

**PACIFIC SALMON COMMISSION JOINT  
TRANSBOUNDARY TECHNICAL COMMITTEE**

**ESTIMATES OF TRANSBOUNDARY RIVER SALMON  
PRODUCTION, HARVEST AND ESCAPEMENT AND A REVIEW OF JOINT  
ENHANCEMENT ACTIVITIES IN 1997**

**REPORT TCTR (05)-4**

December 2005

## **ACRONYMS**

ADF&G	Alaska Department of Fish and Game
AF	Aboriginal Fishery
CPUE	Catch per unit effort
DFO	Department of Fisheries and Oceans (Canada)
DIPAC	Douglas Island Pink and Chum (Private Hatchery)
ESSR	Excess Salmon to Spawning Requirement (surplus fishery license)
IHN	Infectious Hematopoietic Necrosis (a virus which infects sockeye salmon)
LCM	Latent Class Model
MEF	Mid-Eye-Fork (fish length measurement)
POH	Post-Orbital-Hyperal (fish length measurement)
SMM	Stikine Management Model
SPA	Scale Pattern Analysis
TAC	Total Allowable Catch
TRTFN	Taku River Tlingit First Nation
TBR	Transboundary River
TTC	Transboundary Technical Committee
PSC	Pacific Salmon Commission

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## EXECUTIVE SUMMARY

Estimates of catches and escapements of Pacific salmon returning to the transboundary Stikine, Taku, and Alsek rivers for 1997 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 inseason management models is discussed. Results from transboundary river sockeye salmon *Oncorhynchus nerka* enhancement projects are also reviewed.

### STIKINE

The 1997 Stikine sockeye salmon run is estimated at 219,804 fish, of which an estimated 167,578 fish were harvested in various fisheries, 2,294 fish were used for broodstock, 52,226 fish escaped to spawn, and 8,091 fish returned to the Tuya system and were not taken in any fisheries. The catch was the second highest recorded since 1982 when stock identification techniques were first used for marine catches. The run was the third highest since 1979 and was above the 1987-1996 average of 171,280 sockeye salmon. The estimated U.S. commercial catch of Stikine sockeye salmon in Districts 106 and 108 was 101,773 fish; the Canadian inriver commercial, aboriginal, and excess salmon to spawning requirement (ESSR) fishery catches were 59,194, 6,365, and 2,199, respectively. The inriver test fishery catch included 245 sockeye salmon and sampling for otoliths at the Tahltan weir took 378 sockeye salmon. Sockeye salmon from outplants into Tahltan and Tuya lakes contributed an estimated 50,487 and 25,721 fish to the U.S. and Canadian catches, respectively. The postseason estimate of 244,193 sockeye salmon was slightly above the preseason forecasts of 210,896 fish. The Stikine Management Model (SMM) correctly predicted a larger than average sockeye salmon run. Weekly inseason model forecasts ranged from 223,300 to 248,400 sockeye salmon; the final inseason model predictions were 234,100 (Canada) and 232,000 (U.S.). Canadian and U.S. final inseason estimates of run size were different primarily due to differences in updates to the commercial catch data input. Differences in estimated total allowable catch (TAC) were due to Canada using a total escapement goal of 78,000 (24,000 for Tuya stock) and the US using 54,000 (none for the enhanced Tuya stock). Using the inseason model estimates, Canada harvested below its TAC, whereas, the U.S. exceeded its TAC by approximately 23%. Using the postseason estimate of run size and a total allowable catch which allows for the same rate of escapement for Tuya fish as Tahltan fish (an escapement of 17,840 enhanced Tuya stock to allow for sufficient Tahltan escapement assuming the same harvest rate on both stocks), Canada harvested 44% (45% including ESSR catch) of the total allowable catch and the U.S. harvested 69% of the total allowable catch. The broodstock take and otolith sampling removed 2,294 and 378 sockeye salmon, respectively, from the escapement to Tahltan Lake leaving a spawning escapement of 9,811 fish, 59% below the goal of 24,000 fish. The estimated spawning escapement of 31,653 Mainstem Stikine sockeye salmon was within the escapement goal range (20,000 to 40,000 fish) for this stock group.

The catch of chinook salmon *O.tshawytscha* in Canadian commercial and aboriginal fisheries in the Stikine River was 4,483 large fish and 286 jacks, 118% above and 43% below the respective previous 10-year (1987-1996) averages. An additional 30 chinook salmon were taken in the Canadian inriver test fishery. The U.S. marine catch of chinook salmon in the District 106 and 108 mixed stock gillnet fisheries was 3,641 fish, approximately 58% above the 1987-1996

average catch. The chinook salmon spawning escapement of 5,557 large adults through the Little Tahltan River weir in 1997 was 5% above the joint U.S./Canada escapement goal of 5,300 fish but 4% below the 1987-1996 average. Surveys of other Stikine tributaries showed below average escapements.

The U.S. marine harvest of Stikine River coho salmon *O. kisutch* is unknown since there is no stock identification program for this species. Coho salmon catches of 77,550 and 2,140 fish in Districts 106 and 108, respectively, were 54% and 85% below the 1987-1996 averages. Alaskan hatchery fish comprised approximately 25% (19,683 fish) of the coho salmon harvest from the two districts. The Canadian inriver coho salmon catch of 401 fish was 88% below the previous 10-year average. Test fishery catches of coho salmon were too low to allow estimation of the total coho salmon run or of the total spawning escapement. Aerial surveys of six coho salmon spawning index sites indicated below average spawning escapement

## **TAKU**

The postseason estimate of the 1997 Taku sockeye salmon run is 175,866 fish, including an estimated catch of 104,780 fish and an above-border spawning escapement of 71,086 fish. The run size and catch were 37% and 33% below the 1987-1996 averages, and the escapement was 35% below average but within the escapement goal range of 71,000 to 80,000 fish. An estimated 78,288 Taku sockeye salmon was taken in the District 111 commercial fishery and 2,140 sockeye salmon in the U.S. inriver personal use fisheries. Canadian inriver commercial and aboriginal fishery catches were 24,003 and 349 sockeye salmon, respectively. Since the escapement goal is expressed as a range, the resulting total allowable catch is also expressed as a range. In 1997, Canada harvested an estimated 24% to 27%, and the U.S. took 71% to 78% of the total allowable catch.

The catch of large chinook salmon in the Canadian commercial fishery in the Taku River was 2,731 fish, 94% above the 1987-1996 average; in addition, 84 jack chinook salmon were caught compared to an average of 199 fish. The Canadian aboriginal fishery in the Taku River harvested 103 large chinook salmon. The chinook salmon catch in the District 111 mixed stock gillnet fishery was 2,804 fish, 17% below the 1987-1996 average. Seventeen percent of the catch was estimated to be of Alaska hatchery origin. Escapement observed in six Taku River chinook salmon index tributaries was the second highest recorded. The combined aerial count for the index tributaries was 13,849 fish, which was 27% above the previous 10-year average of 10,896 fish, and 5% above the index escapement goal of 13,200 fish.

The estimated above border run size of Taku River coho salmon run in 1997 was 49% below the 1987-1996 average. The above-border inriver run size is estimated at 35,035 coho salmon. The Canadian inriver commercial and aboriginal fishery catches totaled 2,690 coho salmon, 50% below the previous 10-year average. After Canadian catches are subtracted from the above-border run, the above-border spawning escapement is estimated at 32,345 coho salmon, which slightly exceeds the interim escapement goal range of 27,500 to 35,000 fish. The U.S. harvest of 3,515 coho salmon in the District 111 mixed stock fishery was 4% of the previous 10-year average and was the lowest catch since 1975. Alaskan hatcheries contributed an estimated 16% of the District 111 harvest, or 550 fish.

The catch of pink salmon *O. gorbuscha* in District 111 was 51,424 fish, 30% of the 1987-1996 average catch. There was no reported harvest of pink salmon in the Canadian commercial

inriver fishery. The escapement of pink salmon to the Taku River was poor as evidenced by the fish wheel catch of 4,962 pink salmon, 28% of the previous 10-year average.

The catch of chum salmon *O. keta* in the District 111 fishery was 176,864 fish; composed of 173,804 summer run fish (prior to mid-August) and 3,060 fall run fish. The catch of summer chum salmon, primarily Alaskan hatchery stocks, was 12% above the previous 10-year average. The catch of fall chum salmon, composed of wild Taku River and Port Snettisham stocks, was 12% of the previous 10-year average. The harvest of chum salmon in the Canadian inriver fishery totaled 1 fish. Spawning escapement appeared to be poor; the Canyon Island fish wheel catch of 485 chum salmon was 26% below average.

## **ALSEK**

The Alsek River sockeye salmon harvest of 26,672 fish was about 54% above the 1987-1996 average of 17,278 fish. Canadian catches of 484 sockeye salmon in the aboriginal fishery and 36 in the sport fishery were the lowest on record, 74% and 90% below average, respectively. The low catch was the result of closures in the sport and aboriginal fisheries due to conservation concerns. The escapement to the Klukshu River weir of 11,496 fish was 32% below the 1987-1996 average. The Klukshu weir count of 6,565 early run (count through August 15) was 94% above the previous 10-year average, whereas the count of 4,931 late-run sockeye salmon was the lowest on record and was 63% below average. Normally the late run dominates, averaging 13,468 through the Klukshu weir compared to the early run average of 3,424 fish. Counts in other index areas (Tanis Creek, Basin Creek and Village Creek) were below average.

The chinook salmon run to the Alsek River seemed about average. The U.S. Dry Bay catch of 568 chinook salmon was about 48% above the 1987-1996 average of 383 fish. The combined Canadian sport and aboriginal fishery catch of 530 fish was 22% below the previous 10-year average. The 2,989 chinook salmon count through the Klukshu River weir was 2% above the previous 10-year average of 2,919 fish. Aerial survey index counts of other spawning systems were below average. The standing goal for the Klukshu River chinook salmon escapement is 4,700 fish; the proposed revised goal, still under review, is 1,100 to 2,300 fish. Aerial survey index counts of other spawning systems were below average.

The coho salmon run to the Alsek River was above average, but current stock assessment programs prevent an accurate comparison with historical runs. The U.S. Dry Bay catch of 11,427 coho salmon was 233% above the 1987-1996 average of 4,909 fish, while the combined Canadian inriver aboriginal and sport fishery catch of 5 fish was the lowest on record and was 97% below the previous 10-year average. The low catch was due to closures in the fisheries due to sockeye salmon conservation concerns. The operation of the Klukshu weir does not provide a complete enumeration of coho salmon into this system since it is removed before the run is over; however, it does provide a suitable annual index. The count of 307 coho salmon was the lowest count since 1987 and was 87% below the previous 10-year average of 2,429 fish.

## **ENHANCEMENT**

Eggs and milt were collected from the 1997 sockeye salmon escapements at Tahltan and Tatsamenie lakes. A total of 3.2 million eggs was collected at Tahltan Lake, 47% below the 6.0 million egg-take goal; the goal was not attained due to poor escapement to the lake in 1997. The Tatsamenie Lake egg-take goal was increased to 5.0 million in 1996 from the old goal of 2.5 million; the new goal was realized in 1997 with the collection of 5.0 million eggs.

Outplants of 1996 brood year sockeye salmon fry in June and July, 1997 included 2,248,000 fry into Tahltan Lake, 2,611,000 fry of Tahltan Lake origin into Tuya Lake, and 3,941,000 fry into Tatsamenie Lake. Green-egg to planted-fry survivals were 71%, 81%, and 80% for these outplants, respectively. Survival to emergence was generally at expected levels even though there was a loss of approximately 682,000 fry due to Infectious Hematopoietic Necrosis (IHN). Losses from IHN have occurred in the past at Snettisham Hatchery and are expected in sockeye salmon culture; Snettisham Hatchery has a good history of minimizing losses due to IHN.

Sampling of outmigrating smolts was conducted at lake systems that had been stocked with sockeye salmon fry. Large numbers of sockeye salmon smolts were captured at all lakes except Trapper Lake. Total emigration from Tahltan Lake in 1997 was an estimated 518,000 smolts; of which 170,000 originated from fry plants. As in past years, smolts outmigrating from Tuya Lake in the spring were large in size. At Tatsamenie Lake, the smolt mark-recapture program tested in 1996 was not conducted in 1997 due to budgetary constraints. No outmigrating smolts were captured from Trapper Lake in 1997 although the sampling effort was limited; fry plants in Trapper Lake were suspended in 1996 and only age 2+ smolts would have been left in this system.

The State of Alaska transferred the operation of the Snettisham Hatchery on July 1, 1996 from the Alaska Department of Fish and Game (ADF&G) to Douglas Island Pink and Chum, Inc. (DIPAC), a private aquaculture organization with two other operational hatcheries in Juneau. A co-operative agreement between ADF&G and DIPAC provides for Snettisham to continue to serve the needs of the joint transboundary river enhancement projects. The egg incubation and thermal marking program at Snettisham Hatchery went smoothly in 1997.

Adult sockeye salmon otoliths were processed inseason by the ADF&G otolith lab to estimate the weekly contribution of sockeye salmon originating from fry plants to the District 106, 108, and 111 gillnet fisheries. Contributions of hatchery sockeye salmon to Alaskan catches were as follows: 16,700 Stikine sockeye salmon to District 106; 33,800 Stikine sockeye salmon to District 108; and, 2,000 Taku sockeye salmon to District 111. Estimates of contributions to Canadian fisheries included: 24,200 Stikine sockeye salmon to Stikine River fisheries; and 700 Taku sockeye salmon to the Taku River fisheries.

## **INTRODUCTION**

This report presents estimates of the 1997 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 most species are reported from weir counts or other escapement monitoring techniques. Sockeye salmon runs to the three rivers are reconstructed using harvest data and spawning escapement estimates. Joint enhancement activities on the Stikine and Taku rivers are also summarized.

In previous years, the Transboundary Technical Committee (TTC) met prior to the season to update joint management and enhancement plans and determine forecasts for run strength and initial total allowable catch (TAC) estimates for the various species and rivers. However, the planned management meeting, to have been held in Whitehorse in May 1997, was canceled by the Canadian government due to problems regarding Pacific Salmon Commission treaty deliberations; therefore a joint management plan was not written for the 1997 season.

Run reconstruction analyses are conducted on the sockeye salmon runs to the three rivers for the purpose of evaluating the stocks and the fisheries managed for these stocks. No estimates of marine catch are made for Alaskan fisheries outside of District 106 and 108 for Stikine stocks, District 111 for Taku stocks and Subdistrict 182-30 & 31 for Alsek stocks. Therefore, the total catches of transboundary stocks made for this report will not match estimates made for the Joint Interception Committee Report.

### **STIKINE RIVER**

Stikine River salmon are harvested by U.S. gillnet fisheries in Alaskan Districts 106 and 108, by Canadian commercial gillnet fisheries located in the lower and upper Stikine River, and by a Canadian Aboriginal fishery in the upper portion of the river (Figure 1). A small sport fishery also exists in the Canadian portion of the Stikine drainage. In 1995, a United States personal use fishery was established in the lower Stikine River; no catches were reported in this fishery in 1995 through 1997. Additional catches of unknown quantity are taken in U.S. troll and seine fisheries and in sport fisheries near Wrangell and Petersburg. In 1996, the spring experimental troll area in the District 9 portion of Frederick Sound was expanded to target hatchery chinook salmon; four previous areas were combined into one large area that also included previously unopened waters. This area was the same in 1997.



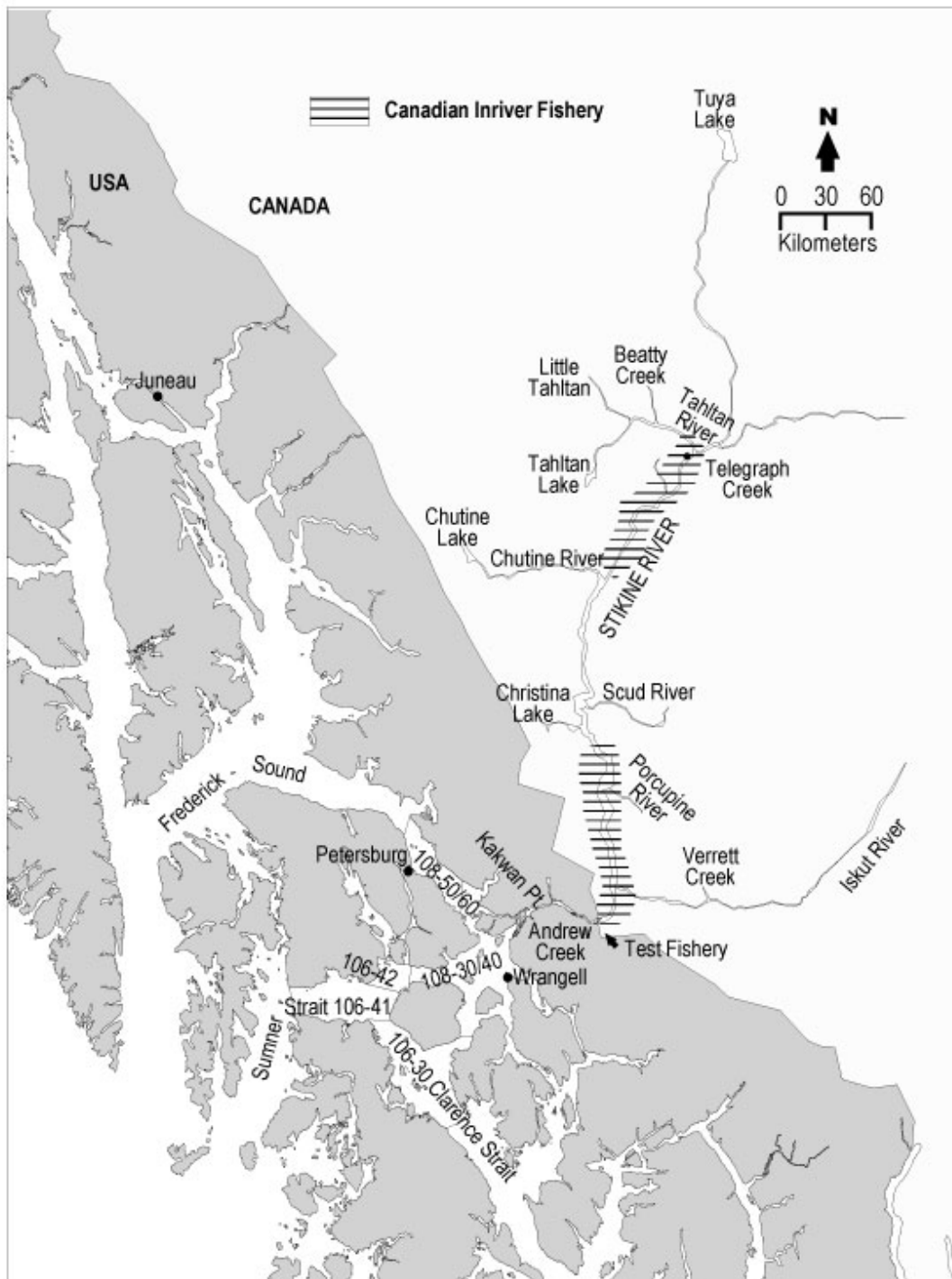


Figure 1. The Stikine River and principal U.S. and Canadian fishing areas.

## **HARVEST REGULATIONS AND THE JOINT MANAGEMENT MODEL**

Prior to the 1997 season, the Pacific Salmon Commission or Canadian and United States governments or stakeholder groups did not negotiate harvest arrangements for Stikine salmon. As a result, the Parties unilaterally developed the following management plans for the 1997 season:

1. Canada developed a fishing plan for the Stikine River that adopted the PSC arrangements for sockeye salmon (50:50 sharing which had not expired) but excluded the catch ceiling for coho salmon which had expired in 1992 (4,000 pieces). The harvest-sharing objective for the sockeye salmon season was to share the total allowable catch (TAC) of Stikine River sockeye salmon 50% to Canada and 50% to the United States. In the event that there was sockeye salmon surplus to spawning requirements at Tahltan Lake and/or in the Tuya River, attempts would be made to harvest some of the surplus. The plan did not permit targeting on chinook salmon since both Parties had previously agreed to rebuild chinook salmon by 1995 and the joint assessment of the status of rebuilding efforts has not yet been completed.
2. The United States management plan was to abide by the harvest sharing provisions that were in effect in 1993; namely to harvest 50% of the TAC of Stikine sockeye salmon (wild plus enhanced), to incidentally harvest chinook salmon and to provide for a Canadian harvest of 4,000 coho salmon.

In most previous years, the Transboundary Technical Committee (TTC) met prior to the season to update joint management and enhancement plans and determine new parameters for input into the inseason run forecast model, referred to as the Stikine Management Model (SMM). However, the meeting scheduled for Whitehorse in late May to finalize the SMM and pre-season run forecasts for 1997 was unexpectedly canceled forcing final revisions to be made over the phone as the season progressed. The Parties independently made Revisions to the forecasts as more information became available.

In 1997, the pre-season forecasts were used during statistical week 24 (June 08 to June 14) through statistical week 26 (June 22 to June 28). Beginning the first week of July, inseason forecasts of total run size and TAC, produced by the SMM and based on CPUE data, were used to assist in determining weekly fishing plans (Table 1). The weekly inputs to the model included: the catch, effort and stock composition (proportion Tahltan/Tuya) in the Canadian lower river test and commercial fisheries; the upper river catch in the aboriginal fishery (AF) and upper river commercial fishery; the catch, effort and assumed stock composition in Subdistrict 106-41; and, the catch and assumed stock composition in District 108 and Subdistrict 106-30. Since results of thermal mark analyses would not be available inseason for the inriver fisheries, in order to account for Tuya escapement in the model and not over-estimate the TAC of Tahltan sockeye salmon, it was agreed that the Tuya sockeye salmon escapement would be assumed to be the same as for Tahltan, i.e. 24,000 fish. The TAC of the Tahltan/Tuya complex would therefore be calculated assuming a total escapement requirement of 48,000 fish.

Initially, average stock proportions from the post-season Scale Pattern Analysis (SPA) analysis in previous years were assumed for weekly catches; the averages used each week depended upon whether the run was judged to be below average, average, or above average. However, the Tahltan/Tuya stock proportions were subsequently adjusted inseason based on the analysis of otolith samples taken in Districts 106 and 108. Inseason otolith sampling was conducted to estimate the contribution of thermally marked Tahltan and Tuya Lake sockeye salmon to catches

in these areas. The weekly estimate of Tuya fish in 106-41 was added to the historical proportion of Tahltan in the SMM since this stock was not present in the historical database. No adjustments were made in District 108. Because different proportions of Tahltan fish were observed in subdistricts of District 108, the overall contribution estimates for District 108 were weighted according to catches in the subdistricts.

The preseason forecasts of returning Stikine sockeye salmon ranged from 210,896 fish, which indicated a run size above the 1987-1996 average terminal run size of 171,498 (Appendix B.28). Canadian inseason predictions of total run ranged from 223,000 sockeye salmon to 248,000 sockeye salmon; U.S. forecasts ranged from 217,527 to 238,110 sockeye salmon (Table 1). All forecasts indicated an above average run and most of the forecasts were above the preseason estimate. U.S. and Canadian weekly predictions differed because of differences in commercial catch data inputs and differences in the handling of the calculation of the TAC of Tuya sockeye salmon. Both Parties put greatest emphasis on the forecasts derived from lower Stikine commercial fishery CPUE. The differences in the forecasts used are summarized in Table 1.

Analyses of the forecasts developed in Canada indicated the forecasts based on inriver commercial and test fishery CPUE and District 106 CPUE differed throughout the season with the greatest variation occurring during the statistical week 28-30 period. The greatest variation in forecasts occurred between inriver commercial and district based forecasts (average absolute difference = 45,000, with District 106 based forecasts always being lower than inriver based forecasts), whereas, the least variation occurred between inriver test fishery and inriver commercial CPUE based forecasts (average absolute difference = 15,000). By the end of August, i.e., statistical week 35, the SMM predicted a total run of 177,700 based on District 106 CPUE to 234,100 sockeye salmon (based on inriver commercial CPUE). The forecast derived from inriver test fishery CPUE was 209,400 sockeye salmon. Final estimates of the TAC ranged from 156,000 to 178,000 fish (Canada and U.S. model runs, respectively), with a Canadian and U.S. allowable harvest of 78,000 to 89,000 sockeye salmon each.

The SMM also predicts the Tahltan/Tuya portion of the run independently from the total run forecasts. Canadian estimates of the Tahltan/Tuya run ranged from 121,900 (statistical week 29) to 106,600 (statistical week 32) sockeye salmon compared to the preseason forecast of 117,000 (Canada). US estimates of the Tahltan/Tuya run ranged from 121,630 (statistical week 29) to 104,393 (statistical week 31) sockeye salmon compared to the preseason forecast of 116,000 (U.S.) fish. The final inseason prediction of the Tahltan Lake weir count was 20,500 sockeye salmon (Canadian inriver Tahltan/Tuya run forecasts based on inriver commercial CPUE minus inriver catch of Tahltan/Tuya sockeye salmon apportioned by an expected Tahltan contribution of 58% to the Tahltan/Tuya complex according to preseason forecasts) compared to the actual Tahltan Lake weir count of 12,400 fish. The explanation for the discrepancy is that the Tahltan component was weaker than expected and the contribution of the Tuya stock to the Tahltan/Tuya complex was higher than expected.

Table 1. Weekly forecasts of run size and total allowable catch for Stikine River sockeye salmon as determined inseason by the Stikine Management Model, 1997.

Statistical Week	Start Date	Forecasts Run Size	TAC		Cumulative Catch <sup>a</sup>		
			TAC	U.S.	Canada	U.S.	Canada
Model Runs Generated by Canada							
25	15-Jun	211,000	133,000	66,500	66,500	4,146	
26	22-Jun	211,000	133,000	66,500	66,500	15,803	4,243
27	29-Jun	223,267	145,267	72,633	72,633	54,018	19,024
28	6-Jul	248,437	170,437	85,218	85,218	79,386	28,814
29	13-Jul	243,542	165,542	82,771	82,771	100,063	38,511
30	20-Jul	229,029	151,029	75,514	75,514	106,554	49,981
31	27-Jul	229,128	151,128	75,564	75,564	109,778	58,495
32	3-Aug	235,644	157,644	78,882	78,882	111,273	60,325
33	10-Aug	238,796	160,796	80,398	80,398	113,237	61,134
34	17-Aug	232,293	154,293	77,146	77,146	114,053	64,772
35	24-Aug	234,066	156,066	78,033	78,033	114,778	64,860
Model Runs Generated by the U.S.							
25	15-Jun	210,896	156,896	78,448	78,448	4,000	100
26	22-Jun	210,896	156,896	78,448	78,448	15,765	1,676
27	29-Jun	217,527	163,527	81,764	81,764	46,688	9,475
28	6-Jul	232,677	178,677	89,339	89,339	72,111	21,763
29	13-Jul	232,639	178,639	89,320	89,320	92,087	31,168
30	20-Jul	234,684	180,684	90,342	90,342	106,143	41,622
31	27-Jul	237,804	183,804	91,902	91,902	109,058	54,780
32	3-Aug	237,524	183,524	91,762	91,762	110,493	60,331
33	10-Aug	238,110	184,110	92,055	92,055	112,999	61,140
34	17-Aug	231,988	177,988	88,994	88,994		
Preliminary End-of -Season Estimate							
		244,193				118,762	65,404

<sup>a</sup> Does not include test or ESSR fishery catches.

## U.S. FISHERIES

The 1997 harvest in the District 106 commercial gillnet fishery included 1,075 chinook, 168,518 sockeye, 77,550 coho, 789,051 pink, and 186,456 chum salmon (Appendix A.5). In the District 108 fishery, 2,566 chinook, 93,039 sockeye, 2,140 coho, 65,745 pink and 38,913 chum salmon were harvested (Appendix A.7). District 106 catches of sockeye and coho salmon were below the 1987-1996 averages while the catches of pink and chum salmon were above the averages. However, 7 of the largest sockeye salmon catches on record (since statehood) have occurred during the past 10 years. The pink salmon catch was the second highest since statehood, behind 1989, and the chum salmon catch was the third highest on record, behind 1995 and 1996 (Figure 2). District 108 catches of all salmon species, except coho salmon, were above the previous 10-year average. The sockeye catch salmon was the third highest on record behind 1994 and 1996, and the chum salmon catch was also the third highest on record, behind 1995 and 1996. The

pink salmon catch was the second highest on record behind 1992. The coho salmon catch was the lowest since 1988; however, District 108 was closed on September 2 (statistical week 36). Annual commercial and test fishery catches from 1964 to 1996 for these fisheries are provided in Appendices B.1 through B.11.

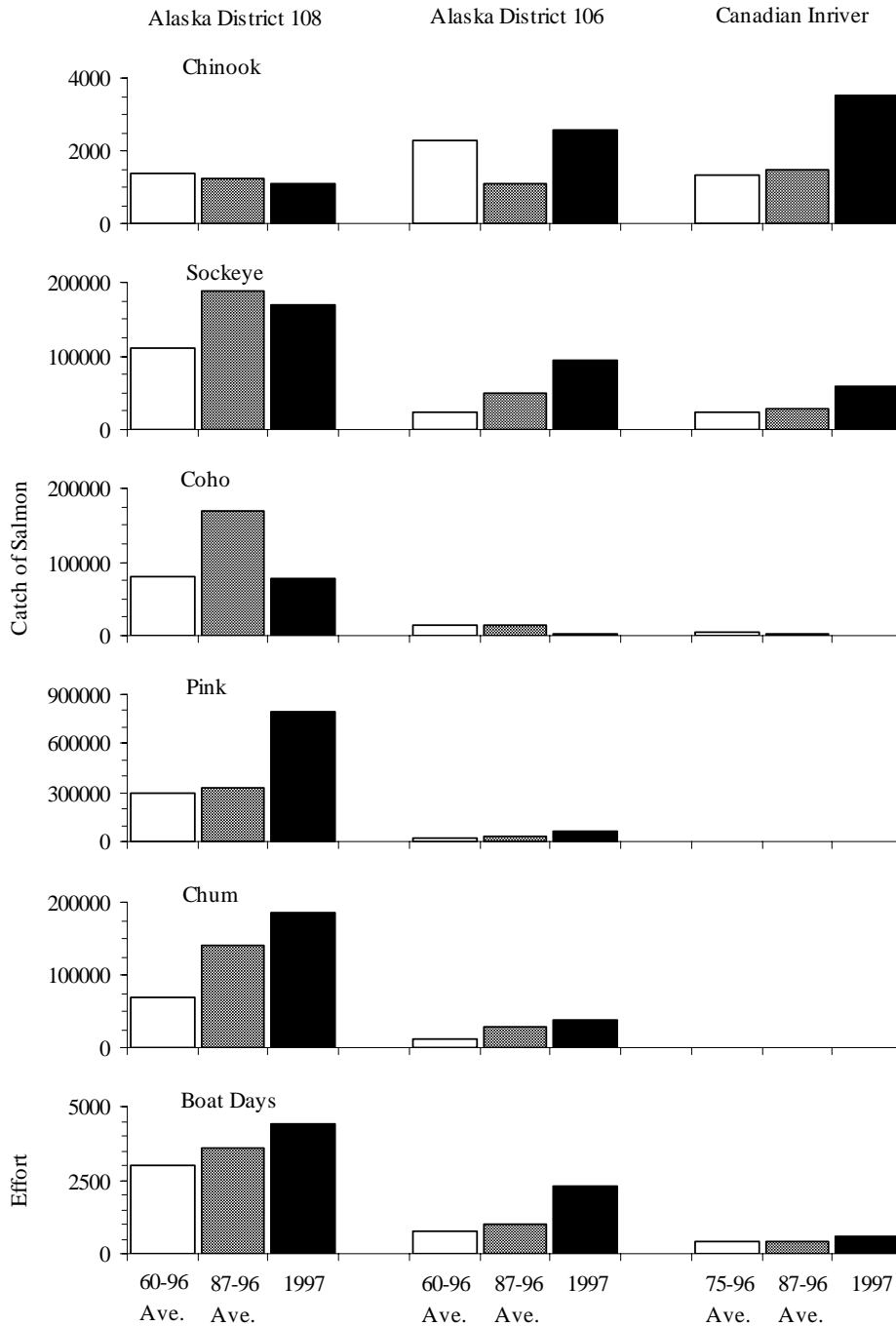


Figure 2. Average catches and fishing efforts compared with 1997 for the Alaska Districts 106 and 108 and for the Canadian inriver fisheries in the Stikine River.

While the catches of each species in Districts 106 and 108 consist of fish of mixed stock origin, the contribution of Stikine River stocks is estimated only for sockeye salmon. Scales were sampled from the various subdistricts and will be used for making postseason catch estimates. The proportion of the District 106 and 108 sockeye salmon catch of Stikine River origin was estimated inseason using both the historical proportions of each stock and the thermally marked otoliths from returns of enhanced Tahltan and Tuya Lake sockeye salmon found in the catch.

The final SMM inseason estimate of the contribution of Stikine sockeye salmon to Districts 106 and 108 was 112,999 or 44% of the sockeye salmon catch (Table 1). Postseason estimates indicated that the Sumner Strait fishery (Subdistricts 106-41 & 106-42) harvested 22,956 Stikine sockeye salmon (Appendix A.2), 20% of the total sockeye salmon harvest in that subdistrict; the Clarence Strait fishery (Subdistrict 106-30) harvested 3,311 Stikine sockeye salmon (Appendix A.4), 2.9% of the catch in that subdistrict; and the District 108 fishery, near the mouth of the Stikine, harvested 75,506 Stikine sockeye salmon (Appendix A.8), 65.6% of the District 108 catch (Figure 3, Appendix B.8).

The District 106 fishing season began on June 15 (statistical week 25) and continued through September 23 (statistical week 39). The District 108 fishing season began on June 9 (statistical week 24) and continued through September 2 (statistical week 36). The initial District 108 opening in week 24 was for 24 hours. The initial opening in statistical week 25 was for two days in both districts. The initial opening in District 106 is normally two days and any decision to extend fishing is based on fishery catch rates estimated by management biologists on site in the fishery. A two-day mid-week opening was also allowed during week 25 in District 108 to target Stikine sockeye salmon from the enhancement program, which appeared to be in high abundance based on the sockeye salmon CPUE in Sumner Strait. During statistical week 26 the fishery was open initially for two days. Both Districts 106 and 108 were extended for 24 hours until noon, June 24 because the average Sumner Strait sockeye salmon CPUE, as estimated by biologists on the grounds, of 125 fish/boat-day was twice the 1987-1996 average of 60 fish/boat-day. The preseason forecast of 156,896 Stikine sockeye salmon (U.S. TAC of 78,448) was still being used at this time and the 22% otolith mark rate in the week 25 Sumner Strait fishery indicated that the Tahltan/Tuya portion of the Stikine run was good and an extension in the fishery was justified. A two-day mid-week opening was also allowed in District 108 during week 26 to harvest the large number of Stikine sockeye salmon from the enhancement program. The sockeye salmon CPUE during the mid-week opening was 72 fish/boat-day or 80% greater than the previous 10-year average CPUE. During statistical week 27 both Districts 106 and 108 were initially open for three days. The week 26 final Sumner Strait sockeye salmon CPUE of 99 sockeye/boat-day combined with the SMM total Stikine run size estimate of 156,896 (U.S. TAC of 78,448), the U.S. catch of estimate of 15,765 Stikine sockeye salmon and the week 26 Sumner Strait Tuya otolith mark rate of 22% indicated that a three-day opening for week 27 was appropriate. A 2½-day mid-week opening was also allowed during week 27 in District 108 to harvest the large number of Stikine sockeye salmon from the enhancement program that were present in the fisheries.

During statistical week 28, Districts 106 and 108 were initially open for three days. The week 27 Sumner Strait sockeye salmon CPUE of 96 fish/boat-day, the SSM total Stikine run size estimate of 217,527, the U.S. TAC of 81,764, and the estimated U.S. catch of Stikine sockeye salmon at 46,688 fish all combined to indicate that a three-day opening was warranted again for this week. Also, at this time the estimated U.S. catch of the Tahltan/Tuya component was

35,771 fish while the run strength was estimated at 144,070 fish (U.S. TAC of 47,855). The week 27 District 108 mid-week opening had not yet occurred at the time the week 28 fishery was announced on July 3, but the total sockeye salmon catch during the mid-week opening was anticipated to be between 10,000 and 12,000 fish and to be composed of approximately 5,000 to 6,000 Tahltan/Tuya sockeye salmon.

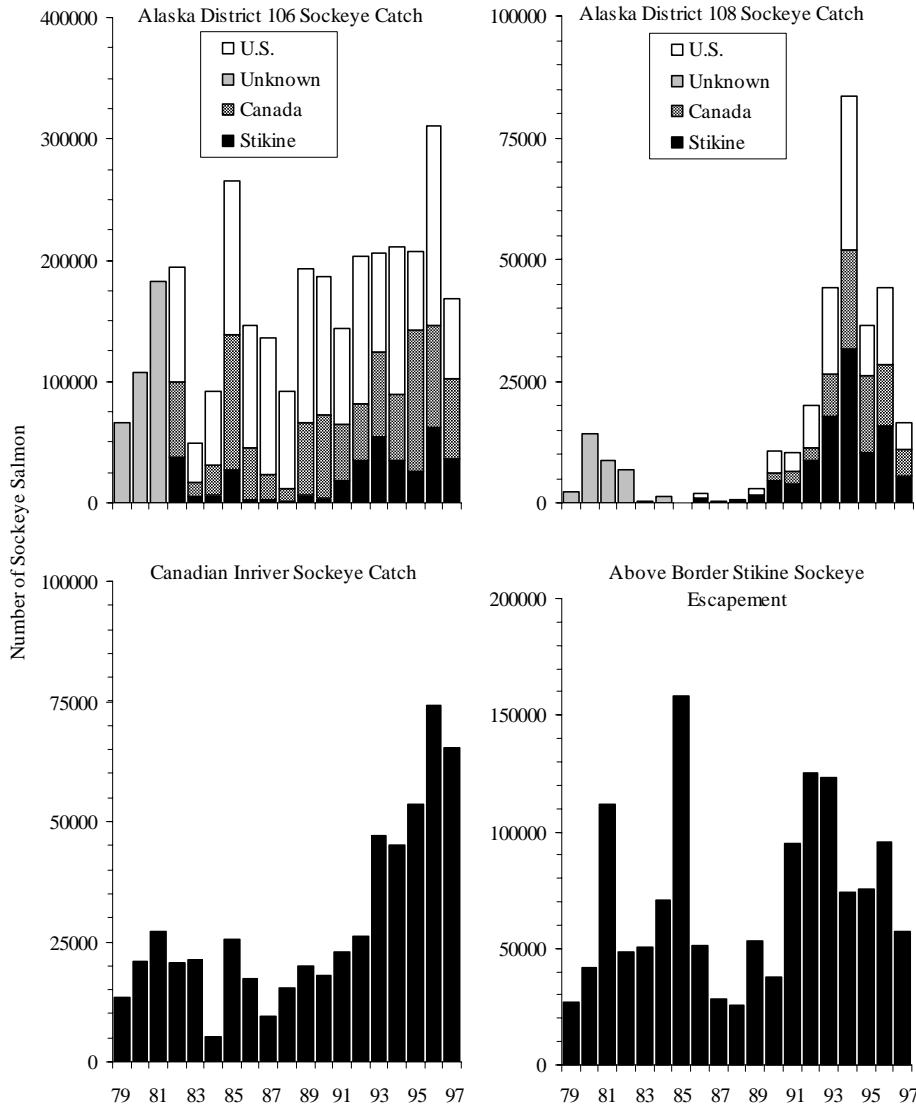


Figure 3. Sockeye salmon catches for the Alaska District 106 and 108 and the combined Canadian fisheries in the Stikine River and Stikine sockeye salmon escapements, 1979-1997.

During statistical week 29 Districts 106 and 108 were open for two days. The week 28 Sumner Strait CPUE of 65 sockeye/boat-day, the SSM Tahltan/Tuya run size estimate of 139,550 (U.S. TAC of 57,595) and the estimated U.S. catch of Tahltan/Tuya fish of 56,075 and the high likelihood that the U.S. catch of Tahltan/Tuya sockeye salmon may soon exceed the SMM TAC all combined to indicated that a reduction in fishing time to two days was warranted in District 106. No extensions or mid-week openings were allowed during week 29. During week 30 both Districts 106 and 108 were open for two days. No extensions or mid-week openings were allowed during week 30.

The management approach was of providing extra time in District 108 to regulate the harvest of the local island sockeye salmon stocks in District 106 while maximizing the harvest of Stikine sockeye salmon in District 108. All sockeye salmon escapements on local island stocks were at or above average with the Luck Lake system in Clarence Strait receiving a record return.

Area restrictions were used around the mouth of the Stikine River for the first three openings (statistical weeks 24 through 26) and in portions of Frederick Sound each week during the sockeye and pink salmon fisheries to protect adult chinook salmon returning to the Stikine River. From 13 July through 3 August, the closure line for District 108 was moved in to the Point Rothsay to Indian Point line.

The management emphasis changed from sockeye to pink salmon during statistical week 31 (July 27 to August 2). Pink salmon management normally begins near week 33 but the very large catches of pink salmon prompted early-directed pink salmon management efforts in both Districts 106 and 108. This season there were 789,051 and 65,745 pink salmon harvested in District 106 and 108, respectively. The District 106 catch is the second highest catch since 1989 and 238% above the 1987-1996 average of 331,456 pink salmon (Appendix B.5), while the District 108 catch is 241% above the respective average of 27,313 pink salmon (Appendix B.7). Pink salmon catches in both districts are not always a true reflection of the pink salmon abundance in the area because the low pink salmon price, along with a high abundance of sockeye salmon affects the fishing patterns and methods. A three-day fishing period was allowed during the first week (statistical week 31, July 27 to August 2) of pink salmon management in both districts and four-day fisheries were allowed during the following three weeks (statistical weeks 32-34, August 3-30). The pink salmon escapements throughout Districts 106 and 108 were above average.

Coho salmon management in both the District 106 and 108 gillnet fisheries usually commences during late August or early September. During statistical week 35 (August 24 to August 30) the management emphasis changed from pink salmon to coho salmon. The coho salmon catches prior to week 35 had been below average and early indicators showed an all gear catch of approximately 1.5 million coho salmon for Southeast Alaska. Two-day openings were allowed in both districts in weeks 35 and 36 (24 August through 6 September). No extensions were allowed during these weeks due to below average coho salmon catches. The week 35 opening was the last opening in District 108 for the 1997 season. The poor catches in the district and the poor catches in the Canadian Lower Stikine commercial fishery indicated that closing District 108 to further coho salmon fishing was warranted. District 106 was limited to a one-day during week 37 because of the continuing poor coho salmon catches in the district. During weeks 38 and 39 District 106 was open for two days. The coho salmon CPUE showed a large increase during week and the coho salmon CPUE was the second highest since 1987 during both weeks



38 and 39. The District 106 fishery was closed after week 39. The closure was warranted because of the high percentage of hatchery coho salmon in the catch and the need to protect wild coho salmon stocks and ensure adequate escapements to the Stikine River and local systems. Coho salmon catch, which was 45.8% below the previous 10-year average catch of 169,407 coho salmon. The District 108 coho salmon catch prior to coho salmon management was 1,774, or approximately 82.9% of the total District 108 coho salmon. The poor catches early in the season and the rapid and very large increase in the coho salmon catches in the last two weeks of the season indicates that the coho salmon return to District 106 was late and below the average returns over the past 10 years. Normally the percentage of hatchery coho salmon starts to increase by mid-August and by the end of the season makes up a high percentage of the weekly catch. This season the hatchery contribution followed the normal pattern throughout the season. The Alaska hatchery coho salmon contribution to the District 106 catch is estimated at 19,512 fish, or 25.2% of the total catch and the Alaska hatchery contribution to the District 108 fishery is estimated at 162 fish or 7.6% of the total catch.

During the 1997 season, the gillnet fishery in District 106 was open for a total of 39 days (Appendix A.5), and in District 108 for 44 days (Appendix A.7). These were above the Districts 106 and 108 previous 10-year (1987-1996) averages of 34.6 and 39.4 days, respectively (Appendices B.5 and B.7). District 106 fishing effort in numbers of vessels was below the average for the first opening and above the average for the next five statistical weeks (weeks 26 to 30). The number of vessels fishing District 106 for the remainder of the season showed no consistent pattern of being above or below the previous 10-year (1987-1996) average (Figure 2, Appendix B.5). The District 108 weekly fishing pressure also showed no consistent pattern of being above or below average during the regular openings but increased to double the average during the mid-week extensions. The greatest number of boat-days in District 106 (444) was in statistical week 34 while the greatest number of boats fishing (137) occurred in statistical week 29, which is the middle of July. The high number of boat-days fished during week 34 was due to the district being open for four consecutive days. The effort of 3,668 boat-days in District 106 was 4% higher than the previous 10-year (1987-1996) average of 3,604 boat-days (Appendix B.7). The District 108 effort was higher than average due to the extended fishing time allowed to harvest the large run of Stikine River sockeye salmon. The 2,285 boat-days fished in District 108 was 61% higher than the previous 10-year (1987-1996) average of 1,002 boat-days (Appendix B.7). Most of the boats fishing during the mid-week openings in District 108 did not fish the entire opening so the effort in boat-days was adjusted to better reflect the time actually fished during these openings. For this reason the boat-days given in Appendix B.7 are less than that obtained by multiplying the number of permits fished by the number of days the fishery was open.

## **CANADIAN FISHERIES**

Catches from the combined Canadian commercial and aboriginal gillnet fisheries in the Stikine River in 1997 included: 4,513 large chinook, 293 jack chinook, 65,804 sockeye, 412 coho, 278 pink, and 237 chum salmon, and 35 steelhead trout (Figure 4, Appendices A.9, A.11, A.12 and A.14). In addition to these catches, 2,015 sockeye salmon were taken in an excess salmon to spawning requirement (ESSR) harvest in the Tuya River (Table 2, Appendix B.18). The sockeye salmon catch, the second highest on record, was approximately two times the previous 10-year (1987-1996) average of 33,205 sockeye salmon (Appendix B.17). The catch of large chinook salmon was the highest on record and was 2.2 times the previous 10-year average of 2,054

chinook salmon. Catches of jack chinook, pink, and chum salmon were all below respective averages; the coho and steelhead salmon catches were the lowest recorded during the 1979-1996 period when the lower river commercial fishery was open.

A test fishery was conducted again in the lower Stikine River, just upstream from the Canada/U.S. border, to determine migratory timing and stock composition of the sockeye salmon run for use in the postseason estimations of the inriver sockeye and coho salmon run sizes. The weekly test fishery sockeye salmon CPUE and stock ID results were also used inseason in the SMM to forecast the total run size. Test fishery catches included: 30 large chinook, 7 jack chinook, 245 sockeye, 11 coho, 9 pink, and 15 chum salmon, and 2 steelhead trout (Appendix A.14).

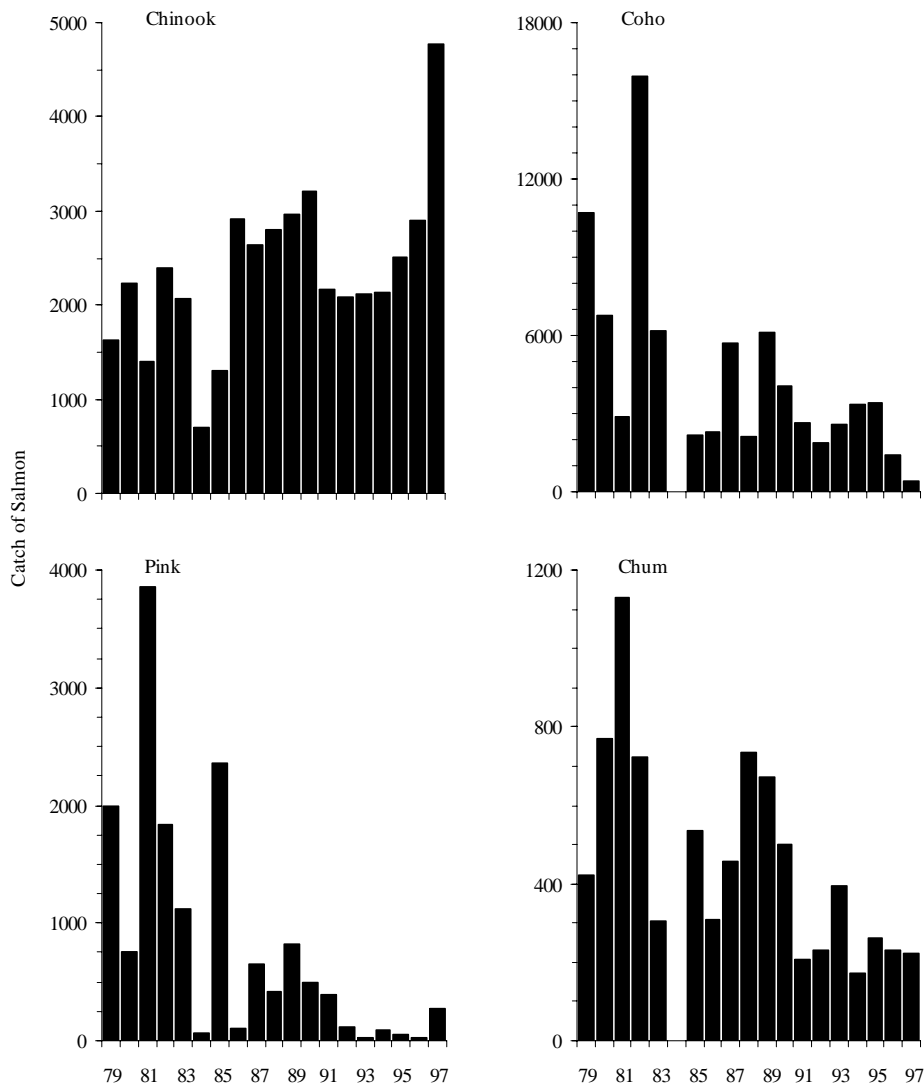


Figure 4. Catches of chinook, coho, pink, and chum salmon in the combined Canadian fisheries in the Stikine River, 1979-1997.

## Lower Stikine Commercial Fishery

Canadian commercial fishers in the lower Stikine harvested 3,283 large chinook, 186 jack chinook, 56,995 sockeye, 401 coho, 269 pink, and 222 chum salmon, and 33 steelhead trout in 1997 (Appendix A.9). The sockeye salmon catch was 205% above the 1987-1996 average of 27,802 sockeye salmon and was the second highest on record, 9,300 below the record catch in 1996 (Appendix B.12). The catch of large chinook, salmon the highest on record, was 294% above the previous 10-year average of 1,116 chinook salmon, whereas, the catches of jack chinook salmon and all other salmon species were below respective previous 10-year averages. An above average sockeye salmon run combined with relatively low fishing effort resulted in the fishery being open almost continuously from June 29 through July 26. The exception to this was a 3-hour closure at the drift site near the Canada/U.S. border in the morning of day 5, 6, and 7 each week to allow the test fishery to operate. Weekly guideline harvests, based on current forecasts of the TAC apportioned by average run timing and domestic and international allocation agreements, were developed each week to guide management decisions.

The fishery commenced at noon on Sunday, June 15 (statistical week 25), for a scheduled opening of three days. The chinook-to-sockeye salmon ratio for this opening was approximately 3.4:1 resulting in the fishing time being kept to three days. Sockeye salmon abundance increased markedly the following week and the chinook:sockeye salmon ratio dropped to 0.2:1. Above average sockeye salmon catch per unit of effort (CPUE) measured in sockeye/fisher/day and a shortfall in the sockeye salmon catch relative to the weekly guideline harvest prompted a two day extension over the initial three-day opening posted in week 26. High water conditions that persisted throughout the opening made fishing conditions less than ideal due to increased debris loads. Despite the conditions, run forecasts derived from fishery performance data from this week ranged from 220,000 sockeye salmon (from District 106 CPUE data) to 244,000 sockeye salmon (from inriver test fishery data), and were above average and slightly above the preseason forecast of approximately 211,000 sockeye salmon.

In statistical week 27, the fishery was scheduled to open for five days commencing Sunday, June 29. Test fishery catches just prior to the opening ranged up to 3.4 sockeye salmon per drift, well above average. Daily commercial sockeye salmon catches and CPUE showed an increasing trend over the first four days of this opening and were up to 87% above average. The above average fishery performance resulted in the fishery being extended by 48 hours and also caused the run forecast, based on commercial fishery inputs, to increase to approximately 248,000 sockeye salmon, the highest level of the season. The catch of approximately 14,900 sockeye salmon in week 27 was the second highest catch on record for this week.

Discussions to this point of the season with Alaska Department of Fish and Game (ADF&G) indicated the run strength was also strong particularly in District 108. In weeks 27 and 28 the Department of Fisheries and Oceans (DFO) raised concerns with ADF&G about the Alaskan catch, particularly of Tahltan sockeye salmon, being much higher than it should have been according to the Stikine Management Model. It was clear from the discussion that there was a significant disagreement over the allocation of the TAC of enhanced Tuya sockeye salmon and over the accounting of inevitable sockeye salmon escapement to the Tuya River. These issues remained unresolved throughout the season.

Sockeye salmon CPUE in the lower Stikine remained above average through week 28 and the fishery was open for seven days. Fishing conditions were once again negatively affected by high

water conditions but despite this, the cumulative catch through the end of this week was approximately 29,000 sockeye salmon, 15% above the guideline cumulative catch through week 28. More discussion occurred with ADF&G this week about the model outputs, which indicated that the U.S. catch was already likely in excess of the seasonal U.S. allocation of Stikine sockeye salmon in general, and Tahltan sockeye salmon in particular. It was emphasized by ADF&G managers that this was not deliberate and that the intention was to only harvest 50% of the TAC.

The inriver run strength dropped noticeably in week 29 and the sockeye salmon CPUE dropped to 21% below the average value for this week. The contribution of the Tahltan/Tuya sockeye salmon, complex to the lower river catch decreased from above 83% in the previous week to approximately 56%. The cumulative lower river commercial catch through July 19 stood at about 37,000 sockeye salmon, which was consistent with the guideline harvest of 37,400 through week 29.

The contribution of Mainstem/Tuya sockeye salmon predominated after week 29 (July 20 on) and overall sockeye salmon CPUE values in the lower river increased to above average levels for weeks 30 through 32. Total Stikine sockeye salmon run forecasts declined to 229,000 in week 30 but rebounded to 239,000 sockeye salmon in week 33. The lower river fishery was scaled back in week 31 to six days, and then to five days in week 32 due to below average weir counts at Tahltan Lake (the proportion of Tahltan/Tuya sockeye salmon in the lower river was still close to 30% during these weeks). Fishing time returned to 7 days/week for weeks 33 through 35 (end of August) as the contribution of Tahltan sockeye salmon declined and the average number of fishers dropped to less than 2/day. The final inseason sockeye salmon forecast, 234,000 sockeye salmon, indicated a Canadian TAC of approximately 78,000 sockeye salmon. Accounting for the combined aboriginal and commercial harvest in the upper river, approximately 8,400 sockeye salmon, the final inseason estimate translated into a lower river target of 69,600 sockeye salmon. The actual catch was 18% below this target.

The sockeye salmon CPUE exhibited a bimodal trend in 1997 with a strong early peak of primarily Tahltan/Tuya sockeye salmon occurring week 27, i.e. the first week of July, and a lesser, but more protracted peak spanning weeks 30&31, i.e. late July to early August. Mainstem sockeye salmon comprised the majority of the stock during this latter peak. The overall peak appeared to be about 2 weeks earlier than normal; on average, it occurs in statistical week 29. The timing of the latter half of the run appeared to be normal. Of the total lower river sockeye salmon catch, 35,347 sockeye salmon were of Tahltan/Tuya lake origin (62% of the catch) and 21,648 originated from the Mainstem Stikine sockeye salmon conglomerate.

It became evident by late-July that the number of sockeye salmon reaching the Tahltan Lake weir would be less than required for escapement. As a result there was no terminal harvest of sockeye salmon at Tahltan Lake in 1997 under an ESSR license. Instead, ESSR fishing activities focused on the lower Tuya River to harvest the sockeye salmon return from the enhancement program. A total of 2,015 sockeye salmon was harvested in this area (Appendix B.18).

From the middle of August through the end of the season (October 04), only 1-2 fishers remained in the fishery. Management emphasis usually switches to coho salmon as sockeye salmon abundance drops off towards the end of August. However, due to poor coho salmon run abundance, there was little effort towards targeting coho salmon in 1997. The peak coho salmon catch of the season occurred in statistical week 37.

Sixteen licensed fishers participated in the fishery throughout the season with a maximum of 15 licenses being active in any one week. The total effort in terms of boat-days was 569, 55.5% above the previous 10-year (1987-1996) average of 366 boat-days (Appendix B.12). The above average effort level in 1997 was primarily due to the above average sockeye salmon run, which resulted in extended fishing periods throughout July. As in 1996, each fisher was allowed the use of two gillnets of which one could be a drift net. A maximum mesh size restriction of 150 mm through mid-July was implemented to reduce the incidental catch of chinook salmon. In 1997, the upstream fishing boundary for the lower river fishery was moved approximately 25 km upstream to Flood River to increase the fishing area over previous years.

### Upper Stikine Commercial Fishery

A small commercial fishery has existed near Telegraph Creek on the upper Stikine River since 1975. The catch recorded in 1997 included: 45 large chinook salmon, which was 61.6% below the previous 10-year (1987-1996) average of 73 large fish, 6 jack chinook, and 2,199 sockeye salmon which was twice the previous 10-year average (Appendices A.11 and B.14). The fishing effort was above average with one to four fishers fishing up to seven days per week. A total of 29 days was fished and the total effort amounted to 42 boat-days. For comparison, the previous 10-year-average fishing time was 20 days with an average effort of 36 boat-days.

### Aboriginal Fishery

The Stikine aboriginal fishery, centered around Telegraph Creek, harvested 1,155 large chinook, 94 jack chinook, and 6,365 sockeye salmon (Appendix A 12). The catch of sockeye salmon was 48% above the previous 10-year (1987-1996) average of 4,302 sockeye salmon, and the harvest of large chinook salmon was 33.4% above the 10-year average of 866 chinook salmon (Appendix B 15). As in past years, fishing times were not restricted in this fishery.

## **ESCAPEMENT**

### Sockeye Salmon

A total of 12,483 sockeye salmon was counted through the Tahltan Lake weir in 1997, which was 63% below the previous 10-year (1987-1996) average of 33,732 sockeye salmon (Appendix B.22). An estimated 1,620 fish (13%) originated from the enhancement program. This estimate is based on the proportion of thermally marked Tahltan Lake sockeye salmon as determined from otoliths from a random sampling of fish collected from the early portion of the Canadian commercial sockeye salmon harvest from the lower Stikine River. The proportion of marked Tahltan fish observed in statistical weeks 26 to 28 was applied to the balance of the catch that had egg diameters of  $\leq 36$ mm taken in statistical weeks 29 to 32. The overall portion of Tahltan Lake sockeye salmon was used to determine the total run size and escapement of Tahltan Lake sockeye salmon. Of the total number of fish enumerated through the weir, 1,140 females and 1,154 males were collected for hatchery broodstock. In addition to the broodstock collection, 378 sockeye salmon were dispatched for otolith collection leaving a spawning escapement of 9,811 fish (Appendices B.18 and B.22). This escapement is well below the escapement range of 18,000 to 30,000 fish.

The spawning escapements for the Mainstem and Tuya stock groups are estimated indirectly by computing the ratio of Tahltan to Mainstem and Tuya components in the total inriver sockeye

salmon run. Stock identification data are collected in the lower river commercial and test fisheries. The ratios of Tahltan to Mainstem and Tahltan to Tuya are applied to the estimated inriver Tahltan run size to develop an estimate of the total inriver sockeye salmon run. The escapements are estimated by subtracting the catches of Mainstem and Tuya sockeye salmon in the Canadian fisheries. The escapement estimates are 33,732 Mainstem fish and 7,602 Tuya fish based on egg diameters measurements and otolith thermal mark ratios (weeks 26-28 only) observed in the lower Stikine River commercial fishery. This estimate was above the goal for the Mainstem stock, but 11% below the previous 10-year (1987-1996) average of 40,700 fish.

Aerial surveys of Mainstem sockeye salmon escapement index areas indicated a below average number of spawners in 1997 (Appendix B.23). The 1997 cumulative index count of 660 sockeye salmon was 30% below the 1987-1996 average of 930 fish. The 1997 survey conditions were fair to good. These surveys do not include all spawning populations, but only the combined counts from up to seven spawning areas.

### Chinook Salmon

This was the thirteenth consecutive year of the operation of an adult chinook salmon enumeration weir on the Little Tahltan River. The 1997 count of 5,557 large chinook salmon was 4% below the 1987-1996 average of 5,337 large fish. The 1997 escapement was slightly above the Little Tahltan escapement goal of 5,300 chinook salmon (Appendix B.25). The count of jack chinook salmon was 54 fish, well below the previous 10-year average of 248 fish. Daily counts from the 1997 program are presented in Appendix A.18.

Results from aerial and foot surveys conducted on Stikine River tributaries indicated a below average chinook salmon escapement in 1997. Survey counts for Little Tahltan River were 1,907 chinook salmon compared to the 1987-1996 average of 2,563 fish; for Beatty Creek, 218 chinook salmon compared to the average of 340 fish; for Tahltan River, 260 chinook salmon compared to the average of 1,995 fish; and for Andrew Creek, 293 chinook salmon compared to the average of 603 fish (Figure 5, Appendix B.26).

### Coho Salmon

The low test catch of coho salmon taken in the lower Stikine test fishery, n=11, precludes a calculation of total in river run size of coho salmon as has been done since 1986 (Appendix A.14). The 1997 aerial survey result of 1,057 coho salmon was 36% of the 1987-1996 average of 2,942 coho salmon. The 1997 survey conditions were poor.

## **SOCKEYE SALMON RUN RECONSTRUCTION**

The postseason estimate of the Stikine sockeye salmon run size is 219,804 fish, of which 84,041 are of Tahltan Lake origin (wild + planted), 64,673 are from Tuya Lake outplants, and 71,091 are Mainstem stocks (Table 2). These estimates are based on postseason analysis of scale patterns combined with otolith recovery and analysis in the U.S Districts 106 and 108 catches; egg-diameter stock-composition estimates for inriver catches; Canadian commercial, aboriginal, ESSR, and test fishery catches; and escapement data. A Stikine run size of this magnitude is 28% greater than the previous 10-year (1987-1996) average run size of 171,498 sockeye salmon. The previous 10-year average run sizes of Tahltan and Mainstem fish are 95,588 and 76,717 sockeye salmon, respectively (Appendix B.28).

The postseason estimate of the run size is slightly above the preseason forecasts of 211,000 (Canadian) and 210,896 (U.S.) fish. The forecast was composed of the following components: 55,640 wild Tahltan Lake sockeye salmon; 12,493 planted Tahltan Lake sockeye salmon; 48,876 planted Tuya Lake sockeye salmon; and 93,887 Mainstem sockeye salmon.

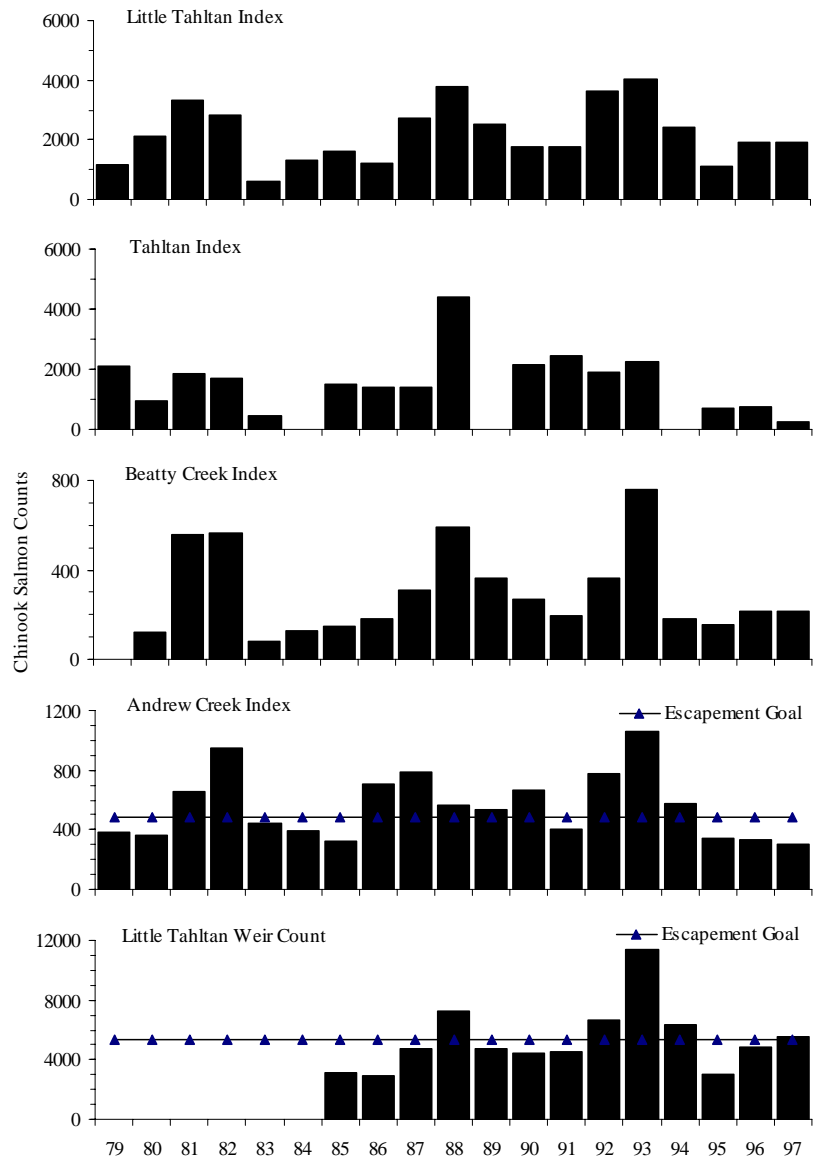


Figure 5. Chinook salmon weir counts and index escapement estimates for major spawning areas and for the entire Stikine River, 1979-1997.

Based on weekly random sampling of otoliths collected in Districts 106 and 108 commercial fisheries, the contribution from Stikine sockeye salmon fry plants consisted of approximately 12,982 sockeye salmon of Tahltan Lake origin, and 37,520 sockeye salmon of Tuya Lake origin (Table 2). Analysis of thermal marks collected from inriver fishery samples indicated that the Canadian harvests included approximately 5,175 and 19,018 sockeye salmon that originated from Tahltan and Tuya fry plants, respectively.

The SMM appeared to slightly underestimate the run size this season. The SMM will be reviewed and updated to include 1997 data in making predictions for the 1998 season.

Table 2. Run reconstruction for Stikine sockeye salmon, both wild and enhanced fish, 1997.

	Tahltan	Tuya	Mainstem	Total	Tahltan	
					Wild	Hatchery
Escapement	12,483	8,091	31,653	52,226	9,507	2,976
Broodstock	2,294			2,294	1,996	298
ESSR or Samples	378	2,015		2,393	291	87
Excess		6,076		6,076		
Spawning	9,811		31,653	41,464	7,220	2,591
Canadian Harvest						
Indian Food	3,650	2,513	202	6,365	3,084	566
Upper Commercial	1,276	883	40	2,199	1,072	204
Lower Commercial	22,599	15,622	18,775	56,996	18,194	4,405
Total	27,525	19,018	19,017	65,560	22,350	5,175
% Harvest	38.5%	33.6%	48.3%	39.2%		
Test Fishery Catch	110	44	91	245	101	9
Inriver Run	40,118	27,153	50,761	118,031	31,958	8,160
U.S. Harvest <sup>a</sup>						
106-41&42	9,327	11,937	1,692	22,956	6,594	2,733
106-30	952	1,295	1,064	3,311	202	750
108	33,644	24,288	17,574	75,506	24,144	9,500
Total	43,923	37,520	20,330	101,773	30,941	12,982
% Harvest	61.5%	66.4%	51.7%	60.8%		
Total Run	84,041	64,673	71,091	219,804	62,899	21,142
Escapement Goal <sup>b</sup>	24,000		30,000	54,000		
Terminal Excess		18,469		18,469		
Total TAC	60,041	46,204	41,091	147,336		
Total Harvest	71,936	58,597	39,438	169,971		
Canada TAC	30,021	23,102	20,545	73,668		
Actual Catch	27,525	19,018	19,017	65,560		
% of total TAC	45.8%	41.2%	46.3%	44.5%		
U.S. TAC	30,021	23,102	20,545	73,668		
Actual Catch	43,923	37,520	20,330	101,773		
% of total TAC	73.2%	81.2%	49.5%	69.1%		

<sup>a</sup> U.S. harvest estimate differs from Joint Interception Committee estimate because no estimates are made for catches other than the listed fisheries.

<sup>b</sup> The escapement goal for Tuya is calculated by subtracting the TAC from the total run. TAC is estimated by applying the harvest rate calculated for the Tahltan stock to the Tuya run.



## TAKU RIVER

Taku River salmon are harvested in the U.S. gillnet fishery in the Alaskan District 111, in northern Southeast Alaska 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 gillnet fishery located in the river near the U.S./Canada border, an aboriginal fishery, and a sport fishery.

### HARVEST REGULATIONS

As with Stikine River issues, efforts to re-negotiate harvest shares of Taku River salmon during the Pacific Salmon Commission, government-to-government, and stakeholder negotiations were not successful. As a result, the Parties unilaterally developed the following management plans for the 1997 season:

1. As in 1996, the Canadian management plan did not numerically constrain Canadian harvests of sockeye and coho salmon since provisions to do so had expired in 1992. The basic objective of the management plan for each species was to manage according to the conservation requirements, i.e. escapement goals, for each species. The plan did not permit targeting on chinook salmon in the Taku River since both Parties had previously agreed to rebuild chinook salmon by 1995 and the joint assessment of the status of rebuilding efforts has not yet been completed.
2. The U.S. management plan reflected the provisions that were in effect for 1993, namely to provide for Canadian harvests of 18% of the TAC of Taku River sockeye and 3,000 coho salmon. As with the Canadian management plan, targeting on chinook salmon was not permitted.

### U.S. FISHERIES

The District 111 drift gillnet fishery was open for a total of 33 days from June 15 through August 27, 1997 (Appendix C.1). Fishing time was 72% of the previous 10-year average and the lowest since 1988 (Appendix D.1). Fishing effort, as measured by the total number of boats delivering fish each week times the number of days open to fishing, totaled 2,107 boat-days, and was 60% of the previous 10-year average. Fishing time and effort were well below average because the fishery was closed early in the fall due to the low coho salmon runs.

The 1997 commercial salmon harvests in the District 111 fishery totaled 2,804 chinook, 94,745 sockeye, 3,515 coho, 51,424 pink, and 176,864 chum salmon (Figure 7, Appendix C.1). Catches of all species ranged from slightly below to well below average. Hatchery fish contributed significantly to the harvests of all species except pink salmon.

The chinook salmon harvest of 2,804 fish was 17% below the 1987-1996 average (Appendix D.1). Alaskan hatchery fish contributed approximately 17.3% (486 fish) of the harvest (coded wire tag estimate).

The sockeye salmon harvest of 94,745 fish was 17% below the previous 10-year average of 114,013 (Appendix D.1). Weekly sockeye salmon catches were slightly below average throughout the season except for the last week of July when the harvest of 19,705 exceeded the previous 10-year average by 45%. The majority (89%) of the sockeye salmon harvest occurred in Taku Inlet (Subdistrict 111-32), with the remainder (11%) coming from Stephens Passage and (<1%) Port Snettisham.

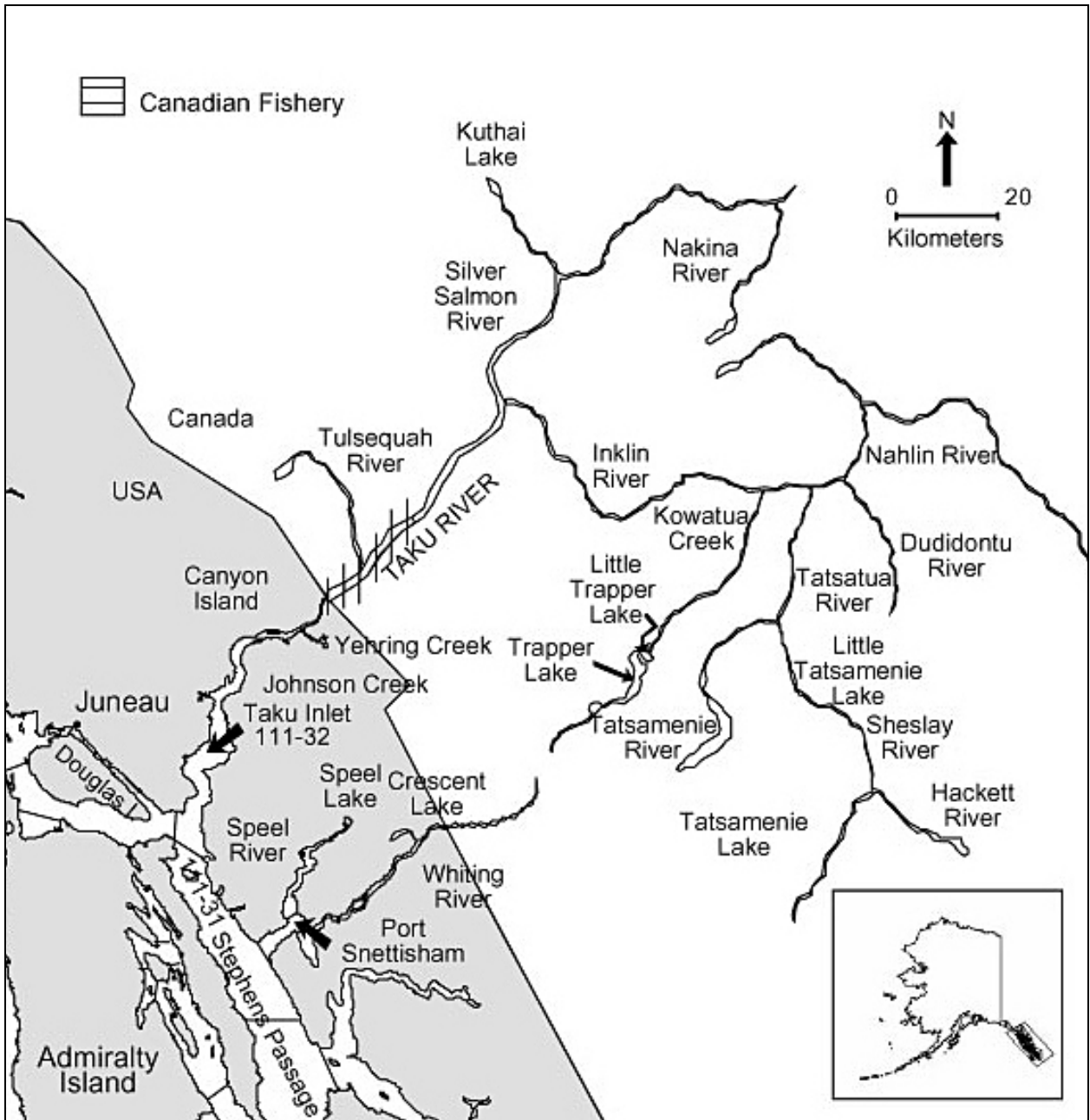


Figure 6. The Taku River and principal U.S. and Canadian fishing areas.

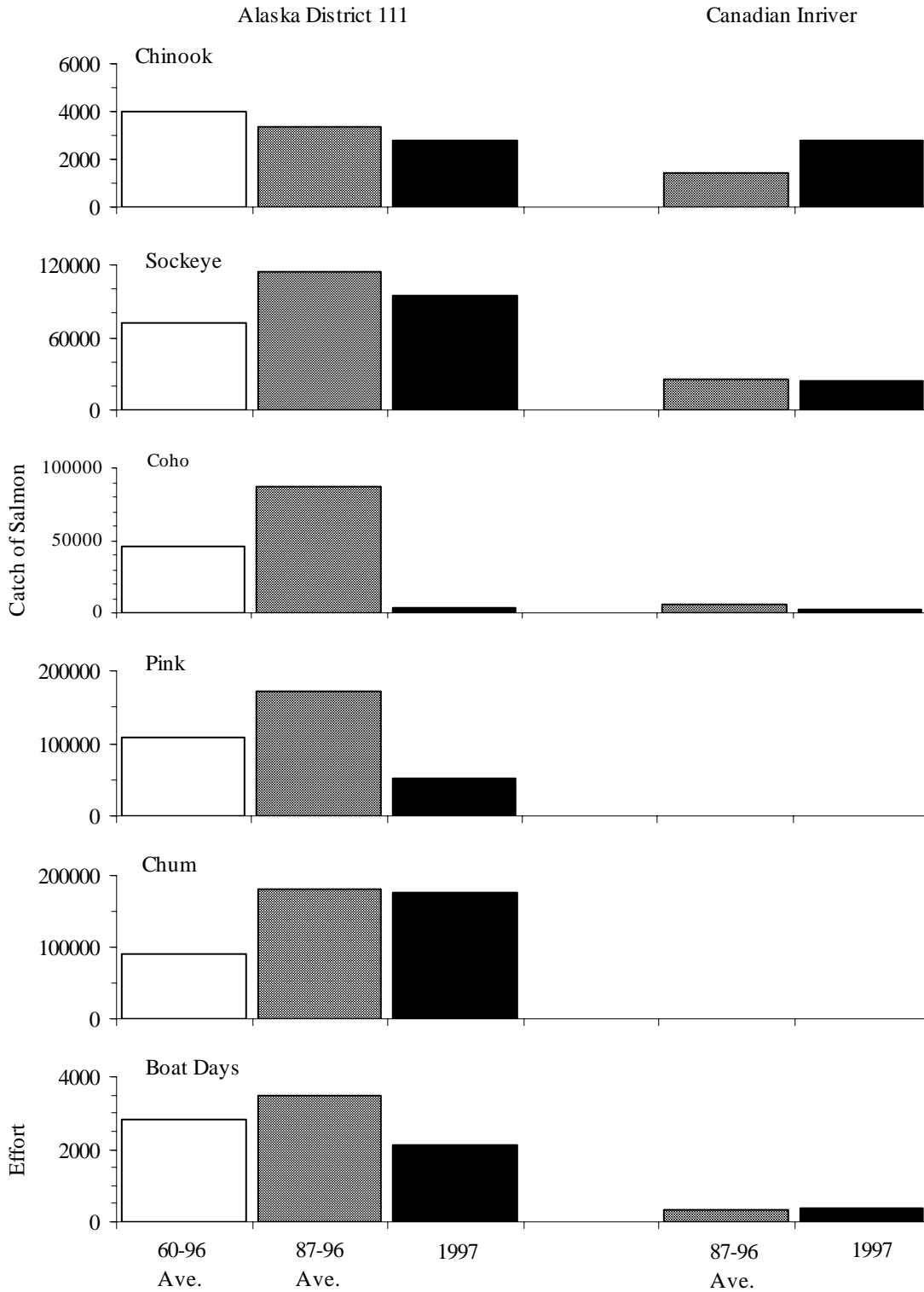


Figure 7. Average catches and fishing efforts compared with 1997 values for the Alaska District 111 commercial fishery and the Canadian commercial fishery in the Taku River.

Three days of fishing were allowed in Taku Inlet during the first four weeks of the season. Fishing time was increased to four days during the week of 13-19 July because the escapement-to-date of Taku River sockeye salmon was very good. Three days of fishing was allowed in Taku Inlet during the next two weeks and projections of the total and inriver returns of Taku River sockeye salmon declined rapidly. Fishing time in Taku Inlet was reduced to two days during the final two weeks of the summer season in early August because Taku River run size projections had declined to well below average.

Port Snettisham was closed to fishing through August 23 to limit harvest rates on Crescent and Speel Lake wild sockeye salmon runs. Returns of these stocks appeared to be below levels of the last several years. DIPAC counted 4,999 sockeye salmon through a weir they operated at the outlet to Speel Lake. The total escapement to Speel Lake is unknown because the weir was removed before the run was completely over. An estimated 13% of the escapement was comprised of returns from Speel brood smolts that had been reared at the Snettisham Hatchery and released into Speel Lake, as evidenced by the recovery of coded-wire-tagged fish in the escapement. The escapement to Crescent Lake was not enumerated but peak aerial survey counts and on-the-grounds observations indicated an escapement below levels seen in 1996 and 1995.

Inseason estimates were developed by applying historical stock composition estimates to the weekly catches after the estimated catch of thermally marked enhanced sockeye salmon had been subtracted from the weekly catches. Postseason estimates were based on a combination of scale pattern analysis, prevalence of brain parasites, and thermal mark stock composition estimates. The District 111 harvest was comprised of and estimated 78,288 Taku and 16,457 Snettisham sockeye salmon (Table 3). Estimated contributions of sockeye salmon from joint U.S./Canada Taku River enhancement programs totaled 1,031 (1%) Trapper Lake and 1,006 (1%) Tatsamenie Lake fish. The harvest of Snettisham fish included, 11,389 (12%) domestic U.S. hatchery sockeye salmon (Appendix C.3). The estimate of stock composition of the harvest of wild sockeye salmon in District 111 is 76,251 Taku River and 5,068 Snettisham sockeye salmon.

The catch of 176,864 chum salmon was composed almost entirely (98.3%) of summer chum salmon (Appendix D.1). The summer chum salmon run is considered to last through mid-August (statistical week 33) and is composed of domestic hatchery and wild stocks. Chum salmon returning to DIPAC hatcheries in Gastineau Channel and to the Limestone Inlet remote release site contributed a major portion of the catch but quantitative contribution estimates are not available. The summer chum salmon catch of 173,804 exceeded the previous 10-year average of 155,390 by 12%, but was substantially below harvest levels of the last three years. Harvest levels of summer chum salmon were negatively impacted by catch limits imposed by processors during the two weeks when peak harvests occurred (13-24 July). As in recent years, extra fishing time was allowed in Section 11-B south of Circle Point (Subdistrict 111-31) to harvest enhanced chum salmon returns. During each of four fishing weeks between July 13 and August 6, an extra day of fishing was allowed in this area, but nets were restricted to a minimum mesh size of 6 inches to allow additional harvest of enhanced chum salmon while limiting harvest rates on Snettisham sockeye salmon stocks.

The catch of 3,060 fall chum salmon (i.e. chum salmon caught after statistical week 33) was only 12.3% of the previous 10-year average and the lowest since 1975 (Appendix D.1). The low catch was a result of poor returns but also to the early closure of the District 111 fishery.

The District 111 pink salmon harvest of 51,424 was 30% of the 1987-1996 average of 171,607 fish (Appendix D.1). This was a result of a poor return to the Taku River and low prices paid for pink salmon. Escapements to District 111 streams other than the Taku River varied from fair to excellent, and were sufficient to allow four days of fishing from 13-17 August to harvest pink salmon surplus to escapement needs in lower Stephens Passage (Subdistrict 111-20). There was no reported catch from this opening.

Table 3. Taku and Snettisham sockeye salmon run reconstruction, 1997. Estimates do not include Taku spawning escapements below the U.S./Canada border or Taku sockeye salmon harvested in marine areas outside District 111.

	Taku	Snettisham Stocks
Escapement	71,086	Not Available
Canadian Harvest		
Commercial	24,003	
Wild	23,346	
Enhanced	657	
Food Fishery	349	
Total	48,355	
% Harvest	23.4%	
Test Fishery Catch (retained)	0	
Above Border Run	119,441	
U.S. Harvest <sup>a</sup>		
District 111	78,288	16,457
Wild	76,251	5,068
Enhanced	2,037	11,389
Personal Use	2,140	
Total	158,716	
% Harvest	76.6%	
Test Fishery Catch	0	
Total Run	278,157	
Taku Harvest Plan	Minimum	Maximum
Escapement Goal	71,000	80,000
TAC	207,157	198,157
Canadian portion	23.3%	24.4%
U.S. Portion	76.6%	80.1%

The coho salmon catch of 3,515 fish was 4% of the previous 10-year average and the lowest harvest since 1975 (Appendix D.1). The catch includes a combination of wild runs to the Taku River, Port Snettisham, Stephens Passage, and local Juneau area streams as well as Alaska

hatchery fish. Alaskan hatchery coho salmon contributed an estimated 15.6% (550 fish) of the catch. Coho salmon run strength during the summer fishing season was the lowest on record. As a result fishing time during the two weeks of the fall fishery (17-27 August) was limited to two days per week. Catches and CPUE were extremely poor during these two openings. Additionally, inseason analysis of coded-wire-tag returns from marine fisheries revealed the presence of few tagged Taku River coho salmon. By late August projections of inriver coho salmon run strength indicated that without further fishing restrictions the escapement goal of 27,500 to 35,000 fish would not be attained. ADF&G implemented a series of fishery closures in late August in response to the extremely poor run projections. The District 111 gillnet fishery was closed for the season on August 27, the earliest closure since 1975. The northern Southeast commercial troll fishery was closed on August 29 in waters along the migration path of returning Taku River coho salmon. Areas closed to trolling included the outside coast between Cape Fairweather and Surge Bay and inside waters in Icy Strait and Chatham Strait north of Point Marsden. Sport fishing restrictions were implemented including closing the waters of Taku Inlet and U.S. portions of the Taku River drainage to coho salmon retention and limiting bag limits of coho salmon from 6 per day and 12 in possession to 3 per day and 6 in possession in remaining portions of the area closed to commercial trolling. These severe fishing restrictions resulted in reduced harvest rates on Taku River coho salmon and the escapement goal was attained.

Several other fisheries in the Juneau area harvested transboundary river stocks in 1997. Estimates of harvest in the U.S. personal use fishery are 33 chinook, 2,140 sockeye, 56 coho, 177 pink, and 2 chum salmon (Appendix D.4). The spring Juneau-area sport fishery harvested an estimated 5,986 chinook salmon. An estimated 4,648 were mature wild spawners, 40 were immature wild chinook salmon, and an additional 1,338 (22%) were of Alaska hatchery origin (coded wire tag estimate). A number of stocks are thought to contribute to the sport fishery, including those from the Taku, Chilkat, and King Salmon rivers, and local hatchery stocks, but the major contributor of mature fish is believed to be the Taku River. The July Hawk Inlet shoreline purse seine fishery north of Point Marsden in Chatham Strait was not opened this year due to poor returns of early-run pink salmon to the Juneau area.

## **CANADIAN FISHERIES**

Taku River commercial fishers harvested 24,003 sockeye, 2,594 coho, 2,731 large chinook, and 84 jack Chinook (fish less than 2.27 kg), and 160 steelhead salmon in 1997 (Appendix C.4). The sockeye salmon catch was 9.4% below the 1987-1996 average of 25,604 sockeye salmon (Figure 7, Appendix D.5). The catch of large chinook salmon was the second highest on record and was 94.4% above the previous 10-year average of 1,405 chinook salmon. Contrasting this, the catch of jack chinook salmon was 42.3% below average and the catch of coho salmon was 44.3% below the previous 10-year average of 5,852 fish. A total of 46 days was fished, 24.2% above the previous 10-year average of 37 days and the seasonal fishing effort was 395 boat-days, 19.4% above the previous 10-year average of 331 boat-days. The above average fishing time and effort was reflective of the existence of a fall fishery, which in many previous years had been curtailed by Treaty restrictions.

In addition to the commercial catches, 103 chinook, 349 sockeye and 96 coho salmon were harvested in the aboriginal fishery in 1997 (Appendix D.7). Aboriginal fishery catches of chinook, sockeye and coho salmon were 39.5%, 94% and 10.3% above respective previous 10-year (1987-1996) averages.

The Taku River Tlingit First Nation (TRTFN), in co-operation with DFO, conducted a creel census on the Nakina River in 1997. Information from the creel census was expanded to provide the following catch estimate: approximately 1,120 chinook salmon were landed of which an estimated 1,008 fish were released.

The Canadian preseason forecast was for a run of approximately 285,200 sockeye salmon, which was the average of a sibling-based forecast of 333,000 sockeye salmon and a forecast of 237,000 sockeye salmon based on stock-recruitment data. The point estimate was 19% above the 1987-1996 average run size of approximately 239,000 sockeye salmon (Canadian estimate). The preseason forecast was used to guide weekly management actions for the first three weeks of the season; thereafter, inseason forecasts based on the joint Canada/U.S mark-recapture program at Canyon Island were used.

The commercial fishery commenced at noon on Sunday, June 15 (statistical week 25) for a scheduled opening of three days and remained open for three days per week through week 27. During these first three weeks of the season, the sockeye salmon CPUE was approximately 16% below average.

Fishing time was scheduled for three days in week 28, from July 06-09. Canyon Island fish wheel catches showed some improvement early in the week (July 7, 8) and the commercial CPUE had increased to above average levels on day 3. Seasonal escapement forecasts ranged from approximately 93,000 to 183,000, well above the target of 71,000 to 80,000 sockeye salmon. These factors lead to a 24-hour extension in week 28.

Below average commercial sockeye salmon CPUE and mediocre fish wheel catches at Canyon Island resulted in fishing time being kept to three days in weeks 29 and 30. Through week 30 (week ending July 26), the cumulative commercial CPUE was approximately 18% below average (and had been consistently 14%-18% below average to date) giving rise to speculation the run was late, weak, or late and weak. Over this period, run forecasts decreased to a range of approximately 158,000 to 221,000 sockeye salmon and the escapement forecasts ranged from 65,000 to 86,000 sockeye salmon (Table 4).

The Tulsequah flood occurred in week 31 and seriously impacted the first two days of fishing with high water and debris. By day 3, July 30, commercial sockeye salmon catches had increased more than twofold over the previous day and daily fish wheel catches at Canyon Island reached 197 sockeye salmon, the highest daily catch so far in the season. The improvement in catches resulted in a 24-hour extension to the scheduled three-day opening; the additional time was also provided, in part, to compensate for lost fishing opportunity caused by the flood earlier in the week. Run forecasts developed at the end of this week ranged from 166,000 to 219,000 but escapement forecasts continued to show a decline and ranged from approximately 64,000 to 77,000 sockeye salmon.

As a result of escapement concerns, the fishery was reduced to two days in week 32 (August 3-5) and kept to two days despite the best catches of the season in both the commercial fishery and the Canyon Island fish wheels. The commercial sockeye salmon CPUE in week 32 was 39% above average and the cumulative CPUE increased to within 8% of average values lending further support to the notion that the run timing was somewhat late. Although the run forecast improved slightly, escapement projections continued to give cause for concern dropping to the lowest range of the season, 57,000 to 68,000 sockeye salmon. This marked the first, but only,

time in the season where the upper end of the escapement forecast range dropped below the minimum escapement goal of 71,000 sockeye salmon.

Table 4. Canadian inseason forecasts of total run size, total allowable catch (TAC), and spawning escapement of Taku sockeye salmon, 1997.

Statistical <i>Week</i>	<i>Total Run</i>		<i>TAC</i>		<i>Escapement</i>	
	from	to	from	to	from	to
25	285,200	285,200	210,200	210,200	71,000	80,000
26	285,200	285,200	210,200	210,200	71,000	80,000
27	188,416	285,200	113,416	210,200	92,704	182,954
28	165,588	326,794	90,588	251,794	106,796	171,994
29	191,358	308,181	116,358	233,181	69,903	98,079
30	157,546	221,047	82,546	146,047	65,424	86,401
31	166,227	219,524	91,227	144,524	64,165	77,827
32	174,088	211,154	99,088	136,154	56,757	67,526
33	174,975	208,175	99,975	133,175	67,008	74,537
34	181,674	202,086	106,674	127,086	68,817	72,103

Fishing time was kept to two days through the remainder of the sockeye salmon season and except for week 33 commercial CPUE remained above average. The cumulative commercial sockeye salmon CPUE over the season from week 26 to week 40 totaled 786 sockeye/fisher/day, 4% above the 1987-1996 average of 754 sockeye/fisher/day. Run projections increased to a range of 182,000 to 202,000 sockeye salmon in week 34 and the escapement projections ranged from 69,000 to 72,000 sockeye salmon.

According to the postseason run estimate of 175,866 sockeye salmon, the total Canadian catch of 24,352 sockeye salmon represented approximately 23.2% to 25.4% of the TAC (Table 3).

With the end of the sockeye salmon season in sight and indications that coho salmon prices might be unattractive, effort levels fell from an average of 13 fishers per day in statistical week 33, to three fishers per day in statistical week 37. Fishing time was increased to seven days/week commencing statistical week 37 (September 07-13) to provide incentive and flexibility for the 1-4 remaining fishers to fish coho salmon. Both DFO and ADF&G wished to have some fishing effort present in the river to provide crucial information regarding the inriver run size of Taku coho salmon. Although the fishery was open continuously, the number of days fished in weeks 38 to 40 ranged from one day in the latter two weeks to four days in week 38. The peak coho salmon catch of the season occurred in statistical week 37, although weekly catches and effort



were below average. The cumulative coho salmon CPUE for the season was 55% below the previous 10-year (1988-1995) average cumulative CPUE. The total season catch of coho salmon was 2,903 fish, 50% below the previous 10-year average of 5,900 coho salmon.

As in recent years, both set and drift gill netting techniques were utilized with the majority of the catch taken in drift gillnets. Mesh sizes were restricted to less than 150m through mid-July to minimize the incidental catch of chinook salmon. One fish wheel was in operation for a brief period of time.

## **ESCAPEMENT**

### **Sockeye Salmon**

Spawning escapement of sockeye salmon in the Canadian portion of the Taku River drainage is estimated from the joint Canada/U.S. mark-recapture program. Counting weirs operated by DFO at Little Trapper and Tatsamenie lakes provide information on the distribution and abundance of discrete spawning stocks within the watershed. Additional sockeye salmon enumeration programs were conducted at Kuthai Lake and the Nahlin River by the TRTFN in 1997.

A mark-recapture program has been operated annually from 1984 to 1997 to estimate the above-border inriver run size (i.e., border escapement); spawning escapement may then be estimated by subtracting the inriver catch. The 1997 estimate of above border run is 95,438 sockeye salmon and the spawning escapement 71,086 fish (Table 3, Appendix C.7). This spawning escapement is 30.2% below the 1987-1996 average of 103,775 fish (Appendix D.9), but is within the interim escapement goal range of 71,000 to 80,000 sockeye salmon (Figure 8).

The escapement through the Little Trapper Lake weir was 5,924 sockeye salmon, 47.1% of the 1987-1996 average of 12,577 spawning fish (Appendix D.10).

Prior to 1995, weir counts for the Tatsamenie system were made at Little Tatsamenie Lake and included fish which spawn between Little Tatsamenie and Tatsamenie lakes as well as fish which spawn in Tatsamenie Lake and its outlet stream. In 1995 the weir was moved upstream to Tatsamenie Lake. The escapement count through the Tatsamenie Lake weir in 1997 was 8,363 sockeye salmon (Appendices C.8 and D.10). To be comparable with earlier spawning estimates, it needed to be expanded to represent the entire Tatsamenie system. In 1994 weirs were operated at both Little Tatsamenie and Tatsamenie lakes; approximately 40% of the fish counted at the Little Tatsamenie weir did not migrate as far as the upper weir site at Tatsamenie Lake. Since this was from only one year and seemed high to the biologist working on the system, the upper Tatsamenie estimate was expanded by 1/0.8 rather than 1/0.6. The resulting escapement to the entire Tatsamenie system was 10,454 fish. A total of 2,382 sockeye salmon was taken for broodstock leaving a spawning escapement of 8,072 sockeye salmon for 1997.

The sockeye salmon count through the Kuthai Lake weir was 5,746 fish, the third highest recorded for the weir and 62.8% above the average count of 3,529 sockeye salmon (Appendix D.10).

The sockeye salmon count through the Nahlin weir was 1,857 fish, the fifth highest recorded since counts were started in 1988 and 3% above the average count of 1,803 fish (Appendix D.10).

## Chinook Salmon

Aerial surveys of the large chinook salmon (three-ocean and larger) to the six escapement index areas annually surveyed by ADF&G were as follows: Nakina, 6,095 fish; Kowatua, 1,360 fish; Tatsamenie, 1,148 fish; Dudidontu, 943 fish; Tseta, 648 fish; and Nahlin, 3,655 fish (Figure 9, Appendix D.11). The total of 13,849 large chinook salmon observed was the second highest on record and 27% above the previous 10-year average of 10,896 fish. The interim index escapement goal for the Taku drainage is 13,200 large chinook salmon to the six index areas.

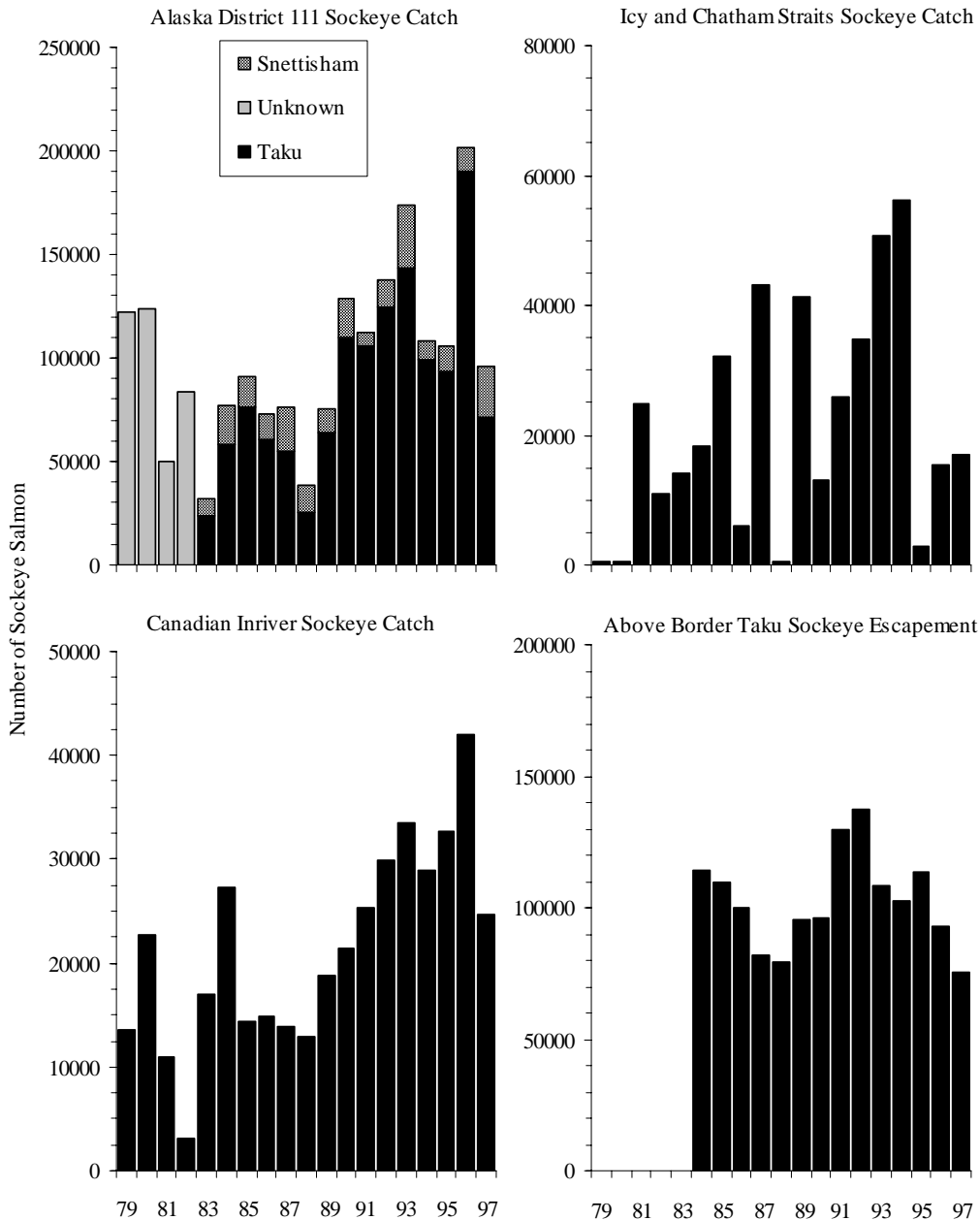


Figure 8. Sockeye salmon catches for the Alaska District 111, the Icy and Chatham Straits, the combined Canadian commercial and food fisheries in the Taku River, and Taku sockeye salmon escapements, 1979-1997.

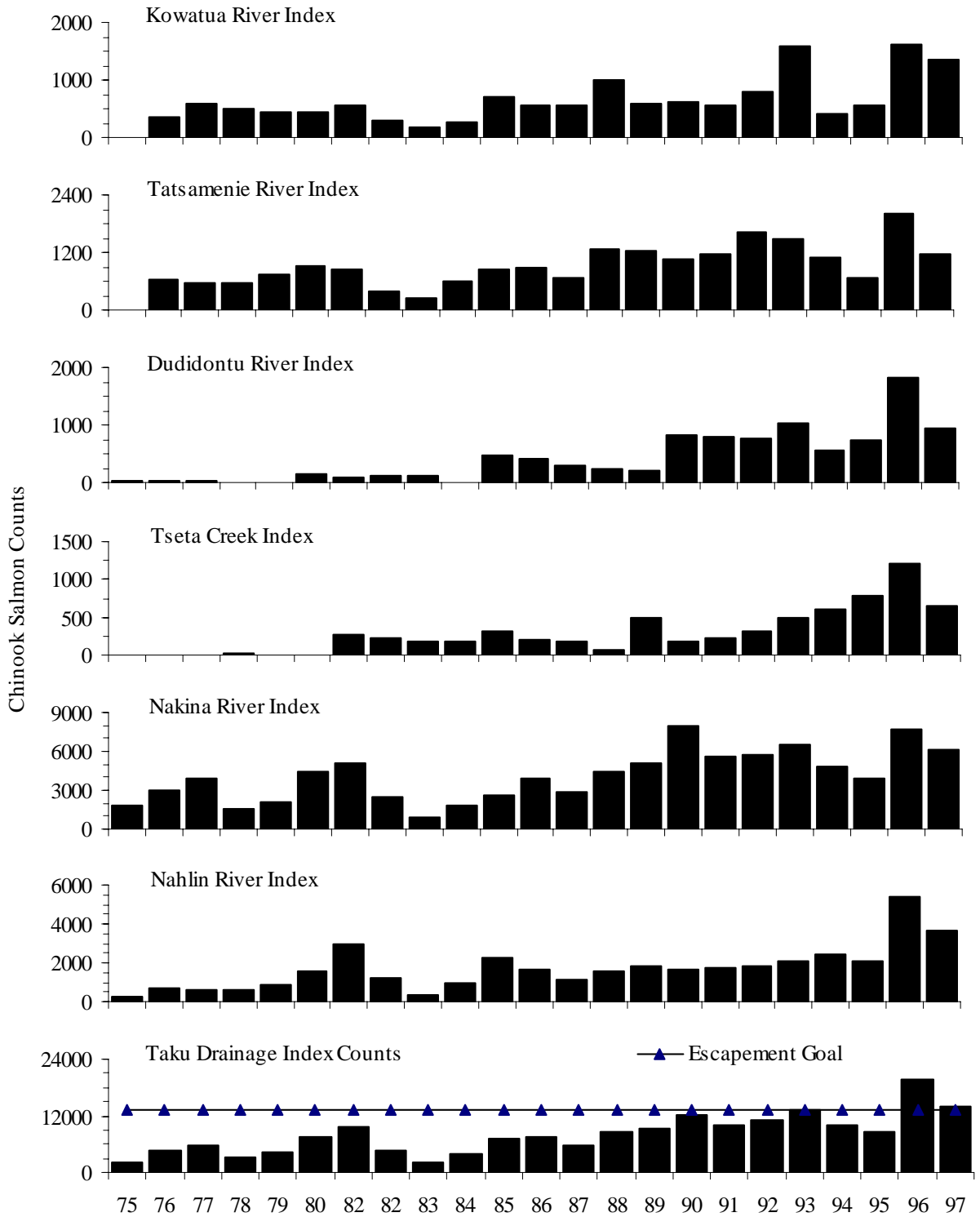


Figure 9. Taku River chinook index escapement counts, 1975-1997.

The number of chinook carcasses counted at the Nakina River weir in 1997 was 3,937 fish; a strong showing of 2,103 females was observed. A total of 3,270 chinook salmon was counted through the Nahlin River weir (Appendix C.10).

### **Coho Salmon**

Spawning escapement of coho salmon in the Canadian portion of the Taku drainage was estimated from the joint Canada/U.S. mark-recapture program. Tag application and tag recovery occurred though statistical week 40 (September 29 to October 4). The above-border escapement was estimated to be 32,345 fish and the spawning escapement was estimated at 35,035 fish (Appendix C.7). The spawning escapement is 48% below the 1987-1996 average of 74,239 coho salmon; however, it is above the interim escapement goal of 27,500 to 35,000 coho salmon.

### **Pink Salmon**

A total of 4,962 pink salmon was counted at the Canyon Island fish wheels in 1997 (Appendix D.14). There was no program in place to estimate the escapement of pink salmon to the Taku River in 1997. The pink salmon count at the fish wheels was 71.8% below the 1987-1996 average of 17,614 fish.

### **Chum Salmon**

There was no program in place to estimate the system-wide escapement of chum salmon. Low catch and CPUE information from the Canyon Island fish wheels and inriver commercial fishery (Appendix D.5) indicated that there was a below average chum salmon run in 1997. A total of 485 chum salmon were captured in the fish wheels, 26.3% below the 1987-1996 average of 659 (Appendix D.14). A total of 60 chum salmon was observed in two the index areas surveyed by the TRTFN. Survey conditions were poor and it was not possible to survey the other three index areas.

The Taku River fall chum salmon run has continually declined since 1989. It is unlikely that the spawning escapement goal of 50,000 to 80,000 chum salmon was achieved.

### **Steelhead Trout**

There was no program in place to estimate the system-wide steelhead salmon escapement. An escapement goal has not been set for this species.

### **SOCKEYE SALMON RUN RECONSTRUCTION**

The postseason estimate of 76,251 wild Taku River sockeye salmon in the District 111 fishery (Table 3) was made by applying scale pattern analysis and analysis of brain parasite prevalence to the non-thermally marked sockeye (the estimated hatchery produced sockeye salmon were first subtracted from the weekly catches). The estimate of 2,037 sockeye salmon originating from fry plants into Trapper and Tatsamenie Lakes in the District 111 catch was based on expansion of otolith-marked sockeye salmon recovered in the District 111 fishery. Additionally, the U.S. inriver personal use fishery harvested an estimated 2,140 sockeye salmon. The estimated total U.S. harvest of Taku River sockeye salmon is 80,428 fish (Table 3).

The estimate of the magnitude of the above-border sockeye salmon run in 1997, based on the joint Canada/U.S. mark-recapture program, was 95,438 fish. Subtracting the Canadian inriver

catch of 24,352 sockeye salmon in the commercial and aboriginal fisheries from the above-border run estimate results in an above-border escapement estimate of 71,086 fish (Table 3).

The run size estimate, determined by summing the estimated U.S. harvest (80,428) and the above-border run (95,438), was 175,866 sockeye salmon, which was 23.8% below the 1987-1996 average run size of 230,838 fish (Appendix D.9). Based on the escapement goal range of 71,000 to 80,000 fish, the TAC was 95,866 to 104,866 sockeye salmon, of which the U.S. harvested 76.7 to 83.9% and Canada harvested 23.2% to 25.4% (Table 3). The overall exploitation rate was estimated to be 56% in 1997.

## **ALSEK RIVER**

Alsek River salmon stocks contribute to the U.S. commercial gillnet fisheries located in Dry Bay, at the mouth of the Alsek River (Figure 10). Unknown quantities of Alsek origin fish are also taken in the U.S. commercial gillnet and troll fisheries in the Yakutat area. No commercial fishery exists in the Canadian portions of the Alsek River drainage, although aboriginal and recreational fisheries occur in the Tatshenshini River and some of its headwater tributaries (Figure 10).

### **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 salmon stocks. Interim escapement goal ranges for Alsek sockeye and coho salmon have been set by the TTC at 33,000 to 58,000 sockeye salmon, and 5,400 to 25,000 coho salmon. Instead of a system-wide chinook salmon escapement goal, a revised goal, expressed in terms of the Klukshu stock only, was established in 1991 to reflect the desire to reduce the uncertainty over expansion factors that had no scientific backing. The Klukshu goal was set by the TTC in 1991 at 4,700 chinook salmon. The TTC has reviewed this escapement level and a new goal of 1,100 to 2,300 chinook salmon has been proposed; this proposal is currently under review by both Parties.

### **U.S. FISHERIES**

The Dry Bay commercial set gillnet fishery harvested 568 chinook, 25,879 sockeye, 11,427 coho, 0 pink, and 34 chum salmon (Appendix E.1). The fishery was open for 59 days, 25.1% longer than the 1987-1996 average of 45 days (Appendix E.4). The majority of fishing time (38 days) occurred late in the season (late August through early October) after the sockeye salmon run had largely passed through the fishery. The total effort expended in the fishery was 611 boat-days, about 34.3% more than the 1987-1996 average of 455 boat-days (Figure 11).

Preseason expectations were for an above average run of early sockeye salmon, an average run of late-run sockeye salmon and an average run of chinook salmon. These expectations were based on parent-year escapements to the Klukshu River.

The Alsek River was opened to commercial fishing on statistical week 24, the second Monday in June (June 9). The initial opening was limited to 24 hours in order to evaluate the effectiveness of chinook salmon conservation measures. Fishery performance indicated that the early segment of the sockeye salmon run was above average and that the chinook salmon harvest was below expected levels. Fishing time was extended to 48 hours during the initial opening. CPUE was well above average during the second week of the season and fishing time was extended to 72

hours. Fishing time was increased to 96 hours during the third week (statistical week 26; June 22- 28) of the season and CPUE remained about average. Fishing time was decreased to 48 hours for statistical weeks 27 through 30 and 24 hours for week 31. CPUE was above average for statistical weeks 27 and 28, average for week 29, and below average for weeks 30 and 31. During statistical week 30, CPUE moved from the East River to Alsek River. CPUE remained about average for statistical week 32 and was below average for week 33. Fishing periods were 48 hours for statistical week 32 and 24 hours for statistical week 33. Less than 8% of the sockeye salmon harvest occurred after statistical week 33.

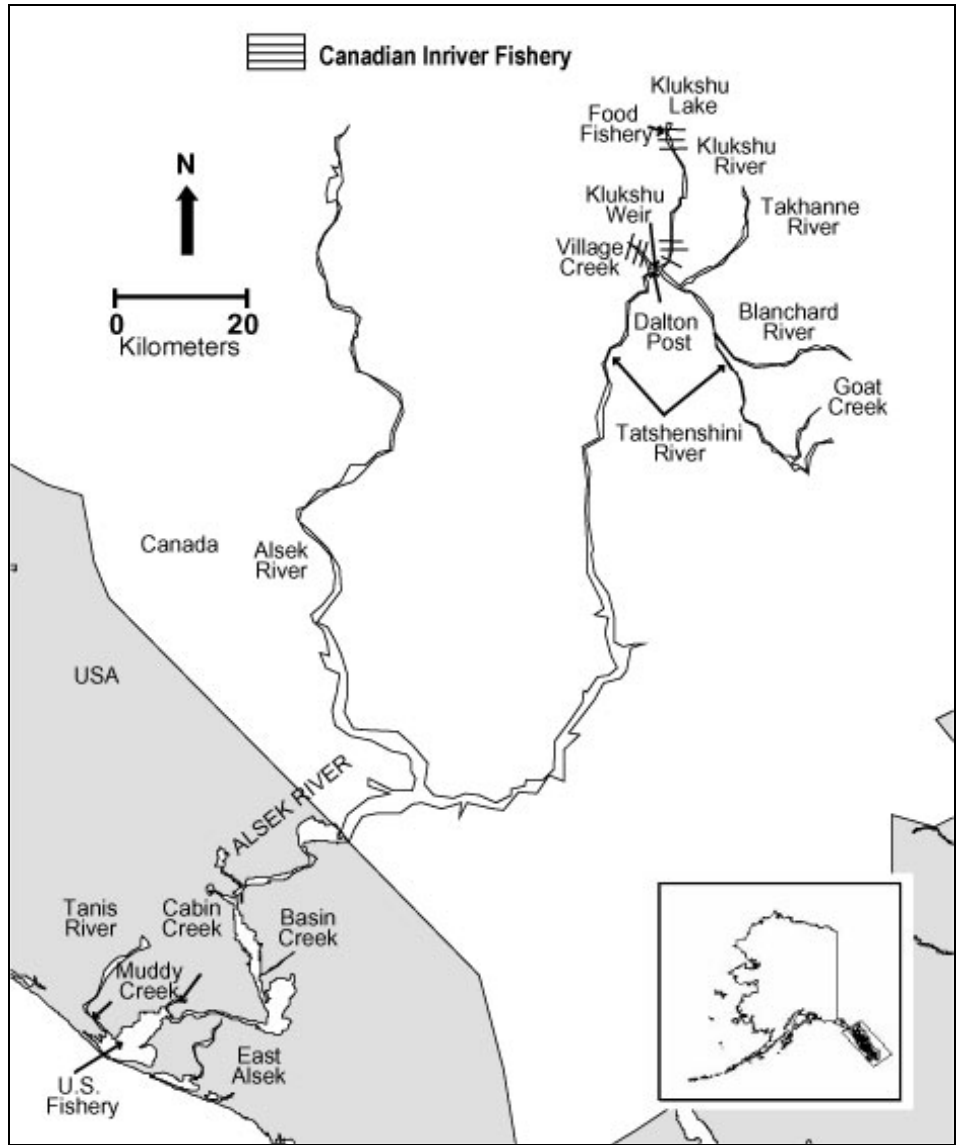


Figure 10. The Alsek River and principal U.S. and Canadian fishing areas.

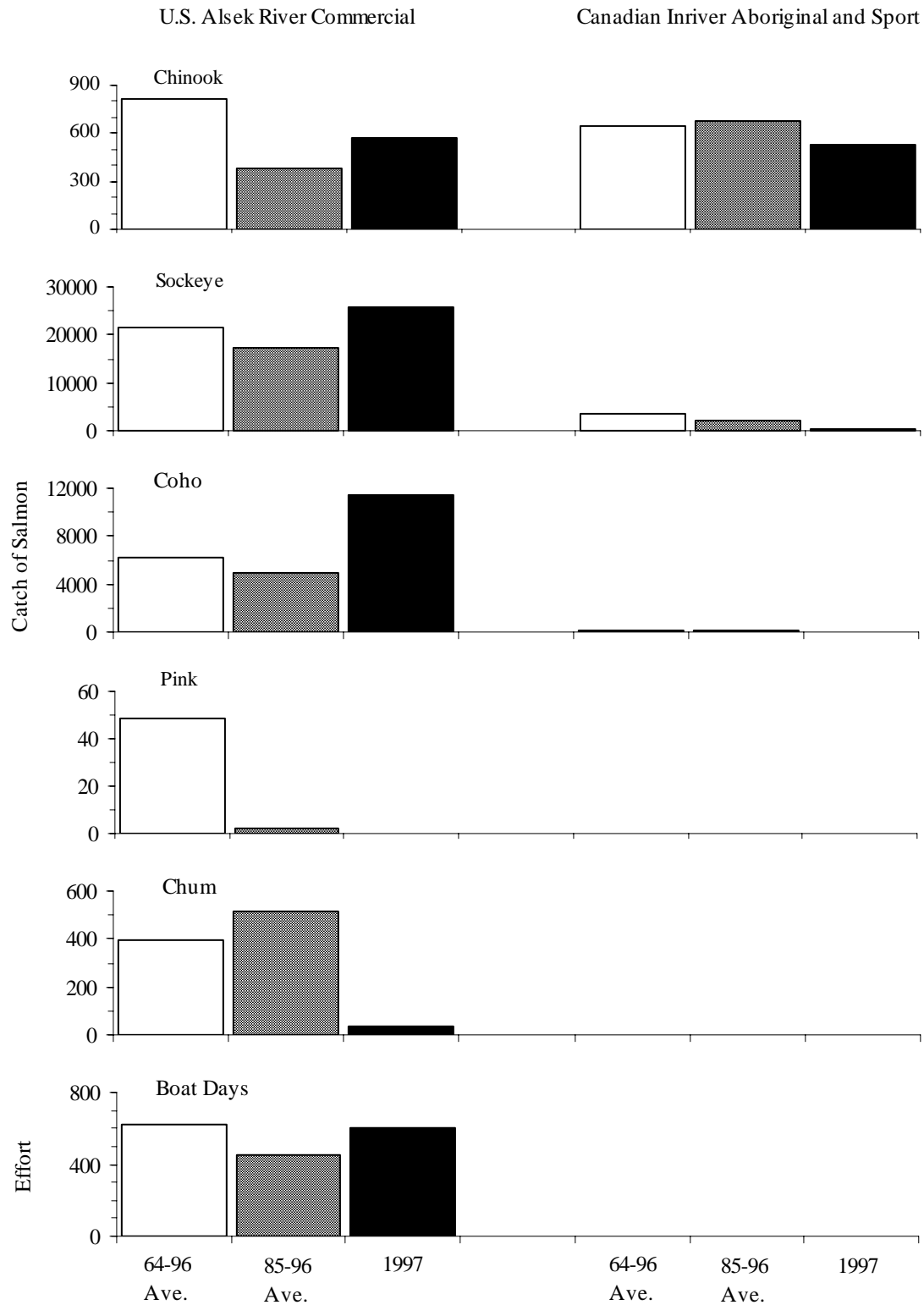


Figure 11. Average catches and fishing efforts compared with 1997 values for the Alaska Alsek River commercial fishery and the Canadian aboriginal and sport fisheries in the Alsek River.

The coho salmon harvest of 11,427 was 133% higher than the previous 10-year (1987-1996) average of 4,901 coho salmon. From statistical week 36 through 39, CPUE was well above average and the Alsek remained on extended time throughout the month of September. Effort was minimal during the last week of September and the first week of October due to the closure of Sitka Sound Seafood's processing plant in Dry Bay. The river was not fished during the last week of the season.

Historically, a set-gillnet fishery targeting chinook salmon was conducted during May and early June. Due to depressed runs, the directed fishery has been closed since 1962 and chinook salmon are now harvested only incidentally during the sockeye salmon fishery in early June. In 1997, the early June periods were limited in time in order to reduce the impact on chinook salmon. Commercial fishers were encouraged to reduce the harvest of chinook salmon by remaining at the fishing site and releasing live fish. This voluntary program has been used with some success on the Situk River under similar circumstances. As in recent years, gillnet mesh size was restricted to a maximum of six inches through July 1. The chinook salmon harvest of 568 fish was about 48.5% more than the 1987-1996 average of 383 fish, but was 33.3% below the 1961-1996 average of 851 chinook salmon (Appendix E.4). Approximately 83% of the chinook salmon catch (471 fish), was taken during the first two weeks of the season.

The Alsek River sockeye salmon harvest of 25,879 fish was about 50% above the previous 10-year (1987-1996) average of 17,302 fish (Figure 12, Appendix E.4). The majority of the harvest (89%, 23,056 sockeye salmon) was taken in the river, with the remainder of the catch coming from the surf area. Adjustments to the weekly fishing periods during the sockeye salmon season relied heavily on fishery performance data; the decision of whether or not to extend any given period was generally based on catch and CPUE figures gathered inseason during that particular period. Parent year escapement information and the Alsek management model projections were also factors in determining the weekly fishing periods. The management model uses multiple regression analysis of fishery catch and effort data to generate weekly projections of the U.S. Alsek River catch, the Klukshu River escapement, and total index run size (U.S. catch + Klukshu weir count). Model results tend to get more accurate as the season progresses; early season projections are of limited use for management purposes. In 1997, model projections were inaccurate. Catch was under estimated and escapement was greatly over estimated (Table 5). Various factors affect the accuracy of the model, including the relative strengths of early and late runs to Klukshu, the abundance of stocks not represented in the model (e.g., Village Creek stock), and the accuracy of manager's projections of effort levels.

**Table 4. Inseason U.S. forecasts of the 1997 Alsek River sockeye salmon catch, Klukshu River weir count, and index run size (catch + Klukshu weir count).**

Statistical week	Date	Catch	Count	Run
26	22-Jun	26,409	18,991	45,400
27	29-Jun	25,958	22,395	48,353
28	6-Jul	25,776	22,112	47,888
29	13-Jul	22,731	20,310	43,041
30	20-Jul	22,605	21,042	43,647
31	27-Jul	22,415	20,842	43,257
Actual		25,879	11,496	37,375



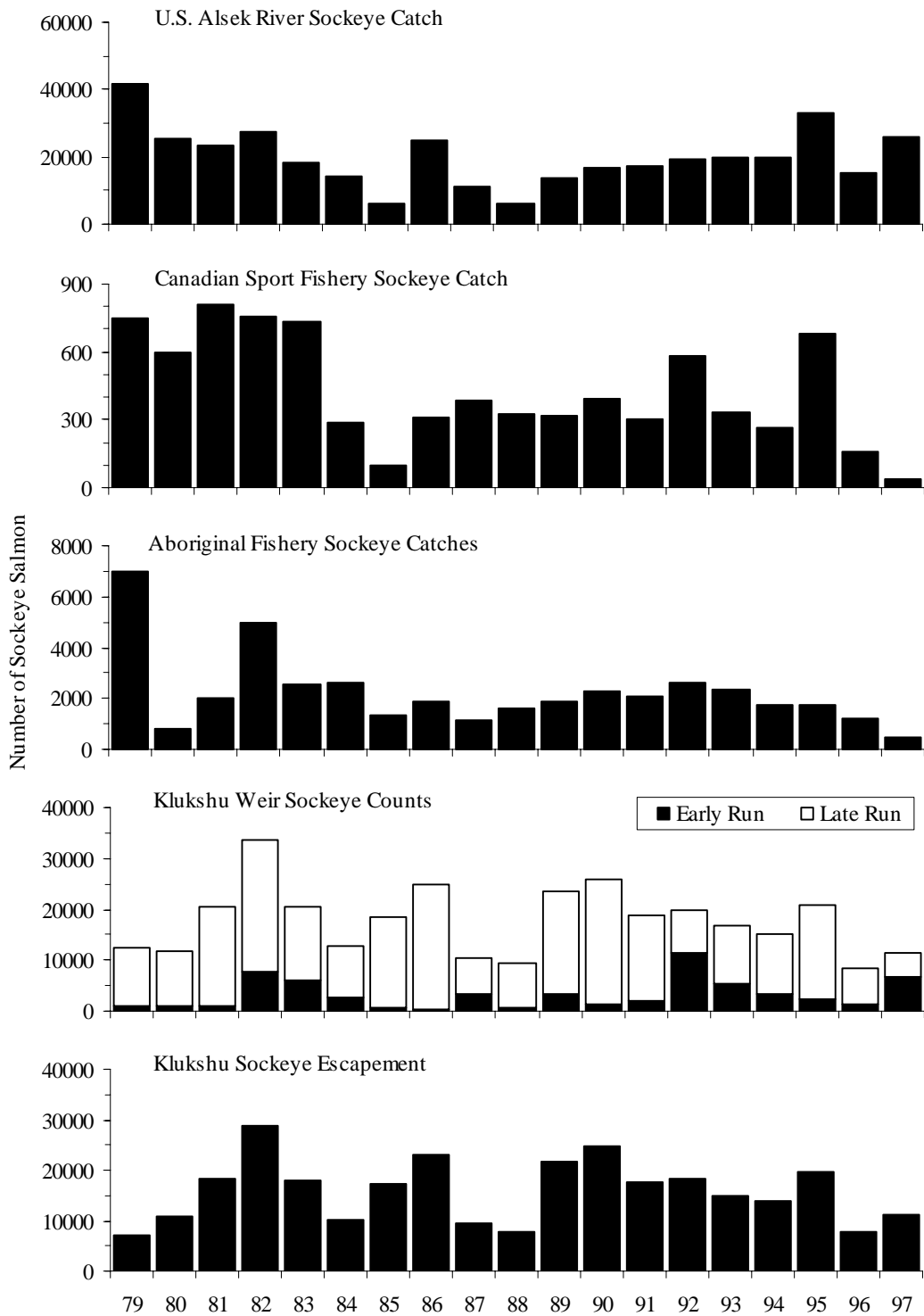


Figure 12. Alsek sockeye catches and weir counts, 1979-1997.

## CANADIAN FISHERIES

The centre of aboriginal fishing activity in the Alsek drainage occurs at the Champagne/Aishihik First Nation village of Klukshu, on the Haines Road, about 60 km south of Haines Junction. Salmon are harvested by means of gaff and traditional fish traps as the fish migrate up the Klukshu River into Klukshu Lake. Gaff fisheries also exist on Village Creek, Goat Creek, and the Blanchard River.

As in recent years, management actions were taken to conserve chinook and early-run sockeye salmon stocks. The fishing plan for the aboriginal fishery for the period prior to August 15 allowed only elders to fish by means of fish traps for 1.25 days per week. After August 15, it was planned that fishing by traps would be allowed 3.25 days per week. However, a very poor late sockeye salmon run led to the closure of trap fishing in mid-September. This marked only the third time in the history of the fishery that a closure was implemented due to conservation concerns.

Gaffing for chinook salmon was prohibited in the waters of Village Creek, Stanley Creek and the Parton River. Elders were the only persons permitted to gaff for sockeye salmon in the Klukshu River prior to August 15. Conservation concerns over the late sockeye salmon run resulted in the closure of the gaff fishery in the Klukshu River upstream of the weir from 6 p.m. Sunday to 6 p.m. Friday each week commencing September 13; gaffing downstream from the weir was also closed for the balance of the season at this time. In addition, the Champagne/Aishihik First Nation suspended any further issuance of aboriginal visitor permits.

The aboriginal fishery harvested an estimated 232 chinook, 484 sockeye, and 5 coho salmon. The catch of chinook salmon was approximately 15% below the 1987-1996 average of 273 fish. The sockeye salmon catch was the lowest on record and was 74% below the previous 10-year average of 1,869 fish. Weekly catches and annual comparisons appear in Appendices E.2 and E.6.

The majority of the sport fishing effort on this 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. Retention of sockeye salmon in the recreational fishery is generally prohibited prior to August 15 to protect early runs. However, due to the above average early run strength in 1997, commencing July 26, the retention of sockeye salmon was allowed. The chinook salmon daily catch limit was two fish, only one of which could be over 45 cm. The overall possession limits for salmon was four, of which only two could be chinook salmon greater than 45 cm in length. Sport fishing in the Dalton Post area was open from 6:00 am Saturday to 12:00 noon Tuesday each week until September 09 when the fishery was closed due to sockeye salmon conservation concerns. The closure, which remained in effect through the balance of the fishing season, seriously impacted the fall sport fishery for both sockeye and coho salmon. The headwater areas within the drainage, upstream of the British Columbia/Yukon border, were closed for the season to protect spawning chinook salmon.

The recreational fishery harvested an estimated 298 chinook, 36 sockeye, and 0 coho salmon. Compared to the 1987-1996 averages, the chinook salmon catch was 25.4% below average and the sockeye salmon catch was 90.3% below average. The average coho salmon catch is 192 fish. The catch data was derived from a creel census program conducted in the Dalton Post area by the

Klukshu weir personnel. Weekly estimates and annual comparisons are listed in Appendices E.2 and E.6.

## ESCAPEMENT

It is currently not possible to accurately assess whether the system-wide escapement goals for Alsek chinook, sockeye and coho salmon 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 the Klukshu weir, Village Creek electronic counter, and aerial surveys do, however, allow annual comparisons of escapement indices. The most reliable comparative escapement index for Alsek drainage salmon stocks is the Klukshu River weir count

### Sockeye Salmon

A total of 11,496 sockeye salmon was counted through the Klukshu weir in 1997 (Table 6, Appendix E.3) and consisted of an above-average (1987-1996) count of 6,565 early-run fish (count through August 15) and a below-average count of 4,931 late-run sockeye salmon (Appendix E.7). The early-run count was 91.7% above the 1987-1996 average of 3,424 fish, and the late-run count was 63.4% below the previous 10-year average of 13,468 sockeye salmon. The estimated Village Creek sockeye salmon escapement was 1,900 sockeye salmon, 61% below the previous 10-year average of 4,930 fish (Appendix E.8).

Comparative counts for other Alsek index tributaries appear in Appendix E.8. A count of 600 sockeye salmon for Basin Creek was well below the previous 10-year (1987-1996) average count of 1,169 fish. The maximum count for the Tanis River was 350 sockeye salmon, 65.6% below the previous 10-year average of 1,018 fish.

Table 5. Catch and Klukshu index escapement data for Alsek sockeye, chinook, and coho salmon for 1997.

	Sockeye	Chinook	Coho
<b>Escapement Index<sup>a</sup></b>			
Klukshu Weir Count	11,496	2,989	307
Klukshu Escapement	11,303	2,829	302
<b>Harvest<sup>b</sup></b>			
U.S. Commercial	25,879	568	11,427
U.S. Subsistence	273	38	26
Canadian Sport	36	298	0
Canadian Aboriginal	484	232	5
Total	26,672	1,136	11,458

<sup>a</sup> Klukshu River salmon stocks represent an assumed large and variable portion of the total Alsek River salmon escapement.

<sup>b</sup> U.S. harvest estimate differs from Joint Interception Committee estimate because no estimates are made for catches other than the listed fisheries.

## **Chinook Salmon**

The most reliable comparative escapement index for the Alsek drainage is the Klukshu weir count. The chinook salmon weir count in 1997 of 2,989 fish (Table 6) was 2.4% above the 1987-1996 average of 2,919 fish (Figure 13, Appendix E.7). However, the 1997 count was below the interim escapement goal of 4,700 Klukshu chinook salmon.

Aerial chinook salmon surveys were again flown in 1997. The count of 190 chinook salmon in the Takhanne River was below the 1987-1996 average of 239 fish by 20.6%. An aerial count of 109 chinook salmon at the Blanchard River was 64% below the previous 10-year average of 302 chinook salmon. Goat Creek was not surveyed this year (Appendix E.9). The aerial survey count of 718 Klukshu chinook salmon was 24% of the weir count of 2,989 fish.

## **Coho Salmon**

The Klukshu weir count of 307 coho salmon (Table 6, Appendix E.7) was well below the average count of 1,572 for the years that the weir has operated (1976 through 1997). The weir is usually removed prior to the completion of the coho salmon return and does not include fish that migrate after mid-October. The coho salmon run was later this year in comparison to the last few years. Based on the above average catches in the U.S. fishery at the mouth of the Alsek River, it is assumed that the low number of coho salmon counted at the Klukshu weir was due to late run timing and not run strength. Poor weather conditions during the fall made it impossible to obtain accurate survey escapement counts from local tributaries (Figure 14, Appendix E.10).

## **RUN RECONSTRUCTION**

Estimates of the Klukshu contribution to the sockeye salmon run to the Alsek drainage vary from 37%, as estimated from an ADF&G mark-recapture study in 1983, to 60%, based on Canadian fishery managers' professional judgment. The Klukshu weir count divided by the estimated proportion of Klukshu fish that constitute the total Alsek run, minus the recreational and aboriginal fishery catches yields an escapement estimate for the Alsek River. The estimated escapement added to the U.S. commercial and subsistence catches yields an estimate of the entire Alsek run. Using the 37% to 60% contribution range, the estimated sockeye salmon escapement in the Alsek River was on the order of 18,000 (Canada) to 30,000 (U.S.) fish and the estimated Alsek sockeye salmon run was on the order of 45,000 (Canada) to 57,000 (U.S.) sockeye salmon. Based on this information, the interim sockeye salmon escapement goal of from 33,000 (U.S.) to 58,000 (Canada) for the Alsek River was not achieved.

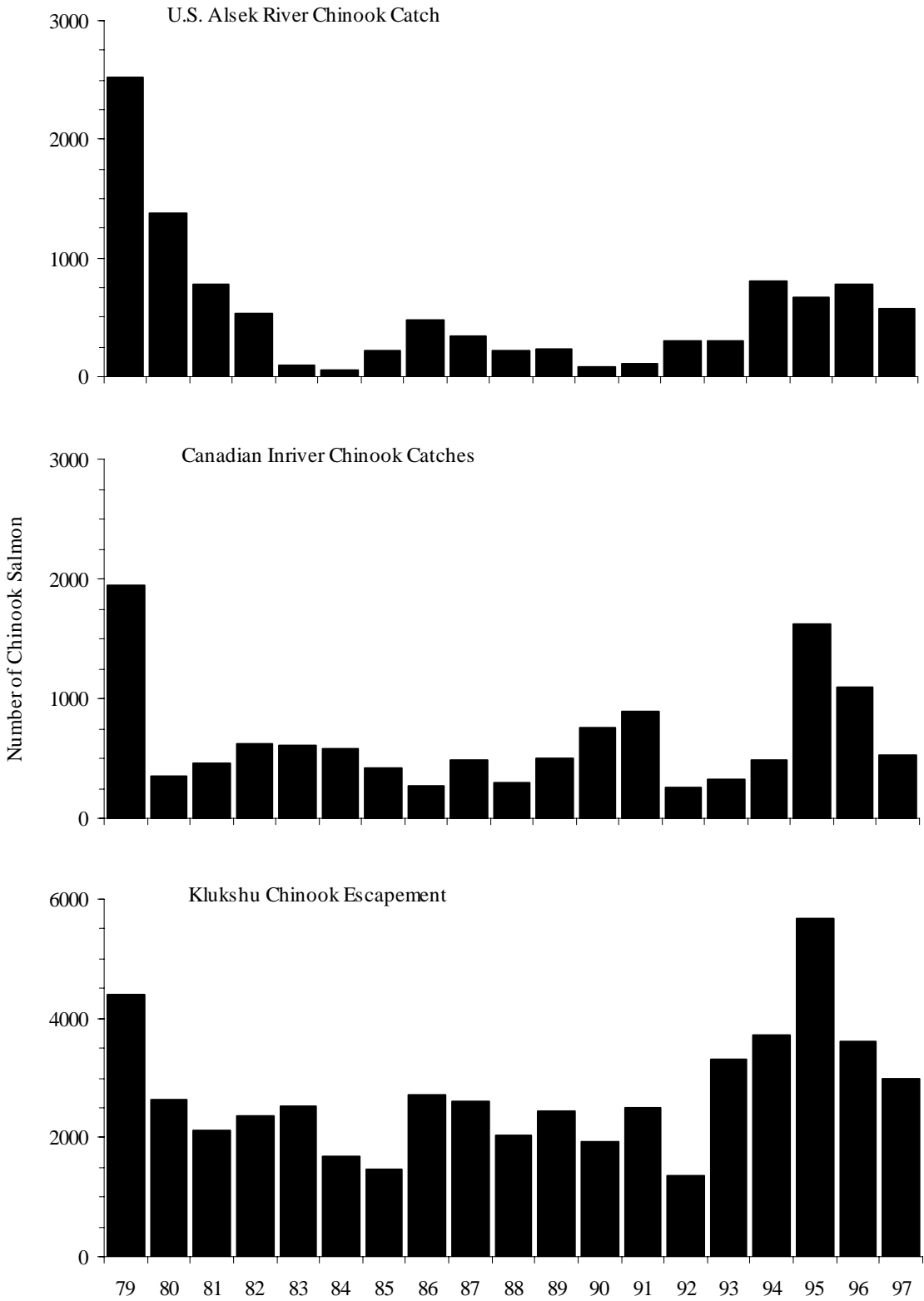


Figure 13. Alsek chinook catches and weir counts, 1979-1997.

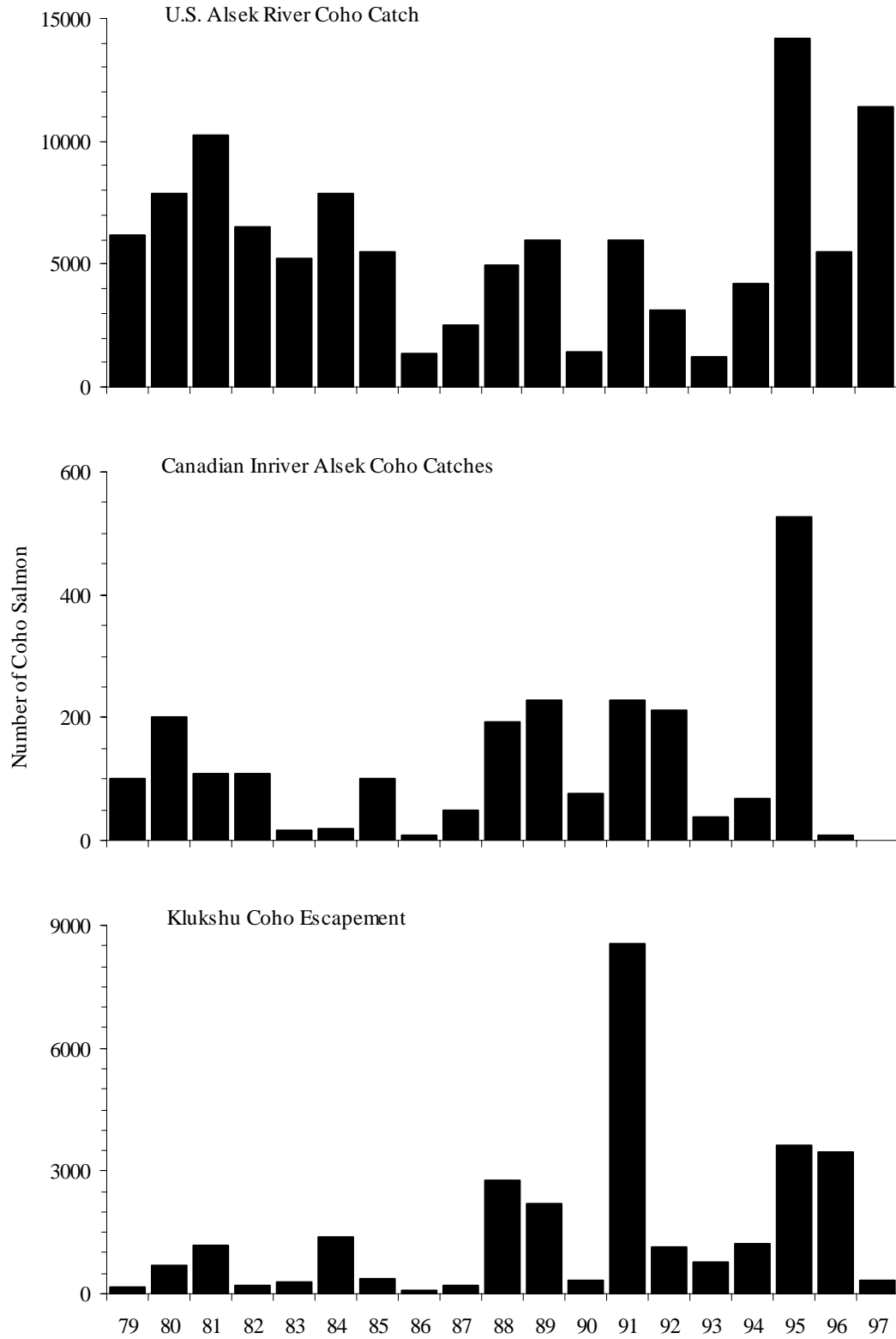


Figure 14. Alsek coho catches and weir counts, 1979-1997.

## **ENHANCEMENT ACTIVITIES**

### **EGG COLLECTION**

In 1997, sockeye salmon eggs were collected at Tahltan Lake on the Stikine River for the ninth year, and in the Tatsamenie Lake system on the Taku River, for the eighth year. No eggs have been collected at Little Trapper Lake on the Taku River since 1994.

**Tahltan Lake: Target 6.0 million eggs**

The egg collection was contracted to Arc Environmental Ltd. for the second consecutive year. Lower than average escapement in 1997 made capture of broodstock relatively difficult in comparison with previous years that had higher escapement levels. An estimated 3.2 million eggs were collected from 1,099 females (based on an average historical fecundity of 2,900 eggs per female). A similar number of males were taken.

**Tatsamenie Lake: Target 5.0 million eggs**

Egg collection was again contracted to B. Mercer and Associates Ltd. An estimated 4.98 million eggs were collected from 1,212 females (based on an estimated fecundity of 4,113 eggs per female). This is the second largest number of eggs collected from the Tatsamenie lake system. A total of 867 males was spawned. A 1:1 spawning ratio was not possible due to fish escaping from the net pens, a higher incidence of prespawn mortality exhibited by the males, and fewer males than females collected for broodstock. The broodstock was captured at an adult enumeration weir that was located on the outlet of Tatsamenie Lake. This was the fourth year that all of the Tatsamenie broodstock was captured at this location. No significant problems were encountered during the course of broodstock collection.

### **INCUBATION AND FRY PLANTS (1996 BROOD YEAR)**

Incubation of 1996 brood eggs took place at Snettisham Hatchery and the resultant fry were transported to the appropriate systems from June 15 to July 01, 1997. The infectious IHN virus was detected in three incubators that contained Tahltan and Tahltan/Tuya fry and an estimated 862,000 fry died or were destroyed. The hatchery manager had observed behavior of pre-emergent fry indicative of IHN virus and made the decision to destroy those incubators of fish; the ADF&G pathology lab later confirmed the presence of the virus.

**Tahltan Lake**

A total of 2.2 million fry from the 1996 Tahltan sockeye salmon egg take were planted back into Tahltan Lake in 1997 (Table 7). Survival from green egg to outplanted fry was 71%. Two incubators of fry designated for planting in Tahltan Lake were destroyed due to IHNV (461,514 fry). The otoliths of this group of fry were thermally marked with a six ring pre-hatch band. Fry outplanting took place from June 16 through June 27.

**Tuya Lake**

A total of 2.6 million fry from the 1996 Tahltan sockeye salmon egg take were planted into Tuya Lake in 1997 (Table 7). Survival from green egg to outplanted fry was 81%. Fry from one incubator designated for planting in Tuya lake were destroyed due to IHNV (220,432 fry). The otoliths of this group were thermally marked with a four ring pre-hatch band. Fry outplanting took place from June 24 through July 01.

## Tatsamenie Lake

A total of 3.9 million fry from the 1996 egg take was planted into Tatsamenie Lake in 1997 (Table 7). Survival from green egg to outplanted fry was 80%. IHNV was not detected in this group of fry. Otoliths of fry planted into Tatsamenie Lake were thermally marked with a five ring pre-hatch band. Outplanting took place from June 15 through June 27.

Table 6. Summary of sockeye salmon fry releases to Transboundary River systems.

	Fry Destination			
	Tahltan	Tuya	Trapper	Tatsamenie
1989	1,042,000	0	0	0
1990	3,600,000	0	934,000	673,000
1991	1,400,000	1,600,000	1,800,000	1,200,000
1992	1,900,000	2,000,000	1,100,000	909,000
1993	904,000	4,700,000	916,000	521,000
1994	1,100,000	2,300,000	773,000	898,000
1995	2,300,000	2,500,000	0	1,700,000
1996	2,200,000	2,600,000	0	3,900,000

## OUTPLANT EVALUATION SURVEYS

### Acoustic, Trawl, Beach seine and Limnological Sampling

In 1997, surveys continued to be directed by the Salmon Indexing Methods Unit of the Stock Assessment Division of Fisheries and Oceans, Canada. Limnological/beach seine surveys were conducted at Tahltan, Tatsamenie, and Tuya lakes by B. Mercer & Associates Ltd.; acoustic and trawl surveys were conducted at Tahltan, Tatsamenie, and Tuya lakes by both Mercer & Associates Ltd. and a crew from the Pacific Biological Station. The limnetic population estimates are based on the soundings and trawl samples only; beach seine catches are not used. Currently, beach seine catches serve as a qualitative index of the abundance of fish in the littoral zone, which is unavailable to the acoustic and trawl gear. Density estimates are made from the sounding transects. Each lake is divided into a number of transects and each transect is further divided into a number of depth strata. Limnetic fish population and density estimates and beach seine catches are presented in Table 8.



Table 7. Limnetic fish population and density estimates and beach seine catches by brood year in Tahltan, Tatsamenie, and Tuya Lakes.

A. Tahltan Lake:

Survey Date	Brood Year	Numbers of Limnetic Fish			Density (#/ha)				Beach Seine Catches		
		Total	Sockeye	Other	Total	CI (%)	Sockeye	Other	Sets	Sockeye	Other
18-Sep-93	1992	817,400	817,400		1,800	19	1,800		7	12	361
18-Sep-94	1993	377,400	377,400		800	41	800		10	9	162
	1994	---	---			---			---	---	---
13-Sep-96	1995	615,300	615,300		1,300	15	1,300		10	141	277 <sup>a</sup>
27-Sep-97	1996	298,000	298,000		600	16	600		10	1	

<sup>a</sup> 63 sculpins, 11 adult sockeye, 203 suckers

B. Tatsamenie Lake:

Survey Date	Brood Year	Numbers of Limnetic Fish			Density (#/ha)				Beach Seine Catches		
		Total	Sockeye	Other	Total	CI (%)	Sockeye	Other	Sets	Sockeye	Other
14-Sep-93	1992	1,146,100	1,146,100		700	36	700		10	11	178
13-Sep-94	1993	1,053,200	1,053,200		600	34	600		10	17	206
18-Sep-95	1994	940,100	940,100		600	39	600		10	9	35
16-Sep-96	1995	831,900	831,900		500	40	500		10	60	18 <sup>a</sup>
16-June-97	1996	900,000	900,000		500	37	500		10	1,846	
6-Aug-97	1996	2,300,000	2,300,000		1,400	40	1,400		10	2,919	
3-Sep-97	1996	2,700,000	2,700,000		1,600	32	1,600		10	840	
1-Oct-97	1996	1,300,000	1,300,000		800	39	800		NA	NA	

<sup>a</sup> 14 sculpins, 3 juvenile chinook, 1 Dolly Varden Char

C. Tuya Lake:

Survey Date	Brood Year	Numbers of Limnetic Fish			Density (#/ha)				Beach Seine Catches		
		Total	Sockeye	Other	Total	CI (%)	Sockeye	Other	Sets	Sockeye	Other
30-Aug-93	1992	437,300	437,300		200	52	200		9	0	1,152
02-Sep-94	1993	1,995,100	1,935,300	59,800	700	55	700		10	0	181
11-Sep-95	1994	1,526,100	1,526,100		500	97	500		10	0	87
09-Sep-96	1995	2,109,000	1,600,000	509,000 <sup>a</sup>	700	24	300	410	2	0	33 <sup>b</sup>
26-Sep-97	1996	2,100,000	572,000	1,528,000							

<sup>a</sup> sculpins

<sup>b</sup> 1 adult grayling, 12 juvenile grayling, 11 chub, 9 sculpins

## **SMOLT SAMPLING**

Trapping to obtain samples of smolt from both natural spawning and fry plants was conducted at Tahltan, Tatsamenie, Trapper, and Tuya lakes. Sampling and enumeration at Tahltan Lake was conducted by DFO, Whitehorse, as part of their continuing smolt program. This program uses a volumetric displacement technique to determine the total smolt run size. Sampling at Tatsamenie, Trapper, and Tuya lakes was done by fyke nets with no attempt made to estimate run size, which is estimated from fall hydroacoustic and trawl survey data for Tatsamenie and Tuya lakes. B. Mercer and Associates conducted the work at Tatsamenie, Trapper, and Tuya lakes.

### **Tahltan Lake**

The smolt weir at the mouth of Tahltan Lake was operated from May 11 through June 25<sup>th</sup>. A total of 518,202 sockeye salmon smolt were enumerated. An estimated 170,123 smolt originated from the fry planting program. Based on the scale age analysis, the overall age composition was 92.6% age-1+ and 7.4% age-2+.

### **Tatsamenie Lake**

Capture of smolts for sampling length, weight, and scales was conducted from May 22 to June 27 using a fyke net. Of the 615 smolts captured, a total of 496 was retained for sampling and the heads preserved for thermal mark analysis. An estimated 4.6% of the smolt sampled originated from the fry plants. The overall age composition of the smolts captured was 76.6% 1+ and 23.4% 2+ based on the scale age analysis (Table 9).

### **Tuya Lake**

In 1997, emigrating smolts were captured with a fyke net from June 1 to June 6. Of the 700 smolts captured, a total of 318 was retained for sampling length, weight, and scales. All otoliths processed were thermally marked. Based on the scale age analysis, the overall age composition was 55.7% 1+, 43.9% 2+, and 0.3% 3+ (Table 9).

### **Trapper Lake**

Fyke nets were fished mid-stream from May 25 to June 7 and 0 smolts were captured.

### **Little Trapper Lake**

Smolt sampling was conducted at Little Trapper Lake on three different occasions (May 21, 23, and June 4) in 1997. Of the 1000+ smolts captured, a total of 200 was retained for sampling length, weight, and scales. The heads were preserved for analysis of the otoliths to determine the wild and enhanced contribution. The overall age composition using scale age analysis was 96.0% 1+ and 4.0% 2+ (Table 9).

A summary of the 1997 average length and weight for the transboundary sockeye salmon smolts is presented in the Table 9.

Table 8. Age composition and average length and weight by age for combined wild and enhanced transboundary sockeye smolts captured in 1997.

Site	Age	Composition (%)	Length (mm)		Weight (grams)	
	Age 1.0	Age 2.0	Age 1.0	Age 2.0	Age 1.0	Age 2.0
Tahlтан	92.6	7.4	76.9	94.9	3.5	6.5
Tuya <sup>a</sup>	55.7	43.9	93.8	136.1	8.4	26.4
Tatsameni	76.6	23.4	75.0	106.3	3.6	9.5
L. Trapper	96.0	4.0	73.9	92.1	3.4	6.7

<sup>a</sup> 1 age 3.0 smolt was captured.

## FINAL RESULTS - 1996 SMOLTS

Processing of 1996 smolts was completed over the winter at the otolith lab in Nanaimo. Results are presented in Table 10.

Table 9. Enhanced and wild contribution, and average length and weight for transboundary sockeye smolts emigrants sampled in 1996, by site and age of smolt.

Site	Origin	Age Composition (%)		Length by Age		Weight by Age	
		1.0	2.0	1.0	2.0	1.0	2.0
Tahlтан	Wild	86.0	4.3	79.9	103.8	4.0	7.2
	Enhanced	9.3	0.4	74.4	105.5	3.2	8.7
Tuya	Wild (none)	-	-	-	-	-	-
	Enhanced	95.9	4.1	99.5	133.1	9.7	24.5
Tatsamenie	Wild	81.0	15.5	75.0	124.3	3.7	16.3
	Enhanced	2.3	1.3	69.9	126.8	3.0	16.9
Trapper	Wild (none)	-	-	-	-	-	-
	Enhanced	87.9	12.1	93.8	121.7	7.6	17.2
L. Trapper	Wild	90.4	5.2	61.6	86.0	2.0	5.2
	Enhanced	1.7	2.3	69.7	124.5	3.5	19.6

## CENTRAL INCUBATION FACILITY

The Snettisham Hatchery Central Incubation Facility operated well during 1997. The otolith marks applied were of good quality based on the voucher samples analyzed by the ADF&G otolith lab. DIPAC, a private aquaculture organization in Juneau, runs the Snettisham facility. A cooperative agreement between ADF&G and DIPAC provides for Snettisham to continue to serve the needs of the joint transboundary river enhancement projects.

## U.S. OTOLITH LAB

### Sampling and Processing Summary

During the 1997 season the ADF&G otolith laboratory received approximately 9539 otolith pairs from 81 separate commercial fishery openings targeting the Taku River (District 111) and the Stikine River (District 106 and 108) sockeye salmon stocks over an 11 week period. Of these, 5,155 otoliths were extracted from 38 separate fisheries openings in Districts 106 and 108 and 2811 otoliths were taken from 15 subdistrict openings in District 111. These totals in District 111 include the Snettisham cost recovery fisheries (883 otoliths) as well as the Canadian Taku inriver fisheries (690). Approximately 9,117 otoliths were processed for thermal marks and 2,195 marked fish were identified and classified as belonging to one of 24 marking groups.

The sampling program went fairly smoothly. However, every year presents new challenges. This year problems were associated with a change of fish buyers in District 111. In previous years, a large processor in Petersburg would send a packer north on a regular basis to collect fish from the commercial fisheries. This year that processor was no longer purchasing fish from the area and new buyers came in to fill the void. This resulted in changes on how the fish were sampled, which included increased sampling effort in Juneau and moving some of the Petersburg sampling effort to a smaller, less accommodating processing plant. Due to these problems a couple fishery openings in upper Clarence Strait could not be monitored directly and the contribution estimates were extrapolated from the other weeks.

To help increase efficiency for port sampling, the sampling goals were reduced this year in those fisheries in Districts 106 and 108 in which historical contribution estimates showed that fewer otoliths are needed to achieve our targeted precision goal of 95% confidence interval that is within  $\pm 7.5\%$  of the estimate.

A change this year also resulted in improved processing efficiency within the otolith laboratory. In previous years, a subsample of 100 otoliths were processed for each fishery opening within 48 to 72 hours to provide the fisheries managers an estimate of stock composition. But as catches declined latter in the season this proved to be an excess number of otoliths and management needs were also not as great. A change was made to process on an inseason basis only 50 otoliths per opening as the fisheries wound down. This still met the precision goals and allowed the laboratory staff to more efficiently balance inseason and postseason processing needs.

A new addition this year was to process, under arrangements with Canada, 60 otoliths per week collected over a 10-week period from the Canadian Taku inriver fisheries. From historical information, 60 otoliths appeared to be an adequate sample for contribution estimates. These otoliths were delivered to the Juneau Otolith lab and placed in the processing schedule. In addition, samples from cost recovery fisheries in Gilbert Bay and Speel Arm (District 111-33, 35) were also examined on a weekly basis to help managers achieve adequate escapement of wild sockeye salmon to local streams.

The inseason processing effort worked fine. Staff was able to keep up with the volume of samples received and provide to ADF&G managers the estimates on hatchery contribution in five separate fishery openings per week. These estimates provided information on run timing and abundance of enhanced fish and were available for use by managers in making decisions about the duration and timing of future commercial openings.

The final number of otolith processed in the Stikine River system (District 106 and 108) was determined by an optimizing algorithm that minimizes the overall uncertainty on the proportion of enhanced fish in the commercial fisheries. Because of the increased efficiency in sampling effort, 93% of the otoliths received from these districts were processed. All the Taku samples collected (typically 400 otoliths per week) were processed because of the need for identifying the enhanced fish prior to running scale stock separation analysis.

Results from the 1997 otolith processing results are summarized in Table 11.

Table 10. Contribution estimates of enhanced sockeye captured in U.S commercial fishing districts in 1997.

Fishery	# Sampled	# Prep	# Marked	% Marked	95% CI Upper	95% CI Lower	Total Enhanced
Wrangell Area	997	895	362	42.9%	46.8%	38.9%	10,479
Frederick Sound	1,311	1,232	325	28.4%	31.3%	25.6%	8,347
Upper Clarence Strait	722	691		2.2%	12.3%	0.0%	1,583
Sumner Strait	2,125	1,993	250	12.7%	14.3%	11.1%	14,897
Total Stikine River	4,384	4,366	961	16.0%	18.2%	13.9%	34,732
Total Taku River	2,811	2,800	384	22.0%	23.3%	20.6%	16,759

### Quality Control Assessment

The quality control program this year involved independent second readings on approximately 58% of the otoliths processed and when disagreements arose a third reading was used to resolve the differences. The amount of agreement between the first and second readings was considered a measure of precision. In addition, for the first time a third reader independently read approximately 17% (1,632) of the otoliths. The advantage of using three independent readings is that it allows the use of latent class models (LCM) to provide estimates of rates of the accuracy of the calls by each reader. In addition, LCM provides means to incorporate potential reader error directly into the overall contribution estimates. LCM however is data intensive and it requires having skilled readers who are familiar with the thermal patterns.

In previous years quality assessment was based solely on two independent readings and Cohen's Kappa statistic was used as a proxy for determining the precision of the readings. Kappa is a chance-corrected index, unlike the more commonly used percent agreement. The difficulty with using Kappa, however, is that it is hard to interpret the index with regards to actual accuracy of our readings. Also, differences in kappa among readers and groups of marks make it difficult to gage one reader's skills relative to another. Kappa still provides a useful index to monitor, but it was clear that a different approach was needed.

Latent class models were evaluated as an alternative to Kappa and were applied to otolith readings from the Stikine River fishery samples. Latent class models have been used for assessing reliability of diagnostic tests in the medical field over the last twenty years, but, to our knowledge, have not been applied to fisheries problems. LCM belongs to a family of latent variable models that hypothesize the existence of unobservable “latent” variables about which information can only be obtained through measurements on observable “manifest” variables. LCMs specifically restrict the latent and manifest variables to be categorical.

In our application we dealt with the simplest situation in which the latent variable is the true class, marked or unmarked, to which the otolith belongs, while the manifest variables are the readers’ classifications. The model was used to determine for each reader the accuracy rate (i.e., the probability of correctly identify a hatchery fish) as well as error rate (i.e., the probability of incorrectly calling a wild fish a hatchery fish). In addition, the model estimated the true proportion of marked fish in the sample. To calculate the standard error surrounding each parameter estimate, a jackknife method was employed.

A summary of the results from applying the LC model to the three-reader data is given in Table 12. All three readers agreed that 256 otoliths were marked and that 837 were unmarked. Disagreements among the readers, while generally small, showed some uneven distributions.

Table 11. Summary of the combined marked (M) and unmarked (U) calls by three readers with the results of the LCM fit, where  $p$  is the proportion of marked fish,  $a_i$  is the accuracy rate of reader  $i$  to detect a marked fish and  $b_i$  is the rate of misidentifying a true unmarked fish by reader  $i$ . Included are the standard error of the parameters and the associated confidence intervals.

Reader Calls	<u>MMM</u>	<u>MMU</u>	<u>MUM</u>	<u>UMM</u>	<u>MUU</u>	<u>UMU</u>	<u>UUM</u>	<u>UUU</u>	<u>TOTAL</u>
Counts	256	41	5	6	20	4	10	837	1,179

LCM Parameters	$p$	$a_1$	$a_2$	$a_3$	$b_1$	$b_2$	$b_3$
Estimate.	0.263	0.977	0.982	0.862	0.022	0.004	0.012
SE (jackknife)	0.013	0.009	0.009	0.020	0.005	0.002	0.004
95%CI up	0.288	0.995	0.998	0.902	0.032	0.008	0.019
95%CI down	0.237	0.959	0.965	0.823	0.012	-0.001	0.004

The LC model results shows (from parameter  $a$ ) that Reader 2 had the highest rate of correctly identifying a hatchery mark, though the accuracy rate of Reader 1 was not significantly different. Reader 3, on the other hand, had a greater tendency to miss a marked fish than the other two. On the rates for making ‘false positive’ calls (calling a true wild fish a hatchery fish – parameter  $b$ ) Reader 1 had the highest rate, around 2%, and Reader 2 had the lowest rate at around 0.4%. None appeared to be very large however. The LC model also estimated that the proportion of marked fish in the collection was 26.3% (310 marks) and that with reader error the uncertainty

surrounding this estimate had a confidence interval of  $\pm 2.5\%$ . This uncertainty was well within the targeted precision goals for sample size. If it was assumed that final resolved readings had been 100% accurate, a random subsample of 1,179 from a population would have had nearly the same confidence bounds as that due to reader error.

Since the results from this approach showed that the overall accuracy of the readings was high, we can make a good case for that for the Stikine River fisheries the contribution estimates were accurate.

Important assumptions on using latent class models are that readings are independent. Specifically, the reading of each otolith by a given reader is independent of any other reading by the same reader, and each reading by various readers on a given otolith are independent given the true state of the otolith. The latter assumption may be hard to meet especially if only the first reader is preparing the otolith for examination and all readers are dependent on that preparation. It may be possible to account for that dependency directly in the modeling approach.

Another critical assumption of the model is that all information on classification is contained in the model data. In other words, it is conceivable to have an extremely high estimate of accuracy, but if a hatchery did not mark all their fish or there exists a pattern in the otoliths of wild stocks that fully mimics the thermal mark, then the model could be miss-specified and the estimates biased. For this reason it is important to fully examine the voucher samples for 100% marking and occasionally look at otoliths from known wild stocks to check for wild pattern characteristics.

In the future, extensions of this approach will be applied to multiple classifications (i.e. marks A, B, C, or no mark). Also the model was applied here to instances where only three independent readings were available, however it may also be possible to apply the model to paired readings from two or more groups of otoliths when there is an underlying contrast in the proportion of marked fish present. Additional readings will also allow a goodness of fit test to be applied as a check on some of the assumptions of the model independence.

While it is labor intensive to conduct multiple readings of the otoliths, there appears to be little choice if the goal is to evaluate and determine the accuracy of the contribution estimates obtained from thermal marked otoliths. The laboratory is now trying to work with other labs in Alaska in instituting standards for measuring accuracy. It is important to note that many of the marks the laboratory works with, particularly on the Taku River, have been difficult to detect and have required the time of the most experienced readers who are in short supply. This has resulted in a lack of multiple readings on these samples and has hampered the ability to monitor the contribution estimates in some fisheries. We hope to improve this situation in the future by retaining experienced readers who have undergone the training process in our lab.

## **CANADIAN OTOLITH LAB**

DFO began developing capabilities to examine for the presence of otolith marks in 1994. A term technician was hired in September of 1994 to work at the Pacific Biological Station, Nanaimo. He has visited otolith labs in both Juneau and Olympia (Washington Department of Fisheries) to observe techniques and develop standardized terminology. The lab is now processing otoliths from a number of southern British Columbia hatcheries (mainly chinook salmon) and will be processing all 1997 transboundary juvenile and smolt otolith samples and most of the Canadian transboundary adult samples. Although the lab is not currently funded as, or intended to be, a

support service, this is the eventual goal. Since results from the Canadian lab have not been provided in a timely manner, DFO is looking at a number of options which include: continued support of the lab with adherence to a inflexible processing schedule; contracting the work out DFO contractors located in Whitehorse, YT; and contracting the work out to the ADF&G or the Douglas Island Pink and Chum Hatchery, which are both located in Juneau, AK.



## **APPENDIX TABLES**

Appendix A. 1. Weekly salmon catch and effort in the Alaskan Subdistrict 106-41 (Sumner Strait) commercial drift gillnet fishery, 1997.

Week	Start Date	Catch						Effort		
		Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Permits	Days	Permit Days
25	15-Jun	254	3,037	90	133	447	0	38	2.0	76
26	22-Jun	264	19,348	758	3,890	2,513	0	65	3.0	195
27	29-Jun	180	24,228	887	19,993	10,117	0	84	3.0	252
28	6-Jul	59	14,936	1,208	32,850	10,355	0	77	3.0	231
29	13-Jul	26	10,679	1,462	30,346	26,065	0	89	2.0	178
30	20-Jul	13	10,686	1,741	36,804	20,182	0	76	2.0	152
31	27-Jul	11	8,726	1,410	59,941	12,563	0	54	3.0	162
32	3-Aug	8	5,504	3,537	69,022	4,865	0	55	4.0	220
33	10-Aug	3	7,071	4,168	91,841	5,374	0	59	4.0	236
34	17-Aug	5	8,374	7,290	42,786	2,747	0	61	4.0	244
35	24-Aug	3	4,421	9,124	18,775	2,420	0	73	2.0	146
36	31-Aug	1	1,136	5,072	6,858	915	0	70	2.0	140
37	7-Sep	0	268	3,083	999	347	0	36	1.0	36
38	14-Sep	1	235	9,393	367	1,218	0	39	2.0	78
39	21-Sep	1	26	3,694	14	484	0	28	2.0	56
Total		829	118,675	52,917	414,619	100,612	0		39.0	2,402

Appendix A. 2. Weekly stock proportions and catches of sockeye salmon harvested in the Alaskan Subdistrict 106-41&42 (Sumner Strait) commercial drift gillnet fishery, 1997. Data based on scale pattern analysis.

Week	Alaska	Canada	Stikine				Planted	CPUE of Stikine Fish			
			Tahltan <sup>a</sup>	Tuya	Mainstem	Total		Tahltan	Tahltan <sup>a</sup>	Tuya	Mainstem
Proportions											
25	0.499	0.195	0.122	0.181	0.003	0.306	0.043	0.110	0.123	0.014	0.110
26	0.302	0.368	0.115	0.215	0.000	0.330	0.063	0.256	0.364	0.000	0.296
27	0.457	0.128	0.215	0.183	0.018	0.415	0.029	0.464	0.300	0.223	0.361
28	0.522	0.175	0.075	0.175	0.053	0.303	0.036	0.109	0.193	0.449	0.177
29	0.693	0.278	0.016	0.007	0.006	0.029	0.007	0.022	0.007	0.047	0.016
30	0.682	0.283	0.017	0.010	0.007	0.035	0.005	0.027	0.012	0.064	0.022
31	0.693	0.292	0.002	0.000	0.013	0.015	0.000	0.003	0.000	0.091	0.007
32	0.747	0.244	0.000	0.000	0.009	0.009	0.000	0.000	0.000	0.030	0.002
33	0.755	0.243	0.000	0.000	0.003	0.003	0.000	0.000	0.000	0.010	0.001
34	0.448	0.536	0.000	0.000	0.016	0.016	0.000	0.000	0.000	0.073	0.005
35	0.603	0.389	0.008	0.000	0.000	0.008	0.000	0.005	0.000	0.000	0.002
36	0.603	0.389	0.008	0.000	0.000	0.008	0.000	0.001	0.000	0.000	0.001
37	0.603	0.389	0.008	0.000	0.000	0.008	0.000	0.001	0.000	0.000	0.001
38	0.603	0.389	0.008	0.000	0.000	0.008	0.000	0.001	0.000	0.000	0.000
39	0.603	0.389	0.008	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000
Total	0.538	0.269	0.079	0.101	0.014	0.193	0.023	0.401	0.529	0.069	1.000
Catches											
25	1,516	592	372	549	8	929	132	4.9	7.2	0.1	12.2
26	5,840	7,126	2,221	4,161	0	6,382	1,226	11.4	21.3	0.0	32.7
27	11,074	3,096	5,197	4,430	431	10,058	707	20.6	17.6	1.7	39.9
28	7,791	2,621	1,116	2,612	796	4,524	539	4.8	11.3	3.4	19.6
29	7,404	2,965	170	76	64	310	75	1.0	0.4	0.4	1.7
30	7,290	3,027	185	109	75	369	53	1.2	0.7	0.5	2.4
31	6,044	2,550	19	0	113	132	0	0.1	0.0	0.7	0.8
32	4,110	1,344	0	0	50	50	0	0.0	0.0	0.2	0.2
33	5,337	1,716	0	0	18	18	0	0.0	0.0	0.1	0.1
34	3,751	4,486	0	0	137	137	0	0.0	0.0	0.6	0.6
35	2,666	1,721	34	0	0	34	0	0.2	0.0	0.0	0.2
36	685	442	9	0	0	9	0	0.1	0.0	0.0	0.1
37	162	104	2	0	0	2	0	0.1	0.0	0.0	0.1
38	142	91	2	0	0	2	0	0.0	0.0	0.0	0.0
39	16	10	0	0	0	0	0	0.0	0.0	0.0	0.0
Total	63,827	31,892	9,327	11,937	1,692	22,956	2,733	44.4	58.6	7.7	110.7

<sup>a</sup> Tahltan includes wild and thermally marked fish.

Appendix A. 3. Weekly salmon catch and effort in the Alaskan Subdistrict 106-30 (Clarence Strait) commercial drift gillnet fishery, 1997.

Week	Start Date	Catch						Effort		
		Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Permits	Days	Permit Days
25	15-Jun	23	251	5	5	7	0	4	2	8
26	22-Jun	62	1,869	70	606	252	0	17	2	34
27	29-Jun	78	4,321	264	8,100	2,280	0	20	3	60
28	6-Jul	37	5,856	601	18,436	9,604	0	37	3	111
29	13-Jul	6	6,524	634	30,099	17,210	0	48	2	96
30	20-Jul	6	7,256	462	34,465	27,559	0	51	2	102
31	27-Jul	9	9,024	843	70,642	15,361	0	61	3	183
32	3-Aug	5	3,262	927	58,007	5,173	0	45	4	180
33	10-Aug	8	2,778	1,217	68,767	1,829	0	35	4	140
34	17-Aug	6	5,332	2,638	55,451	1,933	0	50	4	200
35	24-Aug	0	1,968	2,269	14,151	2,060	0	29	2	58
36	31-Aug	0	1,208	5,037	15,464	1,397	0	39	2	78
37	7-Sep	0	17	430	26	171	0	9	1	9
38	14-Sep	5	164	8,467	205	874	0	22	2	44
39	21-Sep	1	13	769	8	134	0	13	2	26
Total		246	49,843	24,633	374,432	85,844	0		38	1,329

Appendix A. 4. Weekly stock proportions and catches of sockeye salmon harvested in the Alaskan Subdistrict 106-30 (Clarence Strait) commercial drift gillnet fishery, 1997. Data based on scale pattern analysis.

Week	Stikine					Planted		CPUE of Stikine Fish			
	Alaska	Canada	Tahltan <sup>a</sup>	Tuya	Mainstem	Total	Tahltan	Tahltan <sup>a</sup>	Tuya	Mainstem	Total
Proportions											
25	0.670	0.116	0.080	0.130	0.003	0.213	0.080	0.160	0.000	0.012	0.135
26	0.670	0.116	0.080	0.130	0.003	0.213	0.080	0.281	0.000	0.021	0.237
27	0.670	0.116	0.080	0.130	0.003	0.213	0.080	0.368	0.000	0.027	0.311
28	0.804	0.127	0.000	0.065	0.003	0.068	0.040	0.000	0.000	0.020	0.073
29	0.788	0.194	0.015	0.000	0.003	0.018	0.000	0.064	0.000	0.022	0.024
30	0.705	0.282	0.000	0.011	0.002	0.013	0.000	0.000	0.000	0.018	0.019
31	0.593	0.377	0.000	0.000	0.029	0.029	0.000	0.000	0.000	0.161	0.029
32	0.777	0.122	0.094	0.000	0.007	0.101	0.000	0.109	0.000	0.014	0.037
33	0.622	0.342	0.003	0.000	0.033	0.036	0.000	0.004	0.000	0.072	0.014
34	0.444	0.484	0.003	0.000	0.070	0.072	0.000	0.005	0.000	0.205	0.039
35	0.444	0.484	0.003	0.000	0.070	0.072	0.000	0.006	0.000	0.261	0.050
36	0.444	0.484	0.003	0.000	0.070	0.072	0.000	0.003	0.000	0.119	0.023
37	0.444	0.484	0.003	0.000	0.070	0.072	0.000	0.000	0.000	0.015	0.003
38	0.444	0.484	0.003	0.000	0.070	0.072	0.000	0.001	0.000	0.029	0.005
39	0.444	0.484	0.003	0.000	0.070	0.072	0.000	0.000	0.000	0.004	0.001
Total	0.657	0.276	0.019	0.026	0.021	0.066	0.015	0.317	0.501	0.183	1.000
Catches											
25	168	29	20	33	1	54	20	2.5	4.1	0.1	6.7
26	1,253	218	150	243	6	399	150	4.4	7.1	0.2	11.7
27	2,896	503	346	562	15	922	346	5.8	9.4	0.2	15.4
28	4,711	744	0	381	20	401	234	0.0	3.4	0.2	3.6
29	5,140	1,268	97	0	19	116	0	1.0	0.0	0.2	1.2
30	5,113	2,049	0	77	17	94	0	0.0	0.8	0.2	0.9
31	5,354	3,404	0	0	266	266	0	0.0	0.0	1.5	1.5
32	2,534	397	308	0	23	331	0	1.7	0.0	0.1	1.8
33	1,729	950	8	0	91	99	0	0.1	0.0	0.7	0.7
34	2,366	2,580	15	0	371	386	0	0.1	0.0	1.9	1.9
35	873	952	5	0	137	142	0	0.1	0.0	2.4	2.5
36	536	585	3	0	84	87	0	0.0	0.0	1.1	1.1
37	8	8	0	0	1	1	0	0.0	0.0	0.1	0.1
38	73	79	0	0	11	12	0	0.0	0.0	0.3	0.3
39	6	6	0	0	1	1	0	0.0	0.0	0.0	0.0
Total	32,759	13,773	952	1,295	1,064	3,311	750	15.7	24.8	9.0	49.5

<sup>a</sup> Tahltan includes wild and thermally marked fish.

Appendix A. 5. Weekly salmon catch in the Alaskan District 106 commercial drift gillnet fisheries, 1997.  
 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 because some boats fished in more than one subdistrict.

Week	Start Date	Catch						Effort		
		Chinook	Sockeye	Coho	Pink <sup>a</sup>	Chum	Steelhead	Permits	Days	Permit Days
25	15-Jun	277	3,288	95	138	454	0	41	2.0	82
26	22-Jun	326	21,217	828	4,496	2,765	0	79	3.0	237
27	29-Jun	258	28,549	1,151	28,093	12,397	0	103	3.0	309
28	6-Jul	96	20,792	1,809	51,286	19,959	0	109	3.0	327
29	13-Jul	32	17,203	2,096	60,445	43,275	0	135	2.0	270
30	20-Jul	19	17,942	2,203	71,269	47,741	0	124	2.0	248
31	27-Jul	20	17,750	2,253	130,583	27,924	0	112	3.0	336
32	3-Aug	13	8,766	4,464	127,029	10,038	0	99	4.0	396
33	10-Aug	11	9,849	5,385	160,608	7,203	0	92	4.0	368
34	17-Aug	11	13,706	9,928	98,237	4,680	0	107	4.0	428
35	24-Aug	3	6,389	11,393	32,926	4,480	0	101	2.0	202
36	31-Aug	1	2,344	10,109	22,322	2,312	0	109	2.0	218
37	7-Sep	0	285	3,513	1,025	518	0	45	1.0	45
38	14-Sep	6	399	17,860	572	2,092	0	61	2.0	122
39	21-Sep	2	39	4,463	22	618	0	40	2.0	80
Total		1,075	168,518	77,550	789,051	186,456	0		39.0	3,668
Alaska Hatchery Contribution										
25	15-Jun	91		41						
26	22-Jun	121	108	271		1,503				
27	29-Jun	164	251	329		11,223				
28	6-Jul			257						
29	13-Jul			135		10,385				
30	20-Jul		612	125		18,335				
31	27-Jul		275	260		20,588				
32	3-Aug		163	712		8,043				
33	10-Aug			420		5,829				
34	17-Aug			988		1,899				
35	24-Aug		51	2,207		1,415				
36	31-Aug		2	2,456		794				
37	7-Sep			840						
38	14-Sep			8,288						
39	21-Sep		2	2,183						
Total		375	1,463	19,512		80,015				
Catches not including Alaska hatchery contributions										
25	15-Jun	186	3,288	54	138	454	0	41	2.0	82
26	22-Jun	205	21,109	557	4,496	1,262	0	79	3.0	237
27	29-Jun	94	28,298	822	28,093	1,174	0	103	3.0	309
28	6-Jul	96	20,792	1,552	51,286	19,959	0	109	3.0	327
29	13-Jul	32	17,203	1,961	60,445	32,890	0	135	2.0	270
30	20-Jul	19	17,330	2,078	71,269	29,406	0	124	2.0	248
31	27-Jul	20	17,475	1,993	130,583	7,336	0	112	3.0	336
32	3-Aug	13	8,603	3,752	127,029	1,995	0	99	4.0	396
33	10-Aug	11	9,849	4,965	160,608	1,374	0	92	4.0	368
34	17-Aug	11	13,706	8,940	98,237	2,781	0	107	4.0	428
35	24-Aug	3	6,338	9,186	32,926	3,065	0	101	2.0	202
36	31-Aug	1	2,342	7,653	22,322	1,518	0	109	2.0	218
37	7-Sep	0	285	2,673	1,025	518	0	45	1.0	45
38	14-Sep	6	399	9,572	572	2,092	0	61	2.0	122
39	21-Sep	2	37	2,280	22	618	0	40	2.0	80
Total		700	167,055	58,038	789,051	106,441	0	1,357	39.0	3,668

<sup>a</sup> Alaska hatchery pink salmon contributions are not estimated due to a lack of cwt data.

Appendix A. 6. Weekly stock proportions of sockeye salmon harvested in the Alaskan District 106 commercial drift gillnet fisheries, 1997. Data based on SPA.

Week	Stikine			Planted		CPUE of Stikine Fish					
	Alaska	Canada	Tahltan <sup>a</sup>	Tuya	Mainstem	Total	Tahltan	Tahltan <sup>a</sup>	Tuya	Mainstem	Total
25	0.512	0.189	0.119	0.177	0.003	0.299	0.044	0.122	0.136	0.012	0.120
26	0.334	0.346	0.112	0.208	0.000	0.320	0.083	0.256	0.357	0.003	0.287
27	0.489	0.126	0.194	0.175	0.016	0.385	0.089	0.459	0.311	0.165	0.356
28	0.601	0.162	0.054	0.144	0.039	0.237	0.089	0.087	0.176	0.285	0.151
29	0.729	0.246	0.016	0.004	0.005	0.025	0.058	0.025	0.005	0.035	0.016
30	0.691	0.283	0.010	0.010	0.005	0.026	0.043	0.019	0.014	0.042	0.019
31	0.642	0.335	0.001	0.000	0.021	0.022	0.007	0.001	0.000	0.129	0.012
32	0.758	0.199	0.035	0.000	0.008	0.043	0.000	0.020	0.000	0.021	0.010
33	0.717	0.271	0.001	0.000	0.011	0.012	0.000	0.001	0.000	0.034	0.003
34	0.446	0.516	0.001	0.000	0.037	0.038	0.000	0.001	0.000	0.136	0.012
35	0.554	0.418	0.006	0.000	0.021	0.028	0.000	0.005	0.000	0.078	0.009
36	0.521	0.438	0.005	0.000	0.036	0.041	0.000	0.001	0.000	0.044	0.004
37	0.594	0.395	0.007	0.000	0.004	0.012	0.000	0.001	0.000	0.003	0.001
38	0.538	0.428	0.006	0.000	0.029	0.034	0.000	0.000	0.000	0.011	0.001
39	0.550	0.421	0.006	0.000	0.023	0.029	0.000	0.000	0.000	0.001	0.000
Total	0.573	0.271	0.061	0.079	0.016	0.156	0.021				
Catches											
25	1,684	621	392	582	9	983	152	4.8	7.1	0.1	12.0
26	7,093	7,344	2,371	4,404	6	6,781	1,376	10.0	18.6	0.0	28.6
27	13,970	3,599	5,543	4,992	446	10,980	1,053	17.9	16.2	1.4	35.5
28	12,502	3,365	1,116	2,993	816	4,925	773	3.4	9.2	2.5	15.1
29	12,544	4,233	267	76	83	426	75	1.0	0.3	0.3	1.6
30	12,403	5,076	185	186	92	463	53	0.7	0.8	0.4	1.9
31	11,398	5,954	19	0	379	398	0	0.1	0.0	1.1	1.2
32	6,644	1,741	308	0	73	381	0	0.8	0.0	0.2	1.0
33	7,066	2,666	8	0	109	117	0	0.0	0.0	0.3	0.3
34	6,117	7,066	15	0	508	523	0	0.0	0.0	1.2	1.2
35	3,539	2,673	40	0	137	177	0	0.2	0.0	0.7	0.9
36	1,221	1,027	12	0	84	96	0	0.1	0.0	0.4	0.4
37	169	113	2	0	1	3	0	0.0	0.0	0.0	0.1
38	214	171	2	0	11	14	0	0.0	0.0	0.1	0.1
39	21	16	0	0	1	1	0	0.0	0.0	0.0	0.0
Total	96,586	45,665	10,279	13,232	2,756	26,267	3,482	39.1	52.0	8.7	99.8

<sup>a</sup> Tahltan includes wild and thermally marked fish.

Appendix A. 7. Weekly salmon catch and effort in the Alaskan District 108 commercial drift gillnet fishery, 1997. Catches do not include Ohmer Creek terminal area harvests. The permit days are adjusted for boats that did not fish the entire opening and are less than the sum of the permits times the days open.

Week	Start Date	Catch					Effort		Permit Days
		Sockeye	Coho	Pink	Chum	Permits	Days		
24	8-Jun	168	100	0	0	1	25	1.0	25.0
25	15-Jun	683	7,225	31	20	72	53	4.0	202.0
26	22-Jun	565	14,189	19	267	223	90	5.0	376.0
27	29-Jun	710	33,718	73	2,252	2,149	125	5.5	631.0
28	6-Jul	359	24,024	272	17,173	9,750	136	5.5	635.5
29	13-Jul	49	5,993	114	6,495	6,028	46	2.0	92.0
30	20-Jul	12	2,345	256	7,815	6,134	24	2.0	48.0
31	27-Jul	9	3,930	357	18,687	9,634	33	3.0	99.0
32	3-Aug	7	1,149	391	7,985	3,994	25	4.0	100.0
33	10-Aug	3	276	226	4,241	522	11	4.0	44.0
34	17-Aug	0	8	35	69	36	2	4.0	8.0
35	24-Aug	1	40	82	408	310	5	2.0	10.0
36	31-Aug	0	42	284	333	60	7	2.0	14.0
Total		2,566	93,039	2,140	65,745	38,913	582	44	2,285
Alaska Hatchery Contribution									
24	8-Jun	27	0						
25	15-Jun	107	0	3					
26	22-Jun	243	0						
27	29-Jun	249	0	22					
28	6-Jul	111	0	51		8,327			
29	13-Jul	3	0						
30	20-Jul		0			3,708			
31	27-Jul		0			2,023			
32	3-Aug	0	0	0		0			
33	10-Aug	0	0	0		0			
34	17-Aug	0	0	0		0			
35	24-Aug	0	0	0		0			
36	31-Aug	0	0	86		485			
Total		740	0	162		14,544			
Catches not including Alaska hatchery contributions									
24	8-Jun	141	100	0	0	1	25	1.0	25
25	15-Jun	576	7,225	28	20	72	53	4.0	202
26	22-Jun	322	14,189	19	267	223	90	5.0	376
27	29-Jun	461	33,718	51	2,252	2,149	125	5.5	631
28	6-Jul	248	24,024	221	17,173	1,423	136	5.5	636
29	13-Jul	46	5,993	114	6,495	6,028	46	2.0	92
30	20-Jul	12	2,345	256	7,815	2,426	24	2.0	48
31	27-Jul	9	3,930	357	18,687	7,611	33	3.0	99
32	3-Aug	7	1,149	391	7,985	3,994	25	4.0	100
33	10-Aug	3	276	226	4,241	522	11	4.0	44
34	17-Aug	0	8	35	69	36	2	4.0	8
35	24-Aug	1	40	82	408	310	5	2.0	10
36	31-Aug	0	42	198	333	-425	7	2.0	14
Total		1,826	93,039	1,978	65,745	24,369	582	44.0	2,285



Appendix A. 8. Weekly stock proportions and stock-specific catch of sockeye salmon in the Alaskan District 108 commercial drift gillnet fishery, 1997. Catches do not include Ohmer Creek terminal area harvests. Data based on SPA.

Week	Alaska	Canada	Tahltan <sup>a</sup>	Stikine		Planted		CPUE of Stikine Fish			Total
				Tuya	Mainstem	Total	Tahltan	Tahltan <sup>a</sup>	Tuya	Mainstem	
Proportions											
24	0.004	0.254	0.306	0.330	0.106	0.742	0.112	0.014	0.020	0.004	0.011
25	0.004	0.254	0.306	0.330	0.106	0.742	0.123	0.124	0.179	0.032	0.097
26	0.046	0.302	0.389	0.255	0.009	0.653	0.134	0.166	0.145	0.003	0.090
27	0.021	0.078	0.460	0.328	0.113	0.901	0.137	0.278	0.265	0.051	0.176
28	0.105	0.098	0.348	0.244	0.205	0.797	0.065	0.149	0.140	0.065	0.110
29	0.074	0.065	0.203	0.114	0.544	0.861	0.050	0.150	0.112	0.298	0.205
30	0.156	0.258	0.083	0.100	0.403	0.586	0.059	0.046	0.074	0.166	0.105
31	0.108	0.008	0.137	0.087	0.660	0.884	0.021	0.062	0.052	0.221	0.128
32	0.164	0.014	0.044	0.034	0.743	0.822	0.013	0.006	0.006	0.072	0.035
33	0.164	0.014	0.044	0.034	0.743	0.822	0.000	0.003	0.003	0.039	0.019
34	0.164	0.014	0.044	0.034	0.743	0.822	0.000	0.001	0.001	0.006	0.003
35	0.164	0.014	0.044	0.034	0.743	0.822	0.000	0.002	0.002	0.025	0.012
36	0.164	0.014	0.044	0.034	0.743	0.822	0.000	0.002	0.002	0.019	0.009
Total	0.058	0.131	0.362	0.261	0.189	0.812	0.102	0.323	0.242	0.435	1.000
Catch											
24	0	25	31	33	11	74	11	1.2	1.3	0.4	3.0
25	30	1,837	2,207	2,386	765	5,359	891	10.9	11.8	3.8	26.5
26	646	4,279	5,517	3,614	133	9,264	1,902	14.7	9.6	0.4	24.6
27	707	2,615	15,501	11,074	3,821	30,396	4,605	24.6	17.5	6.1	48.2
28	2,517	2,348	8,370	5,871	4,918	19,159	1,555	13.2	9.2	7.7	30.1
29	444	390	1,217	682	3,260	5,159	302	13.2	7.4	35.4	56.1
30	365	606	195	234	945	1,374	137	4.1	4.9	19.7	28.6
31	423	31	539	342	2,595	3,476	83	5.4	3.5	26.2	35.1
32	189	16	51	39	854	944	15	0.5	0.4	8.5	9.4
33	45	4	12	9	205	227	0	0.3	0.2	4.7	5.2
34	1	0	0	0	6	7	0	0.0	0.0	0.7	0.8
35	7	1	2	1	30	33	0	0.2	0.1	3.0	3.3
36	7	1	2	1	31	35	0	0.1	0.1	2.2	2.5
Total	5,381	12,152	33,644	24,288	17,574	75,506	9,500	88.4	66.2	118.8	273.4

<sup>a</sup> Tahltan includes wild and thermally marked fish.

Appendix A. 9. Weekly salmon and steelhead trout catch and effort in the Canadian commercial fishery in the lower Stikine River, 1997.

Week	Start Date	Catch							Effort		
		Chinook		Coho	Pink	Chum	Steelhead	Permits	Days	Permit Days	
		Jacks	Large Sockeye								
25	22-Jun	26	359	105	0	0	0	0	10.50	3	31.5
26	29-Jun	67	792	4,117	0	0	0	0	14.25	5	71.3
27	6-Jul	56	1,317	14,887	0	0	0	1	14.17	7	99.2
28	13-Jul	18	562	9,857	0	0	0	0	10.83	7	75.8
29	20-Jul	15	180	8,043	0	21	0	0	12.67	7	88.7
30	27-Jul	2	50	9,204	2	50	16	2	10.00	7	70.0
31	3-Aug	1	18	7,568	6	37	17	4	9.80	6	58.8
32	10-Aug	1	3	2,488	39	57	22	8	5.50	5	27.5
33	17-Aug	0	0	254	13	5	19	5	1.67	7	11.7
34	24-Aug	0	0	181	16	0	11	2	1.00	7	7.0
35	31-Aug	0	2	88	21	6	29	3	1.00	7	7.0
36	7-Sep	0	0	63	26	17	22	2	1.00	4	4.0
37	14-Sep	0	0	138	196	76	79	6	1.00	7	7.0
38	21-Sep	0	0	0	28	0	7	0	1.00	4	4.0
39	28-Sep	0	0	2	33	0	0	0	1.00	4	4.0
40	5-Oct	0	0	0	21	0	0	0	1.00	2	2.0
Total		186	3,283	56,995	401	269	222	33		89.0	569.4

Appendix A. 10. Weekly sockeye salmon stock proportions and catch by stock in the Canadian commercial fishery in the lower Stikine River, 1997. Sex specific age compositions were calculated and the stock composition of the females sampled for egg diameters was expanded to the catch by age.

Week	Proportion				Planted Tahltan	Catch			Tahltan	
	Small Egg	Tahltan <sup>a</sup>	Tuya Mainstem			Tahltan <sup>a</sup>	Tuya Mainstem		Wild	Planted
25	0.833	0.619	0.286	0.095	0.095	65	30	10	55	10
26	0.911	0.545	0.354	0.102	0.098	2,243	1,456	418	1,838	405
27	0.884	0.503	0.339	0.158	0.106	7,494	5,043	2,350	5,917	1,577
28	0.835	0.429	0.358	0.214	0.086	4,226	3,524	2,107	3,375	851
29	0.558	0.410	0.276	0.315	0.065	3,294	2,219	2,530	2,774	520
30	0.319	0.282	0.239	0.479	0.071	2,594	2,203	4,407	1,945	649
31	0.313	0.288	0.110	0.601	0.043	2,182	835	4,551	1,859	323
32	0.283	0.179	0.117	0.704	0.024	446	291	1,751	387	59
33	0.210	0.114	0.059	0.827	0.008	29	15	210	27	2
34	0.053	0.110	0.017	0.873	0.022	20	3	158	16	4
35	0.087	0.045	0.023	0.932	0.034	4	2	82	1	3
36	0.000	0.025	0.010	0.966	0.025	2	1	61	0	2
37	0.000	0.000	0.000	1.000	0.000	0	0	138	0	0
38	0.000	0.000	0.000	1.000	0.000	0	0	0	0	0
39	0.000	0.000	0.000	1.000	0.000	0	0	2	0	0
Total						22,599	15,622	18,775	18,194	4,405
Proportion						0.397	0.274	0.329	0.319	0.077
Week					Total CPUE	CPUE			Tahltan	
						Tahltan <sup>a</sup>	Tuya Mainstem		Wild	Planted
25					3.333	2.063	0.952	0.317	1.746	0.317
26					57.782	31.481	20.435	5.867	25.796	5.684
27					150.086	75.552	50.842	23.692	59.653	15.899
28					130.022	55.745	46.485	27.793	44.519	11.225
29					90.687	37.141	25.020	28.526	31.277	5.863
30					131.486	37.057	31.471	62.957	27.786	9.271
31					128.707	37.109	14.201	77.398	31.616	5.493
32					90.473	16.218	10.582	63.673	14.073	2.145
33					21.728	2.481	1.283	17.964	2.310	0.171
34					25.857	2.857	0.429	22.571	2.286	0.571
35					12.571	0.571	0.286	11.714	0.143	0.429
36					15.750	0.388	0.155	15.207	0.000	0.388
37					19.714	0.000	0.000	19.714	0.000	0.000
38					0.000	0.000	0.000	0.000	0.000	0.000
39					0.500	0.000	0.000	0.500	0.000	0.000
Total					878.697	298.663	202.140	377.894	241.205	57.458
Proportion						0.340	0.230	0.430	0.275	0.065

Appendix A. 11. Weekly salmon and steelhead trout catch and effort in the Canadian commercial fishery in the upper Stikine River, 1997.

Week	Start Date	Catch								Effort	
		Chinook		Sockeye	Coho	Pink	Chum	Steelhead	Permits	Permit	
		Jacks	Large							Days	Days
26	22-Jun	1	4	0	0	0	0	0	1.0	1.0	1.0
27	29-Jun	0	23	15	0	0	0	0	1.0	4.0	4.0
28	6-Jul	0	5	405	0	0	0	0	2.0	6.0	12.0
29	13-Jul	3	7	725	0	0	0	0	1.6	7.0	11.2
30	20-Jul	1	4	608	0	0	0	0	1.4	7.0	9.8
31	27-Jul	1	2	362	0	0	0	0	1.0	2.0	2.0
32	3-Aug	0	0	84	0	0	0	0	1.0	2.0	2.0
Total		6	45	2,199	0	0	0	0	9.0	29.0	42.0

Appendix A. 12. Weekly salmon and steelhead trout catch and effort in the Canadian Aboriginal fishery located at Telegraph Creek, on the Stikine River, 1997.

Week	Start Date	Catch								Effort	
		Chinook		Sockeye	Coho	Pink	Chum	Steelhead	Permits	Permit	
		Jacks	Large							Days	Days
22	25-May	1	2	0	0	0	0	0	1.0	3	3.0
23	1-Jun	0	10	0	0	0	0	0	1.4	5	7.0
24	8-Jun	8	165	7	0	0	0	0	6.1	7	43.0
25	15-Jun	20	282	9	0	0	0	0	6.4	7	45.0
26	22-Jun	10	67	47	0	0	0	0	2.3	7	16.0
27	29-Jun	23	224	241	0	0	0	0	7.7	7	54.0
28	6-Jul	11	160	1,026	0	0	0	0	8.9	7	62.0
29	13-Jul	14	161	2,382	0	0	0	0	14.1	7	99.0
30	20-Jul	2	47	1,098	0	0	0	0	10.9	7	76.0
31	27-Jul	4	34	1,182	0	0	0	0	8.9	7	62.0
32	3-Aug	0	0	212	0	0	0	0	2.6	7	18.0
33	10-Aug	0	1	76	0	0	0	0	0.6	7	4.0
34	17-Aug	1	2	62	0	0	0	0	1.0	1	1.0
Total		94	1,155	6,365	0	0	0	0	71.8	79	490.0

Appendix A. 13. Catch by stock by week for sockeye salmon harvested in the Canadian upper river commercial and Aboriginal fisheries in the Stikine River, 1997.

Week	Start Date	Upper River Commercial					Aboriginal Fishery				
		Tahltan	Tuya	Mainstem	Tahltan		Tahltan	Tuya	Mainstem	Tahltan	
					Wild	Planted				Wild	Planted
24	8-Jun						3	3	1	2	1
25	15-Jun						4	3	2	3	1
26	22-Jun						20	17	10	17	3
27	29-Jun	7	5	3	6	1	103	86	52	86	17
28	6-Jul	258	119	28	174	84	651	301	74	439	212
29	13-Jul	423	302	0	363	60	1,390	992	0	1,190	200
30	20-Jul	329	279	0	285	44	594	504	0	514	80
31	27-Jul	220	142	0	213	7	719	463	0	696	23
32	3-Aug	39	36	9	31	8	96	92	24	76	20
33	10-Aug						29	39	8	27	2
34	17-Aug						31	7	24	24	7
35	24-Aug						10	6	7	10	0
Total		1,276	883	40	1,072	204	3,650	2,513	202	3,084	566

Appendix A. 14. Weekly salmon and steelhead trout catch and effort in the Canadian test fishery in the Stikine River, 1997.

Week	Start Date	Catch							# Drifts/ Set Hours
		Chinook		Sockeye	Coho	Pink	Chum	Steelhead	
		Jacks	Adults						
Drift gillnet									
25	15-Jun	3	14	23	0	0	0	0	35
26	22-Jun	0	10	35	0	0	0	0	25
27	29-Jun	2	3	45	0	0	0	0	15
28	6-Jul	0	1	26	0	1	0	0	15
29	13-Jul	1	1	27	0	0	1	0	15
30	20-Jul	1	0	27	0	0	2	0	15
31	27-Jul	0	1	20	0	4	0	0	20
32	3-Aug	0	0	24	0	1	3	0	20
33	10-Aug	0	0	7	3	1	1	0	15
34	17-Aug	0	0	8	3	2	2	1	15
35	24-Aug	0	0	3	5	0	6	1	20
Total		7	30	245	11	9	15	2	210
Set gillnet                    There was no set gillnet test fishery in 1997									
Additional Drifts            There were no additional drifts in the test fishery in 1997									
Total Test Fishery Catch									
25	15-Jun	3	14	23	0	0	0	0	
26	22-Jun	0	10	35	0	0	0	0	
27	29-Jun	2	3	45	0	0	0	0	
28	6-Jul	0	1	26	0	1	0	0	
29	13-Jul	1	1	27	0	0	1	0	
30	20-Jul	1	0	27	0	0	2	0	
31	27-Jul	0	1	20	0	4	0	0	
32	3-Aug	0	0	24	0	1	3	0	
33	10-Aug	0	0	7	3	1	1	0	
34	17-Aug	0	0	8	3	2	2	1	
35	24-Aug	0	0	3	5	0	6	1	
Total Test Catch		7	30	245	11	9	15	2	

Appendix A. 15. Weekly catch, CPUE, and migratory timing of Tahltan and Mainstem sockeye salmon stocks in the Stikine River test fishery, 1997. Sex specific age compositions were calculated and the smoothed stock compositions of the females sampled for egg diameters was expanded to the catch by age.

Week	Proportions			Catch			CPUE				Migratory Timing		
	Tahltan	Tuya	Mainstem	Tahltan	Tuya	Mainstem	Tahltan	Tuya	Mainstem	Total	Tahltan	Tuya	Mainstem
Drift gillnet													
25	0.696	0.217	0.087	16	5	2	0.457	0.143	0.057	0.657	0.033	0.010	0.004
26	0.886	0.086	0.029	31	3	1	1.240	0.120	0.040	1.400	0.090	0.009	0.003
27	0.511	0.444	0.044	23	20	2	1.533	1.333	0.133	3.000	0.112	0.097	0.010
28	0.346	0.462	0.192	9	12	5	0.600	0.800	0.333	1.733	0.044	0.058	0.024
29	0.222	0.074	0.704	6	2	19	0.400	0.133	1.267	1.800	0.029	0.010	0.092
30	0.333	0.037	0.630	9	1	17	0.600	0.067	1.133	1.800	0.044	0.005	0.082
31	0.150	0.050	0.800	3	1	16	0.150	0.050	0.800	1.000	0.011	0.004	0.058
32	0.458	0.000	0.542	11	0	13	0.550	0.000	0.650	1.200	0.040	0.000	0.047
33	0.143	0.000	0.857	1	0	6	0.067	0.000	0.400	0.467	0.005	0.000	0.029
34	0.125	0.000	0.875	1	0	7	0.067	0.000	0.467	0.533	0.005	0.000	0.034
35	0.000	0.000	1.000	0	0	3	0.000	0.000	0.150	0.150	0.000	0.000	0.011
Total				110	44	91	5.664	2.646	5.430	13.740			
Proportion				0.449	0.180	0.371				Proportion of run	0.412	0.193	0.395
Set gillnet													
There was no set gillnet test fishery in 1997													
Additional Drifts													
There were no additional drifts in the test fishery in 1997													
Total test fishery catches													
25	0.696	0.217	0.087	16	5	2							
26	0.886	0.086	0.029	31	3	1							
27	0.511	0.444	0.044	23	20	2							
28	0.346	0.462	0.192	9	12	5							
29	0.222	0.074	0.704	6	2	19							
30	0.333	0.037	0.630	9	1	17							
31	0.150	0.050	0.800	3	1	16							
32	0.458	0.000	0.542	11	0	13							
33	0.143	0.000	0.857	1	0	6							
34	0.125	0.000	0.875	1	0	7							
35	0.000	0.000	1.000	0	0	3							
Total				110	44	91							
Proportion				0.449	0.18	0.371							

<sup>a</sup> Catch was apportioned based on samples from standard drift catch.

Appendix A. 16. Daily counts of adult sockeye salmon passing through Tahltan Lake weir, 1997.

Date	Count	Cumulative		Date	Count	Cumulative	
		Count	Percent			Count	Percent
15-Jul	31	31	0.2	21-Aug	128	10,976	87.9
16-Jul	53	84	0.7	22-Aug	67	11,043	88.5
17-Jul	0	84	0.7	23-Aug	31	11,074	88.7
18-Jul	242	326	2.6	24-Aug	104	11,178	89.5
19-Jul	918	1,244	10.0	25-Aug	32	11,210	89.8
20-Jul	1,083	2,327	18.6	26-Aug	45	11,255	90.2
21-Jul	1,249	3,576	28.6	27-Aug	65	11,320	90.7
22-Jul	1,392	4,968	39.8	28-Aug	25	11,345	90.9
23-Jul	518	5,486	43.9	29-Aug	68	11,413	91.4
24-Jul	643	6,129	49.1	30-Aug	114	11,527	92.3
25-Jul	505	6,634	53.1	31-Aug	50	11,577	92.7
26-Jul	776	7,410	59.4	1-Sep	97	11,674	93.5
27-Jul	395	7,805	62.5	2-Sep	76	11,750	94.1
28-Jul	388	8,193	65.6	3-Sep	66	11,816	94.7
29-Jul	261	8,454	67.7	4-Sep	82	11,898	95.3
30-Jul	223	8,677	69.5	5-Sep	34	11,932	95.6
31-Jul	326	9,003	72.1	6-Sep	22	11,954	95.8
1-Aug	70	9,073	72.7	7-Sep	20	11,974	95.9
2-Aug	226	9,299	74.5	8-Sep	61	12,035	96.4
3-Aug	55	9,354	74.9	9-Sep	24	12,059	96.6
4-Aug	144	9,498	76.1	10-Sep	72	12,131	97.2
5-Aug	153	9,651	77.3	11-Sep	14	12,145	97.3
6-Aug	151	9,802	78.5	12-Sep	15	12,160	97.4
7-Aug	79	9,881	79.2	13-Sep	13	12,173	97.5
8-Aug	82	9,963	79.8	14-Sep	37	12,210	97.8
9-Aug	78	10,041	80.4	15-Sep	70	12,280	98.4
10-Aug	189	10,230	82.0	16-Sep	33	12,313	98.6
11-Aug	158	10,388	83.2	17-Sep	32	12,345	98.9
12-Aug	80	10,468	83.9	18-Sep	30	12,375	99.1
13-Aug	120	10,588	84.8	19-Sep	13	12,388	99.2
14-Aug	58	10,646	85.3	20-Sep	16	12,404	99.4
15-Aug	6	10,652	85.3	21-Sep	30	12,434	99.6
16-Aug	17	10,669	85.5	22-Sep	36	12,470	99.9
17-Aug	66	10,735	86.0	23-Sep	0	12,470	99.9
18-Aug	57	10,792	86.5	24-Sep	0	12,470	99.9
19-Aug	36	10,828	86.7	25-Sep	4	12,474	99.9
20-Aug	20	10,848	86.9	26-Sep	9	12,483	100.0
Total Counted				12,483			
Fish removed for broodstock				-2,294 <sup>a</sup>			
Fish removed for otolith samples				-378 <sup>b</sup>			
Total Spawners				9,811			
Wild Spawners				7,220			
Spawners from fry plants				2,591 <sup>c</sup>			

<sup>a</sup> A total of 1,140 females and 1,154 males were taken for broodstock (96 rejects included in the broodstock total).

<sup>b</sup> 378 fish were sacrificed for otolith analysis.

<sup>c</sup> Ratio of wild to hatchery Tahltan fish from the lower river commercial catch applied to number of spawners.



Appendix A. 17. Daily counts of sockeye salmon smolt migrating through Tahltan Lake smolt weir, 1997.

Date	Count	Cumulative		Date	Count	Cumulative	
		Count	Percent			Count	Percent
11-May	5	5	0.0	5-Jun	324	493,791	95.3
12-May	1	6	0.0	6-Jun	279	494,070	95.3
13-May	3	9	0.0	7-Jun	796	494,866	95.5
14-May	11	20	0.0	8-Jun	6,157	501,023	96.7
15-May	84	104	0.0	9-Jun	2,903	503,926	97.2
16-May	948	1,052	0.2	10-Jun	2,967	506,893	97.8
17-May	11,351	12,403	2.4	11-Jun	1,792	508,685	98.2
18-May	8,765	21,168	4.1	12-Jun	377	509,062	98.2
19-May	8,045	29,213	5.6	13-Jun	1,922	510,984	98.6
20-May	2,810	32,023	6.2	14-Jun	975	511,959	98.8
21-May	28,755	60,778	11.7	15-Jun	294	512,253	98.9
22-May	128,654	189,432	36.6	16-Jun	1,611	513,864	99.2
23-May	217,162	406,594	78.5	17-Jun	580	514,444	99.3
24-May	1,079	407,673	78.7	18-Jun	424	514,868	99.4
25-May	9,968	417,641	80.6	19-Jun	741	515,609	99.5
26-May	1,892	419,533	81.0	20-Jun	403	516,012	99.6
27-May	1,635	421,168	81.3	21-Jun	307	516,319	99.6
28-May	33,288	454,456	87.7	22-Jun	742	517,061	99.8
29-May	9,899	464,355	89.6	23-Jun	666	517,727	99.9
30-May	7,537	471,892	91.1	24-Jun	281	518,008	100.0
31-May	13,662	485,554	93.7	25-Jun	194	518,202	100.0
1-Jun	4,502	490,056	94.6				
2-Jun	1,940	491,996	94.9				
3-Jun	713	492,709	95.1				
4-Jun	758	493,467	95.2				
				Wild	348,079		
				Hatchery	170,123		

Appendix A. 18. Daily counts of adult chinook salmon passing through Little Tahltan weir, 1997.

Date	Large Chinook			Chinook Jacks		
	Count	Cumulative Count	Percent	Count	Cumulative Count	Percent
22-Jun	41	41	0.7	0	0	0.0
23-Jun	10	51	0.9	0	0	0.0
24-Jun	13	64	1.2	0	0	0.0
25-Jun	1	65	1.2	0	0	0.0
26-Jun	142	207	3.7	1	1	1.9
27-Jun	94	301	5.4	0	1	1.9
28-Jun	93	394	7.1	0	1	1.9
29-Jun	38	432	7.8	0	1	1.9
30-Jun	152	584	10.5	0	1	1.9
1-Jul	157	741	13.3	0	1	1.9
2-Jul	149	890	16.0	0	1	1.9
3-Jul	49	939	16.9	0	1	1.9
4-Jul	42	981	17.7	0	1	1.9
5-Jul	192	1,173	21.1	2	3	5.6
6-Jul	347	1,520	27.4	2	5	9.3
7-Jul	135	1,655	29.8	5	10	18.5
8-Jul	149	1,804	32.5	0	10	18.5
9-Jul	0	1,804	32.5	0	10	18.5
10-Jul	83	1,887	34.0	1	11	20.4
11-Jul	427	2,314	41.6	4	15	27.8
12-Jul	226	2,540	45.7	2	17	31.5
13-Jul	34	2,574	46.3	0	17	31.5
14-Jul	65	2,639	47.5	4	21	38.9
15-Jul	135	2,774	49.9	1	22	40.7
16-Jul	91	2,865	51.6	0	22	40.7
17-Jul	208	3,073	55.3	1	23	42.6
18-Jul	101	3,174	57.1	1	24	44.4
19-Jul	105	3,279	59.0	2	26	48.1
20-Jul	241	3,520	63.3	0	26	48.1
21-Jul	218	3,738	67.3	2	28	51.9
22-Jul	492	4,230	76.1	4	32	59.3
23-Jul	60	4,290	77.2	1	33	61.1
24-Jul	207	4,497	80.9	2	35	64.8
25-Jul	119	4,616	83.1	1	36	66.7
26-Jul	26	4,642	83.5	0	36	66.7
27-Jul	157	4,799	86.4	2	38	70.4
28-Jul	176	4,975	89.5	3	41	75.9
29-Jul	137	5,112	92.0	2	43	79.6
30-Jul	110	5,222	94.0	1	44	81.5
31-Jul	18	5,240	94.3	0	44	81.5
1-Aug	92	5,332	96.0	6	50	92.6
2-Aug	15	5,347	96.2	0	50	92.6
3-Aug	72	5,419	97.5	1	51	94.4
4-Aug	51	5,470	98.4	0	51	94.4
5-Aug	36	5,506	99.1	0	51	94.4
6-Aug	13	5,519	99.3	1	52	96.3
7-Aug	8	5,527	99.5	0	52	96.3
8-Aug	18	5,545	99.8	0	52	96.3
9-Aug	5	5,550	99.9	0	52	96.3
10-Aug	4	5,554	99.9	0	52	96.3
11-Aug	3	5,557	100.0	2	54	100.0
Total Counted		5,557			54	
Catch Above Weir		10				
Total Spawners		5,547			54	

**Appendix B. 1. Salmon catch and effort in the Alaskan Subdistrict 106-41/42 (Sumner Strait) commercial drift gillnet fishery, 1960-1997.**

Year	Catch						Effort	
	Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Permit Days	Days Open
1960	24	9,005	277	1,103	362		251	17.0
1961	75	9,488	1,851	26,435	9,657		359	48.0
1962	131	19,692	6,548	45,987	9,544		811	44.0
1963	308	45,364	15,702	134,974	50,301		2,311	47.0
1964	314	52,910	27,193	183,394	22,540		2,344	49.0
1965	679	58,736	30,570	162,271	15,763		1,658	50.8
1966	690	65,721	30,792	96,287	24,235		2,080	74.3
1967	668	60,148	10,573	52,284	19,626		1,463	27.0
1968	1,010	50,212	46,111	82,012	39,001		2,997	52.0
1969	607	46,258	6,094	92,075	6,393	482	1,147	31.0
1970	420	26,812	15,153	29,102	18,092	366	905	41.0
1971	671	33,991	24,727	283,739	19,329	363	1,619	50.0
1972	1,747	74,745	60,827	40,644	46,511	515	2,152	41.0
1973	1,540	55,254	24,921	160,297	62,486	375	2,253	26.0
1974	1,342	46,760	28,889	57,296	38,045	238	1,579	28.0
1975	467	19,319	4,650	29,340	7,762	112	515	17.0
1976	237	9,319	10,367	20,251	2,301	71	366	19.0
1977	202	47,408	1,819	51,038	4,240	33	447	17.0
1978	274	1,422	26,762	9,546	3,142	70	389	26.5
1979	458	34,807	12,087	176,395	16,816	154	952	25.0
1980	205	48,434	10,894	17,072	15,162	39	596	16.0
1981	598	132,293	13,161	220,194	25,682	156	1,732	25.0
1982	648	121,556	21,376	10,338	11,911	199	1,083	22.0
1983	268	28,153	41,208	74,347	13,001	198	875	32.0
1984	136	27,372	19,124	99,807	28,461	268	587	32.0
1985	548	172,088	50,577	319,379	45,566	664	1,726	38.0
1986	421	85,247	104,328	105,347	48,471	684	1,896	32.0
1987	441	79,165	17,776	117,059	25,877	318	978	20.0
1988	452	57,337	6,349	10,894	42,210	341	815	18.0
1989	581	107,886	55,671	418,044	40,156	268	1,716	34.0
1990	759	104,922	94,526	84,543	42,474	767	1,827	34.0
1991	857	88,723	136,798	64,182	84,970	135	2,118	39.0
1992	743	146,608	190,885	38,483	100,666	138	2,630	40.0
1993	458	129,859	134,902	296,986	96,995	107	2,728	38.0
1994	456	157,526	191,664	66,225	125,818	59	2,988	43.0
1995	663	133,713	109,613	154,004	189,369	100	2,349	34.0
1996	487	223,784	159,319	70,620	162,872	97	3,623	46.0
Averages								
60-96	556	70,596	47,137	105,459	40,968	261	1,537	34.4
87-96	590	122,952	109,750	132,104	91,141	233	2,177	34.6
1997	829	118,675	52,917	414,619	100,612	0	2,402	39.0

Appendix B. 2. Stock proportions and catches of sockeye salmon in the Alaskan Subdistrict 106-41&42 drift gillnet fishery, 1985-1987.

Year	Alaska	Canada	Tahltan <sup>a</sup>	Stikine		Total	Tahltan	
				Tuya	Mainstem		Wild	Planted
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		
1990	0.579	0.395	0.008		0.018	0.026		
1991	0.460	0.377	0.129		0.034	0.163		
1992	0.582	0.241	0.088		0.089	0.177		
1993	0.369	0.327	0.134		0.169	0.304		
1994	0.531	0.271	0.166		0.032	0.198	0.127	0.040
1995	0.287	0.565	0.099	0.001	0.048	0.149	0.049	0.051
1996	0.479	0.245	0.228	0.039	0.009	0.276	0.203	0.025
Averages								
85-96	0.564	0.309	0.086	0.020	0.038	0.127	0.126	0.038
1997	0.538	0.269	0.079	0.101	0.014	0.193	0.056	0.023
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	1,135		
1989	70,436	32,663	957		3,830	4,787		
1990	60,795	41,415	801		1,911	2,712		
1991	40,832	33,406	11,459		3,026	14,485		
1992	85,364	35,277	12,961		13,005	25,967		
1993	47,970	42,450	17,446		21,992	39,438		
1994	83,692	42,620	26,164		5,050	31,214	19,934	6,230
1995	38,343	75,505	13,292	125	6,448	19,865	6,514	6,778
1996	107,193	54,823	50,924	8,731	2,113	61,768	45,340	5,584
Averages								
85-96	65,667	39,411	13,092	4,428	4,997	18,827	23,929	6,197
1997	63,827	31,892	9,327	11,937	1,692	22,956	6,594	2,733

<sup>a</sup> Tahltan includes wild and thermally marked fish.

Appendix B. 3. Salmon catch and effort in the Alaskan Subdistrict 106-30 (Clarence Strait) commercial drift gillnet fishery, 1960-1997.

Year	Catch						Effort	
	Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Permit Days	Days Open
1960	22	1,349	59	143	140		118	13.0
1961	341	11,126	13,083	97,801	54,822		1,378	57.0
1962	1,177	27,341	35,728	210,633	49,575		3,882	52.0
1963	1,250	35,462	36,376	379,093	39,723		3,278	51.0
1964	1,766	23,598	37,316	259,684	21,305		3,039	49.0
1965	1,123	29,013	45,158	463,577	11,895		2,849	50.8
1966	975	24,126	32,031	304,645	16,521		2,898	74.3
1967	650	26,237	7,097	39,325	6,744		1,048	27.0
1968	306	14,459	21,040	87,095	22,365		1,968	52.0
1969	270	24,060	4,186	104,998	4,510	77	1,026	31.0
1970	365	15,966	20,317	65,790	14,139	107	1,025	41.0
1971	665	19,211	23,358	244,236	18,351	222	1,517	50.0
1972	826	26,593	32,600	48,823	25,871	177	1,276	41.0
1973	391	16,741	13,526	143,324	25,243	125	1,303	26.0
1974	584	10,586	16,762	47,107	12,264	97	712	28.0
1975	2,120	12,732	26,312	173,675	16,206	110	1,159	8.5
1976	147	6,162	8,759	119,188	4,567	57	527	21.0
1977	469	19,615	6,582	368,069	9,060	32	940	21.0
1978	2,408	40,152	28,816	215,169	13,403	133	1,148	16.0
1979	2,262	31,566	15,996	471,817	18,691	165	1,848	25.0
1980	375	58,988	5,772	28,594	11,115	52	749	25.0
1981	967	49,708	9,453	217,379	8,614	31	1,321	26.0
1982	1,000	72,140	10,288	15,141	6,719	83	647	21.0
1983	299	20,689	21,234	133,943	7,143	63	589	37.0
1984	756	64,281	22,235	243,448	41,797	230	1,236	24.0
1985	1,141	92,899	40,565	265,567	24,095	339	1,372	36.0
1986	1,283	60,462	90,584	203,137	33,818	630	1,664	31.0
1987	395	57,262	16,758	126,423	16,148	171	799	20.0
1988	652	35,192	6,754	58,665	27,410	246	682	19.0
1989	963	84,848	36,714	683,150	27,195	126	1,583	34.0
1990	1,349	80,883	69,709	234,643	30,758	193	1,676	34.0
1991	1,209	54,389	61,005	68,557	38,760	63	1,505	39.0
1992	612	56,547	108,050	55,765	39,802	49	1,603	40.0
1993	534	76,096	96,136	240,974	37,606	18	1,646	38.0
1994	298	53,522	76,167	113,769	50,200	36	1,606	43.0
1995	288	73,585	60,948	294,159	110,709	10	1,422	34.0
1996	157	87,316	64,321	117,415	120,418	33	1,580	39.0
Averages								
60-96	821	40,403	33,021	187,701	27,505	131	1,476	34.4
87-96	646	65,964	59,656	199,352	49,901	95	1,410	34.0
1997	246	49,843	24,633	374,432	85,844	0	1,329	38.0

Appendix B. 4. Stock proportions and catches of sockeye salmon in the Alaskan Subdistrict 106-30 drift gillnet fishery, 1960-1997.

Year	Alaska	Canada	Stikine			Tahltan		
			Tahltan <sup>a</sup>	Tuya Mainstem	Total	Wild	Planted	
<b>Proportions</b>								
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		
1990	0.645	0.340	0.001		0.013	0.015		
1991	0.683	0.257	0.052		0.008	0.060		
1992	0.630	0.211	0.022		0.138	0.159		
1993	0.451	0.357	0.036		0.156	0.192		
1994	0.718	0.207	0.069		0.006	0.075	0.055	0.015
1995	0.370	0.551	0.047	0.000	0.032	0.079	0.036	0.010
1996	0.665	0.326	0.008	0.001	0.001	0.010	0.006	0.002
<b>Average</b>								
85-96	0.646	0.294	0.026	0.001	0.033	0.060	0.032	0.009
1997	0.657	0.276	0.019	0.026	0.021	0.066	0.004	0.015
<b>Catch</b>								
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		
1990	52,188	27,506	114		1,075	1,189		
1991	37,164	13,971	2,804		450	3,255		
1992	35,613	11,930	1,226		7,778	9,004		
1993	34,330	27,167	2,758		11,841	14,599		
1994	38,426	11,063	3,712		321	4,033	2,923	789
1995	27,201	40,570	3,423	0	2,391	5,814	2,668	755
1996	58,028	28,448	674	90	76	840	486	188
<b>Average</b>								
85-96	42,229	21,488	1,757		2,269	4,034	2,026	577
1997	32,759	13,773	952	1,295	1,064	3,311	202	750

<sup>a</sup> Tahltan includes wild and thermally marked fish.

Appendix B. 5. Salmon catch and effort in the Alaskan District 106 commercial drift gillnet fisheries, 1960-1997. 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 fish both areas.

Year	Catch						Effort	
	Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Permit Days	Days Open
1960	46	10,354	336	1,246	502		369	17.0
1961	416	20,614	14,934	124,236	64,479		1,737	57.0
1962	1,308	47,033	42,276	256,620	59,119		4,693	52.0
1963	1,558	80,826	52,078	514,067	90,024		5,589	51.0
1964	2,080	76,508	64,509	443,078	43,845		5,383	49.0
1965	1,802	87,749	75,728	625,848	27,658		4,507	50.8
1966	1,665	89,847	62,823	400,932	40,756		4,978	74.3
1967	1,318	86,385	17,670	91,609	26,370		2,511	27.0
1968	1,316	64,671	67,151	169,107	61,366		4,965	52.0
1969	877	70,318	10,280	197,073	10,903	559	2,112	31.0
1970	785	42,778	35,470	94,892	32,231	473	1,863	41.0
1971	1,336	53,202	48,085	527,975	37,680	585	2,774	47.0
1972	2,573	101,338	93,427	89,467	72,382	692	3,311	41.0
1973	1,931	71,995	38,447	303,621	87,729	500	3,300	26.0
1974	1,926	57,346	45,651	104,403	50,309	335	2,177	28.0
1975	2,587	32,051	30,962	203,015	23,968	222	1,781	18.0
1976	384	15,481	19,126	139,439	6,868	128	922	22.0
1977	671	67,023	8,401	419,107	13,300	65	1,381	28.0
1978	2,682	41,574	55,578	224,715	16,545	203	1,567	27.1
1979	2,720	66,373	28,083	648,212	35,507	319	2,784	31.4
1980	580	107,422	16,666	45,666	26,277	91	1,329	25.0
1981	1,565	182,001	22,614	437,573	34,296	187	2,928	26.0
1982	1,648	193,696	31,664	25,479	18,630	282	1,659	22.5
1983	567	48,842	62,442	208,290	20,144	261	1,422	31.4
1984	892	91,653	41,359	343,255	70,258	498	1,783	31.4
1985	1,689	264,987	91,142	584,946	69,661	1,003	2,625	31.4

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Year	Catch						Effort	
	Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Permit Days	Days Open
1986	1,704	145,709	194,912	308,484	82,289	1,314	3,446	31.4
1987	836	136,427	34,534	243,482	42,025	489	1,726	19.5
1988	1,104	92,529	13,103	69,559	69,620	587	1,460	18.5
1989	1,544	192,734	92,385	1,101,194	67,351	394	3,080	34.0
1990	2,108	185,805	164,235	319,186	73,232	960	3,440	34.0
1991	2,066	143,112	197,803	132,739	123,730	198	3,642	39.0
1992	1,355	203,155	298,935	94,248	140,468	187	4,227	40.0
1993	992	205,955	231,038	537,960	134,601	125	4,353	38.0
1994	754	211,048	267,831	179,994	176,018	95	4,353	43.0
1995	951	207,298	170,561	448,163	300,078	110	4,468	34.0
1996	644	311,100	223,640	188,035	283,290	130	5,290	46.0
Averages								
60-96	1,378	110,998	80,159	293,160	68,473	393	2,971	35.6
87-96	1,235	188,916	169,407	331,456	141,041	328	3,604	34.6
1997	1,075	168,518	77,550	789,051	186,456		3,668	39.0

Year	Catch						Effort	
	Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Permit Days	Days Open
Alaska Hatchery Contribution								
1989			0.542					
1990			5,081					
1991			42,859					
1992			64,088					
1993			84,568					
1994			77,860					
1994	414	1,667	39,841		67,114			
1995	353	4,553	27,330		72,417			
1996	326	5,787	54,621		109,245			
Averages								
89-96	364	4,002	49,531		82,925			
1997	375	1,463	19,512		80,015			
Catches not including Alaska hatchery contributions								
1989	1,544	192,734	87,304	1,101,194	67,351	394	3,080	34.0
1990	2,108	185,805	121,376	319,186	73,232	960	3,440	34.0
1991	2,066	143,112	133,715	132,739	123,730	198	3,642	39.0
1992	1,355	203,155	214,367	94,248	140,468	187	4,227	40.0
1993	992	205,955	153,178	537,960	134,601	125	4,353	38.0
1994	340	209,381	227,990	179,994	108,904	95	4,353	43.0
1995	598	202,745	143,231	448,163	227,661	110	4,468	34.0
1996	318	305,313	169,019	188,035	174,045	130	5,290	46.0
Averages								
89-96	1,165	206,025	156,273	375,190	131,249	275		38.5
1997	700	167,055	58,038	789,051	106,441		3,668	39.0



Appendix B. 6. Stock proportions and catches of sockeye salmon in the Alaskan District 106 commercial drift gillnet fisheries, 1982-1997. Catches do not include Blind Slough terminal area harvest. Data based on SPA.

Year	Alaska	Canada	Stikine			Tahltan		
			Tahltan <sup>a</sup>	Tuya	Mainstem	Total	Wild	Planted
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		
1990	0.608	0.371	0.005		0.016	0.021		
1991	0.545	0.331	0.100		0.024	0.124		
1992	0.595	0.232	0.070		0.102	0.172		
1993	0.400	0.338	0.098		0.164	0.262		
1994	0.579	0.254	0.142		0.025	0.167	0.108	0.033
1995	0.589	0.259	0.144	0.000	0.026	0.170	0.110	0.034
1996	0.531	0.268	0.166	0.028	0.007	0.201	0.147	0.019
Averages								
83-96	0.621	0.273	0.071		0.034	0.107		
87-96	0.621	0.263	0.076	0.014	0.040	0.119	0.122	0.029
1997	0.573	0.271	0.061	0.079	0.016	0.156	0.040	0.021
Catches								
1982	94,225	61,821				37,650		
1983	32,603	10,589	5,020		631	5,650		
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		
1990	112,983	68,921	915		2,986	3,901		
1991	77,996	47,376	14,263		3,476	17,740		
1992	120,977	47,207	14,187		20,784	34,971		
1993	82,300	69,617	20,204		33,833	54,037		
1994	122,118	53,683	29,876		5,371	35,247	22,857	7,019
1995	65,544	116,075	16,715	125	8,839	25,679	9,182	7,533
1996	165,221	83,271	51,598	8,821	2,189	62,608	45,826	5,772
Averages								
83-96	99,117	54,714	13,277		6,564	20,480		
87-96	106,750	57,708	15,206	4,473	8,357	24,458	25,955	6,775
1997	96,586	45,665	10,279	13,232	2,756	26,267	6,796	3,483

<sup>a</sup> Tahltan includes wild and thermally marked fish.

Appendix B. 7. Salmon catch and effort in the Alaskan District 108 commercial drift gillnet fishery, 1962-1997. Catches do not include Ohmer Creek terminal area harvests. Permit days are adjusted for boats that did not fish the entire opening and may total to less than the sum of days open times boats fishing.

Year	Catch						Effort	
	Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Permit Days	Days
1962	618	4,430	3,921	2,889	2,035			27.0
1963	1,430	9,979	11,612	10,198	11,024			53.0
1964	2,911	20,299	29,388	114,555	10,771			62.0
1965	3,106	21,419	8,301	4,729	2,480			48.0
1966	4,516	36,710	16,493	61,908	17,730			62.0
1967	6,372	29,226	6,747	4,713	5,955			40.0
1968	4,604	14,594	36,407	91,028	14,537			61.0
1969	5,021	19,209	5,790	11,877	2,311	238	967	46.0
1970	3,207	15,120	18,403	20,523	12,305	109	1,222	51.0
1971	3,717	18,143	14,876	21,806	4,665	62	1,070	57.0
1972	9,332	51,734	38,520	17,153	17,363	193	2,095	64.0
1973	9,254	21,387	5,837	6,585	6,680	67	1,519	39.0
1974	8,199	2,428	16,021	4,188	2,107	57	1,178	28.5
1975	1,534	0	0	0	1	5	258	8.0
1976	1,123	18	6,056	722	124	20	372	19.0
1977	1,443	48,374	14,405	16,253	4,233	24	742	23.0
1978	531	56	32,650	1,157	1,001	60	565	12.0
1979	91	2,158	234	13,478	1,064	3	94	5.0
1980	631	14,053	2,946	7,224	6,910	8	327	22.0
1981	283	8,833	1,403	1,466	3,594	9	177	9.0
1982	1,033	6,911	19,971	16,988	741	32	494	21.0
1983	47	178	15,369	4,171	675	81	263	17.0
1984	14	1,290	5,141	4,960	1,892	4	56	8.6
1985	20	1,060	1,926	5,325	1,892		70	14.0
1986	102	4,185	7,439	4,901	5,928	5	246	25.0
1987	149	1,629	1,015	3,343	949	4	81	13.0
1988	206	1,246	12	144	3,109	9	66	8.0
1989	310	10,083	4,261	27,640	3,375	10	216	28.0
1990	557	11,574	8,218	13,822	9,382	29	359	34.0
1991	1,504	22,275	15,864	10,935	11,402	11	1,114	48.5
1992	967	52,717	22,127	66,742	15,458	27	1,029	51.0
1993	1,628	76,874	14,307	39,661	22,504	29	1,333	48.0
1994	1,996	97,224	44,891	35,405	27,658	47	2,908	57.0
1995	1,702	76,756	17,834	37,788	54,296	18	1,214	49.5
1996	1,717	154,150	19,059	37,651	135,623	40	1,696	56.5
Averages								
60-96	2,282	24,466	13,356	20,627	12,051	44	776	34.7
87-96	1,074	50,453	14,759	27,313	28,376	22	1,002	39.4
1997	2,566	93,039	2,140	65,745	38,913		2,285	44.0

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Year	Catch					Effort		Days
	Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Permit Days	
Alaska Hatchery Contribution								
1989			55					
1990			2,539					
1991			3,458					
1992			7,036					
1993			887					
1994	571	4	2,040		2,159			
1995	758	268	1,085		18,333			
1996	840	418	1,271		40,911			
Avg. 89-96	723	230	2,297		20,468			
1997	740	0	162		14,544			
Catches not including Alaska hatchery contributions								
1989	310	10,083	4,206	27,640	3,375	10	216	28.0
1990	557	11,574	5,679	13,822	9,382	29	359	34.0
1991	1,504	22,275	12,406	10,935	11,402	11	1,114	48.5
1992	967	52,717	15,091	66,742	15,458	27	1,029	51.0
1993	1,628	76,874	13,420	39,661	22,504	29	1,333	48.0
1994	1,425	97,220	42,851	35,405	25,499	47	2,908	57.0
1995	944	76,488	16,749	37,788	35,963	18	1,214	49.5
1996	877	153,732	17,788	37,651	94,712	40	1,696	56.5
Avg. 89-96	1,027	62,620	16,024	33,706	27,287	26	1,234	46.6
1997	1,826	93,039	1,978	65,745	24,369		2,285	44.0

Appendix B. 8. Stock proportions and catches of sockeye salmon in the Alaskan District 108 commercial drift gillnet fishery, 1985-1997. Catches do not include Ohmer Creek terminal area harvests. Data based on SPA.

Year	Alaska	Canada	Stikine			Total	Tahltan	
			Tahltan <sup>a</sup>	Tuya	Mainstem		Wild	Planted
Proportion								
1985	0.064	0.000	0.292		0.644	0.936		
1986	0.206	0.017	0.094		0.683	0.777		
1987b	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		
1990	0.395	0.128	0.111		0.366	0.477		
1991	0.173	0.118	0.395		0.314	0.709		
1992	0.163	0.051	0.258		0.528	0.786		
1993	0.231	0.114	0.256		0.399	0.655		
1994	0.326	0.208	0.362		0.103	0.466	0.246	0.116
1995	0.135	0.204	0.455	0.006	0.200	0.661	0.198	0.257
1996	0.102	0.082	0.622	0.069	0.125	0.816	0.552	0.070
Averages								
85-96	0.188	0.084	0.291	0.037	0.430	0.728	0.332	0.148
1997	0.058	0.131	0.362	0.261	0.189	0.812	0.260	0.102
Catch								
1985	68	0	310		683	992		
1986	862	71	393		2,858	3,252		
1987	204	0	714		712	1,425		
1988	265	48	222		711	933		
1989	1,180	545	341		8,017	8,358		
1990	4,576	1,479	1,280		4,239	5,519		
1991	3,859	2,622	8,807		6,987	15,794		
1992	8,604	2,696	13,599		27,818	41,417		
1993	17,758	8,742	19,688		30,686	50,374		
1994	31,715	20,250	35,222		10,037	45,259	23,936	11,286
1995	10,374	15,641	34,950	461	15,330	50,741	15,224	19,726
1996	15,755	12,618	95,837	10,621	19,319	125,777	85,041	10,796
Averages								
85-96	7,935	5,393	17,614	5,541	10,616	29,153	41,400	13,936
1997	5,381	12,152	33,644	24,288	17,574	75,506	24,144	9,500

<sup>a</sup> Tahltan includes wild and thermally marked fish.

<sup>b</sup> There was no data available to determine the ratio of Tahltan to mainstem Stikine stocks; a 1:1 ratio was assumed.

Appendix B. 9. Salmon catch in the Alaskan District 106 and 108 test fisheries, 1984-1997. Only years with test fishery openings are listed.

Year	Chinook	Sockeye	Catch			Boat Hours
			Coho	Pink	Chum	
Sub-district 106-41 (Sumner Strait)						
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
1990	13	2,256	432	372	552	7.00
1994	0	12	1	0	16	11.00
Sub-district 106-30 (Clarence Strait)						
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	
Total District 106						
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
1990	13	2,256	432	372	552	7.00
1994	0	12	1	0	16	11.00
District 108						
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
1990	19	866	45	942	643	7.00
1991	21	893	18	390	455	154.99
1992	26	1,299	23	855	252	79.00
1993	30	303	0	18	31	45.00

Appendix B. 10. Stock proportions of sockeye salmon in the Alaskan District 106 and 108 test fisheries, 1984-1997. Data based on SPA. Only years with test fishery openings are listed.

Year	Alaska	Canada	Tahltan <sup>a</sup>	Stikine		Tahltan	
				Mainstem	Total	Wild	Planted
Sub-district 106-41 (Sumner Strait) 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	0.624	0.304	0.017	0.056	0.072		
1990	0.548	0.416	0.014	0.022	0.035		
1994	0.500	0.250	0.250	0.000	0.250	0.167	0.083
Sub-district 106-30 (Clarence Strait) 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	0.514	0.486	0.000	0.000	0.000		
District 106 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	0.622	0.307	0.016	0.055	0.071		
1990	0.548	0.416	0.014	0.022	0.035		
1994	0.500	0.250	0.250	0.000	0.250	0.250	0.000
District 108 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	0.132	0.084	0.072	0.712	0.784		
1990	0.417	0.172	0.094	0.318	0.411		
1991	0.128	0.128	0.494	0.251	0.745		
1992	0.149	0.076	0.333	0.442	0.774		
1993	0.168	0.109	0.475	0.248	0.719		

<sup>a</sup>Tahltan includes thermally marked fish.

Appendix B. 11. Stock specific catches of sockeye salmon in the Alaskan District 106 and 108 test fisheries, 1984-1997. Data based on SPA. Only years with test fishery openings are listed.

Year	Alaska	Canada	Tahltan <sup>a</sup>	Stikine		Tahltan	
				Mainstem	Total	Wild	Planted
Sub-district 106-41 (Sumner Strait) Catches							
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	1,274	621	34	114	148		
1990	1,237	939	31	49	80		
1994	6	3	3	0	3	2	1
Subdistrict 106-30 (Clarence Strait) 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		
District 106 Catches							
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	1,293	639	34	114	148		
1990	1,237	939	31	49	80		
1994	6	3	3	0	3	2	0
District 108 Catches							
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	137	87	75	739	814		
1990	361	149	81	275	356		
1991	114	114	441	224	665		
1992	194	99	432	574	1,006		
1993	51	33	144	75	219		

<sup>a</sup> Tahltan includes thermally marked fish.

Appendix B. 12. Salmon and steelhead trout catch and effort in the Canadian commercial fishery in the lower Stikine River, 1979-1997.

Year	Chinook		Catch					Effort	
	Jacks	Large	Sockeye	Coho	Pink	Chum	Steelhead	Permit Days	Days
1979 <sup>a</sup>	63	712	10,534	10,720	1,994	424	264	756.0	42.0
1980		1,488	18,119	6,629	736	771	362	668.0	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	1,063.0	71.0
1983	430	492	15,857	6,170	1,043	274	667	434.0	54.0
1984 <sup>b</sup>									
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
1989	157	1,537	17,179	6,092	825	674	127	325.0	23.0
1990	680	1,569	14,530	4,020	496	499	188	328.0	29.0
1991	318	641	17,563	2,638	394	208	71	282.4	39.0
1992	89	873	21,031	1,850	122	231	129	235.4	55.0
1993	164	830	38,464	2,616	29	395	63	483.8	58.0
1994	158	1,016	38,462	3,377	89	173	75	430.1	74.0
1995	599	1,067	45,622	3,418	48	256	208	534.0	59.0
1996	221	1,708	66,262	1,402	25	229	153	439.2	81.0
Averages <sup>c</sup>									
79-96		1,238	22,881	4,694	870	469	254	441	44
87-96	283	1,116	27,802	3,325	309	383	149	366	46
1997	186	3,283	56,995	401	269	222	33	569.4	89.0

<sup>a</sup> The lower river commercial catch in 1979 includes the upper river commercial catch.

<sup>b</sup> There was no commercial fishery in 1984.

<sup>c</sup> Chinook average for 1979-1994 is for jacks and large fish combined.



Appendix B. 13. Sockeye salmon stock proportions and catch by stock in the Canadian commercial fishery in the lower Stikine River, 1979-1997. Stock compositions based on: scale circuli counts 1970-1983; SPA in 1985; average of SPA and GPA 1986; SPA in 1987 and 1988 and egg diameter in 1989-1997.

Year	Proportions			Planted	Catch			Tahltan	
	Tahltan	Tuya	Mainstem	Tahltan	Tahltan	Tuya	Mainstem	Wild	Planted
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 <sup>a</sup>									
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		
1989	0.164		0.836		2,813		14,366		
1990	0.346		0.654		5,029		9,501		
1991	0.634		0.366		11,136		6,427		
1992	0.482		0.518		10,134		10,897		
1993	0.537		0.463		20,662		17,802		
1994	0.616		0.384		23,678		14,784		
1995	0.676	0.020	0.304	0.195	30,848	893	13,881	21,936	8,912
1996	0.534	0.114	0.352	0.061	35,355	7,583	23,324	31,308	4,047
Averages									
79-96	0.456		0.536		11,561		10,822		
87-96	0.437	0.067	0.549	0.128	14,310	4,238	12,644	26,622	6,480
1997	0.397	0.274	0.329	0.077	22,599	15,622	18,775	18,194	4,405

<sup>a</sup> There was no commercial fishery in 1984.

Appendix E 1. Salmon and steelhead trout catch and effort in the Canadian commercial fishery in the upper Stikine River, 1975-1997.

Year	Catch							Effort	
	Chinook		Sockeye	Coho	Pink	Chum	Steelhead	Permit	
	Jacks	Large						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 <sup>a</sup>									
1980		156	700	40	20	0	0		
1981		154	769	0	0	0	0	11.0	5.0
1982		76	195	0	0	0	0	8.0	4.0
1983		75	614	0	0	4	1	10.0	8.0
1984 <sup>b</sup>									
1985		62	1,084	0	0	0	0	14.0	6.0
1986	41	104	815	0	0	0	0	19.0	7.0
1987	19	109	498	0	0	19	0	20.0	7.0
1988	46	175	348	0	0	0	0	21.5	6.5
1989	17	54	493	0	0	0	0	14.0	7.0
1990	20	48	472	0	0	0	0	15.0	7.0
1991	32	117	761	0	0	0	0	13.0	6.0
1992	19	56	822	0	0	0	0	28.0	13.0
1993	2	44	1,692	0	0	0	2	48.0	22.0
1994	1	76	2,466	0	1	0	0	68.0	50.0
1995	17	9	2,355	0	0	0	0	54.0	25.0
1996	44	41	1,101	0	0	0	0	75.0	59.0
Averages <sup>c</sup>									
75-96		104	983	5	1	1	0	28	16
87-96	22	73	1,101	0	0	2	0	36	20
1997	6	45	2,199	0	0	0	0	42.0	29.0

<sup>a</sup> Catches in 1979 were included in the lower river commercial catches.

<sup>b</sup> There was no commercial fishery in 1984.

<sup>c</sup> Chinook average for 1975-1996 is for jacks and large fish combined.

Appendix B. 14. Salmon and steelhead trout catch in the Canadian Aboriginal fishery located at Telegraph Creek, on the Stikine River, 1972-1997.

Year	Chinook		Catch				
	Jacks	Large	Sockeye	Coho	Pink	Chum	Steelhead
1972			4,373	0	0	0	0
1973		200	3,670	0	0	0	0
1974		100	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	100	0	0	0
1981		586	4,697	200	144	0	4
1982		618	4,948	40	60	0	0
1983	215	851	4,649	3	77	26	46
1984	59	643	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
1989	115	1,078	2,360	6	0	0	0
1990	259	633	3,022	17	0	0	11
1991	310	753	4,439	10	0	0	0
1992	131	911	4,431	5	0	0	3
1993	142	929	7,041	0	0	0	2
1994	191	698	4,167	4	0	0	9
1995	244	570	5,490	0	0	7	62
1996	156	722	6,918	2	0	3	30
Averages <sup>a</sup>							
72-96		809	4,140	16	15	3	7
87-96	193	866	4,302	5	0	2	12
1997	94	1,155	6,365	0	0	0	0

<sup>a</sup> Chinook average for 1972-1996 is for jacks and large fish combined.

Appendix B. 15. Catch by stock for sockeye salmon harvested in the Canadian upper river commercial and Aboriginal fisheries in the Stikine River, 1972-1997.

Year	Upper River Commercial					Canadian Aboriginal Fishery				
	Tahltan	Tuya	Mainstem	Tahltan		Tahltan	Tuya	Mainstem	Tahltan	
				Wild	Planted				Wild	Planted
1972						3,936			437	
1973						3,303			367	
1974						3,150			350	
1975	243		27			1,784			198	
1976	660		73			2,620			291	
1977	1,778		198			3,902			434	
1978	1,350		150			3,150			350	
1979 <sup>a</sup>						2,700			300	
1980	630		70			1,890			210	
1981	692		77			4,227			470	
1982	176		20			4,453			495	
1983	553		61			4,184			465	
1984 <sup>b</sup>						4,794			533	
1985	976		108			6,558			729	
1986	734		82			3,787			421	
1987	448		50			2,681			298	
1988	313		35			1,959			218	
1989	444		49			2,124			236	
1990	425		47			2,720			302	
1991	685		76			3,995			444	
1992	740		82			3,988			443	
1993	1,523		169			6,337			704	
1994	2,219		247	1,904	315	3,750		417	3,217	533
1995	2,120	60	176	1,508	612	4,941	139	410	3,514	1,427
1996	917	155	29	782	135	5,736	972	210	4,881	855
Averages										
72-96	881		91			3,707		389		
87-96	983	108	96	1,398	354	3,823	556	368	3,871	938
1997	1,276	883	40	1,072	204	3,650	2,513	202	3,084	566

<sup>a</sup> Catches in 1979 were included in the lower river commercial catches.

<sup>b</sup> There was no commercial fishery in 1984.

Appendix B. 16. Salmon and steelhead trout catch in the combined Canadian net fisheries in the Stikine River, 1972-1997. ESSR catches not included.

Year	Catch						
	Chinook		Sockeye	Coho	Pink	Chum	Steelhead
	Jacks	Large					
1972		0	4,373	0	0	0	0
1973		200	3,670	0	0	0	0
1974		100	3,500	0	0	0	0
1975		1,202	2,252	50	0	0	0
1976		1,160	3,644	13	0	0	0
1977		162	6,310	0	0	0	0
1978		500	5,000	0	0	0	0
1979	63	1,562	13,534	10,720	1,994	424	264
1980		2,231	20,919	6,769	756	771	362
1981		1,404	27,017	2,867	3,857	1,128	284
1982		2,387	20,540	15,944	1,842	722	828
1983	645	1,418	21,120	6,173	1,120	304	714
1984 <sup>a</sup>	59	643	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	2,360	15,291	2,117	418	733	261
1989	289	2,669	20,032	6,098	825	674	127
1990	959	2,250	18,024	4,037	496	499	199
1991	660	1,511	22,763	2,648	394	208	71
1992	239	1,840	26,284	1,855	122	231	132
1993	308	1,803	47,197	2,616	29	395	67
1994	350	1,790	45,095	3,381	90	173	84
1995	860	1,646	53,467	3,418	48	263	270
1996	421	2,471	74,281	1,404	25	232	183
Averages <sup>b</sup>							
72-96		1,738	20,486	3,212	607	322	180
87-96	497	2,054	33,205	3,331	309	387	161
1997	286	4,483	65,559	401	269	222	33

<sup>a</sup> There was no commercial fishery in 1984.

<sup>b</sup> Chinook average for 1972-1996 is for jacks and large fish combined.

Appendix B. 17. Salmon catches in the Stikine River harvested under Canadian ESSR licenses or taken for otolith samples if no ESSR, 1992-1997.

Year	Tahltan			Tuya
	Total	Wild	Planted	
1993	1,752	1,714	38	
1994	6,852	5,682	1,170	
1995	10,740	6,680	4,060	
1996	14,339	13,045	1,294	216
1997 <sup>a</sup>	378	291	87	2,015
Salmon taken for otolith samples at Tahltan weir and included in ESSR catch when fishery was operated.				
1996	407	370	37	
1997	378	291	87	

<sup>a</sup> There was no ESSR fishery at Tahltan in 1997. Fish were taken for otolith samples.

Appendix B. 18. Salmon and steelhead trout catches and effort in Canadian test fisheries in the Stikine River, 1985-1997.

Year	Catches							Effort Drift=# Set=hr.
	Chinook		Sockeye	Coho	Pink	Chum	Steelhead	
Jacks	Large							
Drift Test Fishery Catches								
1985								
1986	12	27	412	226	8	25	0	405
1987 <sup>a</sup>		128	385	162	111	61	0	845
1988	14	168	325	75	9	33	7	720
1989	4	116	364	242	41	46	5	870
1990	6	167	447	134	5	29	6	673
1991	1	90	503	118	37	30	3	509
1992	27	135	393	75	13	23	7	312
1993	11	94	440	37	6	18	7	304
1994	4	43	179	71	6	20	7	175
1995	13	18	297	35	4	12	4	285
1996	5	42	262	55	4	55	10	245
Avg. 85-96	10	93	364	112	22	32	5	486
1997	7	30	245	11	9	15	2	210
Set Test Fishery Catches								
1985			1,340					
1986								
1987 <sup>a</sup>		61	1,283	620	587	193	0	1,456
1988	15	101	922	130	23	65	14	1,380
1989	20	101	1,243	502	249	103	17	1,392
1990	12	64	1,493	271	42	48	18	1,212
1991	15	77	1,872	127	197	48	1	1,668
1992	21	62	1,971	193	56	43	19	1,249
1993	11	85	1,384	136	6	63	6	1,224
1994	34	74	414	0	0	0	0	456
1995	35	61	850	166	5	41	14	888
1996	40	64	338	0	0	0	1	312
Avg. 85-96	23	75	1,192	215	117	60	9	1,124
1997								0
Additional Test Fishery Catches (none prior to 1992)								
1992	134	417	594	0	0	0	0	85
1993	65	389	1,925	2	1	3	2	266
1994	40	178	840	0	0	0	0	131
1995	136	169	1,423	26	1	9	1	222
1996	31	192	712	0	0	0	0	138
Avg. 85-	81	269	1,099	6	0	2	1	168
1997								0
Total Test Fishery Catches								
1985	0	0	1,340	0	0	0	0	
1986	12	27	412	226	8	25	0	
1987	30	189	1,668	782	698	254	0	
1988	29	269	1,247	205	32	98	21	
1989	24	217	1,607	744	290	149	22	
1990	18	231	1,940	405	47	77	24	
1991	16	167	2,375	245	234	78	4	
1992	182	614	2,958	268	69	66	26	
1993	87	568	3,749	175	13	84	15	
1994	78	295	1,433	71	6	20	7	
1995	184	248	2,570	227	10	62	19	
1996	76	298	1,312	55	4	55	11	
Avg. 85-96	61	260	1,884	284	118	81	12	
1997	7	30	245	11	9	15	2	

<sup>a</sup> 1987 jack chinook catch is for both set and drift nets.

Appendix B. 19. Sockeye salmon stock proportions and catch by stock in the test fishery in the lower Stikine River, 1985-1997. Stock composition based on: SPA 1985; average of SPA and GPA 1986-1988; egg diameter 1989-1997.

Year	Catch Tahltan		Catch		Marked		Proportion Tahltan		Average Proportion <sup>b</sup>	
	U.S. <sup>a</sup>	Canada	Tuya	Mainstem	Tahltan	U.S.	Canada	Tahltan	Tuya	Mainstem
1985	560	439		841		0.418	0.328	0.372		0.628
1986	164	127		267		0.398	0.308	0.352		0.648
1987	513	397		1,213		0.308	0.238	0.273		0.727
1988	408	295		895		0.327	0.237	0.282		0.718
1989		414		1,192			0.258	0.258		0.742
1990		822		1,058			0.454	0.454		0.546
1991		1,443		931			0.608	0.608		0.392
1992		1,912		1,046			0.646	0.646		0.354
1993		2,184		1,564			0.583	0.583		0.417
1994		1,228		205			0.857	0.857		0.143
1995		2,064	20	486	729		0.803	0.803	0.008	0.189
1996		916	77	319	105		0.698	0.698	0.059	0.243
Averages										
85-96		1,020		835			0.501	0.516		0.479
87-96		1,168	49	891	417		0.538	0.546	0.033	0.447
1997		110	44	91	9		0.449	0.449	0.180	0.371

<sup>a</sup> There were no U.S. test fisheries after 1988.

<sup>b</sup> Average proportions are from averages of weekly estimates.



Appendix B. 20. Estimated proportion of inriver run comprised of Tahltan Lake and Mainstem sockeye stocks, 1979-1997. Stock composition estimates based on: scale circuli counts in 1979-1983; SPA in 1985; average of SPA and GPA in 1986-1988; and egg diameter analysis in 1989-1997. The 1994-1997 samples come from commercial catch and CPUE.

Year	Tahltan		Tahltan	Average <sup>a</sup>	
	U.S.	Canada		Tuya	Mainstem
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
1990		0.417	0.417		0.583
1991		0.561	0.561		0.439
1992		0.496	0.496		0.504
1993		0.477	0.477		0.523
1994		0.606	0.606		0.394
1995		0.578	0.578	0.016	0.406
1996		0.519	0.519	0.105	0.376
Averages					
79-96			0.445		0.548
87-96			0.432	0.061	0.556
1997		0.340	0.340	0.230	0.430

<sup>a</sup> Average proportions are from averages of weekly stock composition and migratory timing (from drift test fishery) estimates.

Appendix B. 21. Counts of adult sockeye salmon migrating through Tahltan Lake weir, 1959-1997.

Year	Weir Installed	Date of Arrival			Total Count	Broodstock	Samples or ESSR	Spawners	
		First	50%	90%				Total	Natural Hatchery
1959	30-Jun	2-Aug	12-Aug	16-Aug	4,311				
1960	15-Jul	2-Aug	24-Aug	27-Aug	6,387				
1961	20-Jul	9-Aug	11-Aug	15-Aug	16,619				
1962 <sup>a</sup>	1-Aug	2-Aug	5-Aug	8-Aug	14,508				
1963 <sup>b</sup>	3-Aug				1,780				
1964	23-Jul	26-Jul	14-Aug	25-Aug	18,353				
1965 <sup>c</sup>	19-Jul	18-Jul	2-Sep	7-Sep	1,471				
1966	12-Jul	3-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	8-Aug	19,726				
1969	7-Jul	11-Jul	18-Jul	31-Jul	11,805				
1970	5-Jul	25-Jul	1-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	7-Aug	2,877				
1974	3-Jul	28-Jul	3-Aug	17-Aug	8,101				
1975	10-Jul	25-Jul	8-Aug	17-Aug	8,159				
1976	16-Jul	29-Jul	1-Aug	6-Aug	24,111				
1977	6-Jul	11-Jul	16-Jul	10-Aug	42,960				
1978	10-Jul	10-Jul	20-Jul	29-Jul	22,788				
1979	9-Jul	23-Jul	1-Aug	11-Aug	10,211				
1980	4-Jul	15-Jul	22-Jul	12-Aug	11,018				
1981	30-Jun	16-Jul	26-Jul	3-Aug	50,790				
1982	2-Jul	10-Jul	19-Jul	29-Jul	28,257				
1983	27-Jun	5-Jul	22-Jul	5-Aug	21,256				
1984	20-Jul	19-Jul	24-Jul	3-Aug	32,777				
1985	28-Jun	18-Jul	31-Jul	6-Aug	67,326				
1986	10-Jul	26-Jul	4-Aug	11-Aug	20,280				
1987	14-Jul	21-Jul	4-Aug	13-Aug	6,958				
1988	16-Jul	16-Jul	6-Aug	14-Aug	2,536				
1989	7-Jul	9-Jul	1-Aug	14-Aug	8,316	2,210		6,106	
1990	6-Jul	15-Jul	26-Jul	3-Aug	14,927	3,302		11,625	
1991	15-Jul	17-Jul	25-Jul	7-Aug	50,135	3,552		46,583	
1992	10-Jul	18-Jul	25-Jul	3-Aug	59,907	3,694		56,213	
1993	10-Jul	10-Jul	28-Jul	10-Aug	53,362	4,506	1,752	47,104	46,074
1994	10-Jul	14-Jul	30-Jul	9-Aug	46,363	3,378	6,852	36,133	29,961
1995	8-Jul	9-Jul	24-Jul	12-Aug	42,317	4,902	10,740	26,675	16,591
1996	14-Jul	14-Jul	22-Jul	04-Aug	52,500	4,402	12,955	35,143	31,972
Averages									
59-96	11-Jul	19-Jul	30-Jul	10-Aug	24,291				
87-96	11-Jul	14-Jul	28-Jul	08-Aug	33,732	3,743	8,075	33,198	31,149
1997	15-Jul	15-Jul	25-Jul	26-Aug	12,483	2,294	378	9,811	7,220

<sup>a</sup> Question as to date weir installed.

<sup>b</sup> Daily counts unavailable.

<sup>c</sup> A slide occurred blocking the entrance for a while.

Appendix B. 22. Aerial survey counts of non-Tahltan sockeye stocks in the Stikine River drainage, 1984-1997. The index represents the combined counts from eight spawning areas.

Year	Chutine River	Scud River	Porcupine Slough	Christina Creek	Craig River	Bronson Slough	Verrett Creek	Verrett Slough	Escapement Index
1984	526	769	69	130	102		640		2,236
1985	253	282	69	67	27		383		1,081
1986	139	151	6	0	0		270		566
1987	6	490	62	6	30		103		697
1988	14	219	22	7	0		114		376
1989	29	269	133	10	60	60	180	68	809
1990	24	301	31	4	0	0	301	82	743
1991	0	100	61		7	32	179	8	387
1992	164	1,242	90	50	17	138	163	22	1,886
1993	57	321	141	28	2	79	107	142	877
1994	267	292	66			62	147	114	948
1995	13	260	11			72	47	31	434
1996	134	351	149			27	54	338	1,053
Averages									
84-96	125	388	70	34	25	59	207	101	930
1997	204	271	25			12	116	32	660

Appendix B. 23. Estimates of sockeye salmon smolt migrating through Tahltan Lake smolt weir, 1984-1997

Year	Weir Installed	Date of Arrival			Total Count	Total Estimate	Date and Expansion	Smolt	
		First	50%	90%				Natural	Hatchery
1984	10-May	11-May	23-May	06-Jun		218,702			
1985	25-Apr	23-May	31-May	28-May		613,531			
1986	08-May	10-May	31-May	07-Jun		244,330			
1987 <sup>a</sup>	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			
1990 <sup>b</sup>	05-May	15-May	29-May	05-Jun	595,147	610,407	6/14 97.5%		
1991 <sup>c</sup>	05-May	14-May	21-May	30-May	1,439,676	1,487,265	6/13 96.8%	1,220,397	266,868
1992 <sup>d</sup>	07-May	13-May	21-May	27-May	1,516,150	1,555,026	6/14 97.5%	750,702	804,324
1993	07-May	11-May	17-May	22-May		3,255,045		2,855,562	399,483
1994	08-May	08-May	16-May	12-Jun		915,119		620,809	294,310
1995	05-May	06-May	13-May	11-Jun		822,284		767,027	55,257
1996	11-May	11-May	20-May	25-May		1,559,236		1,408,020	151,216
Averages									
84-96	05-May	11-May	22-May	01-Jun		1,064,776		1,270,420	328,576
1997	07-May	11-May	23-May	30-May		518,202		348,079	170,123

<sup>a</sup> Estimate includes approximately 30,000 mortalities from overcrowding on 5/22, 1987.

<sup>b</sup> Estimate of 595,147 on June 14 expanded by average % of outmigration by date (97.5%) from historical data.

<sup>c</sup> Estimate of 1,439,673 on June 13 expanded by average % of outmigration by date (96.8%) from historical data.

<sup>d</sup> Estimate of 1,516,150 on June 14 expanded by average % of outmigration by date (97.5%) from historical data.

Appendix B. 24. Weir counts of chinook salmon at Little Tahltan River, 1985-1997.

Year	Weir Installed	First Arrival	50% Arrival	90% Arrival	Total Count	Broodstock and Other	Natural Spawners	Total Natural Spawners
Large Chinook								
1985	03-Jul	04-Jul	30-Jul	06-Aug	3,114		3,114	
1986	28-Jun	29-Jun	21-Jul	05-Aug	2,891		2,891	
1987	28-Jun	04-Jul	24-Jul	02-Aug	4,783		4,783	
1988	26-Jun	27-Jun	18-Jul	03-Aug	7,292		7,292	
1989	25-Jun	26-Jun	23-Jul	02-Aug	4,715		4,715	
1990	22-Jun	29-Jun	23-Jul	04-Aug	4,392		4,392	
1991	23-Jun	25-Jun	20-Jul	03-Aug	4,506		4,506	
1992	24-Jun	04-Jul	21-Jul	30-Jul	6,627	-12	6,615	
1993	20-Jun	21-Jun	16-Jul	28-Jul	11,449	-24	11,425	
1994	18-Jun	28-Jun	22-Jul	02-Aug	6,387	-27	6,360	
1995	17-Jun	20-Jun	17-Jul	04-Aug	3,072	0	3,072	
1996	26-Jun	08-Jul	16-Jul	30-Jul	4,821	0	4,821	
Averages								
85-96	24-Jun	28-Jun	20-Jul	02-Aug	5,337		5,332	
1997	14-Jun	22-Jun	16-Jul	29-Jul	5,557	-10	5,547	
Jack Chinook (fish <600 mm poh length)								
1985	03-Jul	04-Jul	31-Jul	10-Aug	316			3,430
1986	28-Jun	03-Jul	25-Jul	06-Aug	572			3,463
1987	28-Jun	03-Jul	26-Jul	06-Aug	365			5,148
1988	26-Jun	27-Jun	17-Jul	02-Aug	327			7,619
1989	25-Jun	26-Jun	23-Jul	02-Aug	199			4,914
1990	22-Jun	05-Jul	22-Jul	30-Jul	417			4,809
1991	23-Jun	03-Jul	24-Jul	07-Aug	313			4,819
1992	24-Jun	12-Jul	22-Jul	30-Jul	131			6,746
1993	20-Jun	30-Jun	14-Jul	01-Aug	60			11,485
1994	18-Jun	02-Jul	22-Jul	05-Aug	121			6,481
1995	17-Jun	22-Jun	28-Jul	10-Aug	135			3,207
1996	26-Jun	02-Jul	13-Jul	14-Jul	22			4,843
Averages								
85-96	24-Jun	01-Jul	22-Jul	02-Aug	248			5,580
1997	14-Jun	26-Jun	21-Jul	1-Aug	54			5,601

Appendix B. 25. Index counts of Stikine chinook escapements, 1979-1997. Counts do not include jacks (fish less than 600mm mef length).

Year	Little	Little	Tahltan	Beatty	Andrew	Comments
	Tahltan	Tahltan				
	Weir	Aerial	Aerial	Aerial	Foot	
1979		1,166	2,118		382	Andrew weir count includes broodstock
1980		2,137	960	122	363	Andrew weir count includes broodstock
1981		3,334	1,852	558	654	Andrew weir count includes broodstock
1982		2,830	1,690	567	947	Andrew weir count includes broodstock
1983		594	453	83	444	Andrew weir count includes broodstock
1984		1,294		126	389	Andrew weir count includes broodstock
1985	3,114	1,598	1,490	147	319	
1986	2,891	1,201	1,400	183	707	
1987	4,783	2,706	1,390	312	788	Andrew helicopter survey
1988	7,292	3,796	4,384	593	564	
1989	4,715	2,527		362	530	Tahltan not surveyed due to visibility
1990	4,392	1,755	2,134	271	664	
1991	4,506	1,768	2,445	193	400	Andrew fixed wind survey
1992	6,627	3,607	1,891	362	778	Andrew helicopter survey, Little Tahltan includes broodstock
1993	11,425	4,010	2,249	757	1,060	
1994	6,360	2,422		184	572	Andrew helicopter survey, Tahltan no survey
1995	3,072	1,117	696	152	338	
1996	4,821	1,920	772	218	332	
Averages						
79-96		2,210	1,728	305	568	
87-96	5,535	2,563	1,995	340	603	
1997	5,547	1,907	260	218	300	

Appendix B. 26. Index counts of Stikine coho salmon escapements, 1984-1997. Missing data due to poor survey conditions.

Year and Date	Katete		Craig	Bronson		Scud		Christina	Total
	West	Katete		Verrett	Slough	Slough	Porcupine		
1984 10/30	147	313	0	15	42				517
1985 10/25	590	1,217	735	39	0	924	365		3,870
1988 10/28	32	227		175		97	53	0	584
1989 10/29	336	896	992	848	120	707	90	55	4,044
1990 10/30	94	548	810	494		664	430		3,040
1991 10/29	302	878	985	218		221	352		2,956
1992 10/29	295	1,346	949	320		462	316		3,688
1993 10/30						206	324		
1994 11/01-02	28	652	1,026	466		448	1,105		3,725
1995 10/30	211	208	1,419	574		621	719		3,752
1996	163	232	205	549		630	1,466		3,245
Average									
84-96	220	652	791	370	54	498	522	28	2,942
1997 11/01	2	0	19	116		272	648		1,057

Appendix B. 27. Stikine River sockeye salmon run size for total run and for stock components, 1979-1997. Catches include ESSR and test fishery catches.

Year	Inriver Run Size Estimates			Inriver Catch	Escapement <sup>b</sup>	Marine Catch	Total Run
	Canada	U.S.	Average <sup>a</sup>				
1979		40,353	40,353	13,534	26,819	8,299	48,652
1980		62,743	62,743	20,919	41,824	23,206	85,949
1981		138,879	138,879	27,017	111,862	27,538	166,417
1982		68,761	68,761	20,540	48,221	42,681	111,442
1983	77,260	66,838	71,683	21,120	50,563	5,780	77,463
1984	95,454	59,168	76,211	5,327	70,884	7,791	84,002
1985	237,261	138,498	184,747	26,804	157,943	29,747	214,494
1986			69,036	17,846	51,190	6,420	75,456
1987			39,264	11,283	27,981	4,085	43,350
1988			41,915	16,538	25,377	3,181	45,096
1989			75,054	21,639	53,415	15,492	90,546
1990			57,386	19,964	37,422	9,856	67,242
1991			120,152	25,138	95,014	34,199	154,351
1992			154,542	29,242	125,300	77,394	231,936
1993			176,100	52,698	123,402	104,630	280,730
1994			127,527	53,380	74,147	80,509	208,036
1995			142,308	66,777	75,531	76,420	218,728
1996			186,576	90,148	96,428	188,385	374,961
Averages							
79-96			101,847	29,995	71,851	41,423	143,269
87-96			112,083	38,681	73,402	59,415	171,498
1997			118,031	68,197	49,834	101,773	219,804
Tahltan Sockeye Run							
1979			17,472	7,261	10,211	5,076	22,548
1980			19,137	8,119	11,018	11,239	30,376
1981			65,968	15,178	50,790	16,189	82,157
1982			42,493	14,236	28,257	20,838	63,332
1983			32,684	11,428	21,256	5,071	37,756
1984			37,571	4,794	32,777	3,089	40,660
1985			86,008	18,682	67,326	25,197	111,205
1986			31,015	10,735	20,280	2,757	33,771
1987			11,923	4,965	6,958	2,259	14,182
1988			7,222	4,686	2,536	2,129	9,351
1989			14,110	5,794	8,316	1,561	15,671
1990			23,923	8,996	14,927	2,307	26,230
1991			67,394	17,259	50,135	23,511	90,905
1992			76,681	16,774	59,907	28,218	104,899
1993			84,068	32,458	51,610	40,036	124,104
1994			77,239	37,728	39,511	65,101	142,340

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Year	Inriver Run Size Estimates			Inriver Catch	Escapement <sup>b</sup>	Marine Catch	Total Run
	Canada	U.S.	Average <sup>a</sup>				
1995			82,290	50,713	31,577	51,665	133,955
1996			96,808	57,263	39,545	147,435	244,243
Averages							
79-96			48,556	18,170	30,385	25,204	73,760
87-96			54,166	23,663	30,502	36,422	90,588
1997			40,118	28,013	12,105	43,923	84,041
Year	Inriver Run Size Estimates			Inriver Catch	Escapement <sup>b</sup>	Marine Catch	Total Run
	Canada	U.S.	Average <sup>a</sup>				
Enhanced Tuya Sockeye Run							
1995			2,216	1,112	1,104	586	2,802
1996			19,681	9,003	10,678	19,442	39,123
Averages							
95-96			10,949	5,058	5,891	10,014	20,963
1997			27,153	21,077	6,076	37,520	64,673
Mainstem Sockeye Run							
1979			22,880	6,273	16,608	3,223	26,103
1980			43,606	12,800	30,806	11,967	55,573
1981			72,911	11,839	61,072	11,349	84,260
1982			26,267	6,304	19,964	21,843	48,110
1983			38,999	9,692	29,307	708	39,707
1984			38,640	533	38,107	4,702	43,342
1985			98,739	8,122	90,617	4,550	103,289
1986			38,022	7,111	30,910	3,663	41,685
1987			27,342	6,318	21,023	1,826	29,168
1988			34,693	11,852	22,841	1,052	35,745
1989			60,944	15,845	45,099	13,931	74,875
1990			33,464	10,968	22,495	7,549	41,013
1991			52,758	7,879	44,879	10,687	63,446
1992			77,861	12,468	65,393	49,176	127,037
1993			92,033	20,240	71,792	64,594	156,627
1994			50,288	15,652	34,636	15,408	65,696
1995			57,802	14,953	42,850	24,169	81,971
1996			70,087	23,882	46,205	21,508	91,595
Averages							
79-96			52,074	11,263	40,811	15,106	67,180
87-96			55,727	14,006	41,721	20,990	76,717
1997			50,761	19,107	31,654	20,330	71,091

<sup>a</sup> The averages for 1983-1985 are averages of weekly run timing estimates as well as stock composition estimates and are not simple averages of total estimates for the season.

<sup>b</sup> Escapement includes fish later captured for broodstock.

Appendix B. 28. Weekly salmon catch and effort in the Alaskan District 111 and Subdistrict 111-32 (Taku Inlet), commercial drift gillnet fishery, 1997.

Week	Start Date	Catch						Effort		
		Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Boats	Days Open	Boat Days
District 111 catches										
25	15-Jun	1,270	3,988	0	0	335		59	3.0	177
26	22-Jun	659	5,840	1	144	1,490		56	3.0	168
27	29-Jun	508	8,682	3	4,993	4,665		63	3.0	189
28	6-Jul	149	10,827	15	14,017	18,812		70	3.0	210
29	13-Jul	59	17,251	13	9,725	44,125		73	4.0	292
30	20-Jul	97	16,181	58	2,832	46,049		81	4.0	324
31	27-Jul	27	19,705	205	7,667	40,051		78	3.0	234
32	3-Aug	17	6,404	248	6,330	14,037		81	3.0	243
33	10-Aug	9	2,541	638	4,057	4,240		44	3.0	132
34	17-Aug	3	1,929	835	1,425	1,744		32	2.0	64
35	24-Aug	6	1,397	1,499	234	1,316		37	2.0	74
Total		2,804	94,745	3,515	51,424	176,864			33.0	2,107
Alaskan hatchery contribution for chinook and coho <sup>a</sup>										
25	15-Jun	191		0						
26	22-Jun	135		0						
27	29-Jun	150		0						
28	6-Jul	7		0						
29	13-Jul	2		0						
30	20-Jul	0		0						
31	27-Jul	0		0						
32	3-Aug	0		3						
33	10-Aug	0		40						
34	17-Aug	0		55						
35	24-Aug	0		452						
Total		486		550						

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Week	Start Date	Catch					Effort			
		Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Boats	Days Open	Boat Days
Catches not including Alaskan hatchery contribution.										
25	15-Jun	1,079		0						
26	22-Jun	524		1						
27	29-Jun	358		3						
28	6-Jul	142		15						
29	13-Jul	57		13						
30	20-Jul	97		58						
31	27-Jul	27		205						
32	3-Aug	17		245						
33	10-Aug	9		598						
34	17-Aug	3		780						
35	24-Aug	6		1,047						
Total		2,318		2,965						
Subdistrict 111-32 Catches (Taku Inlet)										
25	15-Jun	1,270	3,988	0	0	181		58	3.0	174
26	22-Jun	639	5,719	1	138	1,420		55	3.0	165
27	29-Jun	502	8,260	3	4,889	4,482		63	3.0	189
28	6-Jul	131	9,900	11	11,900	16,701		69	3.0	207
29	13-Jul	50	15,218	12	7,616	37,530		69	4.0	276
30	20-Jul	90	14,359	55	2,685	39,527		75	3.0	225
31	27-Jul	27	17,924	197	6,511	33,242		71	3.0	213
32	3-Aug	9	3,871	226	2,188	7,624		62	2.0	124
33	10-Aug	3	2,150	541	1,805	2,647		37	2.0	74
34	17-Aug	2	1,780	806	878	1,194		29	2.0	58
35	24-Aug	1	946	1,141	184	742		28	2.0	56
Total		2,724	84,115	2,993	38,794	145,290	0		30.0	1,761

<sup>a</sup> Chum salmon are not included because of the difficulty of making an accurate estimate, the majority of the summer chum salmon catch was of hatchery origin.

Appendix C. 1. Estimate of the proportion of natural and planted sockeye salmon stock groups harvested in the Alaskan District 111 commercial drift gillnet fishery by week, 1997. Stock composition based on 1983-1996 averages.

Week	Little Trapper				Tatsamenie		Total			Total Wild	U.S.
	Kuthai	Wild	Planted	Mainstem	Wild	Planted	Taku	Crescent	Speel	Snett.	Planted
25	0.640	0.120	0.000	0.148	0.084	0.000	0.992	0.000	0.008	0.008	0.000
26	0.322	0.136	0.024	0.366	0.123	0.000	0.971	0.008	0.021	0.029	0.000
27	0.149	0.362	0.013	0.331	0.042	0.005	0.902	0.026	0.062	0.088	0.010
28	0.030	0.221	0.027	0.413	0.153	0.012	0.856	0.016	0.049	0.065	0.079
29	0.017	0.090	0.014	0.399	0.270	0.007	0.798	0.029	0.011	0.040	0.162
30	0.000	0.267	0.000	0.179	0.328	0.020	0.794	0.002	0.048	0.050	0.155
31	0.000	0.115	0.012	0.185	0.502	0.016	0.831	0.047	0.005	0.052	0.117
32	0.000	0.056	0.000	0.252	0.339	0.007	0.655	0.035	0.017	0.052	0.292
33	0.000	0.168	0.000	0.218	0.357	0.000	0.743	0.069	0.040	0.109	0.148
34	0.000	0.108	0.000	0.311	0.327	0.004	0.750	0.076	0.001	0.077	0.172
35	0.000	0.108	0.000	0.311	0.327	0.004	0.750	0.076	0.001	0.077	0.172
Total	0.067	0.170	0.011	0.282	0.286	0.011	0.826	0.027	0.026	0.053	0.120

Appendix C. 2. Weekly stock-specific catch of wild and planted Taku River and Port Snettisham sockeye salmon harvested in the Alaskan District 111 commercial drift gillnet fishery, 1997. Data based on historical averages except for planted fish.

Week	Little Trapper				Tatsamenie		Total			Total Wild	U.S.
	Kuthai	Wild	Planted	Mainstem	Wild	Planted	Taku	Crescent	Speel	Snett.	Planted
25	2,552	477	0	591	336	0	3,956	0	32	32	0
26	1,881	797	141	2,135	716	0	5,670	47	123	170	0
27	1,296	3,147	113	2,874	362	40	7,832	225	535	760	90
28	320	2,398	292	4,470	1,653	134	9,267	170	532	702	858
29	296	1,556	248	6,881	4,659	124	13,764	505	192	697	2,790
30	0	4,315	0	2,892	5,315	329	12,851	32	783	815	2,515
31	0	2,268	237	3,648	9,900	317	16,370	923	99	1,022	2,313
32	0	360	0	1,615	2,172	48	4,195	227	109	336	1,873
33	0	428	0	553	906	0	1,887	175	102	277	377
34	0	208	0	600	631	8	1,448	147	2	149	332
35	0	151	0	435	457	6	1,048	107	1	108	241
Total	6,345	16,105	1,031	26,694	27,107	1,006	78,288	2,558	2,510	5,068	11,389

Appendix C. 3. Weekly salmon and steelhead trout catch and effort in the Canadian commercial fishery in the Taku River, 1997.

Week	Start Date	Catch							Effort		
		Chinook		Sockeye	Coho	Pink	Chum	Steelhead	Average Permits	Days Fished	Permit Days
Jacks	Large										
25	15-Jun	32	1,008	1,090	0	0	0	3	10.67	3.00	32.00
26	22-Jun	24	588	1,307	0	0	0	1	10.33	3.00	31.00
27	29-Jun	15	596	1,937	0	0	0	0	12.00	3.00	36.00
28	6-Jul	12	395	3,324	2	0	0	0	11.75	4.00	47.00
29	13-Jul	1	82	2,472	33	0	0	0	12.67	3.00	38.00
30	20-Jul	0	36	3,135	42	0	0	0	13.00	3.00	39.00
31	27-Jul	0	18	3,552	263	0	0	0	9.50	4.00	38.00
32	3-Aug	0	7	3,370	256	0	1	0	12.50	2.00	25.00
33	10-Aug	0	0	1,102	114	0	0	1	13.00	2.00	26.00
34	17-Aug	0	1	1,436	348	0	0	15	11.50	2.00	23.00
35	24-Aug	0	0	890	455	0	0	23	8.00	2.00	16.00
36	31-Aug	0	0	122	142	0	0	10	1.00	2.00	2.00
37	7-Sep	0	0	213	402	0	0	52	3.43	7.00	24.00
38	14-Sep	0	0	49	403	0	0	44	4.00	4.00	16.00
39	21-Sep	0	0	1	58	0	0	3	1.00	1.00	1.00
40	28-Sep	0	0	3	76	0	0	8	1.00	1.00	1.00
Total		84	2,731	24,003	2,594	0	1	160		46.00	395.00

Appendix C. 4. Weekly stock proportions of sockeye salmon harvested in the Canadian commercial fishery in the Taku River, 1997. Planted proportions based on preliminary mark recovery.

Week	Start Date	Kuthai	Little Trapper			Tatsamenie	
			Wild	Planted <sup>a</sup>	Mainstem	Wild	Planted <sup>a</sup>
25	15-Jun	0.744	0.015	0.000	0.194	0.047	0.000
26	22-Jun	0.601	0.169	0.017	0.177	0.036	0.000
27	29-Jun	0.388	0.316	0.031	0.204	0.061	0.000
28	6-Jul	0.131	0.620	0.017	0.136	0.097	0.000
29	13-Jul	0.033	0.466	0.017	0.242	0.226	0.017
30	20-Jul	0.009	0.100	0.067	0.573	0.234	0.017
31	27-Jul	0.000	0.298	0.000	0.231	0.455	0.017
32	3-Aug	0.000	0.223	0.000	0.267	0.510	0.000
33	10-Aug	0.000	0.282	0.017	0.221	0.480	0.000
34	17-Aug	0.000	0.088	0.034	0.294	0.549	0.034
35	24-Aug	0.000	0.107	0.000	0.442	0.451	0.000
36	31-Aug	0.000	0.107	0.000	0.442	0.451	0.000
37	7-Sep	0.000	0.107	0.000	0.442	0.451	0.000
38	14-Sep	0.000	0.107	0.000	0.442	0.451	0.000
39	21-Sep	0.000	0.107	0.000	0.442	0.451	0.000
40	28-Sep	0.000	0.107	0.000	0.442	0.451	0.000
Total		0.120	0.282	0.019	0.277	0.294	0.008

<sup>a</sup> Proportion estimated from the ratio in the US District 111 catch.

Appendix C. 5. Weekly stock-specific catch of sockeye salmon in the Canadian commercial fishery in the Taku River, 1997. Planted proportions based on preliminary mark recovery.

Week	Start Date	Kuthai	Little Trapper			Tatsamenie	
			Wild	Planted	Mainstem	Wild	Planted
25	15-Jun	811	16	0	212	51	0
26	22-Jun	786	221	22	231	47	0
27	29-Jun	751	613	60	395	118	0
28	6-Jul	434	2,060	55	453	322	0
29	13-Jul	81	1,152	41	599	558	41
30	20-Jul	28	314	210	1,796	735	52
31	27-Jul	0	1,057	0	820	1,616	59
32	3-Aug	0	750	0	901	1,719	0
33	10-Aug	0	311	19	243	529	0
34	17-Aug	0	127	49	422	789	49
35	24-Aug	0	95	0	393	401	0
36	31-Aug	0	13	0	54	55	0
37	7-Sep	0	23	0	94	96	0
38	14-Sep	0	5	0	22	22	0
39	21-Sep	0	0	0	0	0	0
40	28-Sep	0	0	0	1	1	0
Total		2,891	6,758	456	6,637	7,060	201

Appendix C. 6. Mark-recapture estimate of above border run of sockeye and coho salmon in the Taku River, 1997. The early season sockeye salmon expansion is based on the proportion of fish wheel sockeye salmon catch that occurs before the fishery opens and the late season expansion for coho salmon was not computed in 1997.

Recovery Week	Start Date	Above Border Run				Above Border Escapement	
		Commercial	Test	Aboriginal <sup>a</sup>			
<b>Sockeye</b>							
Early season expansion		1622				1,622	
25	15-Jun	3,140	1,090			2,050	
26	22-Jun	10,507	1,307			9,200	
27-28	29-Jun	26,160	5,261			20,899	
29-31	13-Jul	21,083	9,159			11,924	
32	3-Aug	2,719	3,370			-651	
33	10-Aug	11,499	1,102			10,397	
34	17-Aug	6,558	1,436			5,122	
35-36	24-Aug	8,913	1,012			7,901	
37-40	7-Sep	3,237	266			2,971	
M-R Estimate		93816					
95% C.I.	87,956	99,675					
Total Estimate	89,477	101,398	95,438	24,003	1	349	71,086
<b>Coho</b>							
28-31	6-Jul	1,088	340			748	
32	3-Aug	738	256			482	
33	10-Aug	1,265	114			1,151	
34	17-Aug	1,542	348			1,194	
35	24-Aug	2,589	455			2,134	
36	31-Aug	3,028	142			2,886	
37-40	7-Sep	24,785	939			23,846	
Late season expansion		none					
M-R Estimate		35,035					
95% C.I.	24,851	45,219					
Total Estimate	24,851	45,219	35,035	2,594	39	96	32,345

<sup>a</sup> Aboriginal catch by week is not available.

<sup>b</sup> Estimate based on proportion of fish wheel sockeye catch before the fishery opened.

Appendix C. 7. Daily counts of adult salmon passing through Tatsamenie weir, 1997.

Date	Sockeye			Coho <sup>a</sup>			
	Count	Cumulative		Count	Cumulative		
		Count	Percent		Count	Percent	
22-Aug	-----Weir Operational-----						
23-Aug	47	47	0.6	0	0	0.0	
24-Aug	290	337	4.0	0	0	0.0	
25-Aug	233	570	6.8	0	0	0.0	
26-Aug	191	761	9.1	0	0	0.0	
27-Aug	127	888	10.6	0	0	0.0	
28-Aug	158	1,046	12.5	0	0	0.0	
29-Aug	141	1,187	14.2	0	0	0.0	
30-Aug	175	1,362	16.3	0	0	0.0	
31-Aug	188	1,550	18.5	0	0	0.0	
1-Sep	200	1,750	20.9	0	0	0.0	
2-Sep	174	1,924	23.0	0	0	0.0	
3-Sep	210	2,134	25.5	0	0	0.0	
4-Sep	382	2,516	30.1	0	0	0.0	
5-Sep	244	2,760	33.0	0	0	0.0	
6-Sep	540	3,300	39.5	0	0	0.0	
7-Sep	478	3,778	45.2	0	0	0.0	
8-Sep	528	4,306	51.5	0	0	0.0	
9-Sep	232	4,538	54.3	0	0	0.0	
10-Sep	346	4,884	58.4	0	0	0.0	
11-Sep	218	5,102	61.0	0	0	0.0	
12-Sep	80	5,182	62.0	0	0	0.0	
13-Sep	174	5,356	64.0	0	0	0.0	
14-Sep	371	5,727	68.5	0	0	0.0	
15-Sep	25	5,752	68.8	0	0	0.0	
16-Sep	87	5,839	69.8	0	0	0.0	
17-Sep	67	5,906	70.6	0	0	0.0	
18-Sep	47	5,953	71.2	0	0	0.0	
19-Sep	198	6,151	73.6	0	0	0.0	
20-Sep	164	6,315	75.5	0	0	0.0	
21-Sep	185	6,500	77.7	0	0	0.0	
22-Sep	752	7,252	86.7	0	0	0.0	
23-Sep	70	7,322	87.6	0	0	0.0	
24-Sep	21	7,343	87.8	0	0	0.0	
25-Sep	65	7,408	88.6	0	0	0.0	

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Appendix C. 7. (page 2 Of 2)

Date	Sockeye			Coho <sup>a</sup>		
	Count	Cumulative		Count	Cumulative	
		Count	Percent		Count	Percent
26-Sep	76	7,484	89.5	0	0	0.0
27-Sep	60	7,544	90.2	0	0	0.0
28-Sep	29	7,573	90.6	0	0	0.0
29-Sep	38	7,611	91.0	0	0	0.0
30-Sep	20	7,631	91.2	0	0	0.0
1-Oct	42	7,673	91.7	0	0	0.0
2-Oct	28	7,701	92.1	0	0	0.0
3-Oct	69	7,770	92.9	0	0	0.0
4-Oct	43	7,813	93.4	0	0	0.0
5-Oct	0	7,813	93.4	0	0	0.0
6-Oct	121	7,934	94.9	0	0	0.0
7-Oct	92	8,026	96.0	0	0	0.0
8-Oct	12	8,038	96.1	0	0	0.0
9-Oct	2	8,040	96.1	0	0	0.0
10-Oct	11	8,051	96.3	0	0	0.0
11-Oct <sup>b</sup>	312	8,363	100.0	0	0	0.0
Counts <sup>c</sup>		8,363		0		
Early Fish <sup>d</sup>						
Broodstock <sup>e</sup>		-2,382				
Spawners		5,981				

<sup>a</sup> Operation of weir did not cover entire run.

<sup>b</sup> Daily counts were estimated August 31 and Sept 13 due to holes in the weir.

<sup>c</sup> The estimated return of 8,363 through the Tatsamenie Lake weir is thought to represent approximately 80% of the sockeye run past the old weir location at L. Tatsamenie Lake, resulting in a potential run of 10,454 sockeye.

<sup>d</sup> Daily total on Oct 11 includes a count of 266 to estimate the period after the weir was pulled.

<sup>e</sup> Broodstock included 1,212 females and 867 males spawned and 142 female and 161 male mortalities.

Appendix C. 8. Daily counts of adult sockeye salmon passing through Little Trapper Lake weir, 1997.

Date	Count	Cumulative	
		Count	Percent
26-Jul	----		
27-Jul	89	89	1.50
28-Jul	184	273	4.61
29-Jul	49	322	5.44
30-Jul	169	491	8.29
31-Jul	144	635	10.72
1-Aug	193	828	13.98
2-Aug	157	985	16.63
3-Aug	343	1,328	22.42
4-Aug	421	1,749	29.52
5-Aug	385	2,134	36.02
6-Aug	231	2,365	39.92
7-Aug	266	2,631	44.41
8-Aug	347	2,978	50.27
9-Aug	279	3,257	54.98
10-Aug	263	3,520	59.42
11-Aug	349	3,869	65.31
12-Aug	204	4,073	68.75
13-Aug	178	4,251	71.76
14-Aug	29	4,280	72.25
15-Aug	89	4,369	73.75
16-Aug	74	4,443	75.00
17-Aug	37	4,480	75.62
18-Aug	90	4,570	77.14
19-Aug	38	4,608	77.79
20-Aug	30	4,638	78.29
21-Aug	47	4,685	79.09
22-Aug	41	4,726	79.78
23-Aug	26	4,752	80.22
24-Aug	81	4,833	81.58
25-Aug	50	4,883	82.43
26-Aug	82	4,965	83.81
27-Aug	105	5,070	85.58
28-Aug	147	5,217	88.07
29-Aug	96	5,313	89.69
30-Aug	61	5,374	90.72
31-Aug	37	5,411	91.34

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Appendix C. 8. (page 2 of 2)

Date	Count	Cumulative	
		Count	Percent
1-Sep	27	5,438	91.80
2-Sep	15	5,453	92.05
3-Sep	51	5,504	92.91
4-Sep	77	5,581	94.21
5-Sep	71	5,652	95.41
6-Sep	26	5,678	95.85
7-Sep	48	5,726	96.66
8-Sep	59	5,785	97.65
9-Sep	65	5,850	98.75
10-Sep	49	5,899	99.58
11-Sep	25	5,924	100.00
Count		5,924	
Spawners		5,924	

Appendix C. 9. Daily counts of adult salmon passing through the Nahlin River weir, 1997. Chinook salmon counts represent an unknown portion of the escapement because the weir was not operated throughout the entire run.

Date	Chinook				Sockeye		
	Jack	Count	Cumulative		Count	Cumulative	
			Count	Percent		Count	Percent
19-Jun		8	8	0.24	0	0	0.00
20-Jun		4	12	0.37	1	1	0.05
21-Jun		10	22	0.67	0	1	0.05
22-Jun		9	31	0.95	0	1	0.05
23-Jun		23	54	1.65	7	8	0.43
24-Jun		8	62	1.90	6	14	0.75
25-Jun		36	98	3.00	19	33	1.78
26-Jun		37	135	4.13	28	61	3.28
27-Jun		40	175	5.35	43	104	5.60
28-Jun		48	223	6.82	56	160	8.62
29-Jun		34	257	7.86	46	206	11.09
30-Jun		10	267	8.17	43	249	13.41
1-Jul		32	299	9.14	41	290	15.62
2-Jul		29	328	10.03	65	355	19.12
3-Jul		1,469	1,797	54.95	350	705	37.96
4-Jul		89	1,886	57.68	7	712	38.34
5-Jul		103	1,989	60.83	0	712	38.34
6-Jul		87	2,076	63.49	7	719	38.72
7-Jul		70	2,146	65.63	4	723	38.93
8-Jul		63	2,209	67.55	3	726	39.10
9-Jul		62	2,271	69.45	6	732	39.42
10-Jul		111	2,382	72.84	12	744	40.06
11-Jul		90	2,472	75.60	35	779	41.95
12-Jul		91	2,563	78.38	17	796	42.86
13-Jul		68	2,631	80.46	22	818	44.05
14-Jul		49	2,680	81.96	24	842	45.34
15-Jul		38	2,718	83.12	27	869	46.80
16-Jul		25	2,743	83.88	54	923	49.70
17-Jul		30	2,773	84.80	72	995	53.58
18-Jul		39	2,812	85.99	84	1,079	58.10
19-Jul		22	2,834	86.67	40	1,119	60.26
20-Jul		25	2,859	87.43	76	1,195	64.35

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Appendix C. 9. (page 2 of 2)

Date	Chinook				Sockeye		
	Jack	Count	Cumulative		Count	Cumulative	
			Count	Percent		Count	Percent
21-Jul		25	2,884	88.20	56	1,251	67.37
22-Jul		31	2,915	89.14	59	1,310	70.54
23-Jul		39	2,954	90.34	61	1,371	73.83
24-Jul		37	2,991	91.47	34	1,405	75.66
25-Jul		38	3,029	92.63	56	1,461	78.68
26-Jul		23	3,052	93.33	39	1,500	80.78
27-Jul		41	3,093	94.59	45	1,545	83.20
28-Jul		35	3,128	95.66	45	1,590	85.62
29-Jul		15	3,143	96.12	64	1,654	89.07
30-Jul		22	3,165	96.79	49	1,703	91.71
31-Jul		21	3,186	97.43	74	1,777	95.69
1-Aug		20	3,206	98.04	17	1,794	96.61
2-Aug		0	3,206	98.04	5	1,799	96.88
3-Aug		7	3,213	98.26	16	1,815	97.74
4-Aug		8	3,221	98.50	17	1,832	98.65
5-Aug		18	3,239	99.05	5	1,837	98.92
6-Aug		8	3,247	99.30	3	1,840	99.08
7-Aug		6	3,253	99.48	6	1,846	99.41
8-Aug		7	3,260	99.69	3	1,849	99.57
9-Aug		3	3,263	99.79	6	1,855	99.89
10-Aug		7	3,270	100.00	1	1,856	99.95
11-Aug	-----	Weir Dismantled			1	1,857	100.00
Counts	0	3,270			1,857		

Appendix C. 10. Daily counts of adult sockeye salmon passing through the Kuthai Lake weir, 1997.

Date	Count	Cumulative	Percent
7-Jul	--- Weir installed ---		
8-Jul	128	128	2.23
9-Jul	124	252	4.39
10-Jul	104	356	6.20
11-Jul	51	407	7.08
12-Jul	77	484	8.42
13-Jul	54	538	9.36
14-Jul	303	841	14.64
15-Jul	105	946	16.46
16-Jul	124	1,070	18.62
17-Jul	168	1,238	21.55
18-Jul	40	1,278	22.24
19-Jul	58	1,336	23.25
20-Jul	370	1,706	29.69
21-Jul	130	1,836	31.95
22-Jul	12	1,848	32.16
23-Jul	1,105	2,953	51.39
24-Jul	153	3,106	54.05
25-Jul	204	3,310	57.61
26-Jul	168	3,478	60.53
27-Jul	183	3,661	63.71
28-Jul	173	3,834	66.72
29-Jul	36	3,870	67.35
30-Jul	310	4,180	72.75
31-Jul	211	4,391	76.42
1-Aug	93	4,484	78.04
2-Aug	108	4,592	79.92
3-Aug	99	4,691	81.64
4-Aug	100	4,791	83.38
5-Aug	60	4,851	84.42
6-Aug	59	4,910	85.45
7-Aug	50	4,960	86.32
8-Aug	159	5,119	89.09
9-Aug	52	5,171	89.99
10-Aug	118	5,289	92.05
11-Aug	16	5,305	92.33
12-Aug	73	5,378	93.60
13-Aug	217	5,595	97.37
14-Aug	47	5,642	98.19
15-Aug	20	5,662	98.54

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Appendix C. 10. (page 2 of 2)

Date	Count	Cumulative	Percent
16-Aug	0	5,662	98.54
17-Aug	1	5,663	98.56
18-Aug	0	5,663	98.56
19-Aug	0	5,663	98.56
20-Aug	0	5,663	98.56
21-Aug	0	5,663	98.56
22-Aug	30	5,693	99.08
23-Aug	0	5,693	99.08
24-Aug	18	5,711	99.39
25-Aug	15	5,726	99.65
26-Aug	18	5,744	99.97
27-Aug	2	5,746	100.00
Total	5,746		

Appendix D. 1. Salmon catches and effort in the Alaskan District 111 and Subdistrict 111-32 (Taku Inlet) commercial drift gillnet fishery, 1960-1997. Days open are for the entire district and include openings to harvest spawner chinook salmon, 1960-1975.

Year	Catch							Effort	
	Chinook	Sockeye	Coho	Pink	S. Chum <sup>a</sup>	F. Chum <sup>a</sup>	Steelhead	Boat Days	Days Open
District 111 Catches									
1960	8,810	42,819	22,374	33,155	8,754	33,098			60.00
1961	7,434	45,981	15,486	41,455	8,578	15,855			62.00
1962	5,931	36,745	15,661	17,280	7,453	13,182			52.00
1963	2,652	24,119	10,855	21,392	12,335	7,779			54.00
1964	2,509	34,140	29,315	26,593	4,970	7,883			56.00
1965	4,170	27,569	32,667	2,768	3,842	7,691			63.00
1966	4,829	33,925	26,065	23,833	5,015	30,118			64.00
1967	5,417	17,735	40,391	12,372	2,183	20,651			53.00
1968	4,904	19,501	39,103	67,365	5,747	16,143			60.00
1969	6,986	41,169	10,802	73,927	4,851	10,198	369	1,461	41.50
1970	3,357	50,922	44,960	197,017	19,593	90,797	1,055	2,688	53.00
1971	6,958	66,181	41,830	31,484	31,813	59,332	631	2,914	55.00
1972	10,955	80,404	49,780	144,339	67,126	80,831	574	3,100	51.00
1973	9,799	85,317	35,453	58,186	33,296	75,949	554	3,316	41.00
1974	2,908	38,670	38,667	57,731	11,263	75,423	465	2,237	29.50
1975	2,182	32,513	1,185	9,567	2,091	587	89	1,089	15.50
1976	1,757	61,749	41,729	14,962	6,027	75,776	499	1,939	25.00
1977	1,068	70,097	54,917	88,578	8,995	52,107	359	2,284	27.00
1978	1,926	55,398	31,944	51,385	9,076	27,178	397	2,176	26.00
1979	3,701	122,148	16,194	152,836	5,936	55,261	243	2,235	28.83
1980	2,251	123,451	41,677	296,572	33,627	159,020	363	4,080	30.92
1981	1,721	49,942	26,711	254,856	22,546	53,892	262	2,660	30.00
1982	3,057	83,625	29,072	109,297	14,867	22,741	476	2,437	35.50
1983	888	31,821	21,455	66,239	6,160	9,104	183	1,274	33.00
1984	1,773	77,233	33,836	145,971	45,811	40,930	366	2,690	52.50
1985	2,636	88,077	55,597	311,248	58,972	47,748	499	3,102	48.00
1986	2,584	73,061	30,512	16,568	29,909	28,883	529	2,102	32.83
1987	2,076	75,212	35,219	363,439	57,280	64,380	272	2,514	34.75
1988	1,779	38,923	44,881	157,831	80,307	59,271	226	2,146	32.00
1989	1,811	74,019	51,812	180,597	18,022	18,955	215	2,333	41.00
1990	3,480	126,884	67,530	153,036	112,336	33,463	310	3,202	38.33
1991	3,217	109,877	126,436	74,183	147,404	13,771	69	4,103	57.00
1992	2,341	135,411	172,662	314,445	97,725	14,802	166	4,550	50.00
1993	6,748	171,556	65,536	17,081	156,033	10,447	52	3,827	43.00
1994	5,047	105,861	188,501	401,525	198,002	16,169	459	5,082	66.00
1995	4,660	103,377	83,626	41,269	339,178	10,920	128	4,034	49.00
1996	2,659	199,014	33,633	12,660	347,612	6,455	240	3,229	46.00
Averages									
60-96	3,972	71,742	46,164	109,271	54,723	36,940	359	2,814	44.25
87-96	3,382	114,013	86,984	171,607	155,390	24,863	214	3,502	45.71
1997	2,804	94,745	3,515	51,424	173,804	3,060	0	2,107	33.00

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Appendix D. 1. (page 2 of 2)

Year	Catch							Effort	
	Chinook	Sockeye	Coho	Pink	S. Chum <sup>a</sup>	F. Chum <sup>a</sup>	Steelhead	Boat-Days	Days Open
Subdistrict 111-32 Catches (Taku Inlet)									
1960	8,763	26,641	20,282	26,777	4,566	28,720		1,680	60.00
1961	7,269	30,805	14,618	34,615	6,863	14,876		2,901	62.00
1962	5,719	25,969	13,699	10,006	5,418	11,812		1,568	52.00
1963	2,547	16,079	9,406	18,102	8,085	7,071		1,519	51.00
1964	2,482	28,873	28,603	22,177	3,919	7,822		1,491	56.00
1965	4,146	23,828	32,382	2,641	3,604	7,691		1,332	60.00
1966	4,817	28,301	24,153	22,490	4,350	27,327		1,535	58.00
1967	5,351	14,537	39,983	11,619	1,569	20,463		1,663	50.00
1968	4,862	16,952	37,570	55,527	4,646	15,597		2,420	60.00
1969	6,874	38,260	10,131	66,991	4,233	9,926	366	1,413	42.00
1970	3,073	41,476	37,587	143,886	14,208	76,795	996	2,425	53.00
1971	6,753	62,459	38,571	30,765	31,110	54,696	627	2,849	55.00
1972	9,633	62,877	38,568	78,673	45,955	60,097	544	2,797	51.00
1973	9,525	80,063	29,770	55,234	30,817	61,025	513	3,135	41.00
1974	2,280	26,256	27,670	32,684	6,469	51,063	378	1,741	30.00
1975	1,998	28,201	429	8,084	1,639	31	77	986	15.00
1976	1,693	51,674	31,641	11,868	3,766	42,674	450	1,582	23.00
1977	754	47,512	48,403	67,072	5,436	43,595	318	1,879	27.00
1978	1,642	43,795	21,620	41,624	7,142	18,101	314	1,738	24.00
1979	3,016	103,043	12,741	114,324	4,317	46,142	225	2,011	29.00
1980	1,986	108,577	35,814	241,085	25,779	131,126	337	3,634	31.00
1981	1,325	39,963	20,936	98,524	10,407	40,212	233	1,740	22.00
1982	2,841	75,012	24,761	77,942	11,558	18,363	447	2,130	36.00
1983	689	25,957	17,665	40,996	3,171	7,813	172	1,065	31.00
1984	1,414	59,229	25,951	83,028	28,214	27,967	315	2,120	39.00
1985	2,152	70,160	45,106	176,710	35,897	40,530	436	2,116	37.00
1986	1,877	60,106	26,474	9,772	14,646	24,790	485	1,413	30.00
1987	1,534	54,436	23,342	200,203	31,992	28,891	197	1,517	30.00
1988	949	23,752	33,159	41,625	25,969	27,010	174	1,213	29.00
1989	1,606	68,104	44,034	141,385	15,254	15,491	183	1,909	36.00
1990	2,432	110,006	60,078	101,168	88,350	29,099	286	2,879	38.00
1991	2,614	96,006	118,902	44,347	97,577	12,279	63	3,324	52.00
1992	1,672	103,238	152,598	180,340	57,153	11,649	135	3,407	43.00
1993	4,413	144,982	58,062	8,801	101,356	7,760	46	3,372	43.00
1994	3,051	88,625	156,314	198,507	129,350	12,280	422	3,960	60.00
1995	3,497	81,266	70,826	18,469	192,557	8,786	119	3,061	45.00
1996	2,412	188,412	31,828	12,123	294,890	5,245	236	2,685	41.00
Averages									
60-96	3,504	59,336	39,559	68,383	36,817	28,509	325	2,168	41.68
87-96	2,418	95,883	74,914	94,697	103,445	15,849	186	2,733	41.70
1997	2,724	84,115	2,993	38,794	143,354	1,936	0	1,761	30.00

<sup>a</sup> S Chum and F Chum refer to Summer and Fall runs of these fish, fish harvested prior to week 34 are considered summer chum, and fish harvested in week 34 and beyond are considered fall chum.

Appendix D. 2. Stock proportions and catches of sockeye salmon in the Alaska District 111 commercial drift gillnet fishery, 1983-1997. Data based on analysis of scale patterns, otolith marks, and incidence of brain parasites.

Week	Kuthai	Little Trapper		Tatsamenie		Total			Total	U.S.	
		Wild Planted	Mainstem	Wild Planted		Taku	Crescent	Speel	Snett.	Planted	
Proportion											
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		
1989a	0.077	0.616			0.156	0.848	0.051	0.100	0.152		
1990	0.036	0.197		0.336	0.286	0.855	0.112	0.033	0.145		
1991	0.039	0.297		0.373	0.232	0.941	0.059	0.000	0.059		
1992	0.048	0.220		0.445	0.191	0.904	0.036	0.060	0.096		
1993	0.062	0.328		0.308	0.123	0.822	0.069	0.109	0.178		
1994	0.110	0.356		0.361	0.091	0.917	0.036	0.022	0.058	0.025	
1995	0.046	0.214	0.010	0.428	0.153	0.029	0.880	0.018	0.075	0.093	0.026
1996	0.069	0.117	0.010	0.499	0.232	0.014	0.941	0.013	0.032	0.045	0.014
Averages <sup>b</sup>	0.067	0.239	0.010	0.373	0.162	0.022	0.848	0.086	0.060	0.146	0.022
1997	0.067	0.170	0.011	0.282	0.286	0.011	0.826	0.027	0.026	0.053	0.120
Catches											
1983						24,025			7,796		
1984						58,543			18,690		
1985						73,809			14,268		
1986	4,489	19,441		22,104	14,900	60,934	6,610	5,516	12,127		
1987	5,893	17,594		28,286	2,352	54,124	11,814	9,274	21,088		
1988	4,598	6,153		11,865	3,194	25,811	10,365	2,748	13,112		
1989 <sup>a</sup>	5,696	45,573			11,536	62,805	3,789	7,425	11,214		
1990	4,539	24,952		42,676	36,332	108,499	14,242	4,143	18,385		
1991	4,295	32,685		40,957	25,475	103,412	6,465	0	6,465		
1992	6,543	29,818		60,224	25,853	122,438	4,912	8,060	12,972		
1993	10,673	56,350		52,876	21,139	141,038	11,877	18,641	30,518		
1994	11,638	37,644		38,179	9,585	97,046	3,859	2,319	6,178	2,637	
1995	4,788	22,109	1,017	44,278	15,767	3,049	91,008	1,901	7,741	9,642	2,727
1996	13,742	23,307	1,920	99,231	46,148	2,859	187,207	2,544	6,415	8,959	2,848
Averages <sup>b</sup>	7,120	27,005	1,469	44,068	20,074	2,954	99,152	7,459	6,486	13,945	2,737
1997	6,345	16,105	1,031	26,694	27,107	1,006	78,288	2,558	2,510	5,068	11,389

<sup>a</sup> The Trapper and Mainstem groups were combined in the 1989 analysis.

<sup>b</sup> Averages for individual stocks do not include 1989.

Appendix D. 3. Proportion of wild Taku River sockeye salmon in the Alaskan District 111 commercial drift gillnet catch by week, 1983-1997. Data based on scale patterns and incidence of brain parasites.

Year	Week										Total
	25	26	27	28	29	30	31	32	33	34	
1983		0.996	0.842	0.819	0.663	0.527	0.836	0.534	0.719	0.759	0.755
1984	0.970	0.956	0.843	0.670	0.588	0.712	0.728	0.809	0.726		0.758
1985	0.999	0.986	0.928	0.974	0.868	0.706	0.737	0.826	0.801		0.838
1986	0.938	0.953	0.873	0.880	0.852	0.777	0.851	0.757	0.893	0.739	0.834
1987		0.982	0.901	0.884	0.948	0.414	0.619	0.689	0.841	0.731	0.720
1988		0.964	0.886	0.889	0.510	0.643	0.677	0.528	0.478	0.346	0.663
1989	0.943	0.989	0.979	0.852	0.835	0.641	0.681	0.919	0.676		0.848
1990	0.874	0.935	0.904	0.773	0.782	0.863	0.943	0.939	0.878	0.862	0.855
1991	0.988	0.979	0.953	0.979	0.951	0.933	0.936	0.890	0.885	0.875	0.941
1992		0.978	0.985	0.956	0.916	0.943	0.893	0.858	0.766	0.766	0.904
1993		0.961	0.901	0.837	0.856	0.781	0.790	0.829	0.738	0.706	0.822
1994		1.000	0.981	0.973	0.967	0.870	0.835	0.938	0.804	0.901	0.917
1995	0.942	0.889	0.903	0.858	0.872	0.868	0.761	0.759	0.705	0.740	0.841
1996	1.000	0.998	0.901	0.974	0.938	0.987	0.852	0.931	0.876	0.790	0.941
Average											
83-96	0.957	0.969	0.913	0.880	0.825	0.762	0.796	0.800	0.771	0.747	0.831
87-96	0.949	0.967	0.929	0.897	0.858	0.794	0.799	0.828	0.765	0.746	0.845
1997	0.992	0.971	0.902	0.856	0.798	0.794	0.831	0.655	0.743	0.750	0.826

Appendix D. 4. Salmon catch in the U.S. subsistence and personal use fisheries in the Taku River, 1967-1997. The subsistence fishery was open 1967 to 1976 and 1985 and the personal use fishery was open 1989-1997.

Year	Chinook	Sockeye	Catch Coho	Pink	Chum
1967	0	103	221	9	25
1968	3	41	196	19	10
1969	0	122	8	11	0
1970	0	304	0	20	8
1971	0	512	0	42	0
1972	0	554	0	103	7
1973	0	1,227	0	64	14
1974	0	1,431	0	118	5
1975	0	170	0	3	0
1976	0	351	4	22	0
1985	0	2,514	96	44	3
1989	62	1,395	142	1,467	40
1990	57	1,726	224	242	100
1991	47	1,506	162	183	4
1992	34	1,972	143	162	0
1993	17	2,223	46	172	6
1994	36	2,001	168	137	5
1995	37	2,058	202	83	12
1996	87	2,977	163	285	15
Averages					
67-96	20	1,220	93	168	13
89-96	47	1,982	156	341	23
1997	33	2,140	56	177	2

Appendix D. 5. Salmon and steelhead trout catch and effort in the Canadian commercial fishery in the Taku River, 1979-1997.

Year	Catch							Effort	
	Chinook		Sockeye	Coho	Pink	Chum	Steelhead	Boat	Days
	Jack	Large						Days	Open
1979		97	13,578	6,006	13,661	15,474	254	599	50
1980		225	22,602	6,405	26,821	18,516	457	476	39
1981		159	10,922	3,607	10,771	5,591	108	243	31
1982		54	3,144	51	202	3	1	38	13
1983	400	156	17,056	8,390	1,874	1,760	213	390	64
1984	221	294	27,242	5,357	6,964	2,492	367	288	30
1985	24	326	14,244	1,770	3,373	136	32	178	16
1986	77	275	14,739	1,783	58	110	48	148	17
1987	106	127	13,554	5,599	6,250	2,270	223	280	26
1988	186	555	12,014	3,123	1,030	733	86	185	15
1989	139	895	18,545	2,876	695	42	24	271	25
1990	128	1,258	21,100	3,207	378	12	22	295	28
1991	432	1,177	25,067	3,415	296	2	5	284	25
1992	147	1,445	29,472	4,077	0	7	15	291	27
1993	171	1,619	33,217	3,033	16	15	11	363	34
1994	235	2,065	28,762	14,531	168	18	232	497	74
1995	298	1,577	32,640	13,629	2	1	205	428	51
1996	144	3,331	41,665	5,028	0	0	98	415	65
Averages									
79-96 <sup>a</sup>		1,019	21,087	5,105	4,031	2,621	133	315	35
87-96	199	1,405	25,604	5,852	884	310	92	331	37
1997	84	2,731	24,003	2,594	0	1	160	395	46

<sup>a</sup> 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 on the Taku River, 1986-1997. Data based on scale pattern analysis.

Year	Kuthai	Little Trapper		Mainstem	Tatsamenie		Total Wild	Total Planted
		Wild	Planted		Wild	Planted		
Proportions								
1986	0.111	0.397		0.350	0.143		1.000	
1987	0.062	0.201		0.649	0.088		1.000	
1988	0.143	0.417		0.343	0.098		1.000	
1989 <sup>a</sup>	0.053	0.744			0.203		1.000	
1990	0.112	0.388		0.338	0.163		1.000	
1991	0.064	0.308		0.452	0.176		1.000	
1992	0.092	0.240		0.569	0.099		1.000	
1993	0.126	0.392		0.432	0.049		1.000	
1994	0.158	0.482		0.302	0.058		1.000	
1995	0.047	0.427	0.010	0.373	0.112	0.031	0.959	0.041
1996	0.105	0.221	0.008	0.442	0.215	0.010	0.982	0.018
Averages <sup>b</sup>								
86-96	0.102	0.347		0.425	0.120			
1997	0.120	0.282	0.019	0.277	0.294	0.008	0.973	0.027
Catch								
1986	1,629	5,855		5,152	2,103		14,739	
1987	834	2,728		8,793	1,199		13,554	
1988	1,715	5,005		4,122	1,172		12,014	
1989 <sup>a</sup>	990	13,792			3,763		18,545	
1990	2,355	8,183		7,131	3,431		21,100	
1991	1,601	7,721		11,327	4,418		25,067	
1992	2,699	7,085		16,764	2,924		29,472	
1993	4,192	13,036		14,347	1,641		33,217	
1994	4,544	13,858		8,684	1,676		28,762	
1995	1,528	13,934	331	12,185	3,659	1,003	31,306	1,334
1996	4,357	9,195	331	18,422	8,959	401	40,933	732
Averages <sup>b</sup>								
86-96	2,545	8,660	331	10,693	3,118	702	24,428	1,033
1997	2,891	6,758	456	6,637	7,060	201	23,346	657

<sup>a</sup> The Trapper and Mainstem groups were combined in the 1989 analysis.

<sup>b</sup> Averages do not include 1989.

Appendix D. 7. Salmon catches in the Canadian Aboriginal fishery on the Taku River, 1980-1997.

Year	Chinook						Steelhead
	Jack	Large	Sockeye	Coho	Pink	Chum	
1980		85	150	0	0	15	0
1981							
1982							
1983		9	0	0	0	0	0
1984		0	50	15	0	0	0
1985		4	167	22	0	0	0
1986		10	200	50	0	0	0
1987		0	96	113	0	0	0
1988		27	245	98	0	0	0
1989		6	53	146	0	0	0
1990		0	89	6	0	0	0
1991		0	150	20	0	0	0
1992		121	352	187	0	0	16
1993		25	140	8	0	0	0
1994		119	239	162	4	0	1
1995		70	71	109	0	7	4
1996		63	360	24	0	0	0
Averages							
80-96		36	157	64	0	1	1
87-96		43	180	87	0	1	2
1997		103	349	96	0	0	0

Appendix D. 8. Salmon and steelhead trout catch in the Canadian test fishery in the Taku River, 1987-1997.

Year	Catch					
	Chinook	Sockeye	Coho	Pink	Chum	Steelhead
1987		237	807			
1988	72	708	422	52	222	14
1989	31	207	1,011	0	13	26
1990	48	285	472	0	0	20
1991	0	163	2,004	3	295	41
1992	0	38	1,277	0	76	88
1993 <sup>a</sup>	0	166	1,593	0	50	13
1994	There was no Canadian test fishery in 1994.					
1995	There was no Canadian test fishery in 1995.					
1996	There was no Canadian test fishery in 1996.					
Averages						
87-93	25	258	1,084	9	109	34
1997	1 sockeye and 39 coho salmon caught in 1997 were released live.					

<sup>a</sup> Incomplete harvest data.

Appendix D. 9. Taku River sockeye salmon run size, 1984-1997. Run estimate does not include spawning escapements below the U.S./Canada border. The early season sockeye salmon expansion is based on the proportion of fish wheel sockeye salmon catch that occurs before the fishery opens.

Year	Above Border M-R		Expansion		Expanded		Canadian	U.S. Catch <sup>a</sup>	Total Run
	Run Estimate	Start Date	Method	Factor	Run Estimate	Escape.			
	1984	133,414	17-Jun	Ave.(88-90&95-96) FW CPUE	0.056	141,254			
1985	118,160	16-Jun	Ave.(88-90&95-96) FW CPUE	0.047	123,974	14411	109,563	76,323	200,297
1986	104,162	22-Jun	Ave.(88-90&95-96) FW CPUE	0.095	115,045	14939	100,106	60,934	175,980
1987	87,554	21-Jun	Ave.(88-90&95-96) FW CPUE	0.088	96,023	13887	82,136	55,154	151,178
1988	86,629	19-Jun	1988 FW CPUE	0.065	92,641	12967	79,674	25,811	118,452
1989	99,467	18-Jun	1989 FW CPUE	0.128	114,068	18805	95,263	64,200	178,268
1990	117,385	10-Jun	1990 CPUE	0.002	117,573	21474	96,099	110,225	227,798
1991	153,773	9-Jun	Ave.(88-90&95-96) FW CPUE	0.007	154,873	25380	129,493	105,637	260,510
1992	162,003	21-Jun	Ave.(88-90&95-96) FW CPUE	0.032	167,376	29862	137,514	124,410	291,786
1993	138,523	13-Jun	Ave.(88-90&95-96) FW CPUE	0.026	142,148	33523	108,625	143,261	285,409
1994	129,119	12-Jun	Ave.(88-90&95-96) FW CPUE	0.019	131,580	29001	102,579	99,047	230,627
1995	145,264	11-Jun	1995 FW CPUE	0.008	146,450	32711	113,739	93,066	239,516
1996	132,322	9-Jun	1996 FW CPUE	0.017	134,651	42025	92,626	190,184	324,835
Averages									
	84-96				129,050	24,329	104,721	92,830	221,881
	87-96				129,738	25,964	103,775	101,099	230,838
1997	93,816		1997 FW CPUE	0.036	95,438	24352	71,086	80,428	175,866



Appendix D. 10. Sockeye salmon escapement estimates of Taku River and Port Snettisham sockeye salmon stocks, 1979-1997. Spawners equals escapement to the weir minus fish collected for brood stock.

Year	Little Trapper		Little Tatsamenie		Hackett Weir	Kuthai	Nahlin	Crescent		Speel	
	Escape.	Spawners	Escape.	Spawners		Lake Weir	River Weir	Escape.	Spawners	Escape.	Spawners
1980						1,658					
1981						2,299					
1982											
1983	<sup>a</sup> 7,402	7,402						19,422	19,422	10,484	10,484
1984	13,084	13,084						6,707	6,707	9,764	9,764
1985	<sup>a</sup> 14,889	14,889	13,093	13,093	2,309			7,249	7,249	7,073	7,006
1986	13,820	13,820	11,446	11,446	1,004			3,414	3,414	5,857	5,457
1987	<sup>a</sup> 12,007	12,007	2,794	2,794	910			7,839	7,839	9,319	9,319
1988	10,637	10,637	2,063	2,063	516		<sup>b</sup> 138	<sup>c</sup> 1,199	1,199	969	710
1989	9,606	9,606	3,039	3,039				<sup>c</sup> 1,109	775	12,229	10,114
1990	9,443	7,777	5,736	4,929				<sup>c</sup> 1,262	757	<sup>c</sup> 18,064	16,867
1991	22,942	21,001	8,381	7,585				<sup>d</sup> 9,208	8,666	299	299
1992	14,372	12,732	6,576	5,681		<sup>b</sup> 1,457	<sup>b</sup> 297	<sup>d</sup> 2,674	21,849	9,439	8,136
1993	17,432	16,685	5,028	4,230		<sup>c</sup> 6,312	2,463				
1994	13,438	12,691	4,371	3,578		5,427	960				
1995	11,524	11,524	<sup>e</sup> 8,000	6,607		3,310	3,711			<sup>d</sup> 16,208	14,260
1996	5,483	5,483	<sup>f</sup> 10,381	8,026		4,243	2,538			20,000	18,610
Averages											
83-96	12,577	12,096	6,742	6,089	1,185	3,529	1,803	8,008	7,788	9,975	9,252
1997	5,924	5,924	<sup>g</sup> 8,363	5,981		5,746	1,857				

<sup>d</sup> Mark-recapture estimates.

<sup>a</sup> Weir count plus spawning ground survey.

<sup>b</sup> Weir counts are incomplete.

<sup>c</sup> Counts may be low due to uncounted fish passage past weir.

<sup>e</sup> In 1995 the weir was moved upstream to Tatsamenie Lake, the count of 8,000 is an expansion (based on past experience) of the 5,780 fish counted there.

<sup>f</sup> The estimated return of 10,381 through the Tatsamenie Lake weir in 1996 is thought to represent approximately 80% of the sockeye run past the old weir location at L. Tatsamenie. This results in a potential run of 12,976 sockeye salmon.

<sup>g</sup> The estimated return of 8,363 through the Tatsamenie Lake weir in 1997 is thought to represent approximately 80% of the sockeye run past the old weir location at L. Tatsamenie Lake, resulting in a potential run of 10,454 sockeye.

Appendix D. 11. Aerial survey index escapement counts of large (3-ocean and older) Taku River chinook salmon, 1975-1997.

Year	Kowatua	Tatsatua	Dudidontu	Tseta	Nakina	Nahlin	Total Index Count
1975			15		1,800	274	2,089
1976	341	620	40		3,000	725	4,726
1977	580	573	18		3,850	650	5,671
1978	490	550	0	21	1,620	624	3,305
1979	430	750	9		2,110	857	4,156
1980	450	905	158		4,500	1,531	7,544
1981	560	839	74	258	5,110	2,945	9,786
1982	289	387	130	228	2,533	1,246	4,813
1983	171	236	117	179	968	391	2,062
1984	279	616		<sup>a</sup> 176	1,887	<sup>b</sup> 951	3,909
1985	699	848	475	303	2,647	2,236	7,208
1986	548	886	413	193	3,868	1,612	7,520
1987	570	678	287	180	2,906	1,122	5,743
1988	1,010	1,272	243	66	4,500	1,535	8,626
1989	601	1,228	204	494	5,141	1,812	9,480
1990	614	1,068	820	172	7,917	1,658	12,249
1991	570	1,164	804	224	5,610	1,781	10,153
1992	782	1,624	768	313	5,750	1,821	11,058
1993	1,584	1,491	1,020	491	6,490	2,128	13,204
1994	410	1,106	573	614	4,792	2,418	9,913
1995	550	678	731	786	3,943	2,069	8,757
1996	1,620	2,011	1,810	1,201	7,720	5,415	19,777
Averages							
75-96	626	930	415	347	4,030	1,627	7,975
87-96	831	1,232	726	454	5,477	2,176	10,896
1997	1,360	1,148	943	648	6,095	3,655	13,849

<sup>a</sup> Partial survey.

<sup>b</sup> Extrapolated results.

Appendix D. 12. Taku River (above border) coho salmon run size, 1987-1997.

Year	Canadian Catch			Above Border	
	Commercial	Food	Test	Escapement	Run
1987	5,599	113	807	55,457	61,976 <sup>a</sup>
1988	3,123	98	422	39,450	43,093 <sup>b</sup>
1989	2,876	146	1,011	56,808	60,841 <sup>c</sup>
1990	3,207	6	472	72,196	75,881 <sup>d</sup>
1991	3,415	20	2,004	127,484	132,923
1992	4,077	187	1,277	84,853	90,394 <sup>e</sup>
1993	3,033	8	1,593	109,457	114,091 <sup>f</sup>
1994	14,531	162	0	96,343	111,036 <sup>g</sup>
1995	13,629	109	0	55,710	69,448 <sup>h</sup>
1996	5,028	24	0	44,635	49,687 <sup>i</sup>
Averages					
87-96	5,852	87	759	74,239	80,937
1997	2,594	96	0	32,345	35,035

<sup>a</sup> Mark-recapture estimate through 9/20 was 43,570. Run through 10/05 estimated using inriver test fish CPUE.

<sup>b</sup> Mark-recapture estimate through 9/18.

<sup>c</sup> Mark-recapture estimate through 10/01.

<sup>d</sup> A second method of estimating the above border run by expanding test fishery CPUE yielded an estimate of 85,053 coho salmon.

<sup>e</sup> Mark-recapture estimate of inriver run size through 9/05 of 50,249 was expanded by dividing by proportion of District 111 CPUE of wild coho (0.559).

<sup>f</sup> Inriver estimate through week 37 expanded by dividing by proportion of District 111 CPUE of wild coho (0.54409) through week 37.

<sup>g</sup> Inriver estimate through week 39 expanded by dividing by proportion of District 111 CPUE of wild coho (0.8884) through week 39.

<sup>h</sup> Inriver estimate through week 39 expanded by dividing by proportion of District 111 CPUE of wild coho (0.8887) through week 39.

<sup>i</sup> Inriver estimate through week 39 expanded by dividing by proportion of District 111 CPUE of wild coho (0.889) through week 39.

Appendix D. 13. Escapement counts of Taku River coho salmon, 1984-1997. Counts are for age-.1 fish and do not include jacks. Because of variability between methods, visibility, observers, and timing, these counts are not an index of run strength.

Year	Yehring Creek		Sockeye Creek	Johnson Creek	Fish Creek	Flannigan Slough	Tatsamenie River	Hackett River	Dudidontu River	Upper Nahlin River	
	Weir	Aerial	Aerial	Ar/Foot	Aerial	Aerial	Weir	Weir	Aerial	Aerial	Weir
1984		2,900	275	235	700	1,480					
1985		560	740	150	1,000	2,320	201 <sup>b</sup>	1,031			
1986	2,116 <sup>a</sup>	1,200	174 <sup>c</sup>	70	53 <sup>c</sup>	1,095 <sup>c</sup>	344 <sup>b</sup>	2,723	108	318	
1987	1,627 <sup>a</sup>	565 <sup>c</sup>	980 <sup>c</sup>	150	250	2,100 <sup>c</sup>	173 <sup>b</sup>	1,715	276	165	
1988	1,423	658 <sup>c</sup>	585 <sup>c</sup>	500	1,215 <sup>c</sup>	1,308 <sup>c</sup>	663 <sup>a</sup>	1,260	367	694	1,322
1989	1,570 <sup>d</sup>	600	400	400	235	1,670	712 <sup>a</sup>		115	322	
1990	2,522 <sup>d</sup>	220	193 <sup>c</sup>		425 <sup>c</sup>	414 <sup>c</sup>	669 <sup>a</sup>		25	256	
1991		475 <sup>c</sup>	399 <sup>c</sup>	120	1,378 <sup>c</sup>	1,348 <sup>c</sup>	1,101		458	176 <sup>e</sup>	
1992		1,267 <sup>cf</sup>	594 <sup>f</sup>	654	478	1,288	730				970 <sup>ab</sup>
1993		250	130	90	380	70 <sup>g</sup>	88 <sup>b</sup>				326
1994		500	60	450	200	50 <sup>g</sup>	168				2,112
1995		70	230	170	132	421	62 <sup>b</sup>				
1996		35	28	50	250	278	21 <sup>b</sup>				
Averages											
84-96	1,852	715	368	253	515	1,065	411	1,682	225	322	1,183
85-96	1,852	533	376	255	500	1,030	411	1,682	225	322	1,183
1997		500	10	550	600						

<sup>a</sup>Weir count combined with spawning ground count. Tatsamenie 88-90, Yehring 86-87, Nahlin 92.

<sup>b</sup>Incomplete weir count. Tatsamenie 85-87, 93, 95, 96; and Nahlin 92.

<sup>c</sup>Count is an average of surveys by different observers. Flannigan 86-88, 90, 91; Sockeye 86-88, 90, 91; Fish 86, 88, 90, 91; Yehring 87, 88, 91, 92.

<sup>d</sup>Includes mark-recapture estimate. Yehring 89, 90.

<sup>e</sup>Poor survey conditions. Nahlin 91.

<sup>f</sup>Foot survey. Yehring 92, Sockeye 92.

<sup>g</sup>Surveys conducted before peak abundance on spawning grounds Flannigan 93, 94.

Appendix D. 14. Canyon Island fish wheel salmon counts and periods of operation on the Taku River, 1983-1997.

Year	Period of Operation	Count					Pink	
		Chinook	Sockeye	Coho	Pink	Chum	Even-year	Odd-year
1984	6/15-9/18	138	2,334	889	20,751	316	20,751	
1985	6/16-9/21	184	3,601	1,207	27,670	1,376		27,670
1986	6/14-8/25	571	5,808	758	7,256	80	7,256	
1987	6/15-9/20	285	4,307	2,240	42,786	1,533		42,786
1988	5/11-9/19	1,436	3,292	2,168	3,982	1,089	3,982	
1989	5/05-10/01	1,811	5,650	2,243	31,189	645		31,189
1990	5/03-9/23	1,972	6,091	1,860	13,358	748	13,358	
1991	6/08-10/15	680	5,102	4,922	23,553	1,063		23,553
1992	6/20-9/24	212	6,279	2,103	9,252	189	9,252	
1993	6/12-9/29	562	8,975	2,552	1,625	345		1,625
1994	6/10-9/21	906	6,485	4,792	27,100	367	27,100	
1995	5/4-9/27	1,535	6,228	2,535	1,712	218		1,712
1996	5/3-9/20	1,904	5,919	1,895	21,583	388	21,583	
Averages								
84-96		938	5,390	2,320	17,832	643	14,755	21,423
87-96		1,130	5,833	2,731	17,614	659	15,055	20,173
1997	5/3-10/1	1,321	5,708	1,665	4,962	485		4,962

Appendix E. 1. Weekly salmon catch and effort in the U.S. commercial fishery in the Alsek River, 1997.

Week	Start Date	Catch					Boats	Effort	
		Chinook	Sockeye	Coho	Pink	Chum		Days	Boat
								Open	Days
24	8-Jun	278	2,652	0	0	0	20	2.0	40.0
25	15-Jun	193	5,403	2	0	0	22	3.0	66.0
26	22-Jun	76	4,630	0	0	0	23	4.0	92.0
27	29-Jun	16	2,160	0	0	0	17	2.0	34.0
28	6-Jul	4	2,655	0	0	0	15	2.0	30.0
29	13-Jul	0	1,341	0	0	0	10	2.0	20.0
30	20-Jul	0	1,421	0	0	0	14	2.0	28.0
31	27-Jul	1	802	0	0	0	16	1.0	16.0
32	3-Aug	0	2,503	12	0	0	19	2.0	38.0
33	10-Aug	0	340	4	0	0	13	1.0	13.0
34	17-Aug	0	905	166	0	0	12	3.0	36.0
35	24-Aug	0	525	790	0	0	11	3.0	33.0
36	31-Aug	0	304	1,717	0	2	6	4.0	24.0
37	7-Sep	0	125	2,004	0	14	5	4.0	20.0
38	14-Sep	0	93	4,155	0	8	7	6.5	45.5
39	21-Sep	0	17	2,046	0	7	6	7.0	42.0
40	28-Sep	0	3	391	0	3	6	4.5	27.0
41	5-Oct	0	0	140	0	0		3.0	
Total		568	25,879	11,427	0	34	<sup>a</sup>	56.0	611

<sup>a</sup> Effort is not listed by week, but is included in the season total.

Appendix E. 2. Weekly salmon catch and effort in the Canadian Aboriginal and sport fisheries in the Alsek River, 1997. Total catches do not include released fish.

Week	Date	Chinook			Sockeye			Coho					
		Sport	Release	Aboriginal Total <sup>b</sup>	Sport	Release	Aboriginal Total <sup>b</sup>	Sport	Release	Aboriginal Total <sup>b</sup>			
25	15-Jun	3	1	0	3	0	0	0	0	0	0	0	
26	22-Jun	9	1	0	9	0	12	0	0	0	0	0	
27	29-Jun	114	24	15	129	0	27	1	1	0	0	0	
28	6-Jul	76	42	41	117	0	20	3	3	0	0	0	
29	13-Jul	44	61	45	89	1	17	11	12	0	0	0	
30	20-Jul	30	11	83	113	3	1	43	46	0	0	0	
31	27-Jul	2	1	33	35	1	0	41	42	0	0	0	
32	3-Aug	0	0	10	10	0	0	80	80	0	0	0	
33	10-Aug	0	0	5	5	4	0	51	55	0	0	0	
34	17-Aug	0	0	0	0	3	0	58	61	0	0	0	
35	24-Aug	0	0	0	0	3	0	35	38	0	0	0	
36	31-Aug	0	0	0	0	15	5	53	68	0	0	0	
37	7-Sep	0	0	0	0	6	2	85	91	0	0	0	
38	14-Sep	0	0	0	0	0	11	9	9	0	0	0	
39	21-Sep	0	0	0	0	0	0	14	14	0	0	2	
40	28-Sep	0	0	0	0	0	0	0	0	0	0	3	
41	5-Oct	0	0	0	0	0	2	0	0	0	0	0	
42	12-Oct								0				
Com Sport		20	130	20									
Total		298	271	232	530	36	97	484	520	0	0	5	5

<sup>a</sup> The total food fish catch above the Klukshu Weir was 160 chinook, 193 sockeye, and 5 coho salmon. Village Creek food fish catch was 43 sockeye and 1 chinook salmon.

<sup>b</sup> Does not include released fish.

Appendix E. 3. Daily counts of salmon passing through Klukshu River weir, 1997.

Date	Chinook <sup>a</sup>			Sockeye			Coho		
	Daily	Cumulative		Daily	Cumulative		Daily	Cumulative	
		Daily	Prop.		Daily	Prop.		Daily	Prop.
4-Jun	0	0	0.000	0	0	0.000	0	0	0.000
5-Jun	0	0	0.000	0	0	0.000	0	0	0.000
6-Jun	0	0	0.000	0	0	0.000	0	0	0.000
7-Jun	0	0	0.000	0	0	0.000	0	0	0.000
8-Jun	0	0	0.000	0	0	0.000	0	0	0.000
9-Jun	0	0	0.000	0	0	0.000	0	0	0.000
10-Jun	1	1	0.000	0	0	0.000	0	0	0.000
11-Jun	0	1	0.000	0	0	0.000	0	0	0.000
12-Jun	0	1	0.000	0	0	0.000	0	0	0.000
13-Jun	0	1	0.000	0	0	0.000	0	0	0.000
14-Jun	0	1	0.000	0	0	0.000	0	0	0.000
15-Jun	0	1	0.000	0	0	0.000	0	0	0.000
16-Jun	0	1	0.000	0	0	0.000	0	0	0.000
17-Jun	0	1	0.000	0	0	0.000	0	0	0.000
18-Jun	1	2	0.001	0	0	0.000	0	0	0.000
19-Jun	3	5	0.002	0	0	0.000	0	0	0.000
20-Jun	3	8	0.003	0	0	0.000	0	0	0.000
21-Jun	1	9	0.003	2	2	0.000	0	0	0.000
22-Jun	2	11	0.004	10	12	0.001	0	0	0.000
23-Jun	1	12	0.004	25	37	0.003	0	0	0.000
24-Jun	0	12	0.004	14	51	0.004	0	0	0.000
25-Jun	3	15	0.005	20	71	0.006	0	0	0.000
26-Jun	1	16	0.005	36	107	0.009	0	0	0.000
27-Jun	7	23	0.008	57	164	0.014	0	0	0.000
28-Jun	30	53	0.018	337	501	0.044	0	0	0.000
29-Jun	6	59	0.020	115	616	0.054	0	0	0.000
30-Jun	1	60	0.020	37	653	0.057	0	0	0.000
1-Jul	57	117	0.039	509	1,162	0.101	0	0	0.000
2-Jul	106	223	0.075	366	1,528	0.133	0	0	0.000
3-Jul	15	238	0.080	102	1,630	0.142	0	0	0.000
4-Jul	23	261	0.087	88	1,718	0.149	0	0	0.000
5-Jul	8	269	0.090	92	1,810	0.157	0	0	0.000
6-Jul	92	361	0.121	324	2,134	0.186	0	0	0.000
7-Jul	156	517	0.173	177	2,311	0.201	0	0	0.000
8-Jul	420	937	0.313	166	2,477	0.215	0	0	0.000
9-Jul	189	1,126	0.377	83	2,560	0.223	0	0	0.000
10-Jul	7	1,133	0.379	10	2,570	0.224	0	0	0.000

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Appendix E. 3. (page 2 of 4)

Date	Chinook <sup>a</sup>			Sockeye			Coho		
	Daily	Cumulative		Daily	Cumulative		Daily	Cumulative	
		Daily	Prop.		Daily	Prop.		Daily	Prop.
11-Jul	11	1,144	0.383	10	2,580	0.224	0	0	0.000
12-Jul	12	1,156	0.387	37	2,617	0.228	0	0	0.000
13-Jul	129	1,285	0.430	255	2,872	0.250	0	0	0.000
14-Jul	416	1,701	0.569	236	3,108	0.270	0	0	0.000
15-Jul	215	1,916	0.641	255	3,363	0.293	0	0	0.000
16-Jul	155	2,071	0.693	257	3,620	0.315	0	0	0.000
17-Jul	15	2,086	0.698	18	3,638	0.316	0	0	0.000
18-Jul	29	2,115	0.708	56	3,694	0.321	0	0	0.000
19-Jul	12	2,127	0.712	34	3,728	0.324	0	0	0.000
20-Jul	20	2,147	0.718	109	3,837	0.334	0	0	0.000
21-Jul	103	2,250	0.753	321	4,158	0.362	0	0	0.000
22-Jul	198	2,448	0.819	317	4,475	0.389	0	0	0.000
23-Jul	18	2,466	0.825	79	4,554	0.396	0	0	0.000
24-Jul	35	2,501	0.837	116	4,670	0.406	0	0	0.000
25-Jul	93	2,594	0.868	118	4,788	0.416	0	0	0.000
26-Jul	25	2,619	0.876	79	4,867	0.423	0	0	0.000
27-Jul	86	2,705	0.905	144	5,011	0.436	0	0	0.000
28-Jul	75	2,780	0.930	276	5,287	0.460	0	0	0.000
29-Jul	29	2,809	0.940	134	5,421	0.472	0	0	0.000
30-Jul	19	2,828	0.946	11	5,432	0.473	0	0	0.000
31-Jul	8	2,836	0.949	28	5,460	0.475	0	0	0.000
1-Aug	3	2,839	0.950	16	5,476	0.476	0	0	0.000
2-Aug	12	2,851	0.954	24	5,500	0.478	0	0	0.000
3-Aug	10	2,861	0.957	21	5,521	0.480	0	0	0.000
4-Aug	19	2,880	0.964	104	5,625	0.489	0	0	0.000
5-Aug	15	2,895	0.969	96	5,721	0.498	0	0	0.000
6-Aug	29	2,924	0.978	184	5,905	0.514	0	0	0.000
7-Aug	3	2,927	0.979	4	5,909	0.514	0	0	0.000
8-Aug	8	2,935	0.982	66	5,975	0.520	0	0	0.000
9-Aug	2	2,937	0.983	13	5,988	0.521	0	0	0.000
10-Aug	2	2,939	0.983	31	6,019	0.524	0	0	0.000
11-Aug	9	2,948	0.986	263	6,282	0.546	0	0	0.000
12-Aug	8	2,956	0.989	87	6,369	0.554	0	0	0.000
13-Aug	18	2,974	0.995	65	6,434	0.560	0	0	0.000
14-Aug	4	2,978	0.996	131	6,565	0.571	0	0	0.000
15-Aug	2	2,980	0.997	84	6,649	0.578	0	0	0.000
16-Aug	3	2,983	0.998	32	6,681	0.581	0	0	0.000
17-Aug	1	2,984	0.998	54	6,735	0.586	0	0	0.000
18-Aug	0	2,984	0.998	77	6,812	0.593	0	0	0.000
19-Aug	2	2,986	0.999	34	6,846	0.596	0	0	0.000

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Appendix E. 3. (page 3 of 4)

Date	Chinook <sup>a</sup>			Sockeye			Coho		
	Daily	Cumulative		Daily	Cumulative		Daily	Cumulative	
		Daily	Prop.		Daily	Prop.		Daily	Prop.
20-Aug	0	2,986	0.999	15	6,861	0.597	0	0	0.000
21-Aug	0	2,986	0.999	4	6,865	0.597	0	0	0.000
22-Aug	1	2,987	0.999	174	7,039	0.612	0	0	0.000
23-Aug	0	2,987	0.999	61	7,100	0.618	0	0	0.000
24-Aug	0	2,987	0.999	1	7,101	0.618	0	0	0.000
25-Aug	0	2,987	0.999	0	7,101	0.618	0	0	0.000
26-Aug	0	2,987	0.999	15	7,116	0.619	0	0	0.000
27-Aug	1	2,988	1.000	9	7,125	0.620	0	0	0.000
28-Aug	0	2,988	1.000	80	7,205	0.627	0	0	0.000
29-Aug	0	2,988	1.000	11	7,216	0.628	0	0	0.000
30-Aug	0	2,988	1.000	21	7,237	0.630	0	0	0.000
31-Aug	0	2,988	1.000	13	7,250	0.631	0	0	0.000
1-Sep	0	2,988	1.000	11	7,261	0.632	0	0	0.000
2-Sep	0	2,988	1.000	30	7,291	0.634	0	0	0.000
3-Sep	1	2,989	1.000	42	7,333	0.638	0	0	0.000
4-Sep	0	2,989	1.000	64	7,397	0.643	0	0	0.000
5-Sep	0	2,989	1.000	9	7,406	0.644	0	0	0.000
6-Sep	0	2,989	1.000	57	7,463	0.649	1	1	0.003
7-Sep	0	2,989	1.000	3	7,466	0.649	0	1	0.003
8-Sep	0	2,989	1.000	177	7,643	0.665	0	1	0.003
9-Sep	0	2,989	1.000	11	7,654	0.666	0	1	0.003
10-Sep	0	2,989	1.000	5	7,659	0.666	0	1	0.003
11-Sep	0	2,989	1.000	37	7,696	0.669	0	1	0.003
12-Sep	0	2,989	1.000	27	7,723	0.672	0	1	0.003
13-Sep	0	2,989	1.000	5	7,728	0.672	0	1	0.003
14-Sep	0	2,989	1.000	5	7,733	0.673	0	1	0.003
15-Sep	0	2,989	1.000	4	7,737	0.673	0	1	0.003
16-Sep	0	2,989	1.000	11	7,748	0.674	0	1	0.003
17-Sep	0	2,989	1.000	3	7,751	0.674	0	1	0.003
18-Sep	0	2,989	1.000	16	7,767	0.676	0	1	0.003
19-Sep	0	2,989	1.000	207	7,974	0.694	0	1	0.003
20-Sep	0	2,989	1.000	4	7,978	0.694	0	1	0.003
21-Sep	0	2,989	1.000	3	7,981	0.694	0	1	0.003
22-Sep	0	2,989	1.000	437	8,418	0.732	1	2	0.007
23-Sep	0	2,989	1.000	2,836	11,254	0.979	15	17	0.055
24-Sep	0	2,989	1.000	8	11,262	0.980	0	17	0.055
25-Sep	0	2,989	1.000	9	11,271	0.980	0	17	0.055
26-Sep	0	2,989	1.000	12	11,283	0.981	1	18	0.059
27-Sep	0	2,989	1.000	15	11,298	0.983	12	30	0.098
28-Sep	0	2,989	1.000	1	11,299	0.983	4	34	0.111
29-Sep	0	2,989	1.000	1	11,300	0.983	0	34	0.111
30-Sep	0	2,989	1.000	2	11,302	0.983	0	34	0.111

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Appendix E. 3. (page 4 of 4)

Date	Chinook <sup>a</sup>			Sockeye			Coho		
	Daily	Cumulative		Daily	Cumulative		Daily	Cumulative	
		Daily	Prop.		Daily	Prop.		Daily	Prop.
1-Oct	0	2,989	1.000	0	11,302	0.983	0	34	0.111
2-Oct	0	2,989	1.000	2	11,304	0.983	10	44	0.143
3-Oct	0	2,989	1.000	2	11,306	0.983	0	44	0.143
4-Oct	0	2,989	1.000	5	11,311	0.984	15	59	0.192
5-Oct	0	2,989	1.000	1	11,312	0.984	5	64	0.208
6-Oct	0	2,989	1.000	2	11,314	0.984	4	68	0.221
7-Oct	0	2,989	1.000	10	11,324	0.985	22	90	0.293
8-Oct	0	2,989	1.000	1	11,325	0.985	2	92	0.300
9-Oct	0	2,989	1.000	2	11,327	0.985	1	93	0.303
10-Oct	0	2,989	1.000	18	11,345	0.987	14	107	0.349
11-Oct	0	2,989	1.000	1	11,346	0.987	0	107	0.349
12-Oct	0	2,989	1.000	0	11,346	0.987	0	107	0.349
<sup>b</sup>	0	2,989	1.000	150	11,496	1.000	200	307	1.000
Totals		2,989			11,496			307	
Catch above weir		160			193			5	
Total Escapement		2,829			11,303			302	

<sup>a</sup> Jack chinook included in the counts.

<sup>b</sup> Estimates of fish holding below weir during removal.

Appendix E. 4. Salmon catch and effort in the U.S. commercial fishery in the Alsek River, 1960-1997.

Year	Catch					Effort	
	Chinook	Sockeye	Coho	Pink	Chum	Boat Days	Days Open
1960							
1961	2,120	23,339	7,679	84	86	1,436	80.0
1962	2,276	14,475	8,362	93	133		76.0
1963	131	6,055	7,164	42	34	692	68.0
1964	591	14,127	9,760	144	367	592	68.0
1965	719	28,487	9,638	10	72	1,016	72.0
1966	934	29,091	2,688	22	240	500	64.0
1967	225	11,108	10,090	107	30	600	68.0
1968	215	26,918	10,586	82	240	664	68.0
1969	685	29,259	2,493	38	61	807	61.0
1970	1,128	22,654	2,188	6	26	670	52.3
1971	1,222	25,314	4,730	3	120	794	60.5
1972	1,827	18,717	7,296	37	280	640	65.0
1973	1,757	26,523	4,395	26	283	894	52.0
1974	1,162	16,747	7,046	13	107	699	46.0
1975	1,379	13,842	2,230	16	261	738	58.0
1976	512	19,741	4,883	0	368	550	58.5
1977	1,402	40,780	11,817	689	483	882	57.0
1978	2,441	50,580	13,913	59	233	929	57.0
1979	2,525	41,449	6,158	142	263	1,110	51.0
1980	1,382	25,522	7,863	21	1,005	792	42.0
1981	779	23,641	10,232	65	816	585	40.0
1982	532	27,423	6,534	6	358	555	33.0
1983	94	18,293	5,253	20	432	479	38.0
1984	60	14,326	7,868	24	1,610	429	33.0
1985	213	5,940	5,490	3	427	279	33.0
1986	481	24,791	1,344	13	462	517	34.0
1987	347	11,393	2,517	0	1,924	388	40.5
1988	223	6,286	4,986	7	908	324	34.0
1989	228	13,513	5,972	2	1,031	367	38.0
1990	78	17,013	1,437	0	495	374	38.0
1991	103	17,542	5,956	0	103	530	49.0
1992	301	19,298	3,116	1	120	404	46.0
1993	300	20,043	1,215	0	49	383	40.0
1994	805	19,639	4,182	0	32	416	61.0
1995	670	33,112	14,184	13	347	926	53.5
1996	771	15,182	5,514	0	165	438	47.5
Averages							
60-96	851	21,449	6,299	50	388	640	52.3
87-96	383	17,302	4,908	2	517	455	44.8
1997	568	25,879	11,427	0	34	611	56.0

Appendix E. 5. Salmon catch in the U.S. subsistence and personal use fisheries in the Alsek River, 1976-1997. Catches are those reported on returned permits.

Year	Catch		
	Chinook	Sockeye	Coho
1976	13	51	5
1977	18	113	0
1978			
1979	80	35	70
1980	57	41	62
1981	32	50	74
1982	87	75	50
1983	31	25	50
1984			
1985	16	95	0
1986	22	241	45
1987	27	173	31
1988	13	148	9
1989	20	131	34
1990	85	144	12
1991	38	104	0
1992	15	37	44
1993	38	96	28
1994	60	47	20
1995	51	167	53
1996	60	67	28
Averages			
76-96	40	97	32
87-96	41	111	26
1997	38	273	26

Appendix E. 6. Salmon catches in the Canadian Aboriginal and sport fisheries in the Alsek River, 1976-1997.

Year	Chinook			Sockeye			Coho		
	Aboriginal	Sport	Total	Aboriginal	Sport	Total	Aboriginal	Sport	Total
1976	150	200	350	4,000	600	4,600	0	100	100
1977	350	300	650	10,000	500	10,500	0	200	200
1978	350	300	650	8,000	500	8,500	0	200	200
1979	1,300	650	1,950	7,000	750	7,750	0	100	100
1980	150	200	350	800	600	1,400	0	200	200
1981	150	400	550	2,000	808	2,808	0	109	109
1982	400	333	733	5,000	755	5,755	0	109	109
1983	300	312	612	2,550	732	3,282	0	16	16
1984	100	450	550	2,600	289	2,889	0	20	20
1985	175	210	385	1,361	100	1,461	50	100	150
1986	102	165	267	1,914	307	2,221	0	9	9
1987	125	502	627	1,158	383	1,541	0	49	49
1988	43	384	427	1,604	322	1,926	0	192	192
1989	234	331	565	1,851	319	2,170	0	227	227
1990	202	721	923	2,314	392	2,706	0	75	75
1991	509	430	939	2,111	303	2,414	0	227	227
1992	148	103	251	2,592	582	3,174	0	213	213
1993	152	237	389	2,361	329	2,690	0	37	37
1994	289	304	593	1,745	261	2,006	8	69	77
1995	580	1,044	1,624	1,745	682	2,427	83	527	610
1996	448	650	1,098	1,204	157	1,361	56	9	65
Averages									
76-96	298	392	690	3,043	461	3,504	9	133	142
87-96	273	471	744	1,869	373	2,242	15	163	177
1997	232	298	530	484	36	520	5	0	5

Appendix E. 7. Klukshu River weir counts of chinook, sockeye, and coho salmon, 1976-1997. The escapement count equals the weir count minus the aboriginal fishery catch above the weir and brook stock taken.

Year	Chinook <sup>a</sup>		Early <sup>c</sup>	Sockeye		Escape. <sup>b</sup>	Coho <sup>d</sup>	
	Count	Escape. <sup>b</sup>		Late	Total		Count	Escape.
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	2,454	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	
1989	2,456	2,289	3,400	20,142	23,542	21,636	2,219	
1990	1,915	1,742	1,316	24,679	25,995	24,607	315	
1991	2,489	2,248	1,924	17,053	18,977	17,645	8,540	8,478
1992	1,367	1,242	11,339	8,428	19,767	18,269	1,145	1,145
1993	3,303	3,220	5,369	11,371	16,740	14,921	788	788
1994	3,727	3,628	3,247	11,791	15,038	13,892	1,232	1,232
1995	5,678	5,394	2,289	18,407	20,696	19,817	3,614	3,564
1996	3,599	3,382	1,502	6,818	8,320	7,891	3,465	3,465
Averages								
76-96	2,690	2,425	3,161	15,366	18,527	15,802	1,572	
87-96	2,919	2,763	3,424	13,468	16,892	15,576	2,429	3,112
1997	2,989	2,829	6,565	4,931	11,496	11,303	307	302

<sup>a</sup> Counts include jack chinook salmon.

<sup>b</sup> The chinook and sockeye escapements into Klukshu Lake are calculated from the weir count minus fish harvested above the weir site minus brood stock taken. The remainder of the food fishery harvest occurred below the weir, at Village Creek, and Blanchard and Takhanne Rivers.

<sup>c</sup> Includes sockeye counts up to and including August 15.

<sup>d</sup> Weir was removed prior to the end of the coho run.

Appendix E. 8. Alesek River sockeye salmon counts from U.S. and Canadian aerial surveys and from the electronic counter at Village Creek, 1985-1997.

Year	U.S. Aerial Surveys <sup>a</sup>				Canadian Aerial Surveys <sup>b</sup>		Village Creek Counter
	Basin Creek	Cabin Creek	Muddy Creek	Tanis River	Tatshenshini River	Neskataheen Lake	
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 <sup>c</sup>
1989	320			680	1,689	1,700	9,569
1990	275	300		3,500			7,500 <sup>d</sup>
1991				800			5,670 <sup>e</sup>
1992	1,000	10		350			11,485 <sup>f</sup>
1993	4,800			900			3,135 <sup>g</sup>
1994	250			600	366		4,007 <sup>h</sup>
1995	2,700			350			4,041
1996	325			650			1,583
Averages							
85-96	1,202	177	300	1,257	756	969	4,617
87-96	1,169	177		1,018	829	1,078	4,930
1997	600			350			1,900

<sup>a</sup> Surveys not made every year at each tributary.

<sup>b</sup> Includes several streams from Lo-Fog to Goat Creek.

<sup>c</sup> Incomplete count due to machine malfunction.

<sup>d</sup> Estimated count based on absolute electronic records (5,313) and the total number of non-operational days.

<sup>e</sup> Estimated count based on absolute electronic records (3,981) and the total number of non-operational days.

<sup>f</sup> Counts were estimated during the non-operational days by averaging the counts recorded three days before and before and three days after the malfunction.

<sup>g</sup> Estimated count based on absolute electronic records (2,101) and the total number of non-operational days.

<sup>h</sup> Estimated count based on absolute electronic records (3,921) and the total number of non-operational days.



Appendix E. 9. Aerial survey index counts of Alsek chinook salmon escapements, 1984-1997.

Year	Blanchard River	Takhanne River	Goat Creek
1984	304	158	28
1985	232	184	
1986	556	358	142
1987	624	395	85
1988	437	169	54
1989	<sup>a</sup>	158	34
1990	<sup>a</sup>	325	32
1991	121	86	63
1992	86	77	16
1993	326	351	50
1994	349	342	67
1995	338	260	<sup>b</sup>
1996	132	230	12
Averages			
84-96	319	238	53
87-96	302	239	46
1997	109	190	

<sup>a</sup> Not surveyed due to poor visibility.

<sup>b</sup> Late survey date which missed the peak of spawning.

Appendix E. 10. Aerial survey counts of coho salmon from U.S. lower Alsek River tributaries, 1984-1997.

Year	Combined U.S. Tributary Counts
1985	450
1986	1,100
1987	100
1988	1,900
1989	1,990
1990	1,600
1991	500 <sup>a</sup>
1992	1,010 <sup>a</sup>
1993	800 <sup>a</sup>
1994	975 <sup>a</sup>
1995	1,050
1996	1,350
Averages	
85-96	1,069
87-96	1,128
1997	No surveys due to poor weather conditions

<sup>a</sup> Few systems surveyed.