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TRANSBOUNDARY RIVER SALMON PRODUCTION, HARVEST, AND ESCAPEMENT ESTIMATES, 1989

February 8, 1991

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EXECUTIVE SUMMARY

Postseason estimates of the catches and escapements of Pacific salmon returning to the transboundary Stikine, Taku, and Alsek Rivers for 1989 are presented and compared with historical patterns. Relevant information pertaining to the management of appropriate U.S. and Canadian fisheries is presented and the use of in-season management models is discussed.

The 1989 Stikine sockeye run was estimated at 90,400 fish, of which 37,000 were harvested in various fisheries and 53,400 escaped to spawn. The U.S. marine commercial and test fishery catches of Stikine sockeye salmon were 14,500 and 800 fish, respectively; the Canadian inriver commercial and Indian food fishery catches were 17,700 and 2,400 fish, respectively; and the inriver test fishery catch was 1,600 fish. The preseason forecast of the run was 80,900 sockeye salmon. The Stikine Management Model worked well this year in predicting the Stikine sockeye run, predicting from 88,000 to 121,000 fish during various weeks of the season. The model correctly predicted a smaller than average portion of the run being from the Tahltan stock. Estimates of the total allowable catch (TAC) were derived from predictions of the total Stikine River run; Canada harvested its portion of the TAC while the U.S. harvested approximately half of its TAC estimated by the model. Due to the low run size of the Tahltan stock (15,700 fish), the resulting spawning escapement to Tahltan Lake (8,300 fish) was below the 20,000 to 30,000 goal range established by the Transboundary Technical Committee. The escapement of 45,100 non-Tahltan Stikine sockeye salmon exceeded the upper level of the escapement goal range.

The Canadian inriver Stikine chinook catch was a record 3,000 fish (including jacks), approximately 43% more than the 1980 to 1988 average, with approximately 60% harvested in commercial fisheries and 40% harvested in the Indian food fishery. The U.S. marine catch in the District 106 and 108 mixed stock fisheries was 1,900 fish, approximately 28% more than the 1980 to 1988 average catch. Chinook spawning escapements were good in the Stikine River in 1989, with a count of 4,700 large adults through Little Tahltan weir and a total inriver escapement estimate of 18,900 large fish, 1,800 fish more than the 1980 to 1988 average.

The Stikine coho run was good in 1989. The U.S. marine harvest of Stikine River coho salmon is not known since there is no stock identification program in place; however, total catches in District 106 were above average. The Canadian inriver coho catch was 6,100 fish, 50% more than of the Treaty entitlement of 4,000 fish. The fishery was managed to take the 4,000 fish treaty entitlement plus a 1,900 fish shortfall from the 1988 season. Coho aerial survey escapement counts were well above average.

The Stikine River runs of pink and chum salmon are typically very small. In 1989, Canadian catches of these two species were 800 and 700 fish, respectively. This is below the 1980 to 1988 average for pink salmon and slightly above average for chum salmon.

The 1989 total Taku sockeye run was estimated at 177,600 fish and included a catch of 82,300 and an escapement of 95,300 fish. The U.S. marine commercial and inriver personal use catches were 62,800 and 700 fish, respectively, and the Canadian inriver commercial, food fishery, and test fishery catches were 18,500, 50, and 200 fish, respectively. The Pacific Salmon Treaty defines harvest sharing of Taku River sockeye salmon as 18% of the total allowable catch to Canada and 82% to the U.S. Since the escapement goal set by the Transboundary Technical Committee is expressed as a range, 71,000 to 80,000 fish, the resulting total allowable catch is also determined as a range. In 1989, Canada took 17% to 19% and the U.S. took 60% to 65% of the total allowable catch. The estimated spawning escapement for Taku sockeye salmon exceeded the upper level of the escapement goal range.

The chinook catch in the Canadian commercial fishery in the Taku River was 1,000 fish, approximately three times the 1980 to 1988 average. The catch in the U.S. District 111 mixed stock fishery was 1,800 chinook salmon, approximately 86% of the 1980 to 1988 average. Relatively strong chinook escapements were observed in spawning areas throughout the Canadian portion of Taku River drainage.

The Taku coho run was strong in 1989. The U.S. harvest of coho salmon in the District 111 mixed stock fishery was 51,800 fish, 16,000 fish more than the 1980 to 1988 average. The Canadian inriver coho catch was 2,900 salmon, close to the Treaty limit of 3,000 fish. The above-border run size through October 1 (end of tagging program) was estimated at 60,800 coho salmon, similar to the above-border run for a comparable time period in both 1987 and 1988. Aerial survey index counts and weir counts in U.S. and Canadian portions of the Taku drainage were generally above those of recent years.

The catches of pink and chum salmon in the U.S. District 111 fishery were 180,600 and 37,000 fish, respectively, near the 1980 to 1988 average for pink salmon and approximately 40% of the average for chum salmon. Canadian inriver catches included 700 pink and 40 chum salmon, nearly an order of magnitude below the 1980 to 1988 averages for both species.

The sockeye run to the Alsek River was about average as indicated by below average U.S. terminal and Canadian inriver catches and above average escapement counts. The U.S. Dry Bay catch was 13,500 sockeye salmon, approximately 77% of the 1980 to 1988 average catch. The Canadian sport fishery catch of 300 fish and food fishery catch of 1,900 fish were 67% and 92%, respectively, of the 1980 to 1988 averages. The count of sockeye salmon through Klukshu weir was 23,500 fish, approximately 31% more than the 1980 to 1988 average. The early run component comprised 14% of the total run which represented a 31% increase from the 1980 to 1988 average run.

The chinook run to the Alsek River was also about average. The U.S. Dry Bay catch of 200 fish was 50% of the 1980 to 1988 average. The Canadian combined sport and food fishery catch of 400 chinook salmon was near the 1980 to 1988 average. However, the escapement into Klukshu River, 2,300 chinook salmon, was above the 1980 to 1988 average.

The coho run to the Alsek River was relatively strong in 1989. The U.S. Dry Bay coho catch of 6,000 fish was near the 1980 to 1988 average and the Canadian inriver sport catch of 200 fish was 2.6 times the 1980 to 1988 average. The Klukshu weir count of 2,200 coho salmon was more than twice the 1980 to 1988 average.

The U.S. Dry Bay pink and chum salmon catches of two and 1,000 fish, respectively, were near the 1980 to 1988 averages. There are no recorded Canadian catches of pink or chum salmon in the Alsek River.

INTRODUCTION

This report presents 1989 catch and escapement data for Pacific salmon runs to the transboundary Stikine, Taku, and Alsek Rivers and discusses management actions taken during the season. Catch and effort data are presented by management week (U.S. statistical week) for each river for both U.S. and Canadian fisheries. Spawning escapement data for all species are reported from weir counts or other escapement monitoring techniques. Sockeye runs to the three rivers are reconstructed using harvest data and spawning escapement estimates.

STIKINE RIVER

Stikine River salmon are harvested by U.S. gill net fisheries in Alaskan Districts 106 and 108, by Canadian commercial gill net fisheries located in the lower and upper Stikine River, and by a Canadian Indian food fishery in the upper portion of the river (Figure 1). Additional catches of unknown quantity are taken in U.S. troll and seine fisheries and in sport fisheries near Wrangell and Petersburg. A small sport fishery also exists in the Canadian portion of the Stikine drainage.

Harvest Regulations and the Joint Management Model

The harvest and management of Stikine River salmon stocks for the period 1988 to 1992 is governed by Annex IV, Chapter I, of the Pacific Salmon Treaty as negotiated by the Pacific Salmon Commission in February of 1988. Sharing arrangements for sockeye salmon are:

Total Sockeye Allowable Catch		Canadian Allowable Catch	
From	To	Minimum	Maximum
0	0	4,000	4,000
1	20,000	10,000	15,000
20,001	60,000	15,000	20,000
60,001	infinity	20,000	30,000

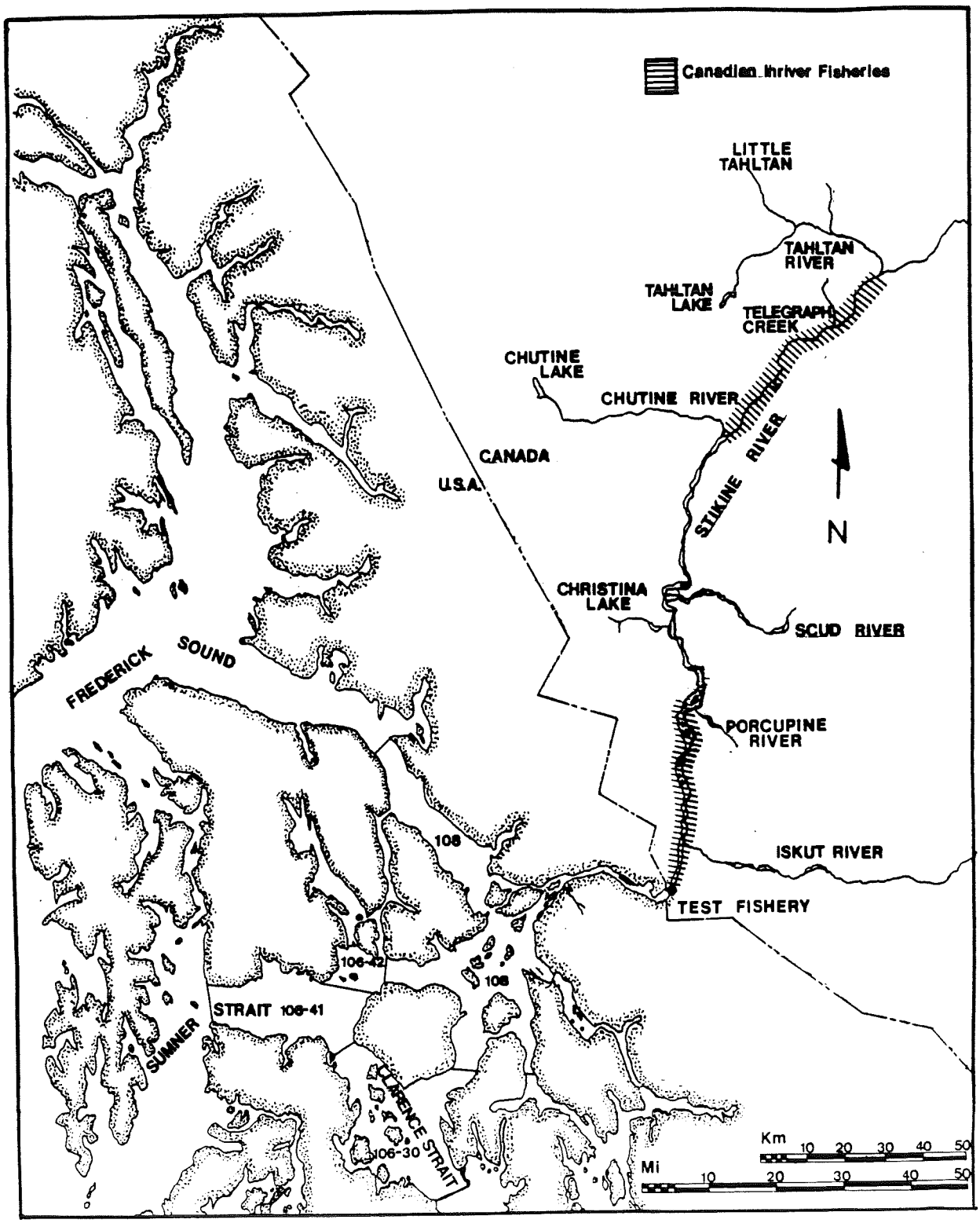

Figure 1. The Stikine River and principal U.S. and Canadian fishing areas.

Under this annex the U.S. is allowed to catch the remainder of the total allowable sockeye catch after the Canadian allowable catch is subtracted from the total. However, even when the calculated total allowable catch (TAC) for the U.S. is low or zero, incidental catches of Stikine sockeye salmon are allowed in District 106. In addition, Canada is restricted to an annual catch of 4,000 coho salmon. This schedule, which is conditionally in effect until 1992, is tied to a commitment by the Parties to undertake a cooperative sockeye enhancement program commencing in 1989; an obligation which was met in 1989.

Prior to the 1989 season, the Transboundary Technical Committee updated the management plan and determined new parameters for input into the in-season run forecast model, referred to as the Stikine Management Model. Details regarding these subjects appear in "Salmon Management Plan for the Transboundary Rivers", Pacific Salmon Commission Transboundary Technical Committee Report TCTR (89)-1, April 1989. As required by the Annex, a preseason forecast of the total Stikine sockeye run was made to guide the initial fishing patterns of U.S. and Canadian fisheries. Beginning the first week of July, in-season forecasts of total run size and TAC produced by the Stikine Management Model and based on catch-per-unit-effort (CPUE) data and the Stikine Management Model, were used to assist in determining weekly fishing plans (Table 1).

Table 1. Weekly forecasts of run size and total allowable catch for Stikine River sockeye salmon as determined by the Stikine Management Model, 1989. The run size is estimated from the preseason forecast in weeks 25 and 26, from twice the predicted run size of the Tahltan stock (district and inriver predictions) in week 27, and from inriver cumulative CPUE of all sockeye salmon for the remaining weeks.

a. Model runs generated in U.S. management office in Petersburg

Week	Start Date	Forecasts		U.S. Fishing Regime[a/]		U.S. TAC	Canada TAC	Cumulative Catch	
		Run Size	TAC	6	8			U.S.	Canada
25	18-Jun	80,850	20,850	I	D	5,850	15,000	575	0
26	25-Jun	80,850	20,850	I	D	5,850	15,000	786	788
27	02-Jul	88,201	28,201	I	D	8,820	19,381	2,727	1,510
28	09-Jul	109,769	49,769	I	D	29,769	20,000	10,075	2,445
29	16-Jul	95,919	35,919	I	D	15,919	20,000	16,351	7,430
30	23-Jul	94,734	34,734	I	D	14,734	20,000	18,576	15,877
31	30-Jul	121,302	61,302	I	D	31,302	30,000	19,690	17,551
32	06-Aug	119,973	59,973	I	D	39,973	20,000		

b. Model runs generated in Canadian management office in Whitehorse

Week	Start Date	Forecasts		U.S. Fishing Regime[a/]		U.S. TAC	Canada TAC	Cumulative Catch	
		Run Size	TAC	6	8			U.S.	Canada
25	18-Jun	80,850	20,850	I		5,850	15,000	531	19
26	25-Jun	80,850	20,850	I		5,850	15,000	928	822
27	02-Jul	89,647	29,647	I	D	9,647	20,000	2,949	1,752
28	09-Jul	106,954	46,954	I	D	26,954	20,000	13,415	2,991
29	16-Jul	97,852	37,852	I	D	17,852	20,000	18,896	11,363
30	23-Jul	101,844	41,784	I	D	21,784	20,000	19,639	16,957
31	30-Jul	118,009	58,009	I	D	38,009	30,000	19,693	18,297
32	06-Aug	119,975	59,975	I	D	39,975	20,000	19,702	18,936
33	13-Aug	117,663	57,663	I	D	37,663	20,000	19,719	19,192
34	20-Aug	114,215	54,215	I	D	34,215	20,000	19,742	19,585
35	27-Aug	113,729	53,729	I	D	33,729	20,000	19,748	19,801

[a/] I indicated indirect fishery allowed; D indicated directed fishery allowed.

The preseason forecast of 80,850 returning Stikine sockeye salmon was approximately 20% below the 1980 to 1988 average run size of 100,625 fish. In-season weekly predictions of total run ranged from 88,200 to 121,300 sockeye salmon; U.S. and Canadian weekly predictions differed slightly because different updates of catch figures were input into the model by each country (Table 1). The progressive increase in weekly forecasts was attributed to an above average run of the later migrating non-Tahltan component of the run. By the end of the fishing season, the Stikine Management Model predicted a total run of 113,729 Stikine sockeye salmon with a TAC of 53,729 fish, a Canadian allowable harvest of 20,000 sockeye salmon, and a U.S. TAC of 33,729 sockeye salmon. The actual catches, calculated postseasonally, were 14,530 and 20,032 fish for the U.S. and Canada, respectively.

The Stikine Management Model also predicts the Tahltan portion of the run independently from the total run predictions. Predictions for the Tahltan portion decreased throughout the season from a maximum estimate of 32,025 sockeye salmon for week 28 (July 9 to 15) to the final estimate of 19,359 sockeye salmon. Thus, by taking into account the Tahltan predictions, managers could reduce, if they wished, fishing effort during the season when the run was predominately comprised of Tahltan fish and increase effort later when the non-Tahltan stocks were present.

U.S. Fisheries

The 1989 harvest in the District 106 commercial gill net fishery included 1,544 chinook, 192,734 sockeye, 92,386 coho, 1,101,194 pink, and 67,351 chum salmon (Appendix A.7). In the District 108 fishery, 310 chinook, 10,083 sockeye, 4,261 coho, 27,640 pink, and 3,375 chum salmon were harvested (Appendix A.10). Catches for all species except coho salmon (in District 108) were above the 1980 to 1988 averages (Figure 2). Test fisheries were conducted in Subdistrict 106-41 and District 108 to help managers ascertain the run strength of various salmon species in-season. Test fisheries catch low numbers of fish compared to the commercial fisheries (Appendices A.12 and A.13). Annual catches from 1964 for these districts are provided in Appendix Tables B.1 through B.16. Catches of each species in Districts 106 and 108 fisheries consist of fish of mixed stock origin; the contribution of Stikine River stocks is estimated only for sockeye salmon.

Scale pattern analysis is used to estimate stock composition in the U.S. marine catches. Only a small proportion of the District 106 sockeye catch was of Stikine River origin (Figure 3). The Sumner Strait fishery (Subdistricts 106-41 & 106-42) harvested 4,787 Stikine sockeye salmon (Appendix A.3), 4.4% of the total sockeye harvest in that subdistrict; the Clarence Strait fishery (Subdistrict 106-30) took 1,385, (Appendix A.6), 1.6% of the catch in that subdistrict; and the terminal area fishery near the mouth of the Stikine (District 108) harvested 8,358 (Appendix A.11), 82.9% of the District 108 catch. Thus, an estimated total of 14,530 Stikine sockeye salmon was taken in U.S. gill net fisheries from both districts.

The 1989 sockeye fishing season in Districts 106 and 108 began on June 18 and continued until September 5 in District 108 and September 18 in District 106. During the first two weeks of the fishery, both District 106 and 108 were open for two days each week. The District 106 fishery openings were limited to two days based upon the lower than average expected Tahltan sockeye run and the lower than average CPUE in the fishery. Since the Tahltan stock run projections from the Stikine Management Model for the third week of the fishery were very low, the District 108 fishery was closed, even though the run projections for the total run were strong enough to warrant a fishery. The following week the model continued to show a good run of non-Tahltan sockeye salmon to the Stikine River and the District 108 fishery was reopened. In-season analysis of scale samples indicated a complete lack of interception

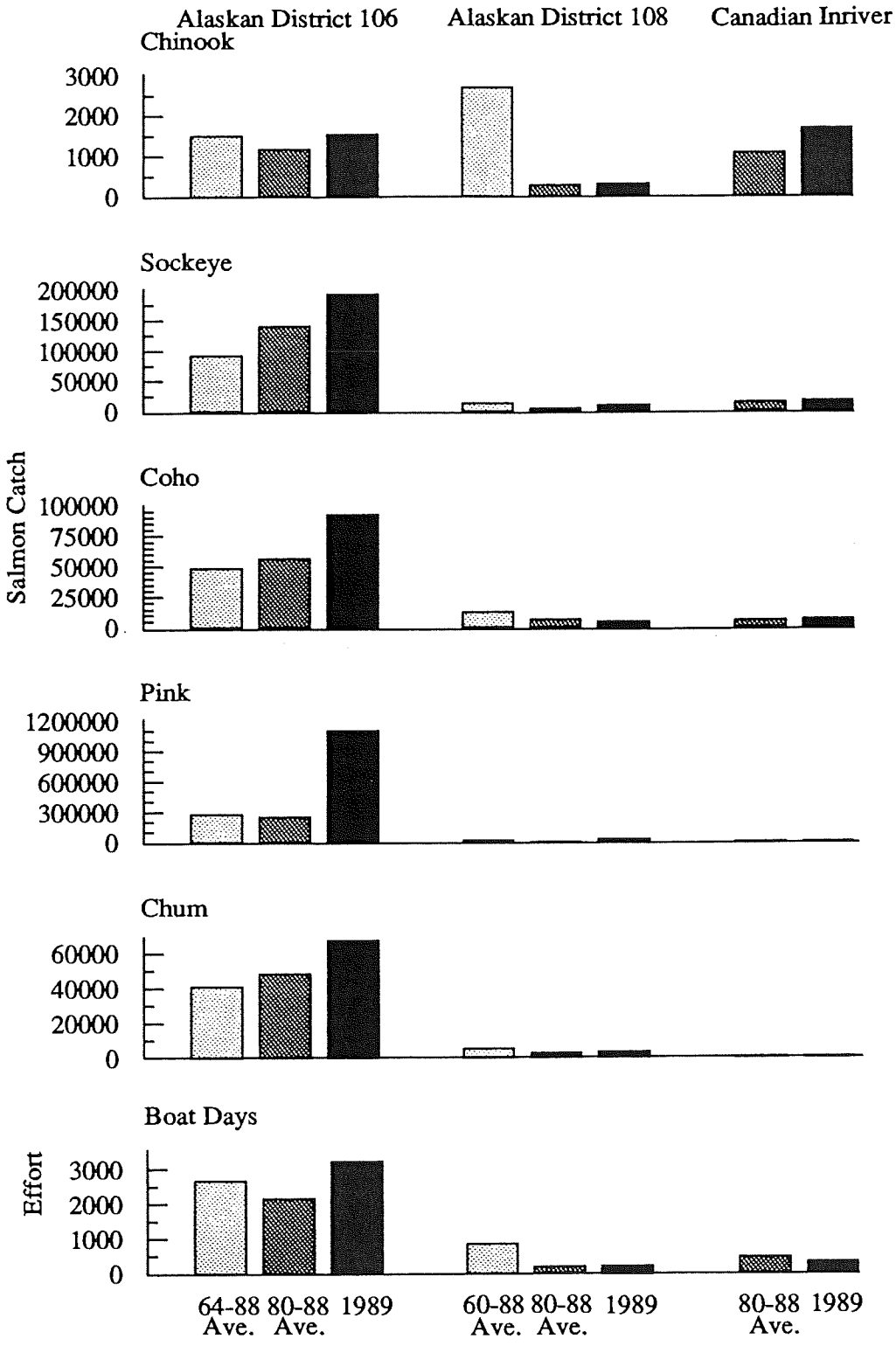

Figure 2. Average catches and fishing efforts compared with 1989 values for the Alaskan Districts 106 and 108, and the Canadian commercial fisheries in the Stikine River.

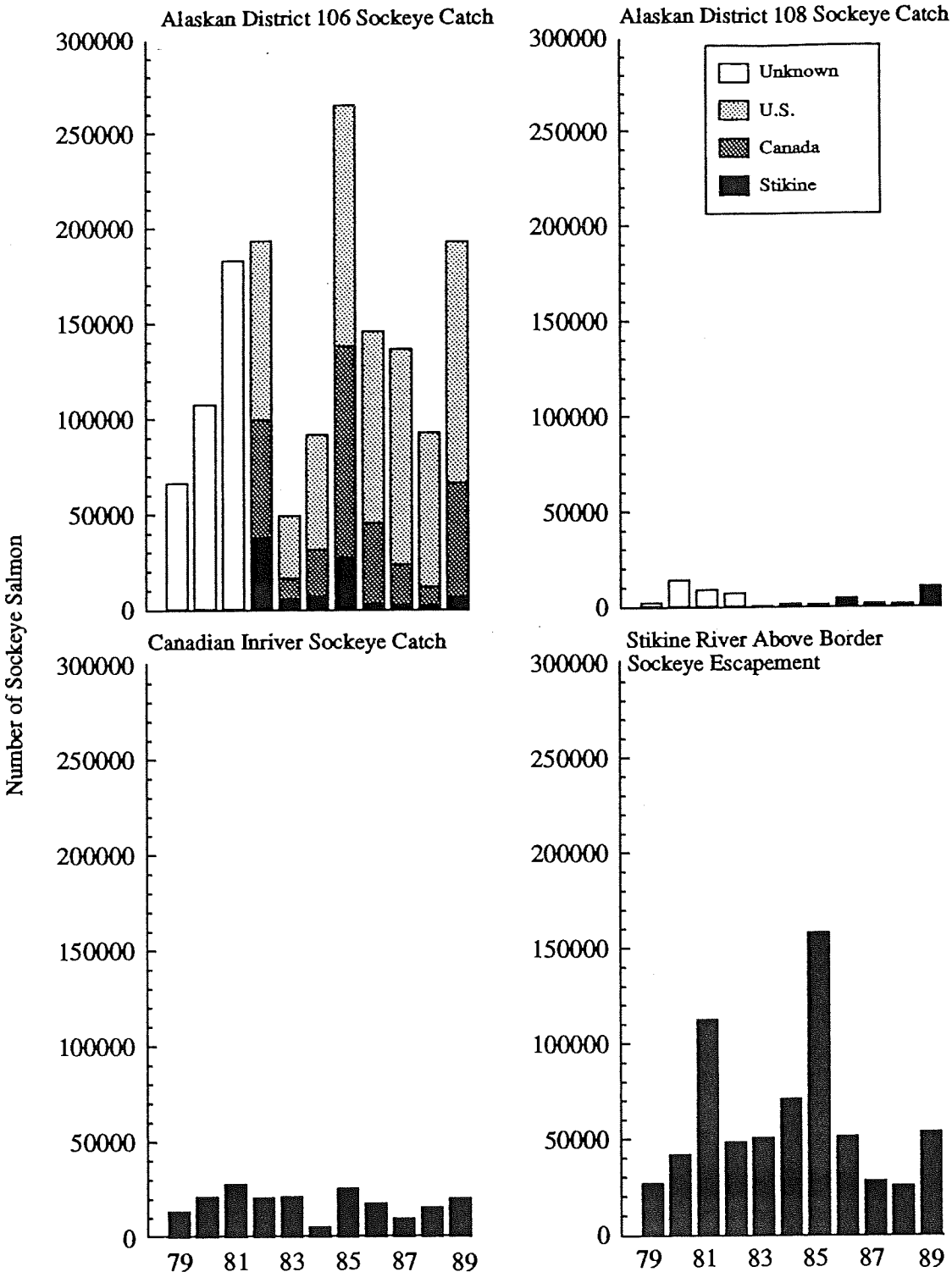

Figure 3. Sockeye catches for the Alaskan Districts 106 and 108, and all the Canadian inriver Stikine fisheries and Stikine sockeye escapements for 1979-1989.

of the Tahltan stock in the fisheries of both districts. Sockeye harvests in both districts were considerably above average and the fishery was extended to three-day openings for the remainder of the summer season.

During the 1989 season the District 106 gill net fishery was open for a total of 34 days and District 108 for 29 days. These were above the 1980 to 1988 averages of 28 and 15 days, respectively. District 106 fishing effort in number of vessels began about average and remained near average or slightly above through the first week in August. Effort was highest during the last two weeks of July when 127 and 126 vessels fished the district. Effort generally remained higher than average throughout the remainder of the season. Because of the strong sockeye and pink runs, the effort fished in District 106 was above average at 3,222 boat-days (Figure 2). District 108 effort remained low throughout the season, however; the total boat-days fished in District 108 (223) was 16% greater than the 1980 to 1988 average of 191 boat-days (Appendix B.7).

Canadian Fisheries

Combined catches from Canadian fisheries in the Stikine River in 1989 included 2,669 large chinook, 289 jack chinook, 20,032 sockeye, 6,098 coho, 825 pink, and 674 chum salmon and 127 steelhead trout (Figure 4 and Appendices A.15-A.18). Catches of all species except pink salmon and steelhead trout were above the respective 1980 to 1988 averages (Figures 2-4). A test fishery was conducted in the lower Stikine River, near the U.S./Canada border, to determine migratory timing and stock composition of the sockeye run and run timing and relative abundance of coho salmon (Appendix A.19-A.21). Annual catches from 1972 through 1989 for Canadian fisheries are presented in Appendices B.17 through B.22.

Lower Stikine Commercial Fishery

The Canadian commercial fishery in the lower Stikine River harvested 1,537 large chinook, 157 jack chinook, 17,179 sockeye, 6,092 coho, 825 pink, and 674 chum salmon and 127 steelhead trout in 1989 (Appendix A.15). The sockeye catch was 15% above the 1980 to 1988 average of 14,917 fish (Appendix B.17).

The fishery commenced at noon on Monday, June 26, and terminated Wednesday, September 13. The sockeye CPUE for the first two weeks of the season was slightly above average although weekly catches were below average. Concerns regarding a below average contribution of the Tahltan sockeye stock to the lower river fishery and the absence of Tahltan sockeye salmon in Districts 106 and 108 resulted in limiting the fishery to one- and two-day openings respectively, for the next two weeks. A decrease in the

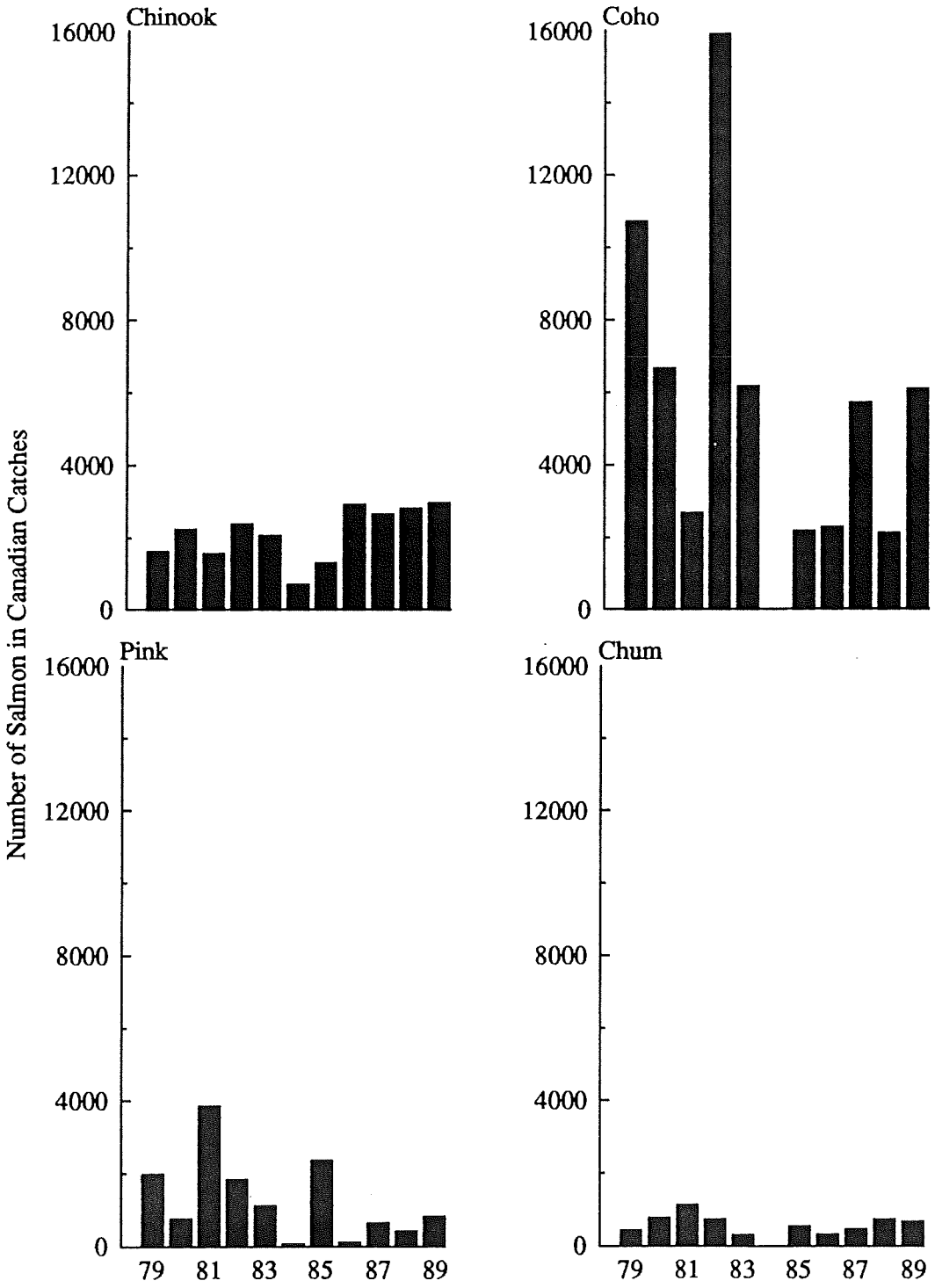

Figure 4. Catches of chinook, coho, pink, and chum salmon in all the Canadian fisheries in the Stikine River, 1979-1989.

CPUE during the third week of fishing, i.e. week 28 (week beginning July 9), when the Tahltan run should have been building, was further indication of a below average Tahltan sockeye run, although the CPUE during this week was also adversely affected by high water conditions. The run forecasts through week 28 generated by Canada fluctuated from the preseason value of 80,850 sockeye to 106,954 sockeye salmon (Table 1b). The cumulative catch in the lower river fishery fell progressively behind schedule during this period due to conservation concerns for the Tahltan stock.

During week 29, a dramatic increase in the sockeye catch and CPUE resulted in a decision to extend the fishery to four days in anticipation of potential increases in the allowable catch, as well as to make up some of the shortfall in catch-to-date. The sockeye catch and CPUE during week 29 were the second highest on record for this week. The catch shortfall was eliminated, in fact it jumped a bit ahead of schedule. The resulting run forecast did not increase and bump the Canadian quota up into the next TAC category.

Near-record CPUE values were again recorded in week 30; however, the fishery was kept at a two-day opening. Throughout the opening this week, the daily forecast of the total run generated from daily hail figures exceeded 120,000 sockeye salmon, which was the threshold separating the 15,000 to 20,000 Canadian catch quota from the next category, 20,000 to 30,000 sockeye salmon. However, it was decided to continue operating within the guidelines of the 15,000 to 20,000 sockeye catch target range for week 31 in the event that the predictions of run size subsided. By the end of the week the model forecast had dropped to 118,000 fish (an increase of 16,000 fish from week 29).

The CPUE remained above average in week 31 and the run forecast increased marginally to 119,975 sockeye salmon, which was the peak in-season estimate. The fishery was closed after one day to keep within the catch guidelines of the 15,000 to 20,000 range. After week 32, the weekly CPUE returned to average values which resulted in a gradual reduction in the total run forecast to the final in-season estimate of 113,729 sockeye salmon. The fishery was kept to one day per week openings throughout the balance of the sockeye season (through August 26).

With a sockeye run size of approximately 114,000, the TAC for the Canadian inriver fisheries was 20,000 sockeye salmon (according to Annex provisions). Allowing for the sockeye catch in the upper Stikine fisheries, the TAC in the lower Stikine fishery was 17,147 sockeye salmon. The actual catch was 32 sockeye salmon above this target.

Canada made a management decision to compensate for the poor coho harvest in 1988. The Canadian catch in 1988 totaled 2,117 coho salmon, which was 1,883 fish less than the quota provided for by the Annex. Consequently, Canada added the 1988 shortfall to the 1989 quota of 4,000 coho salmon under the condition that the add-on would only be taken if the run was above average. A strong coho run was

indicated by the above average CPUE throughout the coho season. Canada's total harvest of 6,098 coho salmon was 215 fish over their target catch of 5,883 fish.

A small commercial chinook egg-taking business was again present on the lower Stikine River in 1989. A total of 563 chinook salmon (approximately 65% females) was purchased from fishers and held to maturity. Holding mortalities included approximately 146 female chinook salmon (a mortality rate of approximately 40% for females). Eggs (an estimated 1,048,200 eggs from 220 females) were fertilized and incubated on site in Heath trays prior to shipment to a private hatchery on Vancouver Island. An estimated 907,600 million eyed eggs were produced by this program.

Twenty permit holders participated in the fishery throughout the season with an average of 14 present each week. The number of boat-days, 325, was similar to the 1988 effort of 320 boat-days but below the 1980 to 1988 average of 471 boat-days. Each permit holder was allowed the use of one gill net with a maximum length of 135 meters. A delayed opening and a maximum mesh size restriction of 146 mm (to July 17) were implemented to reduce the incidental catch of chinook salmon. As in past years, both drift and set netting techniques were utilized.

Upper Stikine Commercial Fishery

A small commercial fishery has existed near Telegraph Creek in the upper Stikine River since 1975. The catch in 1989 was 71 chinook salmon, which included 17 jack chinook (approximately 62% of the 1980 to 1988 average of 114 fish), and 493 sockeye (approximately 75% of the 1980 to 1988 average of 628 fish) (Appendices A.17 and B.19). No other salmon species were taken. Fishing effort levels were similar to those in previous years with 1 to 4 people fishing one day per week from late June through early August.

Indian Food Fishery

The Indian food fishery, centered around Telegraph Creek, harvested 1,078 large chinook, 115 jack chinook, 2,360 sockeye, and 6 coho salmon (Appendix A.18). The sockeye catch was 55% of the 1980 to 1988 average catch while the chinook catch was 20% greater than the 1980 to 1988 average. The poor sockeye catch was a reflection of the poor run strength of the Tahltan stock.

Escapement

Sockeye

A total of 8,316 sockeye salmon was counted through the Tahltan Lake weir in 1989 (Appendix A.22). The Tahltan spawning escapement compared very poorly with counts in previous years and was less than one-third the 1980 to 1988 average of 26,800 (Appendix B.25). The final in-season Stikine Management Model prediction of a Tahltan escapement of approximately 9,900 sockeye salmon was close to the actual count and was well below the management goal range of 20,000 to 40,000 fish. The estimated non-Tahltan spawning escapement, 45,103 sockeye salmon (Table 2), was above the upper end of the spawning goal range of 20,000 to 40,000 fish defined by the Stikine management plan. The non-Tahltan escapement estimate is made by computing the ratio of Tahltan to non-Tahltan fish in the total inriver sockeye run using stock compositions estimated from the inriver test fishery from egg diameter analysis, applying this ratio to the Tahltan run size, and then subtracting the catch of non-Tahltan fish. Aerial surveys of non-Tahltan sockeye escapement index indicated average to low numbers of spawners in 1989 (Appendix B.26). Sockeye smolt have been enumerated at the Tahltan smolt weir since 1984; in 1989, 580,574 smolt were counted (Appendices A.23 and B.27).

Table 2. Stikine sockeye run reconstruction, 1989.

	Tahltan	Non-Tahltan	Total
Escapement	8,316	45,103	53,419
Canadian Harvest			
Indian Food	2,124	236	2,360
Upper Commercial	444	49	493
Lower Commercial	2,813	14,366	17,179
Total	5,380	14,652	20,032
% Harvest	78.7%	52.8%	58.0%
Test Fishery Catch	415	1,192	1,607
Inriver Run	14,111	60,947	75,058
U.S. Harvest			
106-41 & 42	957	3,830	4,787
106-30	154	1,231	1,385
108	341	8,017	8,358
Total	1,452	13,078	14,530
% Harvest	21.3%	47.2%	42.0%
Test Fishery Catch	104	701	805
Total Run	15,667	74,726	90,393
Escapement Goal			
Minimum	20,000	20,000	40,000
Maximum	40,000	40,000	80,000
Total Allowable Catch			
Minimum	0	34,726	10,393
Maximum	0	54,726	50,393
Actual Catch	7,351	29,623	36,974

Chinook

This year was the fifth consecutive year of the operation of a chinook enumeration weir in the Little Tahltan River. In 1989, 4,715 large adults and 199 jacks were counted (Appendix A.24). The 1989 count of large chinook salmon through Little Tahltan weir was average while the jack count was the lowest on record (Figure 5, Appendix B.28). Generally, the chinook escapement to the Little Tahltan exhibits an increasing trend since 1985, although the 1989 count was down from the record level observed in 1988. The estimated chinook escapement to the Stikine River above the U.S./Canada border was 18,860 fish, 10% more than the 1980 to 1988 average (Appendix B.29), but below the escapement goal range of 19,800 to 25,000 fish. The total escapement is estimated by expanding the Little Tahltan weir counts by a factor of four; for years prior to 1985, before the weir was installed, the aerial counts from the Little Tahltan River were expanded by a factor of eight.

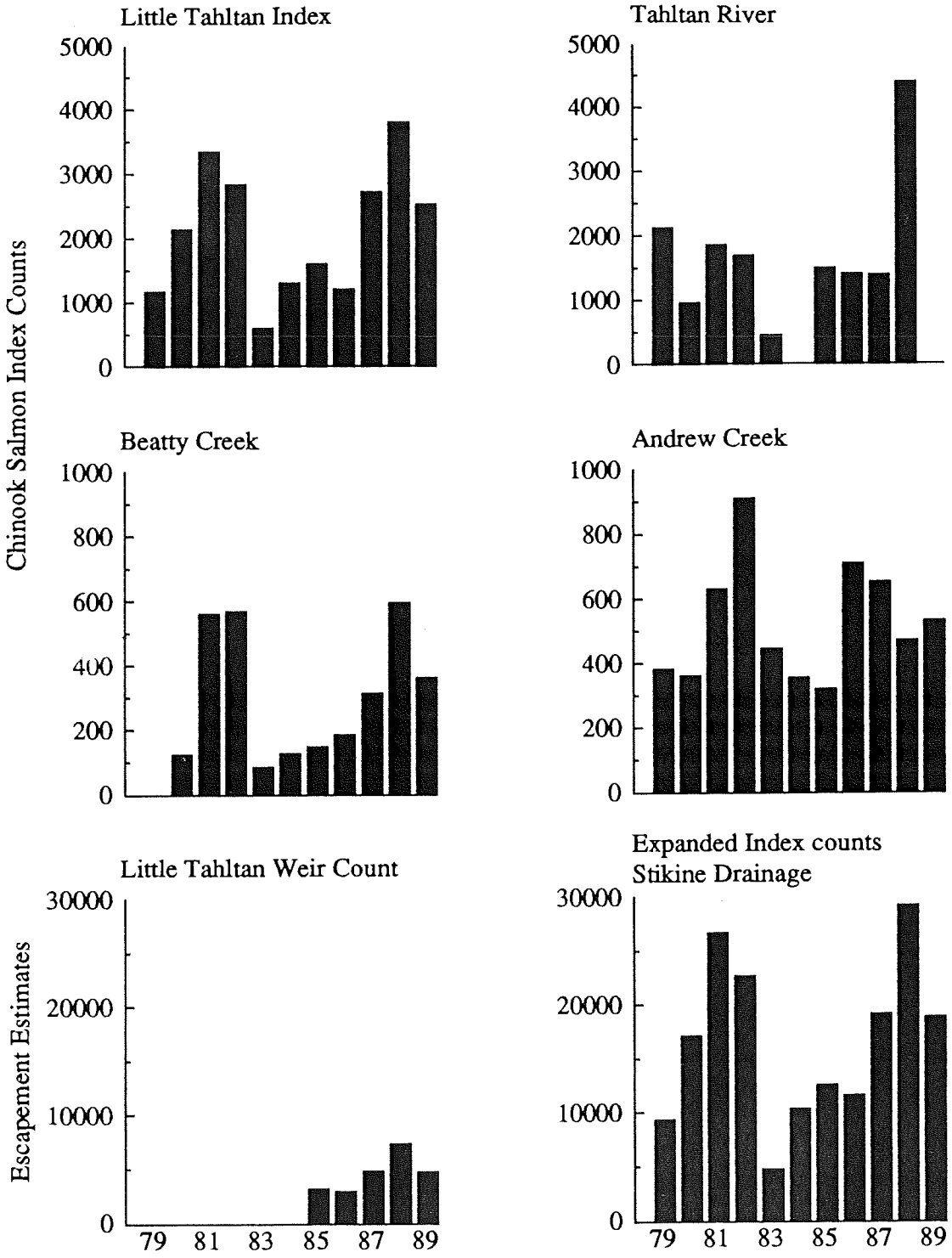

Figure 5. Chinook salmon weir counts and index escapement estimates for major spawning areas and for the entire Stikine River, 1979-1989.

Aerial surveys conducted on other tributaries also indicated a strong run: Little Tahltan River, 2,515; Beatty Creek, 362; and Andrew Creek, 530 fish (Appendix B.29). There was no aerial count for Tahltan River due to poor visibility.

Coho

Aerial surveys of coho index streams conducted in late October and early November in the Stikine watershed indicated a strong inriver run (Appendix B.30). A comparison between sockeye and coho CPUE in the lower Stikine River test fishery indicated that the inriver run of coho salmon was approximately 80% of that of sockeye salmon. The strong coho run was further corroborated by high catches recorded in the commercial fishery.

Sockeye Run Reconstruction

The run reconstruction of Stikine sockeye salmon (Table 2) indicates a total run size of 90,393 fish of which 15,667 were Tahltan stock and 74,726 were non-Tahltan stocks. The total run was 90% of the 1980 to 1988 average (Appendix B.31); however, the Tahltan component was 33% of the average. The Stikine Management Model was fairly successful in accurately forecasting the total run size; the preseason estimate was 11% less and the final in-season estimate derived from the model was 26% higher than the postseason estimate of total run size.

The below average Tahltan run was not wholly unexpected even though the primary brood year escapement (1984) to Tahltan Lake was above average (32,777 sockeye salmon). Only 244,330 smolt emigrated from Tahltan Lake in 1986 (Appendix B.27), the year which would provide the majority of the run in 1989, and the smolt to adult survival of this stock has ranged from 1.2% to 6.4%.

TAKU RIVER

Taku River salmon are harvested in the U.S. gill net fishery in the Alaskan District 111, in northern Southeast Alaskan seine and troll fisheries, and in the Juneau area sport fishery and inriver personal use fishery (Figure 6). Canadian fisheries for Taku River salmon include a commercial gill net fishery located in the river near the U.S./Canada border, a sport fishery, and an Indian food fishery.

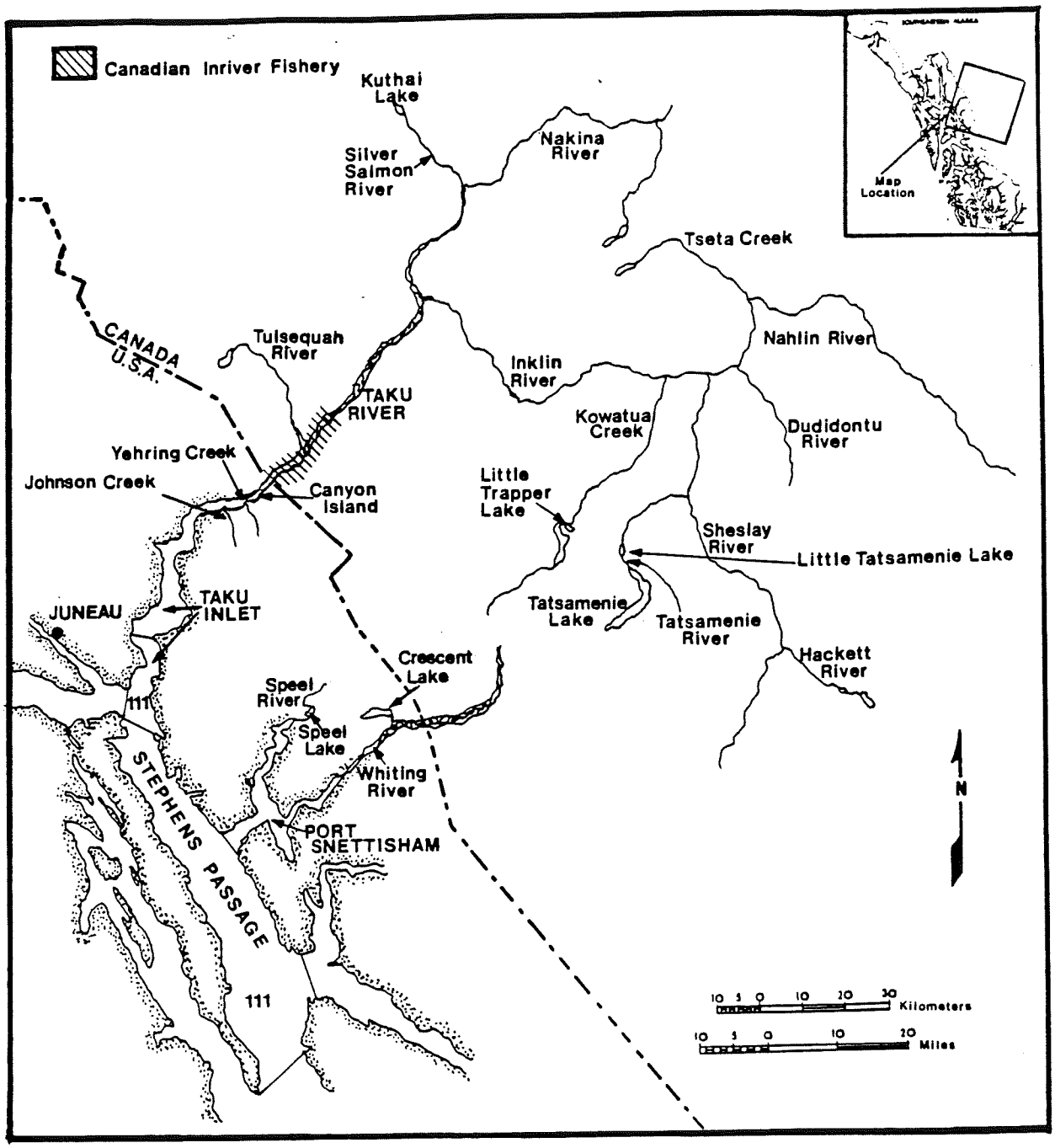

Figure 6. The Taku River and principal U.S. and Canadian fishing areas.

Harvest Regulations

The 1988 to 1992 harvest and management of Taku River salmon stocks is governed by Annex IV, Chapter 1, of the Pacific Salmon Treaty as negotiated at the February 1988 meeting of the Pacific Salmon Commission. The annex allows Canada to harvest 18% of the TAC of Taku sockeye salmon and 3,000 coho salmon. This regime is conditional on the Parties proceeding with a cooperative sockeye enhancement program commencing in 1990.

Prior to this year's fishing season, the Transboundary Technical Committee met to exchange 1989 management plans for the Taku River. The results from this exchange are documented in: "Salmon Management Plan for the Transboundary Rivers", Pacific Salmon Commission Transboundary Technical Committee Report TCTR (89)-1, April 1989.

U.S. Fisheries

Catches in the District 111 commercial gill net fishery in 1989 were 1,811 chinook, 74,019 sockeye, 51,812 coho, 180,597 pink, and 36,977 chum salmon (Appendix C.1). Catches of each species were comprised of mixed stocks from the Taku River, Port Snettisham, and other drainages. Catches of coho salmon were well above the 1980 to 1988 average, the sockeye catch was near average, chinook and pink catches were slightly below average, and the chum catch was 40% of its 1980 to 1988 average (Figure 7 and Appendix D.1). The District 111 fishery was open for a total of 36 days, slightly less than the 1980 to 1988 average of 38 days.

Scale pattern analysis is used to estimate the stock composition of the District 111 sockeye catch (Appendices C.3 and C.4). The majority of the sockeye salmon harvest in District 111 was estimated to be of Taku River origin, 84.8% or 62,805 fish, while 15.2% or 11,214 fish were of Port Snettisham origin. The major contributor was the Little Trapper/Mainstem stock group with 45,573 sockeye salmon, followed by Little Tatsamenie, 11,536; Speel, 7,425; Kuthai, 5,696; and Crescent 3,789 fish, representing 61.6%, 15.6%, 10.0%, 7.7%, and 5.1% of the catch, respectively. The U.S. personal use fishery, located below the U.S./Canada border, harvested an estimated 33 chinook, 749 sockeye, 73 coho, 25 chum, and 765 pink salmon (Appendix D.4). A test fishery was operated one day each week during the month of July in Port Snettisham in 1989. Catches totaled 5 chinook, 85 sockeye, 20 coho, 308 pink, and 145 chum salmon (Appendix C.2). The spring sport fishery in Taku Inlet was reopened in 1989 (this area had been closed to sport fishing prior to mid-June from 1974 to 1988). The ADF&G Division of Sport Fisheries calculated that the reopening of this fishing area increased the total spring sport catch of chinook salmon in the Juneau area by approximately 650 large mature fish. A number of stocks including Taku, Chilkat, King

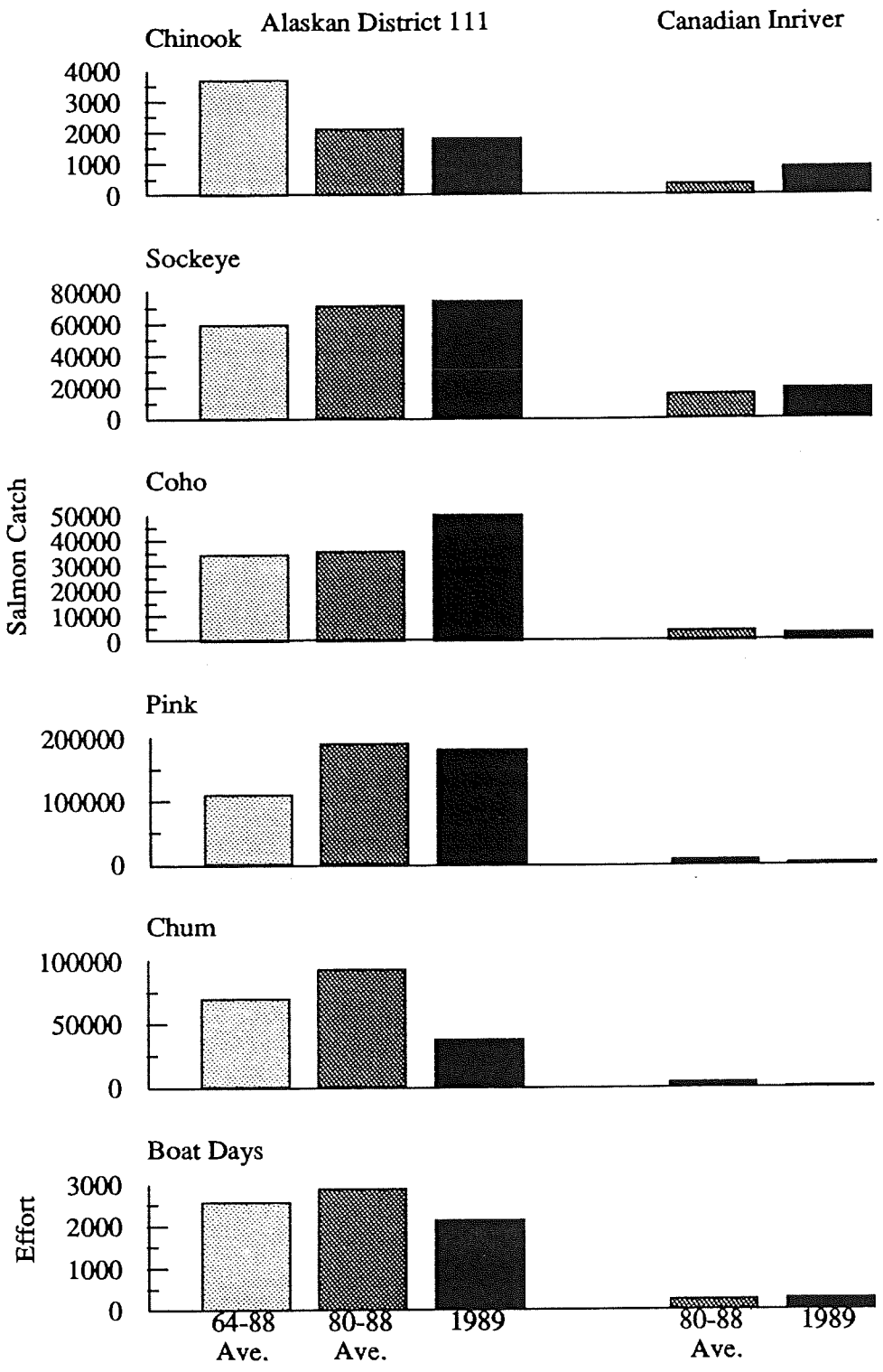

Figure 7. Average catches and fishing efforts compared with 1989 values for the Alaskan District 111 and the Canadian fisheries in the Taku River.

Salmon, and Unuk River stocks, are thought to contribute to the fishery with the majority coming from the Taku River.

The 1989 fishing season in District 111 began on June 18. Three days of fishing were allowed each week through the end of August. This above average (1980 to 1988) opening time was allowed because of an above average sockeye salmon run and a reduction in the number of boats fishing in the area compared with previous years. Total fishing effort was 26% less than the 1980 to 1988 average (Figure 7).

Summer chum salmon, those fish available for harvest prior to mid-August (statistical week 34), are comprised of local Stephens Passage wild stocks and Alaska hatchery fish. In order to protect the weak summer chum runs, portions of Stephens Passage were closed from July 9 to August 2. This closure also protected Port Snettisham sockeye salmon and was primarily responsible for the minor contributions of these stocks to the District 111 sockeye salmon catch. Fishing opportunities to harvest Stephens Passage pink salmon stocks were also reduced. The summer chum harvest of 18,022 fish was 45% below the 1980 to 1988 average.

Coho and fall chum salmon management was instituted on August 20. Although the District 111 gill net coho catch and CPUE were two to three times the historical average during the early weeks of the fishery, the chum catch was very poor. Consequently, in response to the below average chum salmon run, fishing time was reduced to two days per week beginning August 27 and to one day per week from September 10 until the season closed September 18. In addition, Taku Inlet was closed inside a line from Cooper to Greely Points beginning September 10 to further protect chum salmon milling in the terminal area. The fall chum salmon contribution to the total chum harvest in District 111 was 18,955 fish and was approximately one-third of the 1980 to 1988 average catch.

Canadian Fisheries

The Taku River commercial fishery harvested a total of 895 large chinook salmon, 139 jack chinook, 18,545 sockeye, 2,876 coho, 695 pink, and 42 chum salmon and 24 steelhead trout in 1989 (Appendix C.5). The catches of sockeye and chinook salmon were above the 1980 to 1988 averages while catches for other species were below average (Figure 7 and Appendix D.5). The total number of permit days, 271, was approximately 9% above the 1980 to 1988 average of 248 permit days. In addition to the commercial catches, the food fishery harvested 6 chinook, 53 sockeye, and 146 coho salmon. The inriver test fishery took 31 chinook, 207 sockeye, 1,011 coho, and 13 chum salmon and 26 steelhead trout (Appendix C.8).

Based on ADF&G analysis of scale patterns, the Little Trapper Lake/Mainstem stock group dominated the commercial sockeye catch with 13,792 sockeye salmon or 74.4% of the inriver commercial catch

(Appendices C.6 and C.7). The Kuthai Lake and Little Tatsamenie Lake stocks contributed 5.3% (990 fish) and 20.3% (3,763 fish) of the sockeye catch, respectively.

The commercial fishery commenced at noon on Monday, June 26. The CPUE for each of the first two weeks was more than 40% above the 1983 to 1988 average. However, the CPUE values dropped to below average values after statistical week 27 (July 2 to 8) and remained near to or below average for the balance of the sockeye season. Unusually warm weather caused high water conditions throughout most of this period, which adversely affected fishing conditions and may have caused the CPUE to be depressed and less representative of actual salmon abundance than normal.

Forecasts of the total sockeye run were made on a weekly basis using data collected from the U.S./Canada tagging program and catch statistics reported from the U.S. District 111 and Canadian inriver gill net fisheries. The forecasts were used in conjunction with historical timing information to develop both seasonal and weekly cumulative catch guidelines for the Canadian fishery; weekly fishing times were adjusted according to these guidelines. Initial projections of the total run were in excess of 200,000 sockeye salmon; however, the forecasts progressively decreased after week 27 (July 2 to 8) due to the lower abundance of later migrating stocks, including those bound for the Tatsamenie system. The decline in the run forecasts meant reductions in the Canadian catch quota. The predicted TAC for the Canadian fishery was approximately 26,000 sockeye salmon in week 27 but by the end of the season it had dropped to about 20,000 sockeye salmon.

The combined commercial and food fishery catch of coho salmon totaled 3,022 fish, which was close to the Annex provision of 3,000 fish.

As in recent years, both set and drift gillnetting techniques were utilized in the Taku inriver fishery, with the majority of the catch taken in drift gill nets. Mesh sizes were restricted to less than 146 mm through mid-July to minimize the incidental catch of chinook salmon.

Escapement

Sockeye

Sockeye escapement in the Taku drainage is enumerated at several weirs; however, total spawning escapement is estimated from the joint U.S./Canada mark-recapture program (Appendix D.8). The estimated above-border escapement of 95,263 fish (Figure 8) was near the 1984 to 1988 average of 89,572 fish, and above the upper limit of escapement goal range of 71,000 to 80,000 sockeye salmon. The escapement through the Little Trapper Lake weir of 9,556 fish was below the 1983 to 1988 average of

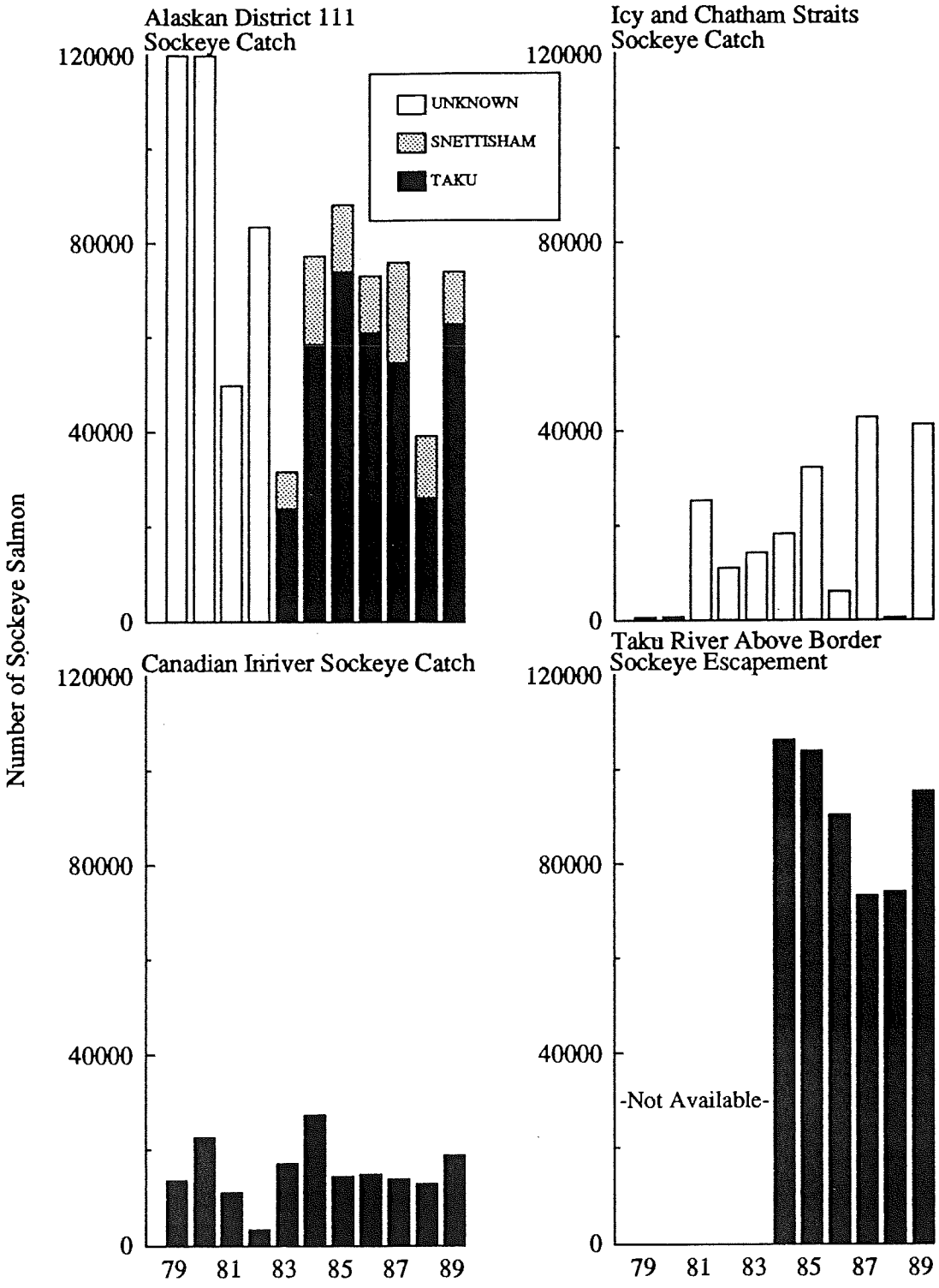

Figure 8. Sockeye catches for the Alaskan District 111 and Icy and Chatham Straits and the Canadian inriver fisheries and Taku sockeye escapement for 1979-1989.

11,972 sockeye salmon and the escapement through Little Tatsamenie Lake weir was 3,039 sockeye salmon, the third consecutive year of low escapements to that system. The escapements of Port Snettisham stocks were mixed. The escapement to Crescent Lake was 1,109 fish, the lowest since the weir was installed in 1983; however, the escapement into Speel Lake, 12,229 fish, was the highest observed since the weir has been operated for sockeye enumeration (1983). The sockeye count from the Crescent Lake weir may be an underestimate of the spawning escapement due to fish passage over the weir during high water.

Chinook

Above average escapements were observed in most of the Taku chinook index tributaries surveyed in 1989. The total chinook escapement estimates of 15,451 (U.S.) and 18,784 (Canada) fish (expansion of aerial surveys to account for total drainage escapement) indicate one of the largest escapements observed since 1977 and were 47% to 48% above the 1980 to 1988 average escapement estimates (Figure 9 and Appendix D.9), although still below the escapement goal range of 25,600 to 30,000 fish. The U.S. estimate is made by expanding the combined Nahlin and Nakina aerial counts by a factor of 1/0.45 and the Canadian estimate is made by expanding the combined Nakina, Nahlin, Kowatua, Tatsatua, Tseta, and Dudidontu aerial counts by a factor of two. The chinook escapement counted through the Little Tatsamenie Lake weir and the chinook carcass count at Nakina River weir were above average, totaling 1,149 and 5,801 fish, respectively.

Coho

Water conditions in late summer and fall remained suitable for fish wheel operation, allowing a substantial portion of the coho run to be tagged. Tagging and test fishery information indicated that the interim escapement goal was exceeded and that the overall coho escapement was strong. The mark-recapture estimate of above-border coho salmon run through October 1 was 60,841 fish, of which 56,808 escaped to spawn. This estimate is near the magnitude of estimates for comparable time periods in 1987 and 1988 (Appendix D.10).

Only limited comparative index escapement data exists for Taku coho salmon. Escapement counts of coho salmon past the Tatsamenie and Yehring Creek weirs were 712 and 1,444 fish, respectively. Aerial surveys for coho salmon above the U.S./Canada border generally indicated average to above average escapements (Appendix D.11).

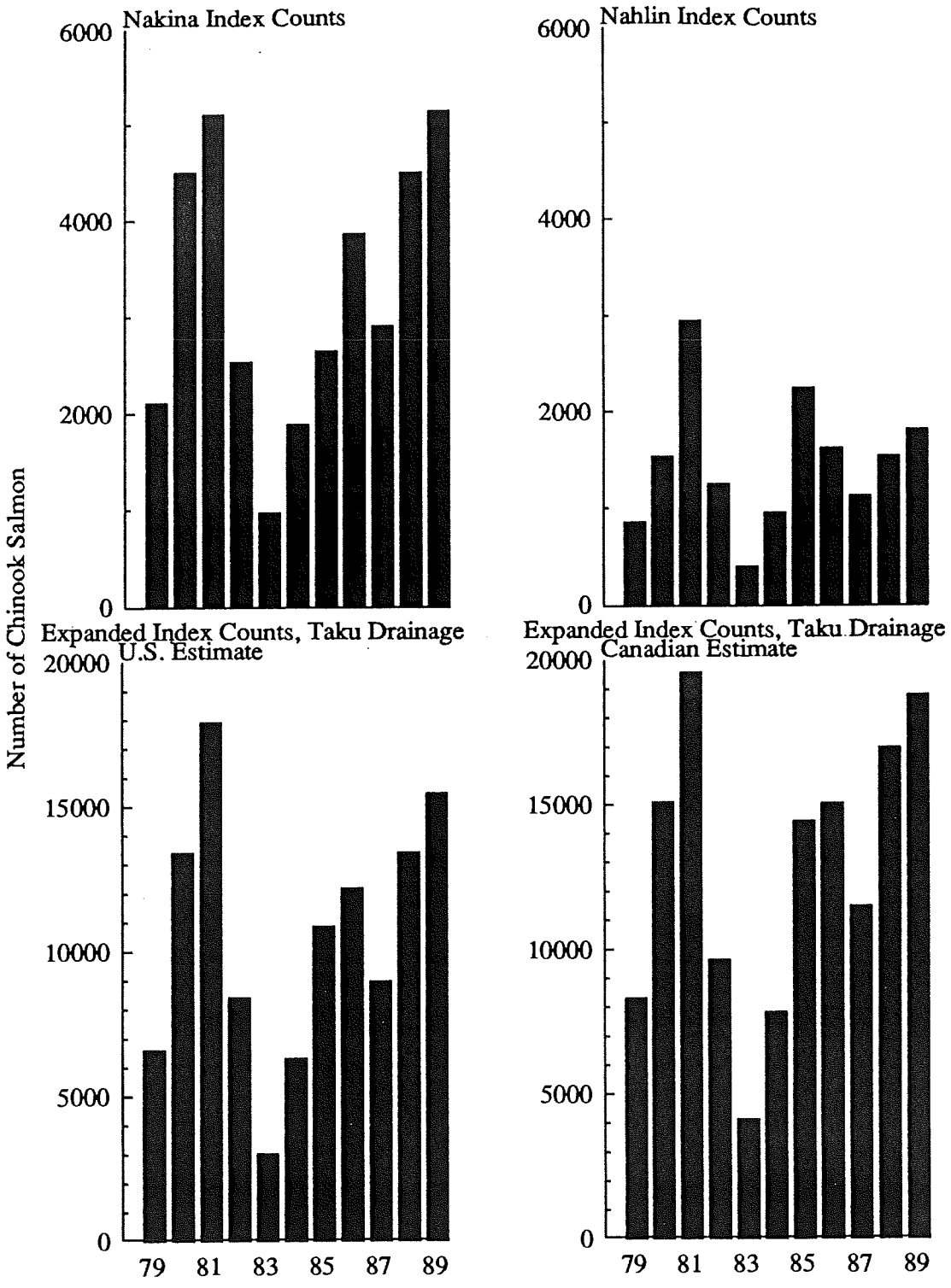

Figure 9. Chinook index escapement estimates for major spawning areas and for the entire Taku River, 1979-1989.

Pink

The escapement of pink salmon to the Taku River, estimated using mark-recapture methods, was 340,000 to 500,000 fish. The estimate is listed as a range because several assumptions of the methodology used may not have been completely satisfied. This escapement is less than odd-year escapements in 1985 and 1987, but still exceeds the interim escapement goal of 150,000 to 200,000 fish.

Chum

A system-wide escapement estimate for chum salmon is not available. Limited aerial survey observations of the principal known spawning areas revealed below-average numbers of fish.

Sockeye Run Reconstruction

The estimated total Taku sockeye run was 177,622 salmon (Table 3), 10% larger than the 1984 to 1988 average of 161,146 fish (Appendix D.12). The total catch of Taku sockeye salmon was 82,359 fish and the escapement was 95,263 fish. The escapement was above the upper level of the escapement goal range of 71,000 to 80,000 sockeye salmon. The U.S. District 111 harvest and inriver personal use harvest of 63,554 fish was 77.4% of the total harvest and the Canadian commercial and food fishery harvest of 18,598 fish was 22.6%. The Canadian test fishery catch of 207 sockeye salmon is not included in these calculations. Based on the escapement goal range, the TAC was 97,622 to 106,622 sockeye salmon. The U.S. harvested 59.6% to 65.1% of the TAC and Canada harvested 17.4% to 19.1% of the TAC. In addition, an estimated 11,214 Port Snettisham sockeye salmon were also harvested in the District 111 gill net fishery for an exploitation rate of 46% on these stocks.

Table 3. Taku sockeye run reconstruction and harvest distribution, 1989.

	Taku	Snettisham
Escapement	95,263	13,338
Canadian Harvest		
Commercial	18,545	
Food Fishery	53	
Total	18,598	
% Harvest	22.6%	
Test Fishery Catch	207	
Above Border Run	114,068	
U.S. Harvest		
District 111	62,805	11,214
Personal Use	749	
Total	63,554	
% Harvest	77.4%	
Test Fishery Catch	None	85
Total Run	177,622	24,637
Taku Harvest Plan	Minimum	Maximum
Escapement Goal	71,000	80,000
Total Allowable Catch	106,622	97,622
Canadian Portion	0.174	0.191
U.S. Portion	0.596	0.651

ALSEK RIVER

Alsek River salmon stocks contribute to the U.S. commercial gill net and subsistence fisheries located in Dry Bay, at the mouth of the Alsek River (Figure 10). Some salmon of Alsek origin may also be taken in U.S. commercial gill net and troll fisheries in the Yakutat area. No commercial fishery exists in the Canadian portions of the Alsek River drainage, although Indian food and recreational fisheries occur in the Tatshenshini River and some of its headwater tributaries (Figure 10).

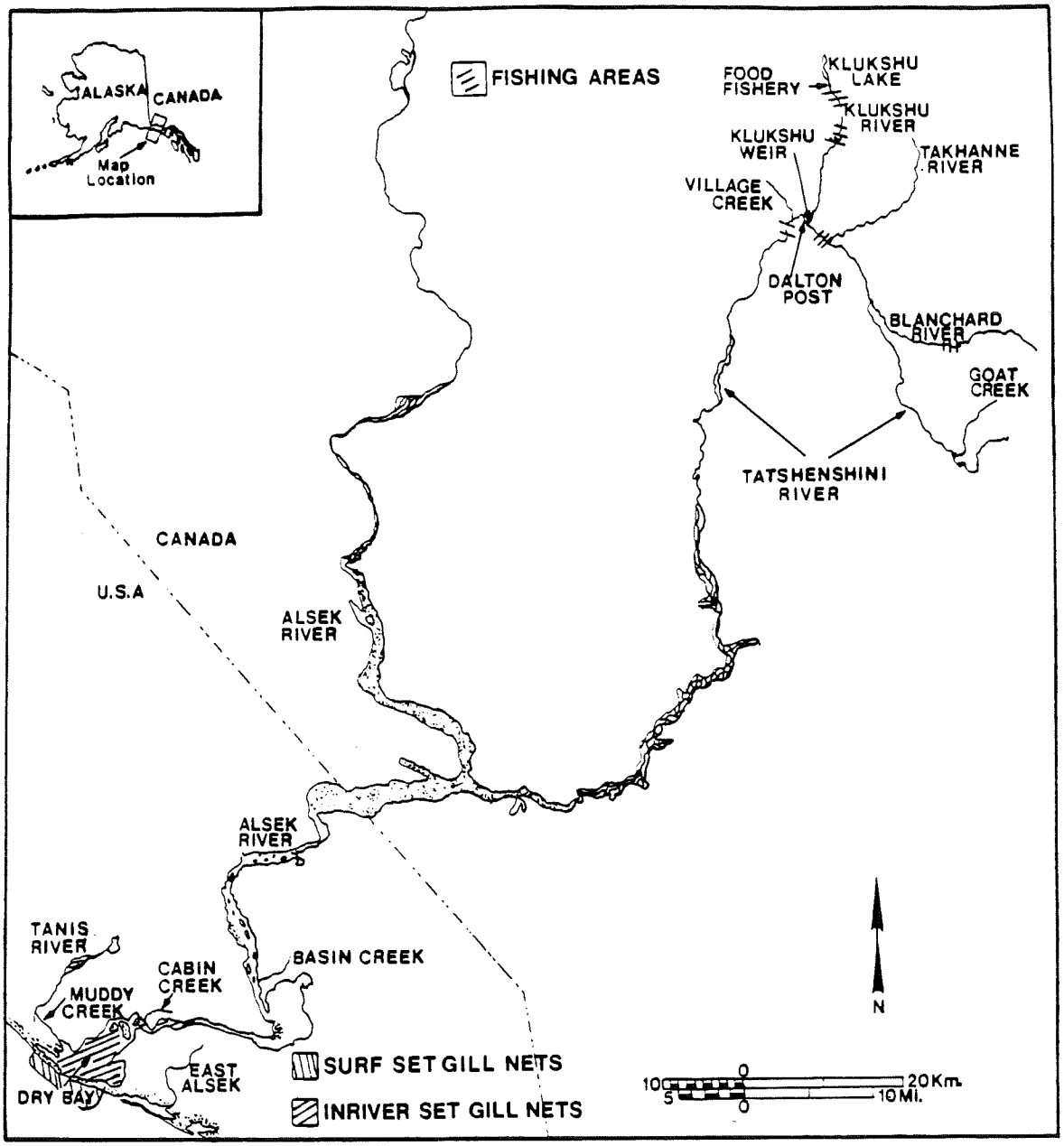

Figure 10. The Alsek River and principal U.S. and Canadian fishing areas.

Harvest Regulations

Although catch sharing of Alsek salmon stocks between Canada and the U.S. has not been specified, Annex IV does call for a cooperative attempt to rebuild depressed chinook and early-run sockeye stocks. Interim escapement goals for Alsek chinook, sockeye, and coho salmon have been set by the Transboundary Technical Committee at 7,200 to 12,500 chinook, 33,000 to 58,000 sockeye, and 5,400 to 25,000 coho salmon.

U.S. Fisheries

The U.S. Dry Bay set gill net fishery harvested 228 chinook, 13,513 sockeye, 5,972 coho, 2 pink, and 1,031 chum salmon (Appendix E.1). Catches of chinook and sockeye salmon were below the 1980 to 1988 averages, average for coho, and above average for chum salmon (Figure 11). Although there was a preseason expectation of a poor run of Alsek River sockeye salmon in 1989, ADF&G fishery managers believed that the early run portion of the parent year return would be large enough to potentially support some harvest. The fishing season opening in Dry Bay was delayed only one week rather than the typical two-week delay used in years with low expected runs.

The fishing season opened on June 12 with normal effort levels and was limited to a one-day opening in order to conserve chinook and early sockeye stocks. Fishing success was better than expected and, consequently, the weekly fishing periods were increased to two days per week for the remainder of the sockeye season. However, the comparatively strong run indicated by fishing CPUE was not supported by the sockeye management model used by ADF&G fishery managers. With the low fishing effort in July and fairly good catches, the two-day-per-week fishery was maintained against the recommendation of the management model. Fishing effort was average during the early season but fell below average in mid-July and returned to average levels late in the fall season. The total sockeye catch of 13,513 fish was 77% of the 1980 to 1988 average (Figure 11) but larger than the catches in 1987 and 1988 (Figure 12). The in-season ADF&G management model used to predict the sockeye run and catch did not work as well in 1989 as it had for the years 1984 through 1988. Postseason analysis of the model revealed that the data used to determine model parameters had not been updated and this likely contributed to the models poor performance.

The U.S. Dry Bay gill net fishery typically catches few Alsek chinook salmon (Figure 13). With the delayed opening of the fishery in recent years, most of the run passes through the fishery by the initial opening date. In addition, a 6-inch maximum mesh size restriction through early July has been placed on the fishery since 1987, effectively eliminating the use of chinook gear.

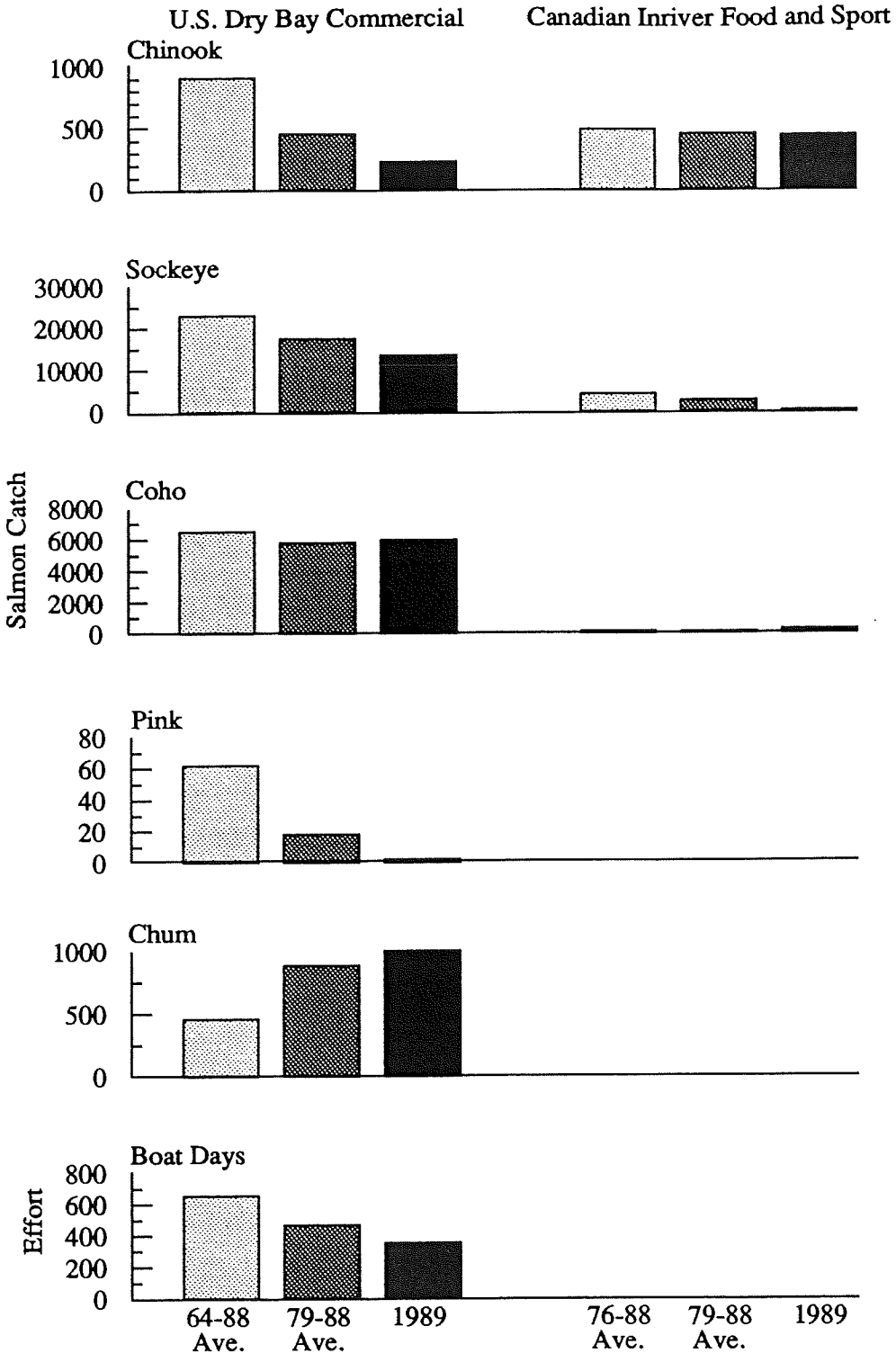

Figure 11. Average catches and fishing efforts compared with 1989 values for the Alaskan Dry Bay commercial fishery and the Canadian combined food and recreational fisheries in the Alsek River.

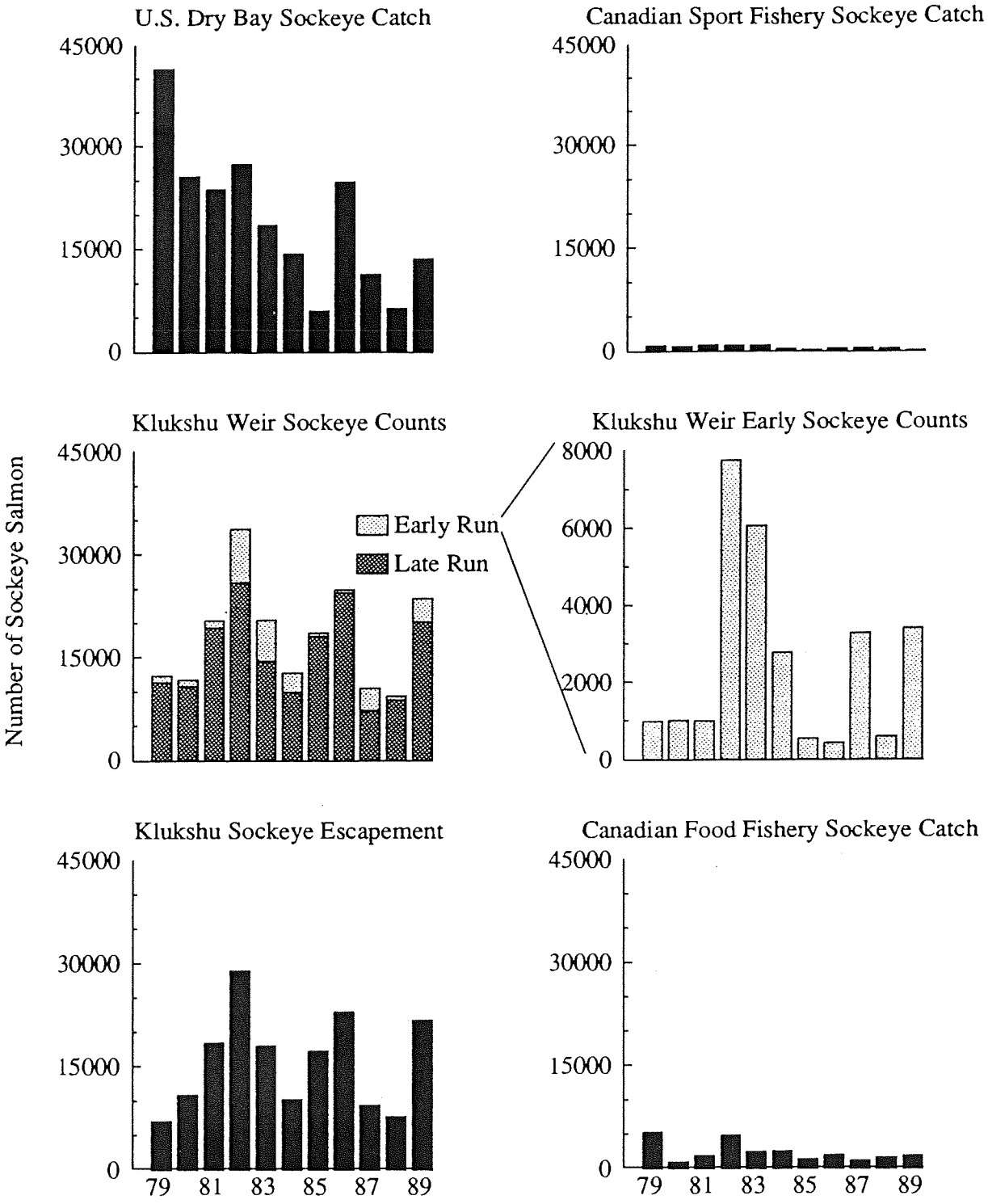

Figure 12. Alsek sockeye catches and weir counts, 1979 to 1989.

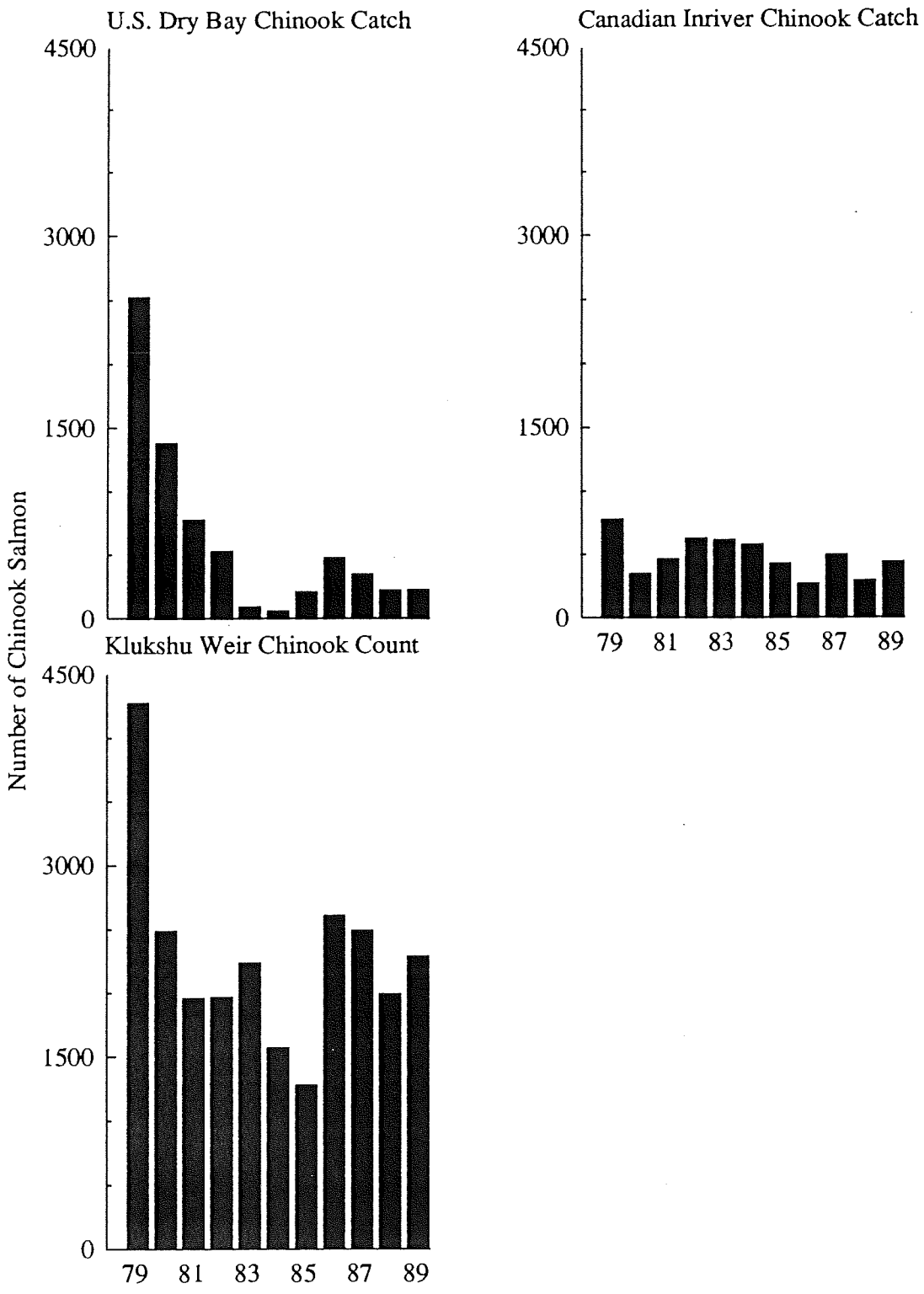

Figure 13. Alsek chinook catches and weir counts, 1979 to 1989.

Fishing success for coho salmon was poor until the later weeks of the coho season. Fishing time was maintained at three days per week due to low effort. The total coho catch of 5,972 fish was near the 1980 to 1988 average, and was the highest catch since 1984 (Figure 14). The Dry Bay fishing season closed at noon October 4.

A small U.S. subsistence fishery in the Alsek River harvested an estimated 10 chinook, 97 sockeye, and 54 coho salmon (Appendix E.4). Catches of chinook and sockeye salmon were below the 1980 to 1988 averages, while coho catches were above average. This catch data was tabulated from subsistence permits returned to ADF&G.

Canadian Fisheries

The center of Indian food fishing activity in the Alsek drainage occurs at the Champagne/Aishihik Indian village of Klukshu, on the Haines Road, about 60 km south of Haines Junction. Fish are harvested by means of gaff and traditional fish traps as the fish migrate up the Klukshu River into Klukshu Lake.

The Indian food fishery harvested 167 chinook and 1,906 sockeye salmon (Appendix E.2). Approximately 300 of the sockeye salmon were caught prior to August 15, when the early run is normally present. The Indian food fishery catch data was summarized weekly from daily catch statistics gathered during the fishing periods.

As in 1988, early-season restrictions in 1989 were implemented to conserve chinook and early run sockeye stocks. The trap fishery remained closed until mid-July at which time, and until August 15, only trapping by elders was permitted for one day each week. A catch ceiling of 10% to 15% of the weir count was in effect during this period; however, it was not needed since effort was minimal. After August 15, the traps were allowed to fish four days per week. The gaff fishery was managed as follows: prior to August 15, only elders were allowed to fish with a gaff in the Klukshu River but other streams, e.g. Village Creek and Blanchard River, were open three days per week to Band members; after August 15, gaffing was permitted by all Band members for four days per week in all systems. The gaff fishery was opened for unlimited time after September 20.

The retained catch in the recreational fishery consisted of 272 chinook, 319 sockeye, and 227 coho salmon in 1989 (Appendix E.2). This catch data was derived from a creel census program conducted in the Dalton Post area by the Klukshu weir personnel. Additional catch data was collected in other areas/tributaries by a Department of Fisheries and Oceans patrolman.

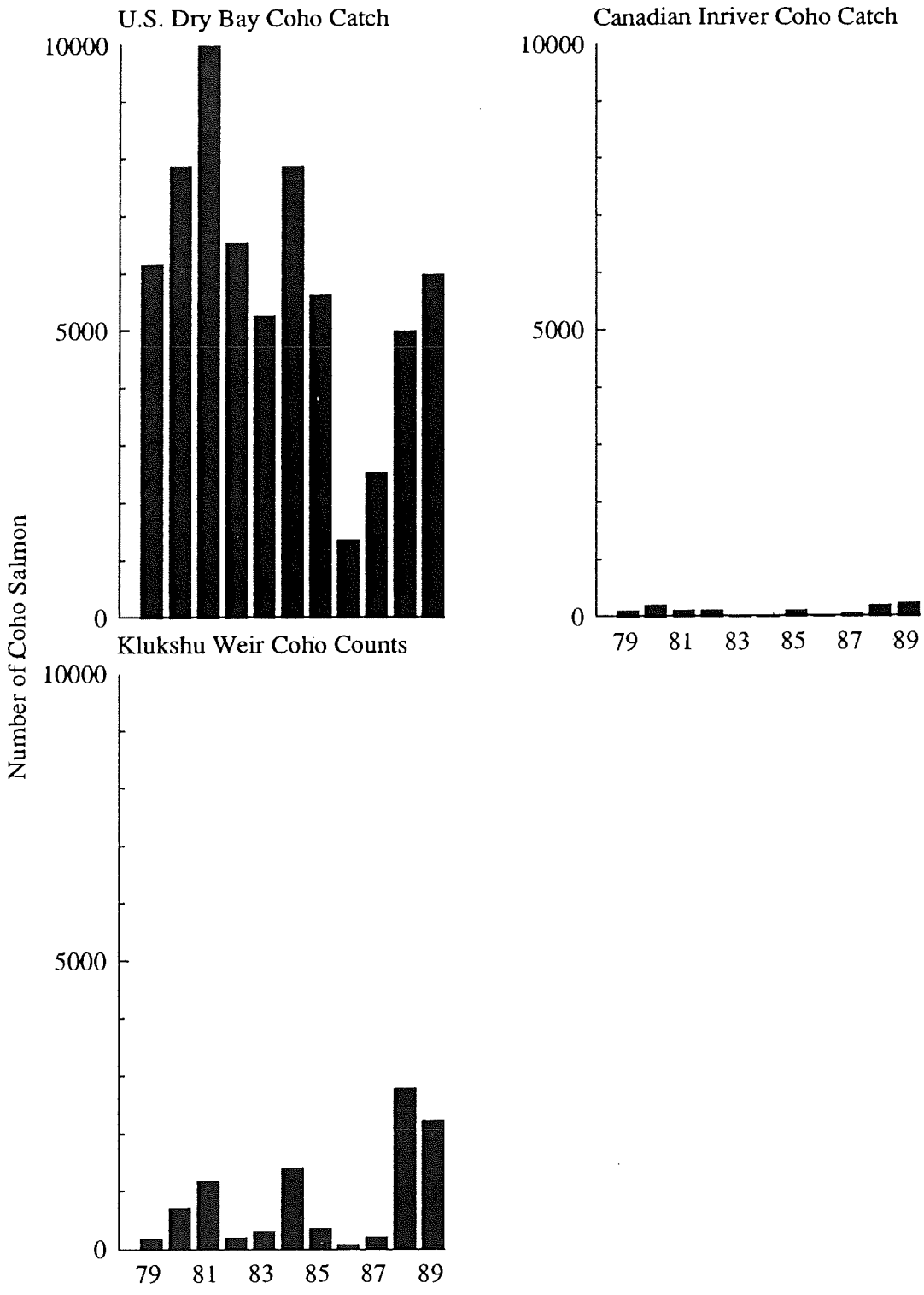

Figure 14. Alsek coho catches and weir counts, 1979 to 1989.

The majority of the sport fishing effort on the Alsek drainage occurs on the Tatshenshini River, at and just downstream of the mouth of the Klukshu River in the vicinity of the abandoned settlement of Dalton Post. The retention of sockeye salmon in the recreational fishery was prohibited prior to August 15 to protect early runs. The chinook catch and possession limits were one and two fish, respectively. Sport fishing in the area where effort traditionally concentrates, i.e. Dalton Post, was open from 6:00 am Saturday to 12:00 noon Tuesday each week. After September 20, the fishery was open seven days per week.

Combined Indian food fishery and recreational fishery catches were near the 1980 to 1988 averages for sockeye and chinook salmon and more than double the average for coho salmon (Figure 11 and Appendix E.5). Canadian catches consist of a small portion of the Alsek runs for each species (Figures 12-14).

Escapement

It is currently not possible to accurately assess whether Alsek escapement goals are being met because total drainage enumeration programs are not established. A large, but unknown and presumably variable, proportion of the escapement of each species is enumerated at the weir on the Klukshu River. Current escapement monitoring programs, including Klukshu weir and aerial surveys, do allow annual comparisons of escapement indices. The most reliable comparative escapement index for Alsek drainage salmon stocks is the Klukshu weir count.

Sockeye

A total of 23,542 sockeye salmon was counted through the Klukshu weir in 1989, consisting of 3,400 early run (count through August 15) and 20,142 late run sockeye salmon (Figure 12). The early run stock was the largest recorded since 1983 and the late run was 30% larger than the 1980 to 1988 average (Appendix E.6). A large run was also recorded in Village Creek where 9,577 sockeye salmon passed an electronic counter (Appendix E.7). Aerial surveys conducted along the Tatshenshini River mainstem spawning areas also indicated a large escapement.

Chinook

The chinook weir count at Klukshu in 1989 was 2,456 fish (Figure 13), close to the 1984 to 1988 average of 2,239 fish. The escapement past the upstream food fishery was 2,289 chinook salmon. Two estimates of the spawning escapement to the entire Alsek River drainage have been generated by expanding the

Klukshu weir count by a factor of 1/0.64 (U.S.) or by a factor of 2.0 (Canada) and then subtracting the upriver Canadian catches. These expansion factors represent professional judgement; their accuracy is not known and they are currently under review by the Transboundary Technical Committee. For 1989, these expansions yield estimates of escapement to the entire drainage of 3,399 (U.S.) and 4,473 (Canada) fish. The escapement goal range is from 5,000 to 7,200 (U.S.) to 12,500 (Canada) fish. Aerial surveys were conducted in 1989 for two other index streams (Appendix E.8); the count of 158 fish in the Takhanne River was less than the 1984 to 1988 average of 233 fish and the count of 34 chinook salmon in Goat Creek was less than the average of 94 fish.

Coho

The escapement of Alsek coho salmon appeared to be very strong in 1989. The Klukshu weir count of coho salmon was 2,219 fish, the second largest count on record (Figure 14). Combined aerial survey counts of coho salmon in U.S. tributaries were also high (Appendix E.9).

Run Reconstruction

Expectations for the sockeye run in 1989 were poor based on the poor 1984 parent year escapement. The run developed stronger than expected however, with U.S. and Canadian sockeye catches and escapement above the 1988 levels. The total sockeye harvest was below average, but an above average count of 23,542 fish was recorded at Klukshu weir (Table 4). The early portion of the escapement through the Klukshu weir represented an average proportion of the total escapement (14%), but was also the highest count since the Treaty has been in effect.

Estimates of the Klukshu contribution to the total sockeye escapement in the Alsek drainage vary from 37%, as estimated from an ADF&G mark-recapture study in 1983, to 60%, based on fishery managers' professional judgement. Using this contribution range for the Klukshu stock, the estimated sockeye escapement in the Alsek River was on the order of 37,000 to 61,000 fish and the estimated total Alsek sockeye run was on the order of 51,000 to 75,000 sockeye salmon. The interim escapement goal for the Alsek River is from 33,000 (U.S.) to 58,000 (Canada) fish.

A summary of escapement and harvest data for chinook and coho salmon are presented in Table 4 along with the sockeye data.

Table 4. Catch and Klukshu index escapement data for Alsek sockeye, chinook, and coho salmon for 1989.

	Sockeye	Chinook	Coho
Escapement Index[a]			
Klukshu Weir Count	23,542	2,456	2,219
Klukshu Escapement[b]	21,636	2,289	
Harvest			
U.S. Commercial	13,513	228	5,972
U.S. Subsistence	97	10	54
Canadian Sport	38	272	227
Canadian Indian Food	1,906	167	0
Total	15,554	677	6,253

[a] Klukshu River salmon stocks represent an assumed large and variable portion of the total Alsek River salmon escapement.

[b] The majority of the Canadian Indian food fishery occurs above the Klukshu weir, the estimated above weir catches are subtracted from weir counts to represent the spawning escapement.

APPENDICES

Appendix A.1. Weekly salmon catch and effort in the Alaskan Subdistrict 106-41 and -42 (Sumner Strait) commercial drift gill net fishery, 1989.

Week	Start Date	Catch					Effort		
		Chinook	Sockeye	Coho	Pink	Chum	Boats	Days	Boat Days
25	18-Jun	164	5,049	426	708	597	54	2	108
26	25-Jun	150	6,953	790	2,318	2,550	67	2	134
27	02-Jul	28	7,402	1,222	9,753	3,130	56	2	112
28	09-Jul	49	23,825	1,760	50,133	8,719	54	3	162
29	16-Jul	40	20,675	3,416	51,661	4,109	63	3	189
30	23-Jul	42	15,819	2,764	75,416	4,177	59	3	177
31	30-Jul	21	17,939	5,218	85,353	5,054	64	3	192
32	06-Aug	3	4,018	3,136	43,587	2,291	37	3	111
33	13-Aug	22	4,427	9,652	75,266	2,505	44	3	132
34	20-Aug	30	1,411	8,194	21,584	2,343	61	3	183
35	27-Aug	20	247	7,457	2,111	2,105	42	2	84
36	03-Sep	1	102	4,739	50	592	25	2	50
37	10-Sep	8	17	6,221	104	1,800	33	2	66
38	17-Sep	3	2	676	0	184	16	1	16
Total		581	107,886	55,671	418,044	40,156	675	34	1,716

Appendix A.2. Weekly stock proportions of sockeye salmon harvested in the Alaskan Subdistrict 106-41 and -42 (Sumner Strait) commercial drift gill net fishery, 1989. Data based on SPA.

Week	Alaska	Canada	Stikine		
			Tahltan	non-Tahltan	Total
25	0.489	0.419	0.032	0.060	0.092
26	0.513	0.302	0.085	0.100	0.185
27	0.495	0.318	0.027	0.160	0.188
28	0.574	0.381	0.000	0.045	0.045
29	0.803	0.191	0.000	0.005	0.005
30	0.784	0.212	0.000	0.004	0.004
31	0.678	0.307	0.000	0.015	0.015
32	0.659	0.330	0.000	0.011	0.011
33	0.525	0.463	0.000	0.012	0.012
34	0.525	0.463	0.000	0.012	0.012
35	0.525	0.463	0.000	0.012	0.012
36	0.525	0.463	0.000	0.012	0.012
37	0.525	0.463	0.000	0.012	0.012
38	0.525	0.463	0.000	0.012	0.012
Total	0.653	0.303	0.009	0.036	0.044

Appendix A.3. Weekly stock-specific catch of sockeye salmon in the Alaskan Subdistrict 106-41 and -42 (Sumner Strait) commercial drift gill net fishery, 1989. Data based on SPA.

			Stikine		
Week	Alaska	Canada	Tahltan	non-Tahltan	Total
25	2,469	2,114	163	303	466
26	3,566	2,098	592	697	1,289
27	3,661	2,352	202	1,187	1,389
28	13,668	9,073	0	1,084	1,084
29	16,612	3,958	0	105	105
30	12,397	3,361	0	61	61
31	12,160	5,507	0	272	272
32	2,647	1,326	0	45	45
33	2,323	2,050	0	54	54
34	740	653	0	17	17
35	130	114	0	3	3
36	54	47	0	1	1
37	9	8	0	0	0
38	1	1	0	0	0
Total	70,436	32,663	957	3,830	4,787

Appendix A.4. Weekly salmon catch and effort in the Alaskan Subdistrict 106-30 (Clarence Strait) commercial drift gill net fishery, 1989.

		Catch					Effort		
Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Days	Boat Days
25	18-Jun	58	1,188	114	92	295	20	2	40
26	25-Jun	77	1,774	348	649	316	28	2	56
27	02-Jul	36	2,500	572	4,418	346	25	2	50
28	09-Jul	99	17,593	1,600	39,579	2,016	37	3	111
29	16-Jul	80	19,900	2,406	72,025	4,615	43	3	129
30	23-Jul	124	18,752	3,051	152,448	4,061	86	3	258
31	30-Jul	77	10,974	2,775	94,672	2,934	63	3	189
32	06-Aug	37	6,567	3,672	91,736	2,724	55	3	165
33	13-Aug	96	3,096	3,055	83,863	1,390	49	3	147
34	20-Aug	109	1,844	6,545	95,399	2,844	62	3	186
35	27-Aug	139	579	4,598	42,001	1,834	49	2	98
36	03-Sep	11	50	2,954	5,522	1,433	23	2	46
37	10-Sep	17	26	4,466	740	2,056	44	2	88
38	17-Sep	3	5	559	6	331	20	1	20
Total		963	84,848	36,715	683,150	27,195	604	34	1,583

Appendix A.5. Weekly stock proportions of sockeye salmon harvested in the Alaskan Subdistrict 106-30 (Clarence Strait) commercial drift gill net fishery, 1989. Data based on SPA.

			Stikine		
Week	Alaska	Canada	Tahltan	non-Tahltan	Total
25	0.655	0.290	0.023	0.033	0.056
26	0.643	0.308	0.000	0.049	0.049
27	0.626	0.306	0.005	0.063	0.068
28	0.563	0.405	0.006	0.026	0.032
29	0.784	0.210	0.000	0.007	0.007
30	0.695	0.296	0.000	0.008	0.008
31	0.626	0.363	0.000	0.011	0.011
32	0.673	0.319	0.000	0.007	0.007
33	0.509	0.483	0.000	0.008	0.008
34	0.509	0.483	0.000	0.008	0.008
35	0.509	0.483	0.000	0.008	0.008
36	0.509	0.483	0.000	0.008	0.008
37	0.509	0.483	0.000	0.008	0.008
38	0.509	0.483	0.000	0.008	0.008
Total	0.662	0.322	0.002	0.015	0.016

Appendix A.6. Weekly stock-specific catch of sockeye salmon in the Alaskan Subdistrict 106-30 (Clarence Strait) commercial drift gill net fishery, 1989. Data based on SPA.

			Stikine		
Week	Alaska	Canada	Tahltan	non-Tahltan	Total
25	778	344	27	39	66
26	1,141	546	0	87	87
27	1,564	765	13	158	171
28	9,903	7,127	114	449	563
29	15,597	4,173	0	130	130
30	13,042	5,559	0	151	151
31	6,869	3,980	0	125	125
32	4,420	2,098	0	49	49
33	1,577	1,495	0	24	24
34	939	890	0	14	14
35	295	280	0	4	4
36	25	24	0	0	0
37	13	13	0	0	0
38	3	2	0	0	0
Total	56,167	27,296	154	1,231	1,385

Appendix A.7. Weekly salmon catch in the Alaskan District 106 commercial drift gill net fisheries, 1989. Catches do not include Blind Slough terminal area harvests. Effort may be less than the sum of effort from 106-41 & -42 and 106-30 since some boats fished more than one subdistrict.

		Catch					Effort		
Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Boats	Days	Boat Days
25	18-Jun	222	6,237	540	800	892	74	2	148
26	25-Jun	227	8,727	1,138	2,967	2,866	95	2	190
27	02-Jul	64	9,902	1,794	14,171	3,476	81	2	162
28	09-Jul	148	41,418	3,360	89,712	10,735	89	3	267
29	16-Jul	120	40,575	5,822	123,686	8,724	105	3	315
30	23-Jul	166	34,571	5,815	227,864	8,238	127	3	381
31	30-Jul	98	28,913	7,993	180,025	7,988	126	3	378
32	06-Aug	40	10,585	6,808	135,323	5,015	91	3	273
33	13-Aug	118	7,523	12,707	159,129	3,895	91	3	273
34	20-Aug	139	3,255	14,739	116,983	5,187	123	3	369
35	27-Aug	159	826	12,055	44,112	3,939	91	2	182
36	03-Sep	12	152	7,693	5,572	2,025	48	2	96
37	10-Sep	25	43	10,687	844	3,856	76	2	152
38	17-Sep	6	7	1,235	6	515	36	1	36
Total		1,544	192,734	92,386	1,101,194	67,351	1,253	34	3,222

Appendix A.8. Weekly stock proportions of sockeye salmon harvested in the Alaskan District 106 commercial drift gill net fisheries, 1989. Data based on SPA.

			Stikine		
Week	Alaska	Canada	Tahltan	non-Tahltan	Total
25	0.521	0.394	0.030	0.055	0.085
26	0.539	0.303	0.068	0.090	0.158
27	0.528	0.315	0.022	0.136	0.158
28	0.569	0.391	0.003	0.037	0.040
29	0.794	0.200	0.000	0.006	0.006
30	0.736	0.258	0.000	0.006	0.006
31	0.658	0.328	0.000	0.014	0.014
32	0.668	0.323	0.000	0.009	0.009
33	0.518	0.471	0.000	0.010	0.010
34	0.516	0.474	0.000	0.010	0.010
35	0.514	0.477	0.000	0.009	0.009
36	0.520	0.470	0.000	0.011	0.011
37	0.515	0.475	0.000	0.009	0.009
38	0.514	0.477	0.000	0.009	0.009
Total	0.657	0.311	0.006	0.026	0.032

Appendix A.9. Weekly stock-specific catch of sockeye salmon in the Alaskan District 106 commercial drift gill net fisheries, 1989. Catches do not include Blind Slough terminal area harvests. Data based on SPA.

Week	Alaska	Canada	Stikine		
			Tahltan	non-Tahltan	Total
25	3,247	2,458	190	342	532
26	4,707	2,644	592	784	1,376
27	5,225	3,117	215	1,345	1,560
28	23,571	16,200	114	1,533	1,647
29	32,209	8,131	0	235	235
30	25,439	8,920	0	212	212
31	19,029	9,487	0	397	397
32	7,067	3,424	0	94	94
33	3,900	3,545	0	78	78
34	1,680	1,544	0	31	31
35	425	394	0	7	7
36	79	71	0	2	2
37	22	20	0	0	0
38	4	3	0	0	0
Total	126,603	59,959	1,111	5,061	6,172

Appendix A.10. Weekly salmon catch and effort in the Alaskan District 108 commercial drift gill net fishery, 1989. Catches do not include Ohmer Creek terminal area harvests.

Week	Start Date	Catch					Effort		
		Chinook	Sockeye	Coho	Pink	Chum	Boats	Days	Boat Days
25	18-Jun	142	399	2	1	55	14	2	28
26	25-Jun	6	48	0	5	39	4	2	8
27	02-Jul	Fishery not open							
28	09-Jul	14	4,373	21	2,353	1,440	7	3	21
29	16-Jul	30	3,541	17	6,710	494	12	3	36
30	23-Jul	59	1,540	63	15,224	767	8	3	24
31	30-Jul	6	113	70	2,965	163	8	3	24
32	06-Aug	0	11	17	89	4	[a]	3	[a]
33	13-Aug	0	20	275	32	100	[a]	3	[a]
34	20-Aug	4	27	1,090	208	159	[a]	3	[a]
35	27-Aug	48	7	1,905	37	109	15	2	30
36	03-Sep	1	4	801	16	45	14	2	28
Total		310	10,083	4,261	27,640	3,375	90	29	223

[a] Effort not recorded by week, effort for these weeks is included in the total.

Appendix A.11. Weekly stock proportions and stock-specific catch of sockeye salmon in the Alaskan District 108 commercial drift gill net fishery, 1989. Catches do not include Ohmer Creek terminal area harvests. Data based on SPA.

			Stikine		
Week	Alaska	Canada	Tahltan	non-Tahltan	Total
Proportions					
25	0.168	0.217	0.248	0.367	0.615
26	0.168	0.217	0.248	0.367	0.615
27	Fishery not open				
28	0.128	0.056	0.040	0.776	0.817
29	0.076	0.030	0.010	0.885	0.895
30	0.162	0.057	0.011	0.769	0.780
31	0.162	0.057	0.011	0.769	0.780
32	0.162	0.057	0.011	0.769	0.780
33	0.162	0.057	0.011	0.769	0.780
34	0.162	0.057	0.011	0.769	0.780
35	0.162	0.057	0.011	0.769	0.780
36	0.162	0.057	0.011	0.769	0.780
Total	0.117	0.054	0.034	0.795	0.829
Catch					
25	67	87	99	146	245
26	8	10	12	18	30
27	Fishery not open				
28	558	244	177	3,394	3,571
29	268	105	34	3,134	3,168
30	250	89	17	1,185	1,202
31	18	6	1	87	88
32	2	1	0	8	9
33	3	1	0	15	16
34	4	2	0	21	21
35	1	0	0	5	5
36	1	0	0	3	3
Total	1,180	545	341	8,017	8,358

Appendix A.12. Weekly salmon catch and effort in the Alaskan District 106 (Sumner and Clarence Strait) test fisheries, 1989.

Week	Start Date	Catch					Effort		
		Chinook	Sockeye	Coho	Pink	Chum	Boats	Hours	Boat Days
25	18-Jun	7	138	12	32	26	2	9.03	0.75
26	25-Jun	1	262	23	174	93	2	9.07	0.76
27	02-Jul	3	308	21	416	115	2	8.90	0.74
28	09-Jul	0	608	40	1,390	183	2	9.00	0.75
29	16-Jul	0	293	69	1,166	102	2	8.67	0.72
30	23-Jul	0	338	73	2,261	258	2	7.74	0.65
31	30-Jul	0	96	37	630	79	2	7.79	0.65
32	06-Aug								
33[a/]	13-Aug	3	21	63	180	92	1		
34[a/]	20-Aug	0	14	164	184	110	1		
35[a/]	27-Aug	0	2	71	57	54	1		
36	03-Sep								
37[a/]	10-Sep	1	0	166	10	73	1		
Total		15	2,080	739	6,500	1,185	18	60.20	5.02

a/ The Ambient Light Test Fishery occurred in Subdistrict 106-30 during weeks 33-35 and 37. Test fishery catches for the remainder of the season were from Subdistrict 106-41.

Appendix A.13. Weekly salmon catch and effort in the Alaskan District 108 test fishery, 1989.

Week	Start Date	Catch					Effort		
		Chinook	Sockeye	Coho	Pink	Chum	Boats	Hours	Boat Days
25	18-Jun	10	41	0	0	7	2	9.38	0.78
26	25-Jun	2	162	0	4	29	2	9.09	0.76
27	02-Jul	2	137	0	42	53	2	9.00	0.75
28	09-Jul	1	425	0	270	73	2	9.00	0.75
29	16-Jul	0	163	1	906	49	2	9.00	0.75
30	23-Jul	0	65	11	904	50	2	9.00	0.75
31	30-Jul	0	45	33	333	22	2	9.00	0.75
Total		15	1,038	45	2,459	283	14	63.47	5.29

Appendix A.14. Stock compositions and stock-specific catch of sockeye salmon in the Alaskan District 106 and 108 test fisheries, 1989. Stock compositions from weekly commercial fishery catches were applied to weekly test fishery catches. Data based on SPA.

District	Alaska	Canada	Stikine		
			Tahltan	non-Tahltan	Total
Proportions					
Subdistrict 106-41	0.562	0.430	0.000	0.008	0.008
Subdistrict 106-30	0.509	0.483	0.000	0.008	0.008
District 108	0.136	0.105	0.101	0.658	0.759
Catches					
Subdistrict 106-41	1,147	879	0	17	17
Subdistrict 106-30	19	18	0	0	0
District 108	141	109	104	684	788
Total	1,308	1,005	104	700	805

Appendix A.15. Weekly salmon and steelhead trout catch and effort in the Canadian commercial fishery in the lower Stikine River, 1989.

		Catch							Effort		
Week	Start Date	Chinook Jacks	Chinook Large	Sockeye	Coho	Pink	Chum	Steel-head	Boats	Days	Boat Days
26	25-Jun	87	756	764	0	0	1	0	15.00	2.0	30.0
27	02-Jul	35	332	722	0	0	4	0	15.00	1.0	15.0
28	09-Jul	19	164	693	0	6	6	0	15.00	2.0	30.0
29	16-Jul	12	221	7,489	1	103	27	0	17.75	4.0	71.0
30	23-Jul	4	37	4,929	1	160	36	1	17.50	2.0	35.0
31	30-Jul	0	18	1,108	11	198	41	0	15.00	1.0	15.0
32	06-Aug	0	5	547	78	199	24	9	9.00	1.0	9.0
33	13-Aug	0	0	256	161	24	52	3	9.00	1.0	9.0
34	20-Aug	0	3	393	1,062	94	155	13	12.00	2.0	24.0
35	27-Aug	0	0	216	2,104	39	242	63	11.67	3.0	35.0
36	03-Sep	0	1	40	1,224	0	32	11	14.00	2.0	28.0
37	10-Sep	0	0	22	1,450	2	54	27	12.00	2.0	24.0
Total		157	1,537	17,179	6,092	825	674	127	162.92	23.0	325.0

Appendix A.16. Weekly sockeye salmon stock proportions and catch by stock in the Canadian commercial fishery in the lower Stikine River, 1989. Data based on egg diameter analysis.

		Catch		CPUE		
Week	Proportion Tahltan	Tahltan	non-Tahltan	Tahltan	non-Tahltan	Total
26	0.645	493	271	8.213	4.520	12.733
27	0.486	351	371	23.393	24.741	48.133
28	0.379	263	430	4.377	7.173	11.550
29	0.205	1,535	5,954	5.406	20.964	26.370
30	0.028	138	4,791	1.972	68.443	70.414
31	0.022	24	1,084	1.625	72.242	73.867
32	0.016	9	538	0.972	59.805	60.778
33	0.000	0	256	0.000	28.444	28.444
34	0.000	0	393	0.000	8.188	8.188
35	0.000	0	216	0.000	2.057	2.057
36	0.000	0	40	0.000	0.714	0.714
37	0.000	0	22	0.000	0.458	0.458
Total		2,813	14,366	45.958	297.748	343.706
Proportion		0.164	0.836			

Appendix A.17. Weekly salmon and steelhead trout catch and effort in the Canadian commercial fishery in the upper Stikine River, 1989. It is assumed that 90% of the sockeye catch is of Tahltan origin.

		Catch							Effort		
Week	Start Date	Chinook Jacks	Chinook Large	Sockeye	Coho	Pink	Chum	Steel-head	Boats	Days	Boat Days
26	25-Jun	4	19	2	0	0	0	0	1.0	1.0	1.0
27	02-Jul	9	10	38	0	0	0	0	1.0	1.0	1.0
28	09-Jul	0	14	51	0	0	0	0	3.0	1.0	3.0
29	16-Jul	4	3	109	0	0	0	0	3.0	1.0	3.0
30	23-Jul	0	4	272	0	0	0	0	4.0	1.0	4.0
31	30-Jul	0	4	6	0	0	0	0	1.0	1.0	1.0
32	06-Aug	0	0	15	0	0	0	0	1.0	1.0	1.0
Total		17	54	493	0	0	0	0	14	7	14

Appendix A.18. Weekly salmon and steelhead trout catch and effort in the Canadian Indian food fishery located at Telegraph Creek, on the Stikine River, 1989. It is assumed that 90% of the sockeye catch is of Tahltan origin.

		Catch							Effort		
Week	Start Date	Chinook Jacks	Chinook Large	Sockeye	Coho	Pink	Chum	Steel-head	Boats	Days	Boat Days
24	11-Jun	8	52	0	0	0	0	0	2.2	7	15.4
25	18-Jun	29	160	19	0	0	0	0	4.1	7	28.7
26	25-Jun	9	240	46	0	0	0	0	4.9	7	34.3
27	02-Jul	6	126	215	0	0	0	0	4.9	7	34.3
28	09-Jul	33	228	495	1	0	0	0	10.3	7	72.1
29	16-Jul	15	140	774	0	0	0	0	10.3	7	72.1
30	23-Jul	7	65	508	2	0	0	0	6.6	7	46.2
31	30-Jul	8	34	226	2	0	0	0	4.6	7	32.2
32	06-Aug	0	33	77	1	0	0	0	1.7	7	11.9
Total		115	1,078	2,360	6	0	0	0	49.6	63	347.2

Appendix A.19. Weekly salmon and steelhead trout catch and effort in the Canadian test fishery in the Stikine River, 1989.

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Steel-head	# Drifts/ Set Hours
Drift gill net								
25	18-Jun	72	25	0	0	0	0	60
26	25-Jun	23	24	0	0	0	0	50
27	02-Jul	16	42	0	0	1	0	60
28	09-Jul	5	22	0	1	2	0	60
29	16-Jul	0	47	1	1	1	0	30
30	23-Jul	0	88	5	13	6	1	50
31	30-Jul	0	58	11	15	6	0	50
32	06-Aug	0	38	29	8	5	1	60
33	13-Aug	0	14	43	2	10	0	60
34	20-Aug	0	5	43	1	8	1	50
35	27-Aug	0	1	51	0	5	1	40
36	03-Sep	0	0	27	0	2	0	50
37	10-Sep	0	0	12	0	0	0	50
38	17-Sep	0	0	15	0	0	0	70
39	24-Sep	0	0	5	0	0	1	70
40	01-Oct	0	0	0	0	0	0	60
Total		116	364	242	41	46	5	870
Set gill net								
25	18-Jun	79	147	0	0	1	0	144
26	25-Jun	13	106	0	0	0	0	120
27	02-Jul	7	200	0	1	2	0	144
28	09-Jul	2	127	0	2	1	0	120
29	16-Jul	0	117	0	9	0	0	48
30	23-Jul	0	243	2	22	9	0	120
31	30-Jul	0	143	11	112	20	2	144
32	06-Aug	0	112	50	78	28	3	144
33	13-Aug	0	20	48	7	10	2	96
34	20-Aug	0	17	136	17	23	2	120
35	27-Aug	0	10	153	1	7	6	96
36	03-Sep	0	1	102	0	2	2	96
Total		101	1,243	502	249	103	17	1,392

Appendix A.20. Weekly sockeye salmon stock proportions in the Stikine River test fishery, 1989. Data based on egg diameter analysis.

Week	Sample Size	Tahltan	non-Tahltan
25	78	0.760	0.240
26	68	0.632	0.368
27	131	0.519	0.481
28	38	0.237	0.763
29	85	0.165	0.835
30	192	0.036	0.964
31	116	0.000	1.000
32	91	0.011	0.989
33	17	0.000	1.000
34	12	0.000	1.000
35	1	0.000	1.000
Total	829		

Appendix A.21. Weekly catch, CPUE, and migratory timing of Tahltan and non-Tahltan sockeye stocks in the Stikine River test fishery, 1989. Data based on egg diameter analysis.

	Catch		CPUE			Migratory Timing	
Week	Tahltan	non-Tahltan	Tahltan	non-Tahltan	Total	Tahltan	non-Tahltan
Drift gill net							
25	19	6	0.317	0.100	0.417	0.043	0.013
26	15	9	0.303	0.177	0.480	0.041	0.024
27	22	20	0.363	0.337	0.700	0.049	0.045
28	5	17	0.087	0.280	0.367	0.012	0.038
29	8	39	0.259	1.308	1.567	0.035	0.176
30	3	85	0.063	1.697	1.760	0.009	0.228
31	0	58	0.000	1.160	1.160	0.000	0.156
32	0	38	0.007	0.626	0.633	0.001	0.084
33	0	14	0.000	0.233	0.233	0.000	0.031
34	0	5	0.000	0.100	0.100	0.000	0.013
35	0	1	0.000	0.025	0.025	0.000	0.003
36	0	0	0.000	0.000	0.000	0.000	0.000
37	0	0	0.000	0.000	0.000	0.000	0.000
38	0	0	0.000	0.000	0.000	0.000	0.000
39	0	0	0.000	0.000	0.000	0.000	0.000
Total	73	291	1.399	6.043	7.442		
Proportion	0.199	0.801		Proportion of run		0.188	0.812
Set gill net							
25	112	35	0.776	0.245	1.021	0.070	0.022
26	67	39	0.558	0.325	0.883	0.051	0.029
27	104	96	0.721	0.668	1.389	0.065	0.060
28	30	97	0.251	0.808	1.058	0.023	0.073
29	19	98	0.402	2.035	2.438	0.036	0.184
30	9	234	0.073	1.952	2.025	0.007	0.177
31	0	143	0.000	0.993	0.993	0.000	0.090
32	1	111	0.009	0.769	0.778	0.001	0.070
33	0	20	0.000	0.208	0.208	0.000	0.019
34	0	17	0.000	0.142	0.142	0.000	0.013
35	0	10	0.000	0.104	0.104	0.000	0.009
36	0	1	0.000	0.010	0.010	0.000	0.001
Total	342	901	2.789	8.260	11.049	0.252	0.748
Proportion	0.275	0.725					

Appendix A.22. Daily counts of adult sockeye salmon passing through Tahltan weir, 1989.

Date	Count	Cumulative Count	Cumulative Percent	Date	Count	Cumulative Count	Cumulative Percent
09-Jul	2	2	0.0	07-Aug	56	6,645	79.9
10-Jul	1	3	0.0	08-Aug	101	6,746	81.1
11-Jul	5	8	0.1	09-Aug	73	6,819	82.0
12-Jul	2	10	0.1	10-Aug	56	6,875	82.7
13-Jul	2	12	0.1	11-Aug	166	7,041	84.7
14-Jul	14	26	0.3	12-Aug	239	7,280	87.5
15-Jul	4	30	0.4	13-Aug	140	7,420	89.2
16-Jul	12	42	0.5	14-Aug	124	7,544	90.7
17-Jul	15	57	0.7	15-Aug	81	7,625	91.7
18-Jul	7	64	0.8	16-Aug	69	7,694	92.5
19-Jul	6	70	0.8	17-Aug	38	7,732	93.0
20-Jul	19	89	1.1	18-Aug	62	7,794	93.7
21-Jul	50	139	1.7	19-Aug	102	7,896	94.9
22-Jul	38	177	2.1	20-Aug	147	8,043	96.7
23-Jul	49	226	2.7	21-Aug	30	8,073	97.1
24-Jul	116	342	4.1	22-Aug	31	8,104	97.5
25-Jul	194	536	6.4	23-Aug	33	8,137	97.8
26-Jul	543	1,079	13.0	24-Aug	21	8,158	98.1
27-Jul	690	1,769	21.3	25-Aug	17	8,175	98.3
28-Jul	414	2,183	26.3	26-Aug	23	8,198	98.6
29-Jul	711	2,894	34.8	27-Aug	19	8,217	98.8
30-Jul	238	3,132	37.7	28-Aug	20	8,237	99.1
31-Jul	481	3,613	43.4	29-Aug	20	8,257	99.3
01-Aug	658	4,271	51.4	30-Aug	15	8,272	99.5
02-Aug	802	5,073	61.0	31-Aug	17	8,289	99.7
03-Aug	784	5,857	70.4	01-Sep	8	8,297	99.8
04-Aug	429	6,286	75.6	02-Sep	8	8,305	99.9
05-Aug	237	6,523	78.4	03-Sep	8	8,313	100.0
06-Aug	66	6,589	79.2	04-Sep	3	8,316	100.0

Appendix A.23. Daily counts of sockeye salmon smolt migrating through Tahltan Lake smolt weir, 1989.

		Cumulative				Cumulative	
Date	Count	Count	Percent	Date	Count	Count	Percent
08-May	2	2	0.0	04-Jun	4343	512,450	88.3
09-May	7	9	0.0	05-Jun	3472	515,922	88.9
10-May	20	29	0.0	06-Jun	8,630	524,552	90.4
11-May	89	118	0.0	07-Jun	3,752	528,304	91.0
12-May	335	453	0.1	08-Jun	1,516	529,820	91.3
13-May	12,466	12,919	2.2	09-Jun	22,218	552,038	95.1
14-May	88,915	101,834	17.5	10-Jun	7,328	559,366	96.3
15-May	94,441	196,275	33.8	11-Jun	2,234	561,600	96.7
16-May	5,730	202,005	34.8	12-Jun	1,209	562,809	96.9
17-May	17,260	219,265	37.8	13-Jun	629	563,438	97.0
18-May	8,945	228,210	39.3	14-Jun	1,632	565,070	97.3
19-May	3,335	231,545	39.9	15-Jun	9,503	574,573	99.0
20-May	1,816	233,361	40.2	16-Jun	950	575,523	99.1
21-May	28,121	261,482	45.0	17-Jun	557	576,080	99.2
22-May	19,251	380,733	65.6	18-Jun	235	576,315	99.3
23-May	17,966	398,699	68.7	19-Jun	202	576,517	99.3
24-May	10,550	409,249	70.5	20-Jun	542	577,059	99.4
25-May	8,359	417,608	71.9	21-Jun	845	577,904	99.5
26-May	11,065	428,673	73.8	22-Jun	566	578,470	99.6
27-May	10,831	439,504	75.7	23-Jun	344	578,814	99.7
28-May	9,950	449,454	77.4	24-Jun	405	579,219	99.8
29-May	13,197	462,651	79.7	25-Jun	335	579,554	99.8
30-May	5,822	468,473	80.7	26-Jun	108	579,662	99.8
31-May[a/]	11,070	479,543	82.6	27-Jun	152	579,814	99.9
01-Jun[a/]	10,009	489,552	84.3	28-Jun	208	580,022	99.9
02-Jun[a/]	6,700	496,252	85.5	29-Jun	291	580,313	100.0
03-Jun	11,855	508,107	87.5	30-Jun	261	580,574	100.0

[a/] The weir was removed from May 31 through June 2 due to high water level and the counts are estimates.

Appendix A.24. Daily counts of adult chinook salmon passing through Little Tahltan weir, 1989.

Date	Large Chinook	Large Chinook Cumulative		Chinook Jacks	Chinook Jacks Cumulative	
	Count	Count	Percent	Count	Count	Percent
25-Jun	weir installed					
26-Jun	7	7	0.15	3	3	1.51
27-Jun	24	31	0.66	2	5	2.51
28-Jun	5	36	0.76	0	5	2.51
29-Jun	4	40	0.85	0	5	2.51
30-Jun	92	132	2.80	4	9	4.52
01-Jul	78	210	4.45	4	13	6.53
02-Jul	34	244	5.17	5	18	9.05
03-Jul	14	258	5.47	0	18	9.05
04-Jul	43	301	6.38	2	20	10.05
05-Jul	96	397	8.42	1	21	10.55
06-Jul	19	416	8.82	2	23	11.56
07-Jul	256	672	14.25	8	31	15.58
08-Jul	6	678	14.38	0	31	15.58
09-Jul	110	788	16.71	5	36	18.09
10-Jul	160	948	20.11	10	46	23.12
11-Jul	32	980	20.78	1	47	23.62
12-Jul	77	1,057	22.42	14	61	30.65
13-Jul	265	1,322	28.04	9	70	35.18
14-Jul	131	1,453	30.82	5	75	37.69
15-Jul	0	1,453	30.82	0	75	37.69
16-Jul	136	1,589	33.70	3	78	39.20
17-Jul	97	1,686	35.76	2	80	40.20
18-Jul	81	1,767	37.48	2	82	41.21
19-Jul	105	1,872	39.70	1	83	41.71
20-Jul	132	2,004	42.50	5	88	44.22
21-Jul	70	2,074	43.99	7	95	47.74
22-Jul	0	2,074	43.99	0	95	47.74
23-Jul	607	2,681	56.86	29	124	62.31
24-Jul	147	2,828	59.98	11	135	67.84
25-Jul	225	3,053	64.75	6	141	70.85
26-Jul	152	3,205	67.97	4	145	72.86
27-Jul	90	3,295	69.88	1	146	73.37
28-Jul	179	3,474	73.68	7	153	76.88
29-Jul	298	3,772	80.00	13	166	83.42
30-Jul	169	3,941	83.58	6	172	86.43
31-Jul	164	4,105	87.06	4	176	88.44
01-Aug	49	4,154	88.10	2	178	89.45
02-Aug	142	4,296	91.11	2	180	90.45
03-Aug	55	4,351	92.28	5	185	92.96
04-Aug	43	4,394	93.19	0	185	92.96
05-Aug	84	4,478	94.97	1	186	93.47
06-Aug	108	4,586	97.26	4	190	95.48
07-Aug	63	4,649	98.60	4	194	97.49
08-Aug	29	4,678	99.22	1	195	97.99
09-Aug	0	4,678	99.22	0	195	97.99
10-Aug	12	4,690	99.47	0	195	97.99
11-Aug	22	4,712	99.94	2	197	98.99
12-Aug	0	4,712	99.94	0	197	98.99
13-Aug	3	4,715	100.00	2	199	100.00
14-Aug	0	4,715	100.00	0	199	100.00
15-Aug	0	4,715	100.00	0	199	100.00
16-Aug	0	4,715	100.00	0	199	100.00

Appendix B.1. Salmon catch and effort in the Alaskan Subdistrict 106-41 and -42 (Sumner Strait) commercial drift gill net fishery, 1964-1989.

Year	Catch					Effort	
	Chinook	Sockeye	Coho	Pink	Chum	Boat Days	Days Open
1964	316	52,943	27,338	183,402	22,913	2,344	49
1965	679	58,736	30,570	162,271	15,763	1,658	51
1966	690	65,721	30,792	96,287	24,235	2,080	74
1967	668	60,148	10,573	52,284	19,626	1,463	27
1968	1,010	50,212	46,111	82,012	39,001	2,997	52
1969	747	46,282	6,557	92,102	6,395	1,147	31
1970	420	26,812	15,153	29,102	18,092	905	41
1971	671	33,991	24,727	283,739	19,329	1,619	50
1972	1,747	74,745	60,827	40,644	46,511	2,152	41
1973	1,540	55,254	24,921	160,297	62,486	2,253	26
1974	1,342	46,760	28,889	57,296	38,045	1,579	28
1975	467	19,319	4,650	29,340	7,762	515	17
1976	237	9,319	10,367	20,251	2,301	366	19
1977	202	47,408	1,819	51,038	4,240	447	17
1978	274	1,422	26,762	9,546	3,142	389	27
1979	458	34,807	12,087	176,395	16,816	952	25
1980	205	48,430	10,826	16,966	15,162	596	16
1981	598	132,359	13,158	218,359	25,994	1,732	25
1982	648	121,220	21,387	10,343	11,896	1,083	22
1983	268	28,153	41,196	74,347	13,001	875	32
1984	136	27,372	19,124	99,807	28,461	587	32
1985	549	172,088	50,655	319,379	45,566	1,726	38
1986	421	85,247	104,328	105,347	48,471	1,896	32
1987	441	79,165	17,776	117,059	25,877	978	20
1988	452	57,337	6,349	10,894	42,210	815	18
Averages							
64-88	607	57,410	25,878	99,940	24,132	1,326	32
80-88	413	83,486	31,644	108,056	28,515	1,143	26
1989	581	107,886	55,671	418,044	40,156	1,716	34

Appendix B.2. Stock proportions and catches of sockeye salmon in the Alaskan Subdistrict 106-41 and -42 (Sumner Strait) commercial drift gill net fishery, 1985-1989. Data based on SPA.

Year	Alaska	Canada	Stikine		
			Tahltan	non-Tahltan	Total
Proportions					
1985	0.480	0.401	0.109	0.010	0.119
1986	0.662	0.308	0.024	0.006	0.030
1987	0.816	0.166	0.015	0.003	0.018
1988	0.868	0.112	0.019	0.001	0.020
1989	0.653	0.303	0.009	0.036	0.044
Catches					
1985	82,563	68,962	18,801	1,762	20,563
1986	56,462	26,214	2,070	501	2,571
1987	64,582	13,170	1,155	258	1,413
1988	49,776	6,426	1,071	64	2,136
1989	70,436	32,663	957	3,830	4,787

Appendix B.3. Salmon catch and effort in the Alaskan Subdistrict 106-30 (Clarence Strait) commercial drift gill net fishery, 1964-1989.

Year	Catch					Effort	
	Chinook	Sockeye	Coho	Pink	Chum	Boat Days	Days Open
1964	1,766	23,598	37,316	259,684	21,305	3,039	49.00
1965	1,123	29,013	45,158	463,577	11,895	2,849	50.75
1966	975	24,126	32,031	304,645	16,521	2,898	74.25
1967	650	26,237	7,097	39,325	6,744	1,048	27.00
1968	306	14,459	21,040	87,095	22,365	1,968	52.00
1969	289	24,061	4,191	104,998	4,511	1,026	31.00
1970	365	15,966	20,317	65,790	14,139	1,025	41.00
1971	665	19,211	23,358	244,236	18,351	1,517	50.00
1972	826	26,593	32,600	48,823	25,871	1,276	41.00
1973	391	16,741	13,526	143,324	25,243	1,303	26.00
1974	696	10,482	16,825	47,041	12,258	712	28.00
1975	2,120	12,732	26,312	173,675	16,206	1,159	8.50
1976	147	6,162	8,759	119,188	4,567	527	21.00
1977	469	19,615	6,582	368,069	9,060	940	21.00
1978	2,408	40,152	28,816	215,169	13,403	1,148	16.00
1979	2,262	31,566	15,996	471,817	18,691	1,848	25.00
1980	375	58,988	5,754	28,594	11,107	749	25.00
1981	967	50,546	9,453	216,909	8,577	1,321	26.00
1982	1,000	72,140	10,284	15,141	6,719	647	21.00
1983	299	20,789	21,234	133,820	7,143	589	37.00
1984	756	64,281	22,235	243,448	41,797	1,236	24.00
1985	1,141	92,899	40,565	265,567	24,095	1,372	36.00
1986	1,283	60,462	90,584	203,137	33,818	1,664	31.00
1987	395	57,262	16,758	126,423	16,148	799	20.00
1988	652	35,192	6,754	58,605	27,410	682	19.00
Averages							
64-88	893	34,131	22,542	177,924	16,718	1,334	32.02
80-88	763	56,951	24,847	143,516	19,646	1,007	26.56
1989	963	84,848	36,715	683,150	27,195	1,583	34.00

Appendix B.4. Stock proportions and catches of sockeye salmon in the Alaskan Subdistrict 106-30 (Clarence Strait) commercial drift gill net fishery, 1985-1989. Data based on SPA.

Year	Alaska	Canada	Stikine		
			Tahltan	non-Tahltan	Total
Proportions					
1985	0.477	0.453	0.056	0.013	0.070
1986	0.726	0.272	0.000	0.002	0.002
1987	0.844	0.140	0.004	0.012	0.016
1988	0.883	0.095	0.021	0.000	0.021
1989	0.662	0.322	0.002	0.015	0.016
Catch					
1985	44,351	42,053	5,244	1,251	6,495
1986	43,875	16,471	11	105	116
1987	48,311	8,020	221	710	931
1988	31,092	3,358	742	0	742
1989	56,167	27,296	154	1,231	1,385

Appendix B.5. Salmon catch and effort in the Alaskan District 106 commercial drift gill net fisheries, 1964-1989. Catches do not include Blind Slough terminal area harvests.

Year	Catch					Effort	
	Chinook	Sockeye	Coho	Pink	Chum	Boat Days	Days Open
1964	2,082	76,541	64,654	443,086	44,218	5,383	49.00
1965	1,802	87,749	75,728	625,848	27,658	4,507	50.75
1966	1,665	89,847	62,823	400,932	40,756	4,978	74.25
1967	1,318	86,385	17,670	91,609	26,370	2,511	27.00
1968	1,316	64,671	67,151	169,107	61,366	4,965	52.00
1969	1,036	70,343	10,748	197,100	10,906	2,173	31.00
1970	785	42,778	35,470	94,892	32,231	1,930	41.00
1971	1,336	53,202	48,085	527,975	37,680	3,136	50.00
1972	2,573	101,338	93,427	89,467	72,382	3,428	41.00
1973	1,931	71,995	38,447	303,621	87,729	3,556	26.00
1974	2,038	57,242	45,714	104,337	50,303	2,291	28.00
1975	2,587	32,051	30,962	203,015	23,968	1,674	17.00
1976	384	15,481	19,126	139,439	6,868	893	21.00
1977	671	67,023	8,401	419,107	13,300	1,387	21.00
1978	2,682	41,574	55,578	224,715	16,545	1,537	26.50
1979	2,720	66,373	28,083	648,212	35,507	2,800	25.00
1980	580	107,418	16,580	45,560	26,269	1,345	25.00
1981	1,565	182,905	22,611	435,268	34,571	3,053	26.00
1982	1,648	193,360	31,671	25,484	18,615	1,730	22.00
1983	567	48,942	62,430	208,167	20,144	1,464	37.00
1984	892	91,653	41,359	343,255	70,258	1,823	32.00
1985	1,690	264,987	91,220	584,946	69,661	3,098	38.00
1986	1,704	145,709	194,912	308,484	82,289	3,560	32.00
1987	836	136,427	34,534	243,482	42,025	1,777	20.00
1988	1,104	92,529	13,103	69,499	69,620	1,497	19.00
Averages							
64-88	1,500	91,541	48,419	277,864	40,850	2,660	33.26
80-88	1,176	140,437	56,491	251,572	48,161	2,150	27.89
1989	1,544	192,734	92,386	1,101,194	67,351	3,222	34.00

Appendix B.6. Stock proportions and catches of sockeye salmon in the Alaskan District 106 commercial drift gill net fisheries, 1982-1989. Catches do not include Blind Slough terminal area harvests. Data based on SPA.

Year	Alaska	Canada	Stikine		
			Tahltan	non-Tahltan	Total
Proportions					
1982	0.486	0.319			0.194
1983	0.668	0.217	0.103	0.013	0.116
1984	0.658	0.269	0.029	0.044	0.074
1985	0.479	0.419	0.091	0.011	0.102
1986	0.689	0.293	0.014	0.004	0.018
1987	0.827	0.155	0.010	0.007	0.017
1988	0.874	0.106	0.020	0.001	0.020
1989	0.657	0.311	0.006	0.026	0.032
Catches					
1982	94,061	61,714			37,585
1983	32,670	10,611	5,030	632	5,662
1984	60,278	24,624	2,673	4,078	6,751
1985	126,914	111,015	24,045	3,013	27,058
1986	100,337	42,685	2,081	606	2,687
1987	112,893	21,190	1,376	968	2,344
1988	80,868	9,784	1,813	64	1,877
1989	126,603	59,959	1,111	5,061	6,172

Appendix B.7. Salmon catch and effort in the Alaskan District 108 commercial drift gill net fishery, 1964-1989. Catches do not include Ohmer Creek terminal area harvests.

Year	Catch					Effort	
	Chinook	Sockeye	Coho	Pink	Chum	Boat Days	Days Open
1964	2,911	20,299	29,388	114,555	10,771	3,416	62
1965	3,106	21,419	8,301	4,729	2,480	960	48
1966	4,516	36,710	16,493	61,908	17,730	1,841	62
1967	6,372	29,226	6,747	4,713	5,955	1,193	40
1968	4,604	14,594	36,407	91,028	14,537	3,114	61
1969	5,023	19,210	5,823	11,884	2,312	858	37
1970	3,207	15,120	18,403	20,523	12,305	1,180	41
1971	3,717	18,143	14,876	21,806	4,665	892	42
1972	9,332	51,734	38,520	17,153	17,363	1,922	49
1973	9,254	21,387	5,837	6,585	6,680	1,042	21
1974	8,199	2,428	16,021	4,188	2,107	550	16
1975	1,534	0	0	0	1		8
1976	1,123	18	6,056	722	124	130	10
1977	1,443	48,374	14,405	16,253	4,233	740	19
1978	531	56	32,650	1,157	1,001	608	12
1979	91	2,158	234	13,478	1,064	100	5
1980	631	14,053	2,946	7,224	6,910	327	22
1981	283	8,833	1,403	1,466	3,594	177	9
1982	1,033	6,886	19,971	16,988	741	508	21
1983	47	178	15,484	4,171	675	266	17
1984	14	1,290	5,141	4,960	1,892	34	5
1985	20	1,060	1,926	5,325	1,892	50	14
1986	102	4,185	7,439	4,901	5,928	216	25
1987	149	1,620	1,015	3,331	949	81	13
1988	206	1,246	12	144	3,109	60	8
Averages							
64-88	2,698	13,609	12,220	17,568	5,161	844	27
80-88	276	4,372	6,149	5,390	2,854	191	15
1989	310	10,083	4,261	27,640	3,375	223	29

Appendix B.8. Stock proportions and catches of sockeye salmon in the Alaskan District 108 commercial drift gill net fishery, 1985-1989. Catches do not include Ohmer Creek terminal area harvests. Data based on SPA.

Year	Alaska	Canada	Stikine		
			Tahltan	non-Tahltan	Total
Proportions					
1985	0.064	0.000	0.292	0.644	0.936
1986	0.206	0.017	0.094	0.683	0.777
1987[a/]	0.125	0.000	0.438	0.437	0.875
1988	0.213	0.039	0.178	0.571	0.749
1989	0.117	0.054	0.034	0.795	0.829
Catch					
1985	68	0	310	683	992
1986	862	71	393	2,858	3,252
1987	203	0	710	708	1,418
1988	265	48	222	711	933
1989	1,180	545	341	8,017	8,358

[a/] There was no data available to determine the ratio of Tahltan to non-Tahltan Stikine stocks; a 1:1 ratio was assumed.

Appendix B.9. Salmon catch in the Alaskan Subdistrict 106-41 (Sumner Strait) test fishery, 1984-1989.

Year	Catch					Boat Hours
	Chinook	Sockeye	Coho	Pink	Chum	
1984	13	1,370	101	975	793	142.51
1985	16	4,345	301	3,230	746	156.31
1986	23	982	177	60	248	99.45
1987	24	2,659	799	4,117	741	508.10
1988	11	1,020	89	137	772	121.00
1989	11	2,043	275	6,069	856	60.20

Appendix B.10. Stock proportions and catches of sockeye salmon in the Alaskan Subdistrict 106-41 and -42 (Sumner Strait) test fishery, 1984-1989. Data based on SPA.

Year	Alaska	Canada	Stikine		
			Tahltan	non-Tahltan	Total
Proportions					
1984	0.658	0.269	0.029	0.044	0.074
1985	0.480	0.401	0.109	0.010	0.119
1986	0.834	0.149	0.008	0.009	0.017
1987	0.816	0.166	0.015	0.003	0.018
1988	0.868	0.098	0.034	0.000	0.034
1989	0.561	0.430	0.000	0.008	0.008
Catch					
1984	901	368	40	61	101
1985	2,085	1,741	475	44	519
1986	819	146	8	9	17
1987	2,169	442	39	9	47
1988	886	100	35	0	35
1989	1,147	879	0	17	17

Appendix B.11. Salmon catch and effort in the Alaskan Subdistrict 106-30 (Clarence Strait) test fishery, 1986-1989.

Year	Catch					Boat Hours
	Chinook	Sockeye	Coho	Pink	Chum	
1986	24	363	95	80	58	23.25
1987	1	899	589	1,705	467	384.00
1988	10	16	412	112	598	119.70
1989	4	37	464	431	329	

Appendix B.12. Stock proportions and catches of sockeye salmon in the Alaskan Subdistrict 106-30 (Clarence Strait) test fishery, 1986-1989. Data based on SPA.

			Stikine		
Year	Alaska	Canada	Tahltan	non-Tahltan	Total
Proportions					
1986	0.726	0.272	0.000	0.002	0.002
1987	0.844	0.140	0.004	0.012	0.016
1988	0.746	0.254	0.000	0.000	0.000
1989	0.509	0.483	0.000	0.000	0.000
Catches					
1986	263	99	0	1	1
1987	758	126	3	11	15
1988	12	4	0	0	0
1989	19	18	0	0	0

Appendix B.13. Salmon catch and effort in the Alaskan District 106 test fisheries 1984-1989.

	Catch					Boat
Year	Chinook	Sockeye	Coho	Pink	Chum	Hours
1984	13	1,370	101	975	793	142.51
1985	16	4,345	301	3,230	746	156.31
1986	47	1,345	272	140	306	122.70
1987	25	3,558	1,388	5,822	1,208	892.10
1988	21	1,036	501	249	1,370	240.70
1989	15	2,080	739	6,500	1,185	60.20

Appendix B.14. Stock proportions and catches of sockeye salmon in the Alaskan District 106 test fisheries, 1984-1989. Data based on SPA.

			Stikine		
Year	Alaska	Canada	Tahltan	non-Tahltan	Total
Proportions					
1984	0.658	0.269	0.029	0.044	0.074
1985	0.480	0.401	0.109	0.010	0.119
1986	0.805	0.182	0.006	0.007	0.013
1987	0.823	0.160	0.012	0.006	0.017
1988	0.867	0.100	0.033	0.000	0.033
1989	0.561	0.431	0.000	0.008	0.008
Catch					
1984	901	368	40	61	101
1985	2,085	1,741	475	44	519
1986	1,082	245	8	9	17
1987	2,928	568	42	20	62
1988	898	104	35	0	35
1989	1,166	897	0	17	17

Appendix B.15. Salmon catch and effort in the Alaskan District 108 test fishery, 1984-1989.

	Catch					
Year	Chinook	Sockeye	Coho	Pink	Chum	Boat Hours
1984	37	641	11	822	813	
1985	33	1,258	11	465	381	71.67
1986	79	564	3	36	315	72.15
1987	30	290	13	1,957	488	76.87
1988	65	451	9	1,091	1,009	126.83
1989	15	1,038	45	2,459	283	63.47

Appendix B.16. Stock proportions and catches of sockeye salmon in the Alaskan District 108 test fishery, 1985-1989. Data based on SPA.

Year	Alaska	Canada	Stikine		
			Tahltan	non-Tahltan	Total
Proportions					
1985	0.064	0.000	0.292	0.644	0.936
1986	0.134	0.044	0.486	0.336	0.822
1987	0.125	0.000	0.438	0.437	0.875
1988	0.205	0.049	0.132	0.614	0.746
1989	0.136	0.105	0.100	0.659	0.759
Catch					
1985	81	0	367	810	1,177
1986	76	25	274	190	464
1987	36	0	127	127	254
1988	93	22	59	277	336
1989	141	109	104	684	788

Appendix B.17. Salmon and steelhead trout catch and effort in the Canadian commercial fishery in the lower Stikine River, 1979-1989.

Year	Catch							Effort	
	Chinook								
	Jacks	Large	Sockeye	Coho	Pink	Chum	Steel-head	Boat Days	Days
1979[a/]	63	712	10,534	10,720	1,994	424	264	b/	42.0
1980		1,488	18,119	6,629	736	771	362	701.0	41.0
1981		664	21,551	2,667	3,713	1,128	280	522.0	32.0
1982		1,693	15,397	15,904	1,782	722	828	1,093.0	71.0
1983	430	492	15,857	6,170	1,043	274	667	458.0	54.0
1984[c/]									
1985	91	256	17,093	2,172	2,321	532	231	145.5	22.5
1986	365	806	12,411	2,278	107	295	192	239.0	13.5
1987	242	909	6,138	5,728	646	432	217	287.0	20.0
1988	201	1,007	12,766	2,112	418	730	258	320.0	26.5
Averages[d/]									
80-88		1,081	14,917	5,458	1,346	611	379	470.7	35.1
1989	157	1,537	17,179	6,092	825	674	127	325.0	23.0

a/ The lower river commercial catch in 1979 includes the upper river commercial catch.
b/ Effort data not available
c/ There was no commercial fishery in 1984.
d/ Chinook average is for jacks and large fish combined.

Appendix B.18. Sockeye salmon stock proportions and catch by stock in the Canadian commercial fishery in the lower Stikine River, 1979-1989. Stock compositions based on: scale circuli counts 1979-1983, SPA in 1985; average of SPA and GPA 1986; SPA in 1987 and 1988; and egg diameter in 1989.

	Proportions		Catch	
Year	Tahltan	non-Tahltan	Tahltan	non-Tahltan
1979	0.433	0.567	4,561	5,973
1980	0.309	0.691	5,599	12,520
1981	0.476	0.524	10,258	11,293
1982	0.624	0.376	9,608	5,789
1983	0.422	0.578	6,692	9,165
1984[a/]				
1985	0.623	0.377	10,649	6,444
1986	0.489	0.511	6,069	6,342
1987	0.225	0.775	1,380	4,758
1988	0.161	0.839	2,062	10,704
Averages				
80-88	0.416	0.584	6,540	8,377
1989	0.164	0.836	2,813	14,366

a/ There was no commercial fishery in 1984.

Appendix B.19. Salmon and steelhead trout catch and effort in the Canadian commercial fishery in the upper Stikine River, 1975-1989.

	Catch							Effort	
	Chinook							Boat	
Year	Jacks	Large	Sockeye	Coho	Pink	Chum	Steelhead	Days	Days
1975		178	270	45	0	0	0		
1976		236	733	13	0	0	0		
1977		62	1,975	0	0	0	0		
1978		100	1,500	0	0	0	0		
1979[a/]									
1980		156	700	40	20	0	0		
1981		154	769	0	0	0	0	11	5.0
1982		76	195	0	0	0	0	8	4.0
1983		75	614	0	0	4	1	10	8.0
1984[b/]									
1985		62	1,084	0	0	0	0	14	6.0
1986	41	104	815	0	0	0	0	19	7.0
1987	19	109	498	0	0	19	0	20	7.0
1988	46	185	348	0	0	0	0	4	6.5
Averages[c/]									
75-88		123	792	8	2	2	0		
80-88		114	628	5	3	3	0	12	6.2
1989	17	54	493	0	0	0	0	14	7.0

a/ Catches in 1979 were included in the lower river commercial catches.
b/ There was no commercial fishery in 1984.
c/ Chinook averages are for jacks and large fish combined.

Appendix B.20. Salmon and steelhead trout catch in the Canadian Indian food fishery located at Telegraph Creek, on the Stikine River, 1972-1989.

	Catch						
	Chinook						
Year	Jacks	Large	Sockeye	Coho	Pink	Chum	Steelhead
1972		0	230	0	0	0	0
1973		200	3,670	0	0	0	0
1974		0	3,500	0	0	0	0
1975		1,024	1,982	5	0	0	0
1976		924	2,911	0	0	0	0
1977		100	4,335	0	0	0	0
1978		400	3,500	0	0	0	0
1979		850	3,000	0	0	0	0
1980		587	2,100	0	0	0	0
1981		740	5,304	8	144	0	4
1982		618	4,948	40	60	0	0
1983		1,066	4,649	3	77	26	46
1984		702	5,327	1	62	0	2
1985	94	793	7,287	3	35	4	9
1986	569	1,026	4,208	2	0	12	2
1987	183	1,183	2,979	3	0	8	2
1988	197	1,178	2,177	5	0	3	3
Averages[a/]							
72-88		731	3,653	4	22	3	4
80-88		993	4,331	7	42	6	8
1989	115	1,078	2,360	6	0	0	0

[a/] Chinook averages are for jacks and large fish combined.

Appendix B.21. Salmon and steelhead trout catch in the combined Canadian net fisheries in the Stikine River, 1972-1989.

Year	Chinook Jacks	Chinook Large	Sockeye	Coho	Pink	Chum	Steel-head
1972	0	0	230	0	0	0	0
1973	0	200	3,670	0	0	0	0
1974	0	0	3,500	0	0	0	0
1975	0	1,202	2,252	50	0	0	0
1976	0	1,160	3,644	13	0	0	0
1977	0	162	6,310	0	0	0	0
1978	0	500	5,000	0	0	0	0
1979	63	1,562	13,534	10,720	1,994	424	264
1980	0	2,231	20,919	6,669	756	771	362
1981	0	1,558	27,624	2,675	3,857	1,128	284
1982	0	2,387	20,540	15,944	1,842	722	828
1983	430	1,633	21,120	6,173	1,120	304	714
1984[a/]	0	702	5,327	1	62	0	2
1985	185	1,111	25,464	2,175	2,356	536	240
1986	975	1,936	17,434	2,280	107	307	194
1987	444	2,201	9,615	5,731	646	459	219
1988	444	2,370	15,291	2,117	418	733	261
Averages[b/]							
72-88		1,380	11,851	3,209	774	317	198
80-88		2,067	18,148	4,863	1,240	551	345
1989	289	2,669	20,032	6,098	825	674	127

a/ There was no commercial fishery in 1984.
b/ Chinook averages are for jacks and large fish combined.

Appendix B.22. Salmon and steelhead trout catches and effort in test fisheries in the Stikine River, 1985-1989.

Year	Fishery	Catch Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Effort Drift=# Set=hr.
1985	C. Set		1,340					
1986	C. Drift	27	412	226	8	25		405
1987	J. Set	128	385	162	111	61		845
	J. Drift	61	1,283	620	587	193		109
1988	J. Set	168	325	75	9	33	7	720
	J. Drift	101	922	130	23	65	14	702
1989	C. Set	116	364	242	41	46	5	870
	C. Drift	101	1,243	502	249	103	17	1,392

Appendix B.23. Sockeye salmon stock proportions and catch by stock in the test fisheries in the lower Stikine River, 1985-1989. Stock compositions based on: SPA 1985; average of SPA and GPA 1986-1988; Egg diameter 1989.

Year	Catch Tahltan		Proportion Tahltan		Average Proportion[a/]	
	U.S.	Canada	U.S.	Canada	Tahltan	non-Tahltan
1985	560	439	0.418	0.328	0.372	0.628
1986	164	127	0.398	0.308	0.352	0.648
1987	513	397	0.308	0.238	0.273	0.727
1988	408	295	0.327	0.237	0.282	0.718
1989		414		0.258	0.258	0.742

[a/] Average proportions are from averages of weekly estimates.

Appendix B.24. Estimated proportion of the inriver run comprised of Tahltan and non-Tahltan sockeye stocks, 1979-1989. Stock compositions based on: scale circuli counts 1979-1983, SPA in 1985; average of SPA and GPA 1986-1988; and egg diameter analysis in 1989.

Year	Porportion Tahltan		Average[a/]	
	U.S.	Canada	Tahltan	non-Tahltan
1979	0.433		0.433	0.567
1980	0.305		0.305	0.695
1981	0.475		0.475	0.525
1982	0.618		0.618	0.382
1983	0.489	0.423	0.456	0.544
1984	0.635	0.394	0.493	0.507
1985	0.621	0.363	0.466	0.534
1986	0.398	0.500	0.449	0.551
1987	0.338	0.257	0.304	0.696
1988	0.209	0.122	0.172	0.828
1989		0.188	0.188	0.812

[a/] Average proportions are from averages of weekly stock composition and migratory timing estimates and therefore do not always equal the average of the season totals.

Appendix B.25. Counts of adult sockeye salmon migrating through Tahltan Lake weir, 1959-1989.

Year	Weir Installed	Date of Arrival			Total Count
		First	50%	90%	
1959	30-Jun	02-Aug	12-Aug	16-Aug	4,311
1960	15-Jul	02-Aug	24-Aug	27-Aug	6,387
1961	20-Jul	09-Aug	11-Aug	15-Aug	16,619
1962[a/]	01-Aug	02-Aug	05-Aug	08-Aug	14,508
1963[b/]	03-Aug				1,780
1964	23-Jul	26-Jul	14-Aug	25-Aug	18,353
1965[c/]	19-Jul	18-Jul	02-Sep	07-Sep	1,471
1966	12-Jul	03-Aug	13-Aug	21-Aug	21,580
1967	11-Jul	14-Jul	21-Jul	28-Jul	38,801
1968	11-Jul	21-Jul	25-Jul	08-Aug	19,726
1969	07-Jul	11-Jul	18-Jul	31-Jul	11,805
1970	05-Jul	25-Jul	01-Aug	11-Aug	8,419
1971	12-Jul	19-Jul	28-Jul	12-Aug	18,523
1972	13-Jul	13-Jul	19-Jul	31-Aug	52,545
1973	10-Jul	24-Jul	30-Jul	07-Aug	2,877
1974	03-Jul	28-Jul	03-Aug	17-Aug	8,101
1975	10-Jul	25-Jul	08-Aug	17-Aug	8,159
1976	16-Jul	29-Jul	01-Aug	06-Aug	24,111
1977	06-Jul	11-Jul	16-Jul	10-Aug	42,960
1978	10-Jul	10-Jul	20-Jul	29-Jul	22,788
1979	09-Jul	23-Jul	01-Aug	11-Aug	10,211
1980	04-Jul	15-Jul	22-Jul	12-Aug	11,018
1981	30-Jun	16-Jul	26-Jul	03-Aug	50,790
1982	02-Jul	10-Jul	19-Jul	29-Jul	28,257
1983	27-Jun	05-Jul	22-Jul	05-Aug	21,256
1984	20-Jun	19-Jul	24-Jul	03-Aug	32,777
1985	28-Jun	18-Jul	31-Jul	06-Aug	67,326
1986	10-Jul	26-Jul	04-Aug	11-Aug	20,280
1987	14-Jul	21-Jul	04-Aug	13-Aug	6,958
1988	16-Jul	16-Jul	06-Aug	14-Aug	2,536
Averages					
59-88	10-Jul	21-Jul	31-Jul	11-Aug	19,841
80-88	03-Jul	16-Jul	27-Jul	07-Aug	26,800
1989	07-Jul	09-Jul	01-Aug	14-Aug	8,316

a/ Question as to date weir installed.
b/ Daily counts unavailable.
c/ A slide occurred blocking the entrance for a while.

Appendix B.26. Aerial survey counts of non-Tahltan sockeye stocks in the Stikine River drainage, 1984-1989. The index represents the combined counts from eight spawning areas.

Year	Escapement Index
1984	2,329
1985	1,136
1986	571
1987	697
1988	376
1989	809

Appendix B.27. Count of sockeye salmon smolt migrating through Tahltan Lake smolt weir, 1984-1989.

Year	Weir Installed	Date of Arrival			Total Count
		First	50%	90%	
1984	10-May	11-May	23-May	06-Jun	219,702
1985	25-Apr	23-May	31-May	28-May	613,531
1986	10-May	10-May	31-May	07-Jun	244,330
1987	07-May	15-May	23-May	24-May	810,432
1988	01-May	08-May	20-May	06-Jun	1,170,136
1989	05-May	08-May	22-May	06-Jun	580,574

Appendix B.28. Weir counts of chinook salmon at Little Tahltan weir, 1985-1989.

		Large Chinook				Jacks				Total
Year	Weir Installed	First Arrival	50% Arrival	90% Arrival	Total Count	First Arrival	50% Arrival	90% Arrival	Total Count	All Chinook
1985	03-Jul	04-Jul	30-Jul	06-Aug	3,146	04-Jul	31-Jul	10-Aug	413	3,559
1986	28-Jun	29-Jun	21-Jul	05-Aug	2,893	03-Jul	25-Jul	06-Aug	572	3,465
1987	28-Jun	04-Jul	24-Jul	02-Aug	4,781	03-Jul	26-Jul	06-Aug	365	5,146
1988	26-Jun	27-Jun	18-Jul	03-Aug	7,292	27-Jun	17-Jul	02-Aug	327	7,619
1989	25-Jun	26-Jun	23-Jul	02-Aug	4,715	26-Jun	23-Jun	02-Aug	199	4,914

Appendix B.29. Index counts of Stikine chinook escapements, 1979-1989. Counts do not include jacks. Total Stikine escapement estimated by Little Tahltan aerial counts * 8, since 1985 by Little Tahltan weir * 4.

Year	Little Tahltan Weir	Little Tahltan (Aerial)	Tahltan (Aerial	Beatty (Aerial)	Andrew[a/] (Foot)	Total Stikine
1979		1,166	2,118		382	9,328
1980		2,137	960	122	362	17,096
1981		3,334	1,852	558	629	26,672
1982		2,830	1,690	567	910	22,640
1983		594	453	83	444	4,752
1984		1,294		126	355	10,352
1985	3,146	1,598	1,490	147	319	12,584
1986	2,893	1,201	1,400	183	707	11,572
1987	4,781	2,706	1,390	312	651	19,124
1988	7,292	3,796	4,384	593	470	29,168
Averages 80-88		2,166	1,702	299	539	17,107
1989	4,715	2,515	[b/]	362	530	18,860

a/ Andrew Creek counts in 1983 and 1984 are from a weir.
b/ Not surveyed due to poor visibility.

Appendix B.30. Index counts of Stikine coho escapements, 1984, 1985, 1988, and 1989.

Index Area	Year and Survey Date 1989 10/27	1988 10/28	1985 10/25	1984 10/30
Katete (south)	336	32	590	460
Katete (north)	896	227	1,217	
Craig	992	a/	735	0
Jekill	0	a/		0
Verret	848	175	39	15
Bronson Slough	120		0	42
Skud Slough	707	97		
Porcupine	90	53		
Christina	55	0		
Total	4,044	584	2,581	517

a/ Poor observation conditions

Appendix B.31. Stikine River sockeye run size, 1979-1989.

Year	Inriver run size estimates			Marine Catch[b/]	Total Run	Escapement
	Canada	U.S.	Average[a/]			
1979		40,353	40,353	8,299	48,652	26,819
1980		62,743	62,743	23,206	85,949	41,824
1981		140,029	140,029	27,538	167,567	112,405
1982		68,761	68,761	43,329	112,090	48,221
1983	77,260	66,838	71,683	5,810	77,493	50,563
1984	95,454	59,168	76,211	7,928	84,139	70,884
1985	237,261	138,498	184,747	29,747	214,494	157,943
1986			69,036	6,420	75,456	51,190
1987			39,264	4,077	43,342	27,981
1988			41,915	3,181	45,096	25,377
Averages						
79-88			79,474	15,954	95,428	61,321
80-88			83,821	16,804	100,625	65,154
1989			75,058	15,335	90,393	53,419
Tahltan sockeye run size						
1979			17,472	5,076	22,548	10,211
1980			19,137	11,239	30,376	11,018
1981			66,514	16,189	82,703	50,790
1982			42,493	24,785	67,278	28,257
1983			32,684	5,104	37,788	21,256
1984			37,571	3,251	40,822	32,777
1985			86,008	25,197	111,205	67,326
1986			31,015	2,757	33,771	20,280
1987			11,923	2,255	14,178	6,958
1988			7,222	2,129	9,351	2,536
Averages						
79-88			35,204	9,811	45,015	25,141
80-88			37,174	10,337	47,511	26,800
1989			14,111	1,556	15,667	8,316

a/ The averages are from averages of weekly stock composition and migratory timing estimates and do not necessarily equal the average of the season estimates.

b/ The marine catch includes test fishery catches.

Appendix C.1. Weekly salmon catch and effort in the Alaskan District 111 commercial drift gill net fishery, 1989.

Week	Start Date	Catch					Effort		
		Chinook	Sockeye	Coho	Pink	Chum	Boats	Days Open[a/]	Boat Days
25	18-Jun	495	6,119	19	49	298	63	3	189
26	25-Jun	451	7,093	61	2,809	1,206	63	3	189
27	02-Jul	332	10,378	329	26,440	2,820	74	3	222
28	09-Jul	217	17,345	487	52,643	4,171	78	3	234
29	16-Jul	120	14,993	683	45,015	4,753	69	3	207
30	23-Jul	54	8,032	1,114	28,897	2,052	59	3	177
31	30-Jul	20	3,976	1,577	17,736	1,104	38	3	114
32	06-Aug	6	2,518	1,507	2,819	438	18	3	54
33	13-Aug	28	1,718	3,568	3,642	1,180	43	3	129
34	20-Aug	16	1,471	13,357	507	3,454	62	3	186
35	27-Aug	34	301	13,460	34	7,773	104	2	208
36	03-Sep	29	48	5,963	6	3,330	61	2	122
37	10-Sep	6	24	5,218	0	2,982	45	1	45
38	17-Sep	3	3	4,469	0	1,416	45	1	45
Total		1,811	74,019	51,812	180,597	36,977	822	36	2,121

[a/] Subdistrict 111-20 was open an additional 2 days in weeks 30 and 31 and 1 day in week 32.

Appendix C.2. Weekly salmon catch and effort in the Alaskan District 111 test gill net fishery, 1989. The test fishery was operated in Port Snettisham.

Week	Start Date	Catch					Effort		
		Chinook	Sockeye	Coho	Pink	Chum	Boats	Days Open	Boat Days
27	02-Jul	2	5	0	4	14	1	0.27	0.27
28	09-Jul	2	8	19	0	9	1	0.16	0.16
29	16-Jul	0	35	0	60	51	1	0.25	0.25
30	23-Jul	0	26	1	170	54	1	0.23	0.23
31	30-Jul	1	11	0	74	17	1	0.22	0.22
Total[a/]		5	85	20	308	145	5	1.13	1.13

[a/] Not all fish caught were sold, therefore, fish ticket catch totals are incorrect.

Appendix C.3. Weekly stock proportions of sockeye salmon harvested in the Alaskan District 111 commercial drift gill net fishery, 1989. Data based on SPA. The Trapper and Mainstem groups were combined in the 1989 analysis.

Week	Kuthai	Little Trapper and Mainstem	Little Tatsamenie	Total Taku	Crescent	Speel
25	0.493	0.431	0.020	0.943	0.016	0.041
26	0.159	0.743	0.088	0.989	0.000	0.011
27	0.085	0.805	0.089	0.979	0.000	0.021
28	0.013	0.755	0.083	0.852	0.063	0.086
29	0.012	0.663	0.159	0.835	0.049	0.116
30	0.014	0.329	0.298	0.641	0.062	0.297
31	0.021	0.261	0.399	0.681	0.134	0.186
32	0.000	0.572	0.347	0.919	0.061	0.020
33	0.023	0.323	0.331	0.676	0.190	0.134
34	0.023	0.323	0.331	0.676	0.190	0.134
35	0.023	0.323	0.331	0.676	0.190	0.134
36	0.023	0.323	0.331	0.676	0.190	0.134
37	0.023	0.323	0.331	0.676	0.190	0.134
38	0.023	0.323	0.331	0.676	0.190	0.134
Total	0.077	0.616	0.156	0.848	0.051	0.100

Appendix C.4. Weekly stock-specific catch of Taku sockeye salmon harvested in the Alaskan District 111 commercial drift gill net fishery, 1989. Data based on SPA. The Trapper and Mainstem groups were combined in the 1989 analysis.

Week	Kuthai	Little Trapper and Mainstem	Little Tatsamenie	Total Taku	Crescent	Speel	Total Snettisham
25	3,014	2,636	120	5,770	99	250	349
26	1,125	5,267	626	7,018	0	75	75
27	880	8,353	923	10,156	0	222	222
28	219	13,103	1,448	14,770	1,090	1,485	2,575
29	181	9,944	2,390	12,515	741	1,737	2,478
30	112	2,643	2,391	5,146	498	2,388	2,886
31	83	1,037	1,586	2,706	531	739	1,270
32	1	1,440	873	2,314	153	51	204
33	39	554	568	1,161	326	230	557
34	33	475	486	994	279	197	477
35	7	97	100	203	57	40	98
36	1	15	16	32	9	6	16
37	1	8	8	16	5	3	8
38	0	1	1	2	1	0	1
Total	5,696	45,573	11,536	62,805	3,789	7,425	11,214

Appendix C.5. Weekly salmon and steelhead trout catch and effort in the Canadian commercial fishery in the Taku River, 1989.

		Catch							Effort		
Week	Start Date	Chinook Jacks	Chinook Large	Sockeye	Coho	Pink	Chum	Steel-head	Average Permits	Days Open	Permit Days
26	25-Jun	83	460	1,562	0	11	0	2	11.5	2.0	23.0
27	02-Jul	32	234	3,687	2	571	1	2	11.3	4.0	45.2
28	09-Jul	5	80	2,088	10	87	1	0	8.8	4.0	35.2
29	16-Jul	9	71	2,275	42	20	1	0	12.0	3.0	36.0
30	23-Jul	8	34	3,271	255	6	2	0	10.8	4.0	43.2
31	30-Jul	1	9	2,281	496	0	6	0	11.0	3.0	33.0
32	06-Aug	0	6	2,750	874	0	20	9	10.0	3.0	30.0
33	13-Aug	1	1	265	258	0	7	0	10.0	1.0	10.0
34	20-Aug	0	0	366	939	0	4	11	11.5	1.3	15.0
Total		139	895	18,545	2,876	695	42	24	96.9	25.3	270.6

Appendix C.6. Weekly stock proportions of sockeye salmon harvested in the Canadian commercial fishery in the Taku River, 1989. Data based on SPA. The Trapper and Mainstem groups were combined in the 1989 analysis.

Week	Kuthai	Little Trapper and Mainstem	Little Tatsamenie
26	0.316	0.649	0.035
27	0.108	0.789	0.103
28	0.008	0.860	0.133
29	0.009	0.904	0.087
30	0.006	0.856	0.138
31	0.004	0.520	0.477
32	0.012	0.595	0.394
33	0.000	0.632	0.368
34	0.000	0.632	0.368
Total	0.053	0.744	0.203

Appendix C.7. Weekly stock-specific catch of sockeye salmon in the Canadian commercial fishery in the Taku River, 1989. Data based on SPA. The Trapper and Mainstem groups were combined in the 1989 analysis.

Week	Kuthai	Little Trapper and Mainstem	Little Tatsamenie
26	493	1,014	55
27	398	2,908	381
28	16	1,795	277
29	21	2,057	197
30	21	2,799	451
31	9	1,185	1,087
32	32	1,635	1,083
33	0	168	97
34	0	231	135
Total	990	13,792	3,763

Appendix C.8. Weekly salmon and steelhead trout catch in the Canadian test fishery in the Taku River, 1989.

Week	Start Date	Chinook	Sockeye	Coho	Pink	Chum	Steelhead
25	18-Jun	19	34	0	0	0	0
26	25-Jun	10	28	0	0	0	0
27	02-Jul	1	24	0	0	0	0
28	09-Jul	1	11	0	0	0	0
29	16-Jul	0	10	0	0	0	0
30	23-Jul	0	15	3	0	0	0
31	30-Jul	0	11	7	0	1	0
32	06-Aug	0	32	18	0	0	0
33	13-Aug	0	10	20	0	0	0
34	20-Aug	0	12	49	0	0	0
35	27-Aug	0	16	320	0	0	3
36	03-Sep	0	2	222	0	0	7
37	10-Sep	0	2	161	0	0	6
38	17-Sep	0	0	53	0	0	3
39	24-Sep	0	0	127	0	12	7
40	01-Oct	0	0	31	0	0	0
Total		31	207	1,011	0	13	26

Appendix C.9. Weekly stock-specific catch of sockeye salmon in the Canadian test fishery in the Taku River, 1989. Data based on SPA, weekly stock proportions assumed the same as the commercial catch. The Trapper/Mainstem groups were combined in the 1989 analysis.

Week	Kuthai	Little Trapper and Mainstem	Little Tatsamenie
26	11	22	1
27	9	18	1
28	3	19	2
29	0	9	1
30	0	9	1
31	0	13	2
32	0	6	5
33	0	19	13
34	0	6	4
35	0	8	4
36	0	10	6
37	0	1	1
38	0	1	1
Total	23	142	42

Appendix C.10. Mark-recapture estimate of above border run of sockeye and coho salmon in the Taku River, 1989.

Week	Start Date	Above Border Run	Canadian Harvests			Above Border[b/] Escapement
			Commercial	Test	Food[a/]	
Sockeye						
22-24	28-May	14,601	0	0		14,601
25	18-Jun	18,884	0	34		18,850
26	25-Jun	28,228	1,562	28		26,638
27-28	02-Jul	14,505	5,775	35		8,695
29	16-Jul	16,805	2,275	10		14,520
30-31	23-Jul	11,448	5,552	15		5,881
32-40	06-Aug	9,597	3,381	85		6,131
Total		114,068	18,545	207	53	95,263
Coho						
25-29	18-Jun	1,425	54	0		1,371
30	23-Jul	878	255	3		620
31	30-Jul	2,693	496	7		2,190
32	06-Aug	300	874	18		(592)
33	13-Aug	9,598	258	20		9,320
34	20-Aug	8,385	939	49		7,397
35-40	27-Aug	37,562	0	914		36,648
Total[c/]		60,841	2,876	1,011	146	56,808

a/ Food fishery catch by week not available.
b/ Total above border escapement equals the sum of the period escapements minus the food fishery catch.
c/ Run size through October 1.

Appendix D.1. Salmon catches and effort in the Alaskan District 111 commercial drift gill net fishery, 1964-1989.

Year	Catch					Effort	
	Chinook	Sockeye	Coho	Pink	Chum	Boat Days	Days Open
1964	2,509	34,140	29,315	26,593	12,853	1,752	56.00
1965	4,170	27,569	32,667	2,768	11,533	1,461	63.00
1966	4,829	33,925	26,065	23,833	35,133	1,708	64.00
1967	5,417	17,735	40,391	12,372	22,834	1,792	53.00
1968	4,904	19,501	39,103	67,365	21,890	2,686	60.00
1969	6,986	41,169	10,802	73,927	15,049	1,552	41.50
1970	3,357	50,922	44,960	197,017	110,390	3,214	53.00
1971	6,958	66,181	41,830	31,484	91,145	3,004	55.00
1972	10,955	80,404	49,780	144,339	147,957	3,831	50.00
1973	9,799	85,317	35,453	58,186	109,245	3,532	38.00
1974	2,905	38,676	38,661	57,732	86,687	2,710	27.50
1975	2,182	32,513	1,185	9,567	2,678	1,240	15.50
1976	1,757	61,749	41,729	14,962	81,803	2,152	25.00
1977	1,068	70,097	54,917	88,578	61,102	2,603	27.00
1978	1,926	55,398	31,944	51,385	36,254	2,406	24.00
1979	3,702	122,376	16,192	152,410	61,200	2,493	28.83
1980	2,422	123,117	41,515	295,553	192,750	4,451	30.92
1981	1,720	49,765	26,803	255,029	76,092	2,862	30.00
1982	3,057	83,479	29,072	109,385	37,310	2,639	35.50
1983	888	31,627	21,443	66,080	15,188	1,411	34.00
1984	1,773	77,233	33,836	145,949	86,741	3,139	66.50
1985	2,651	88,192	55,597	311,248	106,720	3,888	48.00
1986	2,606	73,061	30,512	16,568	58,792	2,164	32.50
1987	2,105	74,457	35,173	355,725	121,862	3,009	35.75
1988	1,778	39,168	45,179	157,424	139,704	2,322	31.00
Averages							
64-88	3,697	59,111	34,165	109,019	69,716	2,561	41.02
80-88	2,111	71,122	35,459	190,329	92,795	2,876	38.24
1989	1,811	74,019	51,812	180,597	36,977	2,121	36.00

Appendix D.2. Stock proportions and catches of sockeye salmon in the Alaskan District 111 commercial drift gill net fishery, 1983-1989. Data based on SPA.

Year	Kuthai	Little[a/] Trapper	Mainstem	Little Tatsamenie	Total Taku	Crescent	Speel	Total Snettisham
Proportions								
1983					0.755			0.245
1984					0.758			0.242
1985					0.838			0.162
1986	0.061	0.266	0.303	0.204	0.834	0.090	0.076	0.166
1987	0.078	0.234	0.376	0.031	0.720	0.157	0.123	0.280
1988	0.118	0.158	0.305	0.082	0.663	0.266	0.071	0.337
Averages	0.086	0.219	0.328	0.106	0.761	0.171	0.090	0.261
1989	0.077	0.616		0.156	0.848	0.051	0.100	0.152
Catches								
1983					23,878			7,749
1984					58,543			18,690
1985					73,905			14,287
1986	4,489	19,441	22,104	14,900	60,934	6,610	5,516	12,127
1987	5,834	17,418	28,002	2,328	53,581	11,695	9,181	20,876
1988	4,627	6,192	11,940	3,214	25,973	10,430	2,765	13,195
Averages	4,983	14,350	20,682	6,814	49,469	9,579	5,821	15,399
1989	5,696	45,573		11,536	62,805	3,789	7,425	11,214

[a/] The Trapper and Mainstem groups were combined in the 1989 analysis.

Appendix D.3. Proportion of Taku River sockeye salmon in the Alaskan District 111 commercial drift gill net catch, 1983-1989. Data based on SPA.

Week	1983	1984	1985	1986	1987	1988	1989
25		0.970	0.999	0.938			0.943
26	0.996	0.956	0.986	0.953	0.982	0.964	0.989
27	0.842	0.843	0.928	0.873	0.901	0.886	0.979
28	0.819	0.670	0.974	0.880	0.884	0.889	0.852
29	0.663	0.588	0.868	0.852	0.948	0.510	0.835
30	0.527	0.712	0.706	0.777	0.414	0.643	0.641
31	0.836	0.728	0.737	0.851	0.619	0.677	0.681
32	0.534	0.809	0.826	0.757	0.689	0.528	0.919
33	0.719	0.726	0.801	0.893	0.841	0.478	0.676
34	0.759			0.739	0.731	0.346	
Total	0.755	0.758	0.838	0.834	0.718	0.663	0.848

Appendix D.4. Salmon catch in the U.S. subsistence and personal use fisheries in the Taku River. The subsistence fishery was open 1967 to 1976 and 1985 and the personal use fishery was open 1989.

	Catch				
Year	Chinook	Sockeye	Coho	Chum	Pink
1967	0	103	221	25	9
1968	3	41	196	10	19
1969	0	122	8	0	11
1970	0	304	0	8	20
1971	0	512	0	0	42
1972	0	554	0	7	103
1973	0	1,227	0	14	64
1974	0	1,431	0	5	118
1975	0	170	0	0	3
1976	0	351	4	0	22
1985	0	924	35	1	19
1989	33	749	73	25	765

Appendix D.5. Salmon and steelhead trout catch and effort in the Canadian commercial fishery in the Taku River, 1979-1989.

	Catch							Effort	
	Chinook								
Year	Jacks	Large	Sockeye	Coho	Pink	Chum	Steelhead	Boat Days	Days Open
1979		97	13,578	6,006	13,661	15,474	254	599.0	50.00
1980		225	22,602	6,405	26,821	18,516	457	479.0	39.00
1981		159	10,922	3,607	10,771	5,591	108	243.0	31.25
1982		54	3,144	51	202	3	1	38.0	13.00
1983	400	156	17,056	8,390	1,874	1,760	213	390.0	64.00
1984	221	294	27,242	5,357	6,964	2,492	367	288.0	30.00
1985	24	326	14,244	1,770	3,373	136	32	178.0	16.00
1986	77	275	14,739	1,783	58	110	48	148.0	17.00
1987	106	127	13,554	5,599	6,250	2,270	223	281.0	26.00
1988	186	555	12,014	3,123	1,030	733	86	185.4	14.70
Averages[a/]									
79-88		328	14,910	4,209	7,100	4,709	179	282.9	30.10
80-88		354	15,057	4,009	6,371	3,512	171	247.8	27.88
1989	139	895	18,545	2,876	695	42	24	270.6	25.30

a/ Chinook averages are for large fish and jacks combined.

Appendix D.6. Sockeye salmon stock proportions and catch by stock in the Canadian commercial fishery in the Taku River, 1986-1989. Data based on SPA.

Year	Kuthai	Little[a/] Trapper	Mainstem	Little Tatsamenie
Proportions				
1986	0.111	0.397	0.350	0.143
1987	0.062	0.201	0.649	0.088
1988	0.143	0.417	0.343	0.098
Averages 86-88	0.105	0.338	0.447	0.110
1989	0.053	0.744		0.203
Catch				
1986	1,629	5,855	5,152	2,103
1987	834	2,728	8,793	1,199
1988	1,715	5,005	4,122	1,172
Averages 86-88	1,393	4,529	6,022	1,491
1989	990	13,792		3,763

[a/] The Trapper and Mainstem groups were combined in the 1989 analysis.

Appendix D.7. Salmon and steelhead trout catch in the Canadian test fishery in the Taku River, 1987-1989.

	Catch					
Year	Chinook	Sockeye	Coho	Pink	Chum	Steelhead
1987		237	807			
1988	72	708	422	52	222	14
1989	31	207	1,011	0	13	26

Appendix D.8. Sockeye salmon escapement counts of Taku River and Port Snettisham stocks, 1983-1989.

	Taku Above Border[a/]		Little Trapper Weir	Little Tatsamenie Weir	Hackett Weir	Crescent Weir	Speel Weir
	Run	Escapement					
1983			7,402[b/]			19,422	10,484
1984	133,414	106,172	13,084			6,707	9,764
1985	118,160	103,916	14,889[b/]	13,015	2,308	7,249	7,073
1986	105,109	90,370	13,820[b/]	11,368	1,004	3,414	5,857
1987	87,130	73,339	12,007	2,794	910	7,839	9,319
1988	87,028	74,061	10,629	2,063	516	1,199	969
Averages 83-88	106,168	89,572	11,972	7,310	1,185	7,638	7,244
1989	114,068	95,263	9,556	3,039		1,109[c/]	12,229

a/ Tag-recovery estimates
b/ Weir count plus spawning ground survey.
c/ Count may be low due to fish passage over weir during high water.

Appendix D.9. Aerial survey index escapement counts of Taku River chinook salmon and estimated escapements to the entire Taku drainage, 1977-1989.

								Taku Drainage	
Year	Kowatua	Tatsamenie	Dudidontu	Tseta	Hackett	Nakina	Nahlin	U.S.[a/]	Canada[b/]
1977						3,850	650	10,000	11,342
1978						1,620	624	4,987	6,610
1979						2,110	857	6,593	8,312
1980						4,500	1,531	13,402	15,088
1981						5,110	2,945	17,900	19,572
1982						2,533	1,246	8,398	9,626
1983						968	391	3,020	4,124
1984	279	616		176[c/]		1,887	951[d/]	6,307	7,818
1985	699	848	475	303		2,647	2,236	10,851	14,416
1986	548	886	413	193		3,868	1,612	12,178	15,040
1987	570	678	287	180		2,906	1,122	8,951	11,486
1988	1,010	874	243	66	1,536	4,500	1,535	13,411	16,954
Averages 77-88						3,042	1,308	9,666	11,699
80-88	621	780	355	184		3,213	1,508	10,491	12,680
1989	601	1,228	204	494		5,141	1,812	15,451	18,784

a/ U.S. estimate: combined Nakina and Nahlin aerial escapement counts, expanded by 1/.45.
b/ Canadian estimate: combined survey counts of Nakina, Nahlin, Kowatua, Tatsatua, Tseta, and Dudidontu Rivers, expanded by 2.0.
c/ Partial survey
d/ Extrapolated results.

Appendix D.10. Taku River (above border) coho run size, 1987-1989.

Year	Canadian Catch			Above Border	
	Commercial	Food	Test	Escapement	Run
1987	5,599		807	55,570	61,976[a/]
1988	3,123	98	422	39,450	43,093[b/]
1989	2,876	146	1,011	56,808	60,841[c/]

a/ Mark-recapture estimate through 9/20 was 43,570. Run through 10/05 estimated using inriver test fish CPUE.
b/ Mark-recapture estimate through 9/18.
c/ Mark-recapture estimate through 10/01.

Appendix D.11. Escapement counts of Taku River coho salmon, 1984-1989. Counts are for age-.1 fish and do not include jacks.

Year	Yehring Creek Weir	Flannigan Slough (Aerial)	Tatsamenie River Weir	Hackett River Weir	Dudidontu River (Aerial)	Upper Nahlin River (Aerial)
1984		1,480				
1985		2,320	201[a/]	1,031		
1986	1,988[a/]	1,095	344[a/]	2,723	108	318
1987	1,622[a/]	2,100	173[a/]	1,715	276	165
1988	1,423	1,241[b/]	663[a/]	1,260	367	694[c/]
Averages 84-88	1,678	1,647	345	1,682	250	392
1989	1,444[d/]	1,464	712	[e/]	115	322

a/ Weir count combined with spawning ground count.
b/ Count is an average of 6 surveys by different observers.
c/ Weir count of 1,322.
d/ Weir was storm damaged on October 3 and an unknown portion of the run escaped uncounted.
e/ Weir discontinued in 1989.

Appendix D.12. Taku River sockeye run size, 1984-1989. Run estimate does not include spawning escapements below the U.S./Canada border.

Year	Canadian Catch			Escapement	Above Border Run	U.S. Catch[a/]	Total Run
	Commercial	Food	Test				
1984	27,242			106,172	133,414	58,543	191,957
1985	14,244			103,916	118,160	74,829	192,989
1986	14,739			90,370	105,109	60,934	166,043
1987	13,554		237	73,339	87,130	54,611[b/]	141,741
1988	12,014	245	708	74,061	87,028	25,973	113,001
Averages							
84-88	16,359			89,572	106,168	54,978	161,146
1989	18,545	53	207	95,263	114,068	63,554	177,622

a/ Included subsistence and personal use catches.
b/ Includes test fishery catch of 1,030 Taku sockeye salmon in 1987.

Appendix E.1. Weekly salmon catch and effort in the U.S. commercial fishery in the Alsek River, 1989. Numbers include surf and inriver fisheries.

Week	Start Date	Catch					Effort		
		Chinook	Sockeye	Coho	Pink	Chum	Boats	Days Open	Boat Days
24	11-Jun	160	1,635	0	0	0	27	1	27
25	18-Jun	51	2,292	0	0	0	24	2	48
26	25-Jun	10	2,641	0	0	0	21	2	42
27	02-Jul	4	2,612	0	0	0	26	2	52
28	09-Jul	1	974	0	0	1	11	2	22
29	16-Jul	1	1,764	0	1	0	10	2	20
30	23-Jul	0	1,006	3	1	2	8	2	16
31	30-Jul	1	372	0	0	3	4	0.5	2
32	06-Aug	0	139	0	0	0	4	0.5	2
33	13-Aug	0	5	0	0	2	[a]	0.5	[a]
34	20-Aug	0	42	79	0	5	[a]	3	[a]
35	27-Aug	0	12	144	0	5	[a]	3	[a]
36	03-Sep	0	9	852	0	43	5	3	15
37	10-Sep	0	8	1,793	0	193	10	3	30
38	17-Sep	0	2	1,410	0	264	9	3	27
39	24-Sep	0	0	1,018	0	361	9	3	27
40	01-Oct	0	0	673	0	152	5	3	15
Total		228	13,513	5,972	2	1,031	181	35.5	355

[a] Effort not reported by week, effort for these weeks is included in the total.

Appendix E.2. Weekly salmon catch and effort in the Canadian fisheries in the Alsek River, 1989.

Week	Date	Chinook				Sockeye				Coho			
		Sport	Release	Food	Total[a]	Sport	Release	Food	Total[a]	Sport	Release	Food	Total[a]
25	18-Jun	5	0	0	5	0	0	0	0	0	0	0	0
26	25-Jun	12	4	0	12	0	2	0	0	0	0	0	0
27	02-Jul	62	8	3	65	0	11	0	0	0	0	0	0
28	09-Jul	63	14	24	87	0	2	5	5	0	0	0	0
29	16-Jul	50	11	34	84	0	0	0	0	0	0	0	0
30	23-Jul	75	94	82	157	0	9	0	0	0	0	0	0
31	30-Jul	1	0	13	14	1	8	0	1	0	0	0	0
32	06-Aug	2	1	2	4	0	1	133	133	0	0	0	0
33	13-Aug	1	1	6	7	0	0	176	176	0	0	0	0
34	20-Aug	1	0	2	3	14	0	184	198	0	0	0	0
35	27-Aug	0	0	1	1	20	3	148	168	0	0	0	0
36	03-Sep	0	0	0	0	97	40	471	568	0	0	0	0
37	10-Sep	0	0	0	0	35	85	479	514	0	0	0	0
38	17-Sep	0	0	0	0	33	24	205	238	0	0	0	0
39	24-Sep	0	0	0	0	16	41	105	121	0	0	0	0
40	01-Oct	0	0	0	0	35	71	0	35	4	10	0	4
41	08-Oct	0	0	0	0	30	65	0	30	24	30	0	24
42	15-Oct	0	0	0	0	38	20	0	38	119	95	0	119
Totals		272	133	167	439	319	382	1,906	2,225	227	230	0	227

[a] Does not include released fish.

Appendix E.3. Salmon catch and effort in the U.S. commercial fishery in the Alsek River, 1964-1989.

Year	Catch					Effort	
	Chinook	Sockeye	Coho	Pink	Chum	Boat Days	Days Open
1964	591	14,127	9,760	144	367	592	72.00
1965	719	28,487	9,638	10	72	1,016	72.00
1966	934	29,091	2,688	22	240	500	68.00
1967	225	11,108	10,090	107	30	600	68.00
1968	215	26,918	10,586	82	240	664	68.00
1969	685	29,259	2,493	38	61	807	61.00
1970	1,128	22,654	2,188	6	26	670	52.25
1971	1,222	25,314	4,730	3	120	764	60.50
1972	1,827	18,717	7,296	37	280	640	65.00
1973	1,757	26,523	4,395	26	283	894	52.00
1974	1,162	16,747	7,046	13	107	699	46.00
1975	1,379	13,842	2,230	16	261	738	58.00
1976	512	19,741	4,883	0	368	550	58.50
1977	1,402	40,780	11,817	689	483	893	57.00
1978	2,441	50,580	13,913	59	233	948	57.00
1979	2,525	41,449	6,158	142	263	1,146	51.00
1980	1,382	25,589	7,863	21	1,005	794	42.00
1981	779	23,697	10,096	65	816	500	41.00
1982	532	27,389	6,534	6	358	497	36.00
1983	94	18,546	5,253	20	432	466	38.00
1984	60	14,326	7,868	24	1,610	455	33.00
1985	213	5,940	5,622	3	427	271	33.00
1986	478	24,791	1,344	13	462	517	34.00
1987	347	11,281	2,517	0	1,924	388	40.50
1988	223	6,286	4,986	7	907	324	34.00
Averages							
64-88	913	22,927	6,480	62	455	653	52
80-88	456	17,538	5,787	18	882	468	37
1989	228	13,513	5,972	2	1,031	355	35.50

Appendix E.4. Salmon catch in the U.S. subsistence fishery in the Alsek River, 1976-1989.

Year	Catch		
	Chinook	Sockeye	Coho
1976	13	51	5
1977	18	113	0
1978	a/	a/	a/
1979	80	35	70
1980	57	41	62
1981	32	50	74
1982	87	75	50
1983	31	25	50
1984	a/	a/	a/
1985	16	95	0
1986	22	241	45
1987	27	173	31
1988	13	148	9
Averages			
76-88	36	95	36
80-88	36	106	40
1989	10	97	54

a/ Data not available

Appendix E.5. Salmon catches in the Canadian food and sport fisheries in the Alsek River, 1976-1989.

Year	Chinook			Sockeye			Coho		
	Food	Sport	Total	Food	Sport	Total	Food	Sport	Total
1976	125	200	325	3,750	600	4,350	0	100	100
1977	250	300	550	11,350	500	11,850	0	200	200
1978	300	300	600	7,850	500	8,350	0	200	200
1979	130	650	780	5,260	750	6,010	0	100	100
1980	150	200	350	900	600	1,500	0	200	200
1981	150	315	465	1,900	808	2,708	0	109	109
1982	400	224	624	4,800	755	5,555	0	109	109
1983	300	312	612	2,475	732	3,207	0	16	16
1984	100	475	575	2,500	289	2,789	0	20	20
1985	175	250	425	1,361	100	1,461	50	100	150
1986	102	165	267	1,914	307	2,221	0	9	9
1987	125	367	492	1,158	383	1,541	0	49	49
1988	43	249	292	1,604	322	1,926	0	192	192
Averages									
76-88	181	308	489	3,602	511	4,113	4	108	112
80-88	172	284	456	2,068	477	2,545	6	89	95
1989	167	272	439	1,906	319	2,225	0	227	227

Appendix E.6. Klukshu River weir counts of chinook, sockeye, and coho salmon, 1976-1989. The escapement = weir count - food fishery catch.

Year	Chinook		Sockeye				Coho
	Count	Escape.	Early[a/]	Late	Total	Escape.	Count[b/]
1976	1,278	1,153	181	11,510	11,691	7,941	1,572
1977	3,144	2,894	8,931	17,860	26,791	15,441	2,758
1978	2,976	2,676	2,508	24,359	26,867	19,017	30
1979	4,404	4,274	977	11,334	12,311	7,051	175
1980	2,637	2,487	1,008	10,742	11,750	10,850	704
1981	2,113	1,963	997	19,351	20,348	18,448	1,170
1982	2,369	1,969	7,758	25,941	33,699	28,899	189
1983	2,537	2,237	6,047	14,445	20,492	18,017	303
1984	1,672	1,572	2,769	9,958	12,727	10,227	1,402
1985	1,458	1,283	539	18,081	18,620	17,259	350
1986	2,709	2,607	416	24,434	24,850	22,936	71
1987	2,616	2,491	3,269	7,235	10,504	9,346	202
1988	2,037	1,994	585	8,756	9,341	7,737	2,774
Averages							
76-88	2,458	2,277	2,768	15,693	18,461	14,859	900
80-88	2,239	2,067	2,599	15,438	18,037	15,969	796
1989	2,456	2,289	3,400	20,142	23,542	21,636	2,219

a/ Includes sockeye counts up to and including August 15.
b/ Weir was removed prior to the end of the coho run.

Appendix E.7. Alsek River sockeye counts from U.S. and Canadian aerial surveys and from the electronic counter at Village Creek, 1985-1989.

Year	U.S. Aerial Surveys[a/]				Canadian Aerial Surveys[b/]		
	Basin Creek	Cabin Creek	Muddy Creek	Tanis River	Tatshenshini River	Neskataheen Lake	Village Creek Counter
1985	2,600			2,200			
1986	100		300	2,700	536	750	1,490
1987	350	220		1,600			1,875
1988	500			750	433	456	433[c/]
1989	320			680	1,689	1,700	9,577

a/ Surveys not made every year at each tributary.
b/ Included several streams from Lo-Fog to Goat Creek.
c/ Incomplete count due to machine malfunction.

Appendix E.8. Aerial survey index counts of Alsek chinook escapements, 1984-1989.

Year	Blanchard River	Takhanne River	Goat Creek
1984	304	158	28
1985	232	184	
1986	556	358	142
1987	624	295	85
1988	437	169	54
1989	[a/]	158	34

[a/] Not surveyed due to poor visibility.

Appendix E.9. Aerial survey counts of coho salmon from U.S. lower Alsek River tributaries, 1984-1989.

Year	Combined U.S. Tributary Counts
1985	450
1986	1,100
1987	100
1988	1,900
1989	1,990