

**PACIFIC SALMON COMMISSION JOINT
TRANSBOUNDARY TECHNICAL COMMITTEE**

**ESTIMATES OF TRANSBOUNDARY RIVER SALMON
PRODUCTION, HARVEST
AND ESCAPEMENT AND A REVIEW OF JOINT
ENHANCEMENT ACTIVITIES IN 1999**

REPORT TCTR (05)-2

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LIST OF ACRONYMS

ADF&G	Alaska Department of Fish and Game
AF	Aboriginal Fishery
CAFN	Champagne Aishihik First Nation
CPUE	Catch per unit effort
CWT	Coded Wire Tag
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-Obital-Hyperal (fish length measurement)
PSC	Pacific Salmon Commission
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
YSC	Yukon Salmon Committee

EXECUTIVE SUMMARY

Estimates of catches and escapements of Pacific salmon returning to the transboundary Stikine, Taku, and Alsek Rivers for 1999 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 1999 Stikine sockeye salmon run is estimated at 124,600 fish, of which an estimated 106,000 fish were harvested in various fisheries including test fisheries, 400 fish were taken at the Tahltan Lake weir for otolith samples, and 2,900 Tahltan fish were used for broodstock. An estimated 16,800 Stikine fish escaped to spawn and 2,300 fish returned to the Tuya system and were not harvested. The catch was below average and the run below the 1989-1998 average run size and the lowest since 1990. Spawning escapements were also below goals. The estimated U.S. commercial catch of Stikine sockeye salmon in Districts 106 and 108 was 54,800 fish and the Canadian inriver commercial, aboriginal, and ESSR fishery catches were 33,100, 4,900, and 2,300 fish, respectively. A U.S. test fishery in District 108 harvested 3,900 Stikine sockeye salmon and the Canadian inriver test fishery catch included 5,900 sockeye salmon. The postseason estimate was close to the preseason forecast of 126,000 fish. The Stikine Management Model predicted a run greater than the preseason forecast after week 30. Weekly inseason model forecasts ranged from 76,000 to 227,000 sockeye salmon; the final inseason model prediction was 206,000 fish (both U.S. and Canada), with a total allowable catch (TAC) of 130,300 fish. Based on the inseason model estimates, both Parties harvested below their 50% target of the TAC (65,000 Stikine sockeye salmon). However, postseason run estimate indicated that both countries exceeded their 50% portion of the TAC; Canada harvested 70% of the TAC and the U.S. harvested 101%. The broodstock collection and otolith sampling removed 2,900 and 400 sockeye salmon, respectively; from the escapement to Tahltan Lake leaving a spawning escapement of 7,400 fish, falling below the goal of 24,000 fish through Tahltan weir. The estimated spawning escapement of 6,100 mainstem Stikine sockeye salmon was also below the objective of 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 2,900 large fish and 1,300 jacks, 29% and 164% of the respective 1989-1998 averages. An additional 900 large and 100 jack Chinook salmon were taken in the Canadian inriver test fishery. The U.S. marine catch of Chinook salmon (all stocks) in the District 106 and 108 mixed stock gillnet fisheries was 1,600 fish, below the 1989-1998 average catch. The U.S. District 108 test fishery harvested 30 Chinook salmon. The Chinook salmon spawning escapement of 4,700 large adults through the Little Tahltan River weir in 1999 was 84% of the 1989-1998 average

As with Chinook salmon, the U.S. marine harvest of Stikine coho salmon *O. kisutch* is unknown since there is no stock identification program for this species. Mixed stock coho salmon catches in Districts 106 and 108 were 203,300 and 28,000 fish, respectively, and were 2% and 70% above the 1989-1998 averages, respectively. Alaskan hatchery fish comprised approximately 39% (89,200 fish) of the coho salmon harvest from the two districts. The Canadian inriver coho salmon catch of 200 fish was 7% of the 1989-1998 average.

TAKU

The postseason estimate of the 1999 Taku sockeye salmon run is 183,800 fish, including an estimated catch of 85,700 fish and an above-border spawning escapement of 98,200 sockeye salmon. The run size and catches were about 75% of the 1989-1998 average while escapement was average and above the escapement goal range of 71,000 to 80,000 fish. An estimated 62,700 Taku sockeye salmon were harvested in the District 111 commercial fishery, 60% of the 1989-1998 average, and an estimated 1,300 sockeye salmon were harvested in the U.S. inriver personal use fishery. Canadian inriver commercial and aboriginal fishery catches included 20,700 and 400 sockeye salmon, respectively. The commercial catch was 76% of the 1989-1998 average, whereas the aboriginal catch was 87% above average. Since the escapement goal is expressed as a range, the resulting total allowable catch is also expressed as a range. In 1999, Canada harvested an estimated 31% to 34%, and the U.S. took 48% to 52% of the total allowable catch.

The catch of large Chinook salmon in the Canadian commercial fishery in the Taku River was 900 fish, 53% of the 1989-1998 average; in addition, 260 jack Chinook salmon were caught compared to 1989-1998 averages of 1,700 and 200 fish, respectively. The Canadian aboriginal fishery in the Taku River harvested 50 large Chinook salmon. In the District 111 mixed stock gillnet fishery the catch of Chinook salmon was 1,800 fish, 55% of the 1989-1998 average. Approximately 27% of the catch, 500 fish, was estimated to be of Alaska hatchery origin. The escapement of 4,200 Chinook salmon counted in Taku River index areas was 36% of the 1989-1998 average and below the recently revised index escapement goal range of 5,800 to 10,500 fish.

The estimated above border run of Taku coho salmon in 1999 is 66,400 fish, which is 87% of the 1989-1998 average. The Canadian inriver commercial catch included 4,400 coho salmon, 80% of the 1988-1997 average. After upriver Canadian catches are subtracted from the inriver run, the above-border-spawning escapement is estimated at 61,000 coho salmon, which exceeds the minimum escapement goal of 38,000 fish. The U.S. harvest of 17,300 coho salmon in the District 111 mixed stock fishery was 21% of the 1989-1998 average. Alaskan hatcheries contributed an estimated 8% of the District 111 harvest, or 1,300 fish.

The harvest of 59,300 pink salmon *O. gorbuscha* in District 111 was 42% of the 1989-1998 average catch of 141,500 fish. Pink salmon were not retained in the Canadian commercial inriver fishery in 1999. The escapement of pink salmon to the Taku River was likely above average as evidenced by the fish wheel catch and release of 23,500 pink salmon, 49% above the 1989-1998 average.

The catch of chum salmon *O. keta* in the District 111 fishery was 429,400 fish; composed of 424,600 summer run fish (prior to mid-August) and 4,800 fall run fish. The catch of summer chum salmon, primarily Alaskan hatchery stocks, was 227% above the 1989-1998 average and was the highest on record. The catch of fall chum salmon, composed of wild Taku River and Port Snettisham stocks, was 36% of the 1989-1998 average. As with pink salmon, there was non-retention of chum salmon in the Canadian inriver fishery and the reported catch was 0 fish in 1999. Spawning escapement appeared to be poor; the Canyon Island fish wheel catch of 160 chum salmon was 35% of the 1989-1998 average and the second lowest on records dating back to 1984.

ALSEK

The Alsek River sockeye salmon harvest of 11,400 fish in the U.S. commercial fishery was 58% of the 1989-1998 average. The Canadian inriver catch of 550 sockeye salmon was the second lowest on record, following 1997 and was 28% of the 1989-1998 average. The aboriginal fishery harvested 550 sockeye salmon, 33% of the 1989-1998 average. No fish were harvested in the sport fishery. The low catches were the result of extensive closures in the sport and aboriginal fisheries due to conservation concerns. The Klukshu River weir count of 5,400 sockeye salmon was 31% of the 1989-1998 average and the lowest on record. The count of 400 early-run sockeye salmon (count through August 15) was 10% of the 1989-1998 average, whereas the count of 5,000 late run fish was 37% of average for the same period.

The Chinook salmon run to the Alsek River seemed average to below average. The U.S. Dry Bay catch of 500 Chinook salmon was 17% above the 1989-1998 average. The combined Canadian sport and aboriginal fishery catch of 430 Chinook salmon was 63% of the 1989-1998 average. The 2,200 Chinook salmon counted through the Klukshu River weir was 76% of the 1989-1998 average. Of the total count, 2,200 Chinook salmon were estimated to have spawned, thus achieving the escapement goal range of 1,100 to 2,300 Chinook salmon, established by the TTC for 1999. Aerial survey index counts of other spawning systems were average.

Current stock assessment programs are insufficient to provide accurate comparison of Alsek coho salmon runs with historical runs. The U.S. Dry Bay catch of 5,700 coho salmon was 98% of the 1989-1998 average, while the combined Canadian inriver aboriginal and sport fishery catch of 30 fish was 17% of the 1989-1998 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 2,600 coho salmon was 5% above the 1989-1998 average.

ENHANCEMENT

Eggs and milt were collected from the 1999 sockeye salmon escapements at Tahltan and Tatsamenie lakes. A total of 4,200,000 eggs were collected at Tahltan Lake, 70% of the 6,000,000 egg-take goal; the goal was not attained due to low escapement to the lake in 1999. At Tatsamenie Lake, approximately 500,000 eggs were taken which was 10% of the 5,000,000 egg target specified in the treaty. Additional eggs were not taken due to a shortfall in escapement.

Fry outplanted in June 1999 included 1,700,000 fry into Tahltan Lake, 1,600,000 fry of Tahltan Lake origin into Tuya Lake, and 1,800,000 fry into Tatsamenie Lake; green-egg to planted fry survivals were 84%, 79%, and 73%, respectively. Survival to emergence was generally at, or below, expected levels; there were no losses to Infectious Hematopoietic Necrosis (IHN).

Outmigrant smolt sampling was conducted at Tahltan, Tuya, and Tatsamenie Lakes in 1999. Total emigration from Tahltan Lake was an estimated 762,000 smolts, less than the number expected. An estimated 294,000 smolts originated from the fry-planting program. Sampling at Tuya Lake was conducted to estimate age and size composition of the outmigrants but outmigration magnitude was not estimated. Sample size was limited due to logistics and timing. The Tatsamenie Lake mark-recapture program estimated that 776,000 smolts out-migrated from that system with planted fish contributing about 92,000 smolts.

The egg incubation and thermal-marking program was continued at Snettisham Hatchery in 1999. Snettisham hatchery is operated by DIPAC (Douglas Island Pink and Chum, Inc.), a private aquaculture organization in Juneau. A co-operative agreement between ADF&G and DIPAC provides for Snettisham hatchery to serve the needs of the joint TBR enhancement projects.

Adult sockeye salmon otoliths were processed inseason by the ADF&G otolith lab to estimate the weekly contribution of fish from U.S./Canada fry planting programs to the District 106, 108, and 111 gillnet fisheries and to Canadian commercial fisheries in the Stikine and Taku Rivers. Preliminary contribution estimates of planted fish to Alaskan catches were 15,000 Stikine sockeye salmon to District 106 and 108 (11% of catch) and 600 Taku sockeye salmon to District 111 (< 1.0% of catch). Estimates of contributions to Canadian fisheries included 8,800 sockeye salmon (23% of catch) to Stikine River fisheries and 290 sockeye salmon to the Taku River fisheries (1.4% of catch).

INTRODUCTION

This report presents estimates of the 1999 catch and escapement data for Pacific salmon runs to the transboundary Stikine, Taku, and Alek 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. Joint enhancement activities on the Stikine and Taku rivers are also summarized.

The Transboundary Technical Committee (TTC) met prior to the season to update joint management, stock assessment and enhancement plans and determine forecasts for run strengths and initial TAC estimates for the various species and rivers. The results of this meeting are summarized in: **Pacific Salmon Commission Transboundary Technical Committee. 1999. *Salmon Management and Enhancement Plans for the Stikine, Taku and Alek rivers, 1999. Report TCTR(99)-2.***

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 Alek stocks.

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. In addition, a Canadian terminal area fishery is operated in the lower Tuya River and/or at Tahltan Lake when escapements are estimated to be surplus to spawning requirements (ESSR) (Figure 1). A small sport fishery also exists in the Canadian sections 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 1999. 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 1999.

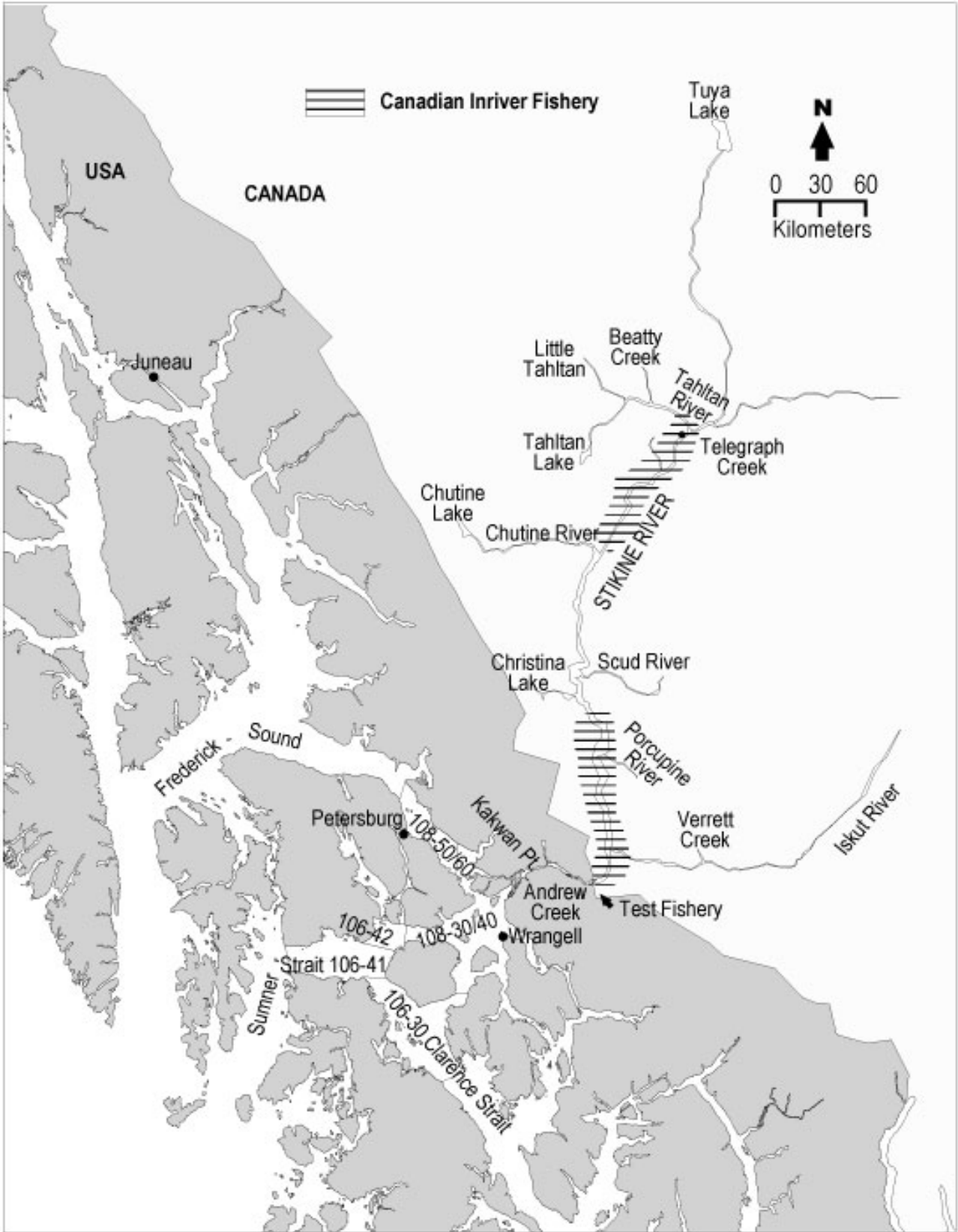


Figure 1. The Stikine River and principal U.S. and Canadian fishing areas.

HARVEST REGULATIONS AND THE JOINT MANAGEMENT MODEL

Negotiations between Canada and the United States to replace expired portions of Annex IV, Chapter 1 of the Pacific Salmon Treaty resulted in the following arrangements for Stikine salmon which are expected to be in place for the 1999 to 2008 period

1. General:

The Parties shall improve procedures for coordinated or cooperative management of the fisheries on transboundary river stocks. To this end, the Parties affirm their intent to develop and implement abundance-based management regimes for transboundary Chinook, sockeye and coho salmon no later than May 1, 2004. follows:

2. Sockeye Salmon:

(i) Assessment of the annual run of Stikine River sockeye salmon shall be made as follows:

a. a pre-season forecast of the Stikine River sockeye salmon run will be made by the Committee prior to April 1 of each year. The Committee may modify the pre-season forecast prior to the opening of the fishing season;

b. in-season estimates of the Stikine River sockeye salmon run and the Total Allowable Catch (TAC) shall be made under the guidelines of an agreed Stikine Management Plan and using a forecast model developed by the Committee. Both U.S. and Canadian fishing patterns shall be based on current weekly estimates of the TAC. At the beginning of the season and up to an agreed date, the weekly estimates of the TAC shall be determined from the pre-season forecast of the run strength. After that date, the TAC shall be determined from the in-season forecast model;

c. modifications to the Stikine Management Plan and forecast model may be made prior to June 1 of each year by agreement of both Parties. Failure to reach agreement in modifications shall result in use of the model and parameters used in the previous year; and

d. estimates of the TAC may be adjusted in-season only by concurrence of both Parties' respective managers. Reasons for such adjustments must be provided to the Committee.

(ii) The Parties desire to maximize the harvest of planted Tahltan/Tuya sockeye salmon in their existing fisheries while considering the conservation needs of wild salmon runs. The Parties agree to manage the runs of Stikine River sockeye salmon to ensure that each country obtains 50% of the TAC in their existing fisheries. Canada will endeavor to harvest all fish surplus to escapement and broodstock needs returning to the Tuya and Tahltan Lake systems.

(iii) The Parties agree to continue the existing joint enhancement programs designed to produce annually 100,000 returning sockeye salmon.

(2) Coho salmon:

(i) Consistent with paragraph 1 above, the Parties agree to develop and implement an abundance-based approach to managing coho salmon on the Stikine River. Assessment programs need to be further developed before a MSY escapement goal can be established.

(ii) In the interim, the United States' management intent is to ensure that sufficient coho salmon enter the Canadian section of the Stikine River to meet the agreed spawning objective, plus an annual Canadian catch of 4,000 coho salmon in a directed coho salmon fishery.

(3) Chinook salmon:

(i) Both Parties shall take the appropriate management action to ensure that the necessary escapement goals for Chinook salmon bound for the Canadian portions of the Stikine River are achieved.

(ii) The Parties agree that new fisheries on Stikine Chinook salmon will not be developed without the consent of both Parties. Consistent with paragraph 2, management of new directed fisheries will be abundance-based through an approach to be developed by the Committee. The Parties agree to implement assessment programs in support of the development of an abundance-based management regime.

(iii) The Parties shall review an appropriate MSY escapement goal for Stikine Chinook salmon by May 1999 and establish a new goal as soon as practicable thereafter.

As in most previous years, the Transboundary Technical Committee (TTC) met prior to the season to update joint management and enhancement plans, develop run forecasts and determine new parameters for input into the inseason run forecast model, referred to as the Stikine Management Model (SMM). The model was upgraded to provide inseason forecasts of the total Stikine sockeye salmon run as well as the following components of the run: the Tahltan stock (wild and planted combined); the Tuya enhanced stock; and the mainstem stocks. In addition, to address concerns raised as a result of the model over-estimating the run size in 1998, compensatory adjustments were made to the model for 1999. These included:

- reducing the CPUE values in the inriver commercial fishery by 25% since 1994 when the allowable gear for fishers was increased to two nets;
- re-calculating the regressions of weekly cumulative CPUE on total inriver run for those years in which the CPUE was adjusted downwards.

In 1999, the preseason forecasts were used during statistical week 26 (June 20 to June 26) through statistical week 27 (June 27 to July 03). After week 27, inseason forecasts of total run size and TAC, produced by the SMM and based on catch per unit effort (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 from egg diameters, proportion Tuya enhanced from thermal mark analyses of otoliths) 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. Results of thermal mark analyses were available inseason for the lower inriver fisheries to account for Tuya production in the model and reduce the risk of over-estimating the TAC of Tahltan sockeye salmon, which was expected to be below average in 1999.

Initially, average stock proportions in District 106 and 108 catches, from historical postseason scale pattern analysis (SPA), were assumed for weekly catches; the averages used each week depended upon

Table 1. Weekly forecasts of run size and total allowable catch for Stikine River sockeye salmon as estimated inseason by the Stikine Management Model, 1999.

Stat. Week	Start Date	Forecast Run Size	TAC			Cumulative Catches ^a	
			Total	U.S.	Canada	U.S.	Canada
Model runs generated by Canada							
25	13-Jun	126,000	61,125	30,563	30,563		
26	20-Jun	126,000	61,126	30,563	30,563	6,397	10
27	27-Jun	126,000	61,125	30,563	30,563	21,386	1,126
28	4-Jul	75,890	14,457	7,229	7,229	26,581	6,336
29	11-Jul	130,958	64,089	32,045	32,045	34,621	17,066
30	18-Jul	198,738	124,668	62,334	62,334	39,578	29,739
31	25-Jul	227,182	148,887	74,444	74,444	45,311	34,015
32	1-Aug	222,347	146,436	73,218	73,218	46,372	36,045
33	8-Aug	215,014	139,282	69,641	69,641	46,372	36,710
34	15-Aug	206,438	130,997	65,499	65,499	46,605	38,451
Model runs generated by the U.S.							
25	13-Jun	126,000	61,125	30,563	30,563		
26	20-Jun	126,000	61,125	30,563	30,563	4,600	28
27	27-Jun	126,000	61,125	30,563	30,563	19,990	1,126
28	4-Jul	75,890	14,457	7,228	7,228	26,582	6,268
29	11-Jul	130,958	64,089	32,045	32,045	34,000	15,268
30	18-Jul	181,195	108,288	54,144	54,144	39,694	25,014
31	25-Jul	224,623	146,702	73,351	73,351	46,687	30,662
32	1-Aug	223,886	146,615	73,307	73,307	46,423	32,854
33	8-Aug	215,050	139,316	69,658	69,658	46,605	32,936
34	15-Aug	205,885	130,422	65,211	65,211		
Postseason estimate (from Table 2).							
124,614							

^a does not include ESSR or test fishery catches

whether the run was judged to be below average, average, or above average. 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 planted Tahltan and Tuya Lake sockeye salmon to catches in these areas. The weekly estimate of Tuya fish in District 106-41 was added to the historical proportion of Tahltan fish 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 forecast for the Stikine sockeye salmon run was 126,000 fish, which indicated a run size below the 1989-1998 average run of 197,284 fish (Appendix B.28). The forecast included approximately 61,000 natural Tahltan sockeye salmon (48%), 3,000 planted Tahltan fish (2%), 29,000 Tuya sockeye salmon (23%), and 33,000 mainstem fish (26%). Canadian inseason predictions of total run ranged from 75,890 to 227,182 sockeye salmon; U.S. forecasts ranged from 75,890 to 224,623 sockeye salmon (Table 1). All forecasts, other than the first week (week 28) indicated an above average run. The preseason forecast was more accurate than inseason forecasts in 1999. U.S. and Canadian weekly predictions differed only slightly this year; differences were due to different catch data input used for the updates.

U.S. FISHERIES

The 1999 harvest in the District 106 commercial gillnet fishery included 518 Chinook, 104,878 sockeye, 203,262 coho, 490,716 pink, and 448,367 chum salmon (Appendix B.5). In the District 108 fishery, 1,049 Chinook, 36,548 sockeye, 28,437 coho, 48,550 pink and 117,196 chum salmon were harvested (Appendix B.7). District 106 catches of Chinook and sockeye salmon were 43% and 54% of the 1989-1998 respective averages while the coho salmon catch was average and the pink and chum salmon catches were above the average. The chum salmon catch was the largest on record (1960-1999) (Figure 2). The District 108 Chinook salmon catch was 78% of the 1989-1998 average and the sockeye salmon catch was 59% of average while the coho, pink and chum salmon catches were all above average. The coho salmon catch was 69% above average and the chum salmon catch was the highest on record. Weekly commercial and test fishery catches and stock composition estimates are provided in Appendices A.1-A.9. Annual commercial and test fishery catches from 1960 to 1999 for these fisheries are provided in Appendices B.1-B.11. Catches of each species in Districts 106 and 108 consist of fish of mixed stock origin; the contribution of Stikine stocks is estimated only for sockeye salmon. The proportion of the District 106 and 108 sockeye salmon catch of Stikine origin was estimated inseason using both the historical proportions of each stock and the thermally marked otoliths from runs of planted Tahltan and Tuya Lake sockeye salmon found in the catch.

The postseason estimate of the contribution of Stikine sockeye salmon to the District 106 and 108 catch is 48,901 or 34% of the total sockeye salmon catch of 141,426 fish. The Sumner Strait fishery (Subdistricts 106-41 & 106-42) harvested 20,623 Stikine sockeye salmon (Appendix A.2), 28.1% of the total sockeye salmon harvest in that subdistrict, and the Clarence Strait fishery (Subdistrict 106-30) harvested 4,196 Stikine fish (Appendix A.4), 13.3% of the total sockeye salmon catch in that subdistrict. The District 108 fishery harvested 29,980 Stikine sockeye salmon (Appendix A.8), 82% of the District 108 sockeye salmon catch (Figure 3).

The Districts 106 and 108 fishing seasons began on June 20 (statistical week 26) and continued through October 12 (statistical week 42). This is the latest the fishery has been open since 1960. The initial opening in statistical week 26 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. The estimated sockeye salmon CPUE in both districts was above the 1989-1998 average for this week and the otolith analysis in the District 108 test fishery showed a Tuya:Tahltan ratio of approx. 50:50. Based on the catch

and otolith information and the preseason forecast of 64,000 Tahltan run, a 24-hour extension was allowed in both districts to harvest the apparent surplus of Tahltan sockeye salmon. During statistical week 27 (27 June – 3 July) the fishery was open for two days. The sockeye salmon catch in District 8 was well above the 1989-1998 average but the catches in District 6 were below average. Based on the good sockeye salmon catches in District 108 and stock identification from the commercial and test fisheries which showed a high percent of Tahltan fish in District 108, District 106 was closed and an additional one-day mid-week opening was allowed in District 108. During statistical week 28 (4 – 10 July) Districts 106 and 108 were initially open for two days. The CPUE in District 108 (53 sockeye/boat/day) was above average while the District 106 CPUE of approximately 40 sockeye/boat/day was below average. The SMM also indicated that the Tahltan run was close to the preseason forecast and that the US catch of Tahltan fish was close to the TAC. Based on the Districts 106 and 108 sockeye salmon catches and the SMM results no extension or mid-week openings were warranted. During statistical week 29 (11-17 July) Districts 106 and 108 were open for two days. Sockeye salmon CPUE was good in the southern portion of

District 108, near the average in Clarence Strait and slightly below average in Sumner Strait. Although the SMM estimated the Tahltan run to be approximately 73,000 fish and the US TAC to be 24,000 the US biologists had doubts that the run was that large due to the poor catches in Frederick Sound portion of District 108. Therefore, no extensions or mid-week openings were warranted. During statistical week 30 (18 – 24 July) Districts 106 and 108 were open for two days. Sockeye salmon CPUE in lower District 108, and in District 106 were all above average. The SMM along with the week 29 inriver catches indicated that the runs of all Stikine stocks were good and that the total US TAC was approximately 54,000. The current US catch of Stikine sockeye salmon was estimated at 24,000 so that approximately 30,000 Stikine sockeye salmon were still available for US harvest. Based on this information a 24-hr extension in both districts was allowed and an additional 2-day mid-week opening was allowed in District 108. During statistical week 31 (25 – 31 July) both districts were initially open for 3 days. The sockeye salmon CPUE for both districts was below average. However, due to the SMM showing the US TAC to be approximately 70,000 and that fish still remained for US harvest an additional 2-day mid-week opening in District 108 was allowed.

The test fishery that was initiated in District 108 during 1998 was undertaken again in 1999. Six gillnet vessels (three in Frederick Sound and three in the Sumner Strait portion of District 108) were contracted to fish for up to three days for three consecutive weeks from at specific locations of their choosing beginning on Tuesday, 15 June. However, due to very low catches during the first week an additional fourth fishing period was allowed so that additional samples needed for adequate statistical analysis could be obtained. Each of the vessels at each location fished different mesh sizes. The three sizes fished were: 4.625 in. to 4.875 in. (11.81 cm to 12.38 cm); 5.375 in. to 5.25 in. (12.7 cm to 13.65 cm); and 5.375 in. to 5.625 in. (13.65 cm to 14.29 cm).

The objective of the fishery was to see if the Tuya sockeye salmon stock was more susceptible to capture in a particular gillnet mesh size than other stocks were. This is of interest because age 2.2 fish are very rare in the Tahltan stock while they may represent 25% or more of the Tuya marine

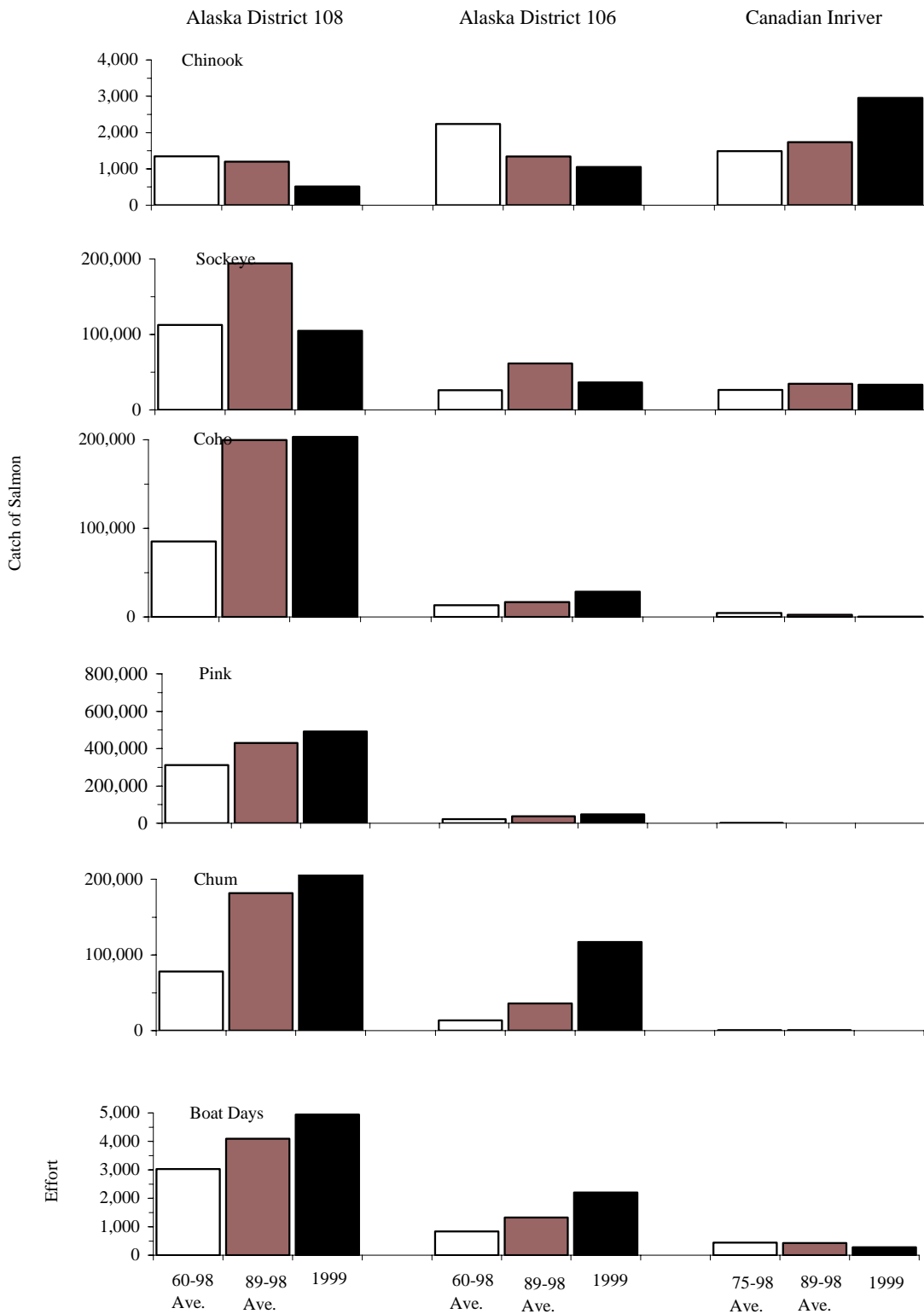


Figure 2. Average catches and fishing efforts compared with 1999 for the Alaska Districts 106 and 108 and for the Canadian inriver fisheries in the Stikine River.

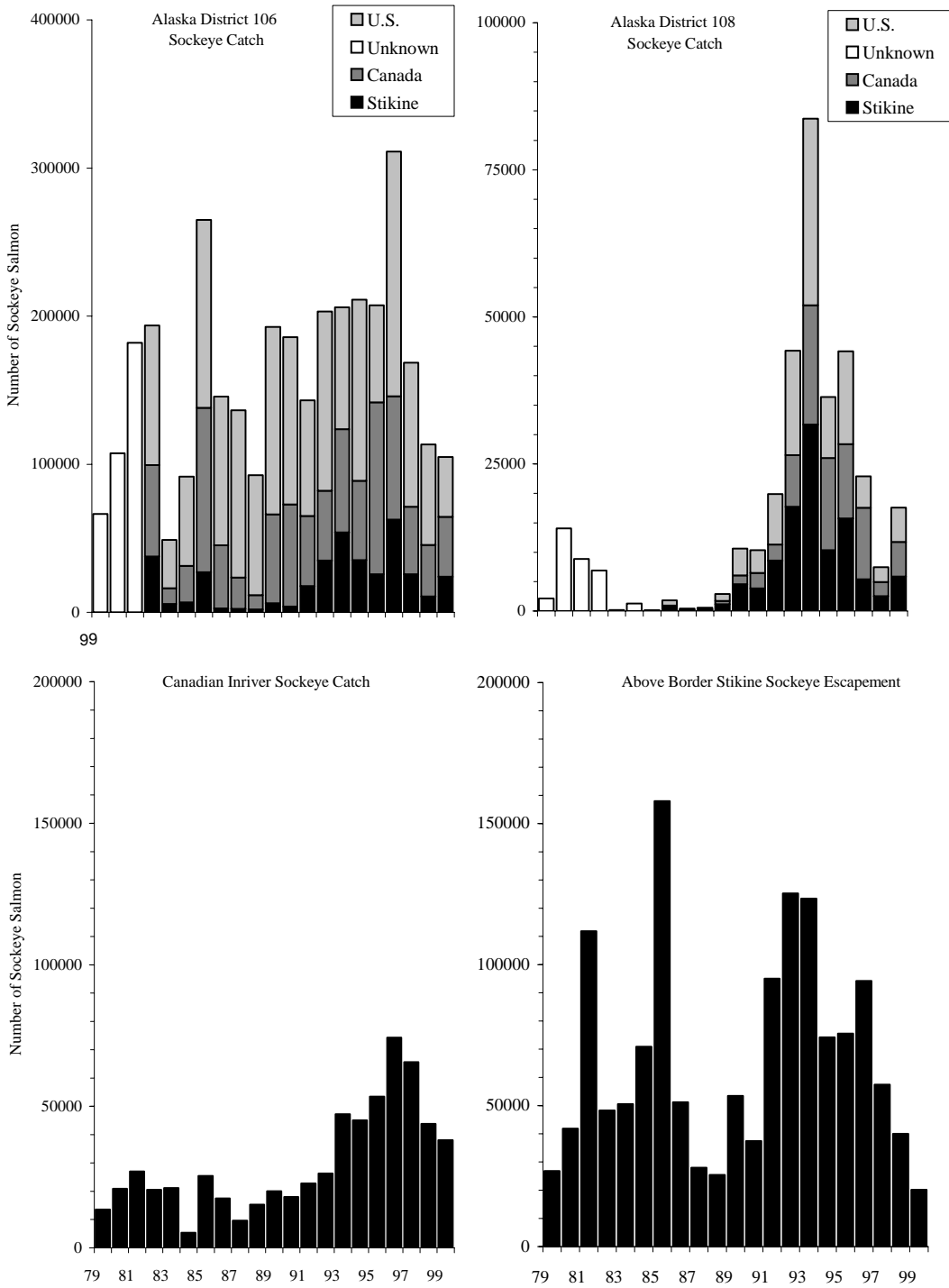


Figure 3. Sockeye salmon catches for the Alaska Districts 106 and 108 and for the Canadian inriver fisheries in the Stikine River and Stikine River sockeye escapements, 1979-1999.

catch. Two-ocean age sockeye salmon are generally smaller than the 3-ocean fish and as such may be more susceptible to catch in smaller gillnets. If it could be shown that the Tahltan and Tuya stocks could be harvested at different rates then it may be possible to institute mesh size restrictions during years of low Tahltan runs to minimize the Tahltan stock catch while still fishing for the planted Tuya stock. Results after the first season did show a slight difference in the catch of age 2.2 sockeye salmon between mesh sizes with the smallest mesh size catching a higher percentage than either of the two other mesh sizes. A total of 3,936 sockeye salmon were caught during the test fishery. Planted Tahltan made up 3%, Tuya made up 27% and wild stocks made up the remaining 70%.

Area restrictions were used around the mouth of the Stikine River for the first two openings (statistical weeks 26 and 27) to protect adult Chinook salmon returning to the Stikine River. From 11 July through 28 July, 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 32 (August 1 to 7). Pink salmon management normally begins near week 33 but the very large expected run of pink salmon to District 106 and the lack of Stikine sockeye salmon stocks in the week 31 catch prompted a slightly early directed pink salmon management efforts in both Districts 106 and 108. The District 106 catch is the ninth highest catch since 1960 and 14% above the 1989-1998 average of 429,405 pink salmon (Appendix B.5), while the District 108 catch is 30% above the average of 37,464 fish (Appendix B.7). Pink salmon catches in both districts are not always a true reflection of abundance because low pink salmon prices, along with a high abundance of sockeye salmon, affect the fishing patterns and methods. A three-day fishing period was allowed during statistical week 32. Four-day fishing periods were allowed for four consecutive weeks from statistical week 33 through statistical week 36 (8 Aug. – 4 Sept.).

Coho salmon management in both the District 106 and 108 gillnet fisheries usually commences during late August or early September. During statistical week 37 (5-11 Sept.) the management emphasis changed from pink to coho salmon. The coho salmon catches prior to week 37 had been slightly below the 1989-1998 average due to the late timing of the coho salmon run into inside waters. Three-day openings were allowed in both districts from week 37 through week 39 (5-22 Sept.) and two-day fisheries were allowed during weeks 40 through 42 (19 Sept. – 12 Oct.). The District 106 fishery was closed after week 42. Prior to the change to coho salmon management, the sockeye and pink salmon fisheries harvested 126,800 coho salmon, or approximately 63% of the total District 106 coho salmon catch.

During the 1999 season, the District 106 gillnet fishery was open for a total of 50 days (Appendix A.5), and the District 108 for 54 days (Appendix A.7). These were above the Districts 106 and 108 1989-1998 respective averages of 39 and 46 days. District 106 fishing effort in numbers of vessels was below the average for the first five openings, near or above the average for the next ten statistical weeks (weeks 32 to 41; 1 Aug. – 5 Oct.) (Appendix B.5). The number of vessels fishing in District 108 was near or above average for all openings. The greatest number of boat-days in District 106 (464) was in statistical week 36 while the greatest number of boats fishing (137) occurred in statistical week 31, which is the last week in July. The high number of boat-days fished during week 36 was due to the district being open for 4 consecutive days. The effort of 4,943 boat-days in District 106 was 20% higher than the 1989-1998 average

of 4,092 boat-days. The 2,207 boat-days fished in District 108 was 67% higher than the 1989-1998 average of 1,323 boat-days (Appendix B.7). District 108 effort was higher than average due to the 4-day openings during weeks 33-36 and the large number of boats remaining in the district throughout the season.

CANADIAN FISHERIES

Catches from the combined Canadian commercial and aboriginal gillnet fisheries in the Stikine River in 1999 included: 2,916 large Chinook, a record 1,264 jack Chinook, 38,055 sockeye, 181 coho, 11 pink, 8 chum salmon, and 14 steelhead salmon (Figure 4, Appendices A.10, A.12, A.13, B.17). In addition to these catches, 2,822 sockeye salmon were taken in an ESSR harvest in the Tuya River. Catches of all species except Chinook salmon were below average. The catch of large Chinook salmon was 29% above the 1989-1998 average of 2,263 and the catch of jack Chinook salmon was 2.6 times the average of 480 jacks. The sockeye salmon catch was approximately 9% below the average of 41,651 fish. Weekly commercial and test fishery catches and stock composition estimates for these fisheries are provided in Appendices A.10-A.16 and annual catches from 1972 to 1999 are provided in Appendices B.12-B.21. The estimate of the total contribution of sockeye salmon from the Canada/U.S. fry-planting program to the combined Canadian aboriginal and commercial fisheries is 10,325 fish, 27.1% of the catch. Although the total catch of sockeye salmon was well within inseason limits established through the SMM, i.e. 42% below the final inseason target indicated by the SMM, it was approximately 21.6% above the postseason estimate of the allowable harvest for Canada (27,020 sockeye salmon) (Table 2). Catches of coho, pink, chum salmon, and steelhead salmon ranged from 3% to 10% of average (Appendix B.17).

A test fishery was conducted again in the lower Stikine River, just upstream from the Canada/U.S. border. Test fishery catches included: 853 large Chinook, 97 jack Chinook, 5,896 sockeye, 392 coho, 35 pink, and 29 chum salmon, and 43 steelhead trout (Appendix A.15). The test fishery was conducted only when the commercial fishery was closed and included ten drifts per day, five in the morning and five in the afternoon. The objectives of the test fishery during the sockeye salmon season were similar to those in previous years: to provide inseason catch, stock ID and effort data for input into the SMM to forecast the inriver run size; and, 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. As in 1998, the test fishery was expanded to test the feasibility of live-capturing coho salmon for the purposes of mark-recapture studies.

Lower Stikine Commercial Fishery

Canadian commercial fishers in the lower Stikine harvested 2,127 large Chinook, a record 789 jack Chinook, 32,556 sockeye, 181 coho, 11 pink, and 8 chum salmon, and 14 steelhead trout in 1999 (Appendix A.10). The sockeye salmon catch was 92% of the 1989 to 1998 average of 35,342 fish (Appendix B.12). The catch of large Chinook salmon was 50% above the average of 1,414 large fish, and the jack Chinook salmon was 2.7 times average. Catches of coho, pink, and chum salmon ranged from 2% to 7% of average and the steelhead trout catch was 11% of the average of 126 fish.

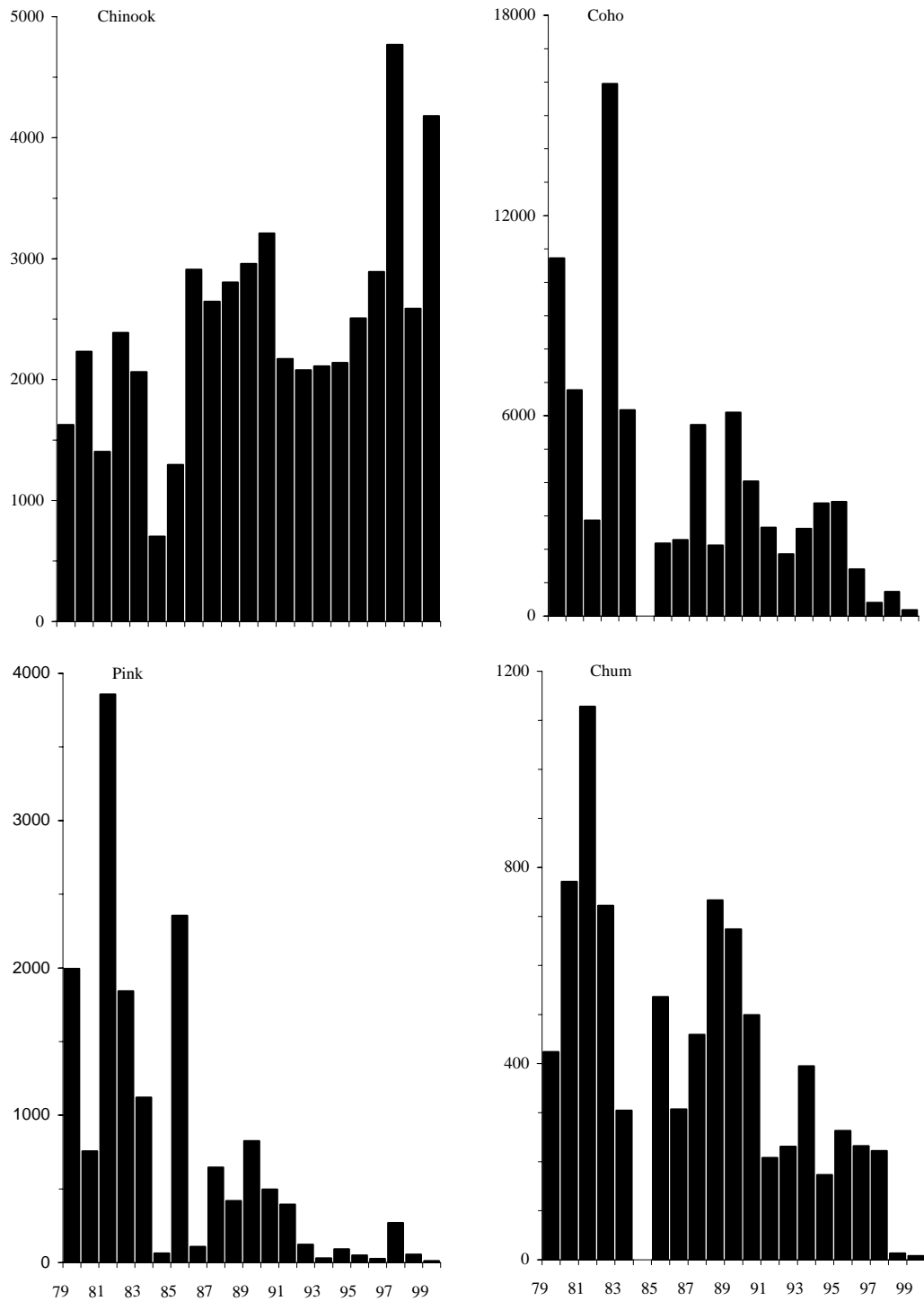


Figure 3. Catches of Chinook, coho, pink, and chum salmon in the combined Canadian fisheries in the Stikine River, 1979-1999.

Table 2. Run reconstruction for Stikine sockeye salmon, 1999.

	Tahltan	Tuya	Mainstem	Total	Tahltan	
					Wild	Hatchery
Escapement ^a	10,748	5,110	6,071	21,928	10,031	717
ESSR Catch ^b		2,822		2,822		
Biological Samples	429			429	400	29
Broodstock	2,870			2,870	2,679	191
Natural Spawning	7,449		6,071	13,520	6,952	497
Excess ^c		2,288		2,288		
Canadian Harvest						
Indian Food	3,038	1,423	413	4,874	2,903	135
Upper Commercial	359	206	60	625	356	3
Lower Commercial	18,742	7,862	5,952	32,556	18,046	696
Total	22,139	9,491	6,425	38,055	21,305	834
% Harvest	51.2%	40.8%	24.4%	41.0%		
Test Fishery Catch	3,031	1,564	1,301	5,896	2,918	113
Inriver Run	35,918	16,165	13,797	65,879	34,254	1,664
U.S. Harvest ^a						
106-41&42	5,425	5,786	9,412	20,623	5,159	266
106-30	563	641	2,992	4,196	541	22
108	15,134	7,360	7,486	29,980	14,258	876
Total	21,122	13,787	19,890	54,799	19,959	1,163
% Harvest	48.8%	59.2%	75.6%	59.0%		
Test Fishery Catch	2,309	1,430	197	3,936	2,174	135
Total Run	59,349	31,382	33,884	124,614	56,386	2,963
Escapement Goal	24,000		30,000	54,000		
Terminal Excess ^d		12,690		12,690		
Total TAC	35,349	18,691	0	54,040		
Total Harvest ^e	48,601	29,094	27,813	105,508		
Canada TAC	17,675	9,346	0	27,020		
Actual Catch ^f	22,139	9,491	6,425	38,055		
% of TAC	62.6%	50.8%		70.4%		
U.S. TAC	17,675	9,346	0	27,020		
Actual Catch ^{fg}	21,122	13,787	19,890	54,799		
% of TAC	59.8%	73.8%		101.4%		

^a Escapement into terminal and spawning areas from traditional fisheries.

^b Catch allowed in terminal areas under the Excess Salmon to Spawning Requirement license.

^c Fish returning to the Tuya system are not able to access the lake where they originated due to velocity barriers.

^d The number of Tuya fish that should be pass through traditional fisheries in order to harvest the Tuya stock at the same rate as the Tahltan stock to ensure adequate spawning escapement for Tahltan fish.

^e Includes traditional, ESSR, and test fishery catches.

^f Does not include ESSR or test fishery catches.

^g U.S. harvest estimate differs from Joint Interception Committee estimate because no estimates are made for catches other than in the listed fisheries.

Weekly guideline harvests, based on forecasts of the total allowable catch (TAC) apportioned by average run timing and domestic and international allocation agreements, were developed each week to guide management decisions during the sockeye salmon season. Management through statistical week 31 was focused primarily on the Tahltan sockeye salmon stock after which it

switched to mainstem sockeye salmon stocks through the end of August, and then to coho salmon. The Tahltan sockeye salmon stock was of particular concern given the preseason expectation of a below average run in 1999.

The fishery commenced at noon on Sunday, June 20 (statistical week 26) for a scheduled opening of two days. Fishing time was kept to 48 hours due to low numbers of sockeye salmon. Sockeye salmon catches increased the following week although the commercial sockeye salmon catch per unit of effort (CPUE) measured in sockeye/fisher/day (s/f/d) was below average as was the test fishery CPUE just prior to the opening in week 27. As a result, fishing time was kept to two days through week 27.

In statistical week 28, the fishery was scheduled to open for two days commencing Sunday, July 04. After the first 24 hours of fishing, the commercial sockeye salmon CPUE was 44% above average prompting a one day extension to the opening to bring the cumulative catch up closer to the weekly guideline harvest. The fishery closed after three days and the cumulative catch was approximately 700 fish below the guideline.

The peak sockeye salmon catch of the season, 10,815 fish, occurred in week 29. The fishery was open initially for 2 days but near a record sockeye salmon CPUE of 244 s/f/d, which was 94% above average, and increases in the inriver forecast for the Tahltan run lead to the fishery being extended to four days. Based on SMM forecasts updated throughout the week, the guideline harvest of Tahltan sockeye salmon through week 29 was 21,000 to 24,000 fish, which was more than double the actual catch of Tahltan fish to this time. Because of the large apparent shortfall in catch, it was expected that a surplus of about 10,000 sockeye salmon would appear at Tahltan Lake.

Record high CPUE prevailed through week 30 and the SMM continued to indicate a growing surplus for Tahltan Lake as the commercial catch fell further behind the guideline harvest. The fishery was extended from the initial two day opening to five days as a result of the fishery performance. The extensions were granted for each 24-hour period after the run assessment had been updated. After day 4 of this opening, the SMM indicated a shortfall in the cumulative lower river catch of approximately 11,000 to 23,000 Tahltan sockeye salmon. The overall sockeye salmon CPUE for this week was 203 s/f/d, which was a record value for week 30, and was 64% above average. The CPUE of Tahltan sockeye salmon was more than four times the historic average for this week. Projections of the inriver run size of Tahltan sockeye salmon stock continued to indicate the cumulative catch of Tahltan fish in the lower river, estimated inseason to be approximately 16,000 fish through week 30, was less than one half what it could have been.

The fishery in week 31 was opened for three days. The sockeye salmon CPUE dropped from above 200 s/f/d in the previous week to 83 s/f/d (slightly below average) and concern started to mount over the weir counts at Tahltan Lake, which were lagging behind expectations. Even though large shortfalls in the lower river catch were still indicated by the SMM, the fishery was not extended as a precautionary measure to ease up on the harvest of the Tahltan stock. The contribution of Tahltan sockeye salmon to the catch was approximately 54% based on stock ID sampling; normally the contribution in this week would be closer to 25%.

The contribution of mainstem sockeye salmon in the lower river catches predominated after week 31 (July 31 on) and the overall sockeye salmon CPUE values in the lower river were below average in weeks 32 and 33. Fishing time remained at three days for the remainder of the

sockeye salmon season to harvest some of the surpluses of mainstem fish indicated by the SMM, although all three days were frequently not fished. Weekly catches after week 32 were well below average causing effort levels to drop 1- to- 3 fishers/week after week 33 (mid –August). Below average coho salmon catches provided little incentive for fishers to remain in the fishery after week 37 (September 11) which marked the end of the season.

Based on sockeye salmon CPUE in the lower river, the overall sockeye salmon run timing appeared to be compressed and approximately one week later than normal. The run peaked in week 29, one week later than the average peak in timing over the previous ten years. The Tahltan and Tuya stocks peaked in week 29; normally they peak over weeks 27 and 28. Mainstem sockeye salmon peaked in week 32, roughly two weeks later than normal. Based on preliminary stock composition estimates, the lower river sockeye salmon catch was comprised of 18,046 wild Tahltan sockeye salmon (55% of the total catch), 7,862 planted Tuya fish (24% of the total catch), 5,952 mainstem sockeye salmon (18% of the total catch), and 696 planted Tahltan fish (2% of the total catch) (Table 2).

As a result of below goal escapement levels, there was no terminal harvest of sockeye salmon at Tahltan Lake in 1999 under an Excess Salmon to Spawning Requirements (ESSR) license. Instead, ESSR fishing activities again focused on the lower Tuya River to harvest fish returning from the fry-planting program. A total of 2,822 sockeye salmon was harvested in this area.

Twelve licensed fishers participated in the fishery throughout the season with a maximum of 11 licenses being active in any one week. The total effort in terms of boat-days was 261, 65% of the 1989-1998 average of 400 boat-days. As in 1998, 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 July 12 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. The same area was fished in 1998 and in 1999.

Upper Stikine Commercial Fishery

A small commercial fishery has existed near Telegraph Creek on the upper Stikine River since 1975. The catch recorded in 1999 included: 24 large Chinook salmon, which was 48% of the 1989-1998 average of 50 large fish; 12 Chinook jacks, 76% of average; and 625 sockeye salmon, which was 47% of average (Appendices A.12 and B.14). The fishing effort was 50% of average with an average of only one fisher fishing two to five days per week. A total of 18 days was fished and the total effort amounted to 19 boat-days. For comparison, the 1989-1998 average fishing time was 24 days with an average effort of 38 boat-days.

Aboriginal Fishery

The Stikine aboriginal fishery, which is located near Telegraph Creek, harvested 765 large Chinook, 463 jack Chinook, and 4,874 sockeye salmon (Appendix A 13). The catch of sockeye salmon was 98% of the 1989-1998 average of 4,982 fish. The harvest of large Chinook salmon was 96% of the average of 799 large fish while the jack Chinook salmon catch was the second highest on record and 2.7 times the average (Appendix B 15). As in past years, fishing times were not restricted in this fishery.

ESCAPEMENT

Sockeye

A total of 10,748 sockeye salmon was counted through the Tahltan Lake weir in 1999, 30% of the 1989-1998 average of 35,297 fish (Appendices A.17, B.22). An estimated 717 fish (7%) originated from the fry-planting program, which was similar to the 7% of thermally marked fish observed in 1998. The estimate of planted fish in 1999 was based on the proportion of thermal marked Tahltan sockeye salmon as determined from otoliths from a random sampling of 429 fish collected at the weir. In addition, 2,870 sockeye salmon were collected for broodstock for the fry-planting project. This leaves a spawning escapement of 7,449 fish (Table 2). The weir count was below both the goal of 24,000 sockeye salmon and the goal range of 18,000 to 30,000 fish.

The spawning escapements for the mainstem and the 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:mainstem and Tahltan: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 inriver catches from the inriver run estimate. The escapement estimates are 6,071 mainstem and 5,110 Tuya sockeye salmon. The mainstem sockeye salmon stocks spawn in tributaries and the mainstem of the Stikine River. The mainstem escapement is well below the escapement goal range of 20,000 to 40,000 fish. Aerial survey counts of sockeye salmon spawning the mainstem index areas totaled 651 fish compared to an average of 910 fish, not including Christina Creek and Craig River that were not surveyed in 1999 (Appendix B.23). The Tuya fish are blocked from entering potential spawning grounds of the Tuya tributary by natural barriers and are targeted in the ESSR fishery, which caught 2,822 fish in 1999 (Appendix B.18). The fate of the remaining 3,411 Tuya fish is unknown.

The Tahltan Lake sockeye salmon smolt outmigration was 762,033 fish in 1999 of which 293,545 originated from the fry planting program (Appendix A.18). This represents 76.7% of the 1984-1998 average of 993,410 smolt (Appendix B.24).

Chinook

Chinook salmon escapement was enumerated at the Little Tahltan weir; 4,738 large fish and 202 jack Chinook salmon were counted between June 27 and August 12 (Appendix A.19, B.25). The escapement for large Chinook salmon was 93% of the old goal of 5,300 fish. The escapement goal for the Stikine River is currently being revised. Aerial surveys of the Tahltan River and Beatty Creek have been discontinued. The peak survey count at Andrew Creek was 605 large Chinook salmon, well within the escapement goal range of 325-750 fish. The aerial survey count for the Little Tahltan River was 1,379 fish, or 29% of the weir count (Appendix B.26, Figure 5). A mark-recapture study was conducted again in 1999. An escapement run size estimate is not available at the time of publication, but will be included in the final report.

Coho

The aerial survey count of coho salmon at the index spawning areas is not yet available, historical counts are provided in Appendix B.27.

SOCKEYE RUN RECONSTRUCTION

The postseason estimate of the Stikine sockeye salmon run size is 124,614 fish, of which 59,349 are of Tahltan origin (wild & planted), 31,382 are of Tuya origin (fry from Tahltan broodstock planted into Tuya Lake), and 33,884 are mainstem stocks (Table 2). These estimates are based on postseason SPA and otolith analysis in the U.S. Districts 106 and 108 catches and egg-diameter stock-composition estimates and otolith analysis for the Canadian commercial, aboriginal, ESSR, and test fishery catches; and escapement data. The 1999 total run is 63% of the 1989-1998 average run of 197,272 sockeye salmon but is close to the preseason forecast of 126,000 sockeye salmon.

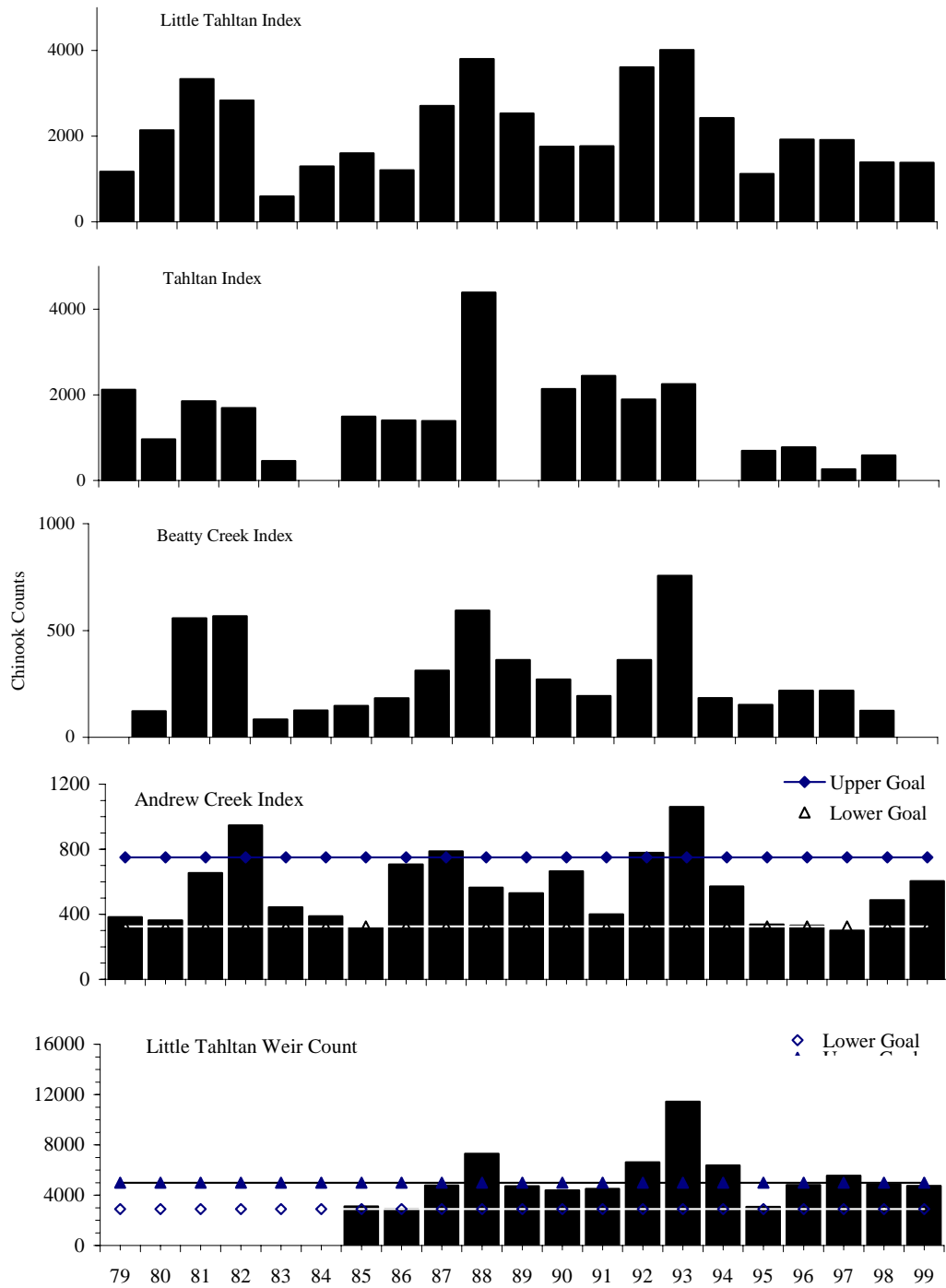


Figure 4. Chinook salmon weir counts and index escapement estimates for major spawning areas and for the entire Stikine River, 1979-1999.

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 Canada/U.S. border, an aboriginal fishery, and a sport fishery.

HARVEST REGULATIONS

New fishing arrangements were in place in 1999 as a result of negotiations between Canada and the United States of Annex IV, Chapter 1 of the Pacific Salmon Treaty. The arrangements that are expected to apply to the Taku River for the 1999 to 2008 period are as follows:

(1) Sockeye salmon:

(i) Except as noted below, Canada shall harvest no more than 18% of the TAC of the wild sockeye salmon originating in the Canadian portion of the Taku River each year;

(ii) If the projected above-border escapement is greater than 100,000 sockeye salmon, Canada may, in addition, harvest 20% of the projected escapement above 100,000 sockeye salmon;

(iii) The Parties agree to manage the runs of Taku River sockeye salmon to ensure that each country obtains catches in their existing fisheries equivalent to each country's share of wild sockeye salmon and a 50% share of fish originating from Taku fry plants;

(iv) The Parties agree to continue the existing joint Taku enhancement program designed to produce annually 100,000 returning sockeye salmon.

(2) Coho salmon:

(i) The Parties agree to develop and implement an abundance-based approach to managing coho salmon on the Taku River no later than May 1, 2004. The Parties commit to developing a revised MSY escapement goal to be implemented no later than May 1, 2004.

(ii) Until a new abundance-based approach is developed, the management intent of the United States is to ensure a minimum above-border run of 38,000 coho salmon, and the following arrangements will apply:

a. no numerical limit on the Taku River coho salmon catch will apply in Canada during the directed sockeye salmon fishery (through statistical week 33);

b. if in-season projections of above-border run size are less than 50,000 coho salmon, a directed Canadian harvest of up to 3,000 coho salmon is allowed for assessment purposes as part of the joint Canada/US Taku River mark-recapture program;

c. if in-season projections of above-border run size exceed 50,000 coho salmon, a directed Canadian harvest of 5,000 coho salmon is allowed;

d. if in-season projections of above-border run size exceed 60,000 coho salmon, a directed Canadian harvest of 7,500 coho salmon is allowed;

e. if in-season projections of above border run size exceed 75,000 coho salmon, a directed Canadian harvest of 10,000 coho salmon is allowed.

(3) Chinook salmon:

(i) Both Parties shall take the appropriate management action to ensure that the necessary escapement goals for Chinook salmon bound for the Canadian portions of the Taku River are achieved.

(ii) The Parties agree that new fisheries on Taku River Chinook salmon will not be developed without the consent of both Parties. Management of new directed fisheries will be abundance-based through an approach to be developed by the Committee no later than May 01, 2004. The Parties agree to implement assessment programs in support of the development of an abundance-based management regime.

(iii) The Parties shall review an appropriate MSY escapement goal for Taku River Chinook salmon by May 1999 and thereafter establish a new goal as soon as practicable.

U.S. FISHERIES

The 1999 commercial salmon harvests in the District 111 fishery totaled 1,841 Chinook, 79,425 sockeye, 17,273 coho, 59,316 pink, and 429,359 chum salmon (Figure 7). Catches of Chinook, sockeye, coho, and pink salmon were below average, but the catch of chum salmon was a record. Weekly commercial fishery catches and stock composition estimates for these fisheries are provided in Appendices C.1- C.3 and annual catches from 1960 to 1998 are provided in Appendices D.1-D.3.

The Chinook salmon harvest of 1,841 fish was 55% of the 1989-1998 average of 3,356 fish (Appendix D.1). Alaskan hatchery fish contributed approximately 27% of the harvest or 499 fish as estimated by coded wire tag (CWT) analysis (Appendix C.1).

The sockeye salmon harvest of 79,425 fish was 67% of the 1989-1998 average catch of 119,042 fish (Appendix D.1, Figure 8). Weekly sockeye salmon catches were below average after the first week of the season, except for the SW36 catch of 2,314 fish, most of which (94%) were domestic hatchery fish and local stocks taken inside Port Snettisham. The season catch was composed of the highest percentage (29%) of age-1.2 sockeye salmon since data collecting began in 1982. The high incidence of the younger, smaller fish, which are not as susceptible to capture in gillnets as older, larger fish, is believed to have lowered the harvest rate for sockeye salmon in the fishery. The percentage of the harvest that occurred in Taku Inlet (Subdistrict 111-32) was 87% of the total catch, near the 1988-1997 average of 83%.

The contributions of Taku River and Port Snettisham sockeye salmon to the District 111 commercial drift gillnet harvest were 14,016 Kuthai, 20,843 Trapper, 18,680 mainstem, 9,791 Tatsamenie, 3,879 Crescent and 1,814 Speel fish. Sockeye salmon from joint U.S./Canada Taku River fry planting programs contributed an estimated 614 fish (<1% of the sockeye salmon catch), including 247 Trapper and 367 Tatsamenie fish. Contributions of domestic U.S. hatchery sockeye salmon to the District 111 gillnet fishery totaled 10,405 fish or 13% of the catch, and included a small number of thermally marked fish from a fry-planting program at Chilkat Lake in upper Lynn Canal.

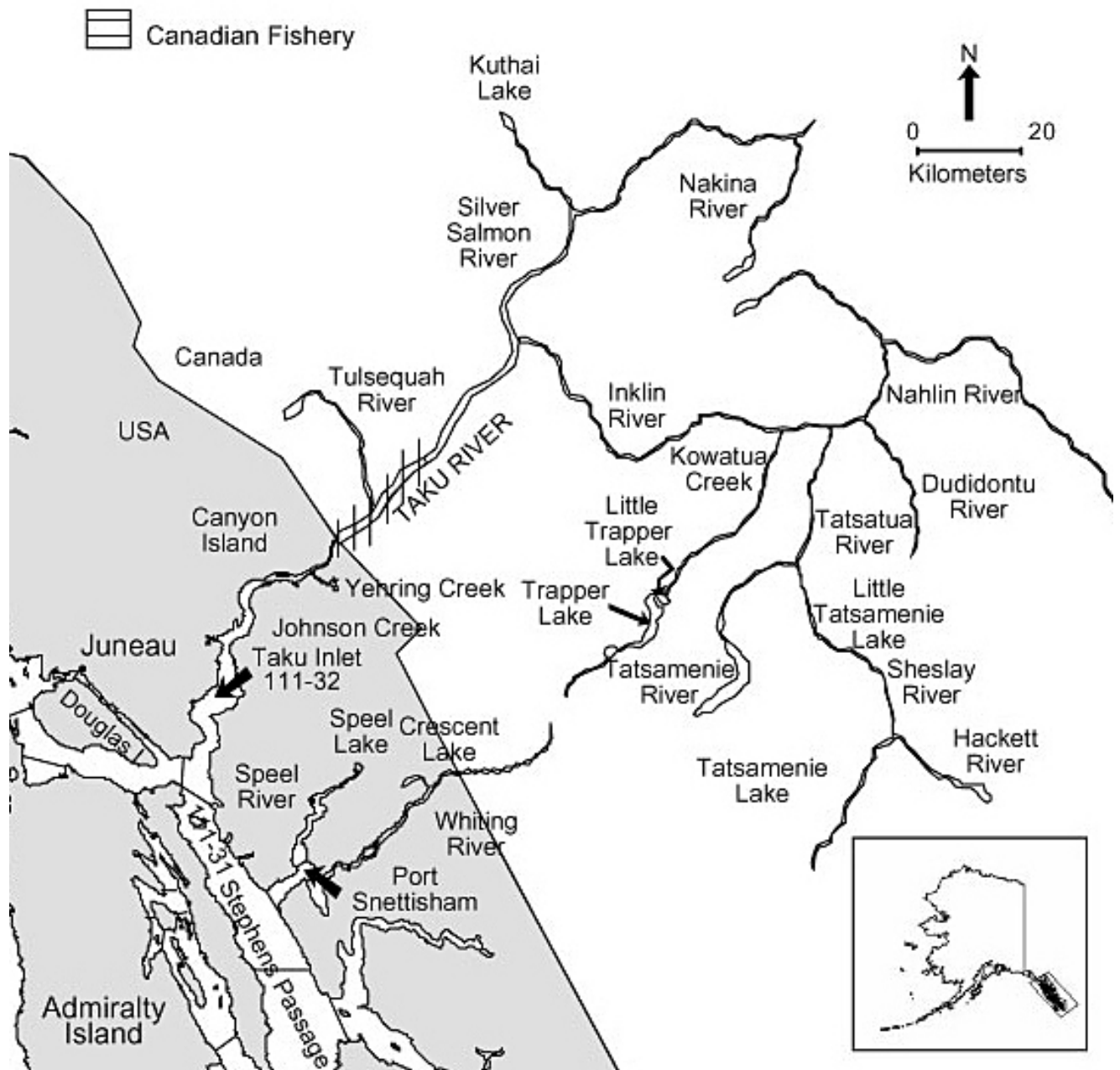


Figure 5. The Taku River and principal U.S. and Canadian fishing areas.

The catch of 429,359 chum salmon was composed almost entirely (99%) of summer chum salmon (Appendix D.1). The summer chum salmon run is considered to last through mid-August (SW33) and is composed of domestic hatchery and wild stocks. Chum salmon returning both to DIPAC hatcheries in Gastineau Channel and to the DIPAC remote release site at Limestone Inlet contributed a major portion of the catch but quantitative contribution estimates are not available. The summer chum salmon catch of 424,574 fish was the highest on record. As in recent years,

mesh size restrictions (minimum 6 inches) were employed during portions of the fishery openings in Section 11-B south of Circle Point (Subdistrict 111-31). This allowed harvest of hatchery chum salmon from the Limestone Inlet remote releases while limiting harvest rates on wild Snettisham sockeye salmon stocks.

The catch of 4,785 fall chum salmon (i.e., chum salmon caught after SW33) was 36% of the 1989-1998 average of 13,274 fish (Appendix D.1). Fall chum salmon caught in District 111 are wild fish from the Taku and Whiting Rivers.

The District 111 pink salmon harvest of 59,316 fish was 42% of the 1989 to 1998 average of 141,150 fish. Pink salmon were very small in size in 1999 and few were susceptible to harvest in the gillnet fishery. Runs of pink salmon to all streams in the district, including the Taku River, were very good; marine survivals for the 1997 brood year of pink salmon in Southeast Alaska were extraordinary. Approximately 74% of the District 111 pink salmon catch was made in Taku Inlet, and 26% in Stephens Passage (Subdistricts 111-31 and 111-20).

Coho salmon stocks harvested in District 111 include runs to the Taku River, Port Snettisham, Stephens Passage, and local Juneau area streams as well as Alaska hatchery fish. The coho salmon catch of 17,273 fish was 21% of the 1989-1998 average of 82,196 fish (Appendix D.1). Coho salmon catches were well below average during each week of the summer fishing season. Coho salmon catches and CPUE remained below average during the fall fishing season as well. Alaskan hatchery coho salmon contributed 1,307 fish or 8% of the District 111 harvest, down significantly from previous years, although runs to local Alaska hatcheries were good to excellent (Appendix C.1). The local hatchery operator reported a significant reduction in the average weight of the 1999 adult coho salmon broodstock relative to previous years. Commercial fishers also reported encountering smaller sized fish in the fishery, which may have lowered the harvest rate for coho salmon in the fishery. The fall fishing season in District 111 lasted nine weeks, until October 13, the latest date this fishery has ever remained open. Three days of fishing time was allowed in Taku Inlet the first week of the fall season, and two days fishing each in the next four weeks (August 22 – September 18). This course of action was taken to conserve both Taku coho and fall chum salmon stocks. When the fall coho salmon mark-recapture program indicated the escapement goal would likely be met, fishing time was increased to four days each in both SW39 and SW40, and three days fishing time each in SW41 and SW42.

The District 111 drift gillnet fishery was open for a total of 59 days from June 20 through October 13, 1999 (Figure 7). Fishing time was 25% above the 1989-1998 average. Fishing effort, as measured by the total number of boats delivering fish each week times the number of days open to fishing, totaled 2,841 boat-days, and was 80% of the 1989-1998 average. However, actual on the grounds fishing effort was less as the result of several factors. In weeks with five days of fishing time, many fishermen left the grounds early, not fishing the full five days. Also, there were two weeks in the summer fishery for which fishing effort was impacted from actions taken by a major fish buyer. Tenders stopped buying fish and left the grounds early on the morning of July 15 (SW29) because their plant had reached processing capacity. Additionally, strict catch limits for chum salmon were imposed on the majority of the fleet in statistical week 31. Both of these actions effectively limited fishing effort in those weeks.

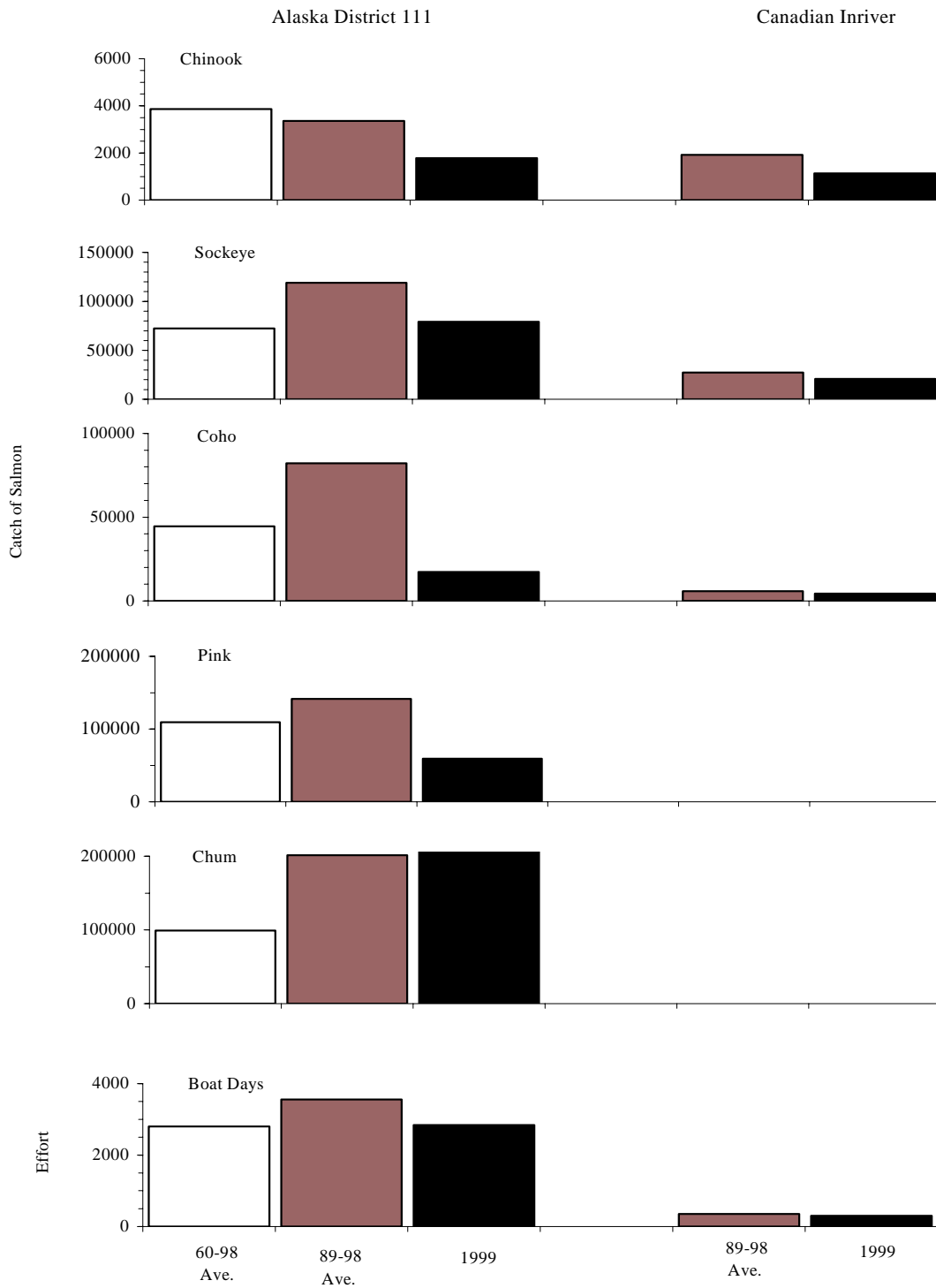


Figure 6. Average catches and fishing efforts compared with 1999 values for the Alaska District 111 commercial fishery and the Canadian commercial fishery in the Taku River.

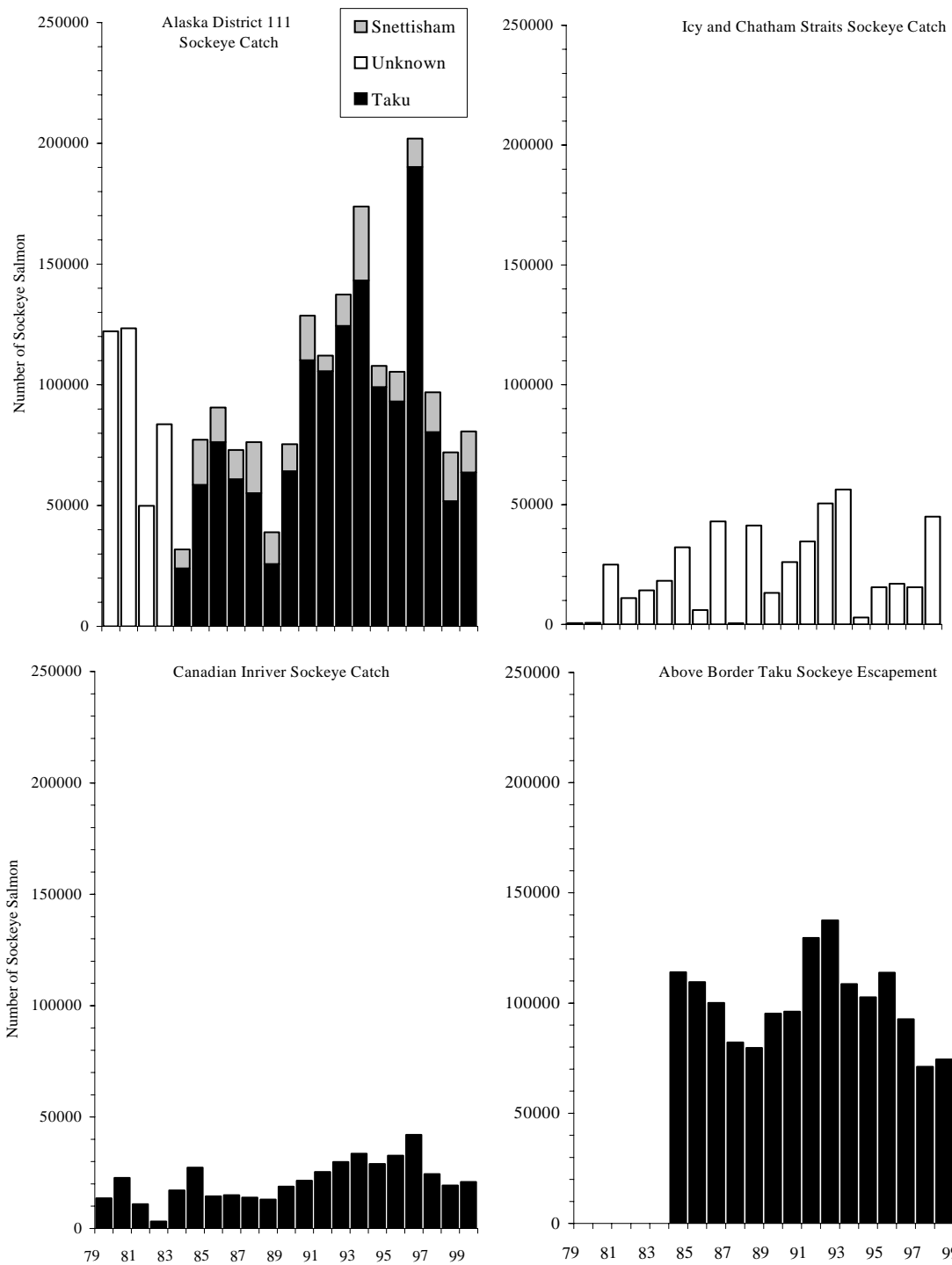


Figure 7. Sockeye salmon catches for the Alaska District 111, the Icy and Chatham Straits, the combined Canadian commercial and food fisheries in the Taku River, and Taku sockeye salmon escapement, 1979-1999.

Three days fishing time was allowed in Taku Inlet during each of the first two weeks of the season. The catch in the first week was above average, but fell below average in the following weeks. Fishing time was increased to four and five days per week in Taku Inlet during the period July 4-August 7 because mark-recapture estimates of inriver run size were increasing rapidly and a substantial U.S. TAC developed (Table 3). Fishing time during the final week of the summer fishing season (SW33: August 8-14) was limited to three days in order to increase passage of later-migrating Taku sockeye salmon stocks. Fishing time in Stephens Passage south of Circle Point (Subdistrict 111-31) was the same as in Taku Inlet (111-32) during the summer fishing season. Lower Stephens Passage (Subdistrict 111-20) was open to fishing for 10 days between August 8 and August 31 to allow harvest of surplus pink salmon.

Table 3. U.S. inseason forecasts of total run size, inriver run size, TAC, and U.S. harvest of Taku River sockeye salmon for 1999.

Stat. Week	Total Run	Inriver Run	Total TAC	U.S. TAC ^a	Projected U.S.
26	135,032	49,566	60,032	49,226	85,466
27	251,948	173,771	176,948	145,097	78,177
28	229,292	158,666	154,292	126,519	69,126
29	208,350	150,192	133,350	109,347	56,658
30	199,426	138,493	124,426	102,029	59,433
31	192,375	132,581	117,375	96,247	58,294
32	183,015	123,118	108,015	88,572	58,397
33	182,491	123,326	107,491	88,143	57,665
Postseaso	183,885	119,304	117,885	96,665	64,581

^a Inseason U.S. TAC calculated as 82% of the total TAC.

Port Snettisham was closed to fishing through August 28 to limit harvest rates on Crescent and Speel Lake wild sockeye salmon runs. Portions of Port Snettisham were opened each week beginning August 29. Although contributions of wild Snettisham sockeye salmon stocks to the harvest were unknown during the fishery, good escapements were apparent. A total of 10,277 sockeye salmon were counted through a weir DIPAC operated on the outlet stream to Speel Lake (Appendix D.10). The escapement to Crescent Lake was not enumerated through a weir, but a peak aerial survey count of 3,750 sockeye salmon and on-the-grounds observations during sampling trips indicated escapement was adequate and important spawning grounds appeared well seeded.

Several other fisheries in the Juneau area harvested transboundary Taku River stocks in 1999. Personal use permits were used to harvest Taku River fish with estimated catches of 22 Chinook, 1,254 sockeye, 44 coho, 105 pink, and 3 chum salmon (Appendix D.4). The spring Juneau-area sport fishery harvested an estimated 2,931 large Chinook (28 inches or longer) and 102 small Chinook salmon. Of the large fish, 2,161 (74%) were wild mature, 46 (2%) were wild immature and 724 (25%) were hatchery fish (CWT 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 Hawk Inlet shoreline purse seine fishery north of Point Marsden in Chatham Strait was opened

for two days during July this year due to strong runs of early migrating pink salmon to the Juneau area. The fishery was open for 10 hours on July 18 and 15 hours on July 21, harvesting 597,700 pink, 46,400 chum, and 5,900 sockeye salmon. The fishery is limited to a harvest cap of 15,000 sockeye salmon during July.

CANADIAN FISHERIES

Taku River commercial fishers harvested 908 large Chinook, 257 jack Chinook (fish less than 2.3 kg), 20,681 sockeye, and 4,416 coho salmon, and 81 steelhead trout in 1999 (Appendix C.4). Catches of all species were below average. The sockeye salmon catch was 76% of the 1989-1998 average of 27,351 fish. Sockeye salmon originating from fry plants contributed 297 fish to the catch, comprising 1.4% of the total sockeye salmon harvest (Appendices C.5, C.6, D.6). The catch was comprised of an estimated 8,044 Kuthai, 6,485 Trapper, 2,992 Mainstem, and 3,160 Tatsamenie fish. The catch of coho salmon was 77% of the average of 5,748 fish. The catch of large Chinook salmon was 53% of the average of 1,721 large fish; however, the 257 jack Chinook salmon harvest was 28% above average (Appendix D.5). A total of 34 days was fished, 81% of the average of 42 days, and the seasonal fishing effort of 300 boat-days was 85% of the average of 354 boat-days. 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 150 mm through July 12 to minimize the incidental catch of Chinook salmon. In addition to the gillnets, one fish wheel was in operation.

In addition to the commercial catches, 50 Chinook and 382 sockeye and 471 coho salmon were harvested in the aboriginal fishery in 1999. The 1989-1998 average catches in the Taku aboriginal fishery have included 57 Chinook, 204 sockeye, 76 coho, 1 chum and 2 steelhead salmon (Appendix D.7). There was no creel census on the Nakina River in 1999

Two test fisheries were in operation in 1999: one, which operated late May through mid-June to sample for tagged Chinook salmon; and the other, which operated after week 37 (September 11) to sample for tagged coho salmon. Total test fishery catches included 577 large Chinook, 2 Chinook jacks, 88 sockeye, 688 coho, and 48 steelhead salmon (Appendix C.7 and D.8).

The Canadian preseason forecast was for a run of approximately 202,900 sockeye salmon, which was the average of a sibling-based forecast of 158,700 sockeye salmon and a forecast of 247,000 fish based on stock-recruitment data. The point estimate was 17% below the 1989-1998 average run size of approximately 245,600 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. For coho salmon, the preseason outlook was for a below average run due to anticipated below average marine survival.

The commercial fishery commenced at noon on Sunday, June 20 (statistical week 26) for a scheduled opening of two days. The commercial sockeye salmon CPUE was 52% below average and the fishery closed after 48 hours.

Over the next two weeks, i.e. weeks 27 and 28, the commercial fishery CPUE increased dramatically establishing weekly record values; the CPUE in week 28 (July 04-07) of 168 sockeye/fisher/day became the peak value of the 1999 season. Canyon Island fish wheel catches of sockeye salmon had also reached above average levels during the same time and the peak daily catch of the season occurred on July 05, 235 sockeye salmon - a record high catch for this

date. The increased sockeye salmon abundance resulted in 24 hours extensions to the weekly commercial fishing periods in each of these weeks, which initially had opened for two days. The cumulative commercial catch through week 28 was 10,700 sockeye salmon, slightly above the inseason guideline harvest of 9,700 fish for this time (Table 4). Total escapement projections generated at the end of week 28 based on the joint Canada/US Taku mark-recapture program, ranged upward from 140,000 fish, well above the target of 71,000 to 80,000 sockeye salmon.

A precipitous decline in sockeye salmon abundance was noticeable in both the inriver commercial fishery and the Canyon Island fish wheels in week 29. The commercial sockeye salmon CPUE dropped to 31 sockeye/fisher/day, less than one third the 10-year weekly average value of approximately 97 sockeye/fisher/day, and the Canyon Island fish wheel catches remained well below long term daily averages for most of the week. In response, the fishery opening was kept to two days. The low inriver sockeye salmon catches resulted in a decrease in the escapement forecast, which dropped to approximately 116,000 fish and the total run forecast fell below 200,000 sockeye salmon (Table 4).

Table 4. Canadian inseason forecasts of total run size, total allowable catch (TAC), and spawning escapement of Taku sockeye salmon, 1999.

Stat.				Canada	Inseason	Actual
Week	Total Run	TAC	Escapement	TAC	Guideline	Catch
25	202,900	127,900	75,000	23,022	859	0
26	202,900	127,900	75,000	23,022	2,234	764
27	202,900	127,900	75,000	23,022	4,410	5,200
28	204,620	129,620	140,152	31,362	9,674	10,742
29	198,487	123,487	115,825	25,393	10,990	11,448
30	215,328	140,328	129,019	31,063	17,754	13,989
31	216,552	141,552	117,345	28,948	20,069	16,369
32	214,862	139,862	115,253	28,226	23,280	17,547
33	198,608	123,608	100,897	22,429	20,578	18,596
34	198,349	123,349	100,677	22,338	21,473	19,211

The fishery in week 30 was initially scheduled for 2 days. However, improved sockeye salmon catches at Canyon Island at the beginning of week 30 (July 18-24) and in the commercial fishery resulted in a 24-hour extension. Over this period, the commercial sockeye salmon CPUE increased to approximately 75 sockeye/boat/day, but it was still 37% below average. After July 19, the daily fish wheel catches at Canyon Island slipped to below average values. However, run and escapement projections increased to 215,000 and 129,000 sockeye salmon, respectively (Table 4).

Fishing performance remained relatively unchanged in week 31 but noticeably declined thereafter. Forecasts of total run ranged from 216,600 fish in week 31 down to 198,300 fish in week 34, the final inseason projection. Escapement projections decreased from 117,300 fish in week 31 to 100,700 fish in week 34. Through week 31, the cumulative commercial sockeye salmon catch was 16,400 fish compared to the inseason guideline of 20,100 sockeye salmon. Fishing time remained at 3 days per week through the end of August and despite decreased weekly fishing effort, fishing time was not increased to make up on the catch shortfall because of conservation concerns, particularly for Tatsamenie sockeye salmon stock. This concern arose

from the extended fishery in District 111, which was open for 5 days in each of weeks 31 and 32, at a time when historically, Tatsamenie stocks have been vulnerable in this fishery.

The cumulative commercial sockeye salmon CPUE over the season totaled 725 sockeye/fisher/day, 15% below the previous 10-year average of 854 sockeye/fisher/day. Run timing appeared to be normal in 1999 although it had an uncharacteristic early peak, which occurred over weeks 27 and 28. Normally the sockeye salmon run does not peak until week 30, the third week in July.

According to the postseason run estimate of approximately 183,885 sockeye salmon, the Canadian catch (excluding test fishery catches) of 21,063 fish represented approximately 19% to 20% of the TAC (Table 5).

After week 34, i.e. the third week in August, management attention shifted to coho salmon and to forecasts of the inriver run into Canada. Through week 35, the week ending August 28, the weekly CPUE in the commercial fishery was consistently below average and inriver run projections assuming the run was on time or one week late, ranged up to 47,000 coho salmon. According to the new harvest sharing arrangements, this meant that the Canadian quota after week 33 was 3,000 coho salmon. Heading into week 36, it was anticipated the quota would be taken this week and this would be the last week of fishing for the season. The fishery in week 36 was extended to four days bringing the cumulative catch from week 34 through week 36 to 3,425 coho salmon. However, the run strength increased significantly in week 36 and the forecast increased to 54,000 fish by week's end. With the forecast in the 50-60,000 fish range, additional fishing was justified since the quota had jumped to the next level, i.e. 5,000 coho salmon.

A two-day opening was posted for week 37 but fishing effort consisted of only one fisher; other fishers had left immediately following the previous week's opening. The run forecast decreased in week 37 to below 50,000 coho salmon, which resulted in the closure of the fishery in week 38. Although subsequent inriver run forecasts increased after week 37 resulting in increased quotas, the fishery had been vacated and the logistics of fishers re-mobilizing and going back into the fishery were considered too onerous to be economical.

The total season coho salmon catch was 4,416 fish, 24% below the previous 10-year average of 5,748 coho salmon and the cumulative coho salmon CPUE through week 37 was 19% above the previous 10-year average. Run timing appeared to be one to two weeks late. The strength of the early part of the run, through week 35, appeared to be below average, whereas, after the end of August, run strength appeared to be above average.

ESCAPEMENT

Sockeye

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. A sockeye salmon enumeration program was again conducted at Kuthai Lake by the TRTFN in 1999.

A mark-recapture program has been operated annually from 1984 to 1999 to estimate the above-border inriver run size (Appendices C.8, D.9). Spawning escapement is then estimated by subtracting the inriver catch. The 1999 estimate of border run is 119,304 sockeye salmon and the spawning escapement is estimated at 98,153 fish (Table 5). This spawning escapement is 96% of

the 1989-1998 average of 102,147 fish (Appendix D.9), and is above the interim escapement goal range of 71,000 to 80,000 sockeye salmon.

The escapement through the Little Trapper Lake weir was 11,805 sockeye salmon, 99% of the 1989-1998 average weir count of 11,888 fish (Appendices C.10, 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 1999 was 2,104 sockeye salmon (Appendices C9, D.10). To be comparable with earlier spawning estimates, it has been 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 appears to be high, the upper Tatsamenie estimate was expanded by 1/0.8 rather than 1/0.6. The resulting escapement to the entire Tatsamenie system in 1999 is estimated at 2,630 fish. A total of 216 sockeye salmon was taken for broodstock leaving a spawning escapement of 1,888 sockeye salmon for 1999. The sockeye salmon count through the Kuthai Lake weir was 10,042 fish, the highest count on record and 247% of the 1992-1998 average count of 4,061 sockeye salmon (Appendices C. 11, D.10). The Nahlin weir was not operated in 1999.

Chinook

Aerial surveys of large Chinook salmon (three-ocean and larger) to the six escapement index areas annually surveyed by ADF&G were as follows: Nakina, 1,900 fish; Kowatua, 561 fish; Tatsatua, 431 fish; Dudidontu, 527 fish; Tseta, 221 fish; and Nahlin, 532 fish (Appendix D.11, Figure 9). The total of 4,172 large Chinook salmon observed was the lowest recorded since 1984 and was 36% of the 1989-1998 average. The expanded estimate of escapement of 20,545 fish is below the revised escapement goal range of 30,000 to 50,000 large Chinook salmon.

A Chinook salmon mark-recapture study was again conducted in 1999. The above-border run was estimated to be 28,045 fish. A test-fishery was conducted to complement spawning ground tag recovery data.

A carcass weir was again operated on the Nakina River to obtain tag and age-length-sex data on Chinook salmon (Appendix C.12). Only 180 Chinook salmon were observed at the weir – this represents the poorest carcass recovery on record. The Nahlin River weir was not installed in 1999 due to concerns that it impedes Chinook salmon migration.

Coho

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 recovery occurred through the early part of statistical week 41 (October 3 to October 10). The above-border run was estimated to be 66,419 fish and the spawning escapement was estimated at 60,768 fish (Appendices C.8, D.12). The spawning escapement is 87% of the 1987-1998 average of 70,226 coho salmon; it exceeded the minimum escapement goal of 38,000 fish. Escapement

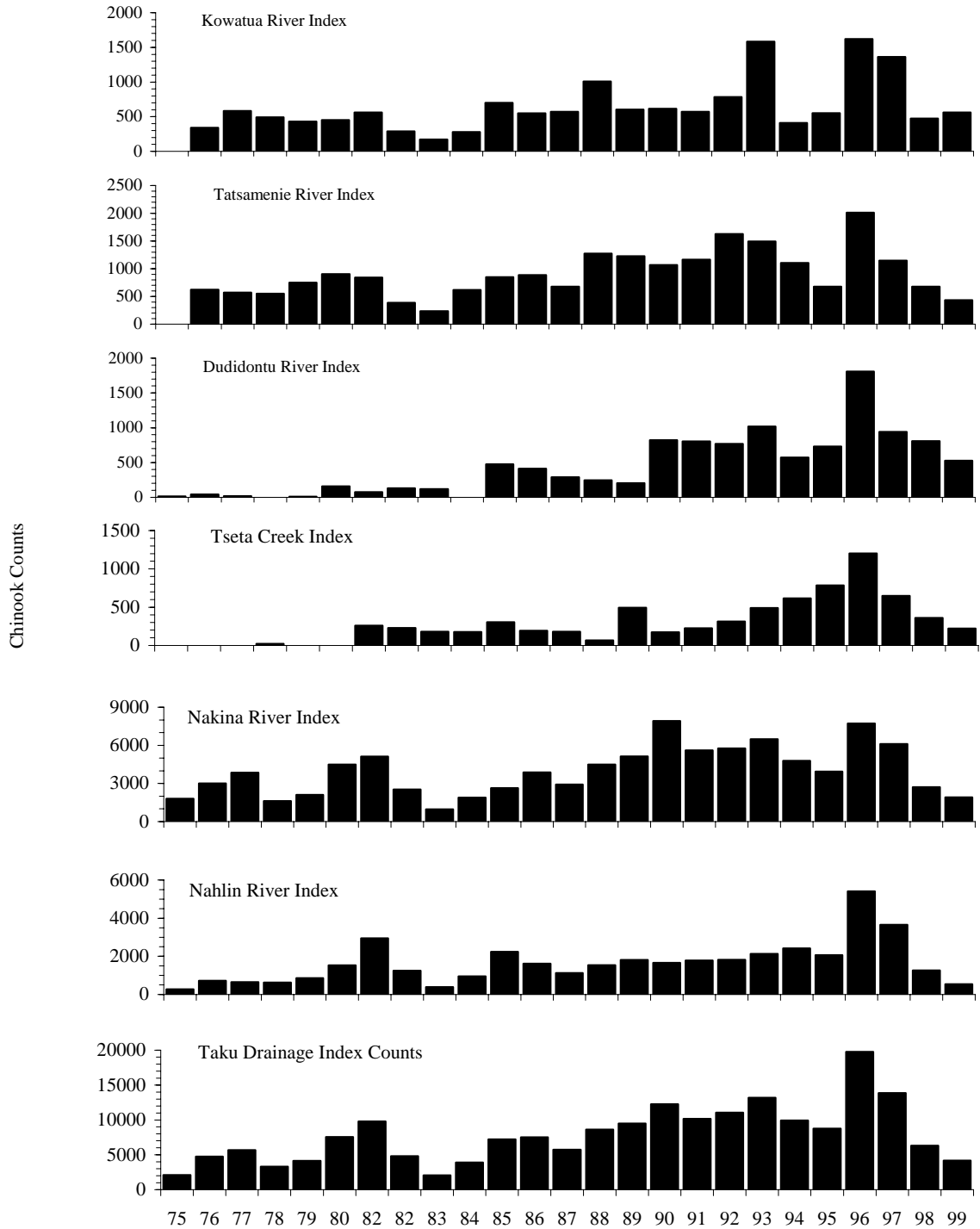


Figure 8. Taku River Chinook index escapement counts, 1975-1999.

counts to other Taku spawning locations were limited in 1999 with Yehring Creek above average and Fish Creek below average (Appendix D.13).

Pink

There was no program in place to estimate the escapement of pink salmon to the Taku River in 1999. A total of 23,503 pink salmon was captured in the Canyon Island fish wheels in 1999 which is 49% above the 1989-1998 average of 15,768 fish (Appendix D.14).

Chum

There was no program in place to estimate the system-wide escapement of chum salmon. Low catch and information from the Canyon Island fish wheels indicated that there was a below average chum salmon run in 1999. A total of 164 chum salmon was captured in the fish wheels, 35% of the 1989-1998 average of 463 fish and the second lowest on record (Appendix D.14).

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

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 RUN RECONSTRUCTION

The postseason estimate of 62,713 wild Taku River sockeye salmon in the District 111 fishery (Table 5) was made from SPA and otolith analysis. The estimate of 247 planted Trapper Lake and 367 planted Tatsamenie Lake sockeye salmon the District 111 catch was based on expansion of otolith marked fish recovered in the District 111 fishery. The U.S. inriver personal use fishery harvested 1,254 sockeye salmon. The estimated total U.S. harvest of Taku River sockeye salmon is 64,581 fish (Table 5).

The estimate of the magnitude of the above-border sockeye salmon run in 1999, based on the joint Canada/U.S. mark-recapture program, was 119,304 fish. Subtracting the Canadian inriver catch of 21,063 sockeye salmon in the commercial, aboriginal and test fisheries, from the above-border run estimate results in an above-border escapement estimate of 98,153 fish.

The run size estimate, determined by summing the estimated U.S. District 111 and inriver harvest and the above-border run, was 183,885 sockeye salmon, which was 78% of the 1989-1998 average run size of 236,017 fish (Appendix D.9). Based on the escapement goal range of 71,000 to 80,000 fish, the TAC was 103,885 to 112,885 sockeye salmon, of which the U.S. harvested 57% to 62% and Canada harvested 19% to 20% (Table 5). The overall exploitation rate, not including test fishery catches was estimated to be 46% in 1999.

Table 5. Taku sockeye salmon run reconstruction, 1999. Estimates do not include spawning escapements below the U.S./Canada border.

	Taku	Snettisham Stocks
Escapement	98,153	Not Available
Canadian Harvest		
Commercial	20,681	
Wild	20,384	
Planted	297	
Food Fishery	382	
Total	21,063	
% Harvest	24.6%	
Test Fishery Catch	88	
Above Border Run	119,304	
U.S. Harvest ^a		
District 111	63,327	
Wild	62,713	5,693
Planted	614	10,405
Personal Use	1,254	
Total	64,581	
% Harvest	75.4%	
Test Fishery Catch	0	
Total Run ^b	183,885	
Taku Harvest Plan	Minimum	Maximum
Escapement Goal	71,000	80,000
TAC	112,885	103,885
Canadian portion	18.7%	20.3%
U.S. Portion	57.2%	62.2%

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

^b Data are preliminary.

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 & MANAGEMENT OBJECTIVES

Although catch sharing of Alsek salmon stocks between Canada and the U.S. has not yet been specified, Annex IV does call for the development and implementation of cooperative abundance-based management plans and programs for Alsek Chinook, sockeye and coho salmon. Interim escapement goal ranges for Alsek sockeye and coho salmon were initially set by the TTC at 33,000 to 58,000 sockeye salmon, and 5,400 to 25,000 coho salmon. However, stock assessment projects to determine system-wide escapements have not yet been developed. Instead, the principle escapement-monitoring tool for Chinook, sockeye, and coho salmon stocks on the Alsek River is the Klukshu weir, operated by DFO and the Champagne-Aishihik First Nation. The weir has been in operation since 1976. To make the management objectives of Chinook and sockeye salmon better defined in terms of Klukshu stocks, revised goals, expressed in terms of Klukshu stocks only, were tentatively established for 1999.

The initiative to establish a specific Klukshu Chinook spawning goal began in 1991 when the TTC set an interim spawning objective of 4,700 Klukshu Chinook salmon. This goal was based more on manager's intuition than on science. From 1995 through 1997, the TTC reviewed this escapement level and concluded that goal of 4,700 Chinook salmon was not supported by the data. A new goal range of 1,100 to 2,300 fish was proposed based on joint analyses of stock-recruitment data. The Parties conducted independent internal reviews of the analyses. Although there was not unanimous support for the proposal, there was agreement on establishing a minimum goal consistent with the lower end of the proposed range. As a result, Canadian and U.S. managers agreed to a minimum spawning escapement goal of 1,100 Chinook salmon for the Klukshu system for the 1999 season.

The stock-recruitment analyses of Klukshu sockeye salmon data have not yet been completed nor has it undergone internal peer review. The analysis is following the same general methodology as was used for the Chinook salmon data. Analyses conducted by the TTC prior to the 1999 season resulted in establishing the following interim management objectives for 1999: a) a minimum escapement goal of 9,500 for the total Klukshu sockeye salmon run; and b) a minimum escapement goal of 1,500 for the early-run fish. These targets were to be considered interim only and subject to further revision upon completion of the analyses and peer review.

PRESEASON FORECASTS

The overall sockeye salmon run to the Klukshu River in 1999 was expected to be average in strength. The principal contributing brood years were 1994 (escapement of 13,892 sockeye salmon) and 1995 (escapement of 19,817 sockeye salmon); the 1989-98 average escapement was 16,356

fish. The range of escapements that appear most likely to produce maximum sustained yields is

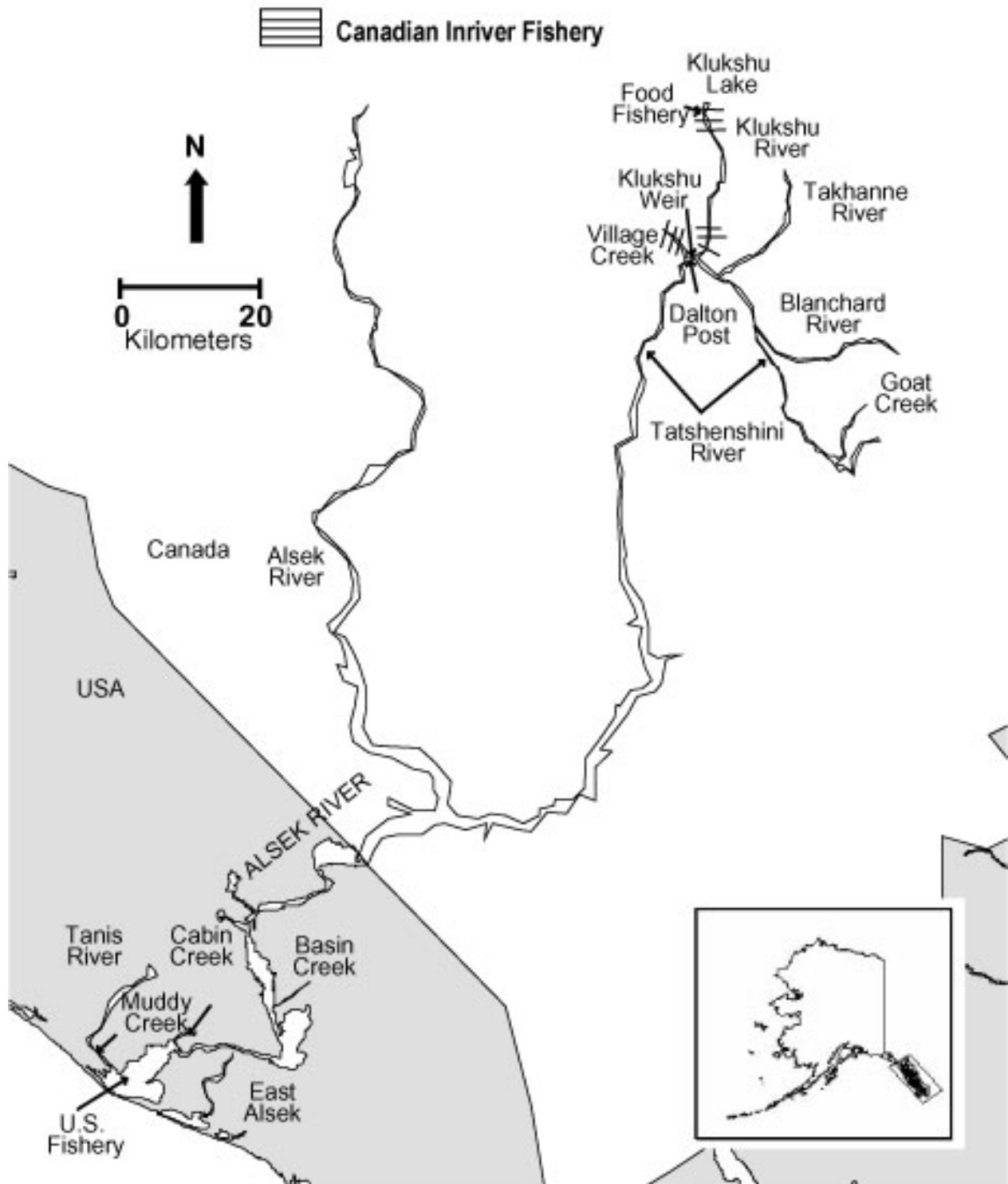


Figure 9. The Alsek River and principal U.S. and Canadian fishing areas.

7,500 to 15,000 sockeye salmon based on historical stock-recruitment analyses. The 1999 overall Klukshu run was expected to be approximately 24,600 sockeye salmon based on the overall historical stock - recruitment relationship, similar to the 1989-1998 average (i.e., 24,600 fish). The early run escapements in 1994 and 1995 were 3,000 and 2,300 fish, respectively. Both years were above average and were close to the optimum level of 2,500 sockeye salmon spawners as determined through separate stock-recruitment analyses by DFO of the early run. Because of this, it was expected the early run component would be above average in strength. As a cautionary note, it was acknowledged the 1998 sockeye salmon run was much lower than expected, likely as a result of poor marine conditions. It was pointed out that it was reasonable to assume that these conditions could prevail and a similar run shortfall could occur in 1999.

The Klukshu Chinook salmon escapements in 1994 and 1995, 3,600 and 5,400 Chinook salmon, respectively, were above average with the 1995 escapement being the highest on record. However, the escapements were above the optimum escapement range of 1,100 to 2,300 fish as determined from current stock-recruitment analysis. As a result, the preliminary outlook was for a below average run.

The coho salmon escapements observed at the Klukshu River in 1995 (3,600 fish) and 1996 (3,500 fish) suggested the run in 1999 would be average to above average. The 1989-1998 average weir count for Klukshu coho salmon of 2,355 fish is an index count because unknown numbers of fish migrate up the Klukshu after the weir is dismantled for the season.

U.S. FISHERIES

The Dry Bay commercial set gillnet fishery harvested 511 Chinook, 11,441 sockeye, 5,660 coho, and 112 chum salmon (Appendix E.1, Figure 11). The fishery was open for 44 days, 94% of the 1989-1998 average (Appendix E.4). The number of days actually fished, however, was only 37 because no fishing occurred after the Dry Bay buying station closed down in week 40. The majority of fishing time (28 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 330 boat-days, 67% of the 1989-1998 average. The estimate of subsistence harvests included 44 Chinook, 152 sockeye, and 21 coho salmon (Appendix E.5).

The Alsek River was opened to commercial fishing during statistical week 24, the first Monday in June (June 7). The initial opening was limited to 24 hours in order to evaluate Chinook and sockeye salmon run strengths. Fishery performance indicated that the sockeye salmon harvest was below expected levels and fishing time was not extended. CPUE continued below average during the next two weeks of the season (statistical weeks 25 and 26) and fishing time was again limited to 24 hours. Fishing time was increased to 72 hours during statistical week 27 because CPUE improved to well above average. During the following week CPUE dropped to just below average and fishing time was reduced to 48 hours. Fishing time was limited to 24 hours during each of the next four weeks due to below average CPUE. In

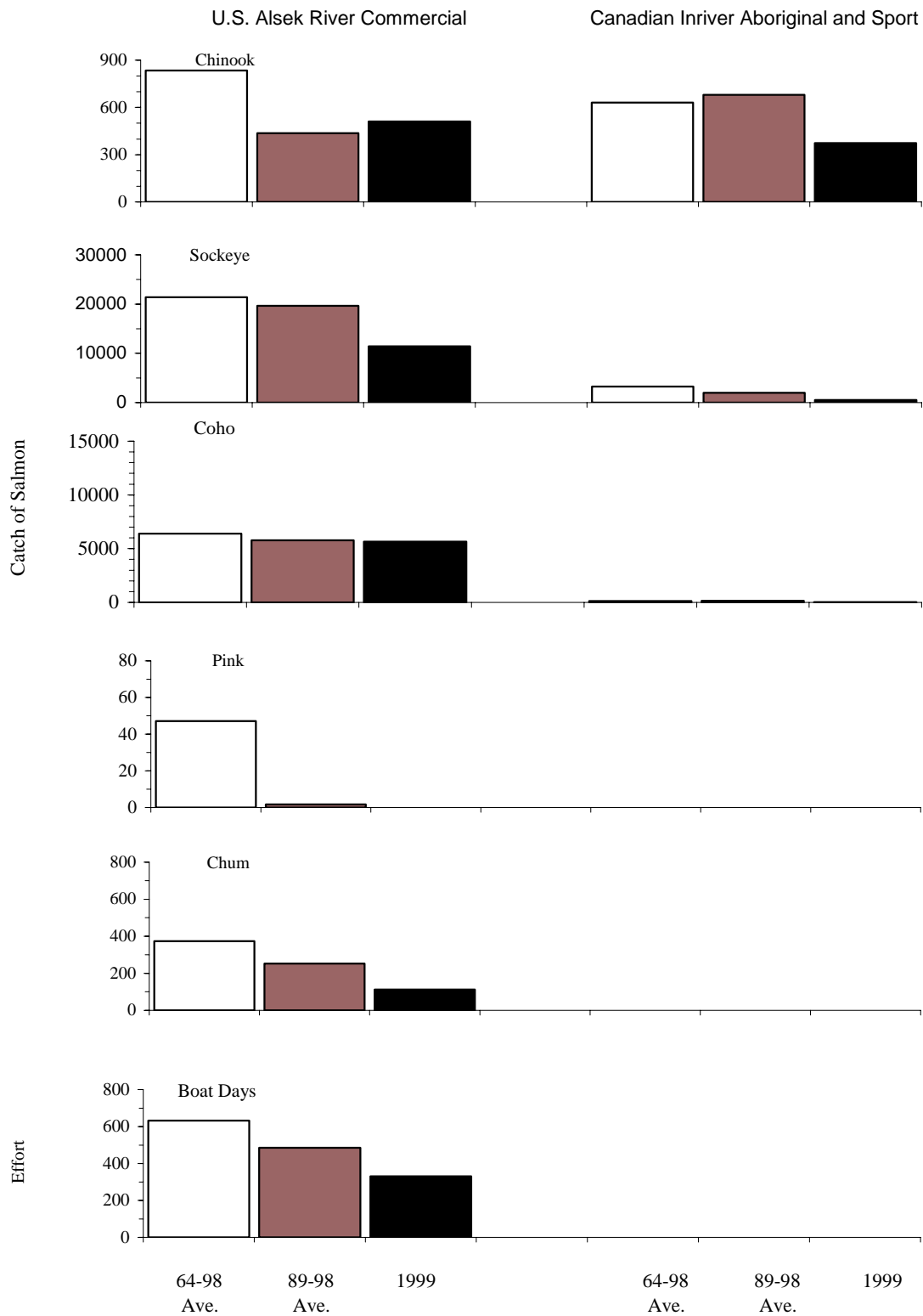


Figure 10. Average catches and fishing efforts compared with 1999 values for the Alaska Alsek River commercial fishery and the Canadian aboriginal and sport fisheries in the Alsek River.

early August, during statistical weeks 33 and 34, fishing was limited to 48 hours in spite of CPUE levels two to three times average because Klukshu weir counts of sockeye salmon were below average.

The coho salmon harvest of 5,660 fish was 98% of the 1989-1998 average. Escapement of coho salmon at the Klukshu weir was well above average early in the season and fishing periods ranged from 2 to 4 days during weeks 35 through 40. No fishing occurred during the weeks 41 and 42 due to the closure of processing plant in Dry Bay.

Historically, a set gillnet fishery targeting on Chinook salmon was conducted during May and early-June. Due to depressed runs, the directed fishery has been closed since 1963 and Chinook salmon have only been harvested incidentally during the sockeye salmon fishery in early June. From 1963 through 1997, the early June periods were limited in time in order to reduce the impact on Chinook salmon. With the advent of the new Chinook salmon escapement goal concern for incidentally caught Chinook salmon has diminished so the management of the early June periods was based on sockeye salmon CPUE. Gillnet mesh size was restricted to a maximum of six inches through July 1. The Chinook salmon harvest of 511 fish was about 16% above the 1989-1998 average (Appendix E.1 and E.4). Approximately 90% of the Chinook salmon catch (459 fish), was taken during the first three weeks of the season.

The Alsek sockeye salmon harvest of 11,441 fish was 58% of the 1989-1998 average (Appendix E.1 and E.4). The majority of the harvest (94%, 10,723 fish) 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 initially based on catch and CPUE data gathered inseason during that particular period. From week 30 through 35, management was also based on Klukshu weir sockeye salmon counts. The Alsek management model was not used this year as a management tool because of unreliable run estimates produced in recent years.

CANADIAN FISHERIES

The aboriginal fishery harvested an estimated 238 Chinook and 554 sockeye salmon. The catch of Chinook salmon was 81% of the 1989-1998 average of 295 fish. The sockeye salmon catch was the second lowest on record and was 33% of the average of 1,697 fish. Weekly catches and annual comparisons appear in Appendices E.2 and E.6.

Catches in the recreational fishery were also well below average with an estimated 136 Chinook, 1 sockeye, and 20 coho salmon being harvested. Compared to the previous 10-year averages, the Chinook salmon catch was 35% of average, the sockeye salmon catch was the lowest on record and was 0.4% of average, and the coho salmon catch was 14% of average. The low catches were attributed to extensive closures that were implemented due to conservation concerns for sockeye salmon. 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, E.6.

Management of salmon in the Yukon is a shared responsibility between Fisheries and Oceans Canada (DFO) and the Yukon Salmon Committee (YSC). The YSC was established in 1995 pursuant to the Comprehensive Land Claim Umbrella Final Agreement between the Government of Canada, the Council for Yukon Indians and the Government of the Yukon. The Committee is

a public board consisting of ten members, 70% of which are appointed by Yukon First Nations. Two Champagne-Aishihik First Nation (CAFN) members sit on the YSC. Although the Committee currently operates by consensus, the voting

structure of the Committee is organized so that, should a vote be necessary, 50% of the votes reside with appointees of Yukon First Nations.

The 1999 Alesk-Tatshenshini management plan, adopted by CAFN, YSC, and DFO, was based on the objectives described in the *Harvest Regulations & Management Objectives* section above. For Chinook and early sockeye salmon management, the status of the Klukshu weir counts was to be reviewed on or about July 15 to ensure weir and spawning escapement targets were on track. The status of the late sockeye salmon run would be reviewed at the end of August. Adjustments to inseason fishing regimes in the sport and aboriginal fisheries would be made if deemed necessary. Other key elements of the plan are described below.

The center of aboriginal fishing activity in the Alesk 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. The fishing plan for the aboriginal fishery in the Klukshu River for the period prior to August 15 allowed fishing by means of fish traps for 2 days per week. After August 15, it was planned that the traps would be fished 3 days per week. Conservation thresholds that might invoke restrictions in the Aboriginal fishery were projected Klukshu weir counts of <1,100 Chinook and <1,500 early sockeye salmon. Gaff fisheries also exist on Village Creek and in the headwaters of the Tatshenshini River and tributaries thereof (Goat Creek, Stanley Creek, Parton River, and the Blanchard River). The plan did not restrict the gaff fishery other than to reserve Goat Creek, Stanley Creek, and the Parton River for elders only.

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. The management plan prohibited the retention of sockeye salmon in the recreational fishery prior to August 15 unless the weir count projection for the early run was >4,500 sockeye salmon. The Chinook salmon daily catch limit was one fish and the possession limit was 2 Chinook salmon. For other salmon species, the daily catch and possession limits were 2, and 4, respectively. However, the aggregate limit for all salmon combined was 2 salmon per daily, 4 in possession. Sport fishing in the Dalton Post area was initially to be open from 6:00 am Saturday to 12:00 noon Tuesday each week. Headwater areas upstream of the British Columbia/Yukon border were to be closed for the season to protect spawning Chinook salmon. Conservation thresholds that were expected to invoke additional restrictions in the sport fishery were projected Klukshu weir counts of <1,500 Chinook and < 9,500 sockeye salmon (early and late runs combined).

In 1999, the Yukon Salmon Committee introduced a mandatory Yukon Salmon Conservation Catch Card in an attempt to improve harvest estimates and to serve as a statistical base to ascertain the importance of salmon to the Yukon sport fishery. Anglers are required to report their catch via mail by the late fall. Information requested includes: the number, sex, size, date and location of salmon caught and released.

Stock status reviews conducted mid-late July raised conservation concerns for sockeye salmon when projections, based on weir counts to date and historic timing data, suggested that the weir

objectives for sockeye salmon were not likely to be achieved. As a result of these concerns, the non-retention for sockeye salmon in the sport fishery was extended, initially through September 30, and eventually through the entire fishing season. When it appeared the late run was also going to be weak, the sport fishery was closed to all fishing in the Klukshu River and in the Tatshenshini River downstream from the Klukshu River from September 04 through October 20. This action was taken to provide free access to the Klukshu for any remaining sockeye salmon. After October 20, the Klukshu River remained closed, whereas the Tatshenshini was opened to allow an opportunity to fish coho salmon, which appeared to be average to above average in abundance.

CAFN also imposed significant closures in the aboriginal fishery. On September 10 through October 15, fishing in the lower Klukshu River downstream of the weir was closed and the trap fishery near the outlet of Klukshu Lake was also closed. For the third consecutive year, depleted runs and closures in the aboriginal fishery seriously impacted CAFN fishers, resulting in basic needs levels not being achieved.

ESCAPEMENT

It is currently not possible to accurately assess whether the system-wide escapement goals for Alek 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 (Appendices E.3, E.7, Figures 12-14). Current escapement monitoring programs including the Klukshu weir, Village Creek electronic counter, and aerial surveys do, however, allow annual comparisons of escapement indices (Appendices E.8-E.10). The most reliable comparative escapement index for Alek drainage salmon stocks is the Klukshu River weir count. Escapements for 1999 are given in Table 5.

Sockeye

The weir count and escapement of Klukshu River sockeye salmon was 5,381 and 5,010 fish respectively in 1999 (5), and consisted of a below average (1989-1998) count of 371 early-run fish (count through August 15) and a below average count (1989-1998) of 5,010 late-run sockeye salmon. The early-run count was 10% of the average of 3,755 fish, and the late-run count was 37% of the average of 13,661 sockeye salmon (Appendix E.7). Due to major equipment failure with the Village Creek electronic counter, a sockeye salmon escapement estimate is not available in 1999 (Appendix E.8).

Comparative counts for other Alek index tributaries appear in Appendix E.8. A count of 30 sockeye salmon for Basin Creek was 2% of the 1989-1998 average of 1,284 fish, while the count of 800 sockeye salmon in the Tanis River was average compared to 831 fish.

Chinook

The most reliable comparative Chinook salmon escapement index for the Alek drainage is the Klukshu weir count. The Chinook salmon weir and escapement counts in 1999 were 2,193 and 2,168 fish respectively (Table 5), and were a respective 76% and 79% of average (Figure 13, Appendix E.7). The 1999 count achieved the escapement goal range of 1,100 to 2,300 Klukshu Chinook salmon.

Aerial Chinook salmon surveys were again flown in 1999. The count of 194 Chinook salmon in the Takhanne River was 90% of the 1989-1998 average of 216 fish. The Blanchard River and Goat Creek counts of 371 and 51 fish were 94% and 30% above their respective averages (Appendix E.9).

Coho

The preliminary Klukshu weir count and escapements of 2,481 and 2,531 coho salmon were 5% above and 3% below their respective averages of 2,355 and 2,617 fish (Table 5, Appendix E.7, Figure 14). The weir is removed prior to the completion of the coho salmon run and does not include fish that migrate after mid-October.

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 22,600 (Canada) to 36,700 (U.S.) fish and the estimated Alsek sockeye salmon run was on the order of 38,200 (Canada) to 52,300 (U.S.) sockeye salmon. The sockeye salmon escapement estimate falls at the lower range or below the sockeye salmon escapement goal range of from 33,000 (U.S.) to 58,000 (Canada) for the Alsek River.

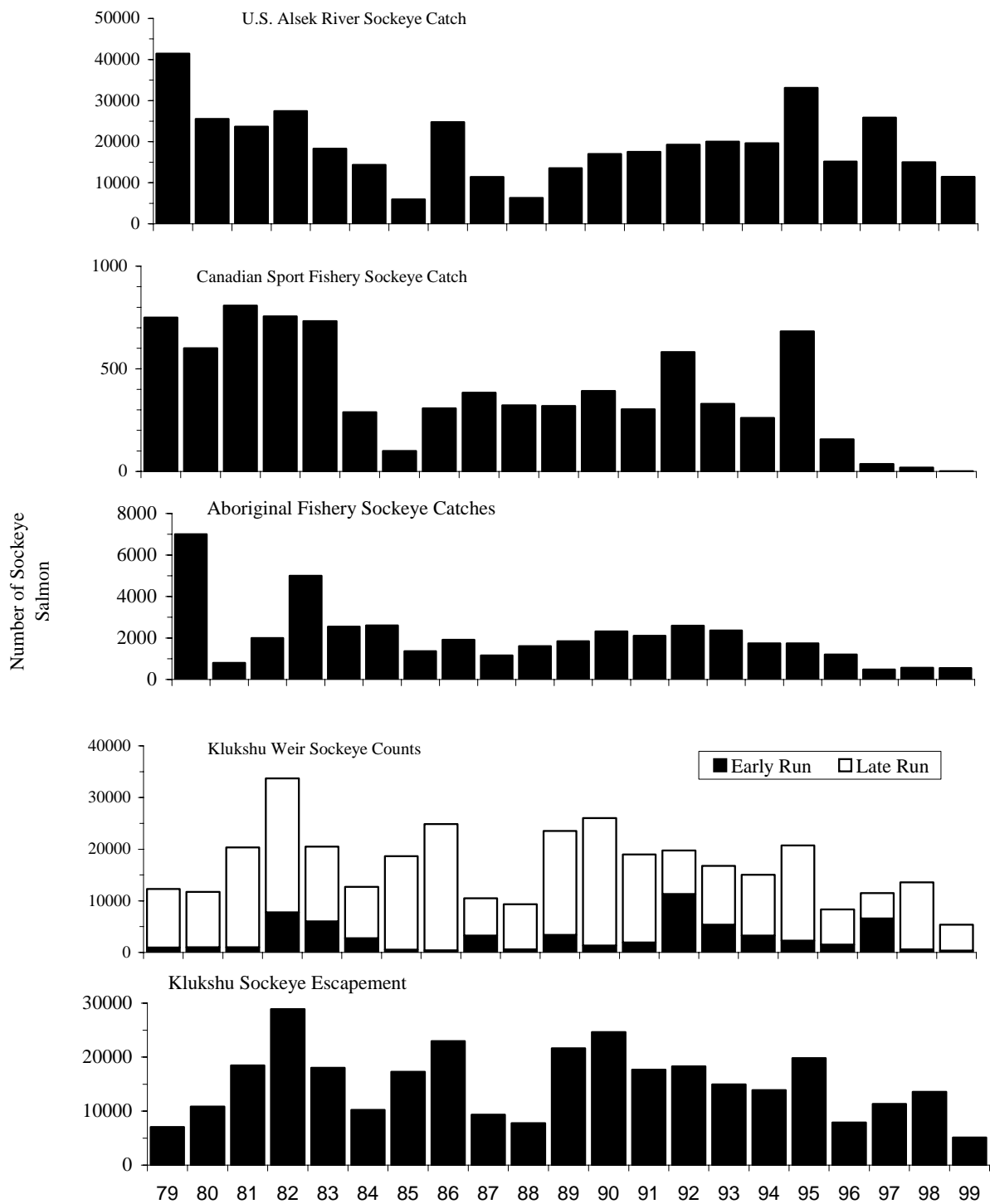


Figure 11. Alek sockeye catches and weir counts, 1979–1999.

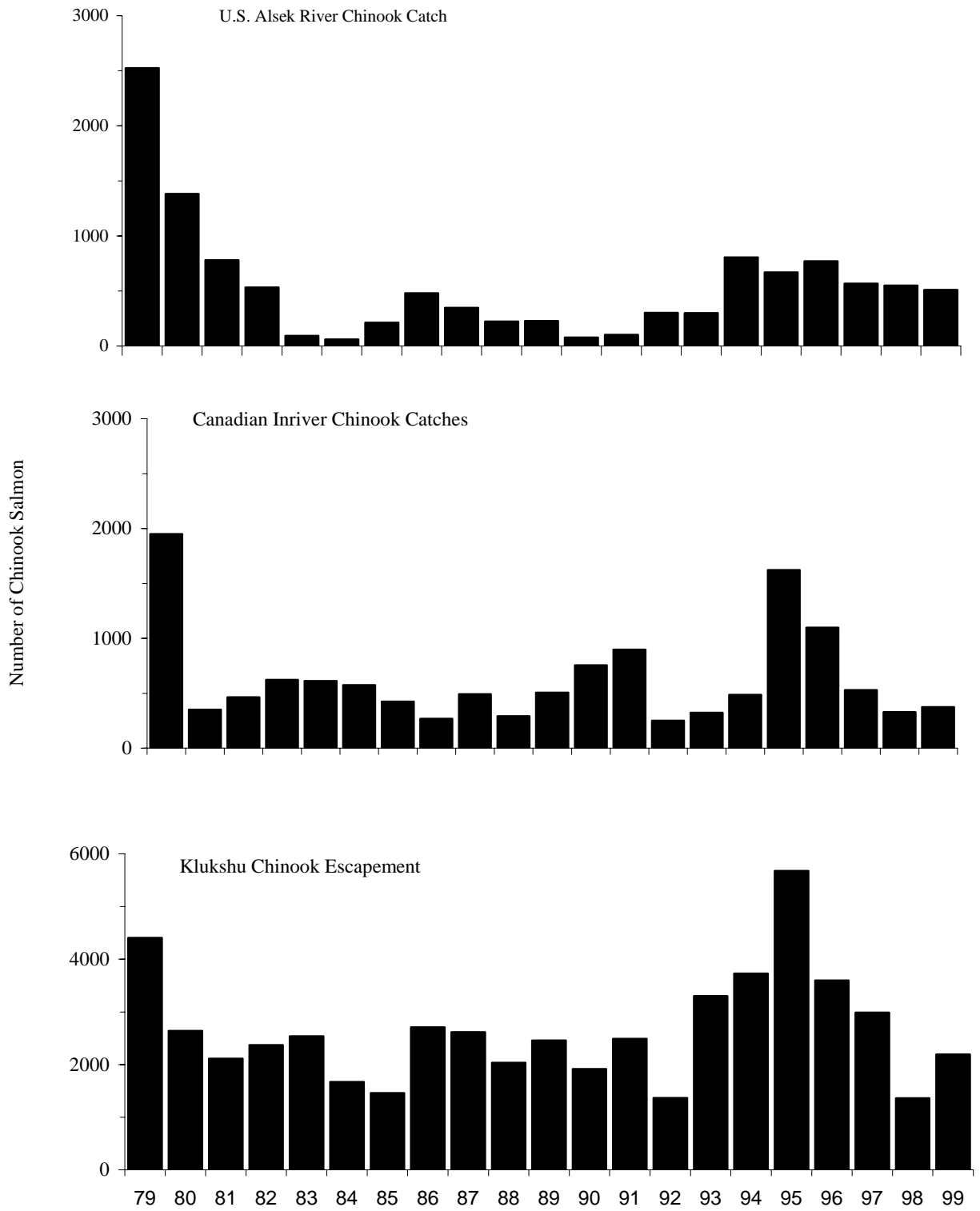


Figure 12. Alsek Chinook catches and weir counts, 1979-1999.

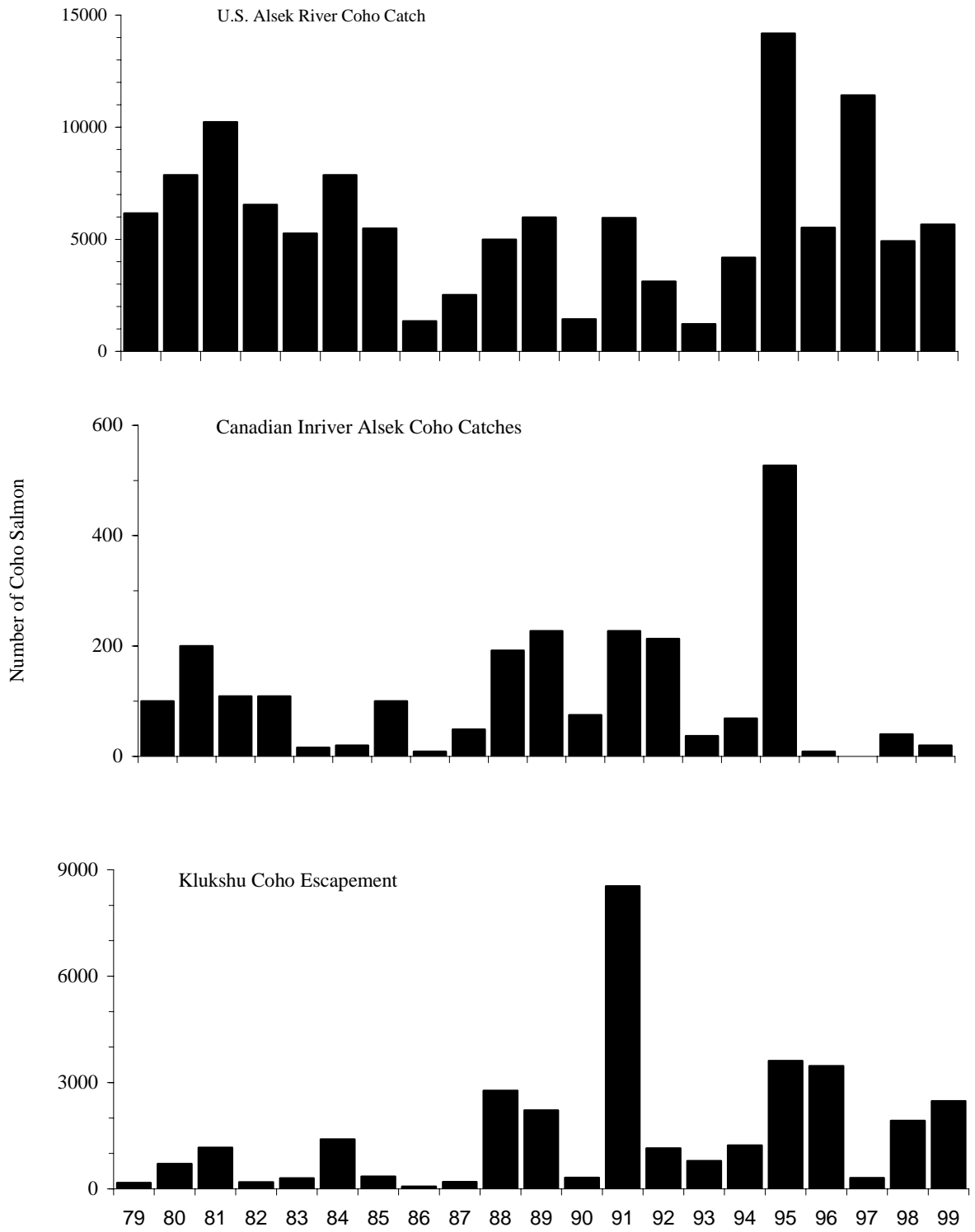


Figure 13. Alsek coho catches and weir counts, 1979-1999.

Table 6. Catch and Klukshu index escapement data for Alesek sockeye, Chinook, and coho salmon for 1999.

	Sockeye	Chinook	Coho
Escapement Index ^a			
Klukshu Weir Count	5,381	2,193	2,481
Klukshu Escapement	5,101	2,168	2,531
Harvest ^b			
U.S. Commercial	11,441	511	5,660
U.S. Subsistence	152	44	21
Canadian Sport	0	192	28
Canadian Aboriginal	554	238	0
Total	12,147	985	5,709

^a Klukshu River salmon stocks represent an assumed large and variable portion of the total Alesek River salmon escapement.

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

ENHANCEMENT ACTIVITIES

EGG COLLECTION

In 1999, sockeye salmon eggs were collected at Tahltan Lake on the Stikine River for the eleventh year, and in the Tatsamenie Lake system on the Taku River, for the tenth 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 fourth consecutive year. Lower than average escapement in 1999 made capture of broodstock relatively difficult in comparison with previous years that had higher escapement levels. An estimated 4,180,000 eggs was collected from 1,442 females (based on an average historical fecundity of 2,900 eggs per female). A similar number of males were taken. The broodstock was collected by beach seine at the major spawning site as has been done in previous years.

Tatsamenie Lake: Target 5.0 million eggs

Egg collection was again contracted to B. Mercer and Associates Ltd. An estimated 496,370 eggs were collected from 116 females (based on a measured fecundity of 4,241 eggs per female). Female sockeye salmon collected for a final egg take were lost when a bear tore a hole in the net pen. A total of 96 males were spawned. The low escapement in 1999 limited the availability of broodstock. The broodstock was captured at an adult enumeration weir that was located at the outlet of Tatsamenie Lake. This was the sixth year that all of the Tatsamenie broodstock was captured at this location. A total of 398 males and 299 females were held prior to September 20. Sixteen females and 159 males were released to ensure the broodstock did not exceed 30% of the escapement.

INCUBATION AND FRY PLANTS (1998 BROOD YEAR)

Incubation of 1998 brood eggs took place at Snettisham Hatchery and the resultant fry were transported to the appropriate systems from May 29 to July 2, 1999. The IHN virus was not detected during the incubation period for the Tahltan and Tatsamenie fry.

Tahltan Lake

An estimated 1,70,000 fry from the 1998 Tahltan sockeye salmon egg take were planted back into Tahltan Lake in 1999 (Table 7). Survival from green-egg to outplanted-fry was 84%. Fry outplanting took place from May 29 through June 2.

Tuya Lake

An estimated 1,600,000 fry from the 1998 Tahltan sockeye salmon egg take were planted into Tuya Lake in 1999 (Table 7). Survival from green-egg to outplanted-fry was 79.2%. Fry outplanting took place from June 21 to July 2.

Tatsamenie Lake

An estimated 1,800,000 fry from the 1998 egg-take were planted into Tatsamenie Lake in 1999 (Table 7). Survival from green-egg to outplanted-fry was 73.3%. Outplanting took place from June 1 through June 9.

Table 7. Summary of sockeye salmon fry releases into Transboundary River Lake systems.

Brood	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
1997	1,900,000	433,000	0	3,597,000
1998	1,670,000	1,603,000	0	1,769,000

OUTPLANT EVALUATION SURVEYS

Acoustic and Trawl, Beach seine and Limnological Sampling

In 1999, 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 Tuya Lake by B. Mercer & Associates Ltd.; acoustic and trawl surveys were conducted at Tatsamenie, Tuya, and Tahltan lakes by B. Mercer & Associates Ltd. 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 cannot be sampled by 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 (rounded to the nearest 100,000) and density estimates and beach seine catches are presented in Table 8. Smolt Enumeration and Sampling

Smolt sampling and enumeration programs were conducted at Tahltan and Tatsamenie lakes. Only sampling was conducted at Tuya Lake. Sampling and enumeration at Tahltan Lake was conducted by DFO, Whitehorse, as part of the continuing smolt program. B. Mercer and Associates, on contract to DFO, performed the work at Tatsamenie and Tuya lakes.

Tahltan Lake

Sampling and enumeration at Tahltan Lake was conducted from May 6 to June 30. A total of 829 smolts were sampled and heads were preserved for thermal mark analysis. An estimated 293,545 smolts originated from the fry planting program. The overall age composition of the smolts captured was 97.6% age 1+ and 2.4% age 2+ based on the scale age analysis (Table 9). Average lengths and weights were 83.4 mm and 106.8 mm, and 4.7g and 9.6g for age 1+ and age 2+ fish, respectively. The Tahltan smolt enumeration program uses a fence and modified inclined plane traps to capture all emigrating smolts. Volumetric displacement techniques are employed to determine the total smolt run size. The 1999 smolt population was estimated to be 762,033 (743,990 age 1+ and 18,043 age 2+).

Tatsamenie Lake

Capture of smolts for sampling as well as for obtaining mark-recapture estimates was conducted from May 21 through July 1 using a fyke net, with attached wing nets. Of the 34,552 smolts captured, a total of 500 retained for sampling and the heads preserved for thermal mark analysis. The overall age composition of the smolts captured was 67.8% age 1+ and 32.2% age 2+ based on thermal mark analysis (Table 9). Of the 500 otoliths examined, 57 (17 fed BY97, 38 unfed BY97, and 2 unfed BY96) were thermally marked. The 1999 Tatsamenie smolt emigration was estimated using mark-recapture techniques. Smolt abundance was estimated (preliminary estimate using Darroch estimator) to be 776,296 (95% CI +/- 84,737) with an enhanced component of 91,807 (47,542 unfed 1+ and 44,309 fed 1+) smolts. An undetermined portion of the run occurred prior to the start of the mark-recapture program.

A summary of preliminary data for the 1999 average length and weight for the transboundary sockeye smolts is presented in the Table 9.

Trapper and Little Trapper Lakes

These lakes were not sampled in 1999.

Tuya Lake

In 1999, emigrating smolts were captured with a fyke net from June 5 to June 25. A total of 120 were retained for length, weight, and scale samples. The heads from the sampled smolts were preserved for otolith analysis, although it is assumed all smolts were of enhanced origin. Based on scale analysis, the overall age composition was 81.4% age1+, 16.1% age 2+, and 2.5% age 3+ (Table 9).

Table 8. Limnetic fish population, hydroacoustic based density estimates, and beach seine catches by broodyear in Tahltan, Tatsamenie, and Tuya Lakes.

Survey Date	Brood Year	Numbers of Limnetic Fish			Density (#/ha)			Beach Seine Catches			
		Total	Sockeye	Other	Total	CI(%)	Sockeye	Other	Sets	Sockeye	Other
Tahltan Lake											
18-Sep-93	1992	800,000	800,000		1,800	19	1,800		7	12	361
18-Sep-94	1993	400,000	400,000		800	41	800		10	9	162
	1994										
13-Sep-96	1995	600,000	600,000		1,300	15	1,300		10	141	277 a
27-Sep-97	1996	300,000	300,000		600	16	600		10	1	
No Surveys in 1998											
11-Oct-99	1998	220,000	220,000		500	25	500				
Tatsamenie Lake											
14-Sep-93	1992	1,100,000	1,100,000		700	36	700		10	11	178
13-Sep-94	1993	1,100,000	1,100,000		600	34	600		10	17	206
18-Sep-95	1994	900,000	900,000		600	39	600		10	9	35
16-Sep-96	1995	800,000	800,000		500	40	500		10	60	18 b
16-Jun-97	1996	900,000	900,000		500	37	500		10	1,846	
06-Aug-97	1996	2,300,000	2,300,000		1,400	40	1,400		10	2,919	
03-Sep-97	1996	2,700,000	2,700,000		1,600	32	1,600		10	840	
01-Oct-97	1996	1,300,000	1,300,000		800	39	800		10	84	15
22-Jul-98	1997	na	na		na		na		10	1,300	8
05-Aug-98	1997	900,000	900,000		600	48	600		10	372	
23-Aug-98	1997	na	na		na		na		10	75	7
04-Sep-98	1997	700,000	700,000		400	38	400		na	na na	
13-Sep-98	1997	na	na		na		na		10	282	7
23-Sep-98	1997	800,000	800,000		500	37	500		na	na na	
03-Oct-98	1997	na	na		an		an		10	139	7
12-Oct-98	1997	500,000	500,000		300	57	300		10	40	82
14-Oct-99	1998	352,000	352,000		200	29	200		10		
Tuya Lake											
8/30/1993	1992	400,000	400,000	0	200	52	200		9	0	1,152
9/2/1994	1993	2,100,000	200,000	100,000	700	55	700		10	0	181
9/11/1995	1994	1,500,000	1,500,000	0	500	97	500		10	0	87
9/9/1996	1995	2,100,000	1,600,000	500,000 a	700	23	500	200	2	0	33 b
9/26/1997	1996	2,100,000	1,400,000	700,000 c	700	29	500		2	0	0
9/19/1998	1997	700,000	600,000	100,000 d	200	42	200	<50	10	0	>13
9/14/1999	1998										

^a63 sculpins, 11 adult sockeye, 203 suckers

^b14 sculpins, 3 juvenile Chinook, 1 Dolly Varden Char

^csculpins

^d1 adult grayling, 12 juvenile grayling, 11 chub, 9 sculpins

Table 9. Age composition and average length and weight by age for combined wild and enhanced transboundary sockeye smolts captured in 1999.

Site	Origin	Sample Size	Age Composition (%)			Length by Age		Weight by Age	
			1.0	2.0	3.0	1.0	2.0	1.0	2.0
Tahltan	Combined Wild and Planted	822	97.6	2.4		83.4	106.8	4.63	9.58
Tuya	Planted	120	81.4	16.1	2.5	na	na	na	na
Tatsamenie	Combined Wild and Planted	500	67.8	32.2		na	na	na	na
Trapper	Not Sampled in 1999								
Little Trapper	Not Sampled in 1999								

Short Term Fry Holding and Feeding Studies

Short-term pen holding studies were conducted at Tahltan and Tatsamenie lakes. The objective of this program was to determine post-transport mortality rates. At Tatsamenie, a total of 1,018,615 fry marked with an ancillary thermal mark was held and fed prior to release. The objective of feeding the fry was to increase the weight of the fry to determine if larger size at release confers an advantage that will increase fry to smolt survival.

Tahltan Lake

Four shipments totaling 1,700,000 fry were made to Tahltan Lake between May 29 and June 2. The first three shipments of enhanced fry were held in net pens for 29-30 hours and fed every 8-12 hours prior to release. The estimated number of mortalities (7,000-8,000) represented 0.5% to 0.6% of the 1,670,615 fry, which were transported and held. The last shipment of fry was not held in a net pen due to extreme wind conditions, which made it difficult to maneuver the plane on the lake; the number of fry released in the last shipment totaled approximately 360,000.

Tatsamenie Lake

Four shipments totaling 1,800,000 fry were made to Tatsamenie Lake June 1-9. The first shipment (606,313 fry) was held in a net pen for 20 days (a sub-sample was held for 30 days to determine the effectiveness of a new holding pen) and fed. The second shipment of fry (399,974) was held for 32 hours and released while the third shipment (351,069 fry) was released immediately. The fourth shipment of fry was held and fed for 21 days before being released. The estimated number of holding mortalities was 137,100 (7.8%) for all shipments combined.

The first shipment of fry attained release weights of 0.29g and 0.50g for the fry held 20 and 30 days, respectively. Estimated mortality for this group was 5,000 fry (0.8%). The fourth shipment of fry attained a release weight of 0.25g after 21 days of feeding. Estimated mortality for this group was 131,000 fry (31.8%). Since these fish were marked with an ancillary thermal mark, it will be possible to determine if feeding and release at a larger size results in a survival rate that is higher than observed for the unfed release groups.

Passive Flow Incubator - Tatsamenie Lake

For the second year, an experimental passive flow incubator was setup in Tatsamenie Lake approximately 300 m from the lake outlet. Approximately 34,000 sockeye salmon eggs were placed in the incubator in the fall of 1999.

CENTRAL INCUBATION FACILITY

OTOLITH ANALYSIS

U.S. Otolith Lab

During the 1999 season, ADF&G thermal mark lab received 15,845 sockeye otoliths collected by ADF&G and DFO staff as part of the U.S./Canada enhancement program. These collections came from commercial and test fisheries in U.S. waters and in Canadian fisheries on the Taku and Stikine Rivers over an 11-week period. In addition, cost recovery and rack samples from Snettisham Hatchery as well as several escapement samples were examined. Combined, the laboratory processed 14,131 of the otoliths received and provided estimates of hatchery contribution for 124 distinct sampling collections. Of these totals, 3,071 otoliths were identified and classified as belonging to one of 28 marking groups. Contribution estimates of the percentage of enhanced fish in the commercial openings were provided to ADF&G and Canadian fisheries managers within 24 to 48 hours after sampling.

Canadian Otolith Labs

The Whitehorse otolith laboratory received 2,164 otoliths from various Canadian transboundary river fisheries and sockeye escapements. In addition, 1,120 otoliths were collected from sockeye fry or smolt samples collected from Tatsamenie, Tahltan and Tuya lakes. The majority of the adult otolith analysis was completed by November of 1999. Juvenile samples, including approximately 900 juvenile otoliths collected from Tatsamenie, Trapper, and Tuya lakes in 1997-98, and 1,000+ adult otoliths from Tatsamenie, Tahltan and Tuya Lake sockeye salmon in 1997-98 were processed.

APPENDICES

Appendix A. 1. Weekly salmon catch and effort in the Alaskan Subdistrict 106-41&42 (Sumner Strait) commercial drift gillnet fishery, 1999.

Week	Start Date	Catch					Effort			
		Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Permits	Days	Permit Days
26	20-Jun	255	6,785	3,078	2,734	1,849		43	3.0	129
27	27-Jun	52	8,501	2,503	5,563	4,379		74	3.0	222
28	4-Jul	28	6,387	3,187	11,042	14,472		69	2.0	138
29	11-Jul	17	9,211	4,041	11,849	31,745		77	2.0	154
30	18-Jul	18	14,902	5,426	19,033	68,797		81	3.0	243
31	25-Jul	3	12,615	8,074	17,256	47,817		101	3.0	303
32	1-Aug	4	6,910	4,069	19,229	19,874		79	3.0	237
33	8-Aug	1	3,909	6,886	29,155	12,880		67	4.0	268
34	15-Aug	1	2,703	11,366	76,535	17,976		68	4.0	272
35	22-Aug	2	928	8,064	46,381	11,677		72	4.0	288
36	29-Aug	0	330	14,786	22,734	21,507		74	4.0	296
37	5-Sep	0	115	16,811	10,658	18,394		82	3.0	246
38	12-Sep	1	74	17,472	4,433	8,330		71	3.0	213
39	19-Sep	2	7	12,141	570	3,612		57	3.0	171
40	26-Sep	6	1	4,978	18	825		28	2.0	56
41	3-Oct	2	0	4,794	4	510		16	2.0	32
42	10-Oct	5	0	2,407	0	163		13	2.0	26
Total		397	73,378	130,083	277,194	284,807			50.0	3,294

Appendix A.2. Weekly scale pattern based stock proportions and catches of sockeye salmon harvested in the Alaskan Subdistrict 106-41&42 (Sumner Strait) commercial drift gillnet fishery, 1999.

Week	Alaska	Canada	Stikine				Planted	CPUE of Stikine Fish			
			Tahltan ^a	Tuya	Mainstem	Total		Tahltan	Tahltan ^a	Tuya	Mainstem
Proportions											
26	0.385	0.078	0.334	0.203	0.000	0.537	0.022	0.511	0.304	0.000	0.265
27	0.409	0.231	0.145	0.206	0.009	0.359	0.003	0.161	0.224	0.009	0.129
28	0.605	0.134	0.085	0.140	0.036	0.261	0.000	0.114	0.185	0.045	0.113
29	0.684	0.069	0.075	0.131	0.041	0.247	0.003	0.131	0.223	0.066	0.139
30	0.701	0.044	0.043	0.029	0.182	0.255	0.004	0.078	0.051	0.302	0.147
31	0.630	0.076	0.004	0.004	0.286	0.294	0.000	0.005	0.005	0.321	0.115
32	0.681	0.132	0.000	0.001	0.185	0.186	0.000	0.000	0.001	0.145	0.051
33	0.726	0.116	0.000	0.006	0.152	0.158	0.000	0.000	0.002	0.060	0.022
34	0.752	0.110	0.000	0.009	0.129	0.137	0.000	0.000	0.002	0.034	0.013
35	0.752	0.110	0.000	0.009	0.129	0.137	0.000	0.000	0.001	0.011	0.004
36	0.752	0.110	0.000	0.009	0.129	0.137	0.000	0.000	0.000	0.004	0.001
37	0.752	0.110	0.000	0.009	0.129	0.137	0.000	0.000	0.000	0.002	0.001
38	0.752	0.110	0.000	0.009	0.129	0.137	0.000	0.000	0.000	0.001	0.000
39	0.752	0.110	0.000	0.009	0.129	0.137	0.000	0.000	0.000	0.000	0.000
40	0.752	0.110	0.000	0.009	0.129	0.137	0.000	0.000	0.000	0.000	0.000
Total	0.618	0.101	0.074	0.079	0.128	0.281	0.004	0.322	0.330	0.348	1.000
Catches											
26	2,613	530	2,263	1,379	0	3,642	152	17.5	10.7	0.0	28.2
27	3,480	1,967	1,230	1,747	77	3,054	30	5.5	7.9	0.3	13.8
28	3,863	858	541	896	229	1,666	0	3.9	6.5	1.7	12.1
29	6,301	633	690	1,208	379	2,277	32	4.5	7.8	2.5	14.8
30	10,453	651	647	433	2,718	3,798	52	2.7	1.8	11.2	15.6
31	7,950	953	54	55	3,603	3,712	0	0.2	0.2	11.9	12.3
32	4,709	914	0	10	1,277	1,287	0	0.0	0.0	5.4	5.4
33	2,838	455	0	22	594	616	0	0.0	0.1	2.2	2.3
34	2,033	298	0	23	348	371	0	0.0	0.1	1.3	1.4
35	698	102	0	8	119	127	0	0.0	0.0	0.4	0.4
36	248	36	0	3	42	45	0	0.0	0.0	0.1	0.2
37	87	13	0	1	15	16	0	0.0	0.0	0.1	0.1
38	56	8	0	1	10	10	0	0.0	0.0	0.0	0.0
39	5	1	0	0	1	1	0	0.0	0.0	0.0	0.0
40	1	0	0	0	0	0	0	0.0	0.0	0.0	0.0
Total	45,335	7,420	5,425	5,786	9,412	20,623	266	34.3	35.1	37.1	106.5

^a 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, 1999.

Week	Start Date	Catch						Effort		
		Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Permits	Days	Permit Days
26	20-Jun	34	687	323	174	248		6	3	18
27	27-Jun	4	1,321	488	850	772		18	2	36
28	4-Jul	20	2,425	1,535	6,670	2,205		24	2	48
29	11-Jul	12	1,965	1,575	4,458	9,534		23	2	46
30	18-Jul	24	9,722	5,121	29,559	55,951		48	3	144
31	25-Jul	10	6,075	4,600	11,733	29,456		53	3	159
32	1-Aug	3	4,199	3,590	19,961	19,244		56	3	168
33	8-Aug	6	3,255	4,637	23,331	9,404		44	4	176
34	15-Aug	1	916	2,153	23,970	3,742		34	4	136
35	22-Aug	2	534	2,685	32,452	5,041		29	4	116
36	29-Aug	1	254	4,414	36,735	5,617		42	4	168
37	5-Sep	1	76	7,293	10,239	8,660		49	3	147
38	12-Sep	0	63	17,183	11,905	10,596		63	3	189
39	19-Sep	2	7	6,388	1,254	1,827		39	3	117
40	26-Sep	1	0	4,618	231	818		22	2	44
41	3-Oct	0	0	5,058	0	378		15	2	30
42	10-Oct	0	1	1,518	0	67		12	2	24
Total		121	31,500	73,179	213,522	163,560			49	1,766

Appendix A. 4. Weekly scale pattern based stock proportions and catches of sockeye salmon harvested in the Alaskan Subdistrict 106-30 (Clarence Strait) commercial drift gillnet fishery, 1999.

Week	Alaska	Canada	Stikine				Planted	CPUE of Stikine Fish			
			Tahltan ^a	Tuya	Mainstem	Total		Tahltan	Tahltan ^a	Tuya	Mainstem
Proportions											
26	0.738	0.108	0.037	0.088	0.030	0.154	0.005	0.185	0.000	0.043	0.125
27	0.738	0.108	0.037	0.088	0.030	0.154	0.005	0.178	0.000	0.041	0.121
28	0.738	0.108	0.037	0.088	0.030	0.154	0.005	0.244	0.000	0.057	0.166
29	0.769	0.079	0.010	0.020	0.122	0.151	0.000	0.055	0.000	0.199	0.138
30	0.812	0.037	0.024	0.000	0.127	0.151	0.000	0.215	0.000	0.327	0.217
31	0.917	0.019	0.024	0.027	0.014	0.064	0.000	0.122	0.000	0.020	0.052
32	0.808	0.086	0.000	0.010	0.095	0.106	0.000	0.000	0.000	0.091	0.056
33	0.655	0.177	0.000	0.000	0.168	0.168	0.000	0.000	0.000	0.119	0.066
34	0.677	0.124	0.001	0.004	0.194	0.199	0.000	0.001	0.000	0.050	0.029
35	0.677	0.124	0.001	0.004	0.194	0.199	0.000	0.001	0.000	0.034	0.020
36	0.677	0.124	0.001	0.004	0.194	0.199	0.000	0.000	0.000	0.011	0.006
37	0.677	0.124	0.001	0.004	0.194	0.199	0.000	0.000	0.000	0.004	0.002
38	0.677	0.124	0.001	0.004	0.194	0.199	0.000	0.000	0.000	0.002	0.001
39	0.677	0.124	0.001	0.004	0.194	0.199	0.000	0.000	0.000	0.000	0.000
40	0.677	0.124	0.001	0.004	0.194	0.199	0.000	0.000	0.000	0.000	0.000
41	0.677	0.124	0.001	0.004	0.194	0.199	0.000	0.000	0.000	0.000	0.000
42	0.677	0.124	0.001	0.004	0.194	0.199	0.000	0.000	0.000	0.000	0.000
Total	0.795	0.072	0.018	0.020	0.095	0.133	0.001	0.161	0.282	0.557	1.000
Catches											
26	507	74	25	60	20	106	3	1.4	3.4	1.1	5.9
27	975	142	48	116	39	204	6	1.3	3.2	1.1	5.7
28	1,790	261	89	213	72	374	12	1.8	4.4	1.5	7.8
29	1,512	156	19	39	239	297	0	0.4	0.8	5.2	6.5
30	7,895	363	234	0	1,230	1,464	0	1.6	0.0	8.5	10.2
31	5,569	115	146	161	84	391	0	0.9	1.0	0.5	2.5
32	3,394	360	0	44	401	445	0	0.0	0.3	2.4	2.6
33	2,131	576	0	0	548	548	0	0.0	0.0	3.1	3.1
34	621	113	1	3	178	182	0	0.0	0.0	1.3	1.3
35	362	66	1	2	104	106	0	0.0	0.0	0.9	0.9
36	172	31	0	1	49	50	0	0.0	0.0	0.3	0.3
37	51	9	0	0	15	15	0	0.0	0.0	0.1	0.1
38	43	8	0	0	12	13	0	0.0	0.0	0.1	0.1
39	5	1	0	0	1	1	0	0.0	0.0	0.0	0.0
40	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0
41	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0
42	1	0	0	0	0	0	0	0.0	0.0	0.0	0.0
Total	25,028	2,276	563	641	2,992	4,196	22	7.6	13.2	26.1	46.9

^a Tahltan includes wild and thermally marked fish.

Appendix A. 5. Weekly salmon catch in the Alaskan District 106 commercial drift gillnet fisheries, 1999.

Week	Start Date	Catch ^b						Effort ^a		
		Chinook	Sockeye	Coho	Pink ^c	Chum	Steelhead	Permits	Days	Permit Days
26	20-Jun	289	7,472	3,401	2,908	2,097		49	3.0	147
27	27-Jun	56	9,822	2,991	6,413	5,151		88	3.0	264
28	4-Jul	48	8,812	4,722	17,712	16,677		93	2.0	186
29	11-Jul	29	11,176	5,616	16,307	41,279		100	2.0	200
30	18-Jul	42	24,624	10,547	48,592	124,748		125	3.0	375
31	25-Jul	13	18,690	12,674	28,989	77,273		151	3.0	453
32	1-Aug	7	11,109	7,659	39,190	39,118		132	3.0	396
33	8-Aug	7	7,164	11,523	52,486	22,284		107	4.0	428
34	15-Aug	2	3,619	13,519	100,505	21,718		95	4.0	380
35	22-Aug	4	1,462	10,749	78,833	16,718		98	4.0	392
36	29-Aug	1	584	19,200	59,469	27,124		113	4.0	452
37	5-Sep	1	191	24,104	20,897	27,054		129	3.0	387
38	12-Sep	1	137	34,655	16,338	18,926		131	3.0	393
39	19-Sep	4	14	18,529	1,824	5,439		94	3.0	282
40	26-Sep	7	1	9,596	249	1,643		49	2.0	98
41	3-Oct	2	0	9,852	4	888		30	2.0	60
42	10-Oct	5	1	3,925	0	230		25	2.0	50
Total		518	104,878	203,262	490,716	448,367			50.0	4,943
Alaska Hatchery Contribution										
26	20-Jun	33	105	2,710		2,840				
27	27-Jun	0	112	1,626		947				
28	4-Jul	22	135	3,517		9,799				
29	11-Jul	73	192	2,217		14,021				
30	18-Jul	0	675	3,851		104,651				
31	25-Jul	15	847	3,471		42,702				
32	1-Aug	5	50	1,545		15,717				
33	8-Aug	41	89	820		7,087				
34	15-Aug	0	52	1,349		1,468				
35	22-Aug	0	0	1,670		4,379				
36	29-Aug	0	0	5,225		4,491				
37	5-Sep	0	0	8,109		0				
38	12-Sep	0	0	18,775		2,980				
39	19-Sep	0	0	11,647		0				
40	26-Sep	0	0	6,322		0				
41	3-Oct	0	0	7,162		0				
42	10-Oct	0	0	2,813		0				
Total		189	2,257	82,828		211,082				
Catches not including Alaska hatchery contributions										
26	20-Jun	256	7,367	691	2,908	-743	0	49	3.0	147
27	27-Jun	56	9,710	1,365	6,413	4,204	0	88	3.0	264
28	4-Jul	26	8,677	1,205	17,712	6,878	0	93	2.0	186
29	11-Jul	-44	10,984	3,399	16,307	27,258	0	100	2.0	200
30	18-Jul	42	23,949	6,696	48,592	20,097	0	125	3.0	375
31	25-Jul	-2	17,843	9,203	28,989	34,571	0	151	3.0	453
32	1-Aug	2	11,059	6,114	39,190	23,401	0	132	3.0	396
33	8-Aug	-34	7,075	10,703	52,486	15,197	0	107	4.0	428
34	15-Aug	2	3,567	12,170	100,505	20,250	0	95	4.0	380
35	22-Aug	4	1,462	9,079	78,833	12,339	0	98	4.0	392
36	29-Aug	1	584	13,975	59,469	22,633	0	113	4.0	452
37	5-Sep	1	191	15,995	20,897	27,054	0	129	3.0	387
38	12-Sep	1	137	15,880	16,338	15,946	0	131	3.0	393
39	19-Sep	4	14	6,882	1,824	5,439	0	94	3.0	282
40	26-Sep	7	1	3,274	249	1,643	0	49	2.0	98
41	3-Oct	2	0	2,690	4	888	0	30	2.0	60
42	10-Oct	5	1	1,112	0	230	0	25	2.0	50
Total		329	102,621	120,434	490,716	237,285	0	1,609	50.0	4,943

^a 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.

^b Catches do not include Blind Slough terminal area harvests.

^c Data not available to estimate contributions of pink salmon from Alaska hatcheries.

Appendix A. 6. Weekly scale pattern based stock proportions of sockeye salmon harvested in the Alaskan District 106 commercial drift gillnet fisheries, 1999.

Week	Alaska	Canada	Stikine				Planted	CPUE of Stikine Fish			
			Tahltan ^a	Tuya	Mainstem	Total		Tahltan ^a	Tuya	Mainstem	Total
Proportions											
26	0.418	0.081	0.306	0.193	0.003	0.502	0.083	0.517	0.316	0.004	0.270
27	0.454	0.215	0.130	0.190	0.012	0.332	0.089	0.161	0.228	0.013	0.131
28	0.642	0.127	0.071	0.126	0.034	0.231	0.089	0.112	0.193	0.049	0.116
29	0.699	0.071	0.063	0.112	0.055	0.230	0.058	0.118	0.201	0.093	0.137
30	0.745	0.041	0.036	0.018	0.160	0.214	0.043	0.078	0.037	0.318	0.149
31	0.723	0.057	0.011	0.012	0.197	0.220	0.007	0.015	0.015	0.245	0.096
32	0.729	0.115	0.000	0.005	0.151	0.156	0.000	0.000	0.004	0.128	0.046
33	0.694	0.144	0.000	0.003	0.159	0.162	0.000	0.000	0.002	0.080	0.029
34	0.733	0.114	0.000	0.007	0.145	0.153	0.000	0.000	0.002	0.042	0.015
35	0.725	0.115	0.000	0.007	0.153	0.160	0.000	0.000	0.001	0.017	0.006
36	0.720	0.116	0.000	0.007	0.157	0.164	0.000	0.000	0.000	0.006	0.002
37	0.723	0.116	0.000	0.007	0.155	0.162	0.000	0.000	0.000	0.002	0.001
38	0.718	0.117	0.000	0.006	0.159	0.166	0.000	0.000	0.000	0.002	0.001
39	0.715	0.117	0.001	0.006	0.161	0.168	0.000	0.000	0.000	0.000	0.000
40	0.752	0.110	0.000	0.009	0.129	0.137	0.000	0.000	0.000	0.000	0.000
41	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
42	0.677	0.124	0.001	0.004	0.194	0.199	0.000	0.000	0.000	0.000	0.000
Total	0.671	0.092	0.057	0.061	0.118	0.237	0.003				
Catches											
26	3,120	604	2,288	1,439	20	3,748	155	15.6	9.8	0.1	25.5
27	4,455	2,109	1,278	1,863	116	3,258	36	4.8	7.1	0.4	12.3
28	5,653	1,119	630	1,109	301	2,040	12	3.4	6.0	1.6	11.0
29	7,813	789	709	1,247	618	2,574	32	3.5	6.2	3.1	12.9
30	18,348	1,014	881	433	3,948	5,262	52	2.3	1.2	10.5	14.0
31	13,519	1,068	200	216	3,687	4,103	0	0.4	0.5	8.1	9.1
32	8,103	1,274	0	54	1,678	1,732	0	0.0	0.1	4.2	4.4
33	4,969	1,031	0	22	1,142	1,164	0	0.0	0.1	2.7	2.7
34	2,654	412	1	27	525	553	0	0.0	0.1	1.4	1.5
35	1,060	169	1	10	223	234	0	0.0	0.0	0.6	0.6
36	420	68	0	4	92	96	0	0.0	0.0	0.2	0.2
37	138	22	0	1	30	31	0	0.0	0.0	0.1	0.1
38	98	16	0	1	22	23	0	0.0	0.0	0.1	0.1
39	10	2	0	0	2	2	0	0.0	0.0	0.0	0.0
40	1	0	0	0	0	0	0	0.0	0.0	0.0	0.0
41	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0
42	1	0	0	0	0	0	0	0.0	0.0	0.0	0.0
Total	70,363	9,696	5,988	6,427	12,404	24,819	288	30.1	31.0	33.2	94.3

^a All Tahltan includes wild and thermally marked fish.

Appendix A. 7. Weekly salmon catch and effort in the Alaskan District 108 commercial drift gillnet fishery, 1999.

Week	Start Date	Catch ^a						Effort ^b		Permit Days
		Chinook	Sockeye	Coho	Pink ^c	Chum	Steelhead	Permits	Days	
26	20-Jun	393	2,623	133	362	179		26	3.0	78.0
27	27-Jun	422	11,622	800	761	1,959		96	3.0	288.0
28	4-Jul	123	6,609	775	2,463	3,821		64	2.0	128.0
29	11-Jul	45	4,078	623	2,018	7,180		55	2.0	110.0
30	18-Jul	32	6,775	2417	11,318	37,164		104	5.0	520.0
31	25-Jul	23	3,281	1659	6,817	17,555		72	5.0	360.0
32	1-Aug	2	775	309	3,540	2,600		14	3.0	42.0
33	8-Aug	1	307	1226	2,268	19724		23	4.0	92.0
34	15-Aug	1	160	1509	4508	18746		30	4.0	120.0
35	22-Aug	4	225	3047	9986	3428		33	4.0	132.0
36	29-Aug	2	55	2431	2845	974		22	4.0	88.0
37	5-Sep	0	22	3,991	627	2,496		23	3.0	69.0
38	12-Sep	0	11	3,729	1,012	813		23	3.0	69.0
39	19-Sep	0	5	3,203	18	344		23	3.0	69.0
40	26-Sep	1	0	681	7	89		6	2.0	12.0
41	3-Oct	0	0	1,457	0	94		6	2.0	12.0
42	10-Oct	0	0	447	0	30		9	2.0	18.0
Total		1,049	36,548	28,437	48,550	117,196		629	54	2,207
Alaska Hatchery Contribution										
26	20-Jun	120	0	146		0				
27	27-Jun	199	0	283		3,127				
28	4-Jul	12	0	2,767		0				
29	11-Jul	21	0	0		0				
30	18-Jul	0	419	484		7,627				
31	25-Jul	0	373	99		10,885				
32	1-Aug	0	0	44		0				
33	8-Aug	0	0	0		0				
34	15-Aug	0	0	295		0				
35	22-Aug	9	0	390		0				
36	29-Aug	0	0	0		0				
37	5-Sep	0	0	0		0				
38	12-Sep	0	0	1,128		0				
39	19-Sep	0	0	269		0				
40	26-Sep	0	0	456		0				
41	3-Oct	0	0	0		0				
42	10-Oct	0	0	0		0				
Total		362	792	6,360		21,640				
Catches not including Alaska hatchery contributions										
26	20-Jun	273	2,623	-13	362	179		26	3.0	78
27	27-Jun	223	11,622	517	761	-1,168		96	3.0	288
28	4-Jul	111	6,609	-1,992	2,463	3,821		64	2.0	128
29	11-Jul	24	4,078	623	2,018	7,180		55	2.0	110
30	18-Jul	32	6,356	1,933	11,318	29,537		104	5.0	520
31	25-Jul	23	2,908	1,560	6,817	6,670		72	5.0	360
32	1-Aug	2	775	265	3,540	2,600		14	3.0	42
33	8-Aug	1	307	1,226	2,268	19,724		23	4.0	92
34	15-Aug	1	160	1,214	4,508	18,746		30	4.0	120
35	22-Aug	-5	225	2,657	9,986	3,428		33	4.0	132
36	29-Aug	2	55	2,431	2,845	974		22	4.0	88
37	5-Sep	0	22	3,991	627	2,496		23	3.0	69
38	12-Sep	0	11	2,601	1,012	813		23	3.0	69
39	19-Sep	0	5	2,934	18	344		23	3.0	69
40	26-Sep	1	0	225	7	89		6	2.0	12
41	3-Oct	0	0	1,457	0	94		6	2.0	12
42	10-Oct	0	0	447	0	30		9	2.0	18
Total		687	35,756	22,077	48,550	95,556		629	54.0	2,207

^a Catches do not include Ohmer Creek terminal area harvests.

^b 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.

^c Data not available to estimate contributions of pink salmon from Alaska hatcheries.

Appendix A. 8. Weekly scale pattern based stock proportions and stock-specific catch of sockeye salmon in the Alaskan District 108 commercial drift gillnet fishery, 1999.

Week	Alaska	Canada	Stikine				Planted	CPUE of Stikine Fish			
			Tahltan ^a	Tuya	Mainstem	Total		Tahltan ^a	Tuya	Mainstem	Total
Proportions											
26	0.157	0.005	0.435	0.381	0.022	0.838	0.026	0.170	0.281	0.018	0.163
27	0.092	0.020	0.527	0.306	0.055	0.888	0.025	0.248	0.270	0.053	0.207
28	0.172	0.040	0.471	0.234	0.083	0.788	0.040	0.283	0.265	0.103	0.235
29	0.082	0.026	0.542	0.185	0.165	0.892	0.035	0.234	0.150	0.147	0.191
30	0.093	0.059	0.366	0.054	0.429	0.849	0.016	0.056	0.015	0.134	0.064
31	0.421	0.062	0.008	0.031	0.478	0.517	0.000	0.001	0.006	0.105	0.027
32	0.186	0.064	0.025	0.022	0.703	0.750	0.000	0.005	0.009	0.312	0.080
33	0.186	0.064	0.025	0.022	0.703	0.750	0.000	0.001	0.002	0.056	0.014
34	0.186	0.064	0.025	0.022	0.703	0.750	0.000	0.000	0.001	0.023	0.006
35	0.186	0.064	0.025	0.022	0.703	0.750	0.000	0.000	0.001	0.029	0.007
36	0.186	0.064	0.025	0.022	0.703	0.750	0.000	0.000	0.000	0.011	0.003
37	0.186	0.064	0.025	0.022	0.703	0.750	0.000	0.000	0.000	0.005	0.001
38	0.186	0.064	0.025	0.022	0.703	0.750	0.000	0.000	0.000	0.003	0.001
39	0.186	0.064	0.025	0.022	0.703	0.750	0.000	0.000	0.000	0.001	0.000
Total	0.144	0.036	0.414	0.201	0.205	0.820	0.024	0.496	0.264	0.240	1.000
Catch ^b											
26	412	13	1,140	1,000	58	2,198	69	14.6	12.8	0.7	28.2
27	1,073	228	6,127	3,558	636	10,321	295	21.3	12.4	2.2	35.8
28	1,135	267	3,110	1,547	550	5,207	261	24.3	12.1	4.3	40.7
29	334	105	2,212	753	674	3,639	145	20.1	6.8	6.1	33.1
30	629	397	2,479	366	2,904	5,749	106	4.8	0.7	5.6	11.1
31	1,382	203	27	101	1,568	1,696	0	0.1	0.3	4.4	4.7
32	144	50	19	17	544	581	0	0.5	0.4	13.0	13.8
33	57	20	8	7	216	230	0	0.1	0.1	2.3	2.5
34	30	10	4	4	112	120	0	0.0	0.0	0.9	1.0
35	42	14	6	5	158	169	0	0.0	0.0	1.2	1.3
36	10	4	1	1	39	41	0	0.0	0.0	0.4	0.5
37	4	1	1	0	15	17	0	0.0	0.0	0.2	0.2
38	2	1	0	0	8	8	0	0.0	0.0	0.1	0.1
39	1	0	0	0	4	4	0	0.0	0.0	0.1	0.1
Total	5,255	1,313	15,134	7,360	7,486	29,980	876	85.8	45.7	41.6	173.0

^a All Tahltan includes wild and thermally marked fish.

^b Catches do not include Ohmer Creek terminal area harvests.

Appendix A. 9. Weekly salmon catch and effort and sockeye stock composition in the Alaskan District 108 test fishery, 1999.

Week	Start Date	Catch					Steelhead
		Chinook	Sockeye	Coho	Pink	Chum	
Catches							
25	13-Jun	17	137	2	1	9	
26	20-Jun	11	2,238	58	100	120	
27	27-Jun	1	885	93	83	359	
28	4-Jul	0	1,541	64	245	880	
Total		29	4,801	217	429	1,368	
Sockeye stock compositions							
Week	Alaska	Canada	Stikine			Total	Planted
			Tahltan	Tuya	Mainstem		Tahltan
Proportions							
25	0.190	0.015	0.460	0.314	0.022	0.796	0.022
26	0.152	0.006	0.421	0.406	0.014	0.841	0.035
27	0.118	0.020	0.546	0.254	0.062	0.862	0.033
28	0.198	0.036	0.532	0.165	0.069	0.766	0.016
Total	0.162	0.019	0.481	0.298	0.041	0.820	0.028
Catch							
25	26	2	63	43	3	109	3
26	341	14	943	908	32	1,883	79
27	104	18	483	225	55	763	29
28	305	55	820	254	107	1,181	24
Total	776	89	2,309	1,430	197	3,936	135

Appendix A.10. Weekly salmon and steelhead trout catch and effort in the Canadian commercial fishery in the lower Stikine River, 1999.

Week	Start Date	Catch							Effort		
		Chinook		Sockeye	Coho	Pink	Chum	Steelhead	Permits	Days	Permit Days
		Jacks	Large								
26	20-Jun	111	303	10	0	0	0	0	10.00	2.0	20.0
27	27-Jun	282	896	1,116	0	0	0	0	9.00	2.0	18.0
28	4-Jul	188	419	5,218	0	0	0	1	11.00	3.0	33.0
29	11-Jul	135	286	10,815	0	1	2	0	11.06	4.0	44.2
30	18-Jul	46	175	10,543	0	2	0	0	10.40	5.0	52.0
31	25-Jul	15	37	2,657	3	0	0	4	10.67	3.0	32.0
32	1-Aug	11	11	2,030	29	3	3	1	11.00	3.0	33.0
33	8-Aug	1	0	82	5	5	2	0	6.00	3.0	18.0
34	15-Aug	0	0	83	39	0	0	3	1.50	2.0	3.0
35	22-Aug	0	0	0	6	0	1	0	1.50	1.0	1.5
36	29-Aug	0	0	0	7	0	0	0	1.50	1.0	1.5
37	5-Sep	0	0	2	92	0	0	5	2.50	2.0	5.0
Total		789	2,127	32,556	181	11	8	14		31.0	261.3

Appendix A.11. Weekly sockeye salmon stock proportions and catch by stock in the Canadian commercial fishery in the lower Stikine River, 1999.

Week	Proportion ^a				Planted	Catch			Tahltan	
	Small Egg	Tahltan ^b	Tuya	Mainstem		Tahltan ^b	Tuya	Mainstem	Wild	Planted
26	1.000	0.400	0.600	0.000	0.000	4	6	0	4	0
27	0.973	0.503	0.470	0.027	0.015	561	525	30	544	17
28	0.978	0.649	0.329	0.022	0.013	3,385	1,718	115	3,317	68
29	0.925	0.667	0.258	0.075	0.034	7,214	2,789	812	6,849	365
30	0.787	0.585	0.203	0.213	0.012	6,166	2,136	2,241	6,039	127
31	0.572	0.374	0.197	0.428	0.029	995	524	1,138	917	78
32	0.279	0.200	0.079	0.721	0.020	405	161	1,464	364	41
33	0.122	0.098	0.024	0.878	0.000	8	2	72	8	0
34	0.059	0.047	0.012	0.941	0.000	4	1	78	4	0
35	0.000	0.000	0.000	1.000	0.000	0	0	0	0	0
36	0.000	0.000	0.000	1.000	0.000	0	0	0	0	0
37	0.000	0.000	0.000	1.000	0.000	0	0	2	0	0
Total						18,742	7,862	5,952	18,046	696
Proportion						0.576	0.241	0.183	0.554	0.021

Week	Total CPUE	CPUE			Tahltan	
		Tahltan ^b	Tuya	Mainstem	Wild	Planted
26	0.500	0.200	0.300	0.000	31.167	0.000
27	62.000	31.167	29.167	1.667	99.467	3.108
28	158.121	102.576	52.061	3.485	159.789	3.276
29	244.462	163.065	63.042	18.354	112.577	6.000
30	202.750	118.577	41.077	43.096	30.444	0.640
31	83.005	31.084	16.370	35.551	11.311	0.962
32	61.515	12.273	4.879	44.364	0.399	0.045
33	4.556	0.444	0.111	4.000	1.302	0.000
34	27.667	1.302	0.325	26.039	0.000	0.000
35	0.000	0.000	0.000	0.000	0.000	0.000
36	0.000	0.000	0.000	0.000	0.000	0.000
37	0.400	0.000	0.000	0.400	0.000	0.000
Total	844.976	460.688	207.332	176.956	446.457	14.031
Proportion		0.545	0.245	0.209	0.528	0.017

^a Sex specific age compositions were calculated and the stock composition of the females sampled for egg diameters was expanded to the catch by age.

^b Tahltan includes wild and planted fish.

Appendix A.12. Weekly salmon and steelhead trout catch and effort in the Canadian commercial fishery in the upper Stikine River, 1999.

Week	Start Date	Catch							Effort		
		Chinook		Sockeye	Coho	Pink	Chum	Steelhead	Permits	Days	Permit Days
		Jacks	Large								
26	20-Jun	7	14	0	0	0	0	0	1.0	2.0	2.0
27	27-Jun	3	5	0	0	0	0	0	1.0	2.0	2.0
28	4-Jul	0	5	0	0	0	0	0	1.0	2.0	2.0
29	11-Jul	0	0	0	0	0	0	0		3.0	0.0
30	18-Jul	0	0	557	0	0	0	0	2.0	4.0	8.0
31	25-Jul	2	0	68	0	0	0	0	1.0	5.0	5.0
Total		12	24	625	0	0	0	0	6.0	18.0	19.0

Appendix A.13. Weekly salmon and steelhead trout catch and effort in the Canadian Aboriginal fishery located at Telegraph Creek, on the Stikine River, 1999.

Week	Start Date	Catch							Effort		
		Chinook		Sockeye	Coho	Pink	Chum	Steelhead	Permits	Days	Permit Days
		Jacks	Large								
21	16-May	0	16	0	0	0	0	0	2.2	6.0	13.0
22	23-May	3	30	0	0	0	0	0	2.7	7.0	19.0
23	30-May	13	41	0	0	0	0	0	2.9	7.0	20.0
24	6-Jun	1	3	0	0	0	0	0	2.0	1.0	2.0
25	13-Jun	0	0	0	0	0	0	0	0.0	0.0	0.0
26	20-Jun	17	72	0	0	0	0	0	1.9	7.0	13.0
27	27-Jun	101	204	25	0	0	0	0	4.9	7.0	34.0
28	4-Jul	170	219	784	0	0	0	0	9.7	7.0	68.0
29	11-Jul	83	71	1,215	0	0	0	0	8.6	7.0	60.0
30	18-Jul	31	39	1,038	0	0	0	0	11.4	7.0	80.0
31	25-Jul	36	46	1,225	0	0	0	0	12.3	7.0	86.0
32	1-Aug	6	10	272	0	0	0	0	3.9	7.0	27.0
33	8-Aug	2	1	213	0	0	0	0	2.7	7.0	19.0
34	15-Aug	0	13	102	0	0	0	0	1.6	7.0	11.0
Total		463	765	4,874	0	0	0	0	66.6	84	452.0

Appendix A.14. Catch by stock by week for sockeye salmon harvested in the Canadian upper river commercial and Aboriginal fisheries in the Stikine River, 1999.

Week	Start Date	Upper River Commercial					Aboriginal Fishery				
		Tahltan	Tuya	Mainstem	Tahltan		Tahltan	Tuya	Mainstem	Tahltan	
					Wild	Planted				Wild	Planted
27	27-Jun						18	7	0	17	1
28	4-Jul						517	253	14	484	33
29	11-Jul						802	393	20	750	52
30	18-Jul	316	188	52	316	0	607	331	100	607	0
31	25-Jul	43	18	7	40	3	769	301	155	720	49
32	1-Aug						131	101	40	131	0
33	8-Aug						140	36	37	140	0
34	15-Aug						54	1	47	54	0
Total		359	206	59	356	3	3,038	1,423	413	2,903	135

Appendix A. 15. Weekly salmon and steelhead trout catch and effort in the Canadian test fishery in the Stikine River, 1999.

Week	Start Date	Catch							# Drifts/ Set Hours
		Chinook		Sockeye	Coho	Pink	Chum	Steelhead	
		Jacks	Adults						
Drift gillnet									
25	13-Jun	1	3	0	0	0	0	1	70
26	20-Jun	15	27	11	0	0	0	0	50
27	27-Jun	22	17	104	0	0	0	0	50
28	4-Jul	4	3	104	0	0	0	0	40
29	11-Jul	1	3	65	0	0	1	0	30
30	18-Jul	0	0	32	0	0	0	0	20
31	25-Jul	0	0	45	0	0	0	0	40
32	1-Aug	0	0	15	0	2	5	0	40
33	8-Aug	0	0	13	3	4	2	1	40
34	15-Aug	0	0	13	9	2	2	0	40
35	22-Aug	0	0	2	17	0	4	2	40
36	29-Aug	0	0	1	15	1	1	6	49
37	5-Sep	0	0	3	104	1	2	4	120
38	12-Sep	0	0	2	83	1	0	7	100
39	19-Sep	0	0	0	18	0	0	0	86
40	26-Sep	0	0	0	40	0	0	2	82
41	3-Oct	0	0	0	17	0	0	2	72
42	10-Oct	0	0	0	6	0	0	0	37
Total		43	53	410	312	11	17	25	1,006
Set gillnet									
25	13-Jun	0	6	0	0	0	0	0	75
26	20-Jun	7	18	13	0	0	0	0	200
27	27-Jun	8	19	202	0	0	0	0	192
28	4-Jul	1	3	178	0	0	0	0	192
29	11-Jul	0	1	112	0	0	0	0	84
30	18-Jul	0	0	67	0	0	0	0	72
31	25-Jul	0	0	94	0	0	0	1	162
32	1-Aug	0	1	14	0	0	0	0	100
33	8-Aug	0	0	81	6	2	3	3	156
34	15-Aug	0	1	36	34	0	3	1	170
35	22-Aug	0	0	5	12	1	1	1	73
36	29-Aug	0	0	1	12	3	3	5	100
Total		16	49	803	64	6	10	11	1,577
Additional Drifts									
25	13-Jun	5	7	0	0	0	0	0	38
26	20-Jun	23	374	138	0	0	0	0	81
27	27-Jun	9	238	1,257	0	0	0	0	96
28	4-Jul	0	82	1,426	0	0	0	0	80
29	11-Jul	0	40	835	0	0	1	1	60
30	18-Jul	0	0	260	0	0	0	0	29
31	25-Jul	0	9	526	0	0	0	0	80
32	1-Aug	1	1	140	7	3	0	1	43
33	8-Aug	0	0	101	9	15	1	5	24
Total		38	751	4,683	16	18	2	7	531
Total Test Fishery Catch									
25	13-Jun	6	16	0	0	0	0	1	70
26	20-Jun	45	419	162	0	0	0	0	50
27	27-Jun	39	274	1,563	0	0	0	0	50
28	4-Jul	5	88	1,708	0	0	0	0	40
29	11-Jul	1	44	1,012	0	0	2	1	30
30	18-Jul	0	0	359	0	0	0	0	20
31	25-Jul	0	9	665	0	0	0	1	40
32	1-Aug	1	2	169	7	5	5	1	40
33	8-Aug	0	0	195	18	21	6	9	40
34	15-Aug	0	1	49	43	2	5	1	40
35	22-Aug	0	0	7	29	1	5	3	40
36	29-Aug	0	0	2	27	4	4	11	49
37	5-Sep	0	0	3	104	1	2	4	120
38	12-Sep	0	0	2	83	1	0	7	100
39	19-Sep	0	0	0	18	0	0	0	86
40	26-Sep	0	0	0	40	0	0	2	82
41	3-Oct	0	0	0	17	0	0	2	72
42	10-Oct	0	0	0	6	0	0	0	37
Total Test Catch		97	853	5,896	392	35	29	43	3,114

Appendix A.16. Weekly catch, CPUE, and migratory timing of Tahltan, Tuya, and mainstem sockeye stocks in the Stikine test fishery, 1999.

Week	Proportions ^a			Catch			CPUE				Migratory Timing		
	Tahltan	Tuya	Mainstem	Tahltan	Tuya	Mainstem	Tahltan	Tuya	Mainstem	Total	Tahltan	Tuya	Mainstem
Drift gillnet													
26	0.444	0.543	0.012	5	6	0	0.098	0.120	0.003	0.220	0.009	0.011	0.000
27	0.585	0.371	0.044	61	39	5	1.218	0.772	0.090	2.080	0.111	0.071	0.008
28	0.587	0.323	0.090	61	34	9	1.525	0.840	0.234	2.600	0.140	0.077	0.021
29	0.573	0.232	0.195	37	15	13	1.242	0.503	0.422	2.167	0.114	0.046	0.039
30	0.482	0.181	0.337	15	6	11	0.771	0.290	0.539	1.600	0.071	0.026	0.049
31	0.346	0.062	0.592	16	3	27	0.389	0.069	0.667	1.125	0.036	0.006	0.061
32	0.207	0.018	0.775	3	0	12	0.078	0.007	0.291	0.375	0.007	0.001	0.027
33	0.113	0.000	0.887	1	0	12	0.037	0.000	0.288	0.325	0.003	0.000	0.026
34	0.041	0.000	0.959	1	0	12	0.013	0.000	0.312	0.325	0.001	0.000	0.029
35	0.000	0.000	1.000	0	0	2	0.000	0.000	0.050	0.050	0.000	0.000	0.005
36	0.000	0.000	1.000	0	0	1	0.000	0.000	0.020	0.020	0.000	0.000	0.002
37	0.000	0.000	1.000	0	0	3	0.000	0.000	0.025	0.025	0.000	0.000	0.002
38	0.000	0.000	1.000	0	0	2	0.000	0.000	0.020	0.020	0.000	0.000	0.002
Total				200	102	108	5.370	2.600	2.961	10.932			
Proportion				0.488	0.249	0.263			Proportion of run		0.491	0.238	0.271
Set gillnet													
26	0.444	0.543	0.012	6	7	0	0.029	0.035	0.001	0.065	0.005	0.006	0.000
27	0.585	0.371	0.044	118	75	9	0.616	0.390	0.046	1.052	0.106	0.067	0.008
28	0.587	0.323	0.090	104	58	16	0.544	0.300	0.084	0.927	0.093	0.051	0.014
29	0.573	0.232	0.195	64	26	22	0.764	0.310	0.260	1.333	0.131	0.053	0.044
30	0.482	0.181	0.337	32	12	23	0.448	0.168	0.314	0.931	0.077	0.029	0.054
31	0.346	0.062	0.592	33	6	56	0.200	0.036	0.343	0.579	0.034	0.006	0.059
32	0.207	0.018	0.775	3	0	11	0.029	0.002	0.109	0.140	0.005	0.000	0.019
33	0.113	0.000	0.887	9	0	72	0.059	0.000	0.460	0.519	0.010	0.000	0.079
34	0.041	0.000	0.959	1	0	35	0.009	0.000	0.203	0.212	0.001	0.000	0.035
35	0.000	0.000	1.000	0	0	5	0.000	0.000	0.068	0.068	0.000	0.000	0.012
36	0.000	0.000	1.000	0	0	1	0.000	0.000	0.010	0.010	0.000	0.000	0.002
Total				371	184	248	2.698	1.242	1.897	5.836			
Proportion				0.462	0.229	0.309					0.462	0.213	0.325
Additional Drifts													
26	0.444	0.543	0.012	61	75	2	0.757	0.925	0.021	1.704	0.011	0.013	0.000
27	0.585	0.371	0.044	736	466	55	7.665	4.859	0.570	13.094	0.110	0.070	0.008
28	0.587	0.323	0.090	837	461	129	10.457	5.761	1.607	17.825	0.150	0.083	0.023
29	0.573	0.232	0.195	479	194	163	7.976	3.232	2.709	13.917	0.115	0.046	0.039
30	0.482	0.181	0.337	125	47	88	4.320	1.623	3.022	8.966	0.062	0.023	0.043
31	0.346	0.062	0.592	182	32	312	2.274	0.405	3.896	6.575	0.033	0.006	0.056
32	0.207	0.018	0.775	29	2	109	0.674	0.058	2.524	3.256	0.010	0.001	0.036
33	0.113	0.000	0.887	11	0	90	0.475	0.000	3.734	4.208	0.007	0.000	0.054
Total				2,460	1,278	945	34.599	16.863	18.082	69.544			
Proportion				0.525	0.273	0.202					0.498	0.242	0.260
Total Test Fishery Catches													
							Tahltan						
							Wild	Planted	Wild	Planted			
26	0.444	0.543	0.012	72	88	2	0.444	0.000	72	0			
27	0.585	0.371	0.044	915	580	68	0.520	0.065	813	102			
28	0.587	0.323	0.090	1,002	552	154	0.535	0.052	913	89			
29	0.573	0.232	0.195	580	235	197	0.530	0.043	536	44			
30	0.482	0.181	0.337	173	65	121	0.443	0.039	159	14			
31	0.346	0.062	0.592	230	41	394	0.346	0.000	230	0			
32	0.207	0.018	0.775	35	3	131	0.207	0.000	35	0			
33	0.113	0.000	0.887	22	0	173	0.113	0.000	22	0			
34	0.041	0.000	0.959	2	0	47	0.041	0.000	2	0			
35	0.000	0.000	1.000	0	0	7	0.000	0.000	0	0			
36	0.000	0.000	1.000	0	0	2	0.000	0.000	0	0			
37	0.000	0.000	1.000	0	0	3	0.000	0.000	0	0			
38	0.000	0.000	1.000	0	0	2	0.000	0.000	0	0			
Total				3,031	1,564	1,301			2,782	249			
Proportion				0.514	0.265	0.221							

^a 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.

Appendix A.18. Daily counts of sockeye salmon smolt migrating through Tahltan Lake smolt weir, 1999.

Date	Count	Cumulative		Date	Count	Cumulative	
		Count	Percent			Count	Percent
9-May	0	0	0.0	7-Jun	27,931	246,801	32.4
10-May	2	2	0.0	8-Jun	10,827	257,628	33.8
11-May	2	4	0.0	9-Jun	288,338	545,966	71.6
12-May	9	13	0.0	10-Jun	75,953	621,919	81.6
13-May	13	26	0.0	11-Jun	33,154	655,073	86.0
14-May	42	68	0.0	12-Jun	9,222	664,295	87.2
15-May	261	329	0.0	13-Jun	14,596	678,891	89.1
16-May	855	1,184	0.2	14-Jun	4,713	683,604	89.7
17-May	914	2,098	0.3	15-Jun	19,024	702,628	92.2
18-May	55,832	57,930	7.6	16-Jun	5,892	708,520	93.0
19-May	2,492	60,422	7.9	17-Jun	31,854	740,374	97.2
20-May	6,411	66,833	8.8	18-Jun	525	740,899	97.2
21-May	2,822	69,655	9.1	19-Jun	17,012	757,911	99.5
22-May	7,055	76,710	10.1	20-Jun	939	758,850	99.6
23-May	4,075	80,785	10.6	21-Jun	341	759,191	99.6
24-May	12,791	93,576	12.3	22-Jun	113	759,304	99.6
25-May	44,314	137,890	18.1	23-Jun	64	759,368	99.7
26-May	35,213	173,103	22.7	24-Jun	85	759,453	99.7
27-May	3,637	176,740	23.2	25-Jun	1,159	760,612	99.8
28-May	2,024	178,764	23.5	26-Jun	311	760,923	99.9
29-May	657	179,421	23.5	27-Jun	344	761,267	99.9
30-May	278	179,699	23.6	28-Jun	638	761,905	100.0
31-May	4,241	183,940	24.1	29-Jun	93	761,998	100.0
1-Jun	806	184,746	24.2	30-Jun	35	762,033	100.0
2-Jun	25,868	210,614	27.6				
3-Jun	4,757	215,371	28.3				
4-Jun	1,662	217,033	28.5				
5-Jun	699	217,732	28.6				
6-Jun	1,138	218,870	28.7				
				Wild		468,488	
				Hatchery		293,545	

Appendix A.19. Daily counts of adult Chinook salmon passing through Little Tahltan weir, 1999.

Date	Large Chinook			Chinook Jacks		
	Count	Cumulative		Count	Cumulative	
		Count	Percent		Count	Percent
19-Jun	0	0	0.0	0	0	0.0
20-Jun	0	0	0.0	0	0	0.0
21-Jun	0	0	0.0	0	0	0.0
22-Jun	0	0	0.0	0	0	0.0
23-Jun	0	0	0.0	0	0	0.0
24-Jun	0	0	0.0	0	0	0.0
25-Jun	0	0	0.0	0	0	0.0
26-Jun	0	0	0.0	0	0	0.0
27-Jun	9	9	0.2	0	0	0.0
28-Jun	2	11	0.2	0	0	0.0
29-Jun	2	13	0.3	0	0	0.0
30-Jun	2	15	0.3	0	0	0.0
1-Jul	4	19	0.4	1	1	0.5
2-Jul	9	28	0.6	0	1	0.5
3-Jul	31	59	1.2	1	2	1.0
4-Jul	31	90	1.9	0	2	1.0
5-Jul	60	150	3.2	2	4	2.0
6-Jul	78	228	4.8	2	6	3.0
7-Jul	67	295	6.2	1	7	3.5
8-Jul	94	389	8.2	0	7	3.5
9-Jul	171	560	11.8	5	12	5.9
10-Jul	178	738	15.6	2	14	6.9
11-Jul	226	964	20.3	4	18	8.9
12-Jul	154	1,118	23.6	3	21	10.4
13-Jul	112	1,230	26.0	4	25	12.4
14-Jul	173	1,403	29.6	5	30	14.9
15-Jul	146	1,549	32.7	1	31	15.3
16-Jul	228	1,777	37.5	7	38	18.8
17-Jul	199	1,976	41.7	7	45	22.3
18-Jul	335	2,311	48.8	9	54	26.7
19-Jul	205	2,516	53.1	5	59	29.2
20-Jul	234	2,750	58.0	16	75	37.1
21-Jul	170	2,920	61.6	12	87	43.1
22-Jul	133	3,053	64.4	8	95	47.0
23-Jul	108	3,161	66.7	6	101	50.0
24-Jul	92	3,253	68.7	2	103	51.0
25-Jul	88	3,341	70.5	5	108	53.5
26-Jul	150	3,491	73.7	7	115	56.9
27-Jul	173	3,664	77.3	7	122	60.4
28-Jul	226	3,890	82.1	5	127	62.9
29-Jul	151	4,041	85.3	8	135	66.8
30-Jul	80	4,121	87.0	2	137	67.8
31-Jul	69	4,190	88.4	7	144	71.3
1-Aug	99	4,289	90.5	16	160	79.2
2-Aug	67	4,356	91.9	2	162	80.2
3-Aug	38	4,394	92.7	3	165	81.7
4-Aug	24	4,418	93.2	4	169	83.7
5-Aug	94	4,512	95.2	7	176	87.1
6-Aug	47	4,559	96.2	11	187	92.6
7-Aug	91	4,650	98.1	6	193	95.5
8-Aug	33	4,683	98.8	3	196	97.0
9-Aug	10	4,693	99.1	2	198	98.0
10-Aug	1	4,694	99.1	1	199	98.5
11-Aug	31	4,725	99.7	3	202	100.0
12-Aug	13	4,738	100.0	0	202	100.0
Total Counted		4,738			202	
Broodstock		5 ^a				
Escapement		4,733			202	

^a 5 females sacrificed for egg take (6 males used but not sacrificed).

Appendix B. 1. Salmon catch and effort in the Alaskan Subdistrict 106-41/42 (Sumner Strait) commercial drift gillnet fishery, 1960-1999.

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	310	45,305	15,727	135,503	50,380		2,311	47.0
1964	316	52,943	27,338	183,402	22,913		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	2,112	31.0
1970	420	26,812	15,153	29,102	18,092	366	1,863	41.0
1971	671	33,991	24,727	283,739	19,329	363	2,774	50.0
1972	1,747	74,745	60,827	40,644	46,511	515	3,321	41.0
1973	1,540	55,254	24,921	160,297	62,486	375	3,300	26.0
1974	1,342	46,760	28,889	57,296	38,045	238	2,179	28.0
1975	467	19,319	4,650	29,340	7,762	112	1,649	17.0
1976	237	9,319	10,367	20,251	2,301	71	827	19.0
1977	202	47,408	1,819	51,038	4,240	33	1,381	17.0
1978	274	1,422	26,762	9,546	3,142	70	1,510	26.5
1979	458	34,807	12,087	176,395	16,816	154	2,703	25.0
1980	205	48,434	10,894	17,068	15,176	39	1,324	16.0
1981	598	132,293	13,161	220,194	25,682	156	2,926	25.0
1982	648	121,563	21,193	10,392	11,891	199	1,700	22.0
1983	268	28,153	41,208	74,347	13,001	198	1,453	32.0
1984	136	27,372	19,124	99,807	28,461	268	1,890	32.0
1985	538	172,088	50,577	319,379	45,566	664	2,673	38.0
1986	421	85,247	104,328	105,347	48,471	684	3,510	32.0
1987	441	79,165	17,776	117,059	25,877	318	1,767	20.0
1988	452	57,337	6,349	10,894	42,210	341	1,495	18.0
1989	581	107,886	55,671	418,044	40,156	268	3,222	34.0
1990	759	104,922	94,526	84,543	42,474	767	3,502	34.0
1991	844	89,355	136,990	64,334	85,435	135	3,620	39.0
1992	743	146,608	190,885	38,483	100,666	138	4,230	40.0
1993	458	129,859	134,902	296,986	96,995	107	4,353	38.0
1994	456	157,526	191,695	66,225	125,826	59	4,468	43.0
1995	663	133,713	109,613	154,004	189,369	100	3,657	34.0
1996	487	223,784	159,319	70,620	162,872	97	5,290	46.0
1997	829	118,675	52,917	414,619	100,612		3,668	39.0
1998	334	79,052	175,124	196,403	200,892		2,999	43.0
Averages								
60-98	557	72,061	50,573	115,737	46,621	261	2,452	34.8
89-98	615	129,138	130,164	180,426	114,530	209	3,901	39.0
1999	397	73,378	130,083	277,194	284,807		3,294	50.0

Appendix B. 2. Scale pattern based stock proportions and catches of sockeye salmon in the Alaskan Subdistrict 106-41/42 (Sumner Strait) commercial drift gillnet fishery, 1985-1999.

Year	Alaska	Canada	Stikine				Tahltan	
			Tahltan ^a	Tuya	Mainstem	Total	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
1997	0.538	0.269	0.079	0.101	0.014	0.193	0.056	0.023
1998	0.550	0.337	0.017	0.096	0.000	0.113	0.014	0.003
Averages								
85-98	0.561	0.308	0.080	0.059	0.034	0.131	0.090	0.028
1999	0.618	0.101	0.074	0.079	0.128	0.281	0.070	0.004
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	41,123	33,644	11,541		3,048	14,588		
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
1997	63,827	31,892	9,327	11,937	1,692	22,956	6,594	2,733
1998	43,479	26,661	1,326	7,555	31	8,912	1,125	201
Averages								
85-98	63,972	37,980	11,988	7,087	4,408	18,421	15,901	4,305
1999	45,335	7,420	5,425	5,786	9,412	20,623	5,159	266

^a 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, 1960-1999.

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	72,235	10,288	15,141	6,755	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	1,149	92,899	40,611	265,574	24,107	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	1,211	54,749	61,170	69,232	39,195	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
1997	246	49,843	24,633	374,432	85,844		1,329	38.0
1998	184	34,383	98,073	306,252	131,130		1,522	43.0
Averages								
60-98	791	40,502	34,480	195,546	31,671	131	1,474	34.8
89-98	584	65,177	69,592	248,979	67,286	66	1,547	38
1999	121	31,500	73,179	213,522	163,560		1,766	49.0

Appendix B.4. Scale pattern based stock proportions and catches of sockeye salmon in the Alaskan Subdistrict 106-30 (Clarence Strait) commercial drift gillnet fishery, 1985-1999.

Year	Alaska	Canada	Stikine			Total	Tahltan	
			Tahltan ^a	Tuya	Mainstem		Wild	Planted
Proportions								
1985	0.477	0.453	0.056		0.013	0.070		
1986	0.726	0.272	0.000		0.002	0.002		
1987	0.844	0.140	0.004		0.012	0.016		
1988	0.883	0.095	0.021		0.000	0.021		
1989	0.662	0.322	0.002		0.015	0.016		
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
1997	0.668	0.276	0.009	0.026	0.021	0.056	-0.006	0.015
1998	0.710	0.237	0.010	0.043	0.000	0.053	0.010	0.000
Average								
85-98	0.652	0.289	0.024	0.017	0.030	0.059	0.020	0.008
1999	0.795	0.072	0.018	0.020	0.095	0.133	0.017	0.001
Catch								
1985	44,351	42,053	5,244		1,251	6,495		
1986	43,875	16,471	11		105	116		
1987	48,311	8,020	221		710	931		
1988	31,092	3,358	742		0	742		
1989	56,167	27,296	154		1,231	1,385		
1990	52,188	27,506	114		1,075	1,189		
1991	37,410	14,063	2,823		453	3,277		
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
1997	33,274	13,773	437	1,295	1,064	2,796	-313	750
1998	24,411	8,150	352	1,465	5	1,822	352	0
Average								
85-98	40,334	19,991	1,564		2,022	3,789	1,223	496
1999	25,028	2,276	563	641	2,992	4,196	541	22

^a Tahltan includes wild and thermally marked fish.

Appendix B. 5. Salmon catch and effort in the Alaskan District 106 commercial drift gillnet fisheries, 1960-1999.

Year	Catch ^b						Effort ^a	
	Chinook	Sockeye	Coho	Pink ^c	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	1,560	80,767	52,103	514,596	90,103		5,589	51.0
1964	2,082	76,541	64,654	443,086	44,218		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	45,662	26,291	91	1,329	25.0
1981	1,565	182,001	22,614	437,573	34,296	187	2,928	26.0
1982	1,648	193,798	31,481	25,533	18,646	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	1,687	264,987	91,188	584,953	69,673	1,003	2,625	31.4
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	2,055	144,104	198,160	133,566	124,630	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	267,862	179,994	176,026	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
1997	1,075	168,518	77,550	789,051	186,456		3,668	39.0
1998	518	113,435	273,197	502,655	332,022		4,398	43.0
Averages								
60-98	1,348	112,563	85,052	311,283	78,292	393	3,026	35.8
89-98	1,200	194,315	199,756	429,405	181,815	275	4,092	39.0
1999	518	104,878	203,262	490,716	448,367		4,943	50.0

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Appendix B. 5. (page 2 of 2)

Year	Catch ^b						Effort ^a	
	Chinook	Sockeye	Coho	Pink ^c	Chum	Steelhead	Permit Days	Days Open
Alaska Hatchery Contribution								
1989			5,081					
1990			42,859					
1991			64,088					
1992			84,568					
1993			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			
1997	375	1,463	19,512		80,015			
1998	290	706	101,129		118,096			
Averages								
89-98	352	2,835	51,689		89,377			
1999	189	2,257	82,828		211,082			
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	2,055	144,104	134,072	133,566	124,630	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	228,021	179,994	108,912	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
1997	700	167,055	58,038	789,051	106,441	0	3,668	39.0
1998	228	112,729	172,068	502,655	213,926		4,398	43.0
Averages								
89-98	1,024	192,898	148,067	429,405	137,127	244	4,092	39.0
1999	329	102,621	120,434	490,716	237,285		4,943	50.0

^a Catches do not include Blind Slough terminal area harvests.

^b Effort may be less than the sum of effort from 106-41/42 and 106-30 since some boats fished in more than one subdistrict.

^c Data not available to estimate contributions of pink salmon from Alaska hatcheries.

Appendix B. 6. Scale pattern based stock proportions and catches of sockeye salmon in the Alaskan District 106 commercial drift gillnet fisheries, 1982-1999.

Year	Alaska	Canada	Stikine				Tahltan	
			Tahltan ^a	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	0.316	0.560	0.081	0.001	0.043	0.124	0.044	0.036
1996	0.531	0.268	0.166	0.028	0.007	0.201	0.147	0.019
1997	0.576	0.271	0.058	0.079	0.016	0.153	0.037	0.021
1998	0.598	0.307	0.015	0.080	0.000	0.095	0.013	0.002
Averages								
83-98	0.600	0.294	0.063		0.032	0.106		
89-98	0.541	0.324	0.074	0.047	0.042	0.135	0.070	0.022
1999	0.671	0.092	0.057	0.061	0.118	0.237	0.054	0.003
Catches ^b								
1982	94,275	61,853				37,670		
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	78,533	47,707	14,364		3,501	17,864		
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
1997	97,101	45,665	9,764	13,232	2,756	25,752	6,281	3,483
1998	67,890	34,811	1,678	9,020	36	10,734	1,477	201
Averages								
83-98	97,073	52,925	12,339		5,920	20,208		
89-98	103,927	62,692	16,041	7,800	8,536	27,697	17,125	4,802
1999	70,363	9,696	5,988	6,427	12,404	24,819	5,700	288

^a All Tahltan includes wild and thermally marked fish.

^b Catches do not include Blind Slough terminal area harvest.

Appendix B.7. Salmon catch and effort in the Alaskan District 108 commercial drift gillnet fishery, 1960-1999.

Year	Catch ^a						Effort	
	Chinook	Sockeye	Coho	Pink ^b	Chum	Steelhead	Permit Days ^c	Days Open
1960								
1961								
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
1997	2,566	93,039	2,140	65,745	38,913		2,285	44.0
1998	460	22,031	19,206	39,246	41,057		1,073	45.0
Averages								
60-98	2,241	26,254	13,211	22,349	13,561	44	836	35.3
89-98	1,341	61,672	16,791	37,464	35,967	26	1,323	46.2
1999	1,049	36,548	28,437	48,550	117,196		2,207	54.0

- continued -

Appendix B.7. (page 2 of 2)

Year	Catch ^a						Effort	
	Chinook	Sockeye	Coho	Pink ^b	Chum	Steelhead	Permit Days ^c	Days Open
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			
1997	740	0	162		14,544			
1998	302	62	3,043		15,140			
Averages								
89-98	642	150	2,158		18,217			
1999	362	792	6,360		21,640			
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
1997	1,826	93,039	1,978	65,745	24,369	0	2,285	44.0
1998	158	21,969	16,163	39,246	25,917	0	1,073	45.0
Averages								
89-98	1,020	61,597	14,633	37,464	26,858	21	1,323	46.2
1999	687	35,756	22,077	48,550	95,556		2,207	54.0

^a Catches do not include Ohmer Creek terminal area harvests.

^b Data not available to estimate contributions of pink salmon from Alaska hatcheries.

^c Permit days are adjusted for boats which did not fish the entire opening and may total less than the sum of the permits times days open.

Appendix B. 8. Scale pattern based stock proportions and catches of sockeye salmon in the Alaskan District 108 commercial drift gillnet fishery, 1985-1999.

Year	Alaska	Canada	Stikine			Total	Tahltan	
			Tahltan ^a	Tuya	Mainstem ^b		Wild	Planted
1984								
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
1997	0.058	0.131	0.362	0.261	0.189	0.812	0.260	0.102
1998	0.115	0.108	0.189	0.244	0.343	0.777	0.182	0.008
Averages								
85-98	0.173	0.089	0.289	0.145	0.407	0.737	0.287	0.111
1999	0.144	0.036	0.414	0.201	0.205	0.820	0.390	0.024
Catch ^c								
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
1997	5,381	12,152	33,644	24,288	17,574	75,506	24,144	9,500
1998	2,541	2,376	4,170	5,383	7,561	17,114	4,000	170
Averages								
85-98	7,367	5,660	17,798	10,188	10,895	31,604	30,469	10,296
1999	5,255	1,313	15,134	7,360	7,486	29,980	14,258	876

^a Tahltan includes wild and thermally marked fish.

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

^c Catches do not include Ohmer Creek terminal area harvests.

Appendix B. 9. Salmon catch in the Alaskan District 106 and 108 test fisheries, 1984-1999.

Year ^a	Catch					Boat Hours
	Chinook	Sockeye	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
1998	0	3,510	142	61	235	45.00
1999	29	4,801	217	429	1,368	45.00

^a Only years with test fishery openings are listed.

Appendix B. 10. Scale pattern based stock proportions of sockeye salmon in the Alaskan District 106 and 108 test fisheries, 1984-1999.

Year ^a	Alaska	Canada	Stikine			Tahltan	
			Tahltan ^b	Tuya	Mainstem	Total	Wild
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	
1998	0.064	0.041	0.353	0.438	0.104	0.895	0.336 0.016
1999	0.162	0.019	0.481	0.298	0.041	0.820	0.453 0.028

^a all Tahltan includes thermally marked fish.

^b Only years with test fishery openings are listed.

Appendix B. 11. Scale pattern based stock specific catches of sockeye salmon in the Alaskan District 106 and 108 test fisheries, 1984-1999.

Year ^a	Alaska	Canada	Stikine				Tahltan	
			Tahltan ^b	Tuya	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		
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	3	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		
1998	224	145	1,238	1,538	365	3,141	1,181	57
1999	776	89	2,309	1,430	197	3,936	2,174	135

^a Only years with test fishery openings are listed.

^b All 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, 1979-1999.

Year	Catch							Effort	
	Chinook		Sockeye	Coho	Pink	Chum	Steelhead	Permit	
	Jacks	Large						Days	Days
1979 ^a	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 ^b									
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
1997	186	3,283	56,995	401	269	222	33	569.4	89.0
1998	328	1,614	37,310	726	55	13	209	374.0	46.5
Averages ^c									
79-98		1,392	25,436	4,259	795	432	240	444	46.1
89-98	290	1,414	35,342	2,654	235	290	126	400	55
1999	789	2,127	32,556	181	11	8	14	261.3	31.0

^a The lower river commercial catch in 1979 includes the upper river commercial catch.

^b There was no commercial fishery in 1984.

^c Chinook average for 1979-1998 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, 1979-1999.

Year	Proportions ^a			Planted Tahltan	Catch			Tahltan	
	Tahltan	Tuya	Mainstem		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 ^b									
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	0.537	0.113	0.350	0.066	35,584	7,465	23,213	31,197	4,387
1997	0.356	0.272	0.372	0.072	20,269	15,513	21,213	16,175	4,094
1998	0.335	0.352	0.313	0.020	12,498	13,137	11,675	11,751	747
Averages									
79-98	0.444		0.516		12,080		11,408		
89-98	0.468	0.189	0.456	0.088	17,265	9,252	14,376	20,265	4,535
1999	0.576	0.241	0.183	0.021	18,742	7,862	5,952	18,046	696

^a 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 1989-1999.

^b There was no commercial fishery in 1984.

Appendix B. 14. Salmon and steelhead trout catch and effort in the Canadian commercial fishery in the upper Stikine River, 1975-1999.

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 ^a									
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 ^b									
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
1997	6	45	2,199	0	0	0	0	42.0	29.0
1998	0	12	907	0	0	0	0	19.0	19.0
Averages ^c									
75-98		98	1,035	4	1	1	0		
89-98	16	50	1,327	0	0	0	0	37.6	23.7
1999	12	24	625	0	0	0	0	19.0	18.0

^a Catches in 1979 were included in the lower river commercial catches.

^b There was no commercial fishery in 1984.

^c Chinook average for 1975-1998 is for jacks and large fish combined.

Appendix B. 15. Salmon and steelhead trout catch in the Canadian Aboriginal fishery located at Telegraph Creek, on the Stikine River, 1972-1999.

Year	Catch						
	Chinook		Sockeye	Coho	Pink	Chum	Steelhead
	Jacks	Large					
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
1997	94	1,155	6,365	0	0	0	0
1998	95	538	5,586	0	0	0	0
Averages ^a							
72-98		819	4,276	15	14	2	7
89-98	174	799	4,982	4	0	1	12
1999	463	765	4,874	0	0	0	0

^a Chinook average for 1972-1998 is for jacks and large fish combined.

Appendix B. 16. Stock specific sockeye catches in the Canadian upper river commercial and Aboriginal fisheries in the Stikine River, 1972-1999.

Year	Upper River Commercial					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 ^a						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 ^b						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	945	150	6	824	121	5,802	972	144	4,931	871
1997	1,152	834	213	914	238	3,318	2,403	644	2,631	687
1998	363	517	27	336	27	2,352	3,103	131	2,227	125
Averages ^a										
72-98	871		93			3,645		387		
89-98	1,061	390	109	1,097	263	3,933	1,654	388	3,304	729
1999	359	206	60	356	3	3,038	1,423	413	2,903	135

^a Catches in 1979 were included in the lower river commercial catches.

^b There was no commercial fishery in 1984.

Appendix B. 17. Salmon and steelhead trout catch in the combined Canadian net fisheries in the Stikine River, 1972-1999. 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 ^a	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
1997	286	4,483	65,559	401	269	222	33
1998	423	2,164	43,803	726	55	13	209
Averages ^b							
72-98		1,882	23,019	3,016	574	307	176
89-98	480	2,263	41,651	2,658	235	291	138
1999	1,264	2,916	38,055	181	11	8	14

^a There was no commercial fishery in 1984.

^b Chinook average for 1972-1998 is for jacks and large fish combined.

Appendix B. 18. Salmon catches in the Stikine River harvested under Canadian ESSR licenses, 1992-1999.

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	12,667	1,672	216	
1997	378	353	25	2,015	No ESSR at Tahltan
1998	390	335	55	6,103	No ESSR at Tahltan
1999	429	404	25	2,822	No ESSR at Tahltan
Salmon taken for otolith samples at Tahltan weir and included in ESSR catch when fishery was operated.					
1996	407	360	47		
1997	378	353	25		
1998	390	335	55		
1999	429	404	25		

Appendix B. 19. Salmon and steelhead trout catches and effort in Canadian test fisheries in the Stikine River, 1985-1999.

Year	Catches							Effort Drift=# Set=hr.
	Chinook		Sockeye	Coho	Pink	Chum	Steelhead	
	Jacks	Large						
Drift Test Fishery Catches								
1986	12	27	412	226	8	25	0	405
1987 ^a		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
1997	7	30	245	11	9	15	2	210
1998	11	25	190	207	20	40	24	820
Averages								
85-98	10	83	342	111	21	31	6	490
1999	43	53	410	312	11	17	25	1,006
Set Test Fishery Catches								
1985			1,340					
1986								
1987 ^a		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
Averages								
85-98	23	75	1,192	215	117	60	9	936
1999	16	49	803	64	6	10	11	1,577
Additional Test Fishery Catches								
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
Averages								
85-98	81	269	1,099	6	0	2	1	120
1999	38	751	4,683	16	18	2	7	531
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	
1997	7	30	245	11	9	15	2	
1998	11	25	190	207	20	40	24	
Averages								
85-98	54	227	1,646	259	103	73	13	
1999	97	853	5,896	392	35	29	43	

^a 1987 jack Chinook catch is for both set and drift nets.

Appendix B. 20. Sockeye salmon stock proportions and catch by stock in the test fishery in the lower Stikine River, 1985-1999.

Year ^a	Catch Tahltan		Catch		Marked Tahltan	Proportion Tahltan		Average Tahltan	Proportions ^b	
	U.S.	Canada	Tuya	Mainstem		U.S.	Canada		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		875	116	321	108		0.667	0.667	0.088	0.245
1997		97	54	94	20		0.396	0.396	0.220	0.384
1998		70	51	69	4		0.368	0.368	0.268	0.363
Averages										
85-98								0.494	0.146	0.464
1999		3,031	1,564	1,301	113		0.514	0.514	0.265	0.221

^a Stock composition based on: SPA 1985; average of SPA and GPA 1986-1988; egg diameter 1989-1999.

^b Average proportions are from averages of weekly estimates.

Appendix B. 21, Estimated proportion of inriver run comprised of Tahltan, Tuya, and mainstem sockeye stocks, 1979-1999.

Year ^a	Tahltan		Average ^b		
	U.S.	Canada	Tahltan	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	0.104	0.377
1997		0.297	0.297	0.229	0.474
1998		0.309	0.309	0.348	0.344
Averages					
79-98			0.431		0.534
89-98			0.445	0.174	0.486
1999		0.545	0.545	0.245	0.209

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

^b Stock compositions based on: scale circuli counts 1979-1983; SPA in 1985; average of SPA and GPA 1986-1988; and egg diameter analysis in 1989-1999. 1994-1999 data from commercial catch and CPUE.

Appendix B. 22. Counts of adult sockeye salmon migrating through Tahltan Lake weir, 1959-1999.

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 ^a	1-Aug	2-Aug	5-Aug	8-Aug	14,508					
1963 ^b	3-Aug				1,780					
1964	23-Jul	26-Jul	14-Aug	25-Aug	18,353					
1965 ^c	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	1,030
1994	10-Jul	14-Jul	30-Jul	9-Aug	46,363	3,378	6,852	36,133	29,961	6,172
1995	8-Jul	9-Jul	24-Jul	12-Aug	42,317	4,902	10,740	26,675	16,591	10,084
1996	14-Jul	14-Jul	22-Jul	04-Aug	52,500	4,402	14,339	33,759	29,823	3,936
1997	15-Jul	15-Jul	25-Jul	26-Aug	12,483	2,294	378	9,811	7,829	1,982
1998	11-Jul	11-Jul	25-Jul	26-Aug	12,658	3,099	390	9,169	8,553	616
Averages										
59-98	11-Jul	19-Jul	30-Jul	11-Aug	23,705					
89-98	10-Jul	13-Jul	26-Jul	11-Aug	35,297	3,534	5,742	28,318	23,138	3,970
1999	11-Jul	19-Jul	31-Jul	13-Aug	10,748	2,870	429	7,449	6,952	497

^a Question as to date weir installed.

^b Daily counts unavailable.

^c A slide occurred blocking the entrance for a while.

Appendix B. 23. Aerial survey counts of Mainstem sockeye stocks in the Stikine River drainage, 1984-1999. 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
1997	204	271	25			12	116	32	660
1998	230	246	89			9	183	135	892
Averages									
84-98	137	371	68	34	25	49	199	97	910
1999	56	301	64			54	98	78	651

Appendix B. 24. Estimates of sockeye salmon smolt migrating through Tahltan Lake smolt weir, 1984-1999.

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 ^a	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 ^b	05-May	15-May	29-May	05-Jun	595,147	610,407	6/14 97.5%		
1991 ^c	05-May	14-May	21-May	30-May	1,439,676	1,487,265	6/13 96.8%	1,220,397	266,868
1992 ^d	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
1997	07-May	11-May	23-May	30-May		518,202		348,685	169,517
1998	07-May	08-May	25-May	05-Jun		540,866		326,420	214,446
Averages									
84-98	05-May	11-May	22-May	01-Jun		993,410		1,037,203	294,428
1999	06-May	10-May	09-Jun	15-Jun		762,033		468,488	293,545

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

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

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

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

Appendix B. 25. Weir counts of Chinook salmon at Little Tahltan River, 1985-1999.

Year	Weir Installed	Date of Arrival			Total Count	Broodstock and Other	Natural Spawners	Total Natural Spawners
		First	50%	90%				
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	-12	11,437	
1994	18-Jun	28-Jun	22-Jul	02-Aug	6,387	-14	6,373	
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	
1997	14-Jun	22-Jun	16-Jul	29-Jul	5,557	-10	5,547	
1998	13-Jun	19-Jun	14-Jul	29-Jul	4,879	-6	4,873	
Averages								
85-98	22-Jun	27-Jun	20-Jul	01-Aug	5,320		5,317	
1999	18-Jun	27-Jun	19-Jul	1-Aug	4,738	-5	4,733	
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			11,497
1994	18-Jun	02-Jul	22-Jul	05-Aug	121			6,494
1995	17-Jun	22-Jun	28-Jul	10-Aug	135			3,207
1996	26-Jun	02-Jul	13-Jul	14-Jul	22			4,843
1997	14-Jun	26-Jun	21-Jul	1-Aug	54			5,601
1998	13-Jun	26-Jun	20-Jul	7-Aug	37			4,910
Averages								
85-98	22-Jun	30-Jun	22-Jul	02-Aug	219			5,536
1999	18-Jun	1-Jul	23-Jul	6-Aug	202			4,935

Appendix B. 26. Index counts of Stikine Chinook escapements, 1979-1999. Counts do not include jacks (fish < 600mm mef length).

Year	Little Tahltan		Tahltan	Beatty	Andrew	Comments	M-R	% to
	Weir	Aerial	Aerial	Aerial	Foot		Estimate	L. Tahltan
1979		1,166	2,118		382	Andrew weir includes broodstock		
1980		2,137	960	122	363	Andrew weir includes broodstock		
1981		3,334	1,852	558	654	Andrew weir includes broodstock		
1982		2,830	1,690	567	947	Andrew weir includes broodstock		
1983		594	453	83	444	Andrew weir includes broodstock		
1984		1,294		126	389	Andrew weir 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		
1988	7,292	3,796	4,384	593	564			
1989	4,715	2,527		362	530	Tahltan not surveyed - visibility		
1990	4,392	1,755	2,134	271	664			
1991	4,506	1,768	2,445	193	400	Andrew fixed wing		
1992	6,627	3,607	1,891	362	778	Andrew helicopter, Little Tahltan inc. brood		
1993	11,437	4,010	2,249	757	1,060			
1994	6,373	2,422		184	572	Andrew helicopter, Tahltan no survey		
1995	3,072	1,117	696	152	338			
1996	4,821	1,920	772	218	332		28,949	0.167
1997	5,547	1,907	260	218	300		26,996	0.205
1998	4,873	1,385	587	125	487		25,968	0.188
Averages								
79-98	5,317	2,154	1,575	291	551			
89-98	5,636	2,242	1,379	284	546		27,304	0.187
1999	4,733	1,379			605	Tahltan and Beatty discontinued	19,947	0.237

Appendix B. 27. Index counts of Stikine coho salmon escapements, 1984-1999. Missing data due to poor survey conditions.

Year	Date	Katete		Bronson		Scud		Christina	Total	
		West	Katete	Craig	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	11/1-2	28	652	1,026	466		448	1,105		3,725
1995	10/30	211	208	1,419	574		621	719		3,752
1996	10/30	163	232	205	549		630	1,466		3,245
1997	11/01	2	0	19	116		272	648		1,057
1998	10/30	14	63	141	282		143	450		1,093
Average										
84-98		185	548	662	341	54	450	527	28	2,631
1999		163	773	891	490		661	894		3,872

Appendix B. 28. Stikine River sockeye salmon run size, 1979-1999. Catches include test fishery catches.

Year	Inriver Run			Inriver Catch	Escapement ^b	Marine Catch	Total Run
	Canada	U.S.	Average ^a				
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	42,766	111,527
1983	77,260	66,838	71,683	21,120	50,563	5,781	77,465
1984	95,454	59,168	76,211	5,327	70,884	7,803	84,014
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	34,323	154,476
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			184,400	90,148	94,252	188,385	372,785
1997			125,657	68,197	57,460	101,258	226,915
1998			90,459	50,486	39,973	30,989	121,448
Averages							
79-98			102,359	32,930	69,429	43,904	146,263
89-98			125,359	47,767	77,592	71,926	197,284
1999			65,879	47,202	18,677	58,735	124,614
Tahltan sockeye run size							
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	20,832	63,326
1983			32,684	11,428	21,256	5,071	37,755
1984			37,571	4,794	32,777	3,086	40,657
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	23,612	91,006
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
1995			82,290	50,713	31,577	51,665	133,955
1996			95,706	57,545	38,161	147,435	243,141
1997			37,319	25,214	12,105	43,408	80,727
1998			27,941	15,673	12,268	7,086	35,027
Averages							
79-98			46,908	18,412	28,496	25,213	72,121
89-98			58,667	26,815	31,852	41,043	99,710
1999			35,918	25,599	10,319	23,431	59,349

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Year	Inriver Run			Inriver Catch	Escapement ^b	Marine Catch	Total Run
	Canada	U.S.	Average ^a				
Tuya sockeye run size							
1995			2,216	1,112	1,104	586	2,802
1996			19,158	8,919	10,239	19,442	38,600
1997			28,738	20,819	7,919	37,520	66,258
1998			31,442	22,911	8,531	15,941	47,383
Averages							
95-98			20,389	13,440	6,948	18,372	38,761
1999			16,165	13,877	2,288	15,217	31,382
Mainstem sockeye run size							
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	21,934	48,201
1983			38,999	9,692	29,307	710	39,709
1984			38,640	533	38,107	4,717	43,357
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	10,712	63,470
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			69,536	23,684	45,852	21,508	91,044
1997			59,600	22,164	37,436	20,330	79,930
1998			31,077	11,902	19,175	7,962	39,039
Averages							
79-98			51,373	11,830	39,543	15,017	66,390
89-98			58,536	15,576	42,961	23,534	82,070
1999			13,797	7,726	6,071	20,087	33,884

^a The averages for 1983-1985 are averages of weekly run timing estimates as well as stock composition estimates and are not

^b Escapement includes fish later captured for broodstock.

Appendix C. 1. Weekly salmon catch and effort in the Alaskan District 111 and Subdistrict 111-32 (Taku Inlet), commercial drift gillnet fishery, 1999.

Week	Start Date	Catch					Effort			
		Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Boats	Days Open	Boat Days
District 111 catches										
26	20-Jun	893	6,654	4	1	1,732		63	3.0	189
27	27-Jun	312	7,687	7	51	11,230		66	3.0	198
28	4-Jul	322	11,276	134	2,692	93,466		77	5.0	385
29	11-Jul	130	18,067	290	6,144	128,625		90	5.0	450
30	18-Jul	80	10,339	1,225	8,481	101,157		101	4.0	404
31	25-Jul	31	11,358	1,096	12,222	46,465		70	5.0	350
32	1-Aug	49	8,507	2,386	18,037	30,909		70	5.0	350
33	8-Aug	10	1,995	1,415	8,481	10,990		47	3.0	141
34	15-Aug	4	699	707	1,310	2,192		21	3.0	63
35	22-Aug	0	342	633	1,589	985		16	2.0	32
36	29-Aug	1	2,314	1,700	308	594		22	3.0	66
37	5-Sep	0	126	2,588	0	620		23	2.0	46
38	12-Sep	1	54	1,217	0	178		18	2.0	36
39	19-Sep	5	6	1,670	0	138		13	4.0	52
40	26-Sep	2	1	1,753	0	76		13	4.0	52
41	3-Oct	1	0	431	0	2		8	3.0	24
42	10-Oct	0	0	17	0	0		1	3.0	3
Total		1,841	79,425	17,273	59,316	429,359			59.0	2,841
Alaskan hatchery contribution for Chinook, and coho salmon ^a										
26	20-Jun	287		0						
27	27-Jun	48		0						
28	4-Jul	38		0						
29	11-Jul	110		0						
30	18-Jul	0		0						
31	25-Jul	0		85						
32	1-Aug	4		15						
33	8-Aug	1		216						
34	15-Aug	0		27						
35	22-Aug	0		40						
36	29-Aug	11		91						
37	5-Sep	0		344						
38	12-Sep	0		52						
39	19-Sep	0		126						
40	26-Sep	0		200						
41	3-Oct	0		112						
42	10-Oct	0		0						
Total		499		1,307						

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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:										
26	20-Jun	606		4						
27	27-Jun	264		7						
28	4-Jul	284		134						
29	11-Jul	20		290						
Catches not including Alaskan hatchery contribution:										
30	18-Jul	80		1,225						
31	25-Jul	31		1,011						
32	1-Aug	45		2,371						
33	8-Aug	9		1,199						
34	15-Aug	4		680						
35	22-Aug	0		593						
36	29-Aug	-10		1,609						
37	5-Sep	0		2,244						
38	12-Sep	1		1,165						
39	19-Sep	5		1,544						
40	26-Sep	2		1,553						
41	3-Oct	1		319						
42	10-Oct	0		17						
Total		1,342		15,966						
Subdistrict 111-32 Catches (Taku Inlet)										
26	20-Jun	886	6,379	4	1	1,626		59	3.0	177
27	27-Jun	310	7,344	7	47	8,757		63	3.0	189
28	4-Jul	301	10,667	125	2,489	79,618		73	5.0	365
29	11-Jul	123	16,520	237	4,975	106,838		82	5.0	410
30	18-Jul	65	8,721	874	6,275	69,998		87	4.0	348
31	25-Jul	29	9,611	953	10,916	34,337		63	5.0	315
32	1-Aug	34	6,896	2,109	12,986	21,893		68	5.0	340
33	8-Aug	2	1,609	551	4,264	4,639		36	3.0	108
34	15-Aug	3	540	414	790	987		16	3.0	48
35	22-Aug	0	326	548	907	467		15	2.0	30
36	29-Aug	1	143	1,459	308	448		18	2.0	36
37	5-Sep	0	101	1,926	0	401		19	2.0	38
38	12-Sep	0	50	1,062	0	130		16	2.0	32
39	19-Sep	5	6	1,632	0	130		13	4.0	52
40	26-Sep	2	1	1,737	0	76		12	4.0	48
41	3-Oct	1	0	431	0	2		8	3.0	24
42	10-Oct	0	0	17	0	2		1	3.0	3
Total		1,762	68,914	14,086	43,958	330,349			58.0	2,563

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

Appendix C. 2. Estimate of the proportion of natural and planted sockeye salmon stock groups harvested in the Alaskan District 111 commercial drift gillnet fishery by week, 1999a.

Week	Kuthai	Little Trapper		Mainstem	Tatsamenie		Total			Total Wild		U.S. Planted
		Wild	Planted		Wild	Planted	Taku	Crescent	Speel	Snett.		
26	0.743	0.111	0.000	0.072	0.030	0.002	0.959	0.033	0.000	0.033	0.008	
27	0.465	0.343	0.003	0.099	0.062	0.011	0.983	0.012	0.000	0.012	0.005	
28	0.217	0.426	0.006	0.071	0.163	0.008	0.891	0.022	0.021	0.043	0.066	
29	0.101	0.358	0.007	0.253	0.102	0.007	0.827	0.057	0.000	0.058	0.115	
30	0.069	0.270	0.003	0.363	0.108	0.000	0.812	0.070	0.003	0.073	0.115	
31	0.044	0.192	0.000	0.406	0.102	0.003	0.747	0.047	0.056	0.104	0.149	
32	0.000	0.080	0.000	0.331	0.256	0.003	0.670	0.079	0.055	0.134	0.196	
33	0.000	0.103	0.000	0.257	0.118	0.000	0.478	0.132	0.044	0.175	0.346	
34	0.000	0.026	0.000	0.109	0.110	0.000	0.244	0.025	0.099	0.123	0.633	
35	0.000	0.026	0.000	0.109	0.110	0.000	0.244	0.025	0.099	0.123	0.633	
36	0.000	0.026	0.000	0.109	0.110	0.000	0.244	0.025	0.099	0.123	0.633	
37	0.000	0.026	0.000	0.109	0.110	0.000	0.244	0.025	0.099	0.123	0.633	
38	0.000	0.026	0.000	0.109	0.110	0.000	0.244	0.025	0.099	0.123	0.633	
39	0.000	0.026	0.000	0.109	0.110	0.000	0.244	0.025	0.099	0.123	0.633	
40	0.000	0.026	0.000	0.109	0.110	0.000	0.244	0.025	0.099	0.123	0.633	
41	0.000	0.026	0.000	0.109	0.110	0.000	0.244	0.025	0.099	0.123	0.633	
42	0.000	0.026	0.000	0.109	0.110	0.000	0.244	0.025	0.099	0.123	0.633	
Total	0.176	0.259	0.003	0.235	0.119	0.005	0.797	0.049	0.023	0.072	0.131	

^a Stock proportions are based on 1999 thermal mark analysis for enhanced fish and 1983-1998 averages for wild fish.

Appendix C. 3. 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, 1999a.

Week	Kuthai	Little Trapper		Mainstem	Tatsamenie		Total			Total Wild		U.S. Planted
		Wild	Planted		Wild	Planted	Taku	Crescent	Speel	Snett.		
26	4,946	740	0	479	198	15	6,378	221	0	221	55	
27	3,577	2,639	21	763	475	81	7,556	92	0	92	39	
28	2,448	4,804	73	797	1,836	90	10,048	246	239	485	743	
29	1,830	6,459	125	4,568	1,838	124	14,944	1,034	6	1,040	2,083	
30	711	2,791	28	3,752	1,113	0	8,395	728	26	754	1,190	
31	504	2,186	0	4,607	1,155	35	8,487	538	639	1,177	1,694	
32	0	680	0	2,817	2,182	22	5,701	670	468	1,138	1,668	
33	0	206	0	512	236	0	954	263	87	350	691	
34	0	18	0	76	77	0	171	17	69	86	442	
35	0	9	0	37	37	0	83	8	34	42	216	
36	0	59	0	252	253	0	564	57	228	285	1,465	
37	0	3	0	14	14	0	31	3	12	16	80	
38	0	1	0	6	6	0	13	1	5	7	34	
39	0	0	0	1	1	0	1	0	1	1	4	
40	0	0	0	0	0	0	0	0	0	0	1	
41	0	0	0	0	0	0	0	0	0	0	0	
42	0	0	0	0	0	0	0	0	0	0	0	
Total	14,016	20,596	247	18,680	9,421	367	63,327	3,879	1,814	5,693	10,405	

^a Stock composition estimates are historical (1983-1998) averages, except for planted which are based on marked fish expansions.

Appendix C. 4. Weekly salmon and steelhead trout catch and effort in the Canadian commercial fishery in the Taku River, 1999.

Week	Start Date	Catch							Effort		
		Chinook		Sockeye	Coho	Pink	Chum	Steelhead	Average Permits	Days Fished	Permit Days
		Jacks	Large								
26	20-Jun	90	324	764	0	0	0	0	10.50	2.00	21.00
27	27-Jun	112	362	4,343	1	0	0	0	9.00	3.00	27.00
28	4-Jul	34	168	5,562	8	0	0	0	11.00	3.00	33.00
29	11-Jul	5	17	662	9	0	0	0	11.50	2.00	23.00
30	18-Jul	11	24	2,541	51	0	0	0	11.33	3.00	34.00
31	25-Jul	2	9	2,375	203	0	0	0	11.00	3.00	33.00
32	1-Aug	3	3	1,190	200	0	0	0	10.00	3.00	30.00
33	8-Aug	0	1	1,049	381	0	0	1	9.67	3.00	29.00
34	15-Aug	0	0	614	498	0	0	0	9.67	3.00	29.00
35	22-Aug	0	0	943	865	0	0	13	6.67	3.00	20.00
36	29-Aug	0	0	635	2,062	0	0	58	5.00	4.00	20.00
37	5-Sep	0	0	3	138	0	0	9	0.50	2.00	1.00
Total		257	908	20,681	4,416	0	0	81		34.00	300.00

Appendix C. 5. Weekly stock proportions of sockeye salmon harvested in the Canadian commercial fishery in the Taku River, 1999.

Week	Start Date	Kuthai	Little Trapper			Tatsamenie	
			Wild	Planted ^a	Mainstem	Wild	Planted ^b
26	20-Jun	0.729	0.237	0.000	0.027	0.007	0.000
27	27-Jun	0.861	0.118	0.000	0.011	0.005	0.005
28	4-Jul	0.503	0.340	0.020	0.079	0.054	0.004
29	11-Jul	0.304	0.400	0.002	0.133	0.150	0.012
30	18-Jul	0.181	0.346	0.020	0.159	0.284	0.010
31	25-Jul	0.120	0.423	0.003	0.262	0.179	0.013
32	1-Aug	0.000	0.484	0.000	0.234	0.282	0.000
33	8-Aug	0.000	0.285	0.000	0.315	0.392	0.009
34	15-Aug	0.000	0.265	0.000	0.388	0.336	0.011
35	22-Aug	0.000	0.343	0.000	0.332	0.324	0.000
36	29-Aug	0.000	0.343	0.000	0.332	0.324	0.000
37	5-Sep	0.000	0.343	0.000	0.332	0.324	0.000
Total		0.389	0.305	0.008	0.145	0.147	0.006

^a Planted proportions based on preliminary mark recovery.

Appendix C. 6. Weekly stock-specific catch of sockeye salmon in the Canadian commercial fishery in the Taku River, 1999.

Week	Start Date	Kuthai	Little Trapper		Mainstem	Tatsamenie	
			Wild	Planted ^a		Wild	Planted ^a
26	20-Jun	557	181	0	21	5	0
27	27-Jun	3,741	511	0	49	20	22
28	4-Jul	2,798	1,893	112	437	299	23
29	11-Jul	201	265	1	88	99	8
30	18-Jul	461	878	52	403	721	26
31	25-Jul	286	1,005	6	623	424	31
32	1-Aug	0	576	0	278	336	0
33	8-Aug	0	299	0	330	411	9
34	15-Aug	0	163	0	238	206	7
35	22-Aug	0	324	0	313	306	0
36	29-Aug	0	218	0	211	206	0
37	5-Sep	0	1	0	1	1	0
Total		8,044	6,314	171	2,992	3,034	126

^a Planted numbers based on preliminary recovery of marks.

Appendix C. 7. Weekly salmon and steelhead trout catch and effort in the Canadian test fishery in the Taku River, 1999.

Week	Start Date ^a	Catch							Effort		
		Chinook		Sockeye	Coho	Pink	Chum	Steelhead	Average Permits	Days Fished	Permit Days
Jacks	Large										
22	23-May	1	209	0	0	0	0	0			
23	30-May	1	183	0	0	0	0	0			
24	6-Jun	0	158	26	0	0	0	0			
25	13-Jun	0	27	18	0	0	0	0			
38	12-Sep	0	0	34	227	0	0	16			
39	19-Sep	0	0	5	68	0	0	6			
40	26-Sep	0	0	5	284	0	0	24			
41	3-Oct	0	0	0	109	0	0	2			
Total		2	577	88	688	0	0	48			

^a There was no test fishing during statistical weeks 26-37 inclusive.

Appendix C. 8. Mark-recapture estimate of above border run of sockeye and coho salmon in the Taku River, 1999.

Recovery Week	Start Date	Above Border Run	Canadian Harvests			Above Border Escapement		
			Commercial	Test	Aboriginal ^a			
Sockeye								
24-26	13-Jun	5,375	764	44		4,611		
27	27-Jun	20,682	4,343			16,339		
28	4-Jul	22,316	5,562			16,754		
29	11-Jul	12,135	662			11,473		
30	18-Jul	21,041	2,541			18,500		
31	25-Jul	9,541	2,375			7,166		
32	1-Aug	8,595	1,190			7,405		
33	8-Aug	1,719	1,049			670		
34	15-Aug	10,142	614			9,528		
35	22-Aug	2,267	943			1,324		
36-40	29-Aug	5,492	638	44		4,854		
M-R Estimate		119,304						
95% C.I.		109,714	128,894					
Total Estimate		119,304	20,681	88	382	98,153		
Coho								
27-34	27-Jun	8,227	1,351			6,876		
35-37	22-Aug	17,113	3,065		316	13,732		
38-41	12-Sep	33,707		688	155	32,864		
Late season expansion ^b		7,372						
M-R Estimate		59,047						
95% C.I.		46,155	71,937					
Total Estimate		51,917	80,918	66,419	4,416	688	471	60,768

^a Aboriginal catch by week is not available.

^b Expansion based on proportion of coho troll harvest taken through statistical week 37, known to be minimum since troll catch rates were still high when the troll fishery closed for season.

Appendix C. 9. Daily counts of adult salmon passing through Tatsamenie weir, 1999.

Date	Sockeye			Coho ^a			
	Count	Cumulative		Count	Cumulative		
		Count	Percent		Count	Percent	
15-Aug	---- Weir Fish Tight ----						
15-Aug	0	0	0.0	0	0	0.0	
16-Aug	2	2	0.1	0	0	0.0	
17-Aug	3	5	0.2	0	0	0.0	
18-Aug	0	5	0.2	0	0	0.0	
19-Aug	0	5	0.2	0	0	0.0	
20-Aug	1	6	0.3	0	0	0.0	
21-Aug	0	6	0.3	0	0	0.0	
22-Aug	4	10	0.5	0	0	0.0	
23-Aug	1	11	0.5	0	0	0.0	
24-Aug	2	13	0.6	0	0	0.0	
25-Aug	5	18	0.9	0	0	0.0	
26-Aug	8	26	1.2	0	0	0.0	
27-Aug	93	119	5.7	0	0	0.0	
28-Aug	228	347	16.5	0	0	0.0	
29-Aug	121	468	22.2	0	0	0.0	
30-Aug	142	610	29.0	0	0	0.0	
31-Aug	36	646	30.7	0	0	0.0	
1-Sep	115	761	36.2	2	2	8.7	
2-Sep	54	815	38.7	0	2	8.7	
3-Sep	45	860	40.9	0	2	8.7	
4-Sep	69	929	44.2	0	2	8.7	
5-Sep	48	977	46.4	0	2	8.7	
6-Sep	4	981	46.6	0	2	8.7	
7-Sep	60	1,041	49.5	0	2	8.7	
8-Sep	5	1,046	49.7	0	2	8.7	
9-Sep	8	1,054	50.1	0	2	8.7	
10-Sep	8	1,062	50.5	0	2	8.7	
11-Sep	9	1,071	50.9	0	2	8.7	
12-Sep	27	1,098	52.2	0	2	8.7	
13-Sep	200	1,298	61.7	0	2	8.7	
14-Sep	1	1,299	61.7	0	2	8.7	
15-Sep	15	1,314	62.5	0	2	8.7	
16-Sep	3	1,317	62.6	0	2	8.7	
17-Sep	0	1,317	62.6	0	2	8.7	
18-Sep	114	1,431	68.0	0	2	8.7	
19-Sep	344	1,775	84.4	2	4	17.4	
20-Sep	20	1,795	85.3	0	4	17.4	

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Date	Sockeye			Coho ^a		
	Count	Cumulative		Count	Cumulative	
		Count	Percent		Count	Percent
21-Sep	44	1,839	87.4	0	4	17.4
22-Sep	44	1,883	89.5	0	4	17.4
23-Sep	40	1,923	91.4	4	8	34.8
24-Sep	2	1,925	91.5	0	8	34.8
25-Sep	0	1,925	91.5	2	10	43.5
26-Sep	8	1,933	91.9	0	10	43.5
27-Sep	0	1,933	91.9	0	10	43.5
28-Sep	8	1,941	92.3	0	10	43.5
29-Sep	3	1,944	92.4	0	10	43.5
30-Sep	7	1,951	92.7	0	10	43.5
1-Oct	0	1,951	92.7	0	10	43.5
2-Oct	61	2,012	95.6	3	13	56.5
3-Oct	11	2,023	96.2	0	13	56.5
4-Oct	2	2,025	96.2	0	13	56.5
5-Oct	3	2,028	96.4	0	13	56.5
6-Oct	0	2,028	96.4	0	13	56.5
7-Oct	32	2,060	97.9	2	15	65.2
8-Oct	16	2,076	98.7	0	15	65.2
9-Oct	4	2,080	98.9	1	16	69.6
10-Oct	7	2,087	99.2	3	19	82.6
11-Oct	0	2,087	99.2	0	19	82.6
12-Oct	12	2,099	99.8	4	23	100.0
13-Oct	0	2,099	99.8	0	23	100.0
14-Oct	5	2,104	100.0	0	23	100.0
14-Oct	---- Weir Pulled ----					
Counts		2,104			23	
Outlet spawners		<15				
Broodstock ^b		-216				
Spawners		1,888				

^a It is estimated that fewer than 100 coho spawned between Little Tatsamenie Lake and the weir at Tatsamenie Lake.

^b The brood stock included 118 females, 96 males, 2 prespawn male mortalities and includes 8 females and 6 males with gametes used for the incubation box near Tatsamenie Lake outlet.

Appendix C. 10. Daily counts of adult sockeye salmon passing through Little Trapper Lake weir, 1999.

Date	Count	Cumulative	
		Count	Percent
20-Jul			
21-Jul	0	0	0.00
22-Jul	0	0	0.00
23-Jul	0	0	0.00
24-Jul	0	0	0.00
25-Jul	0	0	0.00
26-Jul	9	9	0.08
27-Jul	8	17	0.14
28-Jul	156	173	1.47
29-Jul	152	325	2.75
30-Jul	247	572	4.85
31-Jul	220	792	6.71
1-Aug	138	930	7.88
2-Aug	209	1,139	9.65
3-Aug	1,086	2,225	18.85
4-Aug	1,504	3,729	31.59
5-Aug	1,531	5,260	44.56
6-Aug	1,131	6,391	54.14
7-Aug	776	7,167	60.71
8-Aug	476	7,643	64.74
9-Aug	517	8,160	69.12
10-Aug	410	8,570	72.60
11-Aug	282	8,852	74.99
12-Aug	324	9,176	77.73
13-Aug	83	9,259	78.43
14-Aug	86	9,345	79.16
15-Aug	147	9,492	80.41
16-Aug	106	9,598	81.30
17-Aug	187	9,785	82.89
18-Aug	169	9,954	84.32
19-Aug	301	10,255	86.87
20-Aug	69	10,324	87.45
21-Aug	198	10,522	89.13
22-Aug	340	10,862	92.01
23-Aug	213	11,075	93.82
24-Aug	145	11,220	95.04
25-Aug	101	11,321	95.90
26-Aug	47	11,368	96.30
27-Aug	67	11,435	96.87
28-Aug	182	11,617	98.41
29-Aug	25	11,642	98.62
30-Aug	27	11,669	98.85
31-Aug	27	11,696	99.08
1-Sep	42	11,738	99.43
2-Sep	25	11,763	99.64
3-Sep	6	11,769	99.70
4-Sep	11	11,780	99.79
5-Sep	4	11,784	99.82
6-Sep	9	11,793	99.90
7-Sep	2	11,795	99.92
8-Sep	2	11,797	99.93
9-Sep	5	11,802	99.97
10-Sep	2	11,804	99.99
11-Sep	1	11,805	100.00
12-Sep			
13-Sep			
11-Sep	---- Weir Pulled ----		
Count		11,805	
Spawners		11,805	

Appendix C. 11. Daily counts of adult sockeye salmon passing through the Kuthai Lake weir, 1999.

Date	Count	Cumulative	
		Count	Percent
4-Jul	----		
	----Weir Fish Tight ----		
14-Jul	20	20	0.20
15-Jul	151	171	1.70
16-Jul	179	350	3.49
17-Jul	418	768	7.65
18-Jul	741	1,509	15.03
19-Jul	1,437	2,946	29.34
20-Jul	679	3,625	36.10
21-Jul	1,242	4,867	48.47
22-Jul	880	5,747	57.23
23-Jul	1,081	6,828	67.99
24-Jul	267	7,095	70.65
25-Jul	359	7,454	74.23
26-Jul	71	7,525	74.94
27-Jul	155	7,680	76.48
28-Jul	128	7,808	77.75
29-Jul	213	8,021	79.87
30-Jul	133	8,154	81.20
31-Jul	55	8,209	81.75
1-Aug	63	8,272	82.37
2-Aug	49	8,321	82.86
3-Aug	54	8,375	83.40
4-Aug	21	8,396	83.61
5-Aug	5	8,401	83.66
6-Aug	3	8,404	83.69
7-Aug	0	8,404	83.69
8-Aug	2	8,406	83.71
9-Aug	129	8,535	84.99
10-Aug	25	8,560	85.24
11-Aug	157	8,717	86.81
12-Aug	4	8,721	86.85
13-Aug	114	8,835	87.98
14-Aug	440	9,275	92.36
15-Aug	0	9,275	92.36
16-Aug	0	9,275	92.36
17-Aug	0	9,275	92.36
18-Aug	11	9,286	92.47
19-Aug	2	9,288	92.49
20-Aug	69	9,357	93.18
21-Aug	0	9,357	93.18
22-Aug	0	9,357	93.18
23-Aug	0	9,357	93.18
24-Aug	0	9,357	93.18
25-Aug	21	9,378	93.39
26-Aug	22	9,400	93.61
27-Aug	120	9,520	94.80
28-Aug	216	9,736	96.95
29-Aug	276	10,012	99.70
30-Aug	30	10,042	100.00
31-Aug	----		
	---- Weir Pulled ----		
Total	10,042		

Appendix C. 12. Daily counts of Chinook salmon carcasses at the Nakina River weir, 1999.

Date	Count			Cumulative	
	Female	Male	Combined	Count	Percent
6-Aug	0	10	10	10	0.06
7-Aug	1	13	14	24	0.13
8-Aug	0	2	2	26	0.14
9-Aug	2	7	9	35	0.19
10-Aug	3	10	13	48	0.27
11-Aug	1	9	10	58	0.32
12-Aug	1	7	8	66	0.37
13-Aug	2	5	7	73	0.41
14-Aug	9	31	40	113	0.63
15-Aug	4	29	33	146	0.81
16-Aug	4	16	20	166	0.92
17-Aug	1	2	3	169	0.94
18-Aug	0	4	4	173	0.96
19-Aug	0	4	4	177	0.98
20-Aug	0	1	1	178	0.99
21-Aug	0	1	1	179	0.99
22-Aug	0	1	1	180	1.00
Total	28	152	180		

Appendix D.1. Salmon catches and effort in the Alaskan District 111 and Subdistrict 111-32 (Taku Inlet) commercial drift gillnet fishery, 1960-1999.

Year	Catch							Effort	
	Chinook	Sockeye	Coho	Pink	S. Chum ^b	F. Chum ^b	Steelhead	Boat Days	Days Open ^a
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	1,518	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	3,053	55.00
1972	10,955	80,404	49,780	144,339	67,126	80,831	574	3,103	51.00
1973	9,799	85,317	35,453	58,186	33,296	75,949	554	3,286	41.00
1974	2,908	38,670	38,667	57,731	11,263	75,423	465	2,315	29.50
1975	2,182	32,513	1,185	9,567	2,091	587	89	1,084	15.50
1976	1,757	61,749	41,729	14,962	6,027	75,776	499	1,914	25.00
1977	1,068	70,097	54,917	88,578	8,995	52,107	359	2,258	27.00
1978	1,926	55,398	31,944	51,385	9,076	27,178	397	2,174	26.00
1979	3,701	122,148	16,194	152,836	5,936	55,261	243	2,269	28.83
1980	2,251	123,451	41,677	296,572	33,627	159,020	363	4,123	30.92
1981	1,721	49,942	26,711	254,856	22,546	53,892	262	2,687	30.00
1982	3,057	83,625	29,072	109,297	14,867	22,741	476	2,433	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	2,757	52.50
1985	2,636	88,077	55,597	311,248	58,972	47,748	499	3,264	48.00
1986	2,584	73,061	30,512	16,568	29,909	28,883	529	2,129	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	2,135	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	3,188	38.33
1991	3,217	109,877	126,436	74,183	147,404	13,771	69	4,145	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	5,078	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
1997	2,804	94,745	3,515	51,424	173,804	3,060	0	2,107	33.00
1998	794	69,677	28,713	168,283	291,416	4,695	13	3,070	48.00
Averages									
60-98	3,861	72,279	44,623	109,301	63,845	35,245	335	2,818	44.06
89-98	3,356	119,042	82,196	141,450	188,153	13,274	165	3,556	47.13
1999	1,841	79,425	17,273	59,316	424,574	4,785	0	2,841	59.00

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Appendix D.1. (page 2 of 2)

Year	Catch						Effort		
	Chinook	Sockeye	Coho	Pink	S. Chum ^b	F. Chum ^b	Steelhead	Boat Days	Days Open ^a
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
1997	2,724	84,115	2,993	38,794	143,354	1,936		1,761	30.00
1998	634	47,413	24,606	85,269	192,057	2,800		2,007	39.00
Averages									
60-98	3,411	59,666	38,238	68,058	43,529	27,168	325	2,153	41.31
89-98	2,506	101,217	72,024	82,920	131,190	10,733	186	2,837	42.70
1999	1,762	68,914	14,086	43,958	327,706	2,643		2,563	58.00
Total	1,762	68,914	14,086	43,958	327,706	2,643		2,563	58.00

^a Days open are for the entire district and include openings to harvest spawner Chinook salmon, 1960-1975.

^b 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. Estimates of stock proportion and catch of sockeye salmon based on analysis of scale patterns, otolith marks, and brain parasite incidence, in the Alaska District 111 commercial drift gillnet fishery, 1983-1999.

Week	Kuthai	Little Trapper		Mainstem	Tatsamenie		Total			Total Wild		U.S. Planted
		Wild	Planted		Wild	Planted	Taku	Crescent	Speel	Snett.		
Proportions												
1983							0.755				0.245	
1984							0.758				0.242	
1985							0.838				0.162	
1986	0.061	0.266		0.303	0.204		0.834	0.090	0.076		0.166	
1987	0.078	0.234		0.376	0.031		0.720	0.157	0.123		0.280	
1988	0.118	0.158		0.305	0.082		0.663	0.266	0.071		0.337	
1989 ^a	0.077				0.156		0.849	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
1997	0.067	0.170	0.011	0.282	0.286	0.011	0.826	0.027	0.026		0.053	0.120
1998	0.087	0.158	0.008	0.209	0.245	0.004	0.710	0.026	0.007		0.033	0.257
Averages ^b	0.069	0.226	0.010	0.352	0.178	0.015	0.826	0.074	0.056		0.147	0.089
1999	0.176	0.259	0.003	0.235	0.119	0.005	0.797	0.049	0.023		0.072	0.131
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 ^a	5,696				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	6,416		8,960	2,848
1997	6,345	16,105	1,031	26,694	27,107	1,006	78,288	2,558	2,510		5,068	11,389
1998	6,055	11,018	570	14,560	17,040	250	49,493	1,784	500		2,284	17,900
Average ^b	6,869	24,765	1,135	40,161	19,725	1,791	83,655	6,363	5,792		12,423	7,500
1999	14,016	20,596	247	18,680	9,421	367	63,327	3,879	1,814		5,693	10,405

^a The Trapper and Mainstem groups were combined in the 1989 analysis and were 45,573 fish.

^b Averages for individual stocks do not include 1989.

Appendix D. 3. Estimated weekly proportion of wild Taku River sockeye salmon in the Alaskan District 111 commercial drift gillnet catch based on scale patterns and incidence of brain parasites, 1983-1999.

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	0.909	0.974	0.950	0.991	0.914	0.945	0.879	0.804	0.953
1997	0.992	0.970	0.910	0.926	0.951	0.939	0.939	0.925	0.872	0.906	0.938
1998		0.964	0.974	0.978	0.971	0.949	0.948	0.942	0.997	0.857	0.955
Average											
83-98	0.961	0.969	0.917	0.889	0.842	0.785	0.818	0.818	0.791	0.769	0.846
89-98	0.956	0.966	0.940	0.911	0.905	0.878	0.864	0.894	0.820	0.824	0.897
1999		0.966	0.988	0.953	0.934	0.917	0.878	0.833	0.732	0.665	0.917

Appendix D. 4. Salmon catch in the U.S. subsistence fishery (open 1967-1976) and personal use fisheries (open 1989-1999) in the Taku River, 1967-1999.

Year	Catch				
	Chinook	Sockeye	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
1997	33	2,140	56	177	2
1998	31	2,338	174	464	4
Averages					
67-98	21	1,317	95	182	12
89-98	44	2,034	148	337	19
1999	22	1,254	44	105	3

Appendix D. 5. Salmon and steelhead trout catch and effort in the Canadian commercial fishery in the Taku River, 1979-1999.

Year	Catch							Effort	
	Chinook		Sockeye	Coho	Pink	Chum	Steelhead	Boat Days	Days Open
	Jack	Large							
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
1997	84	2,731	24,003	2,594	0	1	160	394	47
1998	227	1,107	19,038	5,090	0	2	176	299	42
Averages									
79-98 ^a		1,125	21,130	4,979	3,628	2,359	137	318	36
89-98	201	1,721	27,351	5,748	156	10	95	354	42
1999	257	908	20,681	4,416	0	0	81	300	34

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

Appendix D. 6. Scale pattern based estimates of sockeye salmon stock proportions and catch by stock in the Canadian commercial fishery on the Taku River, 1986-1999.

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 ^a	0.053				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
1997	0.120	0.282	0.019	0.277	0.294	0.008	0.973	0.027
1998	0.225	0.207	0.028	0.254	0.283	0.003	0.969	0.031
Averages ^b								
86-98	0.109	0.330	0.016	0.398	0.152	0.013	0.991	0.029
1999	0.389	0.305	0.008	0.145	0.147	0.006	0.986	0.014
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 ^a	990				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
1997	2,891	6,758	456	6,637	7,060	201	23,346	657
1998	4,279	3,944	533	4,829	5,397	56	18,449	589
Averages ^b								
86-98	2,586	8,109	413	9,866	3,646	415	23,885	828
1999	8,044	6,314	171	2,992	3,034	126	20,384	297

^a The Trapper and Mainstem groups were combined in the 1989 analysis with 13,792 fish or 0.744 proportion.

^b Averages do not include 1989.

Appendix D. 7. Salmon catches in the Canadian Aboriginal fishery on the Taku River, 1980-1999

Year	Chinook		Sockeye	Coho	Pink	Chum	Steelhead
	Jack	Large					
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
1997		103	349	96	0	0	0
1998		60	239	0	0	0	0
Averages							
80-98		41	174	62	0	1	1
89-98		57	204	76	0	1	2
1999		50	382	471	0	0	0

Appendix D. 8. Salmon and steelhead trout catch in the Canadian test fishery in the Taku River, 1987-1999.

Year	Chinook		Sockeye	Coho	Pink	Chum	Steelhead
	Jack	Large					
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 ^a		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.						
1997	The 1 sockeye and 39 coho salmon caught in 1997 were released live.						
1998	There was no Canadian test fishery in 1998.						
Averages							
87-93		25	258	1,084	9	109	34
1999 ^b	2	577	88	688	0	0	48

^a Incomplete harvest data.

^b In addition to these fish, 180 adult female Chinook, one adult male Chinook and four steelhead were captured and released live.

Appendix D. 9. Taku River sockeye salmon run size, 1984-1999.

Year	Above Border M-R		Expansion		Expanded		Canadian Catch	U.S. Catch	Total Run
	Run Estimate ^a	Start Date	Method	Factor	Run Estimate ^b	Escape.			
1984	133,414	17-Jun	Ave.(88-90&95-96) FW CPUE	0.056	141,254	27,292	113,962	58,543	199,796
1985	118,160	16-Jun	Ave.(88-90&95-96) FW CPUE	0.047	123,974	14,411	109,563	76,323	200,297
1986	104,162	22-Jun	Ave.(88-90&95-96) FW CPUE	0.095	115,045	14,939	100,106	60,934	175,980
1987	87,554	21-Jun	Ave.(88-90&95-96) FW CPUE	0.088	96,023	13,887	82,136	55,154	151,178
1988	86,629	19-Jun	1988 FW CPUE	0.065	92,641	12,967	79,674	25,811	118,452
1989	99,467	18-Jun	1989 FW CPUE	0.128	114,068	18,805	95,263	64,200	178,268
1990	117,385	10-Jun	1990 CPUE	0.002	117,573	21,474	96,099	110,225	227,798
1991	153,773	9-Jun	Ave.(88-90&95-96) FW CPUE	0.007	154,873	25,380	129,493	105,637	260,510
1992	162,003	21-Jun	Ave.(88-90&95-96) FW CPUE	0.032	167,376	29,862	137,514	124,410	291,786
1993	138,523	13-Jun	Ave.(88-90&95-96) FW CPUE	0.026	142,148	33,523	108,625	143,261	285,409
1994	129,119	12-Jun	Ave.(88-90&95-96) FW CPUE	0.019	131,580	29,001	102,579	99,047	230,627
1995	145,264	11-Jun	1995 FW CPUE	0.008	146,450	32,711	113,739	93,066	239,516
1996	132,322	9-Jun	1996 FW CPUE	0.017	134,651	42,025	92,626	190,184	324,835
1997	93,816		1997 FW CPUE	0.017	95,438	24,352	71,086	80,428	175,866
1998	93,728		No expansion in 1998		93,728	19,277	74,451	51,831	145,559
Averages									
84-98					124,455	23,994	100,461	89,270	213,725
89-98					129,788	27,641	102,147	106,229	236,017
1999	119,304		No expansion in 1999		119,304	21,151	98,153	64,581	183,885

^aRun estimate does not include spawning escapements below the U.S./ Canada border.

^bThe early season sockeye salmon expansion is based on the proportion of fish wheel sockeye salmon catch that occurs before the fishery opens.

Appendix D. 10. Estimates of Taku River and Port Snettisham sockeye stock escapement and spawners, the number of spawners are equal to the escapement at the weir minus fish collected for broodstock, 1979-1999.

Year	Little Trapper		Tatsamenie		Hackett	Kuthai	Nahlin	Crescent		Speel	
	Escape.	Spawners	Escape.	Spawners	Weir	Lake Weir	River Weir	Escape.	Spawners	Escape.	Spawners
1980						1,658					
1981						2,299					
1982											
1983	^a 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	^a 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	^a 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		^b 138	^c 1,199	1,199	969	710
1989	9,606	9,606	3,039	3,039				^c 1,109	775	12,229	10,114
1990	9,443	7,777	5,736	4,929			2,515	^c 1,262	757	^c 18,064	16,867
1991	22,942	21,001	8,381	7,585				^d 9,208	8,666	299	299
1992	14,372	12,732	6,576	5,681		^b 1,457	^b 297	^d 22,674	21,849	9,439	8,136
1993	17,432	16,685	5,028	4,230		^c 6,312	2,463				
1994	13,438	12,691	4,371	3,578		5,427	960				
1995	11,524	11,524	^e 8,000	6,607		3,310	3,711			^d 16,208	14,260
1996	^f 5,483	5,483	10,381	8,026		4,243	2,538			20,000	18,610
1997	^g 5,924	5,924	8,363	5,981		5,746	1,857			4,999 ⁱ	
1998	^h 8,717	8,717	5,997	4,735		1,934	345			13,358 ⁱ	
Averages											
83-98	11,920	11,499	6,805	5,985	1,185	4,061	1,647	8,008	7,788	9,862	9,252
89-98	11,888	11,214	6,587	5,439		4,061	1,836	8,563	8,012	11,825	11,381
1999	11,805	11,805	2,104	1,888		10,042				10,277 ⁱ	

^a Weir count plus spawning ground survey.

^b Weir counts are incomplete.

^c Counts may be low due to uncounted fish passage past weir.

^d Mark-recapture estimates. .

^e 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.

^f 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.

^g 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.

^h The estimated count of 5,997 fish through Tatsamenie Lake weir in 1998 does not include an estimated 1,499 fish spawning in the outlet stream i.e. total estimate 7,496.

ⁱ Minimum estimates of run size.

Appendix D. 11. Aerial survey index escapement counts of large (3-ocean and older) Taku River Chinook salmon, 1975-1999.

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		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		^a 176	1,887	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	^a 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
1997	1,360	1,148	943	648	6,095	3,655	13,849
1998	473	675	807	360	2,720	1,294	6,329
Averages							
75-98	651	928	475	364	4,062	1,698	8,178
89-98	856	1,219	848	530	5,618	2,405	11,477
1999	561	431	527	221	1,900	532	4,172

^a Partial survey.

^b Extrapolated results.

Appendix D. 12. Taku River (above border) coho salmon run size, 1987-1999.

Year	Canadian Catch			Above Border	
	Commercial	Food	Test	Escapement	Run
1987	5,599	113	807	55,457	61,976 ^a
1988	3,123	98	422	39,450	43,093 ^b
1989	2,876	146	1,011	56,808	60,841 ^c
1990	3,207	6	472	72,196	75,881 ^d
1991	3,415	20	2,004	127,484	132,923
1992	4,077	187	1,277	84,853	90,394 ^e
1993	3,033	8	1,593	109,457	114,091 ^f
1994	14,531	162	0	96,343	111,036 ^g
1995	13,629	109	0	55,710	69,448 ^h
1996	5,028	24	0	44,635	49,687 ⁱ
1997	2,594	96	0	38,941	41,631 ⁱ
1998	5,090	0	0	61,382	66,472 ⁱ
Averages					
87-98	5,517	81	632	70,226	76,456
1999	4,416	471	688	60,768	66,419 ^j

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

^b Mark-recapture estimate through 9/18.

^c Mark-recapture estimate through 10/01.

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

^e 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

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

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

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

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

^j expansion based on proportion of troll harvest of Taku fish after week 36.

Appendix D. 13. Escapement counts of age-1 (not including jacks) Taku River coho salmon, 1984-1999; 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	At/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 ^b	1,031			
1986	2,116 ^a	1,200	174 ^c	70	53 ^c	1,095 ^c	344 ^b	2,723	108	318	
1987	1,627 ^a	565 ^c	980 ^c	150	250	2,100 ^c	173 ^b	1,715	276	165	
1988	1,423	658 ^c	585 ^c	500	1,215 ^c	1,308 ^c	663 ^a	1,260	367	694	1,322
1989	1,570 ^d	600	400	400	235	1,670	712 ^a		115	322	
1990	2,522 ^d	220	193 ^c		425 ^c	414 ^c	669 ^a		25	256	
1991		475 ^c	399 ^c	120	1,378 ^c	1,348 ^c	1,101		458	176 ^e	
1992		1,267 ^{cf}	594 ^f	654	478	1,288	730				970 ^{ab}
1993		250	130	90	380	70 ^g	88 ^b				326
1994		500	60	450	200	50 ^g	168				2,112
1995		70	230	170	132	421	62 ^b				
1996		35	28	50	250	278	21 ^b				
1997		500	10	550	600						
1998		280		300	450						
Averages											
84-98	1,852	672	343	278	516	1,065	411	1,682	225	322	1,183
89-98	2,046	420	227	309	453	692	444		199	251	1,136
1999		1,050			400						

^a Weir count combined with spawning ground count.

^b Incomplete weir count.

^c Count is an average of surveys by different observers. .

^d Includes mark-recapture estimate.

^e Poor survey conditions.

^f Foot survey.

^g Surveys conducted before peak abundance on spawning grounds.

Appendix E. 1. Weekly salmon catch and effort in the U.S. commercial fishery in the Alsek River, 1999.

Week	Start Date	Catch					Effort		
		Chinook	Sockeye	Coho	Pink	Chum	Boats	Days Open	Boat Days
23	30-May								
24	6-Jun	161	358	0	0	0	14	1.0	14.0
25	13-Jun	168	291	0	0	0	15	1.0	15.0
26	20-Jun	130	775	0	0	0	18	1.0	18.0
27	27-Jun	44	3,042	0	0	0	16	3.0	48.0
28	4-Jul	2	1,093	0	0	0	16	2.0	32.0
29	11-Jul	3	701	60	0	0	15	1.0	15.0
30	18-Jul	0	877	3	0	0	15	1.0	15.0
31	25-Jul	0	629	0	0	1	12	1.0	12.0
32	1-Aug	1	561	0	0	0	12	1.0	12.0
33	8-Aug	0	1,549	2	0	0	10	2.0	20.0
34	15-Aug	0	1,256	51	0	1	7	2.0	14.0
35	22-Aug	1	199	393	0	2	7	2.0	14.0
36	29-Aug	0	54	631	0	4	7	3.0	21.0
37	5-Sep	1	38	1,200	0	33	6	4.0	24.0
38	12-Sep	0	10	1,697	0	32	5	4.0	20.0
39	19-Sep	0	6	848	0	37	5	4.0	20.0
40	26-Sep	0	2	775	0	2	4	4.0	16.0
41	3-Oct						0	4.0	0.0
42	10-Oct						0	3.0	0.0
Total		511	11,441	5,660	0	112		44.0	330.0

Appendix E. 2. Weekly salmon catch and effort in the Canadian Aboriginal and sport fisheries in the Alsek River, 1999.

Week	Date	Chinook				Sockeye				Coho			
		Sport		Aboriginal	Total ^b	Sport		Aboriginal	Total ^b	Sport		Aboriginal	Total ^b
Kept ^a	Released ^a	Kept	Released			Kept	Released						
25	13-Jun	1	0		1	0	0		0	0	0	0	0
26	20-Jun	2	4		2	0	1		0	0	0	0	0
27	27-Jun	1	3	1	2	0	0	0	0	0	0	0	0
28	4-Jul	31	3	15	46	0	3	2	2	0	0	0	0
29	11-Jul	54	40	117	171	0	3	2	2	0	0	0	0
30	18-Jul	69	79	41	110	0	14	11	11	0	0	0	0
31	25-Jul	24	39	42	66	0	7	8	8	1	0	0	1
32	1-Aug	8	1	12	20	0	0	134	134	1	0	0	1
33	8-Aug	1	2	10	11	0	1	73	73	0	0	0	0
34	15-Aug	0	0	0	0	0	0	37	37	0	0	0	0
35	22-Aug	0	0	0	0	0	0	37	37	0	0	0	0
36	29-Aug	0	0		0	0	0	100	100	0	0	0	0
37	5-Sep	0	0		0	0	0	75	75	0	0	0	0
38	12-Sep	0	0		0	0	0	50	50	0	0	0	0
39	19-Sep	0	0		0	0	0	25	25	0	0	0	0
40	26-Sep	0	0		0	0	0		0	0	0	0	0
41	3-Oct	0	0		0	0	0		0	0	0	0	0
42	10-Oct	0	0		0	0	1		0	14	38	0	14
43	17-Oct	0	0		0	0	0		0	11	22	0	11
Sum		192	172	238	430	0	31	554	554	28	60	0	28
Village Creek food fish ^c				8			1	38				0	0
Total		192	172	238	430	0	31	554	554	28	60	0	28
Food fish above Klukshu Weir ^c				25				280					

^a Includes estimates of sport catch (kept and released) in Takhanne and Blanchard rivers; estimates based on salmon catch card information.

^b Does not include released fish.

^c The total food fish catch above the Klukshu Weir and at Village Creek are included in the weekly aboriginal catches.

Appendix E. 3. Daily counts of salmon passing through Klukshu River weir, 1999.

Date	Chinook ^a			Sockeye			Coho		
	Daily	Cumulative		Daily	Cumulative		Daily	Cumulative	
		Daily	Prop.		Daily	Prop.		Daily	Prop.
6-Jun	1	1	0.000	0	0	0.000	0	0	0.000
7-Jun	0	1	0.000	0	0	0.000	0	0	0.000
8-Jun	1	2	0.001	0	0	0.000	0	0	0.000
9-Jun	0	2	0.001	0	0	0.000	0	0	0.000
10-Jun	0	2	0.001	0	0	0.000	0	0	0.000
11-Jun	0	2	0.001	0	0	0.000	0	0	0.000
12-Jun	0	2	0.001	0	0	0.000	0	0	0.000
13-Jun	0	2	0.001	0	0	0.000	0	0	0.000
14-Jun	0	2	0.001	0	0	0.000	0	0	0.000
15-Jun	0	2	0.001	0	0	0.000	0	0	0.000
16-Jun	0	2	0.001	0	0	0.000	0	0	0.000
17-Jun	0	2	0.001	0	0	0.000	0	0	0.000
18-Jun	0	2	0.001	0	0	0.000	0	0	0.000
19-Jun	0	2	0.001	0	0	0.000	0	0	0.000
20-Jun	0	2	0.001	0	0	0.000	0	0	0.000
21-Jun	0	2	0.001	0	0	0.000	0	0	0.000
22-Jun	0	2	0.001	0	0	0.000	0	0	0.000
23-Jun	0	2	0.001	0	0	0.000	0	0	0.000
24-Jun	0	2	0.001	0	0	0.000	0	0	0.000
25-Jun	0	2	0.001	0	0	0.000	0	0	0.000
26-Jun	0	2	0.001	0	0	0.000	0	0	0.000
27-Jun	0	2	0.001	0	0	0.000	0	0	0.000
28-Jun	2	4	0.002	0	0	0.000	0	0	0.000
29-Jun	1	5	0.002	0	0	0.000	0	0	0.000
30-Jun	0	5	0.002	0	0	0.000	0	0	0.000
1-Jul	5	10	0.005	0	0	0.000	0	0	0.000
2-Jul	0	10	0.005	0	0	0.000	0	0	0.000
3-Jul	1	11	0.005	0	0	0.000	0	0	0.000
4-Jul	0	11	0.005	0	0	0.000	0	0	0.000
5-Jul	3	14	0.006	0	0	0.000	0	0	0.000
6-Jul	4	18	0.008	1	1	0.000	0	0	0.000
7-Jul	11	29	0.013	0	1	0.000	0	0	0.000
8-Jul	8	37	0.017	5	6	0.001	0	0	0.000
9-Jul	3	40	0.018	0	6	0.001	0	0	0.000
10-Jul	2	42	0.019	5	11	0.002	0	0	0.000
11-Jul	3	45	0.021	0	11	0.002	0	0	0.000
12-Jul	4	49	0.022	0	11	0.002	0	0	0.000
13-Jul	2	51	0.023	0	11	0.002	0	0	0.000
14-Jul	15	66	0.030	5	16	0.003	0	0	0.000
15-Jul	430	496	0.226	118	134	0.026	0	0	0.000
16-Jul	376	872	0.398	8	142	0.028	0	0	0.000
17-Jul	130	1,002	0.457	2	144	0.028	0	0	0.000
18-Jul	27	1,029	0.469	2	146	0.028	0	0	0.000
19-Jul	53	1,082	0.493	2	148	0.029	0	0	0.000
20-Jul	165	1,247	0.569	9	157	0.031	0	0	0.000
21-Jul	23	1,270	0.579	8	165	0.032	0	0	0.000
22-Jul	39	1,309	0.597	0	165	0.032	0	0	0.000
23-Jul	16	1,325	0.604	0	165	0.032	0	0	0.000
24-Jul	11	1,336	0.609	0	165	0.032	0	0	0.000
25-Jul	12	1,348	0.615	0	165	0.032	0	0	0.000
26-Jul	17	1,365	0.622	0	165	0.032	0	0	0.000
27-Jul	45	1,410	0.643	0	165	0.032	0	0	0.000
28-Jul	84	1,494	0.681	0	165	0.032	0	0	0.000
29-Jul	122	1,616	0.737	21	186	0.036	0	0	0.000

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Appendix E.3. (page 2 of 3)

Date	Chinook ^a			Sockeye			Coho		
	Daily	Cumulative		Daily	Cumulative		Daily	Cumulative	
		Daily	Prop.		Daily	Prop.		Daily	Prop.
30-Jul	61	1,677	0.765	1	187	0.036	0	0	0.000
31-Jul	23	1,700	0.775	0	187	0.036	0	0	0.000
1-Aug	20	1,720	0.784	7	194	0.038	0	0	0.000
2-Aug	95	1,815	0.828	2	196	0.038	0	0	0.000
3-Aug	58	1,873	0.854	37	233	0.045	0	0	0.000
4-Aug	21	1,894	0.864	13	246	0.048	0	0	0.000
5-Aug	26	1,920	0.876	5	251	0.049	0	0	0.000
6-Aug	29	1,949	0.889	3	254	0.050	0	0	0.000
7-Aug	18	1,967	0.897	3	257	0.050	0	0	0.000
8-Aug	29	1,996	0.910	92	349	0.068	0	0	0.000
9-Aug	13	2,009	0.916	5	354	0.069	0	0	0.000
10-Aug	11	2,020	0.921	4	358	0.070	0	0	0.000
11-Aug	18	2,038	0.929	1	359	0.070	0	0	0.000
12-Aug	5	2,043	0.932	0	359	0.070	0	0	0.000
13-Aug	2	2,045	0.933	1	360	0.070	0	0	0.000
14-Aug	8	2,053	0.936	1	361	0.070	0	0	0.000
15-Aug	12	2,065	0.942	10	371	0.072	0	0	0.000
16-Aug	6	2,071	0.944	15	386	0.075	0	0	0.000
17-Aug	8	2,079	0.948	3	389	0.076	0	0	0.000
18-Aug	8	2,087	0.952	0	389	0.076	0	0	0.000
19-Aug	7	2,094	0.955	3	392	0.076	0	0	0.000
20-Aug	16	2,110	0.962	0	392	0.076	0	0	0.000
21-Aug	10	2,120	0.967	0	392	0.076	0	0	0.000
22-Aug	5	2,125	0.969	0	392	0.076	0	0	0.000
23-Aug	7	2,132	0.972	0	392	0.076	0	0	0.000
24-Aug	6	2,138	0.975	4	396	0.077	0	0	0.000
25-Aug	6	2,144	0.978	4	400	0.078	0	0	0.000
26-Aug	12	2,156	0.983	3	403	0.079	0	0	0.000
27-Aug	3	2,159	0.984	2	405	0.079	0	0	0.000
28-Aug	3	2,162	0.986	2	407	0.079	0	0	0.000
29-Aug	10	2,172	0.990	15	422	0.082	0	0	0.000
30-Aug	8	2,180	0.994	10	432	0.084	0	0	0.000
31-Aug	1	2,181	0.995	1	433	0.084	0	0	0.000
1-Sep	2	2,183	0.995	2	435	0.085	0	0	0.000
2-Sep	1	2,184	0.996	1	436	0.085	0	0	0.000
3-Sep	0	2,184	0.996	808	1,244	0.242	0	0	0.000
4-Sep	3	2,187	0.997	1,420	2,664	0.519	0	0	0.000
5-Sep	2	2,189	0.998	89	2,753	0.537	0	0	0.000
6-Sep	0	2,189	0.998	0	2,753	0.537	0	0	0.000
7-Sep	0	2,189	0.998	136	2,889	0.563	0	0	0.000
8-Sep	0	2,189	0.998	2	2,891	0.563	0	0	0.000
9-Sep	0	2,189	0.998	381	3,272	0.638	0	0	0.000
10-Sep	0	2,189	0.998	0	3,272	0.638	0	0	0.000
11-Sep	0	2,189	0.998	0	3,272	0.638	0	0	0.000
12-Sep	0	2,189	0.998	45	3,317	0.646	0	0	0.000
13-Sep	0	2,189	0.998	0	3,317	0.646	0	0	0.000
14-Sep	0	2,189	0.998	2	3,319	0.647	0	0	0.000
15-Sep	0	2,189	0.998	3	3,322	0.647	0	0	0.000
16-Sep	0	2,189	0.998	57	3,379	0.659	0	0	0.000
17-Sep	0	2,189	0.998	0	3,379	0.659	0	0	0.000
18-Sep	0	2,189	0.998	93	3,472	0.677	0	0	0.000
19-Sep	0	2,189	0.998	1,134	4,606	0.898	135	135	0.054
20-Sep	0	2,189	0.998	0	4,606	0.898	0	135	0.054
21-Sep	1	2,190	0.999	1	4,607	0.898	0	135	0.054
22-Sep	0	2,190	0.999	0	4,607	0.898	0	135	0.054
23-Sep	3	2,193	1.000	0	4,607	0.898	2	137	0.055

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Date	Chinook ^a			Sockeye			Coho		
	Daily	Cumulative		Daily	Cumulative		Prop.	Cumulative	
		Daily	Prop.		Daily	Prop.		Daily	Prop.
24-Sep	0	2,193	1.000	0	4,607	0.898	0	137	0.055
25-Sep	0	2,193	1.000	7	4,614	0.899	14	151	0.061
26-Sep	0	2,193	1.000	0	4,614	0.899	4	155	0.062
27-Sep	0	2,193	1.000	0	4,614	0.899	31	186	0.075
28-Sep	0	2,193	1.000	1	4,615	0.899	21	207	0.083
29-Sep	0	2,193	1.000	0	4,615	0.899	16	223	0.090
30-Sep	0	2,193	1.000	25	4,640	0.904	49	272	0.110
1-Oct	0	2,193	1.000	156	4,796	0.935	201	473	0.191
2-Oct	0	2,193	1.000	158	4,954	0.966	108	581	0.234
3-Oct	0	2,193	1.000	12	4,966	0.968	16	597	0.241
4-Oct	0	2,193	1.000	1	4,967	0.968	10	607	0.245
5-Oct	0	2,193	1.000	77	5,044	0.983	154	761	0.307
6-Oct	0	2,193	1.000	36	5,080	0.990	267	1,028	0.414
7-Oct	0	2,193	1.000	10	5,090	0.992	365	1,393	0.561
8-Oct	0	2,193	1.000	9	5,099	0.994	215	1,608	0.648
9-Oct	0	2,193	1.000	7	5,106	0.995	190	1,798	0.725
10-Oct	0	2,193	1.000	0	5,106	0.995	122	1,920	0.774
11-Oct	0	2,193	1.000	11	5,117	0.997	211	2,131	0.859
12-Oct	0	2,193	1.000	10	5,127	0.999	246	2,377	0.958
13-Oct	0	2,193	1.000	4	5,131	1.000	90	2,467	0.994
14-Oct	0	2,193	1.000	0	5,131	1.000	14	2,481	1.000
Total Count		2,193			5,131			2,481	
Adjustments				250	250 ^b		50	50 ^b	
Total		2,193			5,381			2,531	
Catch above weir		25			280			0	
Total Escapement		2,168			5,101			2,531	

^a Jack Chinook included in the counts.

^b Estimated fish holding below weir during removal.

Appendix E. 4. Salmon catch and effort in the U.S. commercial fishery in the Alsek River, 1960-1999.

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
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	773	42.0
1981	779	23,641	10,232	65	816	588	40.0
1982	532	27,443	6,534	6	358	552	33.0
1983	94	18,293	5,253	20	432	487	38.0
1984	60	14,326	7,868	24	1,610	429	33.0
1985	213	5,792	5,490	3	427	277	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	378	38.0
1990	78	17,013	1,437	0	495	374	38.0
1991	103	17,542	5,956	0	105	530	49.0
1992	301	19,298	3,116	1	120	378	46.0
1993	300	20,043	1,215	0	49	386	40.0
1994	805	19,639	4,182	0	32	423	61.0
1995	670	33,112	14,184	13	347	934	53.5
1996	772	15,182	5,514	0	165	441	47.5
1997	568	25,879	11,427	0	34	653	56.0
1998	550	15,007	4,925	1	145	399	41.0
Averages							
60-98	796	21,580	6,345	46	379	634	51.5
89-98	438	19,623	5,793	2	252	490	47.0
1999	511	11,441	5,660	0	112	330	37.0

Appendix E. 5. Salmon catch in the U.S. subsistence and personal use fisheries in the Alsek River, 1976-1999.

Year	Catch ^a		
	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
1997	38	273	26
1998	63	158	42
Averages			
76-98	41	108	33
89-98	47	122	29
1999	44	152	21

^a Catches are those reported on returned permits.

Appendix E. 6. Salmon catches in the Canadian Aboriginal and sport fisheries in the Alsek River, 1976-1999.

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
1997	232	298	530	484	36	520	5	0	5
1998	171	175	346	567	18	585	72	40	112
Averages									
76-98	290	378	668	2,824	423	3,247	12	123	135
89-98	297	429	726	1,697	308	2,005	22	142	165
1999	238	192	430	554	0	554	0	28	28

Appendix E. 7. Klukshu River weir counts of Chinook, sockeye, and coho salmon, 1976-1999.

Year	Chinook ^a		Sockeye				Coho ^c	
	Count	Escape. ^d	Early ^b	Late	Total	Escape. ^d	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
1997	2,989	2,829	6,565	4,931	11,496	11,303	307	302
1998	1,364	1,347	597	12,994	13,591	13,580	1,921	1,961
Averages								
76-98	2,645	2,396	3,197	14,810	18,007	15,510	1,532	
89-98	2,889	2,732	3,755	13,661	17,416	16,356	2,355	2,617
1999	2,193	2,168	371	5,010	5,381	5,101	2,481	2,531

^a Counts include jack Chinook salmon.

^b Includes sockeye counts up to and including August 15.

^c Weir was removed prior to the end of the coho run.

^d 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.

Appendix E. 8. Alesek River sockeye salmon counts from U.S. and Canadian aerial surveys and from the electronic counter at Village Creek, 1985-1999.

Year	U.S. Aerial Surveys ^a				Canada Aerial Surveys ^b		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 ^c
1989	320			680	1,689	1,700	9,569
1990	275	300		3,500			7,500 ^d
1991				800			5,670 ^e
1992	1,000	10		50			11,485 ^f
1993	4,800			900			3,135 ^g
1994	250			600	366		4,007 ^h
1995	2,700			350			4,041
1996	325			650			1,583
1997	600			350			1,900
1998				130			826
Averages							
85-98	1,152	177	300	1,090	756	969	4,116
89-98	1,284	155		801	1,028	1,700	4,972
1999	30			800			NA ⁱ

^a Surveys not made every year at each tributary.

^b Includes several streams from Lo-Fog to Goat Creek.

^c Incomplete count due to machine malfunction.

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

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

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

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

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

ⁱ No counts due to a major malfunction of the counter

Appendix E. 9. Aerial survey index counts of Alsek Chinook salmon escapements, 1984-1999.

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	^a	158	34
1990	^a	325	32
1991	121	86	63
1992	86	77	16
1993	326	351	50
1994	349	342	67
1995	338	260	^b
1996	132	230	12
1997	109	190	
1998	71	136	39
Averages			
84-98	283	228	52
89-98	192	216	39
1999	371	194	51

^a Not surveyed due to poor visibility.

^b 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, 1984-1999.

Year	Combined U.S. Tributary Counts
1985	450
1986	1,100
1987	100
1988	1,900
1989	1,990
1990	1,600
1991 ^a	500
1992 ^a	1,010
1993 ^a	800
1994 ^a	975
1995	1,050
1996	1,350
1997	No surveys due to poor weather
1998	500
Averages	
85-98	1,025
89-98	1,086
1999	No surveys due to poor weather

^a Few systems surveyed.