



KUSKOKWIM AREA SALMON FISHERY, 2000

A Report to the Alaska Board of Fisheries

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INTRODUCTION

The Kuskokwim Area includes the Kuskokwim River drainage and all waters of Alaska that flow into the Bering Sea between Cape Newenham and the Naskonat Peninsula (Figure 1). Six species of Pacific salmon occur in the Kuskokwim Area, with chum and coho salmon being the most abundant. Chinook, sockeye and chum salmon begin entering streams in late May and early June. Since 1984, the mid-point of the run at Bethel has averaged 23 June for chinook, 27 June for sockeye and 3 July for chum salmon. Coho salmon begin entering area streams in mid July with entry continuing into September. Pink salmon occur throughout the area, however, there has been little data collected about pink salmon populations in the Kuskokwim Area because of the lack of commercial markets and the lack of interest by subsistence users. In the Kuskokwim Area, even year returns of pink salmon are significantly greater than odd year returns.

The Alaska Department of Fish and Game (ADF&G), Division of Commercial Fisheries, manages the subsistence and commercial fisheries in the Kuskokwim Area. The Department's goal is to manage both fisheries on a sustained yield basis within the policies set forth by the Alaska Board of Fisheries (Board). By Alaska Statute (AS 16.05.258) subsistence fishers have priority use of the salmon resource.

ESCAPEMENT MONITORING AND ASSESSING RUN ABUNDANCE

The vast size, remoteness and fluvial diversity of the Kuskokwim Area presents tremendous challenges to monitoring salmon escapements and assessing run abundance. Aerial spawning ground surveys have been the most cost effective means of monitoring salmon escapements, but they have limited usefulness and reliability. The more thorough and rigorous ground based projects such as weirs, counting towers and sonar have been operated in a few locations, but until recently cost has prohibited an expansion of such projects. Over the past few years a growing number of weir projects have been developed through cooperative partnerships with various non-ADF&G organizations. These cooperative ventures have made a substantial improvement in the Department's ability to assess salmon escapements and to evaluate the effectiveness of in-season management actions.

Salmon managers require timely appraisals of run abundance in order to effectively prosecute commercial and subsistence fisheries without jeopardizing escapement needs. Escapement projects are of limited usefulness for in-season management of the Kuskokwim River commercial fishing districts because of the great distances between the areas of harvest and the location of escapement projects. It may take weeks for salmon to travel between these locations. As a consequence, managers in the Kuskokwim River rely on a variety of in-season indicators to assess run abundance including test-fisheries, commercial catch statistics and information from subsistence and sport fishers. In Kuskokwim Bay the escapement monitoring projects are within a short distance of the commercial fishing districts, so escapement data plays a greater role in management in-season.

Kuskokwim Bay managers also make extensive use of commercial catch statistics and information from subsistence fishers.

SUBSISTENCE FISHERY

The subsistence salmon fishery in the Kuskokwim area is one of the largest in the state and contributes significantly to the area's mixed cash-subsistence economy. Division of Subsistence community studies in the Kuskokwim region indicate that fish contribute as much as 85 percent of the total pounds of fish and wildlife harvested annually in some communities. Salmon contribute as much as 53 percent of some community's total annual harvest of subsistence resources.

There are 37 communities consisting of approximately 4,200 households in the Kuskokwim Fisheries Management Area. Most of these households (73 percent) are located within the Kuskokwim River drainage. Approximately 1,600 households in the region annually harvest salmon for subsistence use (Figure 2). Drift and set gill nets are the primary gear types used, however, residents also use fishwheels, beach seines, and rod and reel gear. Permits are not required, harvest reporting is voluntary, and there are no individual harvest limits. Subsistence fishing is generally open 7 days per week with periodic closures in conjunction with commercial salmon fishing periods.

The department has collected subsistence salmon harvest information since 1960. (Table 1). Over time, survey methods have been modified to include more thorough canvassing of community households and improve subsistence coho salmon harvest reporting. Prior to 1985, species other than chinook were lumped in the harvest reporting as "small salmon" (Table 1). Harvest estimation methods have been standardized since 1989 with some periodic modification to the survey methods used. Department staff conducts house to house surveys in most communities, and depend on harvest calendars and mail out surveys for a few communities. Recently, the Department has joined efforts with the U.S. Fish and Wildlife Service and the Orutsararmuit Native Council to conduct house to house surveys in Bethel.

Subsistence harvests of chinook and sockeye salmon have remained relatively stable over time (Table 2, Table 3), averaging 87,272 chinook and 41,276 sockeye during the recent ten years (1990- 1999). Subsistence harvests of coho and chum salmon have declined over the past 11 years (Table 4, Table 5), averaging 38,220 coho and 78,147 chum salmon annually from 1990 through 1999 (Table 1). Subsistence harvests of salmon, organized by specific commercial fishing districts, are shown in Table 6.

Subsistence harvest data for the 2000 fishing season have been collected, however, data entry and analysis are not yet complete. Information provided by subsistence fishers during this past summer fishing season indicate that some fishers found it much more difficult to harvest adequate numbers of chinook salmon. Subsistence fishers throughout the drainage reported that there were few chinook salmon or that chinook salmon were difficult to find, requiring more than

the usual amount of effort and resources (time and boat gas) to try and harvest chinook salmon. Some fishers felt that low water conditions, clear water, warm sunny weather during June, and fewer fish, made subsistence salmon fishing especially challenging this past season. Fishers also reported that due to the high cost of fuel and the poor chinook salmon run, they could not afford to fish as frequently as necessary to get the salmon they needed. Fishers generally reported catching more sockeye salmon than chum salmon and that there were few chum salmon returning. Some subsistence fishers indicated that they would try and harvest additional, and hopefully more abundant, coho salmon in August to help cover their shortfall of chinook and chum salmon. Coho salmon are not easily dried and smoked in the same manner as chinook, chum, and sockeye salmon and fishers are often limited in what they harvest by the amount of freezing spaces and canning supplies available.

On July 8, in order to conserve chinook salmon, the Alaska Department of Fish and Game (ADF&G) and the Federal Office of Subsistence Management (FOSM) restricted the subsistence fishery in the Kuskokwim River drainage to the use of 6-inch or less mesh gillnets and limited rod-and-reel subsistence fishers to one chinook per day. The sport fishery for chinook salmon was also closed in the Kuskokwim River drainage. Chinook salmon returns appeared to be adequate in Kuskokwim Bay districts, so no restrictions occurred in those fisheries.

COMMERCIAL FISHERY

KUSKOKWIM AREA

Commercial salmon fishing takes place in four districts within the Kuskokwim Area (Figure 1). District 1, Lower Kuskokwim River, is the portion of the Kuskokwim River upstream of Popokamiut to the regulatory markers located at Bogus Creek about nine miles above the mouth of the Tuluksak River. District 2, Middle Kuskokwim River, is the Kuskokwim River upstream from regulatory markers approximately eight miles downstream of Lower Kalskag upstream to the regulatory markers at Chuathbaluk. District 4, Quinhagak, is in Kuskokwim Bay between the mouth of Weelung Creek and the south mouth of the Arolik River. District 5, Goodnews Bay, is the waters inside of Goodnews Bay.

The first commercial fishing period of the 2000 Kuskokwim Area salmon season occurred in District W-4, Quinhagak on 15 June. The season closed by regulation on 8 September. A total of 623 permit holders took 26,115 chinook, 109,939 sockeye, 307,439 coho, 17 pink and 49,574 chum salmon (Table 7). This was the second lowest number of permits fished in the Kuskokwim Area since 1972 (Table 8). The below average harvests were primarily due to low catches, below average effort levels, and limited fishing time in all districts. There were no sales of salmon roe in the Kuskokwim Area in 2000.

The 2000 commercial salmon catch in the Kuskokwim Area was:

	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>
	26,115	109,939	307,439	17	49,574
10-Year Average	46,697	161,151	548,323	42,227 ^a	333,216

^a even years only.

The Kuskokwim Area chinook salmon catch was 44% below the most recent 10-year (1990-1999) average catch of 46,697. The price per pound for chinook salmon was \$0.40 this year, 13% below the average of \$0.46 (Table 9). The sockeye salmon catch was 32% below the average of 161,151. The \$0.55 price per pound paid for sockeye salmon was 15% below the average of \$0.65. The coho salmon catch was only 56% of the average of 548,323. The price of \$0.28 per pound was 35% below the average price of \$0.43. The pink salmon catch was well below the even year average of 42,227. Pink salmon brought \$0.10 a pound, slightly below the average price of \$0.11. The chum salmon catch was 85% below the average of 333,216. The price of \$0.10 was 52% below the average of \$0.21.

Kuskokwim permit holders received \$1,197,149 for their catch (excluding bonuses and other incentives not reported on fish tickets). The value of the catch was 64% below the previous 10-year average of \$3,368,180. The average permit holder received \$1,922, well below the 10-year average of \$4,261 (Table 8).

KUSKOKWIM RIVER DISTRICTS W-1 AND W-2

The commercial fishery opened in the Kuskokwim River on 5 July with the first period limited to the lower half of District W-1, as required by regulation and warranted by the indications of low salmon abundance (Table 10). Based on the various test-fish and escapement projects it appeared that the sockeye salmon run was adequate, but the chinook and chum salmon returns were very poor. The weak returns of chinook and chum salmon resulted in a very conservative management strategy. There was only one, half-district 4-hour commercial period in District W-1 during the chum salmon directed fishery. The chum harvest of 11,026 fish and chinook harvest of 357 fish, were record low catches for that time period. The incidental harvest of sockeye salmon was below average for that date. Pink salmon landings were well below average due to low run strength, limited fishing time, and lack of a market for this species. There were no periods in District W-2 in June and July due to salmon conservation needs.

The State and Federal governments declared the Kuskokwim River drainage an economic disaster area due to the extremely poor returns of chinook and chum salmon. In September 2000, the Alaska Board of Fisheries classified Kuskokwim River chinook and chum salmon stocks as yield concerns based on guidelines established in the Policy for the Management of Sustainable Salmon Fisheries.

Management transitioned to coho salmon on 28 July when coho began to dominate subsistence and test-fish catches. Throughout the season, based on monitoring projects and commercial catch data, coho salmon run strength appeared to be average. The coho salmon fishery opened on 1 August with a 4-hour period in the lower half of District W-1. This period was restricted to the lower half of District W-1 in order to conserve chum salmon and because of limited processing capacity. There were a total of 12 commercial fishing periods in District W-1 and 2 periods in District W-2 during the coho season (Table 10). The first commercial coho period was 4 hours long while the remaining 11 periods were 6 hours long. In all but the last period, fishing in District W-1 was restricted to half the district because of limited processing capacity. The half-district openings alternated between the upper (Subdistrict W-1A) and lower (Subdistrict W-1B) half of District W-1. Fishers had to register to fish in only one subdistrict and were allowed to transfer only one time after a 48-hour notice. The coho harvest of 261,379 fish, was the highest commercial harvest since 1996.

The 2000 commercial salmon catch in Districts W-1 & W-2 was:

	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>
	444	4,130	261,379	7	11,571
10-Year Average	23,387	58,866	468,650	8,702 ^a	261,412

^a even years only.

Six escapement monitoring projects, including four cooperative and two department operated projects, provided data to assist the management of Kuskokwim River fisheries in 2000. With assistance from the USF&WS and ADF&G the Kwethluk IRA Council operated a weir on the Kwethluk River, while the Kuskokwim Native Association and ADF&G operated weirs on the George and Tatlawiksuk Rivers. The Takotna Community School and ADF&G operated a weir on the Takotna River. The Association of Village Council Presidents contributed a fisheries technician to participate in the department's Aniak River sonar project and the Orutsararmuit Native Council provided a technician to assist in operations of the Bethel Test Fish project. Funding for these projects was provided by grants from the Bering Sea Fishermen's Association, the FOSM, the 1997 Federal Fisheries Disaster Relief Fund, and in-kind support from the department.

Overall, the 2000 Kuskokwim River chinook and chum salmon runs were among the poorest on record, as evidenced by record low commercial catches and record low CPUE in the Bethel test fishery. The Aniak River sonar count and Kogruklu River weir chum salmon passage were 42% and 63% below their respective escapement objectives (Table 11). Daily chum and chinook salmon passage at the Kwethluk, George, Tatlawiksuk, and Takotna River escapement projects were also extremely low when compared to previous year's data. Because of extremely poor chinook and chum salmon run strength, commercial fishing time was limited, resulting in chinook and chum salmon catches of only 2% and 4% of their recent 10-year averages. Accordingly, the incidental sockeye salmon catch was 93% below average because of the

reduced fishing time resulting from chinook and chum salmon conservation measures.

The chinook salmon escapement at the Kogrukluk River weir of 3,310 was 68% below the objective of 10,000. The minimum escapement objective for chinook salmon was not achieved in all six aerial survey index streams. Sockeye salmon passage at the Kogrukluk River weir of 2,770 was below the average escapement of 9,500. There are no pink salmon escapement goals in the Kuskokwim River drainage. Pink salmon escapement was very poor (Table 11).

Commercial fishing time was about average during the coho salmon run, however effort per period was well below average since commercial periods were restricted to half of District W-1. Effort-hours (14,176) was 63% below the 10-year average (Table 12). The coho salmon harvest was the largest since 1996, but still well below the recent 10-year average. The coho salmon escapement of 33,135 at the Kogrukluk River weir is the fourth highest on record and above the escapement objective of 25,000 (Table 11).

The coho salmon run timing was early and commercial fishing could have started before 1 August. However the river remained closed in July to avoid harvesting chum salmon and to provide additional coho salmon to middle and upper Kuskokwim River subsistence fishers.

In the Kuskokwim River, 536 permit holders received \$517,968 for their catch. This is only 22% of the previous 10-year average exvessel value (Table 7). Coho salmon were the most valuable species bringing fishers \$492,682 or 95% of the total value of the catch. Sockeye salmon was the second most valuable species providing 3% of the total value of the catch. Chum salmon was the third most valuable species followed by chinook and pink salmon.

DISTRICT W-4, QUINHAGAK

District W-4, Quinhagak first opened to commercial fishing on 15 June (Table 13). By regulation, the first fishing period is to occur before 16 June. In District W-4 run strength determination is primarily based on commercial catches.

Chinook salmon catches were average for the entire season and the department scheduled the normal two periods per week during the chinook run. Sockeye salmon dominated the catch starting on 29 June and management was directed to that species. Sockeye salmon catches were above average for most of the season and fishing periods occurred on the normal three periods per week schedule. Coho salmon exceeded the sockeye salmon catch on 28 July and management was directed to coho salmon. The coho harvests were above average through the second week of August. In the third week of August, coho catches were average to below average. The coho catches in late August were record lows for that time period. The fishery closed after the final period on 24 August (Table 13).

The 2000 commercial salmon catch in District W-4 was:

	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>
	21,229	68,557	30,529	3	30,553
10-Year Average	20,851	62,963	59,978	22,883 ^a	56,394

^a even years only.

The number of permits fished was 26% below the 10-year average. In 2000, 230 permit holders fished at least one period during the season. There were 27 commercial fishing periods, which was 13% below the 10-year average of 31 periods. Effort-hours (21,852) was 26% below the 10-year average (Table 12). The chinook salmon catch was 2% above the recent 10-year average. The sockeye salmon catch was 9% above average while the chum salmon catch was 46% below average. The coho salmon catch was 49% below the 10-year average. The low pink salmon landings were partially due to lack of a market for this species. Our ability to monitor escapements in the district was limited due to high water and poor aerial survey conditions.

The value of the catch in District W-4 was \$466,167 paid to 230 permit holders (Table 7). This was 35% below the previous 10-year average. The most valuable species was sockeye salmon providing 54% of the fishery's value. Chinook salmon was second in value providing 28% of the fishery's value. Coho and chum salmon were the third and fourth most valuable species.

DISTRICT 5, GOODNEWS BAY

District W-5 was not opened until 26 June to direct the harvest at sockeye salmon and protect chinook salmon, which has been a concern because of recent weak runs (Table 14). The number of permits fished was one-half the 10-year average. In 2000, 46 permit holders fished at least one period during the season. Effort-hours (5,808) was 46% below the 10-year average (Table 12). The catch per unit of effort for sockeye was near average throughout the season. In August, coho salmon catches were average for the first two periods, above average for the next three periods, and below average for the last four openings. The season closed after the final period on 24 August. There were 25 commercial periods in 2000, which is 13% below the recent 10-year average.

The 2000 commercial salmon catch in District W-5 was:

	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>
	4,442	37,252	15,531	7	7,450
10-year Average	2,433	39,322	19,690	6,678 ^a	15,511

^a even years only.

The chinook salmon catch was 83% above the 10-year average, but escapement at the Middle Fork Goodnews River weir was 5% below the goal of 3,500 fish (Table 11). The sockeye salmon catch was 5% below and the chum salmon catch was 50% below the recent 10-year average. The sockeye escapement objective at the weir was achieved while the chum count was slightly below the escapement objective. The coho salmon catch was 22% below the recent 10-year average. An escapement goal has not been established for coho but escapement was above average. The lack of pink salmon landings was likely due to poor run strength and lack of a market.

The value of the Goodnews Bay commercial catch was \$213,013 paid to 46 permit holders (Table 7). This year's catch was worth 30% less than the recent 10-year average. Sockeye salmon were the most valuable species contributing 69% of the catches' value. Coho, chinook, and chum salmon were the second, third, and fourth most valuable species.

PRELIMINARY OUTLOOK FOR 2001

The Kuskokwim Area has no formal forecast for salmon returns. Broad expectations are developed based on an evaluation of parent-year escapements and trends in harvest and perceived productivity. Harvest expectations are described using a loose interpretation of the statistical quartiles for the past ten years of harvest performance as a general guideline. Most of the salmon age composition data from the 2000 season has not yet been processed as of this writing.

KUSKOKWIM RIVER

Chinook:

- Recent Year Trends: diminished commercial harvest for most of the past 10 years, plus poor escapements in 1998, 1999 and 2000
- Parent Year Escapements: good
- Poor ocean survival appears to have impacted Kuskokwim River chinook salmon in 1998, 1999 and 2000 and this may continue to be a factor in 2001.

Given the last three years of poor to extremely poor chinook salmon returns, it is expected that the 2001 chinook return will be well below average. The 2001 chinook salmon return may be too low to provide for a harvestable surplus for the commercial fishery. We are tentatively approaching the 2001 season with little expectation of commercial fishing during June and July. Furthermore, reduction of the chinook salmon subsistence harvest may be necessary in 2001.

Chum

- Recent Year Trends: chum salmon returns have been poor to extremely poor since 1997

- Parent Year Escapements: good in 1996 (will return as age-5 fish), but very poor in 1997 (will return as age-4 fish).
- 2000 Age Composition Data: preliminary results are that the low returns in 2000 were seen in both age-4 and age-5 chum salmon. The poor return of age-4 chums indicates that in 2001 the age-5 component will be weak.
- Poor ocean survival appears to have impacted Kuskokwim River chum salmon in 1997, 1998, 1999 and 2000 and this may continue to be a factor in 2001.

Given the last four years of poor to extremely poor chum salmon returns and the low return of age-4 chum in 2000, it is likely that the 2001 chum return will be well below average and too low to provide for a harvestable surplus for the commercial fishery. We are tentatively approaching the 2001 season with little expectation of commercial fishing during June and July. Furthermore, reduction of the chum salmon subsistence harvest may be necessary in 2001.

Sockeye

Sockeye returns are expected to be average to below average, however no commercial harvest is expected due to anticipated chinook and chum salmon conservation measures.

Coho

- Recent Year Trends: coho returns in 1997, 1998 and 1999 were poor and the return in 2000 was near average to below average.
- Parent Year Escapements: poor in 1997.
- 2000 Age Composition Data: analysis incomplete, but the vast majority of coho return at age-4.
- Poor ocean survival appears to have impacted Kuskokwim River coho salmon in 1997, 1998, 1999 and 2000 and this may continue to be a factor in 2001.

Although our ability to assess coho salmon returns is uncertain, a below average run is expected given the poor escapement in 1997 and the poor survival experienced since 1997. Commercial harvest is expected to be below average.

KUSKOKWIM BAY

Chinook

- Recent Year Trends: average to above average commercial harvest for much of the past few years. Recent year escapement information for the Kanektok River (District 4) has been limited, but escapements to the Goodnews River (District 5) have been above average or near the escapement goal.
- Parent Year Escapements: fair to good, although information from the Kanektok River is incomplete.

The 2001 chinook salmon return to Kuskokwim Bay districts is expected to be near average. The District 4 fishery may be impacted by conservation measures directed at conserving Kuskokwim River salmon. In District 5, management actions will continue to be oriented towards rebuilding chinook salmon run strength, as has been the case for the past several years.

Chum

- Recent Year Trends: chum salmon runs have been average to below average; escapement information is lacking for the District 4, but in District 5 the escapement goal has been consistently achieved, or nearly achieved.
- Parent Year Escapements: the limited information available for District 4 suggests chum salmon escapement to the Kanektok River was below average in both 1996 and 1997; escapement goals were achieved in the Goodnews River of District 5.

The 2001 chum salmon return to Kuskokwim Bay districts is expected to be near average to below average. The District 4 fishery may be impacted by conservation measures directed at conserving Kuskokwim River chinook and chum salmon.

Sockeye

- Recent Year Trends: sockeye salmon runs have been average to below average; escapement information is lacking for the District 4, but in District 5 the escapement goal has been consistently achieved.
- Parent Year Escapements: the limited information available for District 4 suggests sockeye salmon escapement to the Kanektok River was good in both 1996 and 1997; escapement goals were achieved in the Goodnews River of District 5.

The 2001 sockeye salmon return to Kuskokwim Bay districts is expected to be average to above average. The District 4 fishery may be impacted by conservation measures directed at conserving Kuskokwim River chinook and chum salmon.

Coho

- Recent Year Trends: coho runs were poor to below average in 1997, 1999 and 2000 and near average in 1998.
- Parent Year Escapements: no coho escapement information is available for District 4; in District 5 the escapement to Goodnews River was poor in 1997.
- Poor ocean survival appears to have impacted Kuskokwim Bay coho salmon in 1997, 1999 and 2000 and this may continue to be a factor in 2001.

Given the uncertainty of our ability to assess coho salmon runs, the outlook for 2001 commercial harvest ranges from below average to above average.

Table 1. Historical subsistence salmon harvest, Kuskokwim Area, 1960 - 1999.

Year	Chinook	Sockeye	Chum	Coho	"Small Salmon"
1960	18,887				303,153
61	28,934				183,186
62	13,582				163,554
63	34,482				138,669
64	29,017				190,191
65	24,697				250,878
66	49,325				180,054
67	61,262				221,419
68	35,698				278,008
69	40,617				238,798
1970	69,612				258,678
71	43,013				123,290
72	38,176				121,641
73	38,451				203,005
74	26,665				309,950
75	47,569				176,389
76	58,055				228,104
77	58,158				215,590
78	38,145				137,489
79	57,053				190,567
1980	62,047				216,322
81	64,274				191,855
82	61,141				240,872
83	51,020				76,059
84	60,668				103,144
85	45,720	33,632	95,999	24,524	154,155
86	54,256	20,239	142,930	29,742	192,911
87	71,804	25,180	70,709	18,085	113,974
88	75,107	33,102	153,980	43,866	230,948
89	85,322	37,088	145,106	57,847	240,041
1990	92,678	39,662	131,469	50,713	221,844
91	90,224	56,404	96,311	55,620	208,335
92	68,686	34,160	99,577	44,496	178,233
93	91,721	51,364	61,726	35,295	148,385
94	98,378	39,279	76,951	36,504	152,734
95	100,159	28,622	68,942	39,165	136,729
96	81,598	35,036	90,238	34,698	159,972
97	85,506	41,270	40,976	30,714	112,960
98	86,115	37,578	67,665	27,239	132,482
99	77,659	49,388	47,612	27,754	124,754
40 Year Average	57,887				186,233
1960 - 1979 Average	40,570				205,631
1980 - 1999 Average	75,204				166,835
1985 - 1999 Average	80,329	37,467	92,679	37,084	167,230
1990 - 1999 Average	87,272	41,276	78,147	38,220	157,643

Note: Prior to 1985, subsistence salmon harvest information was collected using two basic categories, King salmon and Small salmon. Small salmon were comprised of primarily chum and sockeye salmon with some coho salmon and very few pink salmon. In 1985, survey methods were modified to identify chum, sockeye and coho salmon harvests in the subsistence catch. Pink salmon are harvested primarily on even number years and have not been included in the subsistence surveys. Data for 1983, 1984, 1986 and 1987 are estimates based on surveys in a sample of communities. Survey methods were revised beginning in 1988.

Table 2. Estimated subsistence chinook salmon harvests, Kuskokwim Area, 1989 - 1999.

Community	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Kipnuk	54	108	80		348	150				119	29
Kwigillingok				9	80	7		15		100	
Kongiganak	1,412	1,442	778	904	781	1,271	843	830	1,609	1,250	1,320
Tuntutuliak	3,781	4,044	4,143	3,524	3,633	4,679	4,023	4,027	3,730	4,008	3,645
Eek	1,580	4,920	2,360	2,232	2,619	2,917	3,535	2,568	2,253	2,131	1,816
Kasigluk	2,173	3,167	2,955	94	548	694	392	579	880	541	480
Nunapitchuk	3,170	3,199	4,106	3,575	3,810	4,746	4,400	3,234	4,086	4,934	4,521
Atmautluak	1,227	2,569	1,784	1,422	1,818	1,819	1,918	1,801	1,768	1,452	1,469
Napakiak	3,710	4,158	2,543	3,328	3,972	3,545	3,902	3,784	2,873	3,504	2,380
Napaskiak	4,699	4,972	3,864	4,133	5,671	6,356	4,984	4,453	4,887	5,452	3,827
Oscarville	1,591	898	1,422	122	1,475	1,385	1,438	996	512	981	2,289
Bethel	24,655	19,641	28,817	17,196	22,083	24,515	29,568	20,783	21,253	23,963	24,996
Kwethluk	7,562	9,218	7,511	6,504	9,181	9,262	8,931	9,183	6,872	7,940	6,081
Akiachak	5,504	7,168	5,657	4,163	7,231	8,081	6,571	5,209	7,414	6,507	5,373
Akiak	4,811	5,178	3,247	3,207	4,280	4,759	4,118	4,569	3,378	3,311	2,356
Tuluksak	3,791	1,878	3,351	2,382	3,755	4,534	4,333	3,143	5,627	3,701	2,348
Lower Kalskag	3,337	2,494	3,947	2,269	3,930	3,976	5,321	2,870	3,549	2,041	1,787
Upper Kalskag	1,256	1,558	1,105	1,366	1,679	1,340	1,396	1,351	1,107	1,244	1,688
Aniak	3,406	3,189	3,261	3,955	4,618	3,413	3,422	3,204	3,794	3,508	2,596
Chuathbaluk	403	1,674	791	933	1,447	1,043	2,615	880	1,290	810	1,110
Crooked Creek	451	929	947	472	771	968	934	864	944	772	681
Red Devil	189	273	168	328	487	379	425	337	452	262	161
Sleetmute	420	711	770	801	1,767	1,327	885	1,230	1,171	947	447
Stony River	692	498	586	233	445	359	559	597	863	445	55
Lime Village	105	240	60		41	216	144	48	59	241	155
McGrath	418	1,231	880	1,038	567	1,052	800	1,203	974	769	1,295
Takotna	62	62	0	0	0	0	0	0	0	2	0
Nikolai	716	560	421	605	475	449	979	305	232	330	288
Telida	1			0							
Quinhagak	3,542	6,013	3,693	3,447	3,368	3,995	2,746	3,075	3,433	4,041	3,167
Goodnews Bay	419	351	894	318	628	712	858	403	437	713	805
Platinum	48	188	23	56	80	72	25	12	12	5	66
Mekoryuk						6				1	15
Newtok	5	1				2					
Nightmute		3	20			8					6
Toksook Bay	127	143	25	49	128	341	94	45	47	48	407
Tununak	5		15		5					40	
Chefomak										2	
Other				21							
Total	85,322	92,678	90,224	68,686	91,721	98,378	100,159	81,598	85,506	86,115	77,659

Table 3. Estimated subsistence sockeye salmon harvests, Kuskokwim Area, 1989 - 1999.

Community	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Kipnuk	402	175	136		90	132				107	54
Kwigillingok					140	5		10		125	
Kongiganak	658	423	533	905	705	702	530	722	1,128	888	991
Tuntutuliak	1,173	1,954	1,768	1,894	955	3,185	1,134	1,526	2,048	1,275	2,048
Eek	170	1,177	489	671	406	461	283	478	584	382	625
Kasigluk	235	810	1,421	81	122	275	165	588	499	53	183
Nunapituchuk	1,026	1,098	2,277	2,273	2,545	1,555	882	1,735	2,330	2,250	3,493
Atmautluak	1,143	1,501	881	1,304	1,387	796	1,099	1,456	724	1,050	1,874
Napakiak	1,752	1,375	1,176	1,315	1,150	1,627	959	1,083	1,455	1,705	2,115
Napaskiak	721	1,227	2,673	2,428	3,495	1,933	1,605	2,446	2,329	1,617	2,058
Oscarville	404	153	711	35	932	324	414	212	78	288	2,165
Bethel	7,316	6,392	17,669	7,173	10,503	8,563	8,190	7,112	10,868	8,134	13,145
Kwethluk	2,414	4,055	3,723	1,829	3,790	3,742	2,504	4,035	3,581	4,036	3,112
Akiachak	2,420	3,176	4,123	3,095	4,545	3,323	2,019	2,607	3,014	2,654	3,130
Akiak	2,492	1,739	1,708	1,458	3,558	1,786	643	1,449	1,398	1,478	1,145
Tuluksak	2,314	1,120	3,595	2,034	2,492	1,393	1,244	1,075	1,558	1,490	1,490
Lower Kalskag	767	851	1,092	467	2,339	950	681	1,144	1,455	574	605
Upper Kalskag	338	287	276	333	349	298	55	294	251	245	614
Aniak	959	1,356	2,031	1,180	1,578	571	975	1,277	1,124	1,151	1,310
Chuathbaluk	215	1,178	1,246	471	823	995	472	661	881	248	460
Crooked Creek	436	1,556	998	489	831	512	192	304	350	716	690
Red Devil	356	445	426	315	717	311	620	977	697	346	568
Sleetmute	776	1,060	1,164	855	1,609	1,158	1,083	1,304	1,458	1,398	946
Stony River	1,084	835	1,912	1,462	1,488	802	1,342	1,218	1,607	433	1,230
Lime Village	5,653	2,333	956		2,800	1,760	700	500	660	2,782	2,550
McGrath	0	0	0	0	0	0	0	0	20	0	74
Takotna	0	0	0	0	0	0	0	0	0	0	0
Nikolai	0	0	0	0	0	0	0	0	0	0	0
Telida	0			0							
Quinhagak	633	1,951	1,772	1,264	1,082	1,000	573	400	556	1,490	1,639
Goodnews Bay	710	970	1,132	669	784	669	219	411	472	483	770
Platinum	151	153	150	158	51	101	34	7	137	25	102
Mekoryuk		50	1		1	87				21	2
Newtok	10	3				20					
Nightmute		10	210			15					5
Toksook Bay	277	242	105	1	66	228	5	5	8	101	193
Tununak	83	7	50		30					20	
Cheformak										13	
Other				1	1						
Total	37,088	39,662	56,404	34,160	51,364	39,279	28,622	35,036	41,270	37,578	49,388

Table 4. Estimated subsistence coho salmon harvests, Kuskokwim Area, 1989 - 1999.

Community	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Kipnuk	200	460	30		25	185				85	75
Kwigillingok					80			5		40	
Kongiganak	562	413	540	544	502	566	605	421	618	275	222
Tuntutuliak	508	1,135	729	761	820	441	365	1,339	669	935	331
Eek	349	1,620	343	531	206	426	347	389	80	306	258
Kasigliuk	772	958	1,769	174	228	387	518	368	518	140	92
Nunapitchuk	469	573	1,167	2,226	321	781	641	1,310	872	427	391
Almautluak	971	350	254	518	426	411	566	537	531	425	205
Napakiak	1,757	1,700	597	1,237	590	920	390	600	168	749	487
Napaskiak	1,130	922	754	866	783	2,012	580	398	658	540	355
Oscarville	430	43	136			49		19	60	2	970
Bethel	22,390	19,342	28,136	15,902	13,764	12,258	19,906	12,929	15,108	11,294	12,414
Kwethluk	3,736	3,928	2,380	2,325	1,838	1,816	1,304	3,195	1,193	1,731	2,993
Akiachak	1,890	1,621	2,393	2,108	1,351	1,531	677	850	441	477	663
Akiak	4,959	1,591	2,231	1,137	1,315	1,110	501	972	846	674	254
Tuluksak	1,483	946	1,903	1,544	412	285	531	1,116	434	879	307
Lower Kalskag	981	375	510	469	778	845	718	1,022	652	347	302
Upper Kalskag	688	300	493	931	354	184	167	360	781	812	153
Aniak	2,640	1,484	1,143	1,844	1,091	1,682	1,265	2,671	1,494	1,308	1,418
Chuathbaluk	272	813	93	349	366	795	84	395	217	55	137
Crooked Creek	530	886	277	413	409	581	381	171	261	392	515
Red Devil	1,591	866	1,132	1,160	1,812	994	1,557	1,274	1,391	425	455
Sleetmute	1,009	1,023	1,557	1,132	880	649	1,075	846	419	301	226
Stony River	611	423	502	744	512	505	1,083	571	450	429	511
Lime Village	2,025	538	336	300	618	960	246		277	776	600
McGrath	537	2,408	882	2,780	1,989	2,558	2,225	919	753	924	553
Takotna	40	0	0	0	0	0	0	0	0	3	0
Nikolai	328	73	83	173	267	119	545	64	141	113	117
Telida	60			0							
Quinhagak	3,787	4,174	3,232	2,958	2,152	2,739	2,561	1,467	1,264	1,702	2,021
Goodnews Bay	830	1,556	1,789	1,163	1,197	435	296	203	343	312	439
Platinum	77	90	39	190	29	77	9	59	54	19	143
Mekoryuk	106	52	130	2	53	87		3		178	64
Newtok	15	4									
Nightmute	70		20								
Toksook Bay	35	46	1	15	57	116	22	135	21	97	63
Tununak	9				70					60	
Cheformak										7	
Other			39								
Total	57,847	50,713	55,620	44,496	35,295	36,504	39,165	34,698	30,714	27,239	27,754

Table 5. Estimated subsistence chum salmon harvests, Kuskokwim Area, 1989 - 1999.

Community	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Kipnuk		540	205		601	214				114	31
Kwigillingok					200	5		30		250	
Kongiganak	1,967	980	1,036	1,524	811	1,340	1,275	1,331	902	1,643	1,152
Tuntutuliak	5,068	6,250	4,755	6,052	2,899	5,232	3,488	5,852	2,877	3,774	1,862
Eek	972	3,090	814	1,397	244	624	815	923	649	787	508
Kasigluk	3,007	3,406	3,137	26	374	537	457	1,196	1,278	218	350
Nunapitchuk	6,923	5,240	6,055	8,229	4,854	4,587	4,297	5,833	2,794	5,389	4,742
Atmautluak	3,014	4,006	2,394	3,183	1,345	1,455	3,466	2,672	1,484	1,916	1,667
Napakiak	7,068	8,389	2,340	4,401	2,281	4,096	3,084	4,249	1,458	4,556	1,573
Napaskiak	13,079	8,166	6,582	6,061	3,622	5,605	4,271	4,983	2,589	4,227	2,687
Oscarville	1,341	925	1,141	29	566	676	1,018	1,552	35	420	1,906
Bethel	25,581	18,436	22,770	14,908	9,172	12,341	15,821	16,403	8,790	12,057	11,163
Kwethluk	10,128	11,102	5,497	7,647	3,491	6,102	6,050	11,870	3,554	4,786	3,449
Akiachak	7,747	9,133	5,994	5,771	3,492	6,286	4,074	4,993	1,768	2,467	2,741
Akiak	13,000	8,235	6,668	5,907	7,549	4,599	1,878	4,640	1,725	2,231	1,202
Tuluksak	9,796	5,845	5,695	4,798	3,834	2,476	2,609	3,167	2,887	3,224	1,566
Lower Kalskag	4,932	4,212	2,886	2,758	3,062	2,758	1,455	3,357	1,487	977	759
Upper Kalskag	3,427	1,321	2,357	2,843	578	864	1,351	1,621	405	487	665
Aniak	10,404	9,089	3,492	7,870	2,900	2,612	3,566	8,447	1,747	5,023	1,764
Chuathbaluk	2,051	4,510	1,912	2,502	2,895	1,615	1,807	2,089	1,244	1,027	729
Crooked Creek	779	2,884	1,367	904	715	649	358	347	311	2,561	806
Red Devil	1,376	1,466	1,236	1,523	1,004	1,220	882	787	551	565	193
Sleetmute	1,813	1,874	1,862	3,151	681	1,533	1,758	1,215	417	981	367
Stony River	1,352	1,132	602	1,335	775	932	1,375	443	591	897	358
Lime Village	2,100	2,500	715		508	2,080	920	500	251	964	1,012
McGrath	1,276	2,839	1,068	2,854	590	1,294	1,486	206	111	1,462	260
Takotna	250	56	0	0	0	0	0	10	0	15	0
Nikolai	1,221	882	495	818	353	293	301	249	65	519	89
Telida	15		0								
Quinhagak	1,568	3,234	1,593	1,833	1,008	1,452	686	930	600	1,448	1,810
Goodnews Bay	620	193	144	921	188	425	152	214	133	285	250
Platinum	164	139	5	85		45	3	5		31	31
Mekoryuk	2,915	1,067	1,178		808	2,337				2,176	1,583
Newtok	20	4									
Nightmute	30	35	60			7					10
Toksook Bay	86	224	103	246	296	660	239	124	273	171	326
Tununak	16	65	150		30						
Cheformak										17	
Other			3	1							
Total	145,106	131,469	96,311	99,577	61,726	76,951	68,942	90,238	40,976	67,665	47,612

Table 6. Estimated subsistence salmon harvests by commercial fishing district, Kuskokwim Area, 1989 - 1999.

District 1 - Lower Kuskokwim

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Chinook	69,720	72,560	72,618	52,795	71,285	78,720	78,956	65,174	67,142	69,894	62,930
Sockeye	24,640	26,375	42,883	26,495	36,815	29,802	21,671	26,534	31,594	27,532	37,629
Coho	41,606	35,602	43,362	29,873	22,661	23,178	26,931	24,448	22,196	18,979	20,018
Chum	108,691	93,743	75,083	69,933	45,335	56,175	52,603	69,694	32,790	48,059	36,600

District 2 - Lower Kalskaq - Chuathbaluk

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Chinook	8,402	8,915	9,104	8,523	11,674	9,772	12,754	8,305	9,740	7,603	7,181
Sockeye	2,279	3,672	4,645	2,451	5,089	2,814	2,183	3,376	3,711	2,218	2,989
Coho	4,581	2,972	2,239	3,593	2,589	3,506	2,234	4,448	3,144	2,522	2,010
Chum	20,814	19,132	10,647	15,973	9,435	7,849	8,179	15,514	4,883	7,514	3,916

Non Commercial Fishing Area - Crooked Creek to Telida

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Chinook	3,054	4,504	3,832	3,477	4,553	4,750	4,726	4,584	4,695	3,768	3,082
Sockeye	8,305	6,229	5,456	3,121	7,445	4,543	3,937	4,303	4,792	5,675	6,059
Coho	6,731	6,217	4,769	6,702	6,487	6,366	7,112	3,845	3,692	3,363	2,976
Chum	10,182	13,633	7,345	10,585	4,626	8,001	7,080	3,757	2,297	7,964	3,085

District 4 - Quinhaqak

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Chinook	3,542	6,013	3,693	3,447	3,368	3,995	2,746	3,075	3,433	4,041	3,167
Sockeye	633	1,951	1,772	1,264	1,082	1,000	573	400	556	1,490	1,639
Coho	3,787	4,174	3,232	2,958	2,152	2,739	2,561	1,467	1,264	1,702	2,021
Chum	1,568	3,234	1,593	1,833	1,008	1,452	686	930	600	1,448	1,810

District 5 - Goodnews Bay & Platinum

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Chinook	467	539	917	374	708	784	883	415	449	718	871
Sockeye	861	1,123	1,282	827	835	770	253	418	609	508	872
Coho	907	1,646	1,828	1,353	1,226	512	305	352	397	331	582
Chum	784	332	149	1,006	188	470	155	219	133	316	281

Bering Coast - Mekoryuk and Nelson Island Communities

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Chinook	137	147	60	49	133	357	94	45	47	91	428
Sockeye	370	312	366	1	97	350	5	5	8	155	200
Coho	235	102	151	17	180	203	22	138	21	342	147
Chum	3,067	1,395	1,491	246	1,134	3,004	239	124	273	2,364	1,919

Table 7. Harvest and ex-vessel value of Kuskokwim Area salmon catch by district, 2000.

<u>Lower Kuskokwim River, District W-1</u>						
	<u>Chinook</u>	<u>Sockeye</u>	<u>Coho</u>	<u>Pink</u>	<u>Chum</u>	<u>Total</u>
			<u>2000</u>			
Fish	444	4,130	259,703	7	11,570	275,854
Pounds	7,609	29,127	1,748,730	25	79,667	1,865,158
Price	0.40	0.49	0.28	0.10	0.10	
Value	\$3,044	\$14,272	\$489,644	\$3	\$7,967	\$514,929
			<u>Ave. 1990-99</u>			
Fish	22,596	57,745	453,984	4,969	251,694	790,988
Value	\$174,391	\$291,342	\$1,413,281	\$1,319	\$392,909	\$2,273,242
<u>Middle Kuskokwim River, District W-2</u>						
			<u>2000</u>			
Fish	0	0	1,676	0	1	1,677
Pounds	0	0	10,851	0	8	10,859
Price			0.28		0.10	
Value	\$0	\$0	\$3,038	\$0	\$1	\$3,039
			<u>Ave. 1990-99</u>			
Fish	817	1,120	14,671	25	9,618	26,251
Value	\$7,682	\$5,855	\$46,109	\$12	\$13,873	\$73,530
<u>Quinhagak, District W-4</u>						
			<u>2000</u>			
Fish	21,229	68,557	30,529	3	30,553	150,871
Pounds	335,900	453,588	228,753	9	239,287	1,257,537
Price	0.39	0.55	0.27	0.10	0.10	
Value	\$131,001	\$249,473	\$61,763	\$1	\$23,929	\$466,167
			<u>Ave. 1990-99</u>			
Fish	20,851	62,963	59,978	12,619	56,394	212,805
Value	\$154,507	\$280,465	\$199,497	\$3,047	\$78,723	\$716,238
<u>Goodnews Bay, District W-5</u>						
			<u>2000</u>			
Fish	4,442	37,252	15,531	7	7,450	64,682
Pounds	64,035	266,742	128,476	21	60,005	519,279
Price	0.40	0.55	0.27	0.10	0.10	
Value	\$25,614	\$146,708	\$34,689	\$2	\$6,001	\$213,013
			<u>Ave. 1990-99</u>			
Fish	2,433	39,322	19,690	3,699	15,511	80,656
Value	\$18,514	\$184,979	\$78,280	\$882	\$22,515	\$305,169
<u>Kuskokwim Area Total</u>						
			<u>2000</u>			
Fish	26,115	109,939	307,439	17	49,574	493,084
Pounds	407,544	749,457	2,116,810	55	378,967	3,652,833
Price	0.39	0.55	0.28	0.10	0.10	
Value	\$159,659	\$410,454	\$589,135	\$6	\$37,897	\$1,197,149
			<u>Ave. 1990-99</u>			
Fish	46,697	161,151	548,323	21,312	333,216	1,110,699
Value	\$355,093	\$762,640	\$1,737,167	\$5,260	\$508,020	\$3,368,180

Table 8. Estimated ex-vessel value of the Kuskokwim Area commercial salmon fishery, 1964-2000.

<u>Year</u>	<u>Gross Value (\$) of Catch to Fishermen</u>	<u>Permits Fished^a</u>	<u>Average Income</u>
1964	83,030		
1965	90,950		
1966	87,466		
1967	138,647		
1968	290,370		
1969	297,233		
1970	362,470		
1971	371,220		
1972	360,727		
1973	827,735		
1974	1,056,042		
1975	899,178		
1976	1,380,229		
1977	3,891,950		
1978	2,337,470		
1979	3,678,000		
1980	2,725,134		
1981	3,766,525		
1982	4,213,954		
1983	2,670,400		
1984	5,809,000	774	7,505
1985	3,248,089	781	4,159
1986	4,746,089	789	6,015
1987	6,392,822	798	8,011
1988	12,514,489	811	15,431
1989	5,171,860	824	6,277
1990	4,894,580	824	5,940
1991	3,971,423	820	4,843
1992	5,295,912	814	6,506
1993	3,962,890	807	4,911
1994	5,201,611	797	6,526
1995	4,209,752	829	5,078
1996	2,900,603	713	4,068
1997	1,058,808	702	1,508
1998	1,634,495	707	2,312
1999	551,725	604	913
2000	1,197,149	623	1,922
Ten year Average (1990-1999)	3,368,180	762	4,261

a Number of permits that made at least one delivery

Table 9. Mean salmon weights and prices paid to commercial permit holders in the Kuskokwim Area, 1967-1999.

Year	Average Weight (lb)					Average Price (\$)				
	Chinook	Sockeye	Chum	Pink	Coho	Chinook	Sockeye	Chum	Pink	Coho
1967	27.8	7.4	7.0	^a	5.9	0.13	0.05	0.04	^a	0.09
1968	23.8	6.2	7.9	4.0	7.2	0.16	0.10	0.04	0.05	0.09
1969	19.6	6.2	5.8	3.6	7.3	0.19	0.15	0.07	0.06	0.10
1970	18.9	5.4	6.1	3.3	7.3	0.20	0.21	0.08	0.08	0.14
1971 ^b	26.2	6.9	6.4	^a	6.1	0.17	0.10	0.08	^a	0.13
1972	24.7	^a	6.5	^a	6.4	0.20	^a	0.08	^a	0.16
1973	26.7	^a	6.8	^a	5.8	0.25	^a	0.19	^a	0.26
1974	17.1	6.3	6.8	4.1	7.5	0.46	0.34	0.25	0.23	0.27
1975	14.9	^a	6.4	^a	8.2	0.54	^a	0.26	^a	0.31
1976 ^c	17.0	6.7	7.0	3.5	7.8	0.64	0.43	0.27	0.25	0.40
1977	22.7	8.3	7.3	3.9	7.8	1.15	0.45	0.45	0.25	0.65
1978	24.2	6.5	8.9	3.9	7.1	0.50	0.49	0.32	0.12	0.40
1979	16.6	6.9	7.0	3.9	7.9	0.66	0.53	0.37	0.11	0.75
1980	14.1	6.7	6.4	3.6	6.9	0.47	0.31	0.24	0.12	0.64
1981	17.8	7.2	7.5	3.5	6.4	0.84	0.61	0.23	0.11	0.63
1982	19.3	7.2	7.3	3.6	7.3	0.82	0.41	0.22	0.05	0.53
1983	18.8	6.8	7.4	3.5	6.8	0.54	0.51	0.33	0.05	0.39
1984	16.4	6.6	6.7	3.2	7.7	0.89	0.52	0.28	0.07	0.55
1985	17.0	7.0	7.1	3.6	7.5	0.71	0.59	0.25	0.05	0.51
1986	17.0	7.2	6.8	3.4	6.4	0.80	0.70	0.25	0.05	0.60
1987	15.2	7.5	6.8	3.7	7.2	1.10	1.30	0.27	0.10	0.73
1988	14.1	7.3	6.9	3.4	7.2	1.30	1.42	0.40	0.15	1.25
1989	16.6	7.2	6.8	3.4	7.3	0.75	1.20	0.26	0.05	0.55
1990	15.1	6.7	6.9	3.2	6.5	0.56	1.05	0.26	0.12	0.62
1991	15.3	6.9	6.3	3.4	6.5	0.56	0.67	0.31	0.12	0.45
1992	13.4	7.0	6.8	3.9	7.3	0.66	0.90	0.32	0.06	0.45
1993	14.3	7.1	6.5	3.4	6.6	0.62	0.70	0.40	0.25	0.58
1994	15.6	6.9	6.6	3.6	7.6	0.51	0.53	0.21	0.08	0.57
1995	17.3	6.9	6.9	3.7	7.2	0.60	0.71	0.18	0.12	0.41
1996	15.7	7.2	7.2	3.8	8.0	0.26	0.40	0.11	0.12	0.25
1997	16.2	7.1	7.3	2.7	7.5	0.28	0.42	0.12	0.10	0.33
1998	14.2	6.8	6.9	3.8	7.8	0.27	0.53	0.13	0.10	0.32
1999	15.5	6.5	7.3	3.0	6.6	0.32	0.58	0.10	0.05	0.32
2000	15.6	6.8	6.9	3.2	7.6					
10-Year Average (1990-1999)	15.3	6.9	6.9	3.5	7.2	0.46	0.65	0.21	0.11	0.43

^a Information unavailable.

^b Information on price per pound was not available for District 5.

^c Information was not available for District 4.

Table 10. Commercial salmon harvest and fishing effort by period in Kuskokwim River Districts 1 and 2, and both districts combined, 2000.

Period	Date	Hours	Permits	Chinook		Sockeye		Chum		Pink		Coho	
				Number	CPUE	Number	CPUE	Number	CPUE	Number	CPUE	Number	CPUE
District 1													
1	7/5	4	224	357	0.40	3,658	4.08	11,026	12.31	4	0.00		
2	8/1	4	248	12	0.01	94	0.09	156	0.16			25,624	25.83
3	8/4	6	123	7	0.01	7	0.01	53	0.07			50,260	68.10
4	8/5	6	270	8	0.00	73	0.05	43	0.03	1	0.00	32,056	19.79
5	8/8	6	186	9	0.01	26	0.02	55	0.05			26,771	23.99
6	8/9	6	217	13	0.01	57	0.04	128	0.10			20,905	16.06
7	8/12	6	189	12	0.01	17	0.01	23	0.02	1	0.00	37,451	33.03
8	8/14	6	224	6	0.00	75	0.06	33	0.02	1	0.00	16,766	12.47
9	8/17	6	193	5	0.00	23	0.02	15	0.01			17,916	15.47
10	8/18	6	199	6	0.01	58	0.05	16	0.01			14,697	12.31
11	8/21	6	158	4	0.00	3	0.00	10	0.01			8,577	9.05
12	8/22	6	143	1	0.00	32	0.04	4	0.00			4,489	5.23
13	8/25	6	106	4	0.01	7	0.01	8	0.01			4,191	6.59
Subtotal		74	532	444		4,130		11,570		7		259,703	
District 2													
1	8/12	6	4	0		0		1		0		1,237	51.54
2	8/21	6	2	0		0		0		0		439	36.58
Subtotal		12	4	0		0		1		0			
Total													
Districts 1&2		86	536	444		4,130		11,571		7		260,142	

Table 11. Historical salmon escapement data from selected Kuskokwim Area projects, 1976-2000.

Year	Operating Period	Chinook	Sockeye	Chum	Pink ^a	Coho
Kognikluk River Weir						
BEG		10,000		30,000		25,000
1976	06/29 to 07/31	5,579	2,326	8,117	0 ^b	
1977	07/14 to 07/27	1,945 ^b	1,637 ^b	19,444	2	
1978	06/28 to 07/31	13,667	1,670	48,125	2	
1979	07/01 to 07/24	11,338	2,628	18,599	1	
1980	07/01 to 07/11	6,572 ^b	3,200 ^b	41,777	1	
1981	06/27 to 10/05	16,655	18,066	57,365	6	11,455
1982	07/09 to 09/14	10,993 ^b	17,297 ^b	64,077	19	37,796
1983	06/23 to 09/27	2,992 ^f	1,176 ^f	9,407 ^f	0	8,538
1984	06/19 to 09/15	4,928	4,133	41,484	0	27,595
1985	07/06 to 09/24	4,619	4,359	15,005	0	16,441
1986	06/29 to 09/07	5,038 ^b	4,244 ^b	14,693	0	22,506
1987	07/15 to 09/24	4,063 ^f	973 ^f	17,422 ^f	0	22,821
1988	07/05 to 09/17	8,505	4,397	39,540	0	13,512
1989	07/07 to 08/24	11,940 ^f	5,811 ^f	39,548	0	1272 ^b
1990	06/28 to 09/07	10,218	8,406	26,765	1	6,132 ^b
1991	07/04 to 09/15	7,850	16,455	24,188	4	9,933
1992	07/01 to 08/21	6,755	7,540	34,105	11	26,057 ^b
1993	07/02 to 09/06	12,332	29,358	31,899	0	20,517 ^b
1994	07/02 to 09/14	15,227	14,192 ^f	46,192 ^f	23	34,695
1995	07/02 to 09/06	20,630	10,996	31,265	2	27,861
1996	06/29 to 09/15	14,199	15,385	48,494	6	50,555
1997	06/28 to 09/21	13,286	13,078	7,937	0	12,237
1998	07/18 to 09/19	11,869 ^f	16,773 ^f	36,424 ^f	1	24,344
1999	07/01 to 09/20	5,570	5,864	13,810	0	12,609 ^f
2000	07/05 to 09/18	3,310	2,867	11,491	2	33,135
Aniak River Sonar						
BEG				250,000 ^c		
<i>Non user-configurable, one-bank expanded estimator 1980 - 1995</i>						
1980	06/22 to 07/30	56,469		1,169,470		
	08/16 to 09/12					81,556
1981	06/16 to 08/06	42,060		589,286		
1982	06/21 to 08/01	33,864		442,461		
1983	06/18 to 07/28	4,911		129,367		
1984	06/16 to 07/30			266,976		
1985	06/22 to 07/28			253,051		
1986	06/26 to 07/24			209,080		
1987	06/22 to 07/31			193,013		
1988	06/22 to 07/31			401,511		
1989	06/21 to 07/24			243,922		
1990	06/23 to 08/06			232,260		
1991	06/29 to 07/29			314,166		
1992	06/22 to 07/29			84,269		
1993	06/24 to 07/28			13,870		
1994	06/28 to 07/28			388,163		
1995	06/23 to 07/23					
<i>User-configurable, two-bank estimator, 1996-1999</i>						
BEG				250,000 ^e		
1996	06/21 to 07/28			302,106		
1997	06/16 to 08/03			262,522		
1998	06/24 to 07/31			279,430		
1999	07/01 to 08/03			177,771		
2000	6/25 to 7/31					

- continued -

Table 11. (2 of 3)

Year	Operating Period	Chinook	Sockeye	Chum	Pink	Coho
<u>Kwethluk River</u>						
<i>Weir</i>						
1992	06/18 to 09/12	9,675	1,316	30,596	45,952	45,605
<i>Tower</i>						
1996	06/22 to 07/27	7,415	1,801 ^b	26,049	2,899 ^b	180 ^b
1997	06/22 to 08/12	10,395	1,374	10,659	1,009 ^b	1,110 ^b
1998	07/24 to 08/18	120 ^b	120 ^b	720 ^b	4,398 ^b	2,367 ^b
1999	07/15 to 08/18	^b	^b	^b	^b	^b
<i>Weir Reinstalled</i>						
2000	6/15 to 9/15	3,547	358	12,382	1,407	25,610
<u>Tuluksak River Weir</u>						
1991	06/12 to 09/18	697	34	7,675	391	4,651
1992	06/24 to 09/10	1,083	129	11,183	2,458	7,501
1993	06/17 to 09/10	2,218	88	13,804	210	8,328
1994	06/29 to 09/11	2,922	94	15,707	3,450	8,213
<u>George River Weir</u>						
1996	06/21 to 07/26	7,487	98	17,570	644 ^b	^b
1997	06/09 to 09/15	7,820	445	5,941	17	8,937
1998	06/22 to 07/07	^b	^b	^b	^b	^b
1999	07/14 to 09/25	3,548	39	11,682	97	8,930
2000	06/17 to 09/16	2,959	23	3,488	61	11,256
<u>Takotna River Tower</u>						
<i>Tower</i>						
1995	07/07 to 07/31	^b	0	1,685 ^b	0	0 ^b
1996	06/15 to 07/26	401	0	2,794	0	0 ^b
1997	06/15 to 07/26	1,176	0	1,794		
1998	06/20 to 07/07	^b	^b	^b	^b	^b
1999	Not Operational					
<i>Weir</i>						
2000	06/24 to 09/20	345	4	1,254	0	3,957
<u>Tatlawiksuk River Weir</u>						
1998	06/18 to 07/07	^b	^b	^b	^b	^b
1999	06/15 to 09/20	1,494	5	9,656	1	3,464
2000	06/15 to 08/13	810	0	6,965	0	24,000 ^f
<u>Middle Fork Goodnews River Tower/Weir</u>						
BEG		3,500	25,000	15,000		
<i>Counting Tower, 1981 - 1991</i>						
1981	06/13 to 08/15	3,688	49,108	21,827	1,327 ^b	356 ^b
1982	06/23 to 08/03	1,395	56,255	6,767	13,855 ^b	91 ^b
1983	06/11 to 07/28	6,022	25,813	15,548	34 ^b	0 ^b
1984	06/15 to 07/31	3,260	32,053	19,003	13,744 ^b	249 ^b
1985	06/27 to 07/31	2,831	24,131	10,367	144 ^b	282 ^b
1986	06/16 to 07/24	2,092	51,069	14,764	8,133 ^b	163 ^b
1987	06/22 to 07/30	2,272	28,871	17,517	62 ^b	62 ^b
1988	06/23 to 07/30	2,712	15,799	20,799	6,781 ^b	6 ^b
1989	06/29 to 07/31	1,915	21,186	10,380	246 ^b	1,212 ^b
1990	06/19 to 07/24	3,636	31,679	6,410	3,378 ^b	0 ^b
<i>Weir, 1991 - 2000</i>						
1991	06/29 to 08/24	1,952	47,397	27,525	1,694 ^b	1,978 ^b
1992	06/29 to 08/25	1,903	27,268	22,023	23,030 ^b	150 ^b
1993	06/22 to 08/18	2,317	26,044	14,472	253 ^b	1,374 ^b
1994	06/23 to 08/08	3,856	55,751	34,849	38,705 ^b	309 ^b
1995	06/19 to 08/28	4,836	39,009	33,699	330 ^b	5,415 ^b
1996	06/19 to 08/23	2,930	58,264	40,450	14,509 ^b	9,699 ^b
1997	06/11 to 09/17	2,937	35,530	17,296	940	9,619
1998	07/04 to 09/13	4,584	47,951	28,905	10,367	35,441
1999	06/26 to 09/26	3,221	48,205	19,533	914	11,545
2000	07/02 to 09/22	2,516	32,625	13,803	2,530	19,676

- continued -

Table 11. (3 of 3)

Year	Operating Period	Chinook	Sockeye	Chum	Pink ^a	Coho
<u>Kanektok River Tower</u>						
1996	7/2-7/13; 7/20-7/25	6,827 ^b	71,637 ^b	70,617 ^b		
1997	06/11 to 08/21	16,731 ^b	96,348 ^b	51,180 ^b	7,872 ^b	23,172 ^b
1998	07/23 to 08/17					
1999	Not Operational					
2000	Not Operational					

^a Pink salmon can pass freely through the Kogrukluk River weir.

^b No counts or incomplete count as project was not operated during a significant portion of the species' migration.

^c Aniak River sonar counts after 1983 represent multiple species, however, chum salmon are assumed to be the dominant species during the operational period.

^d Reliable escapement estimates are not available from Aniak River sonar for 1995.

^e The original Aniak River sonar BEG of 250,000 fish counts has been carried forward to the user configurable project, but the BEG will be reassessed as more information is gathered.

^f Field operations were incomplete; full season fish passage was estimated.

^g Weir picket spacing allows pink salmon to pass uncounted.

Table 12. Commercial Fishing Effort in Permit-Hour^a for the Kuskokwim Area, 1960-2000.

Year	District W-1	District W-2	District W-3	District W-4	District W-5	Total
1960	5,136	960	648	4,368	Closed	11,112
1961	16,200	1,512	1,512	4,992	Closed	24,216
1962	14,274		0	8,434	Closed	22,708
1963	5,712	1,722	0	5,520	Closed	12,954
1964	6,468	1,140	0		Closed	7,608
1965	13,500	546	0	3,696	Closed	17,742
1966	18,270		Closed		Closed	18,270
1967	88,248	1,932		3,954	Closed	94,134
1968	77,466	720		7,986	4,704	90,876
1969	67,140	1,488		29,952	14,055	112,635
1970	56,646	3,414		22,080	9,756	91,896
1971	18,060	1,842		24,987	7,476	52,365
1972	47,802	1,722		7,060	1,452	58,036
1973	77,478	3,072		18,372	2,928	101,850
1974	124,569	4,950		18,984	8,148	156,651
1975	181,786	3,648		12,312	5,400	203,146
1976	82,788	3,894		14,784	4,848	106,314
1977	73,944	3,426		17,592	3,780	98,742
1978	71,856	1,892		14,952	3,672	92,372
1979	49,608	984		27,096	8,220	85,908
1980	33,370	714		21,636	9,504	65,224
1981	45,096	1,248		25,656	11,256	83,256
1982	46,108	1,128		22,656	14,556	84,448
1983	47,040	708		20,748	9,456	77,952
1984	62,643	1,050		31,488	14,004	109,185
1985	37,452	462		22,254	8,544	68,712
1986	48,744	606		25,740	10,572	85,662
1987	60,525	576		21,222	10,332	92,655
1988	81,724	912		27,440	14,064	124,140
1989	66,470	816		26,134	12,552	105,972
1990	50,642	1,051		44,520	10,548	106,761
1991	62,672	1,320		29,160	11,532	104,684
1992	54,288	1,164		35,380	15,180	106,012
1993	39,210	774		35,988	13,118	89,090
1994	54,750	702		26,580	15,768	97,800
1995	42,784	602		34,020	14,844	92,250
1996	34,087	242		18,880	6,518	59,727
1997	13,662	30		28,836	5,820	48,348
1998	26,488	18		23,712	7,896	58,114
1999	4,770	0		16,488	5,424	26,682
2000	14,176	36		21,852	5,808	41,872
Ten Year Average (1990-1999)	38,335	590		29,356	10,665	78,947

a Number of permits that made deliveries times the number of hours in the period.

Table 13. Quinhagak, District 4 commercial salmon harvest and effort by period, 2000.

Period	Date	Hours	Permits	Chinook		Sockeye		Chum		Pink		Coho	
				Number	CPUE	Number	CPUE	Number	CPUE	Number	CPUE	Number	CPUE
1	6/15	12	55	3,015	4.57	104	0.16	385	0.58				
2	6/19	12	86	4,700	4.55	893	0.87	1,397	1.35				
3	6/22	12	101	4,893	4.04	1,466	1.21	1,457	1.20				
4	6/26	12	115	3,147	2.28	1,563	1.13	2,360	1.71				
5	6/29	12	87	1,410	1.35	8,067	7.73	4,194	4.02				
6	7/3	12	128	1398	0.91	4,699	3.06	3,239	2.11				
7	7/6	12	84	576	0.57	12,133	12.04	4,321	4.29				
8	7/8	12	116	578	0.42	7,165	5.15	2,845	2.04				
9	7/11	12	102	351	0.29	8,320	6.80	1,914	1.56				
10	7/13	12	117	361	0.26	6,556	4.67	2,844	2.03			4	0.00
11	7/15	12	46	143	0.26	2,927	5.30	1,048	1.90			2	0.00
12	7/17	12	70	191	0.23	4,570	5.44	1,024	1.22			19	0.02
13	7/19	12	64	103	0.13	2288	2.98	778	1.01	3	0.00	51	0.07
14	7/21	12	70	131	0.16	2626	3.13	1172	1.40			182	0.22
15	7/24	12	48	75	0.13	1004	1.74	417	0.72			285	0.49
16	7/26	12	36	36	0.08	898	2.08	328	0.76			704	1.63
17	7/28	12	51	23	0.04	837	1.37	259	0.42			1,257	2.05
18	7/31	12	46	30	0.05	548	0.99	222	0.40			2,533	4.59
19	8/2	12	37	12	0.03	240	0.54	63	0.14			2,544	5.73
20	8/5	12	43	16	0.03	256	0.50	59	0.11			1,899	3.68
21	8/7	12	54	10	0.02	299	0.46	104	0.16			3,761	5.80
22	8/10	12	50	2	0.00	238	0.40	35	0.06			5,146	8.58
23	8/12	12	63	12	0.02	200	0.26	33	0.04			4,683	6.19
24	8/14	12	51	9	0.01	113	0.18	25	0.04			3,427	5.60
25	8/16	12	43	4	0.01	161	0.31	20	0.04			2,434	4.72
26	8/21	12	34	1	0.00	34	0.08	5	0.01			833	2.04
27	8/24	12	24	2	0.01	52	0.18	6	0.02			765	2.66
Totals		324	230	21,229		68,257		30,553		3		30,529	

Table 14. Goodnews Bay, District 5 commercial salmon harvest and effort by period, 2000.

Period	Date	Hours	Permits	Chinook		Sockeye		Chum		Pink		Coho	
				Number	CPUE	Number	CPUE	Number	CPUE	Number	CPUE	Number	CPUE
1	26-Jun	12	16	1,247	6.49	1,984	18.50	1,174	6.11				
2	29-Jun	12	21	1,857	7.37	3,552	14.10	1,362	5.40				
3	3-Jul	12	28	475	1.41	4,712	14.02	1,222	3.64				
4	6-Jul	12	25	120	0.40	3,430	11.43	634	2.11				
5	8-Jul	12	26	393	1.26	4,655	14.92	1,330	4.26				
6	11-Jul	12	27	90	0.28	3,247	10.02	444	1.37	4	0.01		
7	13-Jul	12	28	65	0.19	1,954	5.82	483	1.44				
8	15-Jul	12	2	2	0.08	39	1.63	0	0.00				
9	17-Jul	12	19	41	0.18	1,777	7.79	201	0.88				
10	19-Jul	12	No Commercial Harvest/ No Tenders Due to Weather										
11	21-Jul	12	19	24	0.11	1,936	8.49	225	0.99			6	0.03
12	24-Jul	12	19	36	0.16	2,138	9.38	133	0.58	3	0.01	17	0.07
13	26-Jul	12	20	15	0.06	1,550	6.46	66	0.28			65	0.27
14	28-Jul	12	20	14	0.06	1,743	7.26	41	0.17			142	0.59
15	31-Jul	12	20	19	0.08	1,180	4.92	50	0.21			335	1.40
16	2-Aug	12	No Commercial Harvest/ No Tenders Due to Weather										
17	5-Aug	12	18	4	0.02	479	2.22	29	0.13			593	2.75
18	7-Aug	12	12	9	0.06	382	2.65	13	0.09			881	6.12
19	10-Aug	12	22	9	0.03	529	2.00	12	0.05			2,138	8.10
20	12-Aug	12	22	4	0.02	427	1.62	13	0.05			2,349	8.90
21	14-Aug	12	29	2	0.01	409	1.18	7	0.02			3,205	9.21
22	16-Aug	12	23	5	0.02	395	1.43	4	0.01			1,539	5.58
23	18-Aug	12	19	3	0.01	229	1.00	3	0.01			1,309	5.74
24	21-Aug	12	27	6	0.02	207	0.64	2	0.01			1,861	4.20
25	24-Aug	12	22	2	0.01	298	1.13	2	0.01			1,591	6.03
Totals		300	46	4,442		37,252		7,450				15,531	

Table 15. Historical commercial salmon harvest in the Kuskokwim River, Districts W-1 and W-2 combined. 1960-2000. ^a

Year	Chinook	Sockeye	Chum	Pink	Coho	Total
1960	5,969	0	0	0	2,498	8,467
1961	18,918	0	0	0	5,044	23,962
1962	15,341	0	0	0	12,432	27,773
1963	12,016	0	0	0	15,660	27,676
1964	17,149	0	0	0	28,613	45,762
1965	21,989	0	0	0	12,191	34,180
1966	25,545	0	0	0	22,985	48,530
1967	29,986	0	148	0	56,313	86,447
1968	34,278	0	187	0	127,306	161,771
1969	43,997	322	7,165	0	83,765	135,249
1970	39,290	117	1,664	44	38,601	79,716
1971	40,274	2,606	68,914	0	5,253	117,047
1972	39,454	102	78,619	8	22,579	140,762
1973	32,838	369	148,746	33	130,876	312,862
1974	18,664	136	171,887	84	147,269	338,040
1975	22,135	23	184,171	10	81,945	288,284
1976	30,735	2,971	177,864	133	88,501	300,204
1977	35,830	9,379	248,721	203	241,364	535,497
1978	45,641	733	248,656	5,832	213,393	514,255
1979	38,966	1,054	261,874	78	219,060	521,032
1980	35,881	360	483,211	803	222,012	742,267
1981	47,663	48,375	418,677	292	211,251	726,258
1982	48,234	33,154	278,306	1,748	447,117	808,559
1983	33,174	68,855	276,698	211	196,287	575,225
1984	31,742	48,575	423,718	2,942	623,447	1,130,424
1985	37,889	106,647	199,478	75	335,606	679,695
1986	19,414	95,433	309,213	3,422	659,988	1,087,470
1987	36,179	136,602	574,336	43	399,467	1,146,627
1988	55,716	92,025	1,381,674	10,825	524,296	2,064,536
1989	43,217	42,747	749,182	464	479,856	1,315,466
1990	53,504	84,870	461,624	3,397	410,332	1,013,727
1991	37,778	108,946	431,802	378	500,935	1,079,839
1992	46,872	92,218	344,603	7,451	666,170	1,157,314
1993	8,735	27,008	43,337	64	610,739	689,883
1994	16,211	49,365	271,115	30,949	724,689	1,092,329
1995	30,846	92,500	605,918	93	471,461	1,200,818
1996	7,419	33,878	207,877	1,621	937,299	1,188,094
1997	10,441	21,989	17,026	2	130,803	180,261
1998	17,359	60,906	207,809	92	210,481	496,647
1999	4,705	16,976	23,006	2	23,593	68,282
2000	444	4,130	11,571	7	261,379	277,531
10-Year Average (1990-1999)	23,387	58,866	261,412	8,702 ^b	468,650	816,719

a Includes harvests in District 3 from 1960 to 1965.

b Even years only

Table 16. Quinhagak, District W-4, commercial salmon harvest, 1960-2000

YEAR	CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
1960	0	5,649	3,000	0	0	8,649
1961	4,328	2,308	46	90	18,864	25,636
1962	5,526	10,313	0	4,340	45,707	65,886
1963	6,555	0	0	0	0	6,555
1964	4,081	13,422	379	939	707	19,528
1965	2,976	1,886	0	0	4,242	9,104
1966	278	1,030	0	268	2,610	4,186
1967	0	652	1926	0	8,087	10,665
1968	8,879	5,884	21,511	75,818	19,497	131,589
1969	16,802	3,784	15,077	953	38,206	74,822
1970	18,269	5,393	16,850	15,195	46,556	102,263
1971	4,185	3,118	2,982	13	30,208	40,506
1972	15,880	3,286	376	1,878	17,247	38,667
1973	14,993	2,783	16,515	277	19,680	54,248
1974	8,704	19,510	10,979	43,642	15,298	98,133
1975	3,928	8,584	10,742	486	35,233	58,973
1976	14,110	6,090	13,777	31,412	43,659	109,048
1977	19,090	5,519	9,028	202	43,707	77,546
1978	12,335	7,589	20,114	47,033	24,798	111,869
1979	11,144	18,828	47,525	295	25,995	103,787
1980	10,387	13,221	62,610	21,671	65,984	173,873
1981	24,524	17,292	47,551	160	53,334	142,861
1982	22,106	25,685	73,652	11,838	34,346	167,627
1983	46,385	10,263	32,442	168	23,090	112,348
1984	33,663	17,255	132,151	16,249	50,422	249,740
1985	30,401	7,876	29,992	28	20,418	88,715
1986	22,835	21,484	57,544	8,700	29,700	140,263
1987	26,022	6,489	50,070	66	8,557	91,204
1988	13,883	21,556	68,605	21,310	29,220	154,574
1989	20,820	20,582	44,607	273	39,395	125,677
1990	27,644	83,681	26,926	12,056	47,717	198,024
1991	9,480	53,657	42,571	115	54,493	160,316
1992	17,197	60,929	86,404	64,217	73,383	302,130
1993	15,784	80,934	55,817	7	40,943	193,485
1994	8,564	72,314	83,912	35,904	61,301	261,995
1995	38,584	68,194	66,203	186	81,462	254,629
1996	14,165	57,665	118,718	20	83,005 ^b	273,573
1997	35,510	69,562	32,862	5	38,445	176,384
1998	23,158	41,382	80,183	2,217	45,095	192,035
1999	18,426	41,315	6,184	0	38,091	104,016
2000	21,229	68,557	30,529	3	30,553	150,871
Ten Year Average (90-99)	20,851	62,963	59,978	22,883 ^a	56,394	211,659

a Average of even years only

b Estimate of chum roe included

Table 17. Goodnews Bay, District W-5, commercial salmon harvest, 1968-2000

YEAR	CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL
1968			5,458			5,458
1969	3,978	6,256	11,631	298	5,006	27,169
1970	7,163	7,144	6,794	12,183	12,346	45,630
1971	477	330	1,771	0	301	2,879
1972	264	924	925	66	1,331	3,510
1973	3,543	2,072	5,017	324	15,781	26,737
1974	3,302	9,357	21,340	16,373	8,942	59,314
1975	2,156	9,098	17,889	419	5,904	35,466
1976	4,417	5,575	9,852	8,453	10,354	38,651
1977	3,336	3,723	13,335	29	6,531	26,954
1978	5,218	5,412	13,764	9,103	8,590	42,087
1979	3,204	19,581	42,098	201	9,298	74,382
1980	2,331	28,632	43,256	7,832	11,748	93,799
1981	7,190	40,273	19,749	11	13,642	80,865
1982	9,476	38,877	46,683	4,673	13,829	113,538
1983	14,117	11,716	19,660	0	6,766	52,259
1984	8,612	15,474	71,176	4,711	14,340	114,313
1985	5,793	6,698	16,498	8	4,784	33,781
1986	2,723	25,112	19,378	4,447	10,355	62,015
1987	3,357	27,758	29,057	54	20,381	80,607
1988	4,964	36,368	30,832	5,509	33,059	110,732
1989	2,966	19,299	31,849	82	13,622	67,818
1990	3,303	35,823	7,804	629	13,194	60,753
1991	912	39,838	13,312	29	15,892	69,983
1992	3,528	39,194	19,875	14,310	18,520	95,427
1993	2,117	59,293	20,014	0	10,657	92,081
1994	2,570	69,490	47,499	18,017	28,477	166,053
1995	2,922	37,351	17,875	39	19,832	78,019
1996	1,375	30,717	43,836	22	11,093	87,043
1997	2,039	31,451	2,983	0	11,729	48,202
1998	3,675	27,161	21,246	411	14,155	66,648
1999	1,888	22,910	2,474	0	11,562	38,834
2000	4,442	37,252	15,531	7	7,450	64,682
Ten Year Average (90-99)	2,433	39,322	19,690	6,678 ^a	15,511	80,656

^a Average of even years only

Table 18. Preliminary outlook for the 2001 Kuskokwim Area commercial salmon harvest
(X 1,000 of fish).

Species	Management District						Kuskokwim	
	Districts 1 and 2		District 4		District 5		Area Total	
Chinook	0 to	1	10 to	20	2 to	4	12 to	25
Sockeye	0 to	5	40 to	70	25 to	40	65 to	115
Coho	20 to	300	10 to	60	3 to	20	33 to	380
Pink ^b	0 to	0	0 to	0	0 to	0	0 to	1
Chum	0 to	15	30 to	50	10 to	15	40 to	80
TOTAL	20 to	321	90 to	200	40 to	79	150 to	601

^a Kuskokwim River includes Districts 1 and 2.

^b Outlook is based on historic catches in odd years only.

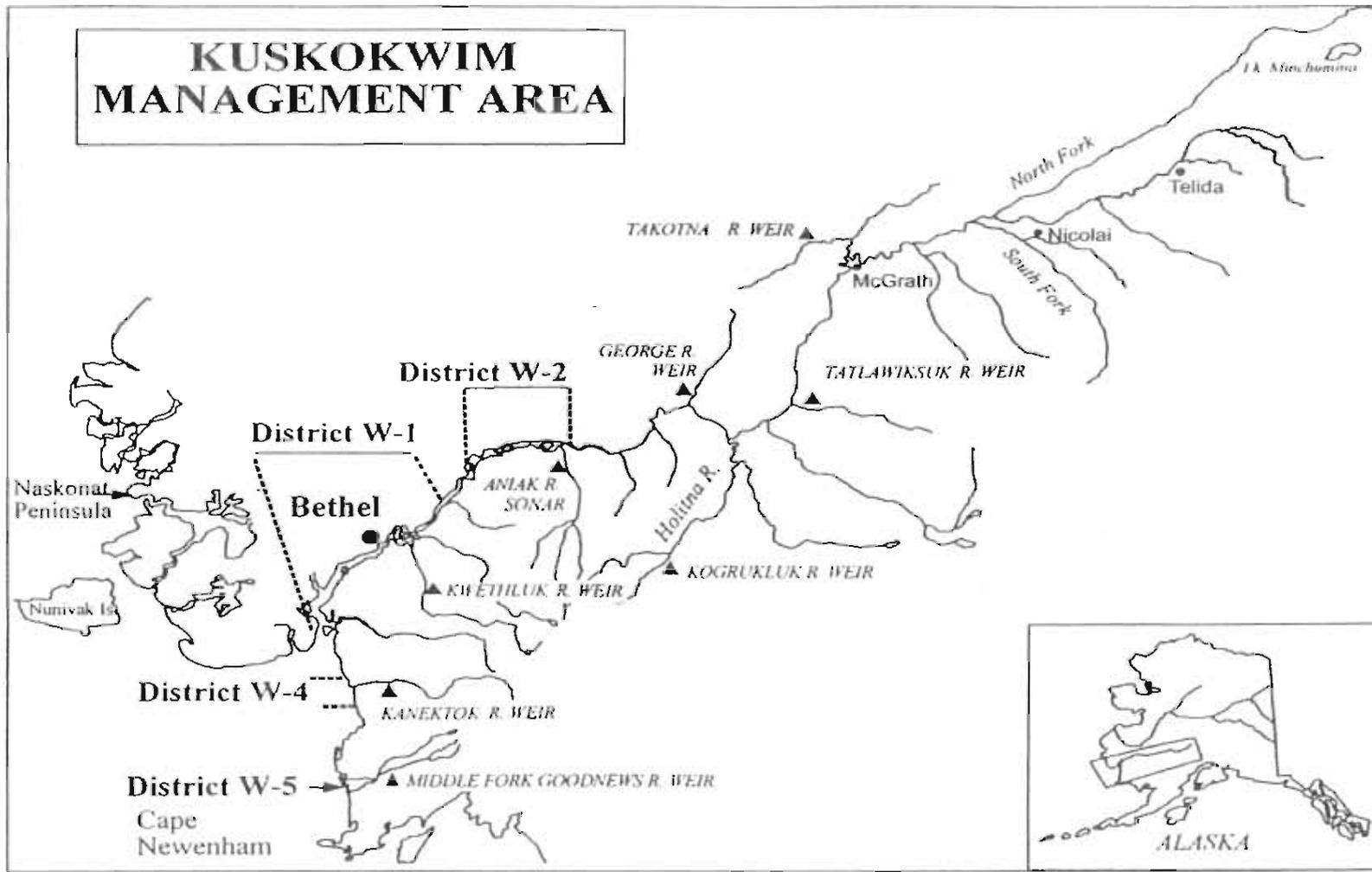


Figure 1. Kuskokwim Area map showing salmon management districts and escapement monitoring projects

Figure 2. Subsistence Salmon Fishing Households, Kuskokwim Area, 1989 - 1999

