 1, stocks moving through Cook Inlet will be managed primarily for recreational purposes; from July 1 to August 15, for commercial purposes; and after August 15, for recreational purposes." would be reinstated.	Alaska Dept. of Fish and Game. 2005. Summary of Actions Alaska Board of Fisheries, Upper Cook Inlet Finfish, held January 17 – 29, 2005. Anchorage AK. https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2004_2005/UCI05Summ.pdf (accessed Jan 12, 2023).

APPENDIX C: SURVEY QUESTIONS

Questions asked of respondents are in bold. Questions answers were multiple choice, and short text-based explanations. Some text answer boxes provided the opportunity for additional explanations when needed to multiple choice questions. Not every respondent answered every question, for example respondents that indicated they had no uplands infrastructure were not asked questions about the value of their upland infrastructure, respondents that indicated they fished independently without a group were not asked questions about their group composition.

Introduction

Hello Cook Inlet East Side Set Gillnet Permit Holder,

The Alaska Commercial Fisheries Entry Commission (commission) is charged with conducting optimum numbers studies of its limited fishery. The result of an optimum numbers study would theoretically tell Alaskans what number of permits in a fishery would result in good returns for operators without being too exclusive.

In 2019, the commission embarked on conducting an optimum numbers study for the Cook Inlet set gillnet fleet (S04H) permit holders. However, after an initial survey focused on variable and fixed costs associated with fishing permits it became clear that all operations were different and complex, and all permits were not made equal. Further, given the social, economic, and political realities of today, the challenges facing those who fished on the East Side were much different than those elsewhere in the Inlet.

As a condition of these factors, and after consultation with several East Side permit holders who encouraged us to continue, CFEC is revising its study to focus just on the East Side harvesters and will attempt to arrive at an optimum number of permits in your area at various ranges of sockeye harvests.

We appreciate your help in completing the following survey and ask that you provide any other information you feel is relevant. In addition, if you would like to speak with CFEC's research staff about the fishery, we very much appreciate the opportunity. Your operations are complex and in order to provide meaningful results, your consultation is needed.

Finally, all of your answers will be held in confidence. Final results will aggregate answers and be provided as general descriptions and values.

Thank you.

The survey includes 45 questions in total, but you may not be asked every question. The presence or absence of some questions depends on your responses to one or more of the previous questions. If a question seems incorrectly numbered or it seems like you have missed a question, don't worry. The questions that do not appear have been omitted from your survey because they are not applicable to your situation.

If you have provided different emails or phone numbers to CFEC in past communications, you may receive more than one survey. In this case PLEASE COMPLETE ONLY ONE SURVEY. Likewise, if you know an East Side permit holder who does not receive a survey, you may tell them to contact CFEC to have one sent.

If you have technical difficulties, questions, or concerns please contact Brad Robbins or Glenn Haight via the contact information below.

Brad Robbins
brad.robbins@alaska.gov
907-790-6943

Glenn Haight
glenn.haight@alaska.gov
907-790-6942

Section One: General Information and Location

These questions ask about who you are, your current fishing site, and where you have fished in the past.

1. **What is your CFEC ID number (text answer)?**
2. **In what year(s) did you acquire your permit(s) (text answer)?**
3. **In what statistical area(s) is/are your current fishing site(s) (choose all that apply)?**
   - ☐ East Foreland (Statistical Area 244-42)
   - ☐ Salmatof (Statistical Area 244-41)
   - ☐ North K Beach (Statistical Area 244-32)
   - ☐ South K Beach (Statistical Area 244-31)
   - ☐ Cohoe (Statistical Area 244-22)
   - ☐ Ninilchik (Statistical Area 244-21)
4. **Where is your fishing site located within the statistical area (latitude/longitude, mile marker on the access road, etc.) (text answer)?**
5. **Does your fishing site have a Shore Fishery Lease with Alaska Department of Natural Resources?**
   - ☐ Yes
   - ☐ No
6. **Do you own the uplands at your set gillnet site?**
   - ☐ Yes *(Yes answers proceed to question 8)*
   - ☐ No *(No answers proceed to question 7)*
7. **What type of arrangement, if any, do you have with the owner of the uplands (text answer)?**
8. **What value would you place on the property if it was not part of your fishing operation (text answer)?**

9. **What value would you place on the property as a fishing operation (text answer)?**
10. **Within the stretch of beach that you fish, are there other set gillnet operations close by, either next to you or offshore out to the legal limit of the fishery?**
    - ☐ Yes
    - ☐ No
    - ☐ Other (Please explain, text answer)
11. **Have you ever fished in a different statistical area on the East Side?**
    - ☐ Yes *(Yes answers proceed to questions 12 and 13)*
    - ☐ No *(No answer proceed to question 14)*
12. **In which statistical area did you previously fish?**
    - ☐ East Foreland (Statistical Area 244-42)
    - ☐ Salmatof (Statistical Area 244-41)
    - ☐ North K Beach (Statistical Area 244-32)
    - ☐ South K Beach (Statistical Area 244-31)
    - ☐ Cohoe (Statistical Area 244-22)
    - ☐ Ninilchik (Statistical Area 244-21)
13. **In what year did you move to your current fishing site (text answer)?**
14. **Have you ever fished in a different district than the East Side?**
    - ☐ Yes *(Yes answers proceed to question 15)*
    - ☐ No *(No answers proceed to questions 14 and 15)*
15. **In what year did you start fishing on the East Side (text answer)?**
16. **Please provide any other information you think necessary to explain your answers in this section (text answer).**

Section Two: Participation

These questions ask whether you fish individually or in a group, how your business is organized, and how you sell your harvest.

17. **Do you regularly register to fish with other permit holders? .**
    - ☐ Yes *(proceeds to question 19)*
    - ☐ No *(Proceeds to question 18)*
18. **Please select from the following on how you operate.**
    - ☐ I fish my permit(s) by myself *(proceeds to question 23).*
    - ☐ I informally fish with other permit holders *(proceeds to question 19).*
19. **How many people and permits generally participate in your group (text answer)?**
20. **Do you consider yourself the lead or co-lead operator in your group?**
    - ☐ Yes *(proceeds to question 21)*
    - ☐ No *(proceeds to question 23)*
21. **What do you do that separates you as the lead (text answer)?**
22. **Do you incur the greatest financial risk from a poor season?**
    - ☐ Yes
    - ☐ No
23. **What aspects of your business create the risks? Examples: debt, asset maintenance, labor costs, etc (text answer).**
24. **Please describe the group's cost-sharing and profit-sharing arrangements (text answer)?**
25. **Do you direct market any of your harvest?**
    - ☐ Yes *(proceeds to question 26)*
    - ☐ No *(proceeds to question 27)*
26. **What percentage of your revenue from the fishing operation came from direct marketing (text answer)?**
27. **Please provide any further information you find necessary to explain the answers given in this section (text answer)?**

Section Three: Profitability

These questions ask about your financial situation in an average year.

28. **How much revenue does your operation, including other permit holders if applicable, need to break even in an average year (text answer) ?**
29. **In order to continue and consider your operation viable as a Cook Inlet set gillnet operator on the East Side, how much money do you need to make annually after accounting for your total costs (text answer)?**
30. **How much money do you need to make to cover your fixed costs? We define fixed costs as those you must pay before any fishing begins. For example, traveling to the site, equipment/site maintenance, guaranteed crew pay, etc (text answer).**
31. **Please provide any other information you find necessary to explain the answers given in this section (text answer).**

Section Four: Seasonality

These questions help CFEC understand the timing and the temp of your fishery.

32. **CFEC understands that in years past, set gillnet operations on the East Side operated as early as June and as late as October. However, just considering the regulatory structure in the last 10-15 years, what span of dates (months/days) do you believe would give you a reasonable opportunity to fish and make your average annual revenue (text answer)?**
33. **In a typical year, does your operation harvest more of the season's catch in a few days, or is the harvest steadier and more drawn out across weeks?**

    ☐ **In a few days.**

    ☐ **Drawn out over multiple weeks.**

34. **If different from your answer in Question 32, please indicate the best span of dates for your operation to prosecute the fishery (text answer).**
35. **Please provide any other information you find necessary to explain the answers given in this section (text answer)?**

Section Five: Sources of Income

This section asks about other sources of income. CFEC wants to understand how much your income is dependent on the fishery.

36. **Do you have other employment outside set gillnet fishing in Cook Inlet?**

    ☐ **Yes** *(proceeds to question 37)*

    ☐ **No** *(proceeds to question 38)*

37. **What is/are your other occupation(s) (text answer)?**
38. **In a typical year's fishing season, what percent of your annual income is from fishing in the Cook Inlet set gillnet fishery (text answer)?**
39. **Please provide any other information you find necessary to explain the answers given in this section (text answer).**

Section Six: Potential Buyback

These questions ask about your willingness to participate, the level of participation you would consider, and if appliable the behavior of permit holders in your group in a potential buyback scenario.

40. **Recently there was proposed legislation that would have prompted a buyback for the East Side set gillnet fleet. What amount of money would motivate you to consider selling a permit (text answer)?**
41. **At what price do you believe your fishing group would be willing to sell one permit? Two permits? Three Permits? Please provide an amount for each permit in the group, including a price for which you would be willing to sell all permits. Put in another way, are the first permits you would be willing to sell as valuable to your operation as the last one you would be willing to sell (text answer).**
42. **Do you think paying different amounts for permits, depending on the circumstances, would be fair?**
    - ☐ **Yes**
    - ☐ **No**
43. **Do you think your group would participate cooperatively in a buyback scenario, or do you think the members would independently determine their level of participation?**
    - ☐ **Cooperatively**
    - ☐ **Independently**
44. **Please provide any other information you find necessary to explain the answers given in this section (text answer).**

Would you be willing to have a follow-up conversation with CFEC staff to talk about your operation or provide clarification to your response?

APPENDIX D: OPEN-ENDED SURVEY RESPONSES REGARDING FINANCIAL RISK AND CHANGES TO FISHING SEASONS

The following open-ended responses were obtained from the CFEC survey. Responses have been edited only to adjust for formatting errors and obvious misspellings. Identifying information has been removed. The answers were generally left as received.

Question 23. What aspects of your business create the risks? Examples: debt, asset maintenance, labor costs, taxes, etc.

- Labor costs asset maintenance.
- All of the above.
- Crew generally 5-7 crew members. Crew provisions. Fuel. Nets. Occasionally new nets. Occasionally new outboard motors. Occasionally purchase of old 4 x4 beach trucks. Lines. Buoys. Other misc. fishing gear. Repair on aging equipment. Utilities. Licenses and permits.
- Poor management by the Alaska Department of Fish and Game. With the uncertain regulatory environment, the department has created over the last several years I cannot accurately budget for a season. Decision driven by politics rather than science have demanded changes in gear, changes in fishing time, changes in the number of nets per permit, etc. There is no normal anymore and that's an environment that is very difficult to operate in.
- fishery management, labor costs, asset maintenance.
- The entire business is risk-involved, and I regret investing in this fishery.
- Asset maintenance.
- All of my tractors, trucks, gear is 40 years old and the fishing has not been good enough to keep up with maintenance and replacement. The price of salmon has stayed the same and even dropped in the last 4 years, but the cost of labor has increased. The fishing does not make debt payments to cover the cost of the property or maintenance of the property. Startup costs like food, fuel, repairs, new gear cost more than we bring in with the limited fish days we get.
- Taxes, expenses such as food and housing.
- Asset maintenance, crew expenses (wages & provisions), absence from our regular business we operate during the other months.
- Timing of opening. Crew help.
- Maintenance is our biggest expense you run a truck or trucks on the beach and things break or just need love at the end of the season. We were replacing 4 net's every year, and lines. At a point that all net's need to be replaced along with buoys.
- Lack of fishing time.
- ANNUAL START UP COSTS, MAINTENANCE, LABOR, EQUIPMENT.
- Dedication of time to the fishing season at the expense of other work opportunities, maintenance of necessary equipment.
- Political corruption within the management of the ESSN by the Board of Fish.
- Asset maintenance, labor, food, basic supplies, gear, and taxes.

- Political closures.
- Labor, unknown fishing ability, management plans, gear, and boat maintenance.
- cost of repairs, fuel, food, crew shares; for the past 5 years taxes haven't been a risk (poor seasons); potential for injury.
- Operational Costs Each Year, Supplies, Gas, Expenses.
- The risks have become greater and greater with the states management plans. Also, debt, cost, labor, taxes, finding crew with limited fishing time, providing room and board, and limited fishing time.
- Labor costs, asset maintenance, taxes, expenses for food/repairs/fuel/licensing.
- maintenance costs, labor costs (including food), taxes, supply expenses.
- vehicle expenses, taxes, lost earning from other summer employment.
- Labor costs, maintenance, seasonal startup cost, permit renewal.
- Maintenance and labor.
- Maintenance and labor.
- Politics.
- Operating expenses, asset maintenance, labor expenses, debt.
- Weather, asset maintenance, incidental king catch, market.
- The unknown, restricted gear, fishing restrictions (not allowed to fish weekends - Friday, Saturday or Sunday). Unable to hire decent crew.
- Restricted gear and fishing opportunity, not able to hire adequate help.
- Taking one month off my jobs in Anchorage. In recent years fishing has been a pay cut because of management closures.
- Debt, labor costs, fuel, utilities, etc.
- Maintenance of gear and equipment - boats, outboards, trucks, insurance, food, and gas. Time lost is probably the biggest hit. Fishing is thought out the mid-summer when there are other high paying labor jobs that me and my crew mates could work. Time is money.
- All of the above. Set up and maintenance of boats outboards, Tractors, Trailers, Trucks, crew & family food gear fuel food all of the nets lines buoys etc. that all cost the same whether we are allowed to fish or not. Last 5 years have become much more frustrating and what has always been a fair chance of working hard and making a decent profit has become very risky because of closures that cannot be anticipated or mitigated. regardless of years of effort many of us have put in to ensure a sustainable fishery.
- Political pressures and crippling management plans.
- Boat and net maintenance and crew shares.
- Liability! Crew insurance. Insurance that is needed to cover other fishermen who come to my compound. Lack of fishing time, due to continual regulation changes that occur at the Alaska Board of Fish (BOF).
- Regulation. Asset maintenance. Being able to hire/train capable workers.
- All of the above and not being able to fish.
- Travel costs. Upkeep.
- Labor, insurance, liability, nets, trucks, fuel, boats, motors, lines, buoys, fees. Can't even come close to breaking even.

- Lack of Income due to crippling regulations
- Being essentially/effectively closed during the bulk of the run for the past four (4) years has eliminated any chance for a profit.
- Finding deckhands as the fishing time has been cut so drastically that they won't make a wage.
- Maintenance, labor costs, no return on high investment.
- Any expenses I pay are risky, as it is unlikely I will be allowed to fish enough to cover them.
- Debt, maintenance, and gear purchases. Labor is based on percentage of catch.
- Fuel, maintenance, parts, labor, food, gear, property taxes, electricity, investment
- Debt, labor costs, maintenance
- I cannot hire help because they know they may only work one day or so, I use to be able to hire 5 or 6 college students, Our site fees for 4 permits alone is $ 1,200.00. I have 5 skiffs and motors to keep up, and set nets to be replaced.
- Start up costs and labor crew members.
- Debt, asset maintenance, labor costs, taxes, my personal safety and the safety of my crew, insurance costs, costs of leases, travel expenses, living expenses for the entire crew and opportunity cost,. My basic startup costs before I catch a single fish is usually around $30,000. On days that I fish, I need 1,500 lbs of fish to break even just on those days. I usually have a crew of about 10 guys to operate my site, it costs me about $150 an hour just to operate.
- fixed costs, taxes and fish management plan that is politically controlled and does not use biology in its decision making.
- One of the largest shareholders in our family fishing corporation.
- There are significant safety risks, we have capsized 3 boats, nearly lost a few tractors to the tide, and have had several injuries. Other risks are debt (my husband and I have invested our entire life saving into the fishing), we need to set aside about $35K as a minimum every year to just go fishing. Lately we have had to borrow the money for startup costs in hopes that we can pay that back. Some years we do, lately we have not been able to.
- All.
- The only real risk is politics, weather and run fluctuations. All of the "things" necessary to fish are somewhat in our control i.e., good maintenance and care of our equipment, fair pay, and good care of our crew for fishing.
- Cash expenditures. All of the above mentioned. My son and I cover all expenditures and split the income that is left over, if there is no income we incur the loss.
- Labor costs, asset maintenance, taxes
- Fishing game playing political games!!!! Alaska board of fish changing regulation every board cycle, and not managing for mixed stock or the Kasilof River!!!
- Labor costs, equipment costs, equipment maintenance.
- No opportunity to harvest fish.
- All of the above.
- Labor.
- Assets.

Question 27. Please provide any other information you find necessary to explain the answers given in this section. (*This was a suite of questions asking about group profit sharing/dynamics and direct marketing a portion of its harvest.)*

- This is a family operation. The permits are moved between family members on occasion because the management decisions have been so erratic and chaotic. We have to have a steady income to survive and even that is being thrown back in our faces with our opponents claiming the fishery is a "hobby." This fishery is viable, but only in a stable regulatory environment. We hire crew to allow us to handle 12 nets, recently we've been so restricted that a large crew is unnecessary. Still, we have to have to be ready if opportunity is offered so we are forced to purchase fuel and food, set up our sites, and hire a minimal crew with the hope that we'll fish.
- My husband's sister is our cook and a permit holder. She has a catcher seller permit, and we sell directly to friends and family members.
- I obtain the catcher seller permit every year.
- We only direct market the high-grade salmon and have a max. number we can sell. If it is a high yield season, many of the high-grade salmon will go to the regular processor.
- DIRECT MARKETING HAS BECOME MORE OF OUR BUSINESS BECAUSE OF MARKET PRICE AND THE AMOUNT OF TIME ALLOWED TO FISH WE MUST MAXIMIZE THE VALUE OF THE LIMITED AMOUNT OF FISH.
- Due to the poor management of the ESSN fishery by the BoF, we rarely make money actually set netting and show a loss in every year but one since forming the LLC in 2017. I do make money, however, by direct marketing some of our catch under my other business.
- Fishing days have been extremely limited, and people want good quality big fish.
- I help out family where needed now. before it was on shares.
- The top percentage permit holder bares most of the site's expenses, including crew shares, maintenance, etc. The 10% permit holders are high school and college students earning money for school. As a family we protect that ability as much as possible. I am the 5% share and mainly responsible for food, cooking, and beach work. I am the wife and mom to other permit holders.
- Ours is a family operation, with support from hired crew. We feed and house them, and pay a share, even when we take a loss.
- Over time the state has unfairly tied the Cook Inlet East Side set netters directly with the management of the Chinook salmon. With limitation decreasing fishing opportunities, whereas other locations within the state of Alaska the Chinook salmon fisheries are not tied to the commercial sockeye harvest. Whereas across the state of Alaska, Chinook salmon runs are struggling, and we are the only fishery closed due to the runs of Chinook.
- The income from direct marketing varies with the length of our season. (Early shutdowns affect direct sales ability).
- variations in ADFG season management have caused fluctuations in our ability to market directly since so much depends on scheduling with buyers.
- N/A.
- My dad is the main operator of our site; I work in his boat.
- BOF regulation changes has drastically changed our fishery. I.E. Growing Personal Use Dipnet Fishery, ever increasing sockeye and king salmon goals, shortening of fishing seasons, changes to fishing nets, etc.

- I chose to crew in Bristol Bay in 2021 and 2022 following a poor season in 2020. So I have not really operated for three seasons now.
- I have fish only limited the last several years, due to 2020, 21, 22 disasters, all restricted to 600 ft. or closed. trying now to harvest enough to pay renewal non-resident fees.
- Lost our clients/customers due to not having fish to sell in last few years.
- Filled out separate Fish Tickets for catch not sold directly to processors/cannery. Should be on file.
- I now only fish the peak and sell my own fish besides what I take home for personal use.
- I direct market and process my own catch. My sales is directly related to the amount of fishing time we are given. It has been terrible for the past few years.
- The fishery was a great investment in 1987 and 1988 and over the years the adfg management destroyed the fishery, with over escapement, gear restrictions, no fishing time.
- I have tried doing direct market in the past and I learned a lot, by the time I got done with processing, freezing, storing and shipping, my costs where about as much as the salmon is at the store. If I were to do it again, I would change some things and sell it as a premium product at a higher price. But I do think I would offer a better price of fresh fish for local Alaskan's, and this could be profitable. The trick is if you hold on to you fish you run the risk of losing it all to spoilage, so he key is to be able quickly process, freeze and store it.
- We have tried it, and it is definably a separate line of work. We have talked about doing this more and more and it may be the only way to pay the bills, but if there is not fishing then there in no point doing direct market, but if the fishing where to return we would seriously consider doing this. The difficult side of this is the fishing is very difficult work, and to do that on top of the work it takes to process is almost undoable, you really need a separate entity to do the processing for you. We have seriously considered making out own smoked salmon, if the fishing where to ever return.
- In question 22, my son and I share 50/50 the financial risk. Even though we have always had three permits and since 2020 four permits, it is still considered "one" operation and he and I have operated as equal partners 50/50 in the operation. Though the 3td and forth 4th permits are in his wife's and his son's name, it is he and I that run everything.
- Adfg is actively trying to ruin the sockeye run in the Kasilof river in the name of conservation of the Kenai king. Just look at harvest date on sockeye to Chinook harvest ratio. Look at the over escapement in the Kasilof river in the last decade!

Question 35. Please provide any other information you find necessary to explain the answers given in this section. ***(This is a follow-up question to a suite of questions asking when is the best time to harvest.)***

- The July 4- August 4 times are when we generally harvest the most fish. But we need to start June 21 to teach new crew people.
- The Kasilof section traditionally makes money by fishing three to four days a week from late June to Early August. We catch a relatively small number per day over that span, usually punctuated by one or two big days if the tides align with management decisions. The big day is hit and miss, the scratch fishing is where we make our money. The scratch fishing is now being diminished to preserve Late Run Kings even though there are no late run kings in the district. We know this because the late run Kenai Kings are defined by the date of their return.
- Our revenue over the past several years has been drawn out because typically the fishery is shut down before the fish actually arrive in the vicinity of Humpy Point.

- THE RUN GENERALLY HITS OUR BEACH BETWEEN JULY17 TO JULY 30
- Run timing varies at every site along the beach, Tide cycles and weather have a great affect on run timing for fish volume.
- The management plan we are operating under now is very poorly conceived. We are sacrificing millions of reds for perhaps 100-200 large Kenai kings. That's not a very good trade, and it is costing the local economy as much as $80 million per year in lost revenue. It's also poor management of the resource. Over-escapement is not good for the stock.
- The viability or unviability of the east side fishery has been driven by political management as opposed to biological management in the last 10-15 years.
- Sport fishing for king salmon has a greater political value than the East Side set net harvest of sockeyes. Penalizing east side set netters because of King harvest is unfair.
- We never have caught King salmon during the red push around the above dates. They Kings seldom show during the red run.
- We need to be able to keep our nets in the water! In the 1980's and 90's, we were able to fish consecutive days. Pulling and setting back out constantly is ridiculous.
- If we can fish on the peak of the run we can be viable.
- In the past we were allowed to fish when the salmon were running, nowadays, we get to fish when the salmon are not running and we get flounders and no salmon, the nets are empty. There is basically no fishing time when the salmon are running.
- Question 33 it is depending on the year how the fish come in sometimes in a big spurt, and sometimes drawn out in over a couple weeks.
- My sites are located outside of a half mile and the early season is for the Kasilof River run. but we catch very few Kasilof reds.
- I as the owner of the company really only make money on the big days (over 10,000 lbs), all the other days are for the crew, but both are necessary to make the business work. They work for me on the big days, and I work for them on all the other days and it works. Having 2-4 days a year does not work for anyone (especially if gear is reduced). For years I would say "I need 10 days to have a good season" anything more than 10 days is a very good season, and 20 days or more is a GREAT season (with a full complement of gear, which is a huge factor). Reducing our gear by two thirds also drastically impacts the economics, it directly translate in to a 66% loss on my site this has to be taken into count (e.g. one net per permit).
- As you well know, the sockeye run can appear early or late.
- during those two weeks 10Klb days are good an common, to get 15k lbs days are common, anything voer 30K lbs days are rare but not unheard of they used to be one or two a season. Over 50K lb days happen every few years, a lot needs to line up (tides, weather, equipment, fish, crew).
- It is not only imperative for the income, but also for the sustainable and healthy harvest of the stock, that fishing occur throughout the presence of the entire run!!!! We are seeing alarming shifts in the makeup and timing of the run because of the breaking of this natural law. The fact that you are asking these questions in this manner an alarming indication that bean counters and politicians are looking at this and not honest experienced competent biologist fisheries managers. It is just flat our fisheries biology 101 that the entire course of the stock run must be thinned or harvested throughout the course of the run. You can't just harvest the front or the middle or make it up at end of the run!
- Kasilof is a very steady run over a longer period of time compared to Kenai run. Look at adfg sonar counts.

Question 39. Please provide any other information you find necessary to explain the answers given in this section. ***(This question is a follow-up to a suite of questions asking about income from salmon fishing versus alternative sources of income.)***

- I'm 75. I get some social security income. Also, a little income from retirement accounts (R.M.D.). This is not really a lot. But as fishing income decreases, the percent goes down. Luckily my house is paid for. Some are not as fortunate.
- I lost money this year, so this is hard to answer. In 2011 it was 90 percent of our income, in 2022 it was minus 10 percent.
- My husband and I are collecting SS.
- This fishery has not been a dependable source of income since I invested in it beginning in 2018.
- 80,000-200,000 depends on if I was selling one or selling all of them. I want to be able to have half our permits and buy a few new tractors and pay off the debt. I'd need around 350,000 to do so. So, I would sell out for 100,000 apiece for 4. I would think about selling one or two for 80,000. Otherwise, I may as well just hold them.
- We worked under the site owner for many years, for a crew wage, and only became the main operators in the last 5 years. In that time, we have never profited more than $25K. There were many years that the site profited more than this, but not recently. This year we broke even, more or less. We do not rely on fishing to pay our bills, but years that we make money it boosts our income sufficiently to tackle projects and save money against future debts.
- I'm almost 70.
- $265000 per permit for the wife's and son. I will die here fishing if fish and game lets me fish. $265.000 per permit that's for 3.
- I also commercial shrimp in PWS.
- I WENT TO COLLEGE BECAUSE I SAW TO ECONOMIC FUTURE WITH FISHING THAT COULD AFFORD THE LIFESTYLE I WANT TO LIVE. IF WE WERE ALLOWED TO FISH LIKE IN THE LATE 80'S THAT WOULD BE A DIFFERENT STORY. REGULATIONS AND FISHING TIME HAVE DECLINED TREMENDOUSLY SINCE THE LATE 80'S.
- Looking at past catch records from the prior owner of my beach site, I should be able to double my teachers salary from fishing. Instead, I have been making no profit from the actual activity of fishing and only make a profit by working the rest of the year retailing my salmon. This "no profit" situation is NOT because the fishery is not viable but rather that the management of the fishery has made it not viable.
- Depending on how much fishing time is allowed. There has not been a typical year for a long time.
- Political pressure needs to be removed.
- Main reason for other employment is health insurance.
- $240,000 for a permit and relinquishment of the area fished by it. I'd be willing to sell two permits (and area that goes with them) for $480,000, but I'm not sure I would sell the remaining permits or areas. My grandfather and father fished the area where I have fished for 64 seasons and I'm not sure I would want to give up this family heritage. I'd certainly want to discuss it with my children first.
- With the Board of Fisheries management strategy for the East Side Cook Inlet setnet fisherman, is bankrupting the set netters.
- I have fished in commercially as a set netter in Cook Inlet since I was 9 years old (I am 62). The percentage of my yearly income varies drastically and depends on the run, the price, my stage of life (attending college or employed as a teacher or working part time in retirement).

- Historically this fishery was by far the majority of my income. Not so much anymore.
- Fishermen should be harvesting the runs of fish or should be very well compensated for not being allowed to fish.
- I supported my family on ten months of employment in another occupation.
- I needed other employment to avoid student loans as I am in college.
- I work outside of fishing to provide health insurance for my family.
- The last five years it has been less than 5% because of lower catch and management closures.
- I'm the first few years it provided 25-30 percent of yearly income but I'm losing money every year just to own it.
- WE cannot make it, under current management plans. Especially fishing 3-5 days a year. We need time, or at least the ability to fish on fish abundance. We used to get both. Not anymore!
- With the decline of king salmon over the years and the politics involved we have been kept out of the water we could still make a living if they would just let us fish.
- I always had to maintain a job as fishing became so unpredictable, due to regulations paired to the in-river King counts. Also I'm retired now so live on SS and some retirement money.
- Average and Typical years no longer apply due to the fact we were starving in Cook Inlet and were forced to go into debt for another fishery away from home.
- I am married and stay at home with our young children. I hold permits to another fishery we operate only because we are rarely allowed to fish in Upper Cook Inlet. This second fishery allows us to hire decks and have reliable work for them.
- I have turned down $100k in the past, but now, who knows? We would all rather be given back our fishery, rather than be given money, but I think ten years average, plus taxes is fair. For my site, that would amount to around $265k.
- We are retired. Fishing is our only income besides our retirement.
- This fishery has become a BAD INVESTMENT and unfortunately the lifestyle and fishing business has suffered. We watched the fishery become managed politically, and not biologically, it is obviously mismanaged, and the resource allocation is unfair now.
- We are a site going through multiple generations and mostly depend upon it for income.
- I would like to just fish, but the industry has become so unpredictable that I have had to do other work. It is getting to a point that I cannot afford to fish my site and invest the money into the community to go fishing, but I also can't really sell it - I'm stuck. For years my fishing pay equaled my teaching pay ($50K teaching and $50K fishing - net income), but now it is a liability, I actually am losing money by going fishing - a lot.
- A fair offer that would cover sunk costs and future opportunity costs 250K per each permit.
- I am the wife of a retired teacher.
- My husband and I have saved like crazy to buy into the fishing, my husband was going to go to law school, but instead put nearly $300K into fishing, as it was a lucrative business and he really liked it. since 2007 things really changed the king issue became a big deal and the politics have been totally against the ESSN, I don't think people realize how much money and time we have put into this fishing industry. Law school or medical would have been soooo much easier, but now we have an asset we cannot fish, and we can't really sell.

- 1,000,000.00. You might think this silly, but this is what it would take. I wouldn't even consider it for the amount they are proposing now. Beach nets would be the most valuable, next would be our second row and then the third row would be the least valuable.
- This requires perspective. For many many years it was 100% of my income or close to it. Since 2012, the last 10 years it has become a nightmare. I have always felt the need to supplement my fishing income to help with the seasonal fluctuations, but it has always been the major source of my income.
- We do not make a profit anymore. Full stop.
- I depend on fishing 100%.
- When I was younger, I worked other jobs in the peninsula when the fish season was done. Those opportunities are not available now.