Hooper Bay Subsistence Salmon Monitoring Project, 2002

By:

Tracy L. Lingnau

Regional Information Report[1] No. 3A02-47

Alaska Department of Fish and Game
Commercial Fisheries Division, AYK Region
333 Raspberry Road
Anchorage, Alaska 99518

December 2002

[1] The Regional Information Report Series was established in 1987 to provide an information access system for all unpublished divisional reports. These reports frequently serve diverse ad hoc informational purposes or archive basic uninterpreted data. To accommodate timely reporting of recently collected information, reports in this series undergo only limited internal review and may contain preliminary data; this information may be subsequently finalized and published in the formal literature. Consequently, these reports should not be cited without prior approval of the author or the Division of Commercial Fisheries.

AUTHOR

Tracy Lingnau is the Yukon Area Summer Season Research Project Leader for the Alaska Department of Fish and Game, Commercial Fisheries Division, 333 Raspberry Rd., Anchorage, AK. 99518.

ACKNOWLEDGEMENTS

The department is very grateful to Elmer Simon, with the Hooper Bay Tribal Council, and the tribal technicians who collected and reported the harvest information in 2002. Their participation in this cooperative assessment project provided welcome assistance and information important to management of the Yukon River salmon fishery. We also gratefully acknowledge subsistence fishers of Hooper Bay who voluntarily provided subsistence catch information.

SPONSORSHIP

This investigation was funded by U.S. Fish and Wildlife Office of Subsistence Management Cooperative Assistance Agreement Number 70181-0-J291.

OEO/ADA STATEMENT

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ABSTRACT

The Yukon River Area includes all waters of Alaska within the Yukon River drainage and all coastal waters of Alaska from Point Romanof southward to the Naskonat Peninsula. Because of its location south of the Yukon River, subsistence harvest information from Hooper Bay could be a potential indicator of run strength and timing before chinook and summer chum salmon enter the Yukon River. During the 2002 monitoring season, 422 interviews were conducted. Catch, time fished, gillnet length and mesh size information were collected. A total of 258 chinook and 5,436 summer chum salmon were harvested during the monitoring period. The average chinook salmon catch per day was seven for fishers using large mesh gear, and the average chum salmon catch was 135 fish per day for chum gear. Eighteen days intervened between the mid-point of the Hooper Bay chinook salmon subsistence fishery and the Alaska Department of Fish and Game Big Eddy set gillnet test fishing mid-point. The chinook salmon cumulative CPUE for Hooper Bay was 0.99 compared to 24.88 for the Big Eddy test fishing project. For summer chum salmon, the Hooper Bay cumulative CPUE was 97.17 compared to 4,316.00 for the Big Eddy drift test-fishing project. Twenty-one days intervened between the mid-point of the Hooper Bay subsistence fishery and Big Eddy test fishing nets.

KEY WORDS: Hooper Bay, chinook salmon, subsistence fishery, Big Eddy, test fishing, gillnet, Yukon River, Point Romanof, Naskonat Peninsula

INTRODUCTION

From its headwaters in Marsh Lake, British Columbia (Thorsteinson et al. 1989), the Yukon River flows approximately 3,701 kilometers (km) to the Bering Sea coast in western Alaska. The Yukon River Area includes all waters of Alaska within the Yukon River drainage and coastal waters from Point Romanof, located northeast of Kotlik, and south to the Naskonat Peninsula (Borba and Hamner 1999 and ADFG 1999). Five species of Pacific salmon are found in the Yukon River drainage, which include chinook (*Oncorhynchus tshawytscha*), chum (*O.keta*), coho (*O. kitsutch*), pink (*O. gorbuscha*), and sockeye (*O. nerka*). Chinook and chum salmon are the primary species and provide the majority of subsistence, personal use, commercial and sport fish harvests for Yukon Area communities.

For management purposes, the Yukon Area is divided into seven districts (Figure 1). The three management areas defining the Lower Yukon Area are Districts 1, 2, and 3. The Upper Yukon Area includes Districts 4, 5 and 6 (ADFG 1999). The Alaskan portion of the Yukon River drainage and the boundary of the management area terminate at the Canadian border.

The Coastal District includes the coastal marine waters within the Yukon Area and is open only to subsistence fishing. Several rural communities are located within the Coastal Management Area and within the lower portions of the Yukon River drainage. Residents of these communities are primarily of Yup'ik Eskimo ancestry, who have historically fished for salmon in nearshore marine waters.

The Hooper Bay salmon subsistence monitoring report has been written annually (Raymond *et. al.* 2001; Lingnau 2002). This report represents information gathered during the 2002 field season.

Community of Hooper Bay

Hooper Bay is a large community situated on the northwest shore of Hooper Bay and is located approximately 241 km northwest of Bethel and 145 km south of the southern most mouth of the Yukon River (Figure 1). The prominent geographical features in the area include Hooper Bay, in which the community is located, and the isolated coastal Askinuk Mountains located 24 km north of the village. The land surface elevation ranges from low-lying marshes bordering Hooper Bay to an abrupt rise of 610 m in height at the Askinuk Mountains. The area around Hooper Bay is well drained by several rivers systems including the Kokechik, Kashunuk, Keolivik, Aphrewn, and Manokinak rivers (Stickney 1984).

Hooper Bay, with a population of approximately 1,200 residents, is the largest community in the Yukon-Kuskokwim Delta after Bethel. Hooper Bay has a subsistence-based economy and functions as the hub for nearby smaller satellite villages. Subsistence salmon fishing activities in the bay occur from late May through mid-July. Historically, residents harvest salmon stocks annually that originate from the Yukon River system and from other areas. A Bering Sea Fishermen's Association tagging and recapture study conducted in 1986 identified that the

residents of Hooper Bay primarily harvest Yukon Area chum and pink salmon stocks, (Borba and Hamner 1999), but also harvest Kotzebue and Norton Sound chum salmon stocks (Kerkvliet 1986).

Alaska Department of Fish and Game Projects

Since 1992, the Alaska Department of Fish and Game (ADF&G) has conducted annual subsistence surveys in the Hooper Bay area (Borba and Hamner 1999). Fishery managers have periodically collected inseason catch reports from Hooper Bay residents, and although helpful, inseason data from Hooper Bay has not been collected on a consistent basis, but only when time was available.

Currently, ADF&G employs a variety of methods to determine returning salmon run strength and timing in the Yukon River. These methods include drift and set gillnet test fishing projects, sonar assessment projects, tower, and weir counting projects, and commercial and subsistence fishery catch rate information. However, these projects only provide information on salmon passage after they have entered the mouth of the Yukon River. Because of recent declines in Yukon River chinook and summer chum salmon returns, ADF&G is interested in collecting salmon run strength and run timing information before the salmon enter the mouth of the Yukon River.

Project Design

Chinook and summer chum salmon are harvested in coastal Yukon area communities annually, but these catches are not formally monitored inseason. This ongoing traditional fishing effort may be used to provide catch data with the potential to generate an early assessment of the run strength of returning chinook and summer chum salmon runs. This information may help fishery managers better assess salmon runs early in the migration.

METHODS

During the 2002 summer season, a Hooper Bay Traditional Council technician collected daily salmon catch and effort data from subsistence salmon fishers in the Hooper Bay area. Data was collected between May 25 through July 14 during the chinook and summer chum salmon migration. Subsistence fishers were interviewed about their daily catch by species, net length, mesh size, and time fished. Each technician contacted fishers at the small boat harbor or on the beach as they returned from fishing.

Catch Effort Calculation

Catch per unit effort (CPUE) calculations were completed for each interview and compiled into an Excel spreadsheet. Daily catch rates were then calculated and compared to the Big Eddy chinook and summer chum salmon test fishing indices. Because of the different methods of collecting run strength and run timing information, i.e. set gillnets and drift gillnets, different formulas are used to calculate catch rate indices. The goal of this project is to determine if Hooper Bay subsistence harvest information can be used to project the run strength of salmon returning to the Yukon River. Therefore, the emphasis is on comparing trends between the Hooper Bay and Big Eddy test fishing projects, not to compare calculated CPUE indices from each project.

Index values (*I*) used in ADF&G test fishing projects the following catch per unit effort equation.

$$I = \frac{6{,}000\ (c)}{(l)\ (t)}$$

The number 6,000 is a constant and is the number of fish, which would have been caught if a net of 100 fathoms was fished for 60 minutes, c denotes salmon catch, l is the length of net in fathoms, and t equals mean time fished in minutes (Lingnau 1997).

Chinook and summer chum salmon harvest information from Hooper Bay was separated by mesh size. Catch information from mesh sizes greater than 6.5 inches were used for chinook catch rates. Mesh sizes less than or equal to 6.5 inches provided data for summer chum salmon catch rates. Assembled data was to be reported to the ADF&G office in Emmonak daily. Collected data from the Hooper Bay subsistence-monitoring project was compared qualitatively with the existing lower Yukon River set gillnet test fishing daily and cumulative CPUE. Large mesh gillnets used in Hooper Bay were compared to the chinook salmon set gillnet test fishery at Big Eddy and small mesh gillnet results used in Hooper Bay were compared to the summer chum salmon drift test fishery.

The Yukon River summer season area research and management biologists worked to ensure that the data collected from the Hooper Bay Subsistence Salmon Monitoring Project was accurate and of the same quality and standards obtained from other catch data collected in the Lower Yukon Area.

Age, Sex and Length Sampling

Data such as date, number and sex of fish were recorded. Captured salmon were identified by species and sex, measured to the nearest 5 mm (mid-eye to fork-of-tail), sampled for scales and adipose fin-clipped to prevent re-sampling. Scales were taken from an area posterior to the base of the dorsal fin and above the lateral line on the left side of the fish (Clutter and Whitesel 1956). One scale was taken from chum salmon and three scales were taken from chinook salmon. Scales

were wiped clean to remove slime and tissue and affixed to a gum-surfaced scale card with numbers that corresponded to the recording form. The scales were processed and aged postseason, and ASL data compiled and summarized.

Comparing Results, 2000-2002

The 2002 season was the third year of a three-year project. Results of the previous three years will consist of comparing run timing (using quartiles) between the Hooper Bay subsistence monitoring project and the Big Eddy test fishing project. An evaluation of the project for the three years of operation can be found in the discussion section.

RESULTS

During the 2002 monitoring season, a total of 422 interviews were conducted during a 39-day period (May 25 to July 14). Subsistence fishers primarily used set gillnets to harvest chinook and summer chum salmon. Fishers used nets of varying lengths (4 fathoms to 50 fathoms), and assorted mesh sizes (3.0 inches to 8.0 inches). The total inseason reported harvest by Hooper Bay subsistence fisherman was 258 chinook salmon and 5,436 summer chum salmon. Results are broken down by gear type below.

Chinook Salmon

Chinook salmon, in 2002, were harvested using nets that averaged 22.5 fathoms in length with a mean mesh size of 8.0 inch. The total time fished using chinook gear was 153,680 minutes (2,561 hours) (Table 1). The amount of time fished in 2002 is several times greater in magnitude compared to 2000 (67,740 minutes) and 2001 (36,360 minutes) (Tables 2 and 3). The mean chinook salmon catch per day fished was seven fish. The cumulative CPUE was 0.99 (Figure 2). The Big Eddy test fishing project's cumulative CPUE was 24.88. The average number of fishers per day using chinook salmon gear was 6.2 with an average fishing time of 19.6 hours per fisherman. The highest single day catch was 24 salmon on June 6. Because of the low harvest of chinook salmon in the Hooper Bay subsistence salmon fishery, run timing comparisons, albeit calculated, between Hooper Bay and the Big Eddy test fishing project should be examined with caution. When comparing the quartiles between Hooper Bay and the Big Eddy test fishing project, the differences (number of days) between the quartiles were 14 days (first quartile), 18 days (second quartile) and 17 days (third quartile) (Table 4 and 5).

Summer Chum Salmon

On June 19, subsistence fishers using chum gear harvested 1,484 chum salmon, the highest single day harvest during the monitoring period. The highest daily CPUE was 39.02 occurring on May 28. The cumulative CPUE was 97.17 (Figure 2). The Big Eddy test-fishing project cumulative CPUE was 4,316.00. Summer chum salmon were harvested using nets with a mean length of 19.9 fathoms with an average mesh size of 4.9 inches. Fishers fished for a total 368,450 minutes (6,141 hours) (Table 1). Similar to chinook salmon, the amount of time fished in 2002 is several times greater in magnitude compared to 2000 (107,995 minutes) and 2001 (123,280 minutes) (Tables 2 and 3). The mean chum salmon catch was 135 fish per day. The average number of fishers using summer chum salmon gear per day was 7.5 with an average fishing time of 21.1 hours per fisherman. When comparing the quartiles between Hooper Bay and the Big Eddy test fishing project, the differences (number of days) between the quartiles were 17 days (first quartile), 21 days (second quartile) and 24 days (third quartile) (Table 6 and 7).

Age, Sex, and Length Results

Summer Chum Salmon

Although 109 samples were collected, this amount was not enough to describe the Hooper Bay subsistence harvest. However, the samples do reflect what was observed in other sampled sites along the Yukon River and its tributaries. Results from the samples were 48.6% age-0.3 fish, 49.5 age-0.4 fish, and 1.8% age-0.5 fish. Females were 57.8% of the sample.

Chinook Salmon

Similar to summer chum salmon, the 31 samples collected were not enough to describe the Hooper Bay subsistence harvest. However, the samples do reflect what was observed in other sampled sites along the Yukon River and its tributaries. Results from the samples were 6.5% age-1.2 fish, 29.0% age-1.3 fish, 61.3% age-1.4 fish, and 3.2% age-1.5 fish. Females were 64.5% of the sample.

Project Results, 2000-2002.

The ability to determine run strength using the Hooper Bay monitoring project for the Yukon River relies heavily on the consistency of the salmon migration speed between Hooper Bay and the Big Eddy test fishing site. Quartile points of the run between Hooper Bay and Big Eddy test fishing project can be used to determine swimming time between the two projects. The cumulative catch rate can be used to determine if the Hooper Bay project correctly represented the runs compared to the Big Eddy cumulative catch rate. Because the Big Eddy summer chum

salmon test fishing project changed from a set gillnet project to a drift gillnet project in 2001, the cumulative CPUE for the study years cannot be compared.

Chinook Salmon

The number of days between the first and third quartile point for Hooper Bay was 20 in 2000, 10 in 2001 and 8 in 2002 (Table 3). For the Big Eddy test fishing project, the number of days between the first and third quartile point in 2000, 2001 and 2002 was 12, 11, and 11. The difference across the years for Hooper Bay was 12 days, whereas only one day for Big Eddy. Other comparisons of quarter points also indicate that differences in the Hooper Bay subsistence fishing, monitoring project vary and are not nearly as consistent as the Big Eddy test fishing project.

Summer Chum Salmon

The number of days between the first and third quartile point for Hooper Bay was 10 in 2000, 5 in 2001, and 9 in 2002 (Table 3). For the Big Eddy test fishing project, the number of days between the first and third quartile point in 2000, 2001 and 2002 was 13, 9 and 10. The difference across the years for Hooper Bay was 12 days, whereas only one day for Big Eddy. Unlike chinook salmon, differences between other quarter points in the Hooper Bay subsistence test fishing project for summer chum salmon are more consistent when comparing these quarter points to the Big Eddy test fishing project.

DISCUSSION

After three years of data, analyses indicate the Hooper Bay subsistence-monitoring project may not truly reflect run strength of chinook and summer chum salmon migrating up the coast to the Yukon River. This discrepancy may be caused by several factors, primarily prevailing winds. According to Hooper Bay residents, winds have a significant effect on the efficiency of the harvest, especially for chinook salmon. Prevailing winds will either push fish to shore, where most subsistence nets are located, or push them offshore, where they cannot be caught.

Secondarily is the simple fact that this is a subsistence fishery. Once fishers have taken their catch, they pull their nets. This action results in an inconsistent and condensed catch rate, and does not produce the consistent daily catch index throughout the season necessary for management. If the bulk of the fishers catch their needed subsistence harvest within a one to two week period, catch rates and quartile points reflect the subsistence harvest statistics, not statistics of the salmon run.

When looking at the cumulative CPUE for each location, Big Eddy reflected the run strength of 2002 was nearly twice that of 2001. According to other projects, this indeed was the case. However, the Hooper Bay index indicated a run, which was half the strength of 2001. The chinook salmon index of Hooper Bay indicated a run near the 2000 level, most likely the poorest

run ever observed. The Big Eddy indicated a more robust run than 2000, and in reality this was the case. Had managers used the data provided by the Hooper Bay subsistence monitoring project, both chinook and summer chum salmon runs would have been misread, leading to erroneous management decisions.

More comparable information between the Hooper Bay subsistence monitoring project and the Big Eddy test fishing project could provide higher quality information. One option would be to continue the project as is but only compare gillnets that are of similar mesh size. For example, instead of comparing Big Eddy 5.5 inch mesh size gill nets to Hooper Bay nets smaller than 6.5 inch, compare the Big Eddy test fishing nets to similar mesh size nets used in Hooper Bay. However, using a single mesh size net in the Hooper Bay fishery could reduce the amount of data received from that fishery and still would not reflect the entire run as these nets would be taken out of the water after subsistence needs have been met. The other option would be to establish a test fishery using the same gear type used at the Big Eddy site. Comparing similarly or identically collected data would provide managers with higher quality comparable run timing and run strength information. A project of this nature would still have complications: changing weather patterns, and the inability of test fishers to ensure caught fish would not go wasted when the community has fulfilled its subsistence needs.

LITERATURE CITED

ADFG. 1999. Annual Management Report Yukon Area, 1998. Alaska Dept. of Fish and Game. Regional Information Report No. 3A99-26. Anchorage. 256pp.

Borba, B.M., and H.H. Hamner. 1999. Subsistence and Personal Use Salmon Harvest Estimates Yukon Area, 1999. Alaska Dept. Fish and Game. Regional Information Report 3A00-23. Anchorage. 111pp.

Clutter, R. I., and L.W. Whitesel. 1956. Collection and interpretation of sockeye salmon scales. Bulletin of the International Pacific Salmon Fisheries Commission 9, Vancouver, British Columbia.

Kerkvliet, C.M. 1986. Hooper Bay Salmon Tagging Study. Bering Sea Fishermen's Association, Anchorage, Alaska.

Lingnau, T.L. 1997. Kobuk River Test Fishing Project, 1997. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Regional Information Report No. 3A97-38. Anchorage.

Lingnau, T.L. 2002. Hooper Bay Subsistence Salmon Monitoring Project, 2001. Alaska Department of Fish and Game, Commercial Fisheries Division, Regional Information Report No. 3A02-10. Anchorage.

Raymond, R.L., Vania, T.D., Lingnau, T.L. 2001. Hooper Bay Subsistence Salmon Monitoring Project, 2000. Alaska Department of Fish and Game, Commercial Fisheries Division, Regional Information Report No. 3A01-04. Anchorage.

Stickney, A. 1984. Coastal Ecology and Wild Resource Use in the Central Bering Sea Area: Hooper Bay and Kwigillingok. Alaska Department of Fish and Game. Technical Paper No. 85. 370 pp.

Thorsteinson, L.K., P.R. Becker, and D.A. Hale.1989. The Yukon Delta: A Synthesis of Information. US Dept. of Commerce, NOAA, National Ocean Service. Anchorage, Ak. 89pp.

TABLES, FIGURES,

AND APPENDIX TABLES

Table 1. Hooper Bay chinook and summer chum salmon subsistence catch per unit effort, and associated catch data, 2002.

	Chinook Salmon (mesh size >6.5")						Summer Chum Salmon (mesh size <=6.5")					
Date	Fished (minutes)	No. of Fishers	No. of Fish	Total Fathoms	CPUE	Cum. CPUE	Fished (minutes)	No. of Fishers	No. of Fish	Total Fathoms	CPUE	Cum. CPUE
25-May	300	1	0	25	0.00	0.00	1,920	6	1	60	0.05	0.05
26-May						0.00	1,920	6		36	0.00	0.05
27-May						0.00	1,940	5	1	41	0.07	0.13
28-May	600	1	0	25	0.00	0.00	600	1	16	4	39.02	39.15
29-May	2,160	5	6	125	0.13	0.13	1,140	2	9	8	5.78	44.93
30-May	2,880	4	11	92	0.25	0.38						44.93
31-May	4,020	5	6	50	0.18	0.56	720	1	16	4	32.52	77.45
1-Jun	11,280	15	14	229	0.03	0.60	3,720	7	42	184	0.37	77.82
2-Jun	7,200	10	7	190	0.03	0.63	2,460	4	33	74	1.09	78.90
3-Jun	14,400	10	14	235	0.02	0.65	8,640	6	241	93	1.80	80.70
4-Jun	15,840	12	7	249	0.01	0.66	9,030	10	202	176	0.76	81.46
5-Jun	19,040	14	16	350	0.01	0.68	18,540	15	295	236	0.41	81.86
6-Jun	17,280	12	24	300	0.03	0.70	25,200	20	577	423	0.32	82.19
7-Jun	7,920	6	9	175	0.04	0.74	15,120	12	599	226	1.05	83.24
8-Jun	14,400	10	20	250	0.03	0.78	28,080	20	1,484	434	0.73	83.97
9-Jun	11,520	8	9	200	0.02	0.80	16,560	12	512	213	0.87	84.84
10-Jun	7,560	6	1	150	0.01	0.80	15,120	11	120	233	0.20	85.05
11-Jun						0.80	14,400	10	6	250	0.01	85.06
12-Jun	2,880	2	0	50	0.00	0.80	8,640	6	24	105	0.16	85.22
13-Jun	2,880	2	0	50	0.00	0.80	17,280	12	151	279	0.19	85.40
14-Jun						0.80	15,840	11	146	239	0.23	85.64
15-Jun	1,440	1	1	25	0.17	0.97	15,120	11	157	152	0.41	86.04
16-Jun						0.97	15,840	11	61	233	0.10	86.14
17-Jun	4,320	3	0	75	0.00	0.97	20,160	14	39	293	0.04	86.18
18-Jun						0.97	15,840	11	39	231	0.06	86.25
19-Jun	1,440	1	0	25	0.00	0.97	20,160	14	38	309	0.04	86.28
20-Jun	4,320	3	1	75	0.02	0.99	16,560	12	108	279	0.14	86.42
21-Jun							21,600	15	47	309	0.04	86.47
22-Jun							5,760	4	0	100	0.00	86.47
23-Jun							5,760	4	5	100	0.05	86.52
24-Jun							4,320	3	20	75	0.37	86.89
25-Jun							5,760	4	38	100	0.40	87.28
26-Jun												87.28
27-Jun							4,320	3	11	75	0.20	87.49
28-Jun							1,440	1	0	25	0.00	87.49
29-Jun												87.49
30-Jun												87.49
1-Jul							1,440	1	10	25	1.67	89.15
2-Jul												89.15
3-Jul												89.15
4-Jul												89.15
5-Jul							2,880	2	37	50	1.54	90.70
6-Jul							1,440	1	14	25	2.33	93.03
7-Jul							1,440	1	13	25	2.17	95.20
8-Jul							1,440	1	5	25	0.83	96.03
9-Jul												96.03
10-Jul												96.03
11-Jul												96.03
12-Jul												96.03
13-Jul												96.03
14-Jul							300	1	2	35	1.14	97.17
15-Jul												
Total	153,680		146	2,945	0.99		368,450		5,119	5,787	97.17	

Table 2. Hooper Bay chinook and summer chum salmon subsistence catch per unit effort, and associated catch data, 2000.

	Chinook Salmon (mesh size >6.5")						Summer Chum Salmon (mesh size <=6.5")					
Date	Fished (minutes)	No. of Fishers	No. of Fish	Total Fathoms	CPUE	Cum. CPUE	Fished (minutes)	No. of Fishers	No. of Fish	Total Fathoms	CPUE	Cum. CPUE
25-May												
26-May												
27-May												
28-May												
29-May												
30-May												
31-May												
1-Jun												
2-Jun												
3-Jun												
4-Jun												
5-Jun												
6-Jun												
7-Jun												
8-Jun	900	2	2	75	0.18	0.18	1,980	4	6	86	0.21	0.21
9-Jun	1,800	3	1	92	0.04	0.21	4,080	5	19	83	0.33	0.55
10-Jun	2,520	6	0	383	0.00	0.21	1,800	2	56	110	1.70	2.24
11-Jun	4,560	13	6	373	0.02	0.24	4,260	11	58	197	0.42	2.66
12-Jun	4,920	14	2	317	0.01	0.24	5,580	13	137	173	0.85	3.51
13-Jun	7,440	22	7	611	0.01	0.25	5,280	14	102	253	0.46	3.97
14-Jun	4,350	14	3	282	0.01	0.27	4,920	12	135	179	0.92	4.89
15-Jun	6,060	15	4	375	0.01	0.28	6,840	16	139	331	0.37	5.25
16-Jun	4,680	7	2	121	0.02	0.30	5,730	11	308	207	1.56	6.82
17-Jun	4,200	11	0	237	0.00	0.30	9,480	19	457	487	0.59	7.41
18-Jun	5,190	17	6	324	0.02	0.32	4,680	18	500	367	1.75	9.16
19-Jun	2,730	9	1	148	0.01	0.33	5,895	17	513	634	0.82	9.98
20-Jun	2,190	8	1	143	0.02	0.35	6,540	21	818	730	1.03	11.01
21-Jun	3,210	10	2	234	0.02	0.37	3,600	11	322	246	2.18	13.19
22-Jun	1,920	5	2	125	0.05	0.42	10,320	29	392	527	0.43	13.63
23-Jun	2,310	6	0	147	0.00	0.42	2,730	6	34	150	0.50	14.12
24-Jun						0.42	1,920	4	32	100	1.00	15.12
25-Jun						0.42	720	2	8	29	2.29	17.41
26-Jun	2,100	6	0	150	0.00	0.42	5,520	15	100	423	0.26	17.67
27-Jun	1,170	3	0	75	0.00	0.42	360	1	0	25	0.00	17.67
28-Jun	870	3	2	75	0.18	0.60	5,370	14	238	327	0.81	18.49
29-Jun	2,280	5	0	150	0.00	0.60	3,060	7	53	295	0.35	18.84
30-Jun	1,260	3	0	75	0.00	0.60	3,780	9	28	225	0.20	19.04
1-Jul						0.60	1,350	3	10	75	0.59	19.63
2-Jul	1,080	3	0	75	0.00	0.60	2,160	6	17	150	0.31	19.94
3-Jul												
4-Jul												
5-Jul												
6-Jul												
7-Jul												
8-Jul												
9-Jul												
10-Jul												
11-Jul												
12-Jul												
13-Jul												
14-Jul												
15-Jul												
Total	67,740		41	4,587	0.60		107,955		4,482	6,408	19.94	

Table 3. Hooper Bay chinook and summer chum salmon subsistence catch per unit effort, and associated catch data, 2001.

	Chinook Salmon (mesh size >6.5")						Summer Chum Salmon (mesh size <=6.5")					
Date	Fished (minutes)	No. of Fishers	No. of Fish	Total Fathoms	CPUE	Cum. CPUE	Fished (minutes)	No. of Fishers	No. of Fish	Total Fathoms	CPUE	Cum. CPUE
25-May												
26-May												
27-May												
28-May												
29-May												
30-May												
31-May												
1-Jun							840	2	1	20	0.36	0.36
2-Jun	1,260	3	12	75	0.76	0.76	180	1	1	10	3.33	3.69
3-Jun						0.76						3.69
4-Jun	1,140	2	8	14	2.92	3.69						3.69
5-Jun	1,290	2	7	31	1.05	4.73	2,310	4	105	70	3.90	7.59
6-Jun	2,040	3	35	37	2.77	7.50	2,800	5	122	80	3.27	10.85
7-Jun	4,080	6	116	122	1.40	8.90	2,520	4	121	70	4.12	14.97
8-Jun	1,290	2	24	31	3.59	12.49	2,940	5	144	80	3.67	18.64
9-Jun	1,440	2	9	75	0.50	12.99	3,540	6	177	84.5	3.55	22.19
10-Jun	720	1	11	13	6.89	19.88	720	1	43	6.1	58.74	80.94
11-Jun	720	1	10	13	6.27	26.14						80.94
12-Jun	3,600	5	42	83	0.84	26.98	1,440	2	78	35	9.29	90.22
13-Jun	4,320	7	43	160	0.37	27.36	1,440	2	88	60	6.11	96.33
14-Jun	720	1	1	10	0.83	28.19	2,880	4	185	79.4	4.85	101.19
15-Jun	2,460	4	13	66	0.48	28.67	6,270	9	343	178.3	1.84	103.03
16-Jun	1,440	2	23	16	5.95	34.62	9,990	15	455	217.8	1.25	104.28
17-Jun	4,770	7	96	111	1.09	35.71	10,200	15	547	185	1.74	106.02
18-Jun	1,200	2	6	31	0.96	36.67	10,770	16	644	354.4	1.01	107.04
19-Jun	1,440	2	15	20	3.13	39.80	19,590	28	1512	452.6	1.02	108.06
20-Jun	1,710	3	37	60	2.16	41.96	8,520	13	908	196.6	3.23	111.29
21-Jun	720	1	5	10	4.17	46.13	8,670	13	658	329.9	1.38	112.67
22-Jun							1,440	2	54	23.3	9.66	122.33
23-Jun												122.33
24-Jun												122.33
25-Jun												122.33
26-Jun							60	1	1	150	0.67	122.99
27-Jun							2,160	3	3	26.6	0.31	123.30
28-Jun							3,960	6	87	59.8	2.20	125.51
29-Jun							3,600	5	89	53.2	2.79	128.30
30-Jun							720	1	7	25	2.33	130.63
1-Jul												130.63
2-Jul												130.63
3-Jul												130.63
4-Jul												130.63
5-Jul												130.63
6-Jul							720	1	15	10	12.50	143.13
7-Jul							1,020	2	28	20	8.24	151.37
8-Jul							420	2	8	20	5.71	157.08
9-Jul												157.08
10-Jul							630	3	5	26	1.83	158.91
11-Jul							1,830	3	6	20	0.98	159.90
12-Jul							6,000	5	20	42.3	0.47	160.37
13-Jul							2,160	3	18	30	1.67	162.04
14-Jul							2,880	4	28	40	1.46	163.49
15-Jul												
Total	36,360		513	980	46.13		123,280		6,501	3,056	163.49	

Table 4. Big Eddy chinook salmon set gillnet test fish daily and cumulative CPUE, and cumulative proportions, 2000-2002.

	2000			2001			2002		
	Daily CPUE	Cum. CPUE	Cum. Prop.	Daily CPUE	Cum. CPUE	Cum. Prop.	Daily CPUE	Cum. CPUE	Cum. Prop.
25-May									
26-May									
27-May									
28-May									
29-May							0.00	0.00	0.00
30-May							0.00	0.00	0.00
31-May							0.00	0.00	0.00
1-Jun							0.13	0.13	0.01
2-Jun							0.13	0.25	0.01
3-Jun	0.00	0.00		0.00	0.00		0.33	0.58	0.02
4-Jun	0.06	0.06		0.00	0.00		0.33	0.92	0.04
5-Jun	0.08	0.14		0.00	0.00		0.33	1.25	0.05
6-Jun	0.17	0.31		0.00	0.00		0.63	1.88	0.08
7-Jun	0.13	0.44		0.00	0.00		0.54	2.42	0.10
8-Jun	0.04	0.48		0.19	0.19	0.02	0.25	2.67	0.11
9-Jun	0.10	0.58	0.04	0.35	0.54	0.05	0.46	3.13	0.13
10-Jun	0.33	0.91	0.06	0.21	0.75	0.06	0.50	3.63	0.15
11-Jun	0.10	1.01	0.06	0.33	1.08	0.09	0.54	4.17	0.17
12-Jun	0.08	1.09	0.07	0.56	1.64	0.14	1.00	5.17	0.21
13-Jun	0.15	1.24	0.08	0.67	2.31	0.20	1.58	6.75	0.27
14-Jun	0.15	1.39	0.08	0.83	3.14	0.27	1.46	8.21	0.33
15-Jun	0.08	1.47	0.09	0.31	3.45	0.30	1.17	9.38	0.38
16-Jun	0.19	1.66	0.10	0.21	3.66	0.32	0.92	10.29	0.41
17-Jun	0.21	1.87	0.11	0.17	3.83	0.33	1.75	12.04	0.48
18-Jun	1.54	3.41	0.21	0.04	3.87	0.34	1.04	13.08	0.53
19-Jun	1.23	4.64	0.28	0.13	4.00	0.35	0.46	13.54	0.54
20-Jun	0.63	5.27	0.32	0.10	4.10	0.36	1.42	14.96	0.60
21-Jun	0.25	5.52	0.34	1.04	5.14	0.45	1.17	16.13	0.65
22-Jun	0.40	5.92	0.36	0.50	5.64	0.49	0.79	16.92	0.68
23-Jun	0.35	6.27	0.38	1.19	6.83	0.59	1.00	17.92	0.72
24-Jun	0.21	6.48	0.40	1.13	7.96	0.69	1.00	18.92	0.76
25-Jun	1.17	7.65	0.47	0.77	8.73	0.76	1.04	19.96	0.80
26-Jun	2.19	9.84	0.60	0.46	9.19	0.80	0.75	20.71	0.83
27-Jun	0.67	10.51	0.64	0.71	9.90	0.86	0.29	21.00	0.84
28-Jun	0.69	11.20	0.68	0.21	10.11	0.88	0.08	21.08	0.85
29-Jun	0.56	11.76	0.72	0.06	10.17	0.88	0.29	21.38	0.86
30-Jun	0.23	11.99	0.73	0.08	10.25	0.89	0.46	21.83	0.88
1-Jul	0.33	12.32	0.75	0.25	10.50	0.91	0.25	22.08	0.89
2-Jul	0.33	12.65	0.77	0.15	10.65	0.92	0.54	22.63	0.91
3-Jul	0.35	13.00	0.79	0.17	10.82	0.94	0.42	23.04	0.93
4-Jul	0.83	13.83	0.84	0.13	10.95	0.95	0.38	23.42	0.94
5-Jul	0.27	14.10	0.86	0.13	11.08	0.96	0.29	23.71	0.95
6-Jul	0.19	14.29	0.87	0.06	11.14	0.97	0.17	23.88	0.96
7-Jul	0.10	14.39	0.88	0.06	11.20	0.97	0.29	24.17	0.97
8-Jul	0.23	14.62	0.89	0.04	11.24	0.97	0.25	24.42	0.98
9-Jul	0.44	15.06	0.92	0.02	11.26	0.98	0.21	24.63	0.99
10-Jul	0.38	15.44	0.94	0.10	11.36	0.98	0.08	24.71	0.99
11-Jul	0.19	15.63	0.95	0.06	11.42	0.99	0.08	24.79	1.00
12-Jul	0.08	15.71	0.96	0.02	11.44	0.99	0.00	24.79	1.00
13-Jul	0.02	15.73	0.96	0.06	11.50	1.00	0.08	24.88	1.00
14-Jul	0.02	15.75	0.96	0.02	11.52	1.00	0.00	24.88	1.00
15-Jul	0.63	16.38	1.00	0.02	11.54	1.00	0.00	24.88	1.00

Table 5. Hooper Bay chinook salmon set gillnet subsistence daily and cumulative CPUE, and cumulative proportions, 2000-2002.

	2000			2001			2002		
	Daily CPUE	Cum. CPUE	Cum. Prop.	Daily CPUE	Cum. CPUE	Cum. Prop.	Daily CPUE	Cum. CPUE	Cum. Prop.
25-May							0.00	0.00	0.00
26-May									
27-May									
28-May							0.00	0.00	0.00
29-May							0.13	0.13	0.13
30-May							0.25	0.38	0.39
31-May							0.18	0.56	0.57
1-Jun							0.03	0.60	0.60
2-Jun				0.76	0.76	0.05	0.03	0.63	0.63
3-Jun					0.76	0.05	0.02	0.65	0.66
4-Jun				0.42	1.18	0.08	0.01	0.66	0.67
5-Jun				0.33	1.51	0.11	0.01	0.68	0.68
6-Jun				1.03	2.54	0.18	0.03	0.70	0.71
7-Jun				1.71	4.24	0.30	0.04	0.74	0.75
8-Jun	0.18	0.18	0.29	1.12	5.36	0.38	0.03	0.78	0.78
9-Jun	0.04	0.21	0.35	0.38	5.74	0.41	0.02	0.80	0.81
10-Jun	0.00	0.21	0.35	0.92	6.65	0.48	0.01	0.80	0.81
11-Jun	0.02	0.24	0.39	0.83	7.49	0.54		0.80	0.81
12-Jun	0.01	0.24	0.40	0.70	8.19	0.59	0.00	0.80	0.81
13-Jun	0.01	0.25	0.42	0.60	8.78	0.63	0.00	0.80	0.81
14-Jun	0.01	0.27	0.44	0.08	8.87	0.63		0.80	0.81
15-Jun	0.01	0.28	0.46	0.32	9.18	0.66	0.17	0.97	0.98
16-Jun	0.02	0.30	0.49	0.96	10.14	0.72		0.97	0.98
17-Jun	0.00	0.30	0.49	1.21	11.35	0.81	0.00	0.97	0.98
18-Jun	0.02	0.32	0.53	0.30	11.65	0.83		0.97	0.98
19-Jun	0.01	0.33	0.55	0.63	12.27	0.88	0.00	0.97	0.98
20-Jun	0.02	0.35	0.59	1.30	13.57	0.97	0.02	0.99	1.00
21-Jun	0.02	0.37	0.61	0.42	13.99	1.00			
22-Jun	0.05	0.42	0.70						
23-Jun	0.00	0.42	0.70						
24-Jun		0.42	0.70						
25-Jun		0.42	0.70						
26-Jun	0.00	0.42	0.70						
27-Jun	0.00	0.42	0.70						
28-Jun	0.18	0.60	1.00						
29-Jun	0.00	0.60	1.00						
30-Jun	0.00	0.60	1.00						
1-Jul		0.60	1.00						
2-Jul	0.00	0.60	1.00						
3-Jul									
4-Jul									
5-Jul									
6-Jul									
7-Jul									
8-Jul									
9-Jul									
10-Jul									
11-Jul									
12-Jul									
13-Jul									
14-Jul									
15-Jul									

Table 6. Big Eddy summer chum salmon drift gillnet test fish daily and cumulative CPUE, and cumulative proportions, 2000-2002.

	2000			2001			2002		
	Daily CPUE	Cum. CPUE	Cum. Prop.	Daily CPUE	Cum. CPUE	Cum. Prop.	Daily CPUE	Cum. CPUE	Cum. Prop.
25-May									
26-May									
27-May									
28-May									
29-May							0.00	0.00	0.00
30-May							15.14	15.14	0.00
31-May							4.51	19.65	0.00
1-Jun							2.97	22.62	0.01
2-Jun							1.50	24.12	0.01
3-Jun							7.78	31.90	0.01
4-Jun	0.00	0.00					0.00	31.90	0.01
5-Jun	0.04	0.04					10.72	42.62	0.01
6-Jun	0.08	0.12					19.92	62.54	0.01
7-Jun	0.04	0.16					6.01	68.55	0.02
8-Jun	0.08	0.24		0.00	0.00	0.00	3.00	71.55	0.02
9-Jun	0.83	1.07	0.06	1.67	1.67	0.00	4.54	76.09	0.02
10-Jun	2.08	3.15	0.16	0.00	1.67	0.00	0.55	76.64	0.02
11-Jun	0.54	3.69	0.19	0.00	1.67	0.00	51.14	127.78	0.03
12-Jun	0.38	4.07	0.21	4.62	6.29	0.00	690.07	817.85	0.19
13-Jun	0.17	4.24	0.22	67.39	73.68	0.02	224.56	1,042.41	0.24
14-Jun	0.17	4.41	0.23	399.89	473.57	0.16	45.53	1,087.94	0.25
15-Jun	0.13	4.54	0.24	173.74	647.31	0.22	30.09	1,118.03	0.26
16-Jun	0.21	4.75	0.25	81.84	729.15	0.25	108.19	1,226.22	0.28
17-Jun	0.13	4.88	0.26	53.76	782.91	0.27	17.40	1,243.62	0.29
18-Jun	1.50	6.38	0.33	24.99	807.90	0.27	175.79	1,419.41	0.33
19-Jun	1.63	8.01	0.42	16.88	824.78	0.28	145.90	1,565.31	0.36
20-Jun	0.92	8.93	0.47	16.47	841.25	0.28	229.91	1,795.22	0.42
21-Jun	0.25	9.18	0.48	155.84	997.09	0.34	824.15	2,619.37	0.61
22-Jun	0.21	9.39	0.49	128.38	1,125.47	0.38	90.01	2,709.38	0.63
23-Jun	0.29	9.68	0.51	295.84	1,421.31	0.48	297.44	3,006.82	0.70
24-Jun	0.21	9.89	0.52	454.59	1,875.90	0.64	323.98	3,330.80	0.77
25-Jun	1.08	10.97	0.57	166.57	2,042.47	0.69	117.00	3,447.80	0.80
26-Jun	1.71	12.68	0.66	201.25	2,243.72	0.76	14.87	3,462.67	0.80
27-Jun	0.71	13.39	0.70	355.55	2,599.27	0.88	23.16	3,485.83	0.81
28-Jun	0.54	13.93	0.73	78.44	2,677.71	0.91	86.55	3,572.38	0.83
29-Jun	0.75	14.68	0.77	23.43	2,701.14	0.91	303.83	3,876.21	0.90
30-Jun	0.29	14.97	0.78	121.44	2,822.58	0.96	78.64	3,954.85	0.92
1-Jul	0.08	15.05	0.79	40.17	2,862.75	0.97	70.80	4,025.65	0.93
2-Jul	0.50	15.55	0.81	16.57	2,879.32	0.97	52.03	4,077.68	0.94
3-Jul	0.25	15.80	0.83	17.26	2,896.58	0.98	164.92	4,242.60	0.98
4-Jul	1.17	16.97	0.89	25.95	2,922.53	0.99	9.10	4,251.70	0.99
5-Jul	0.38	17.35	0.91	9.21	2,931.74	0.99	4.78	4,256.48	0.99
6-Jul	0.00	17.35	0.91	9.20	2,940.94	1.00	23.16	4,279.64	0.99
7-Jul	0.25	17.60	0.92	3.08	2,944.02	1.00	6.12	4,285.76	0.99
8-Jul	0.54	18.14	0.95	7.82	2,951.84	1.00	0.00	4,285.76	0.99
9-Jul	0.46	18.60	0.97	0.00	2,951.84	1.00	9.23	4,294.99	1.00
10-Jul	0.17	18.77	0.98	0.00	2,951.84	1.00	4.74	4,299.73	1.00
11-Jul	0.08	18.85	0.99	1.50	2,953.34	1.00	1.67	4,301.40	1.00
12-Jul	0.08	18.93	0.99	0.00	2,953.34	1.00	9.73	4,311.13	1.00
13-Jul	0.04	18.97	0.99	0.00	2,953.34	1.00	3.20	4,314.33	1.00
14-Jul	0.00	18.97	0.99	0.00	2,953.34	1.00	1.67	4,316.00	1.00
15-Jul	0.13	19.10	1.00				0.00	4,316.00	1.00

Table 7. Hooper Bay summer chum salmon set gillnet subsistence daily and cumulative CPUE, and cumulative proportions, 2000-2002.

	2000			2001			2002		
	Daily CPUE	Cum. CPUE	Cum. Prop.	Daily CPUE	Cum. CPUE	Cum. Prop.	Daily CPUE	Cum. CPUE	Cum. Prop.
25-May							0.05	0.05	0.00
26-May							0.00	0.05	0.00
27-May							0.07	0.13	0.00
28-May							39.02	39.15	0.40
29-May							5.78	44.93	0.46
30-May								44.93	0.46
31-May							32.52	77.45	0.80
1-Jun				0.36	0.36	0.00	0.37	77.82	0.80
2-Jun				3.33	3.69	0.02	1.09	78.90	0.81
3-Jun					3.69	0.02	1.80	80.70	0.83
4-Jun					3.69	0.02	0.76	81.46	0.84
5-Jun				3.90	7.59	0.05	0.41	81.86	0.84
6-Jun				3.27	10.85	0.07	0.32	82.19	0.85
7-Jun				4.12	14.97	0.09	1.05	83.24	0.86
8-Jun	0.21	0.21	0.01	3.67	18.64	0.11	0.73	83.97	0.86
9-Jun	0.33	0.55	0.03	3.55	22.19	0.14	0.87	84.84	0.87
10-Jun	1.70	2.24	0.11	58.74	80.94	0.50	0.20	85.05	0.88
11-Jun	0.42	2.66	0.13		80.94	0.50	0.01	85.06	0.88
12-Jun	0.85	3.51	0.18	9.29	90.22	0.55	0.16	85.22	0.88
13-Jun	0.46	3.97	0.20	6.11	96.33	0.59	0.19	85.40	0.88
14-Jun	0.92	4.89	0.25	4.85	101.19	0.62	0.23	85.64	0.88
15-Jun	0.37	5.25	0.26	1.84	103.03	0.63	0.41	86.04	0.89
16-Jun	1.56	6.82	0.34	1.25	104.28	0.64	0.10	86.14	0.89
17-Jun	0.59	7.41	0.37	1.74	106.02	0.65	0.04	86.18	0.89
18-Jun	1.75	9.16	0.46	1.01	107.04	0.65	0.06	86.25	0.89
19-Jun	0.82	9.98	0.50	1.02	108.06	0.66	0.04	86.28	0.89
20-Jun	1.03	11.01	0.55	3.23	111.29	0.68	0.14	86.42	0.89
21-Jun	2.18	13.19	0.66	1.38	112.67	0.69	0.04	86.47	0.89
22-Jun	0.43	13.63	0.68	9.66	122.33	0.75	0.00	86.47	0.89
23-Jun	0.50	14.12	0.71		122.33	0.75	0.05	86.52	0.89
24-Jun	1.00	15.12	0.76		122.33	0.75	0.37	86.89	0.89
25-Jun	2.29	17.41	0.87		122.33	0.75	0.40	87.28	0.90
26-Jun	0.26	17.67	0.89	0.67	122.99	0.75		87.28	0.90
27-Jun	0.00	17.67	0.89	0.31	123.30	0.75	0.20	87.49	0.90
28-Jun	0.81	18.49	0.93	2.20	125.51	0.77	0.00	87.49	0.90
29-Jun	0.35	18.84	0.94	2.79	128.30	0.78		87.49	0.90
30-Jun	0.20	19.04	0.95	2.33	130.63	0.80		87.49	0.90
1-Jul	0.59	19.63	0.98		130.63	0.80	1.67	89.15	0.92
2-Jul	0.31	19.94	1.00		130.63	0.80		89.15	0.92
3-Jul					130.63	0.80		89.15	0.92
4-Jul					130.63	0.80		89.15	0.92
5-Jul					130.63	0.80	1.54	90.70	0.93
6-Jul				12.50	143.13	0.88	2.33	93.03	0.96
7-Jul				8.24	151.37	0.93	2.17	95.20	0.98
8-Jul				5.71	157.08	0.96	0.83	96.03	0.99
9-Jul					157.08	0.96		96.03	0.99
10-Jul				1.83	158.91	0.97		96.03	0.99
11-Jul				0.98	159.90	0.98		96.03	0.99
12-Jul				0.47	160.37	0.98		96.03	0.99
13-Jul				1.67	162.04	0.99		96.03	0.99
14-Jul				1.46	163.49	1.00	1.14	97.17	1.00
15-Jul									

Table 8. Annual Hooper Bay subsistance harvest and Big Eddy test fishing timing statistics for chinook and summer chum, 2000-2002. [a]

Year	Cumulative CPUE	First Quartile Day	Median Day	Third Quartile Day	Days Between Quartiles: First & Median	Median & Third	First & Third
Chinook Salmon							
Hooper Bay Subsistence Harvsest							
2000	0.60	8-Jun	18-Jun	28-Jun	10	10	20
2001	46.13	7-Jun	11-Jun	17-Jun	4	6	10
2002	0.99	30-May	31-May	7-Jun	1	7	8
Big Eddy Test Fishing							
2000	16.4	19-Jun	26-Jun	1-Jul	7	5	12
2001	11.5	14-Jun	23-Jun	25-Jun	9	2	11
2002	24.6	13-Jun	18-Jun	24-Jun	5	6	11
Summer Chum Salmon							
Hooper Bay Subsistence Harvsest							
2000	19.94	6-Jul	10-Jul	16-Jul	4	6	10
2001	163.49	8-Jul	11-Jul	13-Jul	3	2	5
2002	97.17	6-Jul	10-Jul	15-Jul	4	5	9
Big Eddy Test Fishing							
2000	19.1	16-Jun	23-Jun	29-Jun	7	6	13
2001	2,953.3	17-Jun	24-Jun	26-Jun	7	2	9
2002	4,284.1	14-Jun	21-Jun	24-Jun	7	3	10

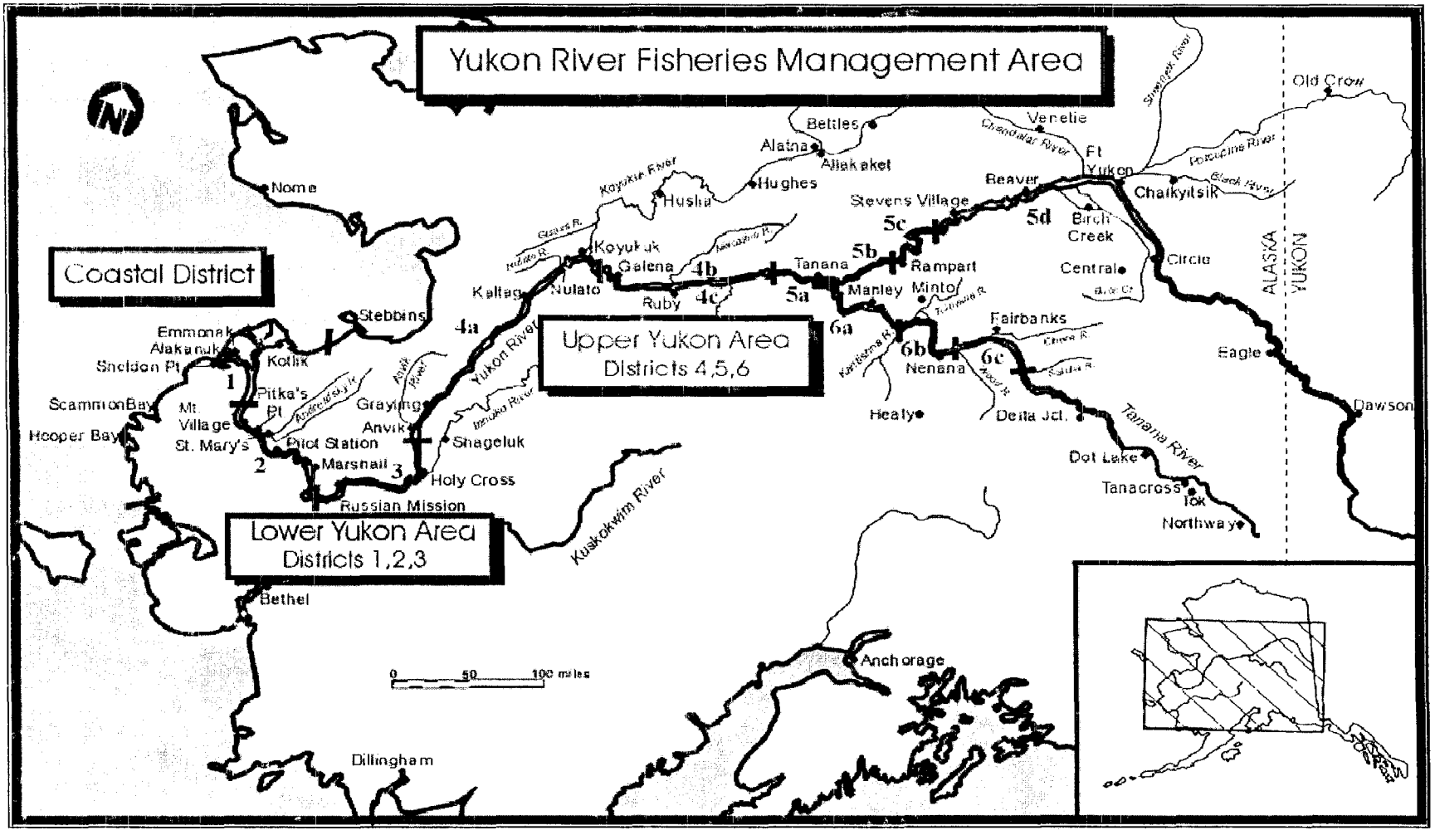
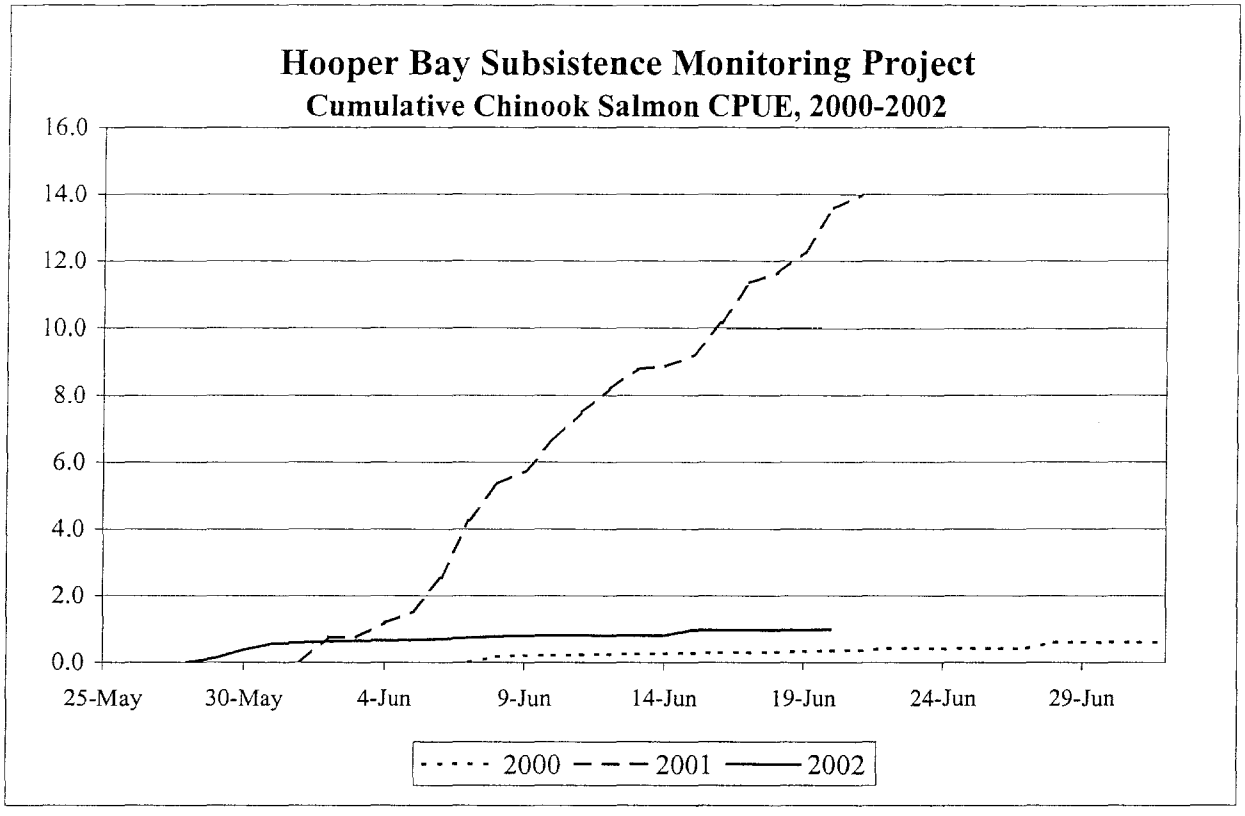


Figure 1. Alaska portion of the Yukon River drainage.



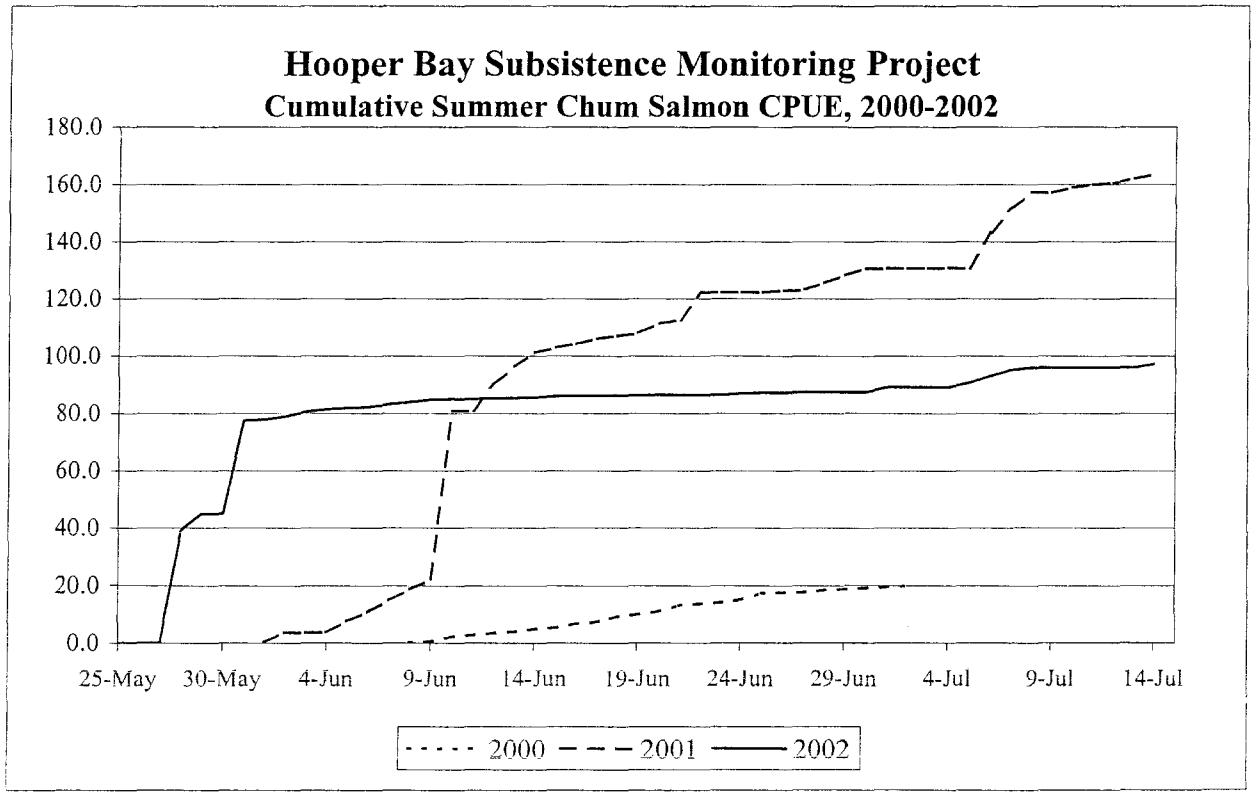


Figure 2. Hooper Bay subsistence monitoring project's cumulative CPUE for chinook and summer chum salmon, 2000-2002.

Appendix Table A.1. Hooper Bay subsistence catch survey form.

Hooper Bay Native Village Daily Subsistence Catch Form

Data collected

Date: _____ **by:** _____

Fished (one day per form) (please print name)

Fisherman	Time Fished (minutes	Net Length (fathom	Mesh Size	Numbe r of	Number of	King CPUE	Chum CPUE

Description of Subsistence Catch

Fishing for kings today was described as: ☐ Poor ☐ Fair ☐ Average ☐ Good ☐ Very Good

Fishing for chums today was described as: ☐ Poor ☐ Fair ☐ Average ☐ Good ☐ Very Good

Overall, fishermen have completed what percent of their subsistence harvest:

☐ 10% ☐ 25% ☐ 50% ☐ 75% ☐ 90% ☐ 100%

General Observations Describing Catch (ex, kings are increasing; good storm moving fish; poor tide)

Catch Per Unit Effort: $\frac{6,000\ (c)}{(l)\ (t)}$ c = Catch t = Time l = Length

FAX DAILY To : 949-1830
Voice phone 949-1039