

**PACIFIC SALMON COMMISSION JOINT
TRANSBOUNDARY TECHNICAL COMMITTEE**

**ESTIMATES OF TRANSBOUNDARY RIVER SALMON
PRODUCTION, HARVEST AND ESCAPEMENT AND A REVIEW OF JOINT
ENHANCEMENT ACTIVITIES IN 1996**

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TABLE OF CONTENTS

	Page
LIST OF TABLES.....	IV
LIST OF FIGURES	IV
LIST OF APPENDICES	V
ACRONYMS	X
EXECUTIVE SUMMARY	XI
Stikine.....	XI
Taku.....	XII
Alsek.....	XIII
Enhancement	XIII
INTRODUCTION.....	1
STIKINE RIVER.....	1
Harvest Regulations and the Joint Management Model	1
U.S. Fisheries.....	4
Canadian Fisheries.....	10
Lower Stikine Commercial Fishery	10
Upper Stikine Commercial Fishery.....	13
Aboriginal Fishery	13
Escapement.....	14
Sockeye Salmon.....	14
Chinook Salmon	14
Coho Salmon	16
Sockeye Salmon Run Reconstruction.....	16
TAKU RIVER.....	18
Harvest Regulations.....	18
U.S. Fisheries.....	18
Canadian Fisheries.....	22
Escapement.....	25
Sockeye Salmon.....	25
Chinook Salmon	27
Coho Salmon	27
Pink Salmon.....	27
Chum Salmon	27
Steelhead Salmon	28
Sockeye Salmon Run Reconstruction.....	28
ALSEK RIVER.....	30
Harvest Regulations.....	30
U.S. Fisheries.....	30
Canadian Fisheries.....	34

Escapement.....	39
Sockeye Salmon.....	39
Chinook Salmon	39
Coho Salmon	40
Run Reconstruction	40
ENHANCEMENT ACTIVITIES	40
Egg Collection	40
Tahltan Lake: Target 6.0 million eggs	41
Tatsamenie Lake: Target 5.0 million eggs.....	41
Incubation and Fry Plants (1995 Brood Year).....	41
Tahltan Lake	41
Tuya Lake	41
Tatsamenie Lake.....	41
Outplant Evaluation Surveys	42
Acoustic and trawl, Beach seine and Limnological sampling.....	42
Smolt Sampling.....	43
Tahltan Lake.....	43
Tatsamenie Smolt Mark-Recapture	43
Tuya Lake.....	44
Trapper Lake	44
Final Results - 1995 Smolts.....	44
Central Incubation Facility	45
Otolith Analysis.....	45
U.S. Otolith Lab.....	45
Canadian Otolith Lab.....	47
APPENDIX A	48
APPENDIX B.....	66
APPENDIX C.....	91
APPENDIX D	100
APPENDIX E.....	111

LIST OF TABLES

Table	Page
Table 1. Weekly forecasts of run size and total allowable catch for Stikine River sockeye salmon as determined inseason by the Stikine Management Model, 1996.....	5
Table 2. Run reconstruction for Stikine sockeye salmon, 1996.....	17
Table 3. Taku and Snettisham sockeye salmon run reconstruction, 1996. Estimates do not include Taku spawning escapements below the U.S./Canada border or Taku sockeye salmon harvested in marine areas outside District 111.....	21
Table 4. Canadian inseason forecasts of total run size, TAC, and Spawning Escapement of Taku sockeye salmon, 1996.	23
Table 5. Inseason U.S. forecasts of the 1996 Alek River sockeye salmon catch, Klukshu River weir count, and index run size (catch + Klukshu weir count).	34
Table 6. Catch and Klukshu index escapement data for Alek sockeye, Chinook, and coho salmon for 1996.	40
Table 7. Summary of sockeye salmon fry releases to transboundary river systems.	42
Table 8. Limnetic fish population estimates and beach seine catches by broodyear in Tahltan; Tatsamenie; and Tuya Lakes. The data collected in 1996 are preliminary.	43
Table 9. Enhanced and wild contribution, and average length and weight for transboundary sockeye smolts emigrants sampled in 1995, by site.....	45
Table 10. Sockeye otolith collection data.	47

LIST OF FIGURES

Figure	Page
Figure 1. The Stikine River and principal U.S. and Canadian fishing areas.....	3
Figure 2. Average catches and fishing efforts compared with 1996 for the Alaska Districts 106 and 108 and for the Canadian inriver fisheries in the Stikine River.....	7
Figure 3. Sockeye salmon catches for the Alaska District 106 and 108 and the combined Canadian fisheries in the Stikine River and Stikine sockeye salmon escapements, 1979-1996.....	9
Figure 4. Catches of Chinook, coho, pink, and chum salmon in the combined Canadian fisheries in the Stikine River, 1979-1996.	12
Figure 5. Chinook salmon weir counts and index escapement estimates for major spawning areas and for the entire Stikine River, 1979-1996.	15
Figure 6. The Taku River and principal U.S. and Canadian fishing areas.....	20
Figure 7. Average catches and fishing efforts computed with 1996 values for the Alaska District 111 commercial fishery and the Canadian commercial fishery in the Taku River.....	26
Figure 8. Sockeye salmon catches for the Alaska District 111, the Icy and Chatham Straits, the combined Canadian commercial and food fisheries in the Taku River, and Taku sockeye salmon escapements, 1979-1996.	29
Figure 9. Taku River Chinook salmon index escapement counts, 1975-1996.....	31
Figure 10. The Alek River and principal U.S. and Canadian fishing areas.	32
Figure 11. Average catches and fishing efforts compared with 1996 values for the Alaska Alek River commercial fishery and the Canadian aboriginal and sport fisheries in the Alek River.....	35
Figure 12. Alek sockeye salmon catches and weir counts, 1979-1996.	36
Figure 13. Alek Chinook salmon catches and weir counts, 1979-1996.	37
Figure 14. Alek coho salmon catches and weir counts, 1979-1996.	38

LIST OF APPENDICES

Appendix	Page
Appendix A. 1. Weekly salmon catch and effort in the Alaskan Subdistrict 106-41&42 (Sumner Strait) commercial drift gillnet fishery, 1996.....	49
Appendix A. 2. Weekly stock proportions and catches of sockeye salmon harvested in the Alaskan Subdistrict 106-41&42 (Sumner Strait) commercial drift gillnet fishery, 1996. Data based on scale pattern analysis.....	49
Appendix A. 3. Weekly salmon catch and effort in the Alaskan Subdistrict 106-30 (Clarence Strait) commercial drift gillnet fishery, 1996.....	50
Appendix A. 4. Weekly stock proportions and catches of sockeye salmon harvested in the Alaskan Subdistrict 106-30 (Clarence Strait) commercial drift gillnet fishery, 1996. Data based on scale pattern analysis.....	50
Appendix A. 5. Weekly salmon catch in the Alaskan District 106 commercial drift gillnet fisheries, 1996. Catches do not include blind Slough terminal area harvests. Effort may be less than the sum of effort from 106-41&42 and 106-30 because some boats fished in more than one subdistrict.	51
Appendix A. 6. Weekly salmon catch contributions of Alaska hatchery and wild fish to the Alaskan District 106 commercial drift gillnet fisheries, 1996. Catches do not include blind Slough terminal area harvests. Effort may be less than the sum of effort from 106-41&42 and 106-30 because some boats fished in more than one subdistrict.	52
Appendix A. 7. Weekly stock proportions of sockeye salmon harvested in the Alaskan District 106 commercial drift gillnet fisheries, 1996. Data based on SPA.....	53
Appendix A. 8. Weekly salmon catch and effort in the Alaskan District 108 commercial drift gillnet fishery, 1996. Catches do not include Ohmer Creek terminal area harvests. The permit days are adjusted for boats that did not fish the entire opening and are less than the sum of the permits times the days open.....	54
Appendix A. 9. Weekly salmon catch contributions of Alaska hatchery and wild fish to the Alaskan District 108 commercial drift gillnet fishery, 1996. Catches do not include Ohmer Creek terminal area harvests. The permit days are adjusted for boats that did not fish the entire opening and are less than the sum of the permits times the days open. ..	55
Appendix A. 10. Weekly stock proportions and stock-specific catch of sockeye salmon in the Alaskan District 108 commercial drift gillnet fishery, 1996. Catches do not include Ohmer Creek terminal area harvests. Data based on SPA.	56
Appendix A. 11. Weekly salmon and steelhead trout catch and effort in the Canadian commercial fishery in the lower Stikine River, 1996.....	57
Appendix A. 12. Weekly sockeye salmon stock proportions and catch by stock in the Canadian commercial fishery in the lower Stikine River, 1996. Sex specific age compositions were calculated and the stock composition of the females sampled for egg diameters was expanded to the catch by age. Thermal mark information based on recovery ratios of Tahltan and Tuya fish in 108.	58
Appendix A. 13. Weekly salmon and steelhead trout catch and effort in the Canadian commercial fishery in the upper Stikine River, 1996.....	59
Appendix A. 14. Weekly salmon and steelhead trout catch and effort in the Canadian Aboriginal fishery located at Telegraph Creek, on the Stikine River, 1996.....	59
Appendix A. 15. Catch by stock by week for sockeye salmon harvested in the Canadian upper river commercial and Aboriginal fisheries in the Stikine River, 1996.	60

Appendix A. 16. Weekly salmon and steelhead trout catch and effort in the Canadian test fishery in the Stikine River, 1996.....	61
Appendix A. 17. Weekly catch, CPUE, and migratory timing of Tahltan and Mainstem sockeye salmon stocks in the Stikine River test fishery, 1996. Sex specific age compositions were calculated and the smoothed stock compositions of the females sampled for egg diameters were expanded to the catch by age.....	62
Appendix A. 18. Daily counts of adult sockeye salmon passing through Tahltan Lake weir, 1996.	63
Appendix A. 19. Daily counts of sockeye salmon smolt migrating through Tahltan Lake smolt weir, 1996.....	64
Appendix A. 20. Daily counts of adult Chinook salmon passing through Little Tahltan weir, 1996.....	65
Appendix B. 1. Salmon catch and effort in the Alaskan Subdistrict 106-41 and -42 (Sumner Strait) commercial drift gillnet fishery, 1960-1996.....	67
Appendix B. 2. Stock proportions and catches of sockeye salmon in the Alaskan Subdistrict 106-41 and -42 (Sumner Strait) commercial drift gillnet fishery, 1985-1996. Data based on SPA.	68
Appendix B. 3. Salmon catch and effort in the Alaskan Subdistrict 106-30 (Clarence Strait) commercial drift gillnet fishery, 1960-1996.....	69
Appendix B. 4. Stock proportions and catches of sockeye salmon in the Alaskan Subdistrict 106-30 (Clarence Strait) commercial drift gillnet fishery, 1985-1996. Data based on SPA.	70
Appendix B. 5. Salmon catch and effort in the Alaskan District 106 commercial drift gillnet fisheries, 1964-1996. Catches do not include Blind Slough terminal area harvests. Effort may be less than the sum of effort from 106-41/42 and 106-30 since some boats fished in more than one subdistrict.	71
Appendix B. 6. Stock proportions and catches of sockeye salmon in the Alaskan District 106 commercial drift gillnet fisheries, 1982-1996. Catches do not include Blind Slough terminal area harvest. Data based on SPA.	72
Appendix B. 7. Salmon catch and effort in the Alaskan District 108 commercial drift gillnet fishery, 1960-1996. Catches do not include Ohmer Creek terminal area harvests. 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.....	73
Appendix B. 8. Stock proportions and catches of sockeye salmon in the Alaskan District 108 commercial drift gillnet fishery, 1985-1996. Catches do not include Ohmer Creek terminal area harvests. Data based on SPA.....	74
Appendix B. 9. Salmon catch in the Alaskan District 106 and 108 test fisheries, 1984-1996. Only years with test fishery openings are listed.....	75
Appendix B. 10. Stock proportions of sockeye salmon in the Alaskan District 106 and 108 test fisheries, 1984-1996. Data based on SPA. Only years with test fishery openings are listed.	76
Appendix B. 11. Stock specific catches of sockeye salmon in the Alaskan District 106 and 108 test fisheries, 1984-1996. Data based on SPA. Only years with test fishery openings are listed.	77
Appendix B. 12. Salmon and steelhead trout catch and effort in the Canadian commercial fishery in the lower Stikine River, 1979-1996.	78
Appendix B. 13. Sockeye salmon stock proportions and catch by stock in the Canadian commercial fishery in the lower Stikine River, 1979-1995. 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 1989-1996.	79
Appendix B. 14. Salmon and steelhead trout catch and effort in the Canadian commercial fishery in the upper Stikine River, 1975-1996.	80
Appendix B. 15. Salmon and steelhead trout catch in the Canadian Aboriginal fishery located at Telegraph Creek, on the Stikine River, 1972-1996.....	81

Appendix B. 16. Catch by stock for sockeye salmon harvested in the Canadian upper river commercial and Aboriginal fisheries in the Stikine River, 1972-1996.	82
Appendix B. 17. Salmon and steelhead trout catch in the combined Canadian net fisheries in the Stikine River, '1972-1996. ESSR catches not included.....	83
Appendix B. 18. Salmon catches in the Stikine River harvested under Canadian ESSR licenses, 1992-1996.....	83
Appendix B. 19. Salmon and steelhead trout catches and effort in Canadian test fisheries in the Stikine River, 1985-1996.	84
Appendix B. 20. Sockeye salmon stock proportions and catch by stock in the test fishery in the lower Stikine River, 1985-1995. Stock composition based on: SPA 1985; average of SPA and GPA 1986-1988; egg diameter 1989-1996.....	85
Appendix B. 21. Estimated proportion of inriver run comprised of Tahltan Lake and Mainstem sockeye stocks, 1979-1995. Stock compositions based on: scale circuli counts 1979-1983; SPA in 1985; average of SPA and GPA 1986-1988; and egg diameter analysis in 1989-1996. 1994-1996 data from commercial catch and CPUE.....	85
Appendix B. 22. Counts of adult sockeye salmon migrating through Tahltan Lake weir, 1959-1996.....	86
Appendix B. 23. Aerial survey counts of Mainstem sockeye stocks in the Stikine River drainage, 1984-1996. The index represents the combined counts from eight spawning areas.	87
Appendix B. 24. Estimates of sockeye salmon smolt migrating through Tahltan Lake smolt weir, 1984-1996.	87
Appendix B. 25. Weir counts of Chinook salmon at Little Tahltan River, 1985-1996.	88
Appendix B. 26. Index counts of Stikine Chinook escapements, 1979-1996. Counts do not include jacks (fish less than 600mm mef length).....	89
Appendix B. 27. Index counts of Stikine coho salmon escapements, 1984-1996. Missing data due to poor survey conditions.	89
Appendix B. 28. Stikine River sockeye salmon run size, 1979-1996. Catches include test fishery catches.	90
Appendix C. 1. Weekly salmon catch and effort in the Alaskan District 111 and Subdistrict 111-32 (Taku Inlet), commercial drift gillnet fishery, 1996.....	92
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, 1996. Stock composition based on 1983-1995 averages.....	93
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, 1996. Stock composition estimates are historical (1983-1994) averages, except for planted which are based on marked fish expansions.....	93
Appendix C. 4. Weekly salmon and steelhead trout catch and effort in the Canadian commercial fishery in the Taku River, 1996.....	94
Appendix C. 5. Weekly stock proportions of sockeye salmon harvested in the Canadian commercial fishery in the Taku River, 1996.....	94
Appendix C. 6. Weekly stock-specific catch of sockeye salmon in the Canadian commercial fishery in the Taku River, 1996.....	95
Appendix C. 7. Mark-recapture estimate of above border run of sockeye and coho salmon in the Taku River, 1996. The early season sockeye salmon expansion is based on the proportion of fish wheel sockeye salmon catch that occurs before the fishery opens and the late season expansion for coho salmon is based on the proportion of the CPUE of above border coho salmon stocks in the District 111-32 fishery that occurs after the tagging is stopped.....	95
Appendix C. 8. Daily counts of adult salmon passing through Tatsamenie weir, 1996.	96
Appendix C. 9. Daily counts of adult sockeye salmon passing through Little Trapper Lake weir, 1996... 97	97

Appendix C. 10. Daily counts of adult salmon passing through the Nahlin River weir, 1996. Chinook salmon counts represent an unknown portion of the escapement because the weir was not operated throughout the entire run.	98
Appendix C. 11. Daily counts of adult sockeye salmon passing through the Kuthai Lake weir, 1996.	99
Appendix D.1. Salmon catches and effort in the Alaskan District 111 and Subdistrict 111-32 (Taku Inlet) commercial drift gillnet fishery, 1960-1996. Days open are for the entire district and include openings to harvest spawner Chinook salmon, 1960-1975.	101
Appendix D. 2. Stock proportions and catches of sockeye salmon in the Alaska District 111 commercial drift gillnet fishery, 1983-1996. Data based on analysis of scale patterns, otolith marks, and incidence of brain parasites.....	103
Appendix D. 3. Proportion of wild Taku River sockeye salmon in the Alaskan District 111 commercial drift gillnet catch by week, 1983-1996. Data based on scale patterns and incidence of brain parasites.	104
Appendix D. 4. Salmon catch in the U.S. subsistence and personal use fisheries in the Taku River, 1967-1996. The subsistence fishery was open 1967 to 1976 and 1985 and the personal use fishery was open 1989-1996.....	104
Appendix D. 5. Salmon and steelhead trout catch and effort in the Canadian commercial fishery in the Taku River, 1979-1996.....	105
Appendix D. 6. Sockeye salmon stock proportions and catch by stock in the Canadian commercial fishery on the Taku River, 1986-1996. Data based on scale pattern analysis.	106
Appendix D. 7. Salmon catches in the Canadian Aboriginal fishery on the Taku River, 1980-1996.	107
Appendix D. 8. Salmon and steelhead trout catch in the Canadian test fishery in the Taku River, 1987-1996.	107
Appendix D. 9. Taku River sockeye salmon run size, 1984-1996. Run estimate does not include spawning escapements below the U.S./ Canada border. The early season sockeye salmon expansion is based on the proportion of fish wheel sockeye salmon catch that occurs before the fishery opens.	108
Appendix D. 10. Sockeye salmon escapement estimates of Taku River and Port Snettisham sockeye salmon stocks, 1979-1996. Spawners equals escapement to the weir minus fish collected for brood stock.	108
Appendix D. 11. Aerial survey index escapement counts of large (3-ocean and older) Taku River Chinook salmon, 1975-1996.	109
Appendix D. 12. Taku River (above border) coho salmon run size, 1987-1996.	109
Appendix D. 13. Escapement counts of Taku River coho salmon, 1984-1996. Counts are for age-1 fish and do not include jacks. Because of variability between methods, visibility, observers, and timing, these counts are not an index of run strength.....	110
Appendix D. 14. Canyon Island fish wheel salmon counts and periods of operation on the Taku River, 1983-1996.	110
Appendix E. 1. Weekly salmon catch and effort in the U.S. commercial fishery in the Alsek River, 1996.....	112
Appendix E. 2. Weekly salmon catch and effort in the Canadian Aboriginal and sport fisheries in the Alsek River, 1996. Total catches do not include released fish.....	112
Appendix E. 3. Daily counts of salmon passing through Klukshu River weir, 1996.	113
Appendix E. 4. Salmon catch and effort in the U.S. commercial fishery in the Alsek River, 1960-1996.....	115
Appendix E. 5. Salmon catch in the U.S. subsistence and personal use fisheries in the Alsek River, 1976-1996. Catches are those reported on returned permits.	116
Appendix E. 6. Salmon catches in the Canadian Aboriginal and sport fisheries in the Alsek River, 1976-1996.	116

Appendix E. 7. Klukshu River weir counts of Chinook, sockeye, and coho salmon, 1976-1996. The escapement count equals the weir count minus the aboriginal fishery catch above the weir and brook stock taken.....	117
Appendix E. 8. Alsek River sockeye salmon counts from U.S. and Canadian aerial surveys and from the electronic counter at Village Creek, 1985-1996.....	118
Appendix E. 9. Aerial survey index counts of Alsek Chinook salmon escapements, 1984-1996.	118
Appendix E. 10. Aerial survey counts of coho salmon from U.S. lower Alsek River tributaries, 1984-1996.....	119

ACRONYMS

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

EXECUTIVE SUMMARY

Estimates of catches and escapements of Pacific salmon returning to the transboundary Stikine, Taku, and Alsek rivers for 1996 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 1996 Stikine sockeye salmon run is estimated at 372,300 fish, of which 264,000 fish were harvested in various fisheries, 4,400 were used for broodstock, and 108,300 escaped to spawn. The catch was the highest recorded since 1982 when stock identification techniques were first used for marine catches. The run was the highest since 1979 and was above the 1986-1995 average of 141,400 sockeye salmon. The estimated U.S. commercial catch of Stikine sockeye salmon in Districts 106 and 108 was 188,400 fish; the Canadian inriver commercial, aboriginal, Excess Salmon to Spawning Requirement (ESSR), and test fishery catches were 67,400, 6,900, 13,200 and 1,300 fish, respectively. Sockeye salmon from outplants into Tahltan and Tuya lakes contributed an estimated 36,000 fish to U.S. catches and 15,400 fish to Canadian catches. The postseason estimate of 372,300 sockeye salmon was slightly above the preseason forecasts by Canada (329,000) and the U.S. (341,000). The Stikine Management Model correctly predicted a larger than average sockeye salmon run. Weekly inseason model forecasts ranged from 220,500 to 493,000 sockeye salmon; the final inseason model predictions were 336,700 (Canada) and 360,500 (U.S.). Canadian and U.S. final inseason estimates were different primarily due to differences in commercial catch data input. Using the inseason estimates, both countries were harvesting below their TAC, with the exception of the U.S. final model run in statistical week 32. Using the postseason estimate of run size and total allowable catch, Canada harvested 24% of the total allowable catch and the U.S. harvested 60% of the total allowable catch. The broodstock take removed 4,400 sockeye salmon, and terminal surplus escapement fishery removed 13,200 sockeye salmon from the escapement to Tahltan Lake leaving a spawning escapement of 52,500 fish, 219% above the goal of 24,000 fish. The estimated spawning escapement of 45,200 Mainstem Stikine sockeye salmon was above the upper end of the escapement goal range (20,000 to 40,000 fish) for this stock group.

The catch of Chinook salmon *O.tshawytscha* in Canadian commercial and aboriginal fisheries in the Stikine River was 2,500 large fish and 420 jacks, 24% above and 24% below the respective 1986-1995 averages. An additional 50 Chinook salmon were taken in the Canadian inriver test fishery. The U.S. marine catch of Chinook salmon in the District 106 and 108 mixed stock gillnet fisheries was 2,400 fish, approximately 5% above the 1986-1995 average catch. The Chinook salmon spawning escapement of 4,800 large adults through the Little Tahltan River weir in 1996 was 10% below the 1986-1995 average and 4% below the joint U.S./Canada escapement goal of 5,300 fish. Surveys of other Stikine tributaries also showed below average escapements.

The U.S. marine harvest of Stikine River coho salmon *O. kisutch* is unknown since there is no stock identification program for this species; however, total mixed-stock coho salmon catches of 223,600 and 19,100 fish in Districts 106 and 108, respectively, were 34% and 40% above the 1986-1995 averages. Alaskan hatchery fish comprised approximately 23% (55,900 fish) of the coho salmon harvest from the two districts. The Canadian inriver coho salmon catch of 1,400

fish was 41% of the previous 10-year average. The estimated coho salmon escapement of 59,600 fish is above the interim escapement goal range of 30,000 to 50,000 coho salmon. Aerial surveys of six coho salmon spawning index sites also indicated above average spawning escapement.

TAKU

The 1996 Taku sockeye salmon run estimate was 324,800 fish, a record, and included an estimated catch of 232,200 fish and an above-border spawning escapement of 92,600 fish. The run size and catch were all time highs, and escapement, while below the 1986-1995 average, exceeded the upper level of the escapement goal range of 71,000 to 80,000 fish. An estimated 187,400 Taku sockeye salmon were taken in the District 111 commercial fishery and 3,000 sockeye salmon in the U.S. inriver personal use fisheries. Canadian inriver commercial and aboriginal fishery catches were 41,000 and 400 sockeye salmon, respectively. Since the escapement goal is expressed as a range, the resulting total allowable catch is also expressed as a range. In 1996, Canada harvested an estimated 17% to 17.2%, and the U.S. took 75% to 78% of the total allowable catch.

The catch of large Chinook salmon in the Canadian commercial fishery in the Taku River was 3,300 fish, over 3 times the 1986 to 1995 average; in addition, 140 jack Chinook salmon were caught compared to an average of 190 fish. The District 111 mixed stock gillnet fishery harvested 2,700 Chinook salmon, 21% below the 1986-1995 average. Twenty percent of the catch was estimated to be of Alaska hatchery origin. Escapement observed in six Taku River Chinook salmon index tributaries was the highest recorded. The combined aerial count for the index tributaries was 19,800 fish, which was two times the 1986-1995 average of 9,700 fish, and 1.5 times the index escapement goal of 13,200 fish.

The Taku coho salmon run was below the 1986 to 1995 average in 1996. The U.S. harvest of 33,600 coho salmon in the District 111 mixed stock fishery was 39% of the previous 10-year average and the lowest catch since 1986. Alaskan hatcheries contributed an estimated 23% of the District 111 harvest, or 7,600 fish. The Canadian inriver commercial and food fishery catch was 24 coho salmon, 27% of the previous 10-year average. The above-border inriver run size is estimated at 49,700 coho salmon. After upriver Canadian catches are subtracted from the inriver run, the above-border spawning escapement is estimated at 44,600 coho salmon, which exceeds the interim escapement goal range of 27,500 to 35,000 fish.

The catch of pink salmon *O. gorbuscha* in District 111 was 12,700 fish, 7% of the 1986-1995 average catch. There was no reported harvest of pink salmon in the Canadian commercial inriver fishery. The escapement of pink salmon to the Taku River was good as evidenced by the fish wheel catch of 21,600 pink salmon, 33% above the ten-year average.

The catch of chum salmon *O. keta* in the District 111 fishery was 354,100 fish, composed of 347,600 summer run fish (prior to mid-August) and 6,500 fall run fish. The catch of summer chum salmon, primarily Alaskan hatchery stocks, was a new record, slightly above the 1995 record catch. The catch of fall chum salmon, composed of wild Taku River and Port Snettisham stocks, was 76% below the 1986-1995 average. There was no reported harvest of chum salmon in the Canadian inriver fishery. Escapement appeared to be poor; the Canyon Island fish wheel catch of 400 chum salmon was 62% below average.

ALSEK

The Alsek River sockeye salmon harvest of 15,000 fish was about 17% below the 1986-1995 average of 18,000. Canadian catches of 1,200 sockeye salmon in the aboriginal fishery and 200 in the sport fishery were 38% and 60% below average, respectively. The escapement to the Klukshu River weir of 8,300 fish was 45% below the 1986-1995 average. The Klukshu weir counts of 1,500 early-run (count through August 15) and 6,800 late-run sockeye salmon were both 45% below the 1986-1995 averages.

The Chinook salmon run to the Alsek River seemed above average. The U.S. Dry Bay catch of 800 fish was more than double the 1986-1995 average. The combined Canadian sport and aboriginal fishery catch of 1,100 fish was 86% above the 1986-1995 average. The 3,600 Chinook salmon count through the Klukshu River weir was 27% above the 1986-1995 average of 2,800 fish. The Klukshu River escapement goal is 4,700 Chinook salmon. Aerial survey index counts of other spawning systems were below average.

The coho salmon run to the Alsek River was above average, but current stock assessment programs prevent an accurate comparison with historical runs. The U.S. Dry Bay catch of 5,500 coho salmon was 23% above the 1986-1995 average, while the combined Canadian inriver aboriginal and sport fishery catch of 65 fish was 62% below the 1986-1995 average; the coho salmon fishery was restricted due to efforts to protect the low return of sockeye salmon. 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, the count of 3,500 coho salmon was the third highest count on record.

ENHANCEMENT

Eggs and milt were collected from the 1996 sockeye salmon escapements to Tahltan and Tatsamenie lakes. A total of 6.2 million eggs was collected at Tahltan Lake, slightly above the 6.0 million egg-take goal. The Tatsamenie Lake egg-take goal was increased to 5.0 million from the old goal of 2.5 million; the new goal was realized in 1996 with the collection of 5.0 million eggs.

Outplants of 1995 broodyear sockeye salmon fry in June and July 1996 included 2,300,000 fry in Tahltan Lake, 2,500,000 fry of Tahltan Lake origin in Tuya Lake, and 1,700,000 fry in Tatsamenie Lake. Green-egg to planted-fry survivals were 76%, 64%, and 72% for these outplants, respectively. Survival to emergence was below average partially due to the loss of 852,000 fry due to Infectious Hematopoietic Necrosis (IHN). Losses from IHN have occurred in the past at Snettisham Hatchery and are expected in sockeye salmon culture; Snettisham Hatchery has a good history of minimal losses to IHN.

Sampling of outmigrating smolts was conducted at lake systems that had been stocked with sockeye salmon fry. Large numbers of sockeye salmon smolts were captured at all lakes except Trapper Lake. Total emigration was estimated for Tahltan Lake and Tatsamenie Lakes in 1996. An estimated 1,559,000 smolts emigrated from Tahltan Lake; an estimate of the number from fry plants is not yet available. At Tatsamenie Lake a smolt recapture program was tested and provided an estimate of 469,000 emigrant smolts; this project was only funded for one year and while successful, may not be continued. As in past years, smolts outmigrating from Tuya Lake this spring were large in size. Outmigrating smolts were captured from Trapper Lake in 1996 as

in previous years; age analysis is not complete, however, there appeared to be a higher proportion of age-1 smolts.

The State of Alaska transferred the operation of Snettisham from Alaska Department of Fish and Game (ADF&G) to Douglas Island Pink and Chum, Inc. (DIPAC), a private aquaculture organization with two other operational hatcheries in Juneau. A cooperative agreement between ADF&G and DIPAC provides for Snettisham to continue to serve the needs of the joint transboundary river enhancement projects. The transfer took effect on July 1, 1996; the new managers are doing an excellent job of hatchery operation. The egg incubation and thermal marking program at Snettisham Hatchery went smoothly in 1996.

Adult sockeye salmon otoliths were processed inseason by the Alaska Department of Fish and Game otolith lab to estimate the weekly contribution of enhanced sockeye salmon returns to the District 106, 108, and 111 gillnet fisheries. Canadian Department of Fisheries and Oceans' otolith lab will be processing all 1996 transboundary adult, juvenile, and smolt otolith samples.

INTRODUCTION

This report presents estimates of the 1996 catch and escapement data for Pacific salmon runs to the transboundary Stikine, Taku, and Alsek rivers and discusses management actions taken during the season. Catch and effort data are presented by management week (U.S. statistical week) for each river for both U.S. and Canadian fisheries. Spawning escapement data for most species are reported from weir counts or other escapement monitoring techniques. Sockeye salmon runs to the three rivers are reconstructed using harvest data and spawning escapement estimates. Joint enhancement activities on the Stikine and Taku rivers are also summarized.

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

STIKINE RIVER

Stikine River salmon are harvested by U.S. gillnet fisheries in Alaskan Districts 106 and 108, by Canadian commercial gillnet fisheries located in the lower and upper Stikine River, and by a Canadian Aboriginal fishery in the upper portion of the river (Figure 1). A small sport fishery also exists in the Canadian portion of the Stikine drainage. In 1995, a United States personal use fishery was established in the lower Stikine River; no catches were reported in this fishery in 1995 and 1996. 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 District 9 portion of Frederick Sound was expanded to target hatchery Chinook salmon.

HARVEST REGULATIONS AND THE JOINT MANAGEMENT MODEL

Harvest arrangements for Stikine salmon were not negotiated by the Pacific Salmon Commission or Canadian and United States governments prior to the 1996 season. As a result, the Parties unilaterally developed the following management plans for the 1996 season:

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

In previous years, the Transboundary Technical Committee (TTC) met prior to the season to update joint management and enhancement plans and determine new parameters for input into the inseason run forecast model, referred to as the Stikine Management Model (SMM). However, due to uncertainty regarding Pacific Salmon Commission deliberations, a joint management plan was not published in 1996.

Preseason forecasts of Stikine sockeye salmon abundance and updates to the SMM update were made jointly by the TTC during the preseason management meeting. Minor revisions to the forecasts were made independently by the Parties as more information became available.

In 1996, the preseason forecasts were used during statistical week 24 (June 09 to June 15) through statistical week 26 (June 23 to June 29). Beginning the first week of July, 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) 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. Initially, average stock proportions from the postseason SPA analysis in previous years were assumed for weekly catches; the averages used each week depended upon whether the run was judged to be below average, average or above average. However, the Tahltan 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 enhanced Tahltan and Tuya Lake sockeye salmon to catches in these areas. The weekly estimate of Tuya fish in 106-41 was added to the historical proportion of Tahltan in the SMM since this stock was not present in the historical database. No adjustments were made in District 108. Because different proportions

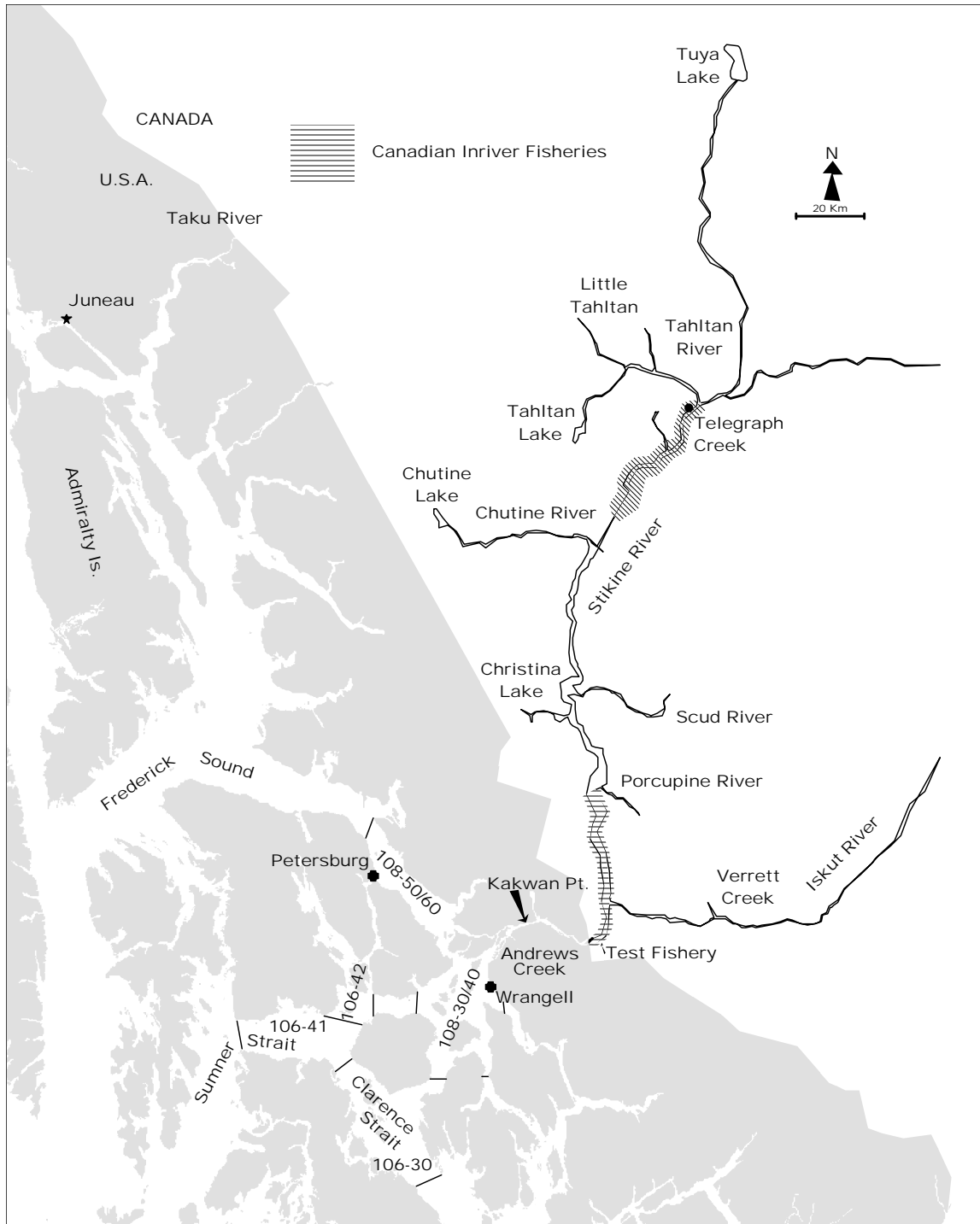


Figure 1. The Stikine River and principal U.S. and Canadian fishing areas.

of Tahltan fish were observed in subdistricts of 108, the overall contribution estimates for 108 were weighted according to catches in the subdistricts.

The preseason forecasts of returning Stikine sockeye salmon ranged from 329,000 (Canada) to 341,000 (U.S.) fish; both predictions indicated a run size substantially above the 1986-1995 average terminal run size of 141,426 (Appendix B.28). Canadian inseason predictions of total run ranged from 232,000 sockeye salmon to 476,000 sockeye salmon; U.S. forecasts ranged from 220,000 to 493,000 sockeye salmon. All forecasts indicated an above average run and most of the forecasts were above the preseason estimate. U.S. and Canadian weekly predictions differed primarily because of differences in commercial catch data inputs. Both Parties used the forecast based on inriver test fishery CPUE data for statistical week 27 and then switched to the forecasts derived from lower Stikine commercial fishery CPUE. The differences in the forecasts used are summarized in the table below.

Analyses of the forecasts developed in Canada indicated the forecasts based on inriver commercial and test fishery CPUE and District 106 CPUE differed throughout the season with the greatest variation occurring during the statistical week 28-30 period. The greatest variation in forecasts occurred between inriver commercial and district based forecasts (average absolute difference = 79,000), whereas, the least variation occurred between test fishery and District 106 based forecasts (average absolute difference = 22,000). By the end of August, i.e. statistical week 35, the SMM predicted a total run of 275,000 based on inriver test fishery CPUE) to 337,000 sockeye salmon (based on inriver commercial CPUE). The forecast derived from District 106 CPUE was 314,000 sockeye salmon. Final estimates of the TAC ranged from 283,000 to 306,000 fish (Canada and U.S. model runs, respectively), with a Canadian and U.S. allowable harvest of 141,500 to 153,000 sockeye salmon each.

The SMM also predicts the Tahltan portion of the run independently from the total run forecasts. Canadian estimates of the Tahltan run ranged from 126,000 (statistical week 27) to 245,000 (statistical week 27) sockeye salmon compared to the preseason forecasts of 223,000 (Canada) and 273,000 (U.S.). The final inseason prediction of the Tahltan Lake weir count was 31,000 to 51,000 sockeye salmon (Canadian inriver Tahltan run forecasts based on District 106 and inriver commercial CPUE minus inriver catch) compared to the actual Tahltan Lake weir count of 52,500 fish. The Tahltan run forecasts based on test fishery data were ignored due to the small sample sizes used in the weekly stock ID estimates.

U.S. FISHERIES

The 1996 harvest in the District 106 commercial gillnet fishery included 644 Chinook, 311,100 sockeye, 223,640 coho, 188,035 pink *O. gorbuscha*, 283,290 chum *O. keta*, and 130 steelhead salmon *O. mykiss* (Figure 2, Appendix A.5). In the District 108 fishery, 1,717 Chinook, 154,150 sockeye, 19,059 coho, 37,651 pink, 135,623 chum, and 40 steelhead salmon were harvested (Appendix A.7). District 106 catches of Chinook and pink salmon were below the 1986 to 1995 average while the catches of all other species were above the average. The sockeye salmon catch was the highest on record, the chum salmon catch was the second highest on record, behind 1995, and the coho salmon catch was the fourth highest on record (Figure 2). District 108 catches of all salmon species were above the 1986-1995 average with both the sockeye and chum salmon catch being the highest on record and the coho salmon catch being the sixth highest on record (Figure 2). Annual commercial and test fishery catches from 1964 to 1995 for these fisheries are provided in Appendices B.1 through B.11. Catches of each species in Districts 106

and 108 consist of fish of mixed stock origin; the contribution of Stikine River stocks is estimated only for sockeye salmon (Figure 3). Scales were sampled from the various subdistricts and were used for making postseason catch estimates. The proportion of the District 106 and 108 sockeye salmon catch of Stikine River origin was estimated inseason using both the historical proportions of each stock and the thermally marked otoliths from returns of enhanced Tahltan and Tuya Lake sockeye salmon found in the catch.

The final inseason estimate of the contribution of Stikine sockeye salmon to Districts 106 and 108 was 178,625 or 38% of the sockeye salmon catch. The postseason estimate is 188,385 fish, 40.0% of the sockeye salmon catch (Figure 3, Appendices B.6 and B.8). The Sumner Strait fishery (Subdistricts 106-41 & 42) harvested 61,768 Stikine sockeye salmon (Appendices A.2 and B.2), 28% of the total sockeye salmon harvest in that subdistrict; the Clarence Strait fishery (Subdistrict 106-30) harvested 840 Stikine sockeye salmon (Appendices A.4 and B.4), 1.0% of the catch in that subdistrict; and the District 108 fishery, near the mouth of the Stikine, harvested 125,777 Stikine sockeye salmon (Appendix A.8 and B.8), 82% of the District 108 catch.

Table 1. Weekly forecasts of run size and total allowable catch for Stikine River sockeye salmon as determined inseason by the Stikine Management Model, 1996.

Stat. Week	Start Date	Forecasts Run Size	TAC	TAC		Cumulative Catch	
				U.S.	Canada	U.S.	Canada
Models Runs by Canada							
25	16-Jun	329,000	275,000	137,500	137,500		
26	23-Jun	329,000	275,000	137,500	137,500	3,883	
27	30-Jun	232,485	178,485	89,243	89,243	16,474	6,084
28	7-Jul	445,975	391,975	195,987	195,987	56,028	23,883
29	14-Jul	475,636	421,636	210,818	210,818	112,784	41,758
30	21-Jul	452,950	398,950	199,475	199,475	142,146	57,936
31	28-Jul	410,891	356,891	178,446	178,446	149,144	61,678
32	4-Aug	383,979	329,979	164,989	164,989	158,606	72,063
33	11-Aug	359,102	305,102	152,551	152,551	158,606	72,063
34	18-Aug	349,820	295,820	147,910	147,910	165,170	74,302
35	25-Aug	336,705	282,705	141,352	141,352	165,170	74,398
Model Runs by U.S.							
25	16-Jun	341,000	287,000	143,500	143,500	3,970	
26	23-Jun	341,000	287,000	143,500	143,500	22,029	1,605
27	30-Jun	220,301	166,301	83,151	83,151	61,827	19,542
28	7-Jul	410,268	356,268	178,134	178,134	106,592	31,841
29	14-Jul	492,859	438,859	219,430	219,430	132,085	48,266
30	21-Jul	427,959	373,959	186,980	186,980	148,813	54,318
31	28-Jul	419,371	365,371	182,686	182,686	164,480	73,241
32	4-Aug	360,476	306,476	153,238	153,238		

The 1996 fishing season in District 108 began on June 10 (statistical week 24) and the District 106 fishing season began on June 16 (statistical week 25) and the fisheries in both districts continued through September 24 (statistical week 39). The District 108 fishery was open for one day during the initial opening (statistical week 24, June 10 to June 16); the opening was based on the preseason expectation of a U.S. TAC of 143,500 Stikine River sockeye salmon. Both districts were open for two days on the first general opening (statistical week 25). 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. During statistical weeks 25 and 26 (June 16 to 22) District 106 was restricted to a two-day per week fishery. During statistical weeks 27 and 28 District 106 was initially open for two days and then a portion of Sumner Strait (subdistricts 106-41 and 42) from MacNamara Pt to the District 106&108 boundary was reopened for a 3.5-day mid-week opening. District 106 was open for 3 days during statistical weeks 29 through 36 (July 14 to September 7) and for two days during statistical weeks 37 through 39. District 108 was also open concurrently with the District 106 openings throughout the entire season. The following additional fishing times were permitted in District 108: a 2-day mid-week opening in statistical week 25 (June 16 to June 22); a 3.5-day mid-week opening in statistical week 26 (June 23 to June 29); and 2-day mid-week openings in statistical weeks 29 and 30 (July 14 to July 27). During the time period when mid-week openings were allowed the SMM indicated a U.S. TAC of between 83,151 and 219,430 sockeye salmon based on the river estimate of total run size. The management approach of providing extra time in District 108 and a small portion of District 106 was used to regulate the harvest of the local island sockeye salmon stocks in District 106 while maximizing the harvest of Stikine sockeye salmon in District 108. Effort was high and, while sockeye salmon catches were strong in Sumner Strait, the catches throughout District 106 were not strong enough to warrant additional time in all of District 106 during the early weeks.

Area restrictions were used around the mouth of the Stikine River for the first two statistical weeks (weeks 24 and 25) and in portions of Frederick Sound each week during the sockeye and pink salmon fisheries to protect adult Chinook salmon returning to the Stikine River. During July and the first week of August the closure line for District 108 was moved in to the Point Rothsay to Indian Point line to avoid areas of known high Chinook salmon abundance.

The management emphasis changed from sockeye salmon to pink salmon during statistical week 34 (August 18 to 24). This season there were 188,035 and 37,651 pink salmon harvested in District 106 and 108, respectively (Appendices A.5 and A.7). The District 106 catch is 55% of the average of 343,501 pink salmon (Appendix B.5), while District 108 catch is 57% above the respective average of 24,038 pink salmon (Appendix B.7). Pink salmon catches in both districts are not always a true reflection of the pink salmon abundance in the area because the low pink salmon price, along with the high abundance of sockeye and coho salmon, affect the fishing patterns and methods. A three-day fishing period was allowed during the week of pink salmon management in both districts. The pink salmon escapements throughout Districts 106 and 108 were above average.

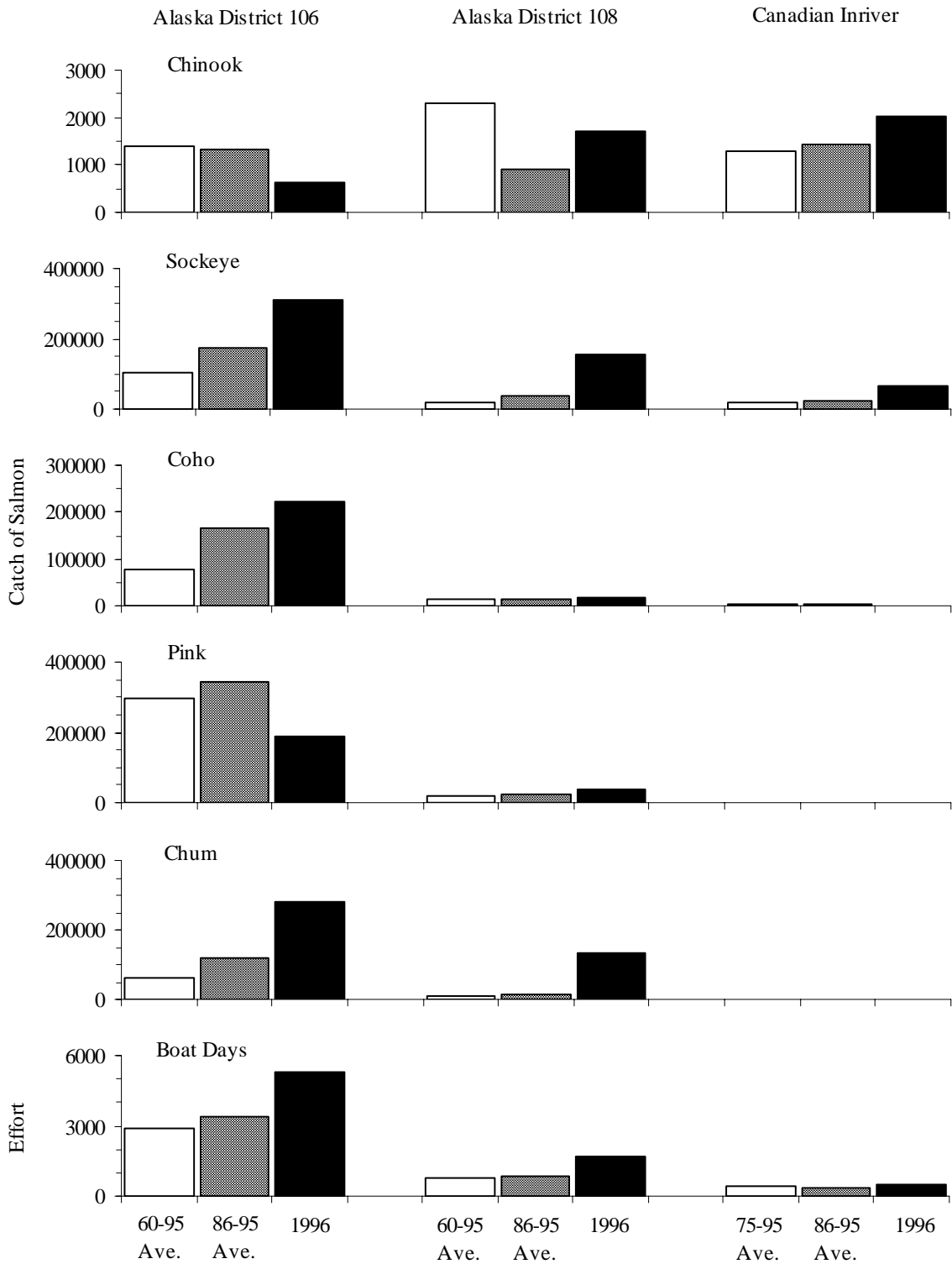


Figure 2. Average catches and fishing efforts compared with 1996 for the Alaska Districts 106 and 108 and for the Canadian inriver fisheries in the Stikine River.

Coho salmon management in both the District 106 and 108 gillnet fisheries usually commences during late August or early September. During statistical week 35 (August 25 to August 31) the management emphasis changed from pink to coho salmon. Early gillnet catches of coho salmon were above or at average levels and the inseason outside troll fishery indicated an above average run. Prior to the change to coho salmon management, the sockeye and pink salmon fisheries harvested approximately 63% of the total District 106 coho salmon catch and approximately 33% of the total District 108 coho salmon catch. Both districts were open for three days during statistical weeks 35 and 36 (August 25 to September 7), two days during statistical weeks 37 and 39 (September 8 to 28). The total coho salmon catch each week was about average while the effort was above average and the CPUE was generally near or below average. Normally the percentage of hatchery coho salmon starts to increase by mid-August and by the end of season makes up a high percentage of the weekly catch. This season the hatchery contribution followed the normal pattern throughout the season. The District 106 coho salmon catch of 223,640 is the fourth highest on record and is 34% above the 1986-1995 average of 166,534 fish (Appendices A.5 and B.5). The District 108 coho salmon catch of 19,059 is the eighth highest on record and is 40% higher than the 1986-1995 average of 13,597 fish (Appendices A.7 and B.7). Fishing effort in both districts was higher than normal. The Alaska hatchery coho salmon contribution to the District 106 fishery is estimated at 54,621 fish (24%) (Appendix A.5) and the contribution to the District 108 fishery is estimated at 1,271 fish (7%) (Appendix A.7).

During the 1996 season, the gillnet fishery in District 106 was open for a total of 46 days (Appendix A.5), and in District 108 for 56.5 days (Appendix A.7). These were above the Districts 106 and 108 1986-1995 averages of 33.1 and 36.2 days, respectively (Appendices B.5 and B.7). District 106 fishing effort in numbers of vessels was near the average for the first four statistical weeks (weeks 25 to 28), 14% to 48% above average for the following eight statistical weeks (weeks 29 to 36), and below average for the last three statistical weeks (weeks 37 to 39) of the season. Because of the extremely strong sockeye salmon and good coho salmon runs, the fishing effort in District 106 was 55% higher than the 1986-95 average (Figure 2, Appendix B.5). The District 108 weekly fishing pressure was about average during the regular openings but increased to double the average during the mid-week extensions. After the mid-week extensions were suspended the effort remained near average. The greatest number of boat-days in District 106 (649) was in statistical week 28 while the greatest number of boats fishing (162) occurred in statistical week 31, which is the end of July. The effort of 5,290 boat-days in District 106 was 55% higher than the 1986-1995 average of 3,420 boat-days. The District 108 effort was higher than average due to the extended fishing time allowed to harvest the large run of Stikine River sockeye salmon. The 1,696 boat-days fished in District 108 was 98% higher than the 1986-1995 average of 857 boat-days (Appendix B.7). Most of the boats fishing during the mid-week openings in District 108 did not fish the entire opening so the effort in boat-days was adjusted to better reflect the time actually fished during these openings. For this reason the boat-days given in Appendix B.7 are less than that obtained by multiplying the number of permits fished by the number of days the fishery was open.

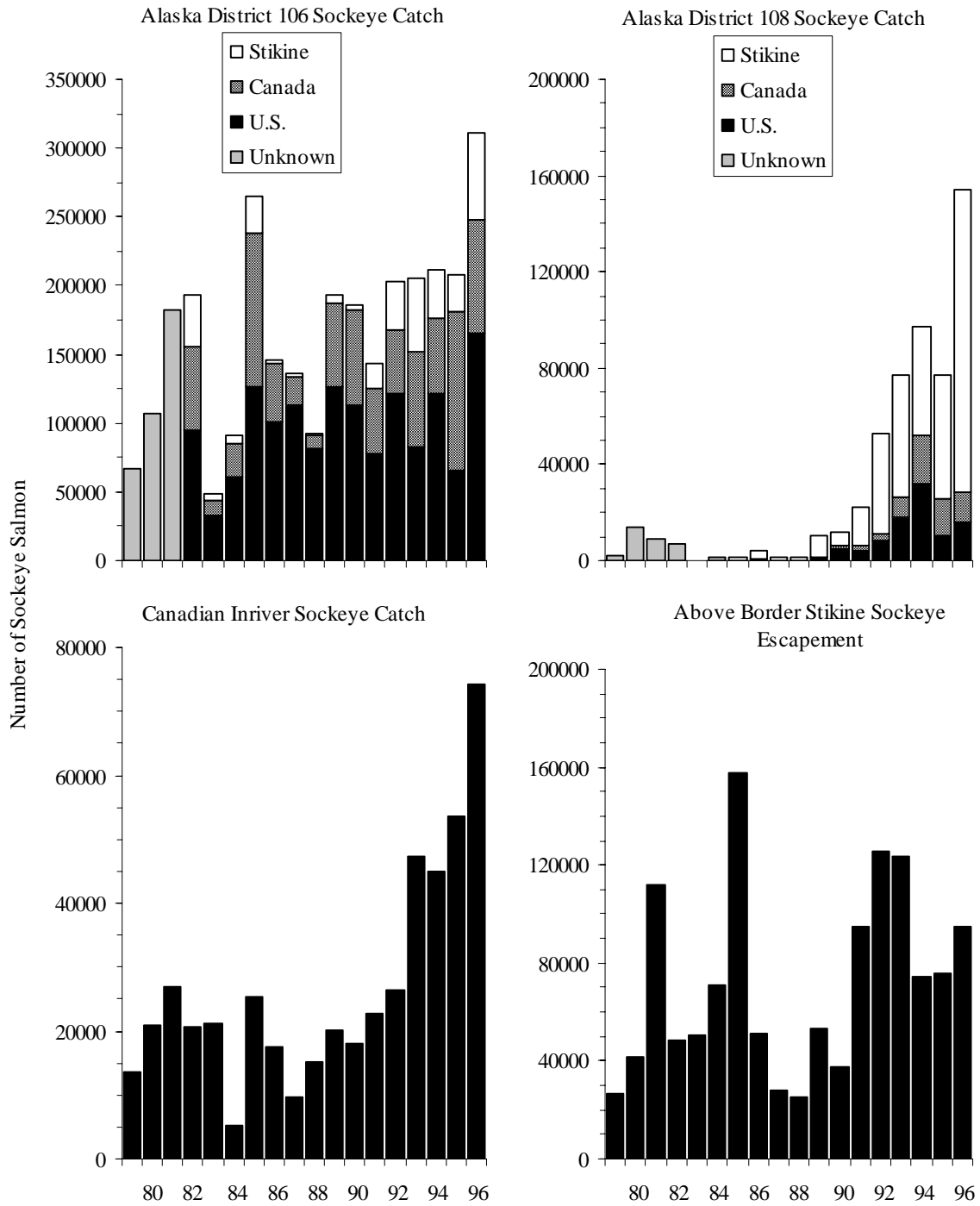


Figure 3. Sockeye salmon catches for the Alaska District 106 and 108 and the combined Canadian fisheries in the Stikine River and Stikine sockeye salmon escapements, 1979-1996.

While there was some effort in the U.S. personal use fishery in the lower Stikine River, there was no reported catch. Based on CWT sampling in Wrangell and the creel survey in Petersburg, an estimated 2,460 Chinook salmon were taken by sport anglers from May 7 to July 14, 1996, in these two locations. An estimated 903 (37%) of these were Alaska hatchery Chinook salmon.

CANADIAN FISHERIES

Catches from the combined Canadian commercial and Aboriginal gillnet fisheries in the Stikine River in 1996 included: 2,471 large Chinook, 421 jack Chinook, 74,281 sockeye, 1,404 coho, 25 pink, and 232 chum, and 183 steelhead salmon (Figure 4, Appendix A.9, A.11, A.12 and B.17). The sockeye salmon catch was the highest on record and was 2.7 times the 1986-1995 average of 27,520 sockeye salmon. The catch of large Chinook salmon was 24% above average and the catch of steelhead salmon was 13% above average whereas, the catches of jack Chinook, pink and chum salmon were all below average. In addition to these catches, 12,955 sockeye salmon were taken in an ESSR harvest at Tahltan Lake (Appendix B.18).

A test fishery was conducted again in the lower Stikine River, just upstream from the Canada/U.S. border, to determine migratory timing and stock composition of the sockeye salmon run for use in the postseason estimations of the inriver sockeye and coho salmon run sizes. The weekly test fishery sockeye salmon CPUE and stock ID results were also used inseason in the SMM to forecast the total run size. Test fishery catches included: 298 large Chinook, 76 jack Chinook, 1,312 sockeye, 55 coho, 4 pink, 55 chum, and 11 steelhead salmon (Appendices A.14 and B.19).

Lower Stikine Commercial Fishery

Canadian commercial fishers in the lower Stikine harvested 1,708 large Chinook, 221 jack Chinook, 66,262 sockeye, 1,402 coho, 25 pink, 229 chum, and 153 steelhead salmon in 1996 (Appendix A.9). The sockeye salmon catch exceeded the previous record of 45,622 sockeye salmon in 1995, and was 296% above the 1986-1995 average of 22,417 sockeye salmon (Appendix B.12). The catch of large Chinook salmon was 88% above the previous ten-year average of 1,026 Chinook salmon, whereas, the catch of jack Chinook salmon and all other salmon species was below respective 1986-1995 averages. A very strong sockeye salmon run combined with relatively low fishing effort resulted in the fishery being open almost continuously from July 07 through August 08. The exception to this was a three-hour closure at the drift site near the Canada/U.S. border in the morning of day 5, 6 and 7 each week to allow the test fishery to operate.

The fishery commenced at noon on Sunday, June 23 (statistical week 26), for a scheduled opening of four days. Record high daily sockeye salmon catches and catch per unit of effort measured in sockeye/fisher/day (CPUE), combined with light effort, i.e. a maximum of eight fishers present, and a shortfall in catch relative to the weekly guideline harvest prompted a three day extension. Weekly guideline harvests, based on current forecasts of the total allowable catch apportioned by average run timing and domestic and international allocation agreements, were developed each week to guide management decisions. The weekly catch of 6,078 sockeye salmon, which was close to the weekly guideline of 6,040 sockeye salmon, was a record for statistical week 26 and was approximately 5.5 times the previous ten-year average catch for this week. The sockeye salmon CPUE was also record high and was 392% above average. Run

forecasts derived from fishery performance data from this week ranged from 232,000 sockeye salmon (from test fishery data) to 310,000 sockeye salmon (from inriver commercial CPUE data), these forecasts were above average but below the preseason forecast of approximately 329,000 sockeye salmon.

In statistical week 27, the fishery was scheduled to open for five days commencing Sunday, June 30. Test fishery catches of 2-3 sockeye/drift were well above average just prior to the opening indicating that the forecast based on test fishery data would likely increase this week. Record high sockeye salmon catches and CPUE continued to prevail in the fishery over the first four days. Fishing time was extended by twenty-four hours but was not extended further due to the cumulative catch being above the guideline for the week and the need for some caution since the test fishery based forecast was somewhat lower than expected. The catch of 17,796 sockeye salmon in statistical week 27, more than 8 times the average catch for this week, was the highest weekly catch ever recorded in the fishery; the previous record was a catch of 10,322 sockeye salmon catch in statistical week 28 in 1995. It was also noted in this week that the weight of the sockeye salmon was approximately 0.5 kg heavier than normal with some fish weighing in excess of 5.4 kg.

The sockeye salmon run strength remained high over the next three weeks resulting in record/near record weekly catches and CPUE. Sockeye salmon run forecasts ranged from 310,000 sockeye salmon (test fishery based forecast in statistical week 28) to 493,000 sockeye salmon (statistical week 29 forecast based on inriver commercial CPUE). Decisions to increase the fishing times in statistical weeks 28 through 30 to seven days, were made based on the record run forecasts, above average CPUE and the status of the cumulative catch relative to weekly guideline levels. In spite of the continuous fishing effort, the cumulative catch fell progressively further behind as the season progressed.

After statistical week 30, according to the commercial CPUE the weekly sockeye salmon run strength appeared to return to about average levels. Weekly fishing times were reduced from seven days in statistical week 31 to five days in each of statistical weeks 32 and 33 in response to lower sockeye salmon abundance. Sockeye salmon run forecasts continued to be at record levels although they steadily declined from statistical week 31 through the end of the sockeye salmon season. The final inseason sockeye salmon forecast indicated a Canadian TAC of 111,000 to 141,000 sockeye salmon. Accounting for the combined Aboriginal and commercial harvest in the upper river, i.e. approximately 8,000 sockeye salmon, the final inseason estimates translated into a lower river target 103,000 to 133,000 sockeye salmon.

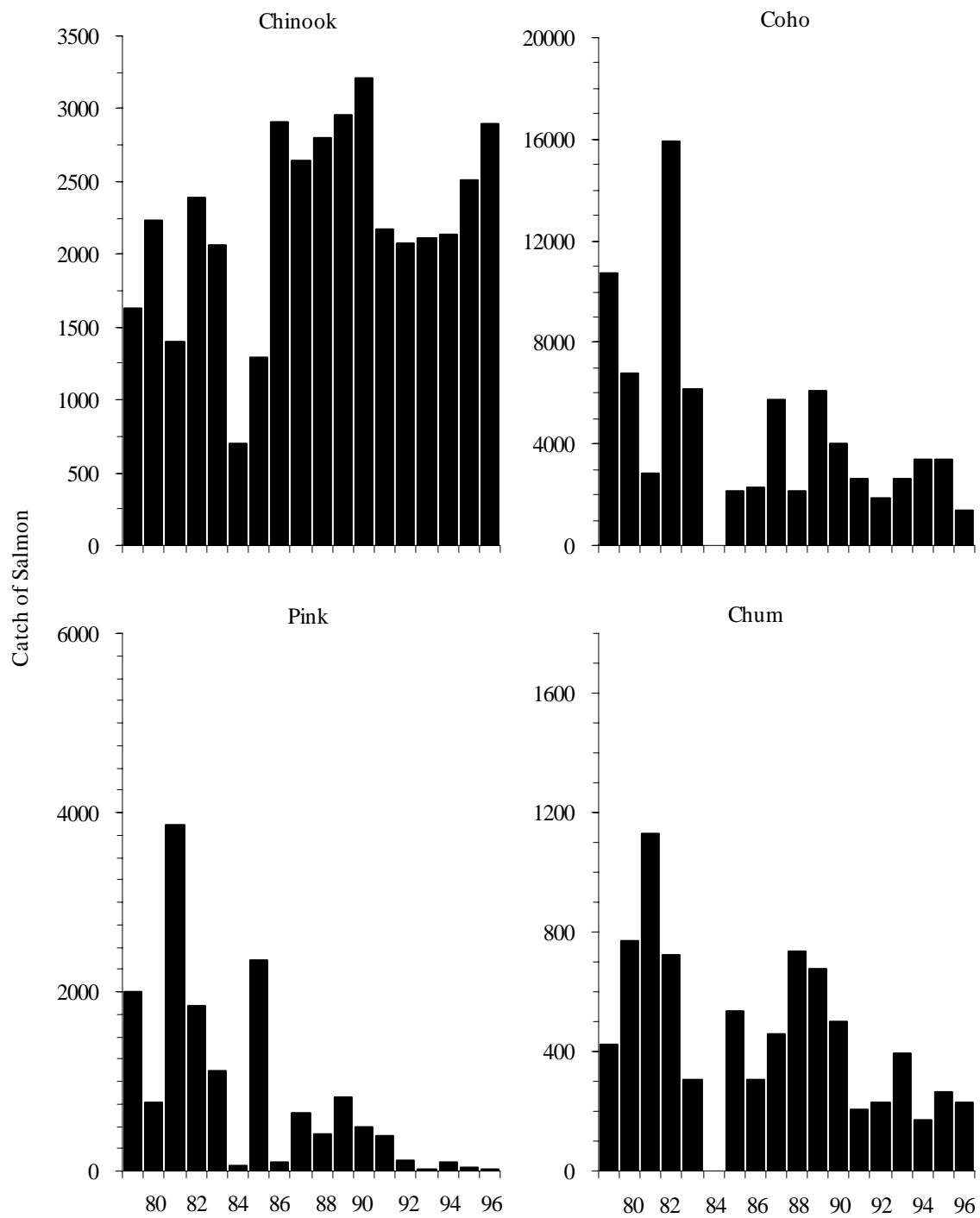


Figure 4. Catches of Chinook, coho, pink, and chum salmon in the combined Canadian fisheries in the Stikine River, 1979-1996.

When comparing the sockeye salmon CPUE for statistical weeks in 1996 with those of other years, the early portion of the sockeye salmon run timing appeared to be about 1-2 weeks earlier than normal. The peak CPUE occurred in statistical week 27 when normally it occurs in statistical week 29. The timing of the latter half of the run appeared to be normal. Tahltan Lake sockeye salmon dominated the catch through July 20 (statistical week 29); thereafter, the mainstem sockeye salmon stock component made up the majority of the sockeye salmon catch. Of the total lower river sockeye salmon catch, 42,938 sockeye salmon were of Tahltan/Tuya lake origin (65% of the catch) and 23,324 originated from the Mainstem Stikine sockeye salmon conglomerate (Appendix A.10).

It was evident by mid-July that the number of sockeye reaching the Tahltan Lake weir surplus would exceed escapement requirements. This prompted the issuance of an "Excess Salmon To Spawning Requirements License (ESSR) which permitted the terminal harvest of sockeye salmon at Tahltan Lake. A total of 12,955 sockeye salmon was harvested under the ESSR (Appendix B.18).

From the middle of August through the end of the season (September 21), only 1-2 fishers remained in the fishery. Management emphasis usually switches to coho salmon as sockeye salmon abundance drops off towards the end of August. However, due to poor market conditions, there was little effort towards targeting coho salmon in 1996. The fishery was open for three to seven days per week after the end of August and generally the coho salmon CPUE was below average. The peak coho salmon catch of the season occurred in statistical week 36.

Eighteen licensed fishers participated in the fishery throughout the season with an average of six licenses active each week throughout the season, about 60% the usual number of fishers. The total effort in terms of boat-days was 439, 27% above the 1986-1995 average of 346 boat-days (Appendix B.12). The above average effort level in 1996 was primarily due the record sockeye salmon run which resulted in extended fishing periods throughout July and early August. As in 1995, each fisher was allowed the use of two gillnets of which one could be a drift net. This was the second year that additional gear was permitted throughout the entire season. In 1994, the second piece of fishing gear was allowed only after the first 48 hours of fishing in each week. A delayed opening to June 23 and a maximum mesh size restriction of 150 mm through mid-July was implemented to reduce the incidental catch of Chinook salmon.

Upper Stikine Commercial Fishery

A small commercial fishery has existed near Telegraph Creek on the upper Stikine River since 1975. The catch recorded in 1996 included: 41 large Chinook salmon, which was approximately one half the 1986 to 1995 average of 79 large fish, 44 jack Chinook, and 1,101 sockeye salmon which was 3% above average (Appendices A.11 and B.14). The fishing effort was above average with one to four fishers fishing up to seven days per week. A total of 59 days was fished and the total effort amounted to 75 boats-days. For comparison, the previous ten-year average fishing time was 15 days with an average effort of 30 boat-days.

The additional time fished during the season was the result of the excellent run of sockeye salmon.

Aboriginal Fishery

The Stikine Aboriginal fishery, centered around Telegraph Creek, harvested 722 large Chinook, 156 jack Chinook, 6,918 sockeye, 2 coho, 3 chum, and 30 steelhead salmon (Appendix A 12).

The catch of sockeye salmon was 72% above the 1986-1995 average of 4,031 sockeye salmon, whereas the harvest of large Chinook salmon was 19% below the ten-year average of 896 Chinook salmon (Appendix B 15). As in past years, fishing times were not restricted in this fishery.

ESCAPEMENT

Sockeye Salmon

A total of 52,500 sockeye salmon was counted through the Tahltan Lake weir in 1996, which was 72% above the 1986-1995 average of 30,510 sockeye salmon (Appendix B.22). Analysis of thermal marks from otoliths sampled from Tahltan Lake indicated that an estimated 5,914 fish (11.3%) originated from the enhancement program. Of the total number of fish enumerated through the weir, 2,181 females and 2,156 males were collected for hatchery broodstock. In addition to the broodstock collection, 12,955 sockeye salmon were harvested under the ESSR license, leaving a spawning escapement of 35,143 fish (Appendix B.18 and B.22). This exceeded the escapement range of 18,000 to 30,000 fish.

The spawning escapements for the Mainstem and Tuya stock groups are estimated indirectly by computing the ratio of Tahltan to Mainstem and Tuya components in the total inriver sockeye salmon run. Stock identification data are collected in the lower river commercial and test fisheries. The ratios of Tahltan to Mainstem and Tahltan to Tuya are applied to the estimated inriver Tahltan run size to develop an estimate of the total inriver sockeye salmon run. The escapements are estimated by subtracting the catches of Mainstem and Tuya sockeye salmon in the Canadian fisheries. The postseason escapement estimates are 45,203 Mainstem fish and 10,612 Tuya fish based on egg diameter and thermal mark incidence from inriver fisheries and the inriver commercial fishery CPUE data to give run timing. This estimate was above the goal for the Mainstem stock and is 21% above the 1986-1995 average of 37,457.

Aerial surveys of Mainstem sockeye salmon escapement index areas indicated above average numbers of spawners in 1996 (Appendix B.23). The 1996 cumulative index count of 1,053 sockeye salmon was 14% above of the 1986-1995 average of 920 fish. The 1996 survey conditions were fair to good. These surveys do not include all spawning populations; the index represents the combined counts from up to seven spawning areas.

Chinook Salmon

This was the twelfth consecutive year of the operation of an adult Chinook salmon enumeration weir on the Little Tahltan River. The 1996 count of 4,821 large Chinook salmon was 90% of the 1986-1995 average of 5,384 large fish (Appendix B.25). The 1996 escapement was below the Little Tahltan escapement goal of 5,300 Chinook salmon. The count of jack Chinook salmon was 22, well below the 1986-1995 average of 269 fish. Daily counts from the 1996 program are presented in Appendix A.18.

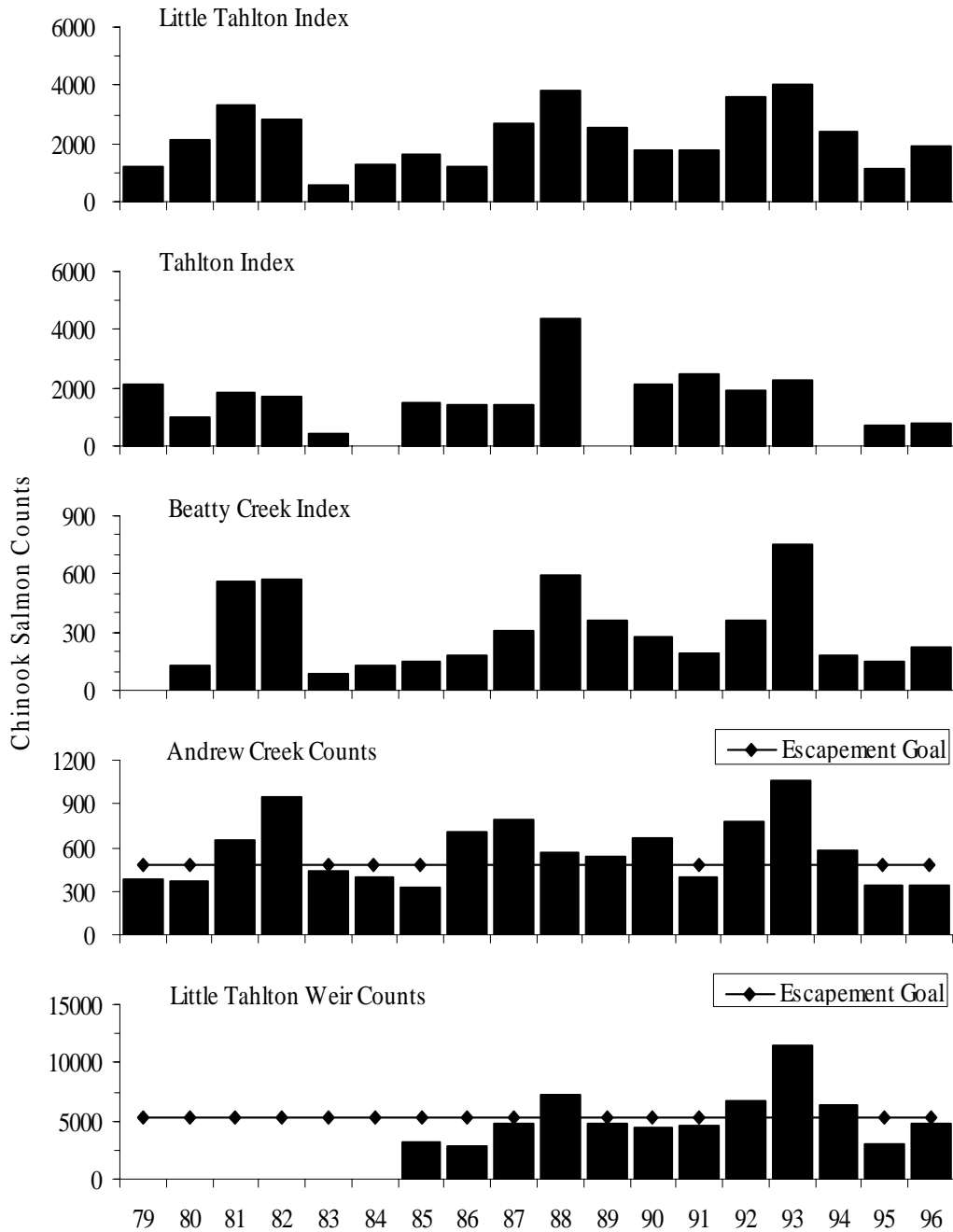


Figure 5. Chinook salmon weir counts and index escapement estimates for major spawning areas and for the entire Stikine River, 1979-1996.

Results from aerial and foot surveys conducted on Stikine River tributaries indicated a below average Chinook salmon escapement in 1996. Survey counts for Little Tahltan River were 1,920 Chinook salmon compared to the 1986-1995 average of 2,491 fish; for Beatty Creek, 218 Chinook salmon compared to the average of 337 fish; for Tahltan River, 772 Chinook salmon compared to the average of 2,074 fish; and for Andrew Creek, 332 Chinook salmon compared to the average of 640 fish (Figure 5, Appendix B.26).

Coho Salmon

The lower Stikine River test fishery ended on statistical week 35 (week ending August 31), which precluded complete coverage of the coho salmon run. From historical test fishery catch records, 1986 to 1990, approximately 48% of the coho salmon run migrates through the lower river by statistical week 35. The cumulative coho salmon test fishery CPUE was expanded accordingly (2.30/0.48) and the resultant projected CPUE (4.78) was calculated to be 32.5% of the total 14.72 cumulative sockeye salmon CPUE. The inriver coho salmon run then was estimated to be 20.8% of the inriver sockeye salmon run size of 189,559 fish, or 61,030 coho salmon. Subtracting the combined inriver catch of 1,402 coho salmon in the Canadian commercial fishery and 55 coho salmon taken in the inriver test fishery gives an estimated total coho salmon escapement of 59,573 fish, which is above the interim escapement goal range of 30,000 to 50,000 coho salmon. Aerial surveys of six coho salmon spawning index sites indicated above average spawning escapement for three of the six streams surveyed (Appendix B.27).

SOCKEYE SALMON RUN RECONSTRUCTION

The postseason estimate of the Stikine sockeye salmon run size is 372,294 fish, of which 242,859 are of Tahltan Lake origin (wild + enhanced), 38,841 are from Tuya Lake, and 90,593 are Mainstem (Table 2). These estimates are based postseason analysis of scale patterns and otolith recovery and analysis for U.S. Districts 106 and 108 catches; egg-diameter and otolith stock-composition estimates for inriver catches; Canadian commercial, aboriginal, ESSR, and test fishery catches; and escapement data. A Stikine run size of this magnitude is 2.6 times the 1986-1995 average run size of 141,426 sockeye salmon, and exceeds the previous high of 280,730 in 1993 by 33%. The 1986-1995 average run sizes of Tahltan and Mainstem fish are 69,541 and 71,726 sockeye salmon, respectively (Appendix B.28).

The postseason estimate of the run size is slightly above the preseason forecasts of 329,000 (Canadian) and 341,000 (U.S.) fish. The Canadian forecast was composed of the following components: 197,000 wild Tahltan Lake sockeye salmon; 26,000 enhanced Tahltan Lake sockeye salmon; 38,000 enhanced Tuya Lake sockeye salmon; and 68,000 Mainstem/Tuya sockeye salmon. The U.S. used the same components in their forecast with the exception of the wild Tahltan Lake component where the U.S. forecast 209,000. The Tahltan components of the run (wild and enhanced) were estimated by averaging smolt-based and sibling-based estimates. The combined sibling-based forecasts of wild and enhanced Tahltan runs, 199,900 sockeye salmon was closest (11% above) to the postseason estimate; the combined smolt-based forecasts totaled 245,400 sockeye salmon 36% above the postseason estimate. Of the different components, the Tuya forecast was the closest to the estimate, only 8% low. For the Mainstem sockeye salmon component, the preseason sibling forecast of 68,000 sockeye salmon was 47% of the postseason Mainstem run size estimate of 145,295 fish and had the greatest difference in numbers of fish (over 77,000).

Table 2. Run reconstruction for Stikine sockeye salmon, 1996.

	Tahltan	Tuya	Mainstem	Total	Tahltan	
					Wild	Hatchery
Escapement ^a	52,500	10,612	45,203	108,316	46,586	5,914
Biological Sampling	407			407		
Broodstock	4,402			4,402	3,906	496
Natural Spawning	35,143		45,203	80,346	31,972	3,171
Excess ^c		10,396		10,396		
Canadian Harvest						
Indian Food	5,736	972	210	6,918	4,881	855
Upper Commercial	917	155	29	1,101	782	135
Lower Commercial	35,355	7,583	23,324	66,262	31,308	4,047
Total	42,008	8,710	23,563	74,281	36,971	5,037
ESSR ^b	12,955	216		13,171	11,496	1,459
Test Fishery Catch	916	77	319	1,312	916	
Inriver Run	95,424	19,399	69,085	183,909	84,473	10,951
U.S. Harvest ^a						
106-41&42	50,924	8,731	2,113	61,768	45,340	5,584
106-30	674	90	76	840	486	188
108	95,837	10,621	19,319	125,777	85,041	10,796
Total	147,435	19,442	21,508	188,385	130,868	16,567
Total Run	242,859	38,841	90,593	372,294	215,341	27,518
Escapement Goal	24,000		30,000	54,000		
Terminal Excess ^d		10,396				
Total TAC	218,859	35,003	60,593	314,455		
Total Harvest ^e	203,314	28,445	45,390	277,149		
Canada TAC	109,430	17,502	30,297	157,228		
Actual Catch ^f	42,008	8,710	23,563	74,281		
% of total TAC	19.2%	24.9%	38.9%	23.6%		
% of TAC inc. ESSR	25.1%	25.5%	38.9%	27.8%		
U.S. TAC	109,430	17,502	30,297	157,228		
Actual Catch ^g	147,435	19,442	21,508	188,385		
% of total TAC	67.4%	55.5%	35.5%	59.9%		

^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 Planted fish returning to the Tuya system are not able to access Tuya Lake due to velocity barriers.

^d The number of Tuya fish that should pass through the traditional fisheries in order to avoid overexploitation of the Tahltan stock.

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

^f Does not include ESSR catches.

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

Based on weekly random sampling of otoliths collected in Districts 106 and 108 commercial fisheries, the contribution from Stikine sockeye salmon fry plants consisted of 16,567 sockeye salmon of Tahltan Lake origin, and 19,442 sockeye salmon of Tuya Lake origin. Estimates of contribution from fry plants to the Canadian fisheries are approximately 6,496 sockeye salmon of Tahltan Lake origin, and 8,926 sockeye salmon of Tuya Lake origin.

For the Canadian analysis, the SMM appeared to overestimate the run size this season. In statistical weeks 28 through 31 the SMM estimated well a run well over 400,000, in statistical weeks 32 through 35 the estimate steadily declined and the final inseason forecast of the run size derived from the SMM (336,705 sockeye salmon) was just 8% below the postseason estimate of the total run (372,294 sockeye salmon). For the U.S. analysis, a similar pattern occurred with the final inseason forecast of 360,476 sockeye salmon nominally equal to the postseason estimate. The SMM will be reviewed and updated to include 1996 data in making predictions for the 1997 season.

TAKU RIVER

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

HARVEST REGULATIONS

As with Stikine River issues, efforts to re-negotiate harvest shares of Taku River salmon during the Pacific Salmon Commission and government-to-government negotiations were not successful. As a result, the Parties unilaterally developed the following management plans for the 1996 season:

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

U.S. FISHERIES

The District 111 drift gillnet fishery was open for a total of 46 days from June 16 through September 16, 1996 (Appendix C.1). Fishing effort, as measured by the total number of boats delivering fish each week times the number of days open to fishing, totaled 3,229 boat-days, 5% below the previous 10-year average. Fishing time and effort were above average during the summer fishing season but below average in the fall. Processors imposed chum salmon catch limits on fishers from early July through mid-August because the region-wide abundance of

summer chum salmon exceeded their processing capacities. The catch limits had a dramatic effect on the distribution of effort within the district.

The 1996 commercial salmon harvests in the District 111 fishery totaled 2,659 Chinook, 199,014 sockeye, 33,633 coho, 12,660 pink, 354,067 chum, and 240 steelhead salmon (Appendix C.1). The sockeye and chum salmon catches were the largest in the history of the fishery, while catches of Chinook, coho and pink salmon were below average (Appendix D.1). Enhanced stocks contributed significantly to the harvests of all species except pink salmon. The Chinook salmon harvest of 2,659 fish was 21% below the 1986 to 1995 average. Alaskan hatchery fish contributed approximately 20% (533 fish) of the harvest (CWT estimate). The only management action taken for Chinook salmon conservation was during the first statistical week of the season when Taku Inlet was closed north of the latitude of Jaw Point.

The sockeye salmon harvest of 199,014 fish was 96% above the previous 10-year average of 101,418, and exceeded the previous record harvest by 14%. Sockeye salmon catch and CPUE were above average throughout the summer season. The weekly harvests of 51,914 and 43,426 fish between July 14 and July 25 were the highest recorded in the history of the fishery. The average weight of sockeye salmon taken in the fishery was 7.25 pounds, above the previous 10-year average of 6.7 pounds and the heaviest average weight since 1982.

Fishing effort during the summer season concentrated more heavily in Taku Inlet than in recent years, and 94% of the sockeye salmon harvest (187,207 fish) occurred in the inlet (Appendix C.2 and C.3). Fishers chose to avoid outer portions of Taku Inlet and Stephens Passage because chum salmon abundance in these areas was so high they would quickly reach their catch limit, thereby restricting their ability to harvest the strong run of higher valued Taku River sockeye salmon. Fishing time in Taku Inlet varied from three to four days per week until the last week of July, when time was reduced to two days to increase escapement of late run stocks into the Taku River. Fishing time was then increased to three and four days per week, respectively, for the final two weeks of the summer fishing season as escapement levels increased.

Port Snettisham was closed through August to continue rebuilding Crescent and Speel lake stocks, except for a short two-day opening in inner Port Snettisham (Gilbert Bay) allowed in late July to harvest surplus Crescent Lake sockeye salmon. Runs of these stocks were quite strong but were not heavily harvested due to the lack of effort in Stephens Passage.

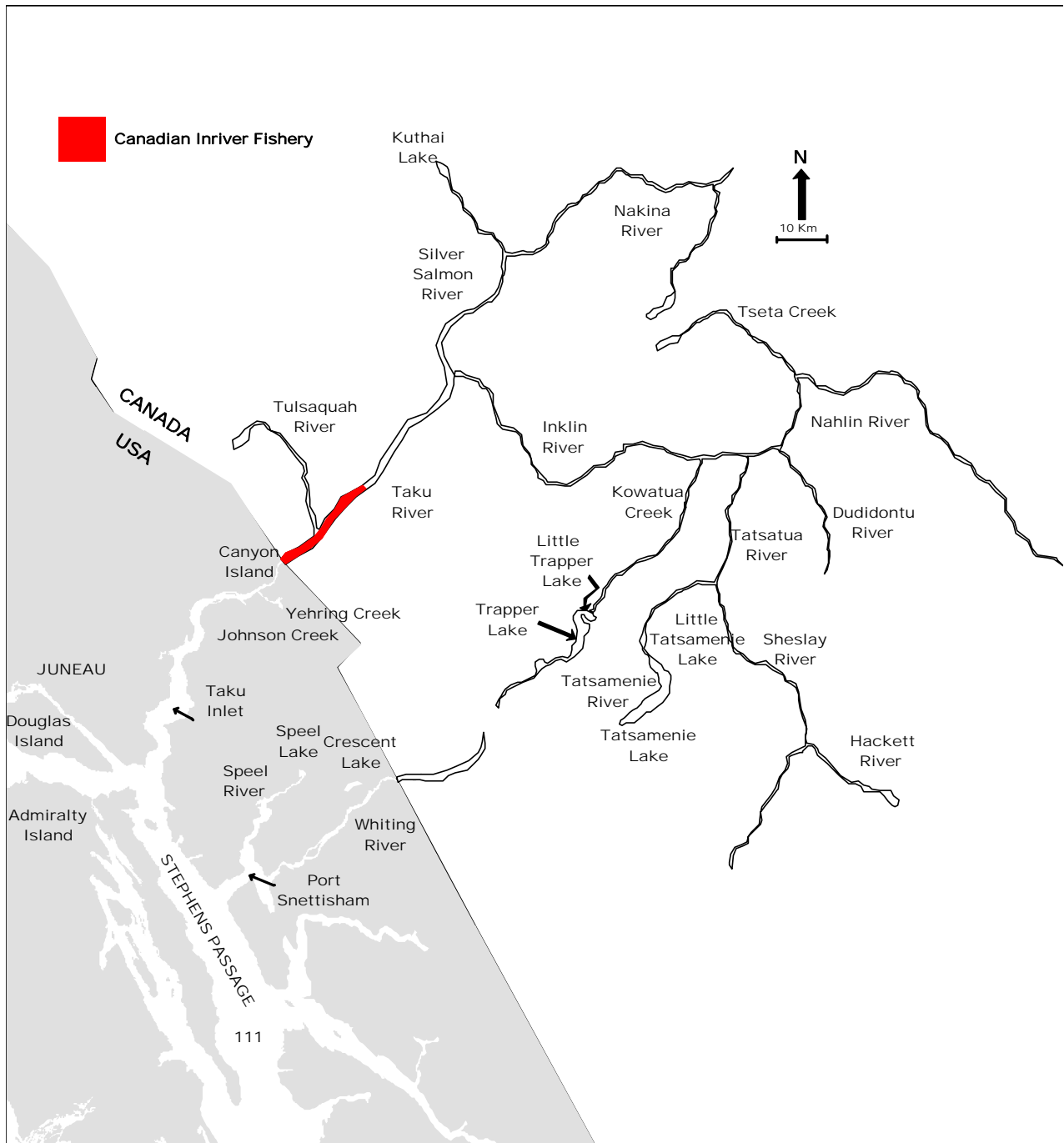


Figure 6. The Taku River and principal U.S. and Canadian fishing areas.

Table 3. Taku and Snettisham sockeye salmon run reconstruction, 1996. Estimates do not include Taku spawning escapements below the U.S./Canada border or Taku sockeye salmon harvested in marine areas outside District 111.

	Taku River Stocks	Snettisham Stocks
Escapement	92,626	Not Available
Canadian Harvest		
Commercial		
Wild	40,933	
Enhanced	732	
Food Fishery	360	
Total	42,025	
% Harvest	18.1%	
Test Fishery Catch	0	
Above Border Run	134,651	
U.S. Harvest ^a		
District 111	187,207	11,807
Wild	182,428	8,959
Enhanced	4,779	2,848
Personal Use	2,977	
Total	190,184	
% Harvest	81.9%	
Test Fishery Catch	0	
Total Run	324,835	
Taku Harvest Plan	Minimum	Maximum
Escapement Goal	71,000	80,000
TAC	253,835	244,835
Canadian portion	16.6%	17.2%
U.S. Portion	74.9%	77.7%

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

Several other fisheries in the Juneau area harvested transboundary river stocks in 1996. Estimates of the harvest in the U.S. personal use fishery in the lower Taku River are 87 Chinook, 2,977 sockeye, 163 coho, 285 pink, and 15 chum salmon (Appendix D.4). The spring Juneau-area sport fishery harvested an estimated 4,900 Chinook salmon. An estimated 3,960 (80%) were mature wild spawners and an additional 760 (15%) were of Alaskan hatchery origin (CWT estimate). A number of stocks are thought to contribute to the fishery, including those from the Taku, Chilkat, and King Salmon rivers, and local hatchery stocks, but the major contributor of mature fish is believed to be the Taku River. The July Hawk Inlet shoreline purse seine fishery north of Point Marsden in Chatham Strait was not opened this year due to very poor runs of pink salmon to many Juneau area streams; this fishery, when open, harvests some salmon of Taku River origin. Taku River coho salmon are also harvest in the Southeast Alaska troll and recreational fisheries.

CANADIAN FISHERIES

Taku River commercial fishers harvested 41,665 sockeye, 5,028 coho, 3,331 large Chinook, and 144 jack Chinook salmon (fish less than 2.27 kg), and 98 steelhead salmon in 1996 (Appendix C.4). The sockeye salmon catch was the highest on record and was 82% above the 1986-1995 average of 22,911 sockeye salmon (Figure 7, Appendix D.5). The catch of large Chinook salmon was also a record and was more than three times the previous ten-year average of 1,099 Chinook salmon. Contrasting this, the catch of jack Chinook salmon was 25% below average and the catch of coho salmon was 9% below the previous ten-year average of 5,527 fish. The fishery was open for a total of 65 days, well above the previous ten-year average of 32 days and the seasonal fishing effort was 415 boat-days, 36% above the 1986-1995 average of 304 boat-days. The above average fishing time and effort was reflective of the existence of a fall fishery that in many previous years had been curtailed by Treaty restrictions.

In addition to the commercial catches, 360 sockeye, 24 coho and 63 Chinook salmon were harvested in the Aboriginal fishery in 1996 (Appendix D.7).

The Taku River Tlingit First Nation, in cooperation with DFO, conducted a creel census on the Nakina River in 1996. Information from the creel census was expanded to provide the following catch estimate: approximately 800 - 900 Chinook salmon were landed of which an estimated 90% were released.

The Canadian preseason forecast was for a run of approximately 219,000 sockeye salmon that was the average of a sibling -based forecast of 227,000 sockeye salmon, and a forecast of 211,000 sockeye salmon based on stock-recruitment data. The point estimate was close to 1986-1995 ten-year average run size of approximately 213,301 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 (Table 4).

The commercial fishery commenced at noon on Sunday, June 16 (statistical week 25) for a scheduled opening of two days. The sockeye salmon CPUE of 56 sockeye/fisher/day was 68% above the 10-year average for this week. However, low water levels, which may have increased catchability, and concerns about potential effects on increasing incidental Chinook salmon catches lead to the decision to close the fishery after two days. Fishing time was scheduled for three days in the following week from June 23-26 in response to the strong initial sockeye salmon showing. Although the commercial fishery CPUE after the first 2.8 days of statistical week 26 was below average, the fishing time was extended by 24 hours due to record high cumulative sockeye salmon catches in the Canyon Island fish wheels.

When fish wheel catches dropped to below average values in statistical week 27, the fishery, which continued to show below average CPUE, was restricted to three days of fishing, June 30 to July 03. The first inseason forecast was made at the end of this opening and ranged from 171,000 to 338,000 sockeye salmon. The wide range in the forecast was the result of two different timing scenarios assumed: the lower end of the range was the forecast based on expanding the current mark-recapture estimate by average run timing; whereas, the upper end of range represented the forecast based on an assumed one week delay in run timing. Associated with the run forecast was a total spawning escapement projection that ranged from 83,000 to 164,000 sockeye salmon (Table 4). This was above the goal of 71,000 to 80,000 sockeye salmon.

The fishery in statistical week 28 was also scheduled for three days, from July 7 - 10. Although commercial catches were below average for the first day, Canyon Island fish wheel catches showed a marked improvement indicating the beginning of a pulse of fish early in the week. Catches in the District 111 gillnet fishery in the previous week had improved and the CPUE was 35%-40% above average; to this point in the season, the CPUE in District 111 was indicating an above average run. On day three of statistical week 28, the Canadian commercial CPUE rose to above average values of approximately 100 sockeye/fisher/day. Based on increasing fishery performance and indications of a strong run outside of the river, the fishery was extended 24 hours.

Table 4. Canadian inseason forecasts of total run size, TAC, and Spawning Escapement of Taku sockeye salmon, 1996.

Statistical Week	Total Run		TAC		Escapement	
	from	to	from	to	from	to
25	211,000	227,000	136,000	152,000		
26	211,000	227,000	136,000	152,000		
27	211,000	227,000	136,000	152,000		
28	171,146	337,763	96,146	262,763	83,118	164,036
29	195,662	315,111	120,662	240,111	79,500	128,034
30	227,214	318,795	152,214	243,795	67,591	94,834
31	277,538	366,524	202,538	291,524	56,935	75,190
32	324,512	393,606	249,512	318,606	71,731	87,003
33	351,105	417,724	276,105	342,724	105,089	125,028
34	325,289	361,838	250,289	286,838	91,748	102,056

The total run forecast produced from statistical week 28 inputs increased to a range of 196,000 to 315,000 sockeye salmon although the projected season escapement dropped to the 79,000 to 128,000 sockeye salmon range; the escapement projection was still at, or above, goal levels (Table 4). Above average CPUE in the early part of the opening and strong outside catches in the previous week in District 111 (over 30,000 sockeye salmon and CPUE 85%-90% above average), lead to an 24 hour extension over the scheduled three day opening in statistical week 29.

The catch in District 111 was a record high in statistical week 29 (over 50,000 sockeye salmon, CPUE 120% above average) indicating the likelihood of strong inriver run strength the following week. This appeared to hold true; Canyon Island fish wheel catches in the early part of statistical week 30 were the highest to this point in the season and the CPUE in the Canadian fishery after the first 2.8 days of fishing was 210 sockeye/fisher/day compared to an average for this statistical week of 111 sockeye/fisher/day. These factors lead to a twenty-four hour extension to the scheduled three-day opening. The weekly catch totaled 8,284 sockeye salmon, the second highest catch for this week on record and the CPUE of 176 sockeye/fisher/day was also the second highest on record for this week.

The forecast developed for statistical week 30 (from statistical week 29 inputs) had increased marginally ranging from 227,000 to 319,000 sockeye salmon, however, this was the first week in

the season when the lower end of the projected escapement range, 67,600 - 94,800 sockeye salmon forecast in statistical week 30, fell below the lower end of the escapement goal range, i.e. 71,000 sockeye salmon (Table 4). This trend continued in statistical week 31 with the run forecast increasing to 277,000 to 367,000 sockeye salmon which was buoyed primarily by record catches in District 111 (125,000 sockeye salmon caught from statistical weeks 28 through 30) but the escapement projection declining to the 57,000 to 75,000 sockeye salmon range (Table 4).

The fishery for statistical week 31 was scheduled for three days from July 28-31. During the first 2 days of the opening, it soon became apparent that the peak of the run was near. Canyon Island fish wheel catches increased to more than 300 sockeye/day and the CPUE in the commercial fishery was at an all time record level (>260 sockeye/fisher/day). In spite of the strong showing of sockeye salmon, the fishery was closed after three days due to concerns over the declining escapement projections that existed going into this week. The weekly catch of 9,045 sockeye salmon was the highest weekly catch for any week on record and was approximately 2.5 times the average catch for this week.

The run forecast range after statistical week 31 increased to 325,000 to 394,000 sockeye salmon and the escapement projection improved to the 72,000 to 87,000 sockeye salmon range (Table 4). A three-day fishery was posted for statistical week 32 (August 4-7). Catch rates remained well above average during the first couple of days of the opening and the CPUE was about 105% above average; these factors combined with the improved escapement outlook and knowledge that the CPUE in the District 111 was still well above average, prompted a twenty-four hour extension. The catch of 8,360 sockeye salmon (183% above average) and CPUE of 190 sockeye/fisher/day (112% above average), established new record values for statistical week 32. Mid-week mark-recapture estimates indicated that the spawning escapement had surpassed the upper end of the escapement goal range; the cumulative spawning escapement was estimated to be approximately 84,000 sockeye salmon.

Weekly fishing times decreased to three days in statistical week 33, then to two days in statistical week 34 as the sockeye salmon numbers dropped off and the commercial sockeye salmon CPUE decreased to roughly average values. With the end of the sockeye salmon season in sight and indications that coho salmon prices would be unattractive, effort levels also fell from an average of 11 fishers/day in statistical week 32, to 5 fishers/day in statistical week 34.

The final inseason sockeye salmon forecast indicated a total run in the 325,000 to 362,000 sockeye salmon range and a spawning escapement in the range of 92,000 to 102,000 sockeye salmon. The postseason run estimate is 324,835 sockeye salmon and the escapement is estimated to be 92,626 sockeye salmon. The Canadian catch of 42,025 sockeye salmon represented approximately 16.6% to 17.2% of the TAC (Table 3).

Fishing time was increased to four days in statistical weeks 35 (August 25-29) and 36 (September 1-5) to target coho salmon. Although the peak coho salmon catch of the season occurred in statistical week 35, weekly catches and effort were below average. Fishing time was reduced to three days in statistical week 37 but then opened to seven days/week for the remainder of the season with only one fisher fishing two licenses left on the river. Through the end of August, the cumulative coho salmon CPUE was slightly above average, 195 coho/fisher/day compared to the 1988-1995 average cumulative CPUE of 187 coho/fisher/day. However, weekly coho salmon CPUE's were well below average for the rest of the season. The

total season catch of coho salmon was 5,028 fish, 9% below the previous ten-year average (Appendix D.5).

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

ESCAPEMENT

Sockeye Salmon

Spawning escapement of sockeye salmon in the Canadian portion of the Taku River drainage is estimated from the joint Canada/U.S. mark-recapture program. Counting weirs operated by DFO at Little Trapper and Tatsamenie lakes provide information on the distribution and abundance of discrete spawning stocks within the watershed. Additional sockeye salmon enumeration programs were conducted at Kuthai Lake and the Nahlin River by the Taku River Tlingit First Nation (TRTFN) in 1996.

A mark-recapture program has been operated annually from 1984 to 1996 to estimate the above-border inriver run size (i.e., border escapement); spawning escapement may then be estimated by subtracting the inriver catch. The 1996 estimate of above-border run is 134,651 sockeye salmon and the spawning escapement, 92,626 fish (Appendix C.7). This spawning escapement is 12% below the 1984-1995 average of 105,729 fish, but is 16% higher than the upper end of the interim escapement goal range of 71,000 to 80,000 sockeye salmon (Figure 8).

The escapement through the Little Trapper Lake weir was 5,483 sockeye salmon, 42% of the 1983-1995 average of 13,123 fish (Appendix D.10).

Prior to 1995, weir counts for the Tatsamenie system were made at Little Tatsamenie Lake and included fish which spawn between Little Tatsamenie and Tatsamenie lakes as well as fish which spawn in Tatsamenie Lake and its outlet stream. In 1995 the weir was moved upstream to Tatsamenie Lake. The escapement count through the Tatsamenie Lake weir in 1996 was 9,381 sockeye salmon (Appendix C.8). To be comparable with earlier spawning estimates, it needed to be expanded to represent the entire Tatsamenie system. In addition, the weir was installed late in relation to the run timing so the weir count was first expanded to include the missed portion of the upper Tatsamenie run (approximately 1,000 fish). In 1994 weirs were operated at both Little Tatsamenie and Tatsamenie lakes; approximately 40% of the fish counted at the Little Tatsamenie weir did not migrate as far as the upper weir site at Tatsamenie Lake. Since this was from only one year and seemed high to the biologist working on the system, the upper Tatsamenie estimate was expanded by 1/0.8 rather than 1/0.6. The resulting escapement to the entire Tatsamenie system, is 12,976 fish. A total of 2,355 sockeye salmon were taken for broodstock leaving a spawning escapement of 10,621 sockeye salmon for 1996, the second highest spawning escapement since 1985 when estimates were first recorded

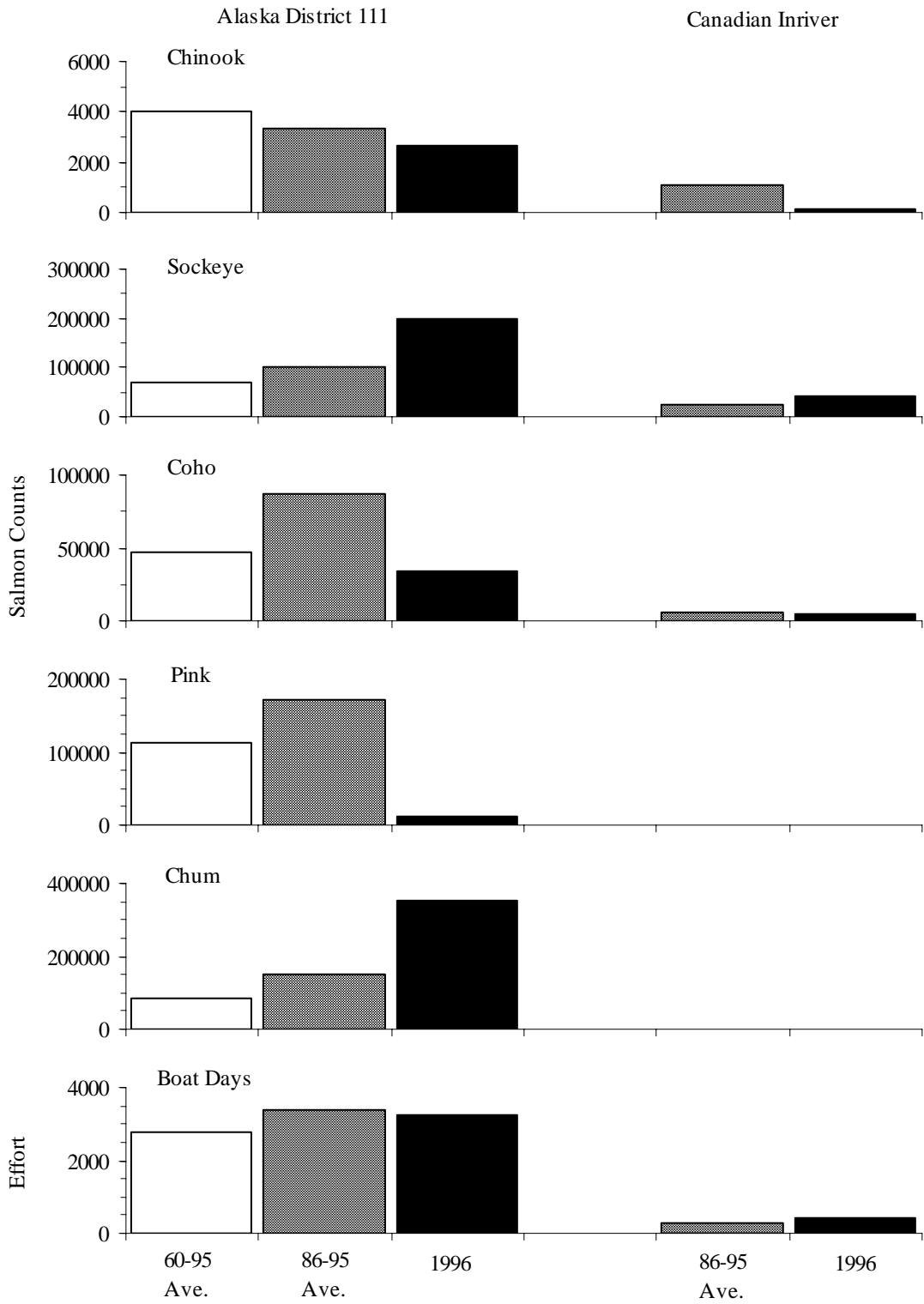


Figure 7. Average catches and fishing efforts computed with 1996 values for the Alaska District 111 commercial fishery and the Canadian commercial fishery in the Taku River.

The sockeye salmon count through the Kuthai Lake weir was 4,243 fish, the third highest recorded for the weir and 24% above the average count of 3,411 sockeye salmon (Appendix D.10).

The sockeye salmon count through the Nahlin weir was 2,538 fish, the third highest recorded since counts were started in 1988 and 51% above the average count of 1,681 fish.

Chinook Salmon

Aerial surveys of the large Chinook salmon (3-ocean and larger) to the six escapement index areas annually surveyed by the ADF&G were as follows: Nakina, 7,720; Kowatua, 1,620; Tatsamenie, 2,011; Dudidontu, 1,810; Tseta, 1,201; Nahlin, 5,415 fish (Figure 9, Appendix D.11). The total of 19,777 large Chinook salmon observed was the highest on record and over two times the 10-year average of 9,670 fish. The interim index escapement goal for the Taku drainage is 13,200 large Chinook salmon to the six index areas.

The number of Chinook salmon carcasses counted at the Nakina River weir in 1996 was 2,679 fish. A total of 7,862 Chinook salmon was counted through the Nahlin River weir (Appendix C.10).

Coho Salmon

Spawning escapement of coho salmon in the Canadian portion of the Taku drainage was estimated from the joint Canada/U.S. mark-recapture program. Tags were applied through statistical week 38 and tag recovery occurred until statistical week 40 (September 29 to October 5). Since the mark-recapture data used did not cover the full migration period, District 111 average CPUE information was fit to a normal curve to provide an estimate of the proportion of the run that was missed; the initial estimate of 44,172 was subsequently expanded by 0.889. The above-border run was estimated to be 49,687 fish and the spawning escapement was 44,635 fish (Appendix C.7). The spawning escapement is below the 1987-1995 average of 75,358 coho salmon; however, it is above the interim escapement goal of 27,500 to 35,000 coho salmon.

Pink Salmon

A total of 21,583 pink salmon was counted at the Canyon Island fish wheels in 1996 (Appendix D.14). There was no program in place to estimate the escapement of pink salmon to the Taku River in 1996. The pink salmon count at the fish wheels was 33% above the 1986 to 1995 average of 16,181.

Chum Salmon

There was no program in place to estimate the system-wide escapement of chum salmon. Low catch and CPUE information from the Canyon Island fish wheels (Appendix D.14) and inriver commercial fishery (Appendix D.5) indicated that there was a below average chum salmon run in 1996. A total of 388 chum salmon was captured in the fish wheels, 38% below the 1986-1995 average of 628 (Appendix D.14). Chum salmon were observed in four index areas that are surveyed (aerials) by the TRTFN; the count in these areas was 720 chum salmon, an above average count. 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 SALMON

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

SOCKEYE SALMON RUN RECONSTRUCTION

The postseason estimate of 182,428 wild Taku River sockeye salmon and 4,779 fish originating from fry plants into Tatsamenie and Trapper Lakes in the District 111 gillnet fishery were estimated from a combination of thermal mark analysis, scale pattern analysis, and brain parasite prevalence. An additional 2,977 sockeye salmon was estimated to have been harvested in the U.S. inriver personal use fishery. The estimated U.S. harvest of Taku River sockeye salmon is 190,184 fish (Table 3).

The estimate of the magnitude of the above-border sockeye salmon run in 1996, based on the joint Canada/U.S. mark-recapture program, was 134,651 fish (Table 3). Subtracting the Canadian inriver catch of 42,025 sockeye salmon in the commercial and aboriginal fisheries from the above-border run estimate results in an above-border escapement estimate of 92,626 fish.

The run size estimate, determined by summing the estimated U.S. and Canadian harvests and the escapement is 324,835 sockeye salmon, which was 52% above the 1985-1996 average run size of 213,301 fish (Appendix D.9). Based on the escapement goal range of 71,000 to 80,000 fish, the TAC was 244,835 to 253,835 sockeye salmon, of which the U.S. harvested 75% to 78% and Canada harvested 17% (Table 3). The overall exploitation rate was estimated to be 71% in 1996.

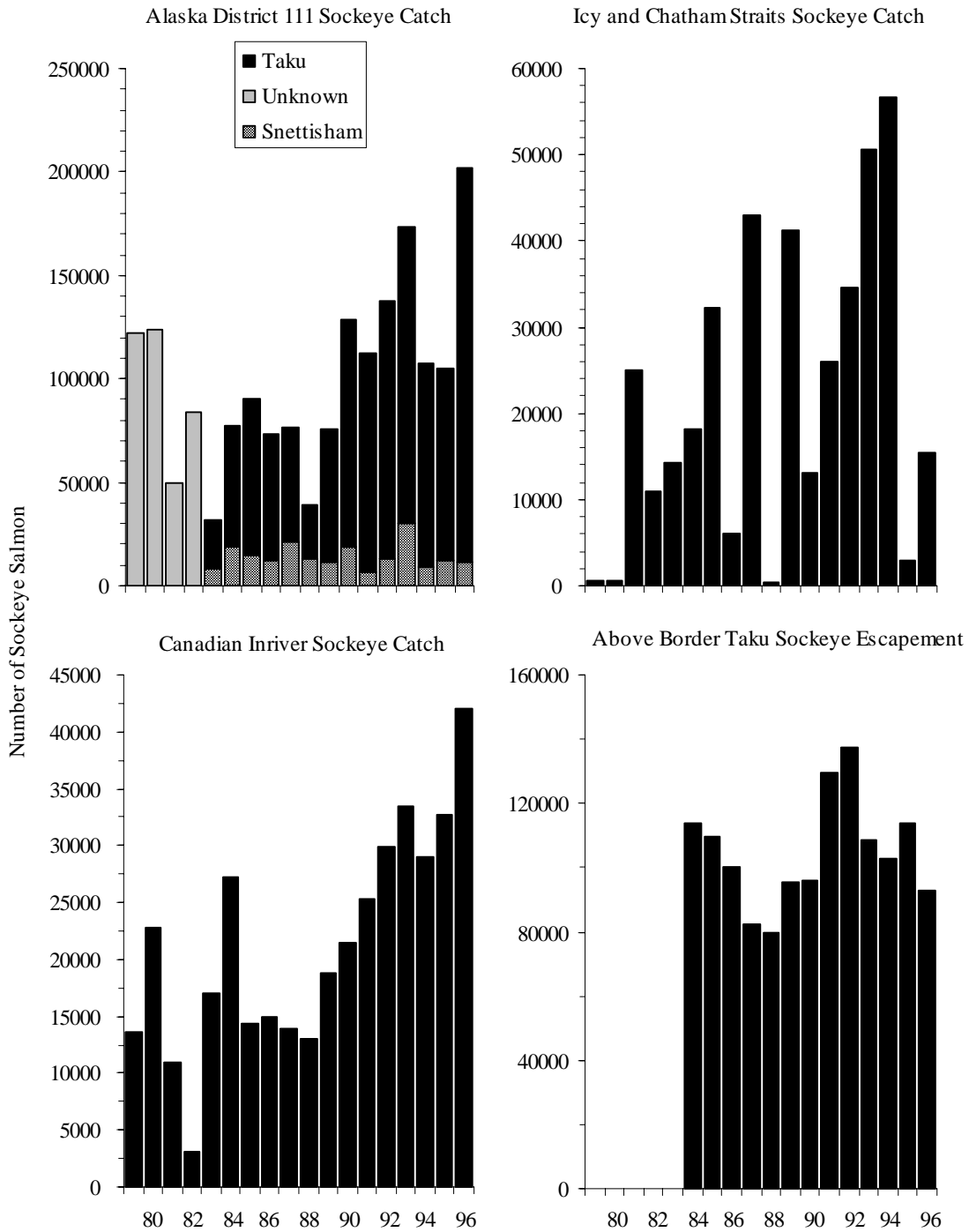


Figure 8. Sockeye salmon catches for the Alaska District 111, the Icy and Chatham Straits, the combined Canadian commercial and food fisheries in the Taku River, and Taku sockeye salmon escapements, 1979-1996.

ALSEK RIVER

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

HARVEST REGULATIONS

Although catch sharing of Alsek salmon stocks between Canada and the U.S. has not been specified, Annex IV does call for a cooperative attempt to rebuild depressed Chinook and early-run sockeye salmon stocks. The Transboundary Technical Committee set interim escapement goal ranges for Alsek sockeye salmon at 33,000 to 58,000 fish and coho salmon at 5,400 to 25,000 fish. Instead of a system-wide Chinook salmon escapement goal, a revised goal, expressed in terms of the Klukshu stock only, has been established at 4,700 Chinook salmon which is currently under review. The revision made in the fall of 1991 reflected the desire to reduce the uncertainty over expansion factors that had no scientific backing.

U.S. FISHERIES

The Dry Bay commercial set gillnet fishery harvested 771 Chinook, 15,182 sockeye, 5,514 coho, 0 pink, and 165 chum salmon (Figures 11-14, Appendix E.1). The fishery was open for 47.5 days, 9% longer than the 1986-1995 average of 43 days (Appendix E.4). The majority of fishing time (32 days) occurred late in the season (August through early October) after the sockeye salmon run had largely passed through the fishery. The total effort expended in the fishery was 438 boat-days, about 5% less than the 1986-1995 average of 463 boat-days (Figure 11).

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

The Alsek River was opened to commercial fishing on statistical week 23, the first Monday in June (June 3). This marked the third year in a row that the Alsek was opened on the earliest date allowed by regulation. The initial opening was limited to 12 hours in order to evaluate the effectiveness of Chinook salmon conservation measures. Fishery performance indicated that the early-segment of the sockeye salmon run was average and that the Chinook salmon harvest was above expected levels. Fishing time was not extended during the initial opening. CPUE was well above average during the second week of the season, but fishing time was kept at one day due to the Chinook salmon harvest. Fishing time was increased to two days during the third week (statistical week 25; June 16 to 22) of the season and CPUE remained above average. Fishing time was increased to three days for statistical week 26, two days were allowed for statistical week 27, and three days were allowed for statistical weeks 28 through 30. CPUE was below average for statistical weeks 26 through 28. Although, during statistical weeks 26 through 28 CPUE was average or above average until effort increased during the last 24 hours of the fishing periods due to fishermen that moved from the East River to Alsek River. CPUE remained above average the remainder of the sockeye salmon season (statistical week 29 through 33; 7/14 to 8/17). Fishing periods were two days for statistical weeks 31 and 33 and four days for statistical week 32. Only 1% of the sockeye salmon harvest occurred after statistical week 33.

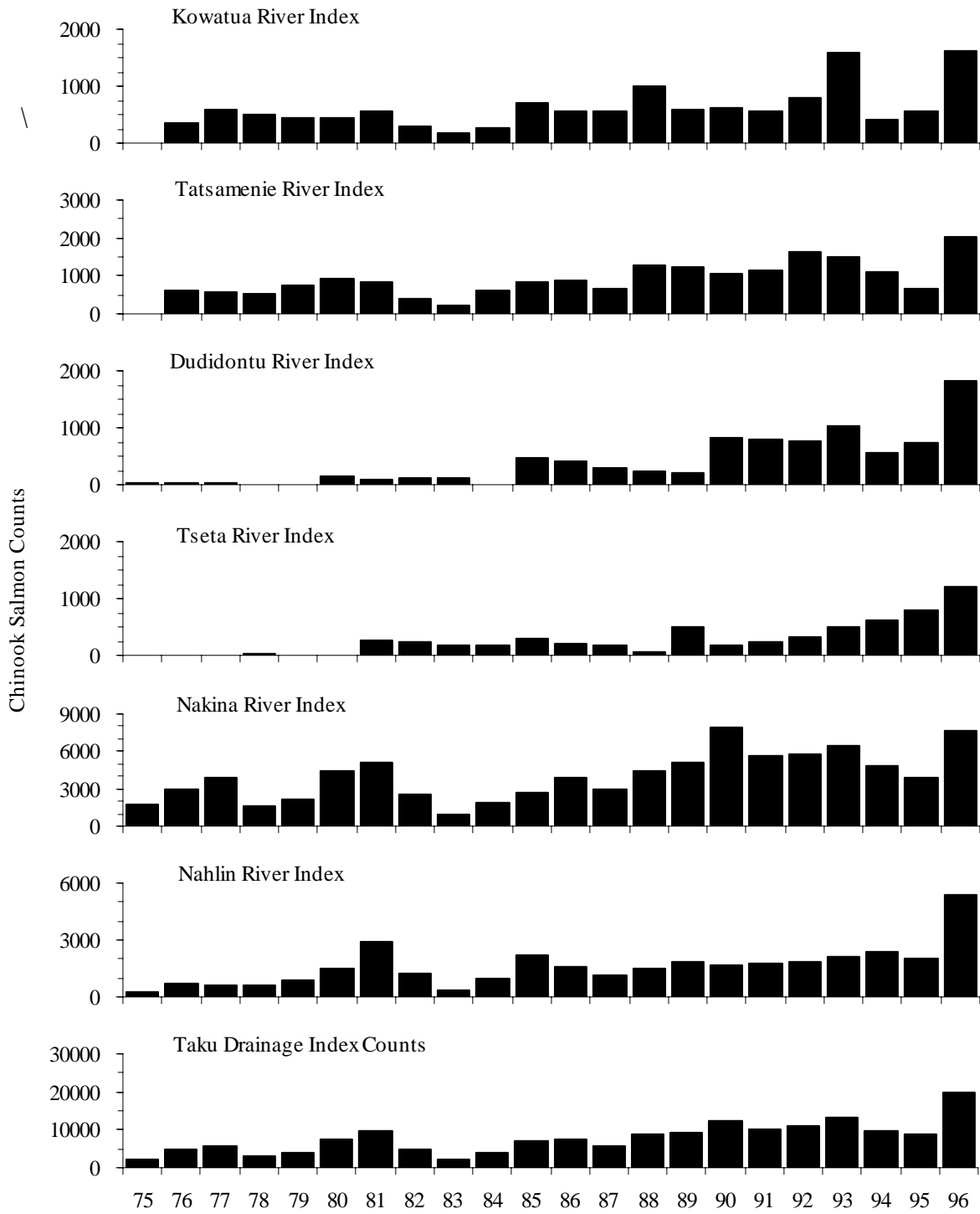


Figure 9. Taku River Chinook salmon index escapement counts, 1975-1996.

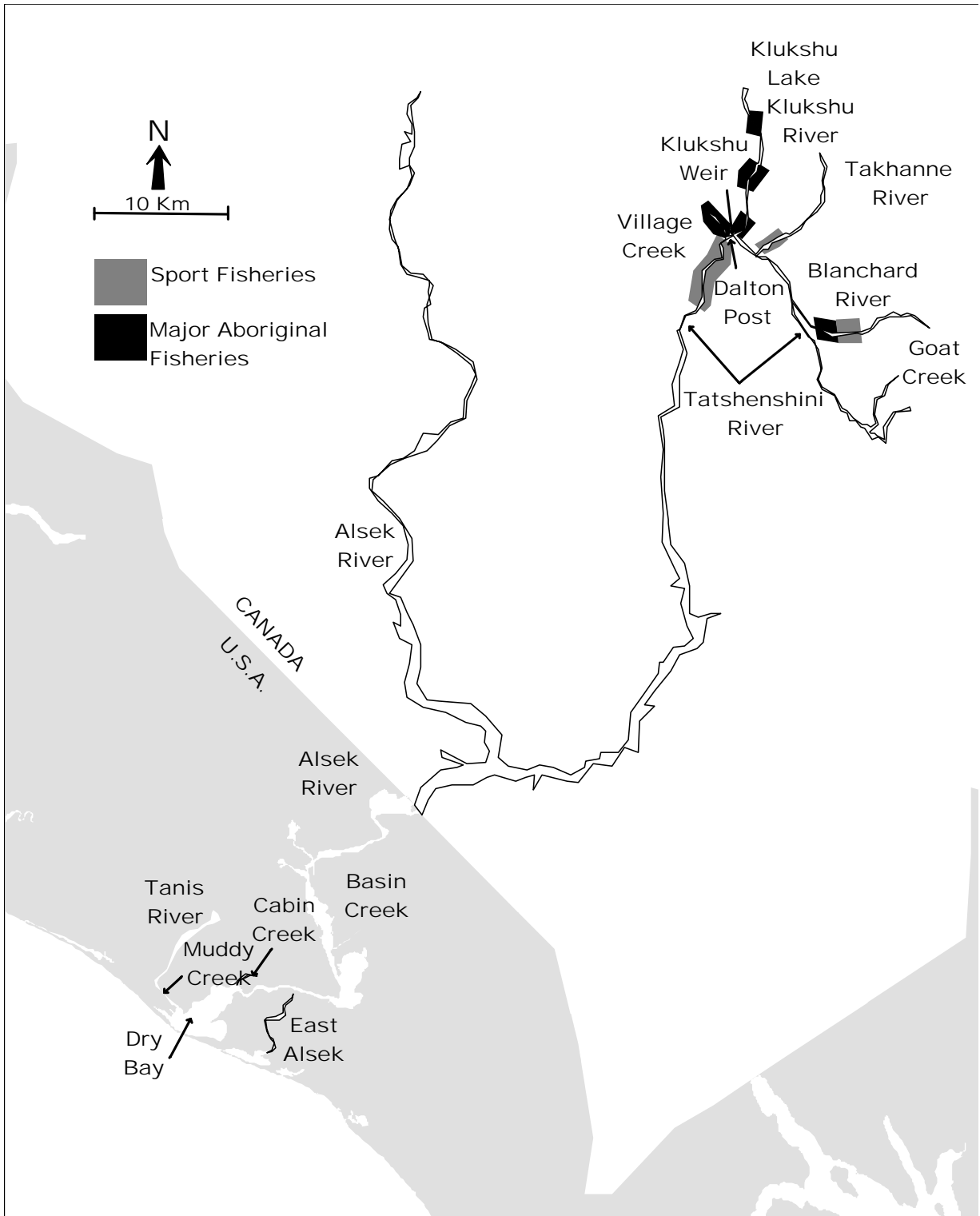


Figure 10. The Alsek River and principal U.S. and Canadian fishing areas.

As a reflection of the strong area-wide coho salmon run, fishing times were maintained at four days for statistical weeks 36 through the final week of the season (statistical week 40). The coho salmon harvest of 5,514 was 23% higher than the 1986-1995 average of 4,491 coho salmon (Appendix E.4). Sitka Sound Seafoods closed their Dry Bay Plant at the end of statistical week 38. Due to the closure of the plant the fishing effort the last two weeks of the season was minimal.

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 1962 and Chinook salmon are now harvested only incidentally during the sockeye salmon fishery in early June. In 1996, the early June periods were limited in time in order to reduce the impact on Chinook salmon. Commercial fishers were encouraged to reduce the harvest of Chinook salmon by remaining at the fishing site and releasing live fish. This voluntary program has been used with some success on the Situk River under similar circumstances. As in recent years, gillnet mesh size was restricted to a maximum of six inches through July 1. The Chinook salmon harvest of 771 fish was more than double the 1986-1995 average of 354 fish, but was slightly below the 1960-1995 average of 853 Chinook salmon (Appendix E.4). Approximately 64% of the Chinook salmon catch (492 fish), was taken during the first two weeks of the season.

The Alsek River sockeye salmon harvest of 15,182 fish was about 17% below the 1986-1995 average of 18,263 (Figure 12, Appendix E.4). The majority of the harvest (91%, 13,755 sockeye salmon) was taken in the river, with the remainder of the catch coming from the surf area. Adjustments to the weekly fishing periods during the sockeye salmon season relied heavily on fishery performance data; the decision of whether or not to extend any given period was generally based on catch and CPUE figures gathered inseason during that particular period. Parent year escapement information and the Alsek management model projections were also factors in determining the weekly fishing periods. The management model uses multiple regression analysis of fishery catch and effort data to generate weekly projections of the U.S. Alsek River catch, the Klukshu River escapement, and total index run size (U.S. catch + Klukshu weir count). Model results tend to get more accurate as the season progresses; early season projections are of limited use for management purposes. In 1996, model projections were inaccurate. Catch was under estimated and escapement was greatly over estimated (Table 5). Various factors affect the accuracy of the model, including the relative strengths of early and late runs to Klukshu, the abundance of stocks not represented in the model (e.g., Village Creek stock), and the accuracy of manager's projections of effort levels.

Table 5. Inseason U.S. forecasts of the 1996 Alsek River sockeye salmon catch, Klukshu River weir count, and index run size (catch + Klukshu weir count).

Statistical week	Start Date	Total Catch	Klukshu Count	Index Run
26	23-Jun	13,676	17,124	30,800
27	30-Jun	10,695	15,402	26,097
28	7-Jul	10,416	14,078	24,494
29	14-Jul	10,908	15,896	26,804
30	21-Jul	12,146	18,569	30,715
31	28-Jul	12,518	19,576	32,094
Actual		15,182	8,320	23,502

Canadian Fisheries

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

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

Gaffing for sockeye salmon in the Klukshu River was prohibited prior to August 15, except by elders. Conservation concerns over the late sockeye salmon run resulted in closure of the gaff fishery in the Klukshu River upstream of the weir in mid September; at this time gaffing downstream from the weir was restricted to two days per week. Gaffing for Chinook salmon was prohibited in the waters of Village Creek, Stanley Creek and the Parton River.

The Aboriginal food fishery harvested an estimated 448 Chinook, 1,204 sockeye, and 56 coho salmon. The catch of Chinook salmon was approximately 88% above the 1986-95 average of 238 fish. The sockeye salmon catch was 38% below the 1986-95 average of 1,940. Weekly catches and annual comparisons appear in Figures 11-14 and Appendices E.2 and E.6.

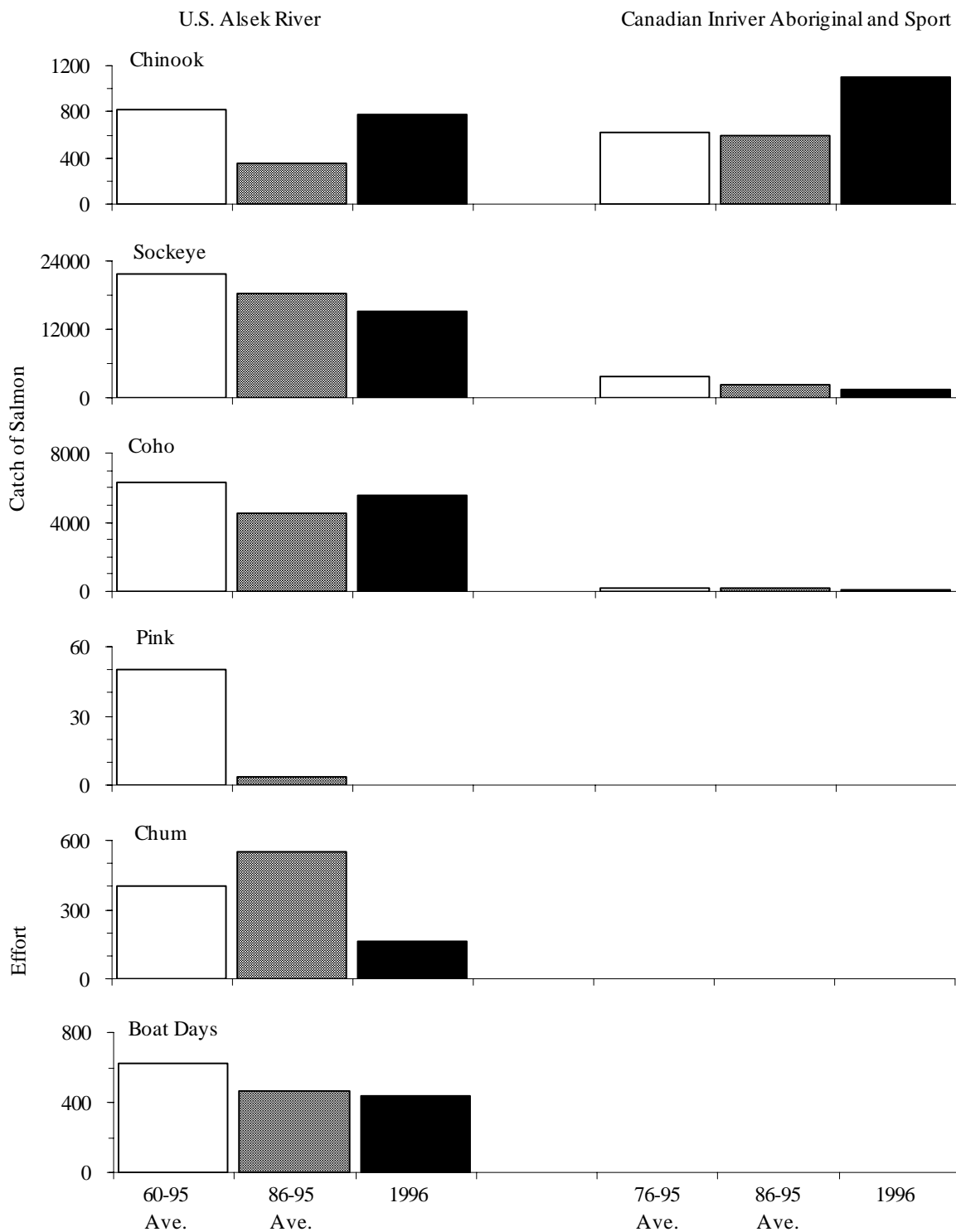


Figure 11. Average catches and fishing efforts compared with 1996 values for the Alaska Alsek River commercial fishery and the Canadian aboriginal and sport fisheries in the Alsek River.

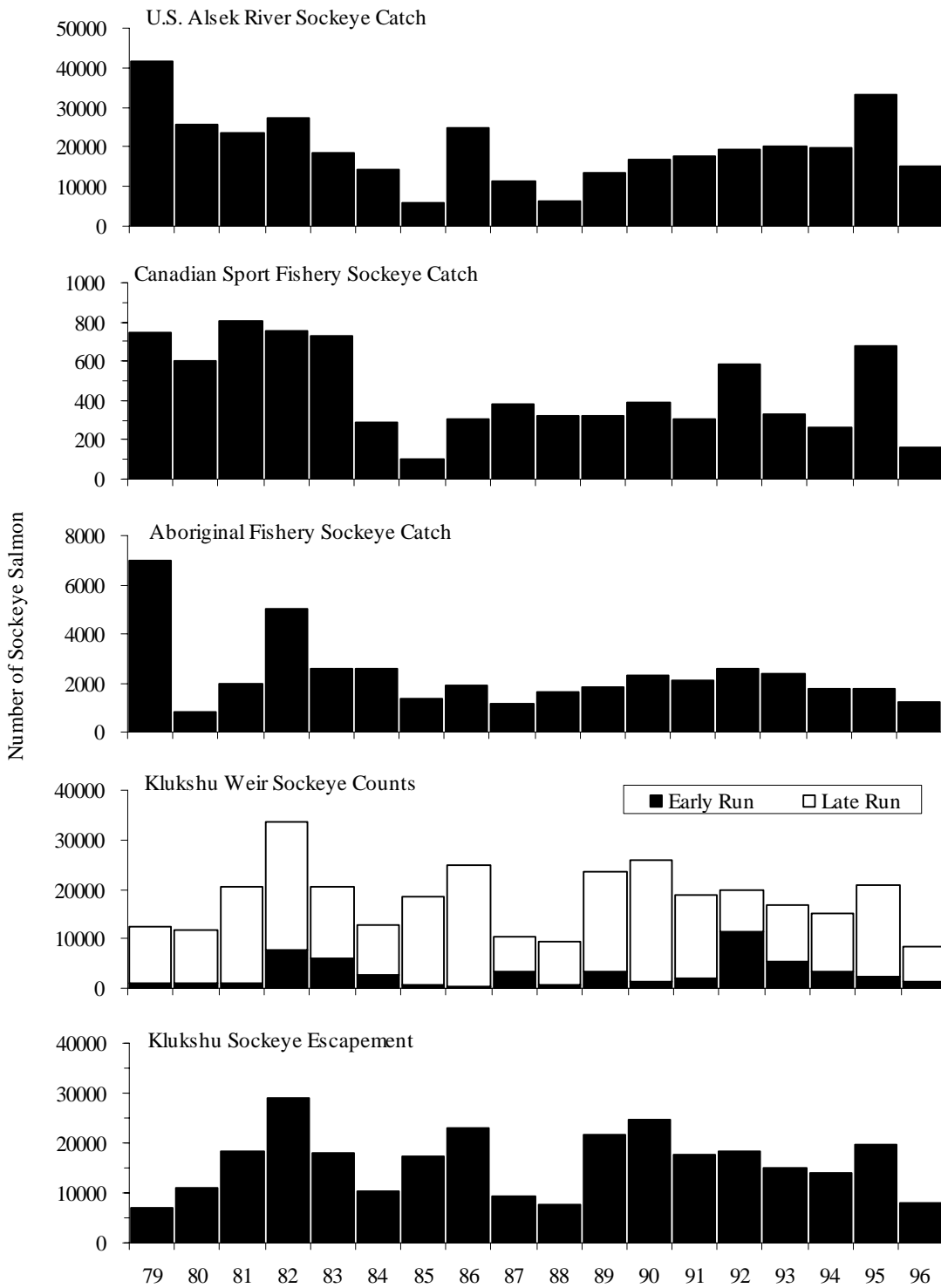


Figure 12. Alsek sockeye salmon catches and weir counts, 1979-1996.

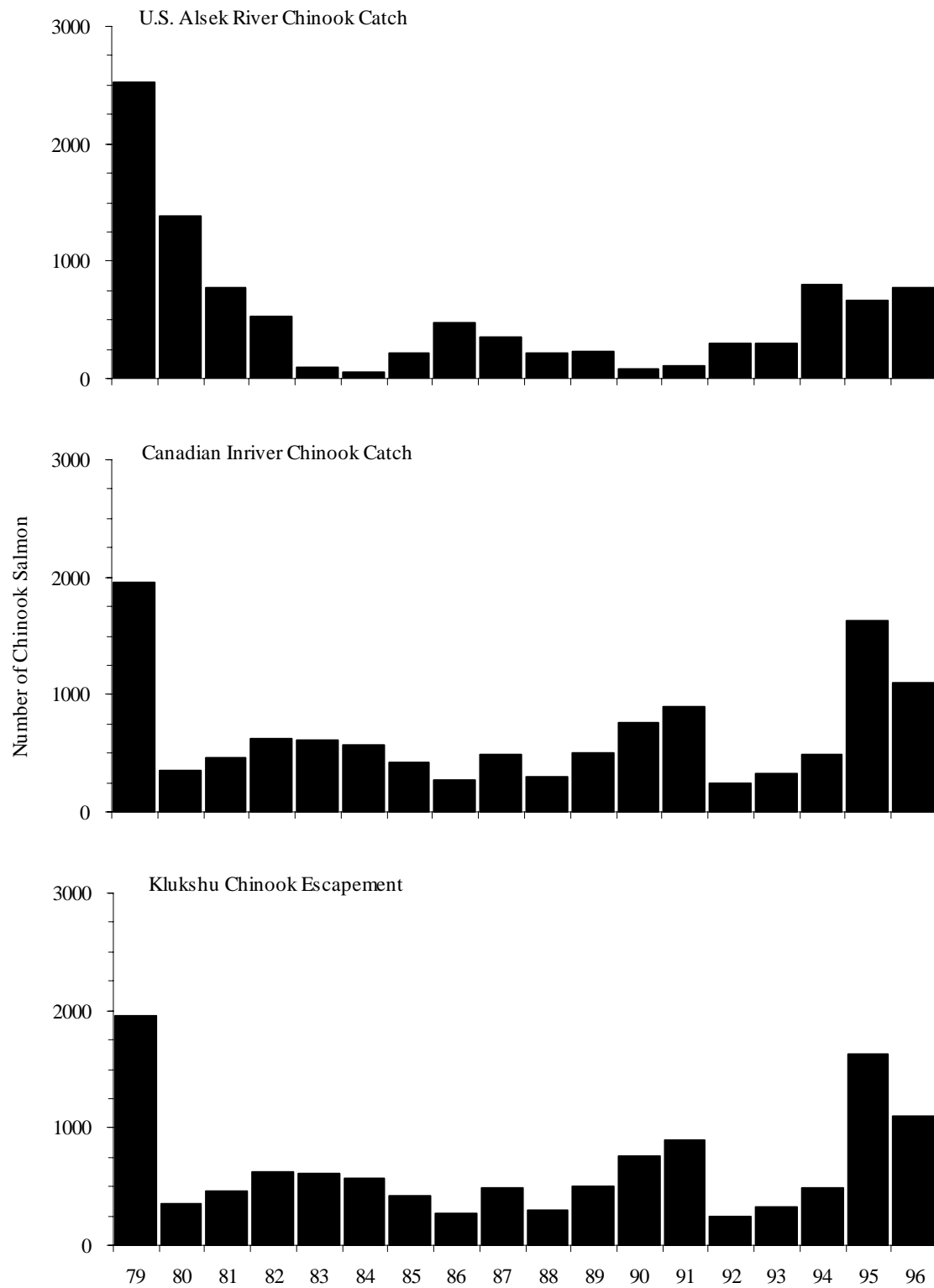


Figure 13. Alsek Chinook salmon catches and weir counts, 1979-1996.

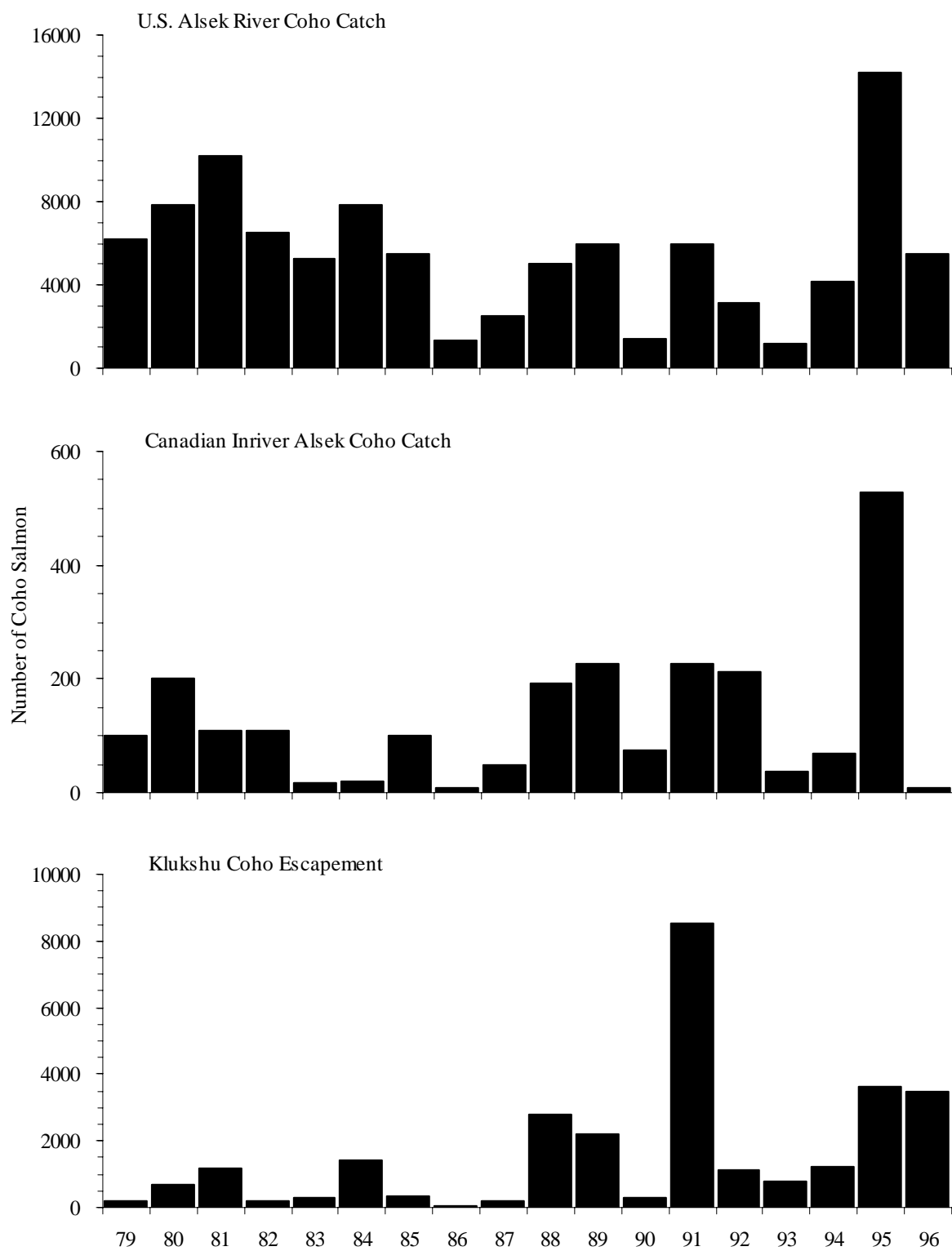


Figure 14. Alesk coho salmon catches and weir counts, 1979-1996.

The majority of the sport fishing effort on this drainage occurs on the Tatshenshini River, at and just downstream of the mouth of the Klukshu River in the vicinity of the abandoned settlement of Dalton Post. Retention of sockeye salmon in the recreational fishery was prohibited prior to August 15 to protect early runs. The Chinook salmon daily catch limit was two fish, only one of which could be over 45 cm. The overall possession limits for salmon was four, of which only two could be Chinook salmon greater than 45 cm in length. Sport fishing in Dalton Post area was open from 6:00 am Saturday to 12:00 noon Tuesday each week until September 10 when the fishery was closed due to sockeye salmon conservation concerns. The closure, which remained in effect to October 19, seriously impacted the fall sport fishery for both sockeye and coho salmon. The headwater areas within the drainage, upstream of the British Columbia - Yukon border, were closed for the season to protect spawning Chinook salmon.

The recreational fishery harvested an estimated 650 Chinook, 157 sockeye and 9 coho salmon. Compared to 1986-1995 averages, the Chinook salmon catch was 85% above average, the sockeye salmon catch was 59% below average, and the coho salmon catch was 94% below average. The catch data was derived from a creel census program conducted in the Dalton Post area by the Klukshu weir personnel. Weekly estimates and annual comparisons are listed in Appendices E.2 and E.6.

ESCAPEMENT

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

Sockeye Salmon

A total of 8,320 sockeye salmon was counted through the Klukshu weir (Appendix E.7) in 1996 and consisted of below average (1986-1995) counts of: early-run, 1,502 fish (count through August 15); and late-run, 6,818 fish. The early run count was 55% below the 1986-1995 average of 3,315 fish, and the late run count was 55% below the 1986-1995 average of 15,230 sockeye salmon. The estimated Village Creek sockeye salmon escapement was 1,583 sockeye salmon, 68% below the 1986-1995 average of 4,921 fish (Appendix E.8).

Comparative counts for other Alsek index tributaries appear in Appendix E.8. A count of 325 sockeye salmon for Basin Creek was well below the 1986-1995 average count of 1,144 fish. The maximum count for the Tanis River was 650 sockeye salmon, 47% below the 1986-1995 average of 1,223 fish.

Chinook Salmon

The most reliable comparative escapement index for the Alsek drainage is the Klukshu weir count. The Chinook salmon weir count in 1996 of 3,599 fish was 27% above the 1986-1995 average of 2,830 fish (Figure 13, Appendix E.7). However, the 1996 count was below the interim escapement goal of 4,700 Klukshu Chinook salmon.

Aerial Chinook salmon surveys were again flown in 1996. The count of 230 Chinook salmon in the Takhanne River was below the 1986-1995 average of 242 fish by 5%. Aerial count of 132 Chinook salmon at the Blanchard River was 63% below the 1986-1995 averages of 355 Chinook salmon. The survey count of 12 fish at Goat Creek was 78% below the previous 10-year average of 55 fish (Appendix E.9). The aerial survey count of 788 Klukshu Chinook salmon was 22% of the weir count of 3,599 fish.

Coho Salmon

Escapement counts for coho salmon on the U.S. side of the border were generally average. The combined systems coho salmon survey count of 1,350 fish was 22% above the 1986-1995 average of 1,103 fish (Appendix E.10).

RUN RECONSTRUCTION

Estimates of the Klukshu contribution to the sockeye salmon run to the Alsek drainage vary from 37%, as estimated from an ADF&G mark-recapture study in 1983, to 60%, based on Canadian fishery managers' professional judgment. The Klukshu weir count divided by the estimated proportion of Klukshu fish that constitute the total Alsek run, minus the recreational and aboriginal fishery catches yields an escapement estimate for the Alsek River. The estimated escapement added to the U.S. commercial and subsistence catches yields an estimate of the entire Alsek run. Using the 37% to 60% contribution range, the estimated sockeye salmon escapement in the Alsek River was on the order of 12,000 (Canada) to 20,000 (U.S.) fish and the estimated Alsek sockeye salmon run was on the order of 29,000 (Canada) to 38,000 (U.S.) sockeye salmon. Based on this information, the interim sockeye salmon escapement goal of from 33,000 (U.S.) to 58,000 (Canada) for the Alsek River was not achieved.

Table 6. Catch and Klukshu index escapement data for Alsek sockeye, Chinook, and coho salmon for 1996.

Index Type	Sockeye	Chinook	Coho
Escapement Index			
Klukshu Weir Count	8,320	3,599	3,465
Klukshu Escapement	7,891	3,382	3,465
Harvest			
U.S. Commercial	15,182	771	5,373
U.S. Subsistence	39	14	18
Canadian Sport	157	650	9
Canadian Aboriginal	1,204	448	56
Total	16,582	1,883	5,456

ENHANCEMENT ACTIVITIES

EGG COLLECTION

In 1996, sockeye salmon eggs were taken at Tahltan Lake on the Stikine River for the eighth year, and in the Tatsamenie Lake system on the Taku River for the seventh year. No eggs were collected at Little Trapper Lake on the Taku River in 1995 or 1996.

Tahltan Lake: Target 6.0 million eggs

The egg collection was again contracted to Triton Environmental Consultants Ltd. The large escapement in 1996 made capture of broodstock relatively easy. An estimated 6.2 million eggs were collected from 2,128 females (based on an average historical fecundity of 2,900 eggs per female). A similar number of males were taken.

Tatsamenie Lake: Target 5.0 million eggs

Egg collection was again contracted to Mercer and Associates Ltd.—An estimated 5.0 million eggs were collected from 1,244 females (based on an estimated fecundity of 4,000 eggs per female). This is the largest number of eggs yet collected from the Tatsamenie system. Approximately the same number of males were taken. Broodstock was captured at an improved adult enumeration weir that was located on the outlet of Tatsamenie Lake. This was the third year that all of the Tatsamenie broodstock was captured at this location; in 1993 a small scale pilot project captured 44 females at this location (the majority of the broodstock in 1993, and all of the broodstock from 1990 to 1992 was captured at an adult weir on the outlet of Little Tatsamenie Lake). No significant problems were encountered during the course of broodstock collection and holding.

INCUBATION AND FRY PLANTS (1995 BROOD YEAR)

Incubation of 1995 brood eggs took place at Snettisham Hatchery and the resultant fry were transported to the appropriate systems in June and July of 1996. The IHN virus was detected in several incubators that contained Tahltan and Tahltan/Tuya fry at Snettisham. The hatchery manager observed behavior of pre-emergent fry indicative of IHN virus and made the decision to destroy those incubators of fish; the ADF&G pathology lab later confirmed the presence of the virus.

Tahltan Lake

A total of 2.3 million fry from the 1995 Tahltan sockeye salmon egg take was planted back into Tahltan Lake in 1996 (Table 7). Survival from green egg to outplanted fry was 76%. One incubator of fry designated for planting in Tahltan Lake was destroyed due to IHNV (330,400 fry). The otoliths of this group of fry were thermally marked with a six ring pre-hatch band. Fry outplanting took place from June 15 through June 25.

Tuya Lake

A total of 2.5 million fry from the 1995 Tahltan sockeye salmon egg take was planted into Tuya Lake in 1996 (Table 7). Survival from green egg to outplanted fry was 64%. Two incubators of fry designated for planting in Tuya Lake were destroyed due to IHNV (521,500 fry). The otoliths of this group were thermally marked with a four ring pre-hatch band. Fry outplanting took place from June 21 through July 3.

Tatsamenie Lake

A total of 1.7 million fry from the 1995 egg take was planted into Tatsamenie Lake in 1996 (Table 7). Survival from green egg to outplanted fry was 72%. IHNV was not detected in this group of fry. Otoliths of fry planted into Tatsamenie Lake were thermally marked with a five ring pre-hatch band. Outplanting took place from June 16 through June 25.

Table 7. Summary of sockeye salmon fry releases to transboundary river systems.

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

OUTPLANT EVALUATION SURVEYS

Acoustic and trawl, Beach seine and Limnological sampling

Outplant evaluation resources were reduced in 1996. The cuts reflect a reduced budget and the loss of a full position with the retirement of one of the principal transboundary research biologists, Mr. Bruce Morley. 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 Little Trapper, Tahltan, Tatsamenie, Trapper and Tuya lakes; acoustic and trawl surveys were conducted at Tahltan, Tatsamenie and Tuya lakes.

The first surveys were limnological surveys conducted by B. Mercer and Associates between July 21 and July 27. These surveys included Secchi depths; surface temperature; vertical temperature profiles; and sampling for total phosphorus, chlorophyll-a, and zooplankton. Stratified zooplankton sampling was conducted at Tuya Lake again this year. Beach seining was expanded this year to include all five lakes (Tahltan and Tuya lakes were omitted in 1995). The acoustic and trawl surveys were conducted in September by Triton Environmental Consultants Ltd.– only three lakes were surveyed this year. High fry densities, which resulted in target overlap problems in previous years, were not encountered in 1996. The total phosphorous and chlorophyll-a samples have been forwarded to the West Vancouver lab for processing. The zooplankton and fish samples collected this year are currently archived at the Pacific Biological Station awaiting assignment of budget and sample processing priorities.

Table 8. Limnetic fish population estimates and beach seine catches by broodyear in Tahltan; Tatsamenie; and Tuya Lakes. The data collected in 1996 are preliminary.

A. Tahltan Lake:											
Survey date	Brood Year	Numbers of limnetic fish			Density (#/ha)				Beach seine catches		
		Total	Sockeye	Other	Total	CI%	Sockeye	Other	Sets	Sockeye	Other
18-Sep-93	1992	817,400	817,400		1,800	19	1,800		7	12	361
18-Sep-94	1993	377,400	377,400		800	41	800		10	9	162
	1994	---	---			---			---	---	---
13-Sep-96	1995	615,300	615,300		1,300	15	1,300		10	141	277 ^a

^a 63 sculpin, 11 adult sockeye, 141 juvenile sockeye, 203 suckers

B. Tatsamenie Lake:											
Survey date	Brood Year	Numbers of limnetic fish			Density (#/ha)				Beach seine catches		
		Total	Sockeye	Other	Total	CI%	Sockeye	Other	Sets	Sockeye	Other
14-Sep-93	1992	1,146,100	1,146,10		700	36	700		10	11	178
13-Sep-94	1993	1,053,200	1,053,20		600	34	600		10	17	206
18-Sep-95	1994	940,100	940,100		600	39	600		10	9	35
16-Sep-96	1995	831,900	831,900		500	40	500		10	60	18 ^a

^a 14 sculpin, 3 juvenile Chinook, 1 Dolly Varden Char

C. Tuya Lake:											
Survey date	Brood Year	Numbers of limnetic fish			Density (#/ha)				Beach seine catches		
		Total	Sockeye	Other	Total	CI%	Sockeye	Other	Sets	Sockeye	Other
30-Aug-93	1992	437,300	437,300		200	52	200		9	0	1,152
02-Sep-94	1993	1,995,100	1,935,300		700	55	700		10	0	181
11-Sep-95	1994	1,526,100	1,526,100		500	97	500		10	0	87
09-Sep-96	1995	2,109,000	880,700	1,228,300 ^a	700	24	300	410	2	0	33 ^b

^a 29 trawl-caught sculpin
^b 1 adult grayling, 12 juvenile grayling, 11 chub, 9 sculpins

Smolt Sampling

Trapping to obtain samples of both wild and enhanced sockeye salmon smolts was done at Tahltan, Tatsamenie, Trapper, and Tuya lakes. Sampling and enumeration at Tahltan Lake weir was conducted by DFO, Whitehorse, as part of their continuing smolt program. At Tatsamenie the work was again done under contract with Brian Mercer and Associates Ltd., and included a longer period of operation than in the past and a mark recapture study to estimate abundance of out migrants. Sampling at other lakes was done by fyke net with no attempt made to estimate run size, which is estimated from fall hydroacoustic and trawl survey data. Brian Mercer and Associates also conducted the work at Trapper and Tuya.

Tahltan Lake

Sampling at Tahltan Lake was conducted May 11 to June 26 by DFO, Whitehorse, as part of their regular smolt enumeration program. The run was sampled daily in approximate proportion to run size. A total of 800 smolts were collected from the estimated run of 1,559,236 smolts. A proportional subsample of 400 fish was selected for otolith thermal mark analysis. The otoliths from this subsample will be examined for marks to distinguish enhanced from wild fish.

Tatsamenie Smolt Mark-Recapture

A new smolt program was conducted at Tatsamenie Lake from May 26 to June 28, 1996. Emigrating sockeye salmon smolts were captured in a 2m by 2m fyke net (with wings constructed of vexar). A subsample of the daily catch was anaesthetized using MS222, transported in a water filled container supplied with an oxygen diffuser, and released in Tatsamenie Lake about 5 km west of the lake outlet. The released smolts were marked with

color-coded paper staples applied beneath the dorsal fin. A separate color code (2 colors/tag- i.e. white-white or black-red) was used each day for a 10-day period and the same color code sequence was then repeated for the next 10-day period. Numbered fingerling tags were tested early in the program, but the use of this tag type was discontinued due to the excessive handling required and potential injury to the smolts. This program was fashioned after a smolt mark recapture program that has been conducted on the Babine River since the 1960's. The staple tags were bent in a jig and applied by hand; taggers used bandages on the thumb and near thumb digit to facilitate tag application.

A total of 29,787 smolts were caught, 9,712 tags were applied and 614 tags recovered over the course of the study. Population estimates were calculated on a daily basis; the cumulative estimate is 469,114 smolts, although the estimate does not cover the full migration period, and was not adjusted for net efficiency.

Two control groups of 20 smolts were held in net pens in the river for 10 days. There was no tag loss observed, 5% of one control group died on the 8th day. Virtually all of the marked fish released in the lake emigrated prior to 8 days, however, if fish died there could be increased susceptibility to predation.

Approximately 400 smolts were collected throughout the run, sampled for length, weight, and scales and preserved for thermal mark analysis. The otoliths from this subsample will be examined for marks to distinguish enhanced from wild fish. The results of this analysis when completed can be weighted on a daily basis to determine the total number of wild and enhanced smolts emigrating from Tatsamenie Lake.

Tuya Lake

All Tuya smolts collected in 1996 were considered to be age 1+ fish (the samples have not been aged yet); they were 12-15 grams in weight. Analysis of thermal marked otoliths and aging of scales is not complete at this time.

Trapper Lake

Fyke nets were fished mid-stream under favorable water conditions from May 22 to June 20; only 100 smolts were captured. Size information suggests that the sample involved 3 age groups. All age 1+ were 6-7 grams. These fish were heavier than previous averages, and may have been from the group with a unique mark that was held and fed in a net pen in 1995. Analysis of thermal marked otoliths and aging of scales is not complete at this time.

FINAL RESULTS - 1995 SMOLTS

Processing of 1995 smolts was completed over the winter at the otolith lab in Nanaimo. Results are presented in Table 9.

Table 9. Enhanced and wild contribution, and average length and weight for transboundary sockeye smolts emigrants sampled in 1995, by site.

Site	Origin	Age Composition (%)		Length		Weight	
		1.0	2.0	1.0	2.0	1.0	2.0
Tahltan	Wild	90.4	2.8	83.4	116.7	4.7	13.5
	Enhanced	5.4	1.3	81.7	113.0	4.4	12.0
Tuya	Wild	n/a	n/a	-	-	-	-
	Enhanced	97.1	2.9	95.6	137.0	9.6	27.4
Tatsamenie	Wild	84.8	12.7	81.9	119.3	5.1	16.1
	Enhanced	2.0	0.5	79.5	117.0	4.5	15.2
Trapper ^a	Wild	n/a	n/a	-	-	-	-
	Enhanced	6.1	89.1	84.7	111.0	6.0	13.7
L. Trapper	Wild	64.1	33.1	66.5	80.9	2.8	4.8
	Enhanced	0.4	2.4	69.0	110.7	3.2	13.4

^a Additional smolts at Trapper were 4.2% age 3.0 and 0.6% (1 fish) age 4.0.

CENTRAL INCUBATION FACILITY

The Snettisham Hatchery Central Incubation Facility operated very well during the last year. The otolith marks applied were of good quality based on the voucher samples analyzed by the ADF&G otolith lab. All newly installed systems are functioning well and staffing of the hatchery has undergone some positive changes.

The State of Alaska transferred the operation of Snettisham from ADF&G to DIPAC hatchery, a private aquaculture organization with two other operational hatcheries in Juneau. A cooperative agreement between ADF&G and DIPAC provides for Snettisham to continue to serve the needs of the joint transboundary river enhancement projects. The transfer took effect on July 1, 1996; the new managers are doing an excellent job of hatchery operation.

OTOLITH ANALYSIS

U.S. Otolith Lab

Activities of the Alaska Department of Fish and Game's Otolith Processing Laboratory included: 1) sampling otoliths from Districts 106, 108, and 111 commercial fisheries; 2) processing a subsample of otoliths to provide weekly in-season estimates to fisheries managers on the contribution of enhanced stocks from the 1990 through 1992 broodyears for use in management decisions; 2) post-season processing a portion of the remaining otoliths to determine overall contribution of enhanced fish in the commercial fisheries; and 3) conducting quality control assessments on the readability of the thermal mark through the use of independent second readings.

During this reporting period the collection of sockeye salmon otoliths from commercial gillnet fisheries targeting on Stikine River and Taku River stocks was completed along with the final processing of otoliths to estimate stock contribution.

The sampling program, conducted primarily out of Petersburg, went fairly smoothly. However every year presents it's own challenges. This year problems were associated with the huge run of chum salmon that returned to southeast Alaska. These chum salmon created difficulties for the fisherman in trying to target on sockeye salmon and it also made it difficult for the processors to sort the sockeye salmon from the chum salmon and to schedule processing time to handle the high volume of fish. As a result it was sometimes difficult for samplers to track the progress of the fishery during the season such that they could schedule their time to obtain samples. Overall however these difficulties were worked through and the samples received by the ADF&G Tag and Otolith lab are believed to be unbiased and representative of the commercial catch.

The fisheries sampled in 1996 include Frederick Sound driftnet (District. 108-50,60), Wrangle Area driftnet (District. 108 -20/30/40), Sumner Strait driftnet (District. 106-41), Upper Clarence Strait driftnet (District. 106 -30), and Taku/Snettisham driftnet (District. 111-31,32). On a weekly basis, 288 to 300 otolith pairs were randomly collected from both the Sumner Strait and Upper Clarence Strait fisheries, and 200 otoliths were collected from both the Wrangle area and Frederick Sound driftnet fisheries. Unlike previous years, matched scale and otolith samples were obtained from the first 100 otoliths per week in the Sumner Strait fisheries to help identify, through scale analysis, stocks whose scale patterns could potentially be confused with the Tuya fish. In the Taku/Snettisham driftnet fisheries, 400 matched samples of scales, brain parasites and otoliths were collected per week. These matched samples are necessary to provide stock separation analysis to identify different wild stocks.

For each fishery opening 100 of the otoliths were processed within 48 to 72 hours to provide the fisheries managers an estimate of stock composition. Portions of the remaining otoliths were later processed to increase precision around the initial estimates.

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

By the end of the season Department of Fish and Game port samplers collected 10,369 otolith pairs from 57 fishery openings over a 10-week period. Of these, 7,240 otoliths were extracted from 39 separate fisheries openings in districts 106 and 108 targeting the Stikine River stocks and 3,129 otoliths were taken from 18 openings in the District 111 fisheries targeting the Taku River stocks. Laboratory personnel have processed 67% of the Stikine samples and nearly 100% of the Taku samples. The number of Stikine otoliths processed are determined by an optimizing algorithm that minimizes the overall uncertainty on the proportion of enhanced fish in the commercial fisheries, while all the Taku samples are processed because of the need for identifying the enhanced fish prior to running scale stock separation analysis.

Table 10 presents a summary of all the otoliths processed from statistical week 24 (June 10) through statistical week 34 (Aug. 18) grouped by fishing district. The table includes estimates of percent contribution of otolith marked fish captured in each district. The total Taku River figures include all the District 111-31 and -32 fisheries and include a commercial opening that took place in District 111-35 to target on domestic stocks returning to the Port Snettisham hatchery.

Table 10. Sockeye otolith collection data.

Fisheries	Subdistricts	Otoliths Sampled	Otoliths Processed	Percent Marked
Frederick Sound	108-50,60	1,411	1,120	10.8%
Wrangle area	108-20,30,40	1,107	911	17.5%
Sumner Strait	106-41,42	2,547	1,901	6.2%
Upper Clarence Strait	106-30	2,171	935	0.4%
Taku/Snettisham	111-31,32,35	3,129	3,122	3.4%

Examination of the second readings for quality control suggests that there was overall good agreement on what is marked and unmarked fish. As a result it is likely that the numbers presented in Table 1 will be fairly close to the final figures. A goal for quality control readings is to ensure that uncertainty due to reading errors is smaller than the uncertainty that is due to sample size alone. Because reading thermal marks is ultimately a subjective determination and no secondary tag has been applied to these fish, we can only estimate the accuracy of the readings through blind replicate readings of the thermal marks. The experience to date is that even with clear thermal marks there will still be disagreements between experienced readers and the effective accuracy in readings will be something less than 100%. We have also found that there tends to be greater disagreement in distinguishing between marked groups as opposed to distinguishing between marked and unmarked fish.

At this point we suspect that the disagreement within marked groups might be a result of how often the pattern is encountered by the readers. Human visual theory suggests that the recognition of complex patterns is directly related to exposure to the patterns. We will continue to look for ways to improve the detection on seldom encountered patterns during the season by trying various methods that aid in the development of a mental ‘search image’. One reason for improving this capability is that uncommon patterns are frequently those from age-4 sockeye salmon. The proportion of age 4 fish encountered during the year is useful in estimating the number of 5-year-olds (the dominant age) that will return the following year. In the past we have presumed the detection of 4-year-old marked fish was 100% accurate and that information was used to monitor the effectiveness of the enhancement program. This presumption of accuracy will be reevaluated through between reader comparisons as well as between laboratory comparisons through the exchange of samples with the Canadian otolith laboratory.

Canadian Otolith Lab

DFO began developing capabilities to examine for the presence of otolith marks in 1994. A term technician was hired in September of 1994 to work at the Pacific Biological Station, Nanaimo. He has visited otolith labs in both Juneau and Olympia (Washington Dept. of Fisheries) to observe techniques and develop standardized terminology. The lab is now processing otoliths from a number of southern British Columbia hatcheries (mainly Chinook salmon) and will be processing all 1996 transboundary juvenile and smolt otolith samples and most, if not all, of the Canadian transboundary adult samples. Although the lab is not currently funded as, or intended to be, a support service, this is the eventual goal.

APPENDIX A

Appendix A. 1. Weekly salmon catch and effort in the Alaskan Subdistrict 106-41&42 (Sumner Strait) commercial drift gillnet fishery, 1996.

Week	Start Date	Catch						Effort		Permit Days
		Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Permits	Days	
25	16-Jun	46	2,803	414	26	1,076	1	47	2.0	94
26	23-Jun	198	26,105	2,530	448	10,758	1	65	2.0	130
27	30-Jun	69	29,029	3,423	1,408	16,352	0	68	5.5	374
28	7-Jul	53	30,315	4,985	3,736	29,909	4	88	5.5	484
29	14-Jul	34	33,287	7,482	3,118	27,353	15	89	3.0	267
30	21-Jul	23	33,200	13,308	5,900	25,057	11	104	3.0	312
31	28-Jul	35	28,558	20,104	8,935	11,232	14	97	3.0	291
32	4-Aug	20	22,262	17,376	13,659	11,774	29	96	3.0	288
33	11-Aug	2	10,363	14,781	14,109	7,272	18	93	3.0	279
34	18-Aug	3	4,353	14,118	13,508	6,223	0	80	3.0	240
35	25-Aug	1	2,234	16,583	3,878	5,574	0	89	3.0	267
36	1-Sep	1	748	23,071	1,022	6,812	0	80	3.0	240
37	8-Sep	2	463	16,388	831	2,808	1	79	3.0	237
38	15-Sep	0	58	3,659	41	507	3	51	2.0	102
39	22-Sep	0	6	1,097	1	165	0	9	2.0	18
Total		487	223,784	159,319	70,620	162,872	97	1,135	46.0	3,623

Appendix A. 2. Weekly stock proportions and catches of sockeye salmon harvested in the Alaskan Subdistrict 106-41&42 (Sumner Strait) commercial drift gillnet fishery, 1996. Data based on scale pattern analysis.

Week	Alaska	Canada	Stikine				Planted Tahltan	CPUE of Stikine Fish			
			Tahltan ^a	Tuya	Mainstem	Total		Tahltan ^a	Tuya	Mainstem	Total
Proportions											
25	0.268	0.249	0.436	0.046	0.000	0.483	0.060	0.055	0.038	0.000	0.051
26	0.129	0.087	0.672	0.093	0.019	0.785	0.031	0.574	0.520	0.441	0.563
27	0.315	0.062	0.459	0.125	0.039	0.624	0.081	0.152	0.270	0.352	0.173
28	0.478	0.118	0.343	0.061	0.000	0.405	0.058	0.091	0.106	0.000	0.091
29	0.662	0.159	0.169	0.010	0.000	0.179	0.010	0.089	0.035	0.000	0.080
30	0.636	0.285	0.070	0.010	0.000	0.080	0.005	0.031	0.030	0.000	0.030
31	0.536	0.464	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
32	0.551	0.428	0.021	0.000	0.000	0.021	0.000	0.007	0.000	0.000	0.006
33	0.486	0.471	0.000	0.000	0.043	0.043	0.000	0.000	0.000	0.188	0.006
34	0.475	0.520	0.000	0.000	0.005	0.005	0.000	0.000	0.000	0.011	0.000
35	0.475	0.520	0.000	0.000	0.005	0.005	0.000	0.000	0.000	0.005	0.000
36	0.475	0.520	0.000	0.000	0.005	0.005	0.000	0.000	0.000	0.002	0.000
37	0.475	0.520	0.000	0.000	0.005	0.005	0.000	0.000	0.000	0.001	0.000
38	0.475	0.520	0.000	0.000	0.005	0.005	0.000	0.000	0.000	0.000	0.000
39	0.475	0.520	0.000	0.000	0.005	0.005	0.000	0.000	0.000	0.000	0.000
Total	0.479	0.245	0.228	0.039	0.009	0.276	0.025	0.841	0.129	0.031	1.000
Catches											
25	752	698	1,223	130	0	1,353	169	13.0	1.4	0.0	14.4
26	3,355	2,267	17,555	2,436	492	20,483	812	135.0	18.7	3.8	157.6
27	9,131	1,793	13,333	3,641	1,131	18,105	2,343	35.6	9.7	3.0	48.4
28	14,482	3,570	10,412	1,851	0	12,263	1,760	21.5	3.8	0.0	25.3
29	22,044	5,286	5,616	341	0	5,957	333	21.0	1.3	0.0	22.3
30	21,099	9,458	2,311	332	0	2,643	166	7.4	1.1	0.0	8.5
31	15,296	13,262	0	0	0	0	0	0.0	0.0	0.0	0.0
32	12,263	9,525	474	0	0	474	0	1.6	0.0	0.0	1.6
33	5,037	4,876	0	0	450	450	0	0.0	0.0	1.6	1.6
34	2,067	2,263	0	0	22	22	0	0.0	0.0	0.1	0.1
35	1,061	1,162	0	0	11	11	0	0.0	0.0	0.0	0.0
36	355	389	0	0	4	4	0	0.0	0.0	0.0	0.0
37	220	241	0	0	2	2	0	0.0	0.0	0.0	0.0
38	28	30	0	0	0	0	0	0.0	0.0	0.0	0.0
39	3	3	0	0	0	0	0	0.0	0.0	0.0	0.0
Total	107,193	54,823	50,924	8,731	2,113	61,768	5,584	235.3	36.0	8.6	279.9

^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, 1996

Week	Start Date	Catch						Effort		Permit Days
		Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Permits	Days	
25	16-Jun	25	368	54	3	258	0	12	2	24
26	23-Jun	31	1,313	540	49	1,005	1	14	2	28
27	30-Jun	22	4,397	1,308	567	9,119	1	23	2	46
28	7-Jul	16	8,567	2,212	2,082	19,990	4	34	2	68
29	14-Jul	20	13,367	3,889	3,191	34,011	3	55	3	165
30	21-Jul	24	24,085	6,416	6,407	20,714	1	59	3	177
31	28-Jul	9	10,958	6,425	7,207	9,740	11	67	3	201
32	4-Aug	8	16,458	12,728	19,756	8,341	10	60	3	180
33	11-Aug	0	4,606	5,780	27,829	3,176	0	61	3	183
34	18-Aug	0	1,535	3,496	21,230	2,346	0	45	3	135
35	25-Aug	1	1,049	6,344	22,084	5,378	2	44	3	132
36	1-Sep	0	397	8,351	5,452	4,702	0	47	3	141
37	8-Sep	1	211	5,772	1,528	1,429	0	26	3	78
38	15-Sep	0	5	979	30	169	0	9	2	18
39	22-Sep	0	0	27	0	40	0	2	2	4
Total		157	87,316	64,321	117,415	120,418	33	558	39	1,580

Appendix A. 4. Weekly stock proportions and catches of sockeye salmon harvested in the Alaskan Subdistrict 106-30 (Clarence Strait) commercial drift gillnet fishery, 1996. Data based on scale pattern analysis.

Week	Alaska	Canada	Stikine				Planted Tahltan	CPUE of Stikine Fish			
			Tahltan ^a	Tuya	Mainstem	Total		Tahltan ^a	Tuya	Mainstem	Total
Proportions											
25	0.796	0.166	0.030	0.000	0.008	0.038	0.000	0.070	0.000	0.179	0.075
26	0.841	0.157	0.002	0.000	0.000	0.002	0.000	0.016	0.000	0.000	0.014
27	0.768	0.225	0.007	0.000	0.000	0.007	0.003	0.107	0.000	0.000	0.090
28	0.793	0.185	0.022	0.000	0.000	0.022	0.010	0.434	0.000	0.000	0.364
29	0.758	0.222	0.013	0.007	0.000	0.020	0.007	0.161	0.000	0.000	0.206
30	0.695	0.301	0.004	0.000	0.000	0.004	0.000	0.084	0.000	0.000	0.071
31	0.667	0.318	0.015	0.000	0.000	0.015	0.000	0.127	0.000	0.000	0.107
32	0.480	0.520	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
33	0.614	0.386	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
34	0.474	0.504	0.000	0.000	0.023	0.023	0.000	0.000	0.000	0.371	0.033
35	0.496	0.481	0.000	0.000	0.023	0.023	0.000	0.000	0.000	0.260	0.023
36	0.496	0.481	0.000	0.000	0.023	0.023	0.000	0.000	0.000	0.092	0.008
37	0.496	0.481	0.000	0.000	0.023	0.023	0.000	0.000	0.000	0.089	0.008
38	0.496	0.481	0.000	0.000	0.023	0.023	0.000	0.000	0.000	0.009	0.001
Total	0.665	0.326	0.008	0.001	0.001	0.010	0.002	0.840	0.070	0.090	1.000
Catches											
25	293	61	11	0	3	14	0	0.5	0.0	0.1	0.6
26	1,104	206	3	0	0	3	0	0.1	0.0	0.0	0.1
27	3,376	989	32	0	0	32	12	0.7	0.0	0.0	0.7
28	6,790	1,585	192	0	0	192	87	2.8	0.0	0.0	2.8
29	10,136	2,968	173	90	0	263	90	1.0	0.5	0.0	1.6
30	16,735	7,253	97	0	0	97	0	0.5	0.0	0.0	0.5
31	7,312	3,480	166	0	0	166	0	0.8	0.0	0.0	0.8
32	7,901	8,557	0	0	0	0	0	0.0	0.0	0.0	0.0
33	2,829	1,777	0	0	0	0	0	0.0	0.0	0.0	0.0
34	727	773	0	0	35	35	0	0.0	0.0	0.3	0.3
35	521	504	0	0	24	24	0	0.0	0.0	0.2	0.2
36	197	191	0	0	9	9	0	0.0	0.0	0.1	0.1
37	105	101	0	0	5	5	0	0.0	0.0	0.1	0.1
38	2	2	0	0	0	0	0	0.0	0.0	0.0	0.0
Total	58,028	28,448	674	90	76	840	188	6.5	0.5	0.7	7.8

^a Tahltan includes wild and thermally marked fish.

Appendix A. 5. Weekly salmon catch in the Alaskan District 106 commercial drift gillnet fisheries, 1996. Catches do not include blind Slough terminal area harvests. Effort may be less than the sum of effort from 106-41&42 and 106-30 because some boats fished in more than one subdistrict.

Week	Start Date	Catch						Effort		
		Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Permits	Days	Permit Days
25	16-Jun	71	3,171	468	29	1,334	1	59	2.0	118
26	23-Jun	229	27,418	3,070	497	11,763	2	78	2.0	156
27	30-Jun	91	33,426	4,731	1,975	25,471	1	88	5.5	484
28	7-Jul	69	38,882	7,197	5,818	49,899	8	118	5.5	649
29	14-Jul	54	46,654	11,371	6,309	61,364	18	140	3.0	420
30	21-Jul	47	57,285	19,724	12,307	45,771	12	158	3.0	474
31	28-Jul	44	39,516	26,529	16,142	20,972	25	162	3.0	486
32	4-Aug	28	38,720	30,104	33,415	20,115	39	153	3.0	459
33	11-Aug	2	14,969	20,561	41,938	10,448	18	150	3.0	450
34	18-Aug	3	5,888	17,614	34,738	8,569	0	125	3.0	375
35	25-Aug	2	3,283	22,927	25,962	10,952	2	130	3.0	390
36	1-Sep	1	1,145	31,422	6,474	11,514	0	124	3.0	372
37	8-Sep	3	674	22,160	2,359	4,237	1	105	3.0	315
38	15-Sep	0	63	4,638	71	676	3	60	2.0	120
39	22-Sep	0	6	1,124	1	205	0	11	2.0	22
Total		644	311,100	223,640	188,035	283,290	130	1,661	46.0	5,290

Appendix A. 6. Weekly salmon catch contributions of Alaska hatchery and wild fish to the Alaskan District 106 commercial drift gillnet fisheries, 1996. Catches do not include blind Slough terminal area harvests. Effort may be less than the sum of effort from 106-41&42 and 106-30 because some boats fished in more than one subdistrict.

Week	Start Date	Catch						Effort		
		Chinook	Sockeye	Coho	Pink ^a	Chum	Steelhead	Permits	Days	Permit Days
Alaska Hatchery Contribution										
25	16-Jun	50	0	173		0				
26	23-Jun	132	80	895		5,275				
27	30-Jun	29	0	752		15,808				
28	7-Jul	0	245	1,093		22,014				
29	14-Jul	7	1,059	1,037		15,091				
30	21-Jul	57	1,211	1,035		18,490				
31	28-Jul	51	1,410	1,302		6,868				
32	4-Aug	0	484	3,060		2,281				
33	11-Aug	0	206	3,260		1,432				
34	18-Aug	0	267	4,846		0				
35	25-Aug	0	0	8,216		7,144				
36	1-Sep	0	0	15,135		14,842				
37	8-Sep	0	825	12,168		0				
38	15-Sep	0	0	1,649		0				
39	22-Sep	0	0	0						
Total		326	5,787	54,621		109,245				
Catches not including Alaska hatchery contributions										
25	16-Jun	21	3,171	295	29	1,334	1	59	2.0	118
26	23-Jun	97	27,338	2,175	497	6,488	2	78	2.0	156
27	30-Jun	62	33,426	3,979	1,975	9,663	1	88	5.5	484
28	7-Jul	69	38,637	6,104	5,818	27,885	8	118	5.5	649
29	14-Jul	47	45,595	10,334	6,309	46,273	18	140	3.0	420
30	21-Jul	-10	56,074	18,689	12,307	27,281	12	158	3.0	474
31	28-Jul	-7	38,106	25,227	16,142	14,104	25	162	3.0	486
32	4-Aug	28	38,236	27,044	33,415	17,834	39	153	3.0	459
33	11-Aug	2	14,763	17,301	41,938	9,016	18	150	3.0	450
34	18-Aug	3	5,621	12,768	34,738	8,569	0	125	3.0	375
35	25-Aug	2	3,283	14,711	25,962	3,808	2	130	3.0	390
36	1-Sep	1	1,145	16,287	6,474	-3,328	0	124	3.0	372
37	8-Sep	3	-151	9,992	2,359	4,237	1	105	3.0	315
38	15-Sep	0	63	2,989	71	676	3	60	2.0	120
39	22-Sep	0	6	1,124	1	205	0	11	2.0	22
Total		318	305,313	169,019	188,035	174,045	130	1,661	46.0	5,290

^a Alaska hatchery pink salmon contributions are not estimated due to a lack of cwt data.

Appendix A. 7. Weekly stock proportions of sockeye salmon harvested in the Alaskan District 106 commercial drift gillnet fisheries, 1996. Data based on SPA.

Week	Alaska	Canada	Stikine				Planted	CPUE of Stikine Fish			
			Tahltan ^a	Tuya	Mainstem	Total		Tahltan ^a	Tuya	Mainstem	Total
Proportions											
25	0.330	0.239	0.389	0.041	0.001	0.431	0.044	0.056	0.038	0.004	0.052
26	0.163	0.090	0.640	0.089	0.018	0.747	0.083	0.601	0.542	0.462	0.589
27	0.374	0.083	0.400	0.109	0.034	0.543	0.089	0.148	0.261	0.343	0.168
28	0.547	0.133	0.273	0.048	0.000	0.320	0.089	0.087	0.099	0.000	0.086
29	0.690	0.177	0.124	0.009	0.000	0.133	0.058	0.074	0.036	0.000	0.066
30	0.660	0.292	0.042	0.006	0.000	0.048	0.043	0.027	0.024	0.000	0.026
31	0.572	0.424	0.004	0.000	0.000	0.004	0.007	0.002	0.000	0.000	0.002
32	0.521	0.467	0.012	0.000	0.000	0.012	0.000	0.006	0.000	0.000	0.005
33	0.525	0.444	0.000	0.000	0.030	0.030	0.000	0.000	0.000	0.147	0.004
34	0.475	0.516	0.000	0.000	0.010	0.010	0.000	0.000	0.000	0.022	0.001
35	0.482	0.507	0.000	0.000	0.011	0.011	0.000	0.000	0.000	0.013	0.000
36	0.482	0.506	0.000	0.000	0.011	0.011	0.000	0.000	0.000	0.005	0.000
37	0.482	0.508	0.000	0.000	0.011	0.011	0.000	0.000	0.000	0.003	0.000
38	0.477	0.517	0.000	0.000	0.006	0.006	0.000	0.000	0.000	0.001	0.000
39	0.475	0.520	0.000	0.000	0.005	0.005	0.000	0.000	0.000	0.000	0.000
Total	0.531	0.268	0.166	0.028	0.007	0.201	0.019				
Catches											
25	1,045	759	1,234	130	3	1,367	169	10.5	1.1	0.0	11.6
26	4,459	2,473	17,558	2,436	492	20,486	812	112.6	15.6	3.2	131.3
27	12,507	2,782	13,365	3,641	1,131	18,137	2,354	27.6	7.5	2.3	37.5
28	21,272	5,155	10,604	1,851	0	12,455	1,847	16.3	2.9	0.0	19.2
29	32,180	8,254	5,789	431	0	6,220	423	13.8	1.0	0.0	14.8
30	37,834	16,711	2,408	332	0	2,740	166	5.1	0.7	0.0	5.8
31	22,608	16,742	166	0	0	166	0	0.3	0.0	0.0	0.3
32	20,164	18,082	474	0	0	474	0	1.0	0.0	0.0	1.0
33	7,866	6,653	0	0	450	450	0	0.0	0.0	1.0	1.0
34	2,794	3,036	0	0	57	57	0	0.0	0.0	0.2	0.2
35	1,582	1,666	0	0	35	35	0	0.0	0.0	0.1	0.1
36	552	580	0	0	13	13	0	0.0	0.0	0.0	0.0
37	325	342	0	0	7	7	0	0.0	0.0	0.0	0.0
38	30	33	0	0	0	0	0	0.0	0.0	0.0	0.0
39	3	3	0	0	0	0	0	0.0	0.0	0.0	0.0
Total	165,221	83,271	51,598	8,821	2,189	62,608	5,771	187.2	28.8	6.8	222.8

^a Tahltan includes wild and thermally marked fish.

Appendix A. 8. Weekly salmon catch and effort in the Alaskan District 108 commercial drift gillnet fishery, 1996. Catches do not include Ohmer Creek terminal area harvests. The permit days are adjusted for boats that did not fish the entire opening and are less than the sum of the permits times the days open.

Week	Start Date	Catch						Effort		
		Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Permits	Days	Permit Days
24	9-Jun	79	91	0	0	12	1	22	1.0	22.0
25	16-Jun	313	5,770	176	1	1,179	0	40	4.0	72.0
26	23-Jun	630	41,082	181	21	3,005	1	98	5.5	242.0
27	30-Jun	352	46,049	473	423	20,900	0	122	5.5	310.5
28	7-Jul	169	32,208	869	4,544	58,033	4	128	5.5	333.0
29	14-Jul	67	13,910	756	11,268	27,525	4	90	5.0	215.0
30	21-Jul	65	11,877	1,439	13,790	20,038	14	66	5.0	151.0
31	28-Jul	15	1,960	522	4,930	1,990	10	18	3.0	51.0
32	4-Aug	2	643	702	1,217	1,195	0	10	3.0	30.0
33	11-Aug	3	217	484	519	114	4	5	3.0	15.0
34	18-Aug	0	72	639	130	127	0	9	3.0	27.0
35	25-Aug	0	143	4,048	198	404	1	21	3.0	63.0
36	1-Sep	8	16	2,077	74	229	0	13	3.0	39.0
37	8-Sep	14	79	3,884	372	412	0	21	3.0	63.0
38	15-Sep	0	28	2,239	161	365	1	22	2.0	44.0
39	22-Sep	0	5	570	3	95	0	9	2.0	18.0
Total		1,717	154,150	19,059	37,651	135,623	40	694	56.5	1,695.5

Appendix A. 9. Weekly salmon catch contributions of Alaska hatchery and wild fish to the Alaskan District 108 commercial drift gillnet fishery, 1996. Catches do not include Ohmer Creek terminal area harvests. The permit days are adjusted for boats that did not fish the entire opening and are less than the sum of the permits times the days open.

Week	Start Date	Catch						Effort		Permit Days
		Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Permits	Days	
Alaska Hatchery Contribution										
24	9-Jun	6	0	110		0				
25	16-Jun	174	0	81		0				
26	23-Jun	254	0	117		0				
27	30-Jun	199	0	114		6,943				
28	7-Jul	34	67	93		21,695				
29	14-Jul	166	72	71		6,275				
30	21-Jul	7	217	0		3,670				
31	28-Jul	0	62	34		1,133				
32	4-Aug	0	0	0		1,195				
33	11-Aug	0	0	0		0				
34	18-Aug	0	0	550		0				
35	25-Aug	0	0	101		0				
36	1-Sep	0	0	0		0				
37	8-Sep	0	0	0		0				
38	15-Sep	0	0	0		0				
39	22-Sep	0	0	0		0				
Total		840	418	1,271		40,911				
Catches not including Alaska hatchery contributions										
24	9-Jun	73	91	-110	0	12	1	22	1.0	22
25	16-Jun	139	5,770	95	1	1,179	0	40	4.0	72
26	23-Jun	376	41,082	64	21	3,005	1	98	5.5	242
27	30-Jun	153	46,049	359	423	13,957	0	122	5.5	311
28	7-Jul	135	32,141	776	4,544	36,338	4	128	5.5	333
29	14-Jul	-99	13,838	685	11,268	21,250	4	90	5.0	215
30	21-Jul	58	11,660	1,439	13,790	16,368	14	66	5.0	151
31	28-Jul	15	1,898	488	4,930	857	10	18	3.0	51
32	4-Aug	2	643	702	1,217	0	0	10	3.0	30
33	11-Aug	3	217	484	519	114	4	5	3.0	15
34	18-Aug	0	72	89	130	127	0	9	3.0	27
35	25-Aug	0	143	3,947	198	404	1	21	3.0	63
36	1-Sep	8	16	2,077	74	229	0	13	3.0	39
37	8-Sep	14	79	3,884	372	412	0	21	3.0	63
38	15-Sep	0	28	2,239	161	365	1	22	2.0	44
39	22-Sep	0	5	570	3	95	0	9	2.0	18
Total		877	153,732	17,788	37,651	94,712	40	694	56.5	1,696

Appendix A. 10. Weekly stock proportions and stock-specific catch of sockeye salmon in the Alaskan District 108 commercial drift gillnet fishery, 1996. Catches do not include Ohmer Creek terminal area harvests. Data based on SPA.

Week	Alaska	Canada	Stikine				Planted	CPUE of Stikine Fish			
			Tahltan ^a	Tuya	Mainstem	Total		Tahltan	Tahltan ^a	Tuya	Mainstem
Proportions											
24	0.055	0.143	0.264	0.022	0.516	0.802	0.048	0.003	0.002	0.017	0.006
25	0.139	0.049	0.700	0.033	0.080	0.813	0.083	0.144	0.065	0.051	0.117
26	0.016	0.116	0.741	0.089	0.037	0.868	0.089	0.324	0.368	0.050	0.265
27	0.021	0.046	0.765	0.088	0.080	0.933	0.089	0.292	0.319	0.094	0.249
28	0.082	0.097	0.642	0.067	0.111	0.820	0.058	0.160	0.158	0.085	0.143
29	0.341	0.031	0.298	0.027	0.303	0.628	0.043	0.050	0.042	0.156	0.073
30	0.429	0.116	0.096	0.011	0.348	0.455	0.007	0.019	0.020	0.218	0.064
31	0.245	0.074	0.052	0.018	0.611	0.681	0.000	0.005	0.017	0.187	0.047
32	0.283	0.270	0.033	0.008	0.406	0.447	0.000	0.002	0.004	0.069	0.017
33	0.283	0.270	0.033	0.008	0.406	0.447	0.000	0.001	0.003	0.047	0.012
34	0.283	0.270	0.033	0.008	0.406	0.447	0.000	0.000	0.001	0.009	0.002
35	0.283	0.270	0.033	0.008	0.406	0.447	0.000	0.000	0.000	0.007	0.002
36	0.283	0.270	0.033	0.008	0.406	0.447	0.000	0.000	0.000	0.001	0.000
37	0.283	0.270	0.033	0.008	0.406	0.447	0.000	0.000	0.000	0.004	0.001
38	0.283	0.270	0.033	0.008	0.406	0.447	0.000	0.000	0.000	0.002	0.001
39	0.283	0.270	0.033	0.008	0.406	0.447	0.000	0.000	0.000	0.001	0.000
Total	0.102	0.082	0.622	0.069	0.125	0.816	0.070	0.700	0.074	0.226	1.000
Catch											
24	5	13	24	2	47	73	4	1.1	0.1	2.1	3.3
25	801	280	4,037	191	461	4,689	477	56.1	2.7	6.4	65.1
26	656	4,780	30,455	3,658	1,533	35,646	3,662	125.8	15.1	6.3	147.3
27	971	2,137	35,210	4,065	3,666	42,941	4,091	113.4	13.1	11.8	138.3
28	2,657	3,133	20,684	2,161	3,573	26,418	1,879	62.1	6.5	10.7	79.3
29	4,746	429	4,146	372	4,217	8,735	600	19.3	1.7	19.6	40.6
30	5,098	1,376	1,140	126	4,137	5,403	82	7.5	0.8	27.4	35.8
31	481	145	101	36	1,197	1,334	0	2.0	0.7	23.5	26.2
32	182	174	21	5	261	288	0	0.7	0.2	8.7	9.6
33	61	59	7	2	88	97	0	0.5	0.1	5.9	6.5
34	20	19	2	1	29	32	0	0.1	0.0	1.1	1.2
35	40	39	5	1	58	64	0	0.1	0.0	0.9	1.0
36	5	4	1	0	6	7	0	0.0	0.0	0.2	0.2
37	22	21	3	1	32	35	0	0.0	0.0	0.5	0.6
38	8	8	1	0	11	13	0	0.0	0.0	0.3	0.3
39	1	1	0	0	2	2	0	0.0	0.0	0.1	0.1
Total	15,755	12,618	95,837	10,621	19,319	125,777	10,796	388.8	41.1	125.5	555.4

Appendix A. 11. Weekly salmon and steelhead trout catch and effort in the Canadian commercial fishery in the lower Stikine River, 1996.

Week	Start Date	Catch							Effort		
		Chinook		Sockeye	Coho	Pink	Chum	Steelhead	Permits	Days	Permit Days
		Jacks	Large								
26	23-Jun	55	663	6078	0	0	1	0	7.29	7	51.0
27	30-Jun	128	748	17796	0	0	0	0	9.5	6	57.0
28	7-Jul	28	186	17055	0	3	20	2	10.86	7	76.0
29	14-Jul	7	57	11091	4	1	11	2	11.14	7	78.0
30	21-Jul	1	28	8840	17	0	26	3	8.86	7	62.0
31	28-Jul	1	20	3669	86	4	34	29	7	7	49.0
32	4-Aug	1	5	1469	244	3	62	70	5.43	5	27.2
33	11-Aug	0	1	147	170	0	35	29	1	5	5.0
34	18-Aug	0	0	54	91	0	14	6	1	7	7.0
35	25-Aug	0	0	7	32	1	6	1	1	3	3.0
36	1-Sep	0	0	32	395	1	6	11	1.67	6	10.0
37	8-Sep	0	0	17	175	5	9	0	1	7	7.0
38	15-Sep	0	0	7	188	7	5	0	1	7	7.0
Total		221	1,708	66,262	1,402	25	229	153		81.0	439.2

Appendix A. 12. Weekly sockeye salmon stock proportions and catch by stock in the Canadian commercial fishery in the lower Stikine River, 1996. Sex specific age compositions were calculated and the stock composition of the females sampled for egg diameters was expanded to the catch by age. Thermal mark information based on recovery ratios of Tahltan and Tuya fish in 108.

Week	Proportion				Planted	Catch			Tahltan	
	Small Egg	Tahltan	Tuya	Mainstem		Tahltan	Tuya	Mainstem	Wild	Planted
26	0.929	0.808	0.122	0.071	0.082	4,910	739	429	4,411	499
27	0.859	0.731	0.128	0.141	0.129	13,017	2,274	2,505	10,724	2,293
28	0.719	0.555	0.164	0.281	0.039	9,468	2,794	4,793	8,799	669
29	0.531	0.429	0.102	0.469	0.032	4,758	1,133	5,200	4,404	354
30	0.319	0.256	0.063	0.681	0.014	2,266	555	6,019	2,144	122
31	0.214	0.201	0.013	0.786	0.026	736	48	2,885	640	96
32	0.150	0.125	0.026	0.850	0.009	183	38	1,248	170	13
33	0.102	0.102	0.000	0.898	0.000	15	0	132	15	0
34	0.074	0.037	0.037	0.926	0.019	2	2	50	1	1
35	0.000	0.000	0.000	1.000	0.000	0	0	7	0	0
36	0.000	0.000	0.000	1.000	0.000	0	0	32	0	0
37	0.000	0.000	0.000	1.000	0.000	0	0	17	0	0
38	0.000	0.000	0.000	1.000	0.000	0	0	7	0	0
Total						35,355	7,583	23,324	31,308	4,047
Proportion						0.534	0.114	0.352	0.729	0.061

Week	Total	CPUE			Tahltan	
		CPUE	Tahltan	Tuya	Mainstem	Wild
25	24.417	19.725	2.969	1.723	17.720	2.005
26	119.106	96.218	14.482	8.407	86.439	9.779
27	312.211	228.368	39.895	43.947	188.140	40.228
28	224.349	124.546	36.753	63.049	115.746	8.800
29	142.229	61.016	14.529	66.684	56.476	4.540
30	142.535	36.537	8.949	97.049	34.569	1.967
31	74.878	15.020	0.980	58.878	13.061	1.959
32	54.107	6.740	1.400	45.967	6.262	0.479
33	29.400	3.000	0.000	26.400	3.000	0.000
34	7.714	0.286	0.286	7.143	0.143	0.143
35	2.333	0.000	0.000	2.333		
36	3.194	0.000	0.000	3.194		
37	2.429	0.000	0.000	2.429		
38	1.000	0.000	0.000	1.000		
Total	1139.900	591.456	120.242	428.203	521.557	69.899
Proportion		0.519	0.105	0.376	0.458	0.061

Note: The proportions used for the final estimate include interpolations for week 25.

Appendix A. 13. Weekly salmon and steelhead trout catch and effort in the Canadian commercial fishery in the upper Stikine River, 1996

Week	Start Date	Catch							Effort		
		Chinook		Sockeye	Coho	Pink	Chum	Steelhead	Permits	Days	Permit Days
		Jacks	Large								
26	23-Jun	0	0	0	0	0	0	0	0.0	4.0	0.0
27	30-Jun	16	30	84	0	0	0	0	1.0	7.0	7.0
28	7-Jul	2	2	182	0	0	0	0	2.0	6.0	12.0
29	14-Jul	26	9	494	0	0	0	0	4.0	7.0	28.0
30	21-Jul	0	0	294	0	0	0	0	2.0	7.0	14.0
31	28-Jul	0	0	36	0	0	0	0	1.0	7.0	7.0
32	4-Aug	0	0	11	0	0	0	0	1.0	7.0	7.0
33	11-Aug	0	0	0	0	0	0	0	0.0	7.0	0.0
34	18-Aug	0	0	0	0	0	0	0	0.0	7.0	0.0
Total		44	41	1,101	0	0	0	0	11.0	59.0	75.0

Appendix A. 14. Weekly salmon and steelhead trout catch and effort in the Canadian Aboriginal fishery located at Telegraph Creek, on the Stikine River, 1996.

Week	Start Date	Catch							Effort		
		Chinook		Sockeye	Coho	Pink	Chum	Steelhead	Permits	Days	Permit Days
		Jacks	Large								
21	19-May	0	1	0	0	0	0	19	1.2	6	7.0
22	26-May									0	
23	2-Jun									0	
24	9-Jun	7	84	0	0	0	0	0	4.4	7	31.0
25	16-Jun	18	169	8	0	0	0	4	4.9	7	34.0
26	23-Jun	3	29	1	0	0	0	2	2.1	7	15.0
27	30-Jun	79	249	467	0	0	0	0	8.1	7	57.0
28	7-Jul	33	128	2,577	0	0	0	0	16.1	7	113.0
29	14-Jul	6	29	2,047	1	0	1	0	12.9	7	90.0
30	21-Jul	4	11	1,053	0	0	0	0	9.4	7	66.0
31	28-Jul	2	5	250	0	0	2	1	3.1	7	22.0
32	4-Aug	1	8	262	0	0	0	0	3.0	7	21.0
33	11-Aug	1	3	82	0	0	0	0	1.4	7	10.0
34	18-Aug	1	3	82	0	0	0	0	1.4	7	10.0
35	25-Aug	1	3	89	1	0	0	4	2.2	7	15.4
Total		156	722	6,918	2	0	3	30	70.4	90	491.4

Appendix A. 15. Catch by stock by week for sockeye salmon harvested in the Canadian upper river commercial and Aboriginal fisheries in the Stikine River, 1996.

Week	Start Date	Upper River Commercial					Aboriginal Fishery				
		Tahltan	Tuya	Mainstem	Tahltan		Tahltan	Tuya	Mainstem	Tahltan	
					Wild	Planted				Wild	Planted
21	19-May						0	0	0	0	0
22	26-May										
23	2-Jun										
24	9-Jun						0	0	0	0	0
25	16-Jun						7	1	0	6	1
26	23-Jun	0	0	0	0	0	1	0	0	1	0
27	30-Jun	70	12	2	60	10	391	66	10	333	58
28	7-Jul	152	26	4	129	23	2,160	362	55	1,841	319
29	14-Jul	425	69	0	364	61	1,760	287	0	1,507	253
30	21-Jul	238	41	15	202	36	853	148	52	723	130
31	28-Jul	25	5	6	21	4	176	35	39	145	31
32	4-Aug	7	2	2	6	1	171	37	54	139	32
33	11-Aug	0	0	0	0	0	70	12	0	60	10
34	18-Aug	0	0	0	0	0	70	12	0	60	10
35	25-Aug						77	12	0	66	11
Total		917	155	29	782	135	5,736	972	210	4,881	855

Appendix A. 16. Weekly salmon and steelhead trout catch and effort in the Canadian test fishery in the Stikine River, 1996.

Week	Start Date	Catch							# Drifts/ Set Hours
		Chinook		Sockeye	Coho	Pink	Chum	Steelhead	
		Jacks	Adults						
Drift gillnet									
25	16-Jun	3	32	21	0	0	0	0	60
26	23-Jun	1	1	29	0	0	0	0	15
27	30-Jun	1	8	77	0	0	0	0	20
28	7-Jul	0	1	29	0	0	0	0	15
29	14-Jul	0	0	38	0	0	1	0	15
30	21-Jul	0	0	23	1	1	0	0	15
31	28-Jul	0	0	17	0	0	7	1	15
32	4-Aug	0	0	11	5	2	11	2	15
33	11-Aug	0	0	8	7	1	15	2	20
34	18-Aug	0	0	6	20	0	10	5	30
35	25-Aug	0	0	3	22	0	11	0	25
Total		5	42	262	55	4	55	10	245
Set gillnet									
25	16-Jun	40	59	251	0	0	0	1	264
26	23-Jun	0	4	15	0	0	0	0	24
27	30-Jun								
28	7-Jul	0	1	72	0	0	0	0	24
Total		40	64	338	0	0	0	1	312
Additional Drifts									
25	16-Jun	31	183	250	0	0	0	0	115
26	23-Jun								
27	30-Jun	0	0	123	0	0	0	0	5
28	7-Jul	0	9	339	0	0	0	0	18
Total		31	192	712	0	0	0	0	138
Total Test Fishery Catch									
25	16-Jun	74	274	522	0	0	0	1	
26	23-Jun	1	5	44	0	0	0	0	
27	30-Jun	1	8	200	0	0	0	0	
28	7-Jul	0	11	440	0	0	0	0	
29	14-Jul	0	0	38	0	0	1	0	
30	21-Jul	0	0	23	1	1	0	0	
31	28-Jul	0	0	17	0	0	7	1	
32	4-Aug	0	0	11	5	2	11	2	
33	11-Aug	0	0	8	7	1	15	2	
34	18-Aug	0	0	6	20	0	10	5	
35	25-Aug	0	0	3	22	0	11	0	
Total Test Catch		76	298	1,312	55	4	55	11	

Appendix A. 17. Weekly catch, CPUE, and migratory timing of Tahltan and Mainstem sockeye salmon stocks in the Stikine River test fishery, 1996. Sex specific age compositions were calculated and the smoothed stock compositions of the females sampled for egg diameters were expanded to the catch by age.

Week	Proportions			Catch			CPUE				Migratory Timing			
	Tahltan	Tuya	Mainstem	Tahltan	Tuya	Mainstem	Tahltan	Tuya	Mainstem	Total	Tahltan	Tuya	Mainstem	
Drift gillnet														
25	0.710	0.029	0.261	15	1	5	0.249	0.010	0.091	0.350	0.017	0.001	0.006	
26	0.745	0.159	0.095	22	5	3	1.441	0.308	0.185	1.933	0.098	0.021	0.013	
27	0.760	0.145	0.095	59	11	7	2.927	0.558	0.365	3.850	0.199	0.038	0.025	
28	0.787	0.057	0.156	23	2	5	1.521	0.110	0.302	1.933	0.103	0.007	0.021	
29	0.136	0.026	0.838	5	1	32	0.345	0.067	2.122	2.533	0.023	0.005	0.144	
30	0.231	0.000	0.769	5	0	18	0.354	0.000	1.179	1.533	0.024	0.000	0.080	
31	0.155	0.000	0.845	3	0	14	0.175	0.000	0.958	1.133	0.012	0.000	0.065	
32	0.000	0.000	1.000	0	0	11	0.000	0.000	0.733	0.733	0.000	0.000	0.050	
33	0.000	0.000	1.000	0	0	8	0.000	0.000	0.400	0.400	0.000	0.000	0.027	
34	0.100	0.000	0.900	1	0	5	0.020	0.000	0.180	0.200	0.001	0.000	0.012	
35	0.000	0.000	1.000	0	0	3	0.000	0.000	0.120	0.120	0.000	0.000	0.008	
Total				132	19	111	7.033	1.052	6.635	14.720				
Proportion				0.502	0.073	0.425					Proportion of run	0.478	0.071	0.451
Set gillnet														
25	0.710	0.029	0.261	178	7	66	0.675	0.027	0.248	0.951	0.148	0.006	0.054	
26	0.745	0.159	0.095	11	2	1	0.466	0.099	0.060	0.625	0.102	0.022	0.013	
27														
28	0.787	0.057	0.156	57	4	11	2.361	0.170	0.469	3.000	0.516	0.037	0.102	
Total				246	14	78	3.502	0.297	0.777	4.576	0.765	0.065	0.170	
Proportion				0.728	0.041	0.231								
Additional Drifts ^a														
25	0.710	0.029	0.261	178	7	65	1.544	0.062	0.568	2.174	0.034	0.001	0.012	
26														
27	0.760	0.145	0.095	94	18	12	18.704	3.567	2.329	24.600	0.410	0.078	0.051	
28	0.787	0.057	0.156	267	19	53	14.820	1.070	2.944	18.833	0.325	0.023	0.065	
Total				538	44	130	35.067	4.700	5.840	45.607	0.769	0.103	0.128	
Proportion				0.755	0.062	0.182								
Total test fishery catches														
25	0.710	0.029	0.261	371	15	136								
26	0.745	0.159	0.095	33	7	4								
27	0.760	0.145	0.095	152	29	19								
28	0.787	0.057	0.156	346	25	69								
29	0.136	0.026	0.838	5	1	32								
30	0.231	0.000	0.769	5	0	18								
31	0.155	0.000	0.845	3	0	14								
32	0.000	0.000	1.000	0	0	11								
33	0.000	0.000	1.000	0	0	8								
34	0.100	0.000	0.900	1	0	5								
35	0.000	0.000	1.000	0	0	3								
Total				916	77	319					Tahltan includes 63 planted fish			
Proportion				0.698	0.059	0.243								

^a Catch was apportioned based on samples from standard drift catch.

Appendix A. 18. Daily counts of adult sockeye salmon passing through Tahltan Lake weir, 1996.

Date	Count	Cumulative		Date	Count	Cumulative	
		Count	Percent			Count	Percent
14-Jul	1	1	0.0	13-Aug	89	50,095	95.4
15-Jul	3	4	0.0	14-Aug	295	50,390	96.0
16-Jul	2	6	0.0	15-Aug	245	50,635	96.4
17-Jul	671	677	1.3	16-Aug	206	50,841	96.8
18-Jul	803	1,480	2.8	17-Aug	241	51,082	97.3
19-Jul	5,119	6,599	12.6	18-Aug	120	51,202	97.5
20-Jul	10,653	17,252	32.9	19-Aug	71	51,273	97.7
21-Jul	4,820	22,072	42.0	20-Aug	19	51,292	97.7
22-Jul	5,531	27,603	52.6	21-Aug	425	51,717	98.5
23-Jul	5,190	32,793	62.5	22-Aug	129	51,846	98.8
24-Jul	2,814	35,607	67.8	23-Aug	47	51,893	98.8
25-Jul	1,658	37,265	71.0	24-Aug	59	51,952	99.0
26-Jul	1,419	38,684	73.7	25-Aug	96	52,048	99.1
27-Jul	267	38,951	74.2	26-Aug	34	52,082	99.2
28-Jul	517	39,468	75.2	27-Aug	29	52,111	99.3
29-Jul	1,860	41,328	78.7	28-Aug	93	52,204	99.4
30-Jul	1,892	43,220	82.3	29-Aug	21	52,225	99.5
31-Jul	1,579	44,799	85.3	30-Aug	54	52,279	99.6
1-Aug	817	45,616	86.9	31-Aug	77	52,356	99.7
2-Aug	701	46,317	88.2	1-Sep	9	52,365	99.7
3-Aug	733	47,050	89.6	2-Sep	13	52,378	99.8
4-Aug	564	47,614	90.7	3-Sep	26	52,404	99.8
5-Aug	379	47,993	91.4	4-Sep	3	52,407	99.8
6-Aug	295	48,288	92.0	5-Sep	2	52,409	99.8
7-Aug	173	48,461	92.3	6-Sep	61	52,470	99.9
8-Aug	339	48,800	93.0	7-Sep	8	52,478	100.0
9-Aug	507	49,307	93.9	8-Sep	0	52,478	100.0
10-Aug	97	49,404	94.1	9-Sep	2	52,480	100.0
11-Aug	367	49,771	94.8	10-Sep	20	52,500	100.0
12-Aug	235	50,006	95.2				
Total Counted				52,500			
Fish removed for broodstock				-4,402 ^a			
Fish removed for ESSR				-12,955 ^b			
Total Spawners				35,143			
Wild Spawners				31,972			
Spawners from fry plants				3,171			

^a A total of 2,181 females and 2,156 males were taken for broodstock (65 mortalities included in the broodstock total).

^b 12,955 fish were harvested with an ESSR license and an additional 407 fish were sacrificed for otolith analysis.

Appendix A. 19. Daily counts of sockeye salmon smolt migrating through Tahltan Lake smolt weir, 1996.

Date	Count	Cumulative		Date	Count	Cumulative	
		Count	Percent			Count	Percent
11-May	3	3	0.0	4-Jun	1,245	1,526,014	97.8
12-May	5	8	0.0	5-Jun	4,511	1,530,525	98.1
13-May	6	14	0.0	6-Jun	4,270	1,534,795	98.4
14-May	5	19	0.0	7-Jun	1,069	1,535,864	98.5
15-May	69	88	0.0	8-Jun	5,703	1,541,567	98.8
16-May	14,204	14,292	0.9	9-Jun	2,952	1,544,519	99.0
17-May	10,071	24,363	1.6	10-Jun	607	1,545,126	99.1
18-May	86,210	110,573	7.1	11-Jun	474	1,545,600	99.1
19-May	208,014	318,587	20.4	12-Jun	981	1,546,581	99.2
20-May	480,293	798,880	51.2	13-Jun	553	1,547,134	99.2
21-May	35,896	834,776	53.5	14-Jun	221	1,547,355	99.2
22-May	118,690	953,466	61.1	15-Jun	124	1,547,479	99.2
23-May	310,513	1,263,979	81.0	16-Jun	422	1,547,901	99.3
24-May	107,310	1,371,289	87.9	17-Jun	1,405	1,549,306	99.3
25-May	32,260	1,403,549	90.0	18-Jun	298	1,549,604	99.4
26-May	21,512	1,425,061	91.4	19-Jun	225	1,549,829	99.4
27-May	61,094	1,486,155	95.3	20-Jun	176	1,550,005	99.4
28-May	16,398	1,502,553	96.3	21-Jun	112	1,550,117	99.4
29-May	6,063	1,508,616	96.7	22-Jun	66	1,550,183	99.4
30-May	2,098	1,510,714	96.9	23-Jun	1,135	1,551,318	99.5
31-May	2,084	1,512,798	97.0	24-Jun	261	1,551,579	99.5
1-Jun	7,399	1,520,197	97.5	25-Jun	6,600	1,558,179	99.9
2-Jun	3,542	1,523,739	97.7	26-Jun	1,384	1,559,563	100.0
3-Jun	1,030	1,524,769	97.8				
						Wild	1,408,285
						Hatchery	151,278

Appendix A. 20. Daily counts of adult Chinook salmon passing through Little Tahltan weir, 1996

Date	Large Chinook			Chinook Jacks		
	Count	Cumulative		Count	Cumulative	
		Count	Percent		Count	Percent
17-Jun	-----Weir installed-----					
18-Jun	0	0	0.0	0	0	0.0
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	12	12	0.2	0	0	0.0
27-Jun	0	12	0.2	0	0	0.0
28-Jun	0	12	0.2	0	0	0.0
29-Jun	0	12	0.2	0	0	0.0
30-Jun	8	20	0.4	0	0	0.0
1-Jul	2	22	0.5	0	0	0.0
2-Jul	3	25	0.5	0	0	0.0
3-Jul	7	32	0.7	0	0	0.0
4-Jul	15	47	1.0	0	0	0.0
5-Jul	15	62	1.3	0	0	0.0
6-Jul	190	252	5.2	0	0	0.0
7-Jul	164	416	8.6	0	0	0.0
8-Jul	315	731	15.2	0	0	0.0
9-Jul	130	861	17.9	0	0	0.0
10-Jul	257	1,118	23.2	0	0	0.0
11-Jul	243	1,361	28.2	0	0	0.0
12-Jul	274	1,635	33.9	1	1	4.5
13-Jul	154	1,789	37.1	0	1	4.5
14-Jul	225	2,014	41.8	2	3	13.6
15-Jul	245	2,259	46.9	0	3	13.6
16-Jul	248	2,507	52.0	0	3	13.6
17-Jul	73	2,580	53.5	0	3	13.6
18-Jul	246	2,826	58.6	0	3	13.6
19-Jul	256	3,082	63.9	1	4	18.2
20-Jul	262	3,344	69.4	2	6	27.3
21-Jul	232	3,576	74.2	1	7	31.8
22-Jul	24	3,600	74.7	0	7	31.8
23-Jul	150	3,750	77.8	1	8	36.4
24-Jul	141	3,891	80.7	2	10	45.5
25-Jul	19	3,910	81.1	1	11	50.0
26-Jul	184	4,094	84.9	2	13	59.1
27-Jul	56	4,150	86.1	1	14	63.6
28-Jul	47	4,197	87.1	0	14	63.6
29-Jul	133	4,330	89.8	4	18	81.8
30-Jul	69	4,399	91.2	1	19	86.4
31-Jul	123	4,522	93.8	0	19	86.4
1-Aug	19	4,541	94.2	0	19	86.4
2-Aug	43	4,584	95.1	0	19	86.4
3-Aug	0	4,584	95.1	0	19	86.4
4-Aug	0	4,584	95.1	0	19	86.4
5-Aug	124	4,708	97.7	3	22	100.0
6-Aug	0	4,708	97.7	0	22	100.0
7-Aug	95	4,803	99.6	0	22	100.0
8-Aug	0	4,803	99.6	0	22	100.0
9-Aug	17	4,820	100.0	0	22	100.0
10-Aug	0	4,820	100.0	0	22	100.0
11-Aug	1	4,821	100.0	0	22	100.0
12-Aug	0	4,821	100.0	0	22	100.0
13-Aug	0	4,821	100.0	0	22	100.0
14-Aug	0	4,821	100.0	0	22	100.0
15-Aug	0	4,821	100.0	0	22	100.0
Total Counted		4,821			22	
Adjustments		0				
Total Spawners		4,821			22	

APPENDIX B

Appendix B. 1. Salmon catch and effort in the Alaskan Subdistrict 106-41 and -42 (Sumner Strait) commercial drift gillnet fishery, 1960-1996.

Year	Catch						Effort	
	Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Permit Days	Open Days
1960	24	9,005	277	1,103	362		251	17.0
1961	75	9,488	1,851	26,435	9,657		359	48.0
1962	131	19,692	6,548	45,987	9,544		811	44.0
1963	308	45,364	15,702	134,974	50,301		2,311	47.0
1964	314	52,910	27,193	183,394	22,540		2,344	49.0
1965	679	58,736	30,570	162,271	15,763		1,658	50.8
1966	690	65,721	30,792	96,287	24,235		2,080	74.3
1967	668	60,148	10,573	52,284	19,626		1,463	27.0
1968	1,010	50,212	46,111	82,012	39,001		2,997	52.0
1969	607	46,258	6,094	92,075	6,393	482	1,147	31.0
1970	420	26,812	15,153	29,102	18,092	366	905	41.0
1971	671	33,991	24,727	283,739	19,329	363	1,619	50.0
1972	1,747	74,745	60,827	40,644	46,511	515	2,152	41.0
1973	1,540	55,254	24,921	160,297	62,486	375	2,253	26.0
1974	1,342	46,760	28,889	57,296	38,045	238	1,579	28.0
1975	467	19,319	4,650	29,340	7,762	112	515	17.0
1976	237	9,319	10,367	20,251	2,301	71	366	19.0
1977	202	47,408	1,819	51,038	4,240	33	447	17.0
1978	274	1,422	26,762	9,546	3,142	70	389	26.5
1979	458	34,807	12,087	176,395	16,816	154	952	25.0
1980	205	48,434	10,894	17,072	15,162	39	596	16.0
1981	598	132,293	13,161	220,194	25,682	156	1,732	25.0
1982	648	121,556	21,376	10,338	11,911	199	1,083	22.0
1983	268	28,153	41,208	74,347	13,001	198	875	32.0
1984	136	27,372	19,124	99,807	28,461	268	587	32.0
1985	548	172,088	50,577	319,379	45,566	664	1,726	38.0
1986	421	85,247	104,328	105,347	48,471	684	1,896	32.0
1987	441	79,165	17,776	117,059	25,877	318	978	20.0
1988	452	57,337	6,349	10,894	42,210	341	815	18.0
1989	581	107,886	55,671	418,044	40,156	268	1,716	34.0
1990	759	104,922	94,526	84,543	42,474	767	1,827	34.0
1991	857	88,723	136,798	64,182	84,970	135	2,118	39.0
1992	743	146,608	190,885	38,483	100,666	138	2,630	40.0
1993	458	129,859	134,902	296,986	96,995	107	2,728	38.0
1994	456	157,526	191,664	66,225	125,818	59	2,988	43.0
1995	663	133,713	109,613	154,004	189,369	100	2,349	34.0
60-95 Avg.	558	66,340	44,021	106,427	37,582	267	1,479	34.1
86-95 Avg.	583	109,099	104,251	135,577	79,701	292	2,005	33.2
1996	487	223,784	159,319	70,620	162,872	97	3,623	46.0

Appendix B. 2. Stock proportions and catches of sockeye salmon in the Alaskan Subdistrict 106-41 and -42 (Sumner Strait) commercial drift gillnet fishery, 1985-1996. Data based on SPA.

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
85-95 Avg.	0.572	0.315	0.073		0.041	0.113	0.088	0.045
1996	0.479	0.245	0.228	0.039	0.009	0.276	0.203	0.025
Catches								
1985	82,563	68,962	18,801		1,762	20,563		
1986	56,462	26,214	2,070		501	2,571		
1987	64,582	13,170	1,155		258	1,413		
1988	49,776	6,426	1,071		64	1,135		
1989	70,436	32,663	957		3,830	4,787		
1990	60,795	41,415	801		1,911	2,712		
1991	40,832	33,406	11,459		3,026	14,485		
1992	85,364	35,277	12,961		13,005	25,967		
1993	47,970	42,450	17,446		21,992	39,438		
1994	83,692	42,620	26,164		5,050	31,214	19,934	6,230
1995	38,343	75,505	13,292	125	6,448	19,865	6,514	6,778
85-95 Avg.	61,892	38,010	9,652		5,259	14,923		
1996	107,193	54,823	50,924	8,731	2,113	61,768	45,340	5,584

^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, 1960-1996.

Year	Catch						Effort	
	Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Permit Days	Open Days
1960	22	1,349	59	143	140		118	13.0
1961	341	11,126	13,083	97,801	54,822		1,378	57.0
1962	1,177	27,341	35,728	210,633	49,575		3,882	52.0
1963	1,250	35,462	36,376	379,093	39,723		3,278	51.0
1964	1,766	23,598	37,316	259,684	21,305		3,039	49.0
1965	1,123	29,013	45,158	463,577	11,895		2,849	50.8
1966	975	24,126	32,031	304,645	16,521		2,898	74.3
1967	650	26,237	7,097	39,325	6,744		1,048	27.0
1968	306	14,459	21,040	87,095	22,365		1,968	52.0
1969	270	24,060	4,186	104,998	4,510	77	1,026	31.0
1970	365	15,966	20,317	65,790	14,139	107	1,025	41.0
1971	665	19,211	23,358	244,236	18,351	222	1,517	50.0
1972	826	26,593	32,600	48,823	25,871	177	1,276	41.0
1973	391	16,741	13,526	143,324	25,243	125	1,303	26.0
1974	584	10,586	16,762	47,107	12,264	97	712	28.0
1975	2,120	12,732	26,312	173,675	16,206	110	1,159	8.5
1976	147	6,162	8,759	119,188	4,567	57	527	21.0
1977	469	19,615	6,582	368,069	9,060	32	940	21.0
1978	2,408	40,152	28,816	215,169	13,403	133	1,148	16.0
1979	2,262	31,566	15,996	471,817	18,691	165	1,848	25.0
1980	375	58,988	5,772	28,594	11,115	52	749	25.0
1981	967	49,708	9,453	217,379	8,614	31	1,321	26.0
1982	1,000	72,140	10,288	15,141	6,719	83	647	21.0
1983	299	20,689	21,234	133,943	7,143	63	589	37.0
1984	756	64,281	22,235	243,448	41,797	230	1,236	24.0
1985	1,141	92,899	40,565	265,567	24,095	339	1,372	36.0
1986	1,283	60,462	90,584	203,137	33,818	630	1,664	31.0
1987	395	57,262	16,758	126,423	16,148	171	799	20.0
1988	652	35,192	6,754	58,665	27,410	246	682	19.0
1989	963	84,848	36,714	683,150	27,195	126	1,583	34.0
1990	1,349	80,883	69,709	234,643	30,758	193	1,676	34.0
1991	1,209	54,389	61,005	68,557	38,760	63	1,505	39.0
1992	612	56,547	108,050	55,765	39,802	49	1,603	40.0
1993	534	76,096	96,136	240,974	37,606	18	1,646	38.0
1994	298	53,522	76,167	113,769	50,200	36	1,606	43.0
1995	288	73,585	60,948	294,159	110,709	10	1,422	34.0
60-95 Avg.	840	39,100	32,152	189,653	24,925	135	1,473	34.3
86-95 Avg.	758	63,279	62,283	207,924	41,241	154	1,419	33.2
1996	157	87,316	64,321	117,415	120,418	33	1,580	39.0

Appendix B. 4. Stock proportions and catches of sockeye salmon in the Alaskan Subdistrict 106-30 (Clarence Strait) commercial drift gillnet fishery, 1985-1996. Data based on SPA.

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
85-95 Avg.	0.644	0.291	0.028		0.036	0.064	0.045	0.013
1996	0.665	0.326	0.008	0.001	0.001	0.010	0.006	0.002
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	37,164	13,971	2,804		450	3,255		
1992	35,613	11,930	1,226		7,778	9,004		
1993	34,330	27,167	2,758		11,841	14,599		
1994	38,426	11,063	3,712		321	4,033	2,923	789
1995	27,201	40,570	3,423		2,391	5,814	2,668	755
85-95 Avg.	40,792	20,855	1,855		2,468	4,324	2,796	772
1996	58,028	28,448	674	90	76	840	486	188

^a Tahltan includes wild and thermally marked fish.

Appendix B. 5. Salmon catch and effort in the Alaskan District 106 commercial drift gillnet fisheries, 1964-1996. Catches do not include Blind Slough terminal area harvests. Effort may be less than the sum of effort from 106-41/42 and 106-30 since some boats fished in more than one subdistrict.

Year	Catch						Effort	
	Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Permit Days	Days Open
1960	46	10,354	336	1,246	502		369	17.0
1961	416	20,614	14,934	124,236	64,479		1,737	57.0
1962	1,308	47,033	42,276	256,620	59,119		4,693	52.0
1963	1,558	80,826	52,078	514,067	90,024		5,589	51.0
1964	2,080	76,508	64,509	443,078	43,845		5,383	49.0
1965	1,802	87,749	75,728	625,848	27,658		4,507	50.8
1966	1,665	89,847	62,823	400,932	40,756		4,978	74.3
1967	1,318	86,385	17,670	91,609	26,370		2,511	27.0
1968	1,316	64,671	67,151	169,107	61,366		4,965	52.0
1969	877	70,318	10,280	197,073	10,903	559	2,112	31.0
1970	785	42,778	35,470	94,892	32,231	473	1,863	41.0
1971	1,336	53,202	48,085	527,975	37,680	585	2,774	47.0
1972	2,573	101,338	93,427	89,467	72,382	692	3,311	41.0
1973	1,931	71,995	38,447	303,621	87,729	500	3,300	26.0
1974	1,926	57,346	45,651	104,403	50,309	335	2,177	28.0
1975	2,587	32,051	30,962	203,015	23,968	222	1,781	18.0
1976	384	15,481	19,126	139,439	6,868	128	922	22.0
1977	671	67,023	8,401	419,107	13,300	65	1,381	28.0
1978	2,682	41,574	55,578	224,715	16,545	203	1,567	27.1
1979	2,720	66,373	28,083	648,212	35,507	319	2,784	31.4
1980	580	107,422	16,666	45,666	26,277	91	1,329	25.0
1981	1,565	182,001	22,614	437,573	34,296	187	2,928	26.0
1982	1,648	193,696	31,664	25,479	18,630	282	1,659	22.5
1983	567	48,842	62,442	208,290	20,144	261	1,422	31.4
1984	892	91,653	41,359	343,255	70,258	498	1,783	31.4
1985	1,689	264,987	91,142	584,946	69,661	1,003	2,625	31.4
1986	1,704	145,709	194,912	308,484	82,289	1,314	3,446	31.4
1987	836	136,427	34,534	243,482	42,025	489	1,726	19.5
1988	1,104	92,529	13,103	69,559	69,620	587	1,460	18.5
1989	1,544	192,734	92,385	1,101,194	67,351	394	3,080	34.0
1990	2,108	185,805	164,235	319,186	73,232	960	3,440	34.0
1991	2,066	143,112	197,803	132,739	123,730	198	3,642	39.0
1992	1,355	203,155	298,935	94,248	140,468	187	4,227	40.0
1993	992	205,955	231,038	537,960	134,601	125	4,353	38.0
1994	754	211,048	267,831	179,994	176,018	95	4,353	43.0
1995	951	207,298	170,561	448,163	300,078	110	4,468	34.0
60-95 Avg.	1,398	105,440	76,173	296,080	62,506	402	2,907	35.3
86-95 Avg.	1,341	172,377	166,534	343,501	120,941	446	3,420	33.1
1996	644	311,100	223,640	188,035	283,290	130	5,290	46.0
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			
89-95 Avg.			48,804					
1996	326	5,787	54,621		109,245			
Catches not including Alaska hatchery contributions								
1989	1,544	192,734	87,304	1,101,194	67,351	3,080	34.0	
1990	2,108	185,805	121,376	319,186	73,232	3,440	34.0	
1991	2,066	143,112	133,715	132,739	123,730	3,642	39.0	
1992	1,355	203,155	214,367	94,248	140,468	4,227	40.0	
1993	992	205,955	153,178	537,960	134,601	4,353	38.0	
1994	340	209,381	227,990	179,994	108,904	4,353	43.0	
1995	598	202,745	143,231	448,163	227,661	4,468	34.0	
89-95 Avg.	1,286	191,841	154,452	401,926	125,135	3,938	37.4	
1996	318	305,313	169,019	188,035	174,045	5,290	46.0	

Appendix B. 6. Stock proportions and catches of sockeye salmon in the Alaskan District 106 commercial drift gillnet fisheries, 1982-1996. Catches do not include Blind Slough terminal area harvest. Data based on SPA.

Year	Alaska	Canada	Stikine			Total	Tahltan	
			Tahltan ^a	Tuya	Mainstem		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
83-95 Avg.	0.607	0.297	0.059		0.037	0.096		
1996	0.531	0.268	0.166	0.028	0.007	0.201	0.147	0.019
Catches								
1982	94,225	61,821				37,650		
1983	32,603	10,589	5,020		631	5,650		
1984	60,278	24,624	2,673		4,078	6,751		
1985	126,914	111,015	24,045		3,013	27,058		
1986	100,337	42,685	2,081		606	2,687		
1987	112,893	21,190	1,376		968	2,344		
1988	80,868	9,784	1,813		64	1,877		
1989	126,603	59,959	1,111		5,061	6,172		
1990	112,983	68,921	915		2,986	3,901		
1991	77,996	47,376	14,263		3,476	17,740		
1992	120,977	47,207	14,187		20,784	34,971		
1993	82,300	69,617	20,204		33,833	54,037		
1994	122,118	53,683	29,876		5,371	35,247	22,857	7,019
1995	65,544	116,075	16,715	125	8,839	25,679	9,182	7,533
83-95 Avg.	94,032	52,517	10,329		6,901	17,240		
1996	165,221	83,271	51,598	8,821	2,189	62,608	45,826	5,772

^a Tahltan includes wild and thermally marked fish.

Appendix B. 7. Salmon catch and effort in the Alaskan District 108 commercial drift gillnet fishery, 1960-1996. Catches do not include Ohmer Creek terminal area harvests. 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.

Year	Catch						Effort	
	Chinook	Sockeye	Coho	Pink	Chum	Steelhead	Permit Days	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
60-95 Avg.	2,299	20,652	13,188	20,126	8,416	45	742	34.1
86-95 Avg.	912	35,456	13,597	24,038	15,406	19	857	36.2
1996	1,717	154,150	19,059	37,651	135,623	40	1,696	56.5
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			
89-95 Avg.			2,443					
1996	840	418	1,271		40,911			
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
89-95 Avg.	1,048	49,604	15,771	33,142	17,655	24	1,168	45.1
1996	877	153,732	17,788	37,651	94,712	40	1,696	56.5

Appendix B. 8. Stock proportions and catches of sockeye salmon in the Alaskan District 108 commercial drift gillnet fishery, 1985-1996. Catches do not include Ohmer Creek terminal area harvests. Data based on SPA.

Year	Alaska	Canada	Stikine			Total	Tahltan	
			Tahltan ^a	Tuya	Mainstem		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		
1987 ^b	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
Averages								
85-95	0.195	0.085	0.261		0.458	0.720	0.222	0.187
1996	0.102	0.082	0.622	0.069	0.125	0.816	0.552	0.070
Catch								
1985	68	0	310		683	992		
1986	862	71	393		2,858	3,252		
1987	204	0	714		712	1,425		
1988	265	48	222		711	933		
1989	1,180	545	341		8,017	8,358		
1990	4,576	1,479	1,280		4,239	5,519		
1991	3,859	2,622	8,807		6,987	15,794		
1992	8,604	2,696	13,599		27,818	41,417		
1993	17,758	8,742	19,688		30,686	50,374		
1994	31,715	20,250	35,222		10,037	45,259	23,936	11,286
1995	10,374	15,641	34,950	461	15,330	50,741	15,224	19,726
85-95 Avg.	7,224	4,736	10,502		9,825	20,369	19,580	15,506
1996	15,755	12,618	95,837	10,621	19,319	125,777	85,041	10,796

^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.

Appendix B. 9. Salmon catch in the Alaskan District 106 and 108 test fisheries, 1984-1996. Only years with test fishery openings are listed.

Year	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

Appendix B. 10. Stock proportions of sockeye salmon in the Alaskan District 106 and 108 test fisheries, 1984-1996. Data based on SPA. Only years with test fishery openings are listed.

Year	Alaska	Canada	Stikine			Total	Tahltan	
			Tahltan ^a	Tuya	Mainstem		Wild	Planted
Sub-district 106-41 (Summer 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			
1991								
1992								
1993								
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			
1991								
1992								
1993								
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			

^a Tahltan includes wild and thermally marked fish.

Appendix B. 11. Stock specific catches of sockeye salmon in the Alaskan District 106 and 108 test fisheries, 1984-1996. Data based on SPA. Only years with test fishery openings are listed.

Year	Alaska	Canada	Stikine			Total	Tahltan	
			Tahltan ^a	Tuya	Mainstem		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			
1991								
1992								
1993								
1994	6	3	3	0	3		2	1
Subdistrict 106-30 (Clarence Strait) Catches								
1986	263	99	0	1	1			
1987	758	126	3	11	15			
1988	12	4	0	0	0			
1989	19	18	0	0	0			
District 106 Catches								
1984	901	368	40	61	101			
1985	2,085	1,741	475	44	519			
1986	1,082	245	8	9	17			
1987	2,928	568	42	20	62			
1988	898	104	35	0	35			
1989	1,293	639	34	114	148			
1990	1,237	939	31	49	80			
1991								
1992								
1993								
1994	6	3	3	0	3		2	0
District 108 Catches								
1985	81	0	367	810	1,177			
1986	76	25	274	190	464			
1987	36	0	127	127	254			
1988	93	22	59	277	336			
1989	137	87	75	739	814			
1990	361	149	81	275	356			
1991	114	114	441	224	665			
1992	194	99	432	574	1,006			
1993	51	33	144	75	219			

^a Tahltan includes wild and thermally marked fish.

Appendix B. 12. Salmon and steelhead trout catch and effort in the Canadian commercial fishery in the lower Stikine River, 1979-1996.

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
79-95 average ^c		1,195	20,170	4,899	923	484	260	440.8	41.2
86-95 average ^c	297	1,026	22,417	3,413	317	389	153	346.5	39.7
1996	221	1,708	66,262	1,402	25	229	153	439.2	81.0

^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 1979-1994 is for jacks and large fish combined.

Appendix B. 13. Sockeye salmon stock proportions and catch by stock in the Canadian commercial fishery in the lower Stikine River, 1979-1995. 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 1989-1996.

Year	Proportions			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 ^a									
1985	0.623		0.377		10,649		6,444		
1986	0.489		0.511		6,069		6,342		
1987	0.225		0.775		1,380		4,758		
1988	0.161		0.839		2,062		10,704		
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
79-95 average	0.451		0.548		10,074		10,040		
86-95 average	0.433		0.565		11,381		10,946		
1996	0.534	0.114	0.352	0.061	35,355	7,583	23,324	31,308	4,047

^a 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, 1975-1996.

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
75-95 averages ^c		105	977	5	1	1	0		
86-95 averages ^c	21	79	1,072	0	0	2	0	30.1	15.1
1996	44	41	1,101	0	0	0	0	75.0	59.0

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

^b There was no commercial fishery in 1984.

^c Chinook average for 1975-1995 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, 1972-1996.

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
72-95 averages ^a		806	4,025	17	16	3	6
86-95 averages ^a	234	896	4,031	5	0	3	9
1996	156	722	6,918	2	0	3	30

^a Chinook average for 1972-1995 is for jacks and large fish combined.

Appendix B. 16. Catch by stock for sockeye salmon harvested in the Canadian upper river commercial and Aboriginal fisheries in the Stikine River, 1972-1996.

Year	Upper River Commercial					Canadian Aboriginal Fishery				
	Tahltan	Tuya	Mainstem	Tahltan		Tahltan	Tuya	Mainstem	Tahltan	
				Wild	Planted				Wild	Planted
1972						3,936			437	
1973						3,303			367	
1974						3,150			350	
1975	243		27			1,784			198	
1976	660		73			2,620			291	
1977	1,778		198			3,902			434	
1978	1,350		150			3,150			350	
1979 ^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
1995	2,120	60	176	1,507	612	4,941	139	410	3,514	1,427
72-95 averages	879		95			3,622		397		
86-95 averages	965		101			3,628		389		
1996	917	155	29	782	135	5,736	972	210	4,881	855

^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, 1972-1996. ESSR catches not included.

Year	Catch						
	Chinook		Sockeye	Coho	Pink	Chum	Steelhead
	Jacks	Large					
1972	0	0	4,373	0	0	0	0
1973	0	200	3,670	0	0	0	0
1974	0	100	3,500	0	0	0	0
1975	0	1,202	2,252	50	0	0	0
1976	0	1,160	3,644	13	0	0	0
1977	0	162	6,310	0	0	0	0
1978	0	500	5,000	0	0	0	0
1979	63	1,562	13,534	10,720	1,994	424	264
1980	0	2,231	20,919	6,769	756	771	362
1981	0	1,404	27,017	2,867	3,857	1,128	284
1982	0	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
72-95 averages ^b		1,690	18,245	3,287	632	326	180
86-95 averages ^b	553	2,001	27,520	3,418	318	394	162
1996	421	2,471	74,281	1,404	25	232	183

^a There was no commercial fishery in 1984.

^b Chinook average for 1972-1994 is for jacks and large fish combined.

Appendix B. 18. Salmon catches in the Stikine River harvested under Canadian ESSR licenses, 1992-1996.

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	12,955	11,786	1,169	216

Appendix B. 19. Salmon and steelhead trout catches and effort in Canadian test fisheries in the Stikine River, 1985-1996.

Year	Catches							Effort
	Chinook		Sockeye	Coho	Pink	Chum	Steelhead	Drift=#
	Jacks	Large						Set=hr.
Drift Test Fishery Catches								
1985								
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
85-95 average	10	99	375	118	24	30	5	510
1996	5	42	262	55	4	55	10	245
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
85-95 average	20	76	1,277	238	129	67	10	1,214
1996	40	64	338	0	0	0	1	312
Additional Test Fishery Catches								
1985								
1986								
1987								
1988								
1989								
1990								
1991								
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
85-95 average	94	288	1,196	7	1	3	1	176
1996	31	192	712	0	0	0	0	138
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	
85-95 average	60	257	1,936	304	128	83	13	
1996	76	298	1,312	55	4	55	11	

^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, 1985-1995. Stock composition based on: SPA 1985; average of SPA and GPA 1986-1988; egg diameter 1989-1996.

Year	Catch Tahltan		Catch		Marked Tahltan	Proportion Tahltan		Average Proportion ^a		
	U.S.	Canada	Tuya	Mainstem		U.S.	Canada	Tahltan	Tuya	Mainstem
1985	560	439		841		0.418	0.328	0.372		0.628
1986	164	127		267		0.398	0.308	0.352		0.648
1987	513	397		1,213		0.308	0.238	0.273		0.727
1988	408	295		895		0.327	0.237	0.282		0.718
1989		414		1,192			0.258	0.258		0.742
1990		822		1,058			0.454	0.454		0.546
1991		1,443		931			0.608	0.608		0.392
1992		1,912		1,046			0.646	0.646		0.354
1993		2,184		1,564			0.583	0.583		0.417
1994		1,228		205			0.857	0.857		0.143
1995		2,064	20	486	729		0.803	0.803	0.008	0.189
85-95 average								0.499	0.008	0.500
1996		916	77	319	105		0.698	0.698	0.059	0.243

^a Average proportions are from averages of weekly estimates.

Appendix B. 21. Estimated proportion of inriver run comprised of Tahltan Lake and Mainstem sockeye stocks, 1979-1995. Stock compositions based on: scale circuli counts 1979-1983; SPA in 1985; average of SPA and GPA 1986-1988; and egg diameter analysis in 1989-1996. 1994-1996 data from commercial catch and CPUE.

Year	Tahltan		Average ^a		
	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
79-95 average			0.441		0.558
86-95 average			0.425	0.016	0.574
1996		0.518	0.519	0.105	0.376

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

Appendix B. 22. Counts of adult sockeye salmon migrating through Tahltan Lake weir, 1959-1996.

Year	Weir Installed	Date of Arrival			Total			Natural Spawners	Hatchery Spawners
		First	50%	90%	Count	Broodstock	ESSR		
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
1994	10-Jul	14-Jul	30-Jul	9-Aug	46,363	3,378	6,852	36,133	29,961
1995	8-Jul	9-Jul	24-Jul	12-Aug	42,317	4,902	10,740	26,675	16,591
59-95 average	10-Jul	19-Jul	31-Jul	11-Aug	23,529				
86-95 average	10-Jul	15-Jul	29-Jul	09-Aug	30,510				
1996	14-Jul	14-Jul	22-Jul	04-Aug	52,500	4,402	12,955	35,143	31,972
									3,171

^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, 1984-1996. 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	1242	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
84-95 average	124	391	63	34	25	63	220	67	920
1996	134	351	149			27	54	338	1,053

Appendix B. 24. Estimates of sockeye salmon smolt migrating through Tahltan Lake smolt weir, 1984-1996.

Year	Weir Installed	Date of Arrival			Total Count	Total Estimate	Date and Expansion	Natural Smolt	Hatchery Smolt
		First	50%	90%					
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
84-95 average	05-May	11-May	22-May	02-Jun		1,023,571		1,242,899	364,048
1996	11-May	11-May	20-May	25-May		1,559,236		1,408,020	151,216

^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, 1985-1996.

Year	Weir Installed	First Arrival	50% Arrival	90% Arrival	Total Count	Broodstock and Other	Natural Spawners	Total Natural Spawners
Large Chinook								
1985	03-Jul	04-Jul	30-Jul	06-Aug	3,114		3,114	
1986	28-Jun	29-Jun	21-Jul	05-Aug	2,891		2,891	
1987	28-Jun	04-Jul	24-Jul	02-Aug	4,783		4,783	
1988	26-Jun	27-Jun	18-Jul	03-Aug	7,292		7,292	
1989	25-Jun	26-Jun	23-Jul	02-Aug	4,715		4,715	
1990	22-Jun	29-Jun	23-Jul	04-Aug	4,392		4,392	
1991	23-Jun	25-Jun	20-Jul	03-Aug	4,506		4,506	
1992	24-Jun	04-Jul	21-Jul	30-Jul	6,627	-12	6,615	
1993	20-Jun	21-Jun	16-Jul	28-Jul	11,449	-24	11,425	
1994	18-Jun	28-Jun	22-Jul	02-Aug	6,387	-27	6,360	
1995	17-Jun	20-Jun	17-Jul	04-Aug	3,072	0	3,072	
85-95 average	24-Jun	27-Jun	21-Jul	02-Aug	5,384		5,379	
1996	26-Jun	08-Jul	16-Jul	30-Jul	4,821	0	4,821	
Jack Chinook (fish <600 mm poh length)								
1985	03-Jul	04-Jul	31-Jul	10-Aug	316			3,430
1986	28-Jun	03-Jul	25-Jul	06-Aug	572			3,463
1987	28-Jun	03-Jul	26-Jul	06-Aug	365			5,148
1988	26-Jun	27-Jun	17-Jul	02-Aug	327			7,619
1989	25-Jun	26-Jun	23-Jul	02-Aug	199			4,914
1990	22-Jun	05-Jul	22-Jul	30-Jul	417			4,809
1991	23-Jun	03-Jul	24-Jul	07-Aug	313			4,819
1992	24-Jun	12-Jul	22-Jul	30-Jul	131			6,746
1993	20-Jun	30-Jun	14-Jul	01-Aug	60			11,485
1994	18-Jun	02-Jul	22-Jul	05-Aug	121			6,481
1995	17-Jun	22-Jun	28-Jul	10-Aug	135			3,207
85-95 average	24-Jun	01-Jul	23-Jul	04-Aug	269			5,647
1996	26-Jun	02-Jul	13-Jul	14-Jul	22			4,843

Appendix B. 26. Index counts of Stikine Chinook escapements, 1979-1996. Counts do not include jacks (fish less than 600mm mef length).

Year	Little Tahltan Weir	Little Tahltan Aerial	Tahltan Aerial	Beatty Aerial	Andrew Foot	Comments
1979		1,166	2,118		382	Andrew weir count includes broodstock
1980		2,137	960	122	363	Andrew weir count includes broodstock
1981		3,334	1,852	558	654	Andrew weir count includes broodstock
1982		2,830	1,690	567	947	Andrew weir count includes broodstock
1983		594	453	83	444	Andrew weir count includes broodstock
1984		1,294		126	389	Andrew weir count includes broodstock
1985	3,114	1,598	1,490	147	319	
1986	2,891	1,201	1,400	183	707	
1987	4,783	2,706	1,390	312	788	Andrew helicopter survey
1988	7,292	3,796	4,384	593	564	
1989	4,715	2,527		362	530	Tahltan not surveyed due to visibility
1990	4,392	1,755	2,134	271	664	
1991	4,506	1,768	2,445	193	400	Andrew fixed wind survey
1992	6,627	3,607	1,891	362	778	Andrew helicopter survey, Little Tahltan includes brood stock
1993	11,425	4,010	2,249	757	1,060	
1994	6,360	2,422		184	572	Andrew helicopter survey, Tahltan no survey
1995	3,072	1,117	696	152	338	
79-95 average		2,227	1,797	311	582	
86-95 average	5,606	2,491	2,074	337	640	
1996	4,821	1,920	772	218	332	

Appendix B. 27. Index counts of Stikine coho salmon escapements, 1984-1996. Missing data due to poor survey conditions.

Year and Date	Katete West	Katete	Craig	Verrett	Bronson Slough	Scud Slough	Porcupine	Christina	Total
1984 10/30	147	313	0	15	42				517
1985 10/25	590	1,217	735	39	0	924	365		3,870
1988 10/28	32	227		175		97	53	0	584
1989 10/29	336	896	992	848	120	707	90	55	4,044
1990 10/30	94	548	810	494		664	430		3,040
1991 10/29	302	878	985	218		221	352		2,956
1992 10/29	295	1,346	949	320		462	316		3,688
1993 10/30						206	324		
1994 11/01-02	28	652	1,026	466		448	1,105		3,725
1995 10/30	211	208	1,419	574		621	719		3,752
Average									
84-95	226	698	865	350	54	483	417	28	2,908
1996	163	232	205	549		630	1,466		3,245

Appendix B. 28. Stikine River sockeye salmon run size, 1979-1996. Catches include test fishery catches.

Year	Inriver Run Size Estimates			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	42,626	111,386
1983	77,260	66,838	71,683	21,120	50,563	5,778	77,462
1984	95,454	59,168	76,211	5,327	70,884	7,781	83,992
1985	237,261	138,498	184,747	26,804	157,943	29,747	214,494
1986			69,036	17,846	51,190	6,420	75,456
1987			39,264	11,283	27,981	4,085	43,350
1988			41,915	16,538	25,377	3,181	45,096
1989			75,054	21,639	53,415	15,492	90,546
1990			57,386	19,964	37,422	9,856	67,242
1991			120,152	25,138	95,014	34,199	154,351
1992			154,542	29,242	125,300	77,394	231,936
1993			176,100	52,698	123,402	104,630	280,730
1994			127,527	53,380	74,147	80,509	208,036
1995			142,308	66,777	75,531	76,420	218,728
79-95 average			96,862	26,457	70,406	32,774	129,637
86-95 average			100,329	31,451	68,878	41,219	141,547
1996			183,909	88,764	95,145	188,385	372,294
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	20,631	63,124
1983			32,684	11,428	21,256	5,066	37,750
1984			37,571	4,794	32,777	3,050	40,621
1985			86,008	18,682	67,326	25,197	111,205
1986			31,015	10,735	20,280	2,757	33,771
1987			11,923	4,965	6,958	2,259	14,182
1988			7,222	4,686	2,536	2,129	9,351
1989			14,110	5,794	8,316	1,561	15,671
1990			23,923	8,996	14,927	2,307	26,230
1991			67,394	17,259	50,135	23,511	90,905
1992			76,681	16,774	59,907	28,218	104,899
1993			84,068	32,458	51,610	40,036	124,104
1994			77,239	37,728	39,511	65,101	142,340
1995			82,290	50,713	31,577	51,665	133,955
Averages							
79-95			45,717	15,871	29,847	18,000	63,717
86-95			47,586	19,011	28,576	21,954	69,541
1996			95,424	55,879	39,545	147,435	242,859
Tuya							
1995			2,216	1,112	1,104	586	2,802
1996			19,399	9,003	10,396	19,442	38,841
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	21,995	48,262
1983			38,999	9,692	29,307	712	39,711
1984			38,640	533	38,107	4,731	43,370
1985			98,739	8,122	90,617	4,550	103,289
1986			38,022	7,111	30,910	3,663	41,685
1987			27,342	6,318	21,023	1,826	29,168
1988			34,693	11,852	22,841	1,052	35,745
1989			60,944	15,845	45,099	13,931	74,875
1990			33,464	10,968	22,495	7,549	41,013
1991			52,758	7,879	44,879	10,687	63,446
1992			77,861	12,468	65,393	49,176	127,037
1993			92,033	20,240	71,792	64,594	156,627
1994			50,288	15,652	34,636	15,408	65,696
1995			57,802	14,953	42,850	24,169	81,971
79-95 average			51,015	10,521	40,494	14,740	65,755
86-95 average			52,521	12,329	40,192	19,206	71,726
1996			69,085	23,882	45,203	21,508	90,593

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

^b Escapement includes fish later captured for broodstock.

APPENDIX C

Appendix C. 1. Weekly salmon catch and effort in the Alaskan District 111 and Subdistrict 111-32 (Taku Inlet), commercial drift gillnet fishery, 1996.

Week	Start Date	Chinook	Sockeye	Catch				Effort		
				Coho	Pink	Chum	Steelhead	Boats	Days Open	Boat Days
District 111 catches										
25	16-Jun	766	3,371	26	3	5,409	0	59	3.0	177
26	23-Jun	1,058	9,110	85	33	34,056	10	73	3.0	219
27	30-Jun	363	19,711	161	582	82,099	1	83	4.0	332
28	7-Jul	212	30,127	206	1,297	63,468	1	88	4.0	352
29	14-Jul	116	51,914	403	3,143	54,609	7	86	4.0	344
30	21-Jul	60	43,426	1,074	4,023	72,716	0	106	4.0	424
31	28-Jul	43	20,368	790	1,734	28,238	2	92	4.0	368
32	4-Aug	16	10,868	2,027	789	5,146	11	52	4.0	208
33	11-Aug	4	6,925	4,085	442	1,871	26	60	4.0	240
34	18-Aug	2	1,475	4,186	514	1,337	40	43	3.0	129
35	25-Aug	3	1,197	6,640	92	1,309	29	48	3.0	144
36	1-Sep	12	333	7,860	3	2,215	37	59	3.0	177
37	8-Sep	3	162	4,761	5	1,390	24	47	2.0	94
38	15-Sep	1	27	1,329	0	204	52	21	1.0	21
Total		2,659	199,014	33,633	12,660	354,067	240		46.0	3,229
Alaskan hatchery contribution for Chinook, sockeye, and coho: ^a										
25	16-Jun	161	0	0						
26	23-Jun	223	0	10						
27	30-Jun	82	255	0						
28	7-Jul	33	0	0						
29	14-Jul	4	726	0						
30	21-Jul	0	201	0						
31	28-Jul	9	1,394	36						
32	4-Aug	7	167	131						
33	11-Aug	0	48	606						
34	18-Aug	0	26	1,089						
35	25-Aug	0	21	1,270						
36	1-Sep	14	6	2,921						
37	8-Sep	0	3	1,579						
38	15-Sep	0	0	0						
Total		533	2,848	7,642						
Catches not including Alaskan hatchery contribution:										
25	16-Jun	605	3,371	26						
26	23-Jun	835	9,110	75						
27	30-Jun	281	19,456	161						
28	7-Jul	179	30,127	206						
29	14-Jul	112	51,188	403						
30	21-Jul	60	43,225	1,074						
31	28-Jul	34	18,974	754						
32	4-Aug	9	10,701	1,896						
33	11-Aug	4	6,877	3,479						
34	18-Aug	2	1,449	3,097						
35	25-Aug	3	1,176	5,370						
36	1-Sep	-2	327	4,939						
37	8-Sep	3	159	3,182						
38	15-Sep	1	27	1,329						
Total		2,126	196,166	25,991						
Subdistrict 111-32 Catches (Taku Inlet)										
25	16-Jun	694	2,898	23	3	4,246	0	49	3.0	147
26	23-Jun	952	8,036	64	21	29,781	10	71	3.0	213
27	30-Jun	307	15,008	119	379	52,435	1	76	4.0	304
28	7-Jul	207	28,588	200	1,264	55,970	1	85	3.0	255
29	14-Jul	115	51,687	397	3,031	52,474	7	86	4.0	344
30	21-Jul	60	42,756	1,066	4,014	68,220	0	104	3.0	312
31	28-Jul	38	19,388	754	1,627	25,410	2	91	2.0	182
32	4-Aug	16	10,754	1,976	789	5,039	11	52	3.0	156
33	11-Aug	4	6,496	3,733	419	1,315	22	58	4.0	232
34	18-Aug	2	1,342	3,954	491	1,140	40	42	3.0	126
35	25-Aug	3	965	6,327	77	864	29	47	3.0	141
36	1-Sep	10	313	7,298	3	1,725	37	54	3.0	162
37	8-Sep	3	154	4,671	5	1,337	24	45	2.0	90
38	15-Sep	1	27	1,246	0	179	52	21	1.0	21
Total		2,412	188,412	31,828	12,123	300,135	236		41.0	2,685

^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, 1996. Stock composition based on 1983-1995 averages.

Week	Kuthai	Little Trapper		Mainstem	Tatsamenie		Total Taku	Crescent	Speel	Total Wild Snett.	U.S. Planted
		Wild	Planted		Wild	Planted					
25	0.654	0.218	0.000	0.073	0.050	0.004	1.000	0.000	0.000	0.000	0.000
26	0.368	0.264	0.014	0.214	0.138	0.001	0.998	0.002	0.000	0.002	0.000
27	0.149	0.313	0.019	0.348	0.048	0.024	0.901	0.008	0.079	0.086	0.013
28	0.090	0.180	0.017	0.459	0.226	0.002	0.974	0.010	0.016	0.026	0.000
29	0.030	0.119	0.014	0.548	0.202	0.025	0.938	0.025	0.023	0.048	0.014
30	0.021	0.032	0.004	0.602	0.314	0.013	0.987	0.006	0.002	0.008	0.005
31	0.001	0.013	0.000	0.486	0.346	0.006	0.852	0.019	0.060	0.079	0.068
32	0.000	0.030	0.000	0.602	0.287	0.012	0.931	0.011	0.043	0.053	0.015
33	0.000	0.050	0.000	0.573	0.229	0.024	0.876	0.000	0.117	0.117	0.007
34	0.000	0.032	0.000	0.419	0.339	0.000	0.790	0.005	0.187	0.192	0.018
35	0.000	0.032	0.000	0.419	0.339	0.000	0.790	0.005	0.187	0.192	0.018
36	0.000	0.032	0.000	0.419	0.339	0.000	0.790	0.005	0.187	0.192	0.018
37	0.000	0.032	0.000	0.419	0.339	0.000	0.790	0.005	0.187	0.192	0.018
38	0.000	0.032	0.000	0.419	0.339	0.000	0.790	0.005	0.187	0.192	0.018
Total	0.069	0.117	0.010	0.499	0.232	0.014	0.941	0.013	0.032	0.045	0.014

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, 1996. Stock composition estimates are historical (1983-1994) averages, except for planted which are based on marked fish expansions.

Week	Kuthai	Little Trapper		Mainstem	Tatsamenie		Total Taku	Crescent	Speel	Total Wild Snett.	U.S. Planted
		Wild	Planted		Wild	Planted					
25	2,205	736	0	247	169	14	3,371	0	0	0	0
26	3,350	2,401	130	1,947	1,254	8	9,090	20	0	20	0
27	2,928	6,177	366	6,862	943	477	17,753	153	1,550	1,703	255
28	2,725	5,425	507	13,839	6,802	57	29,355	300	472	772	0
29	1,578	6,160	726	28,444	10,497	1,306	48,711	1,291	1,186	2,477	726
30	926	1,368	191	26,136	13,654	583	42,858	262	105	367	201
31	30	262	0	9,902	7,039	124	17,357	387	1,230	1,617	1,394
32	0	331	0	6,545	3,120	125	10,121	115	465	580	167
33	0	345	0	3,971	1,587	165	6,068	0	809	809	48
34	0	47	0	618	500	0	1,165	7	276	284	26
35	0	38	0	501	406	0	946	6	224	230	21
36	0	11	0	139	113	0	263	2	62	64	6
37	0	5	0	68	55	0	128	1	30	31	3
38	0	1	0	11	9	0	21	0	5	5	0
Total	13,742	23,307	1,920	99,231	46,148	2,859	187,207	2,544	6,415	8,959	2,848

Appendix C. 4. Weekly salmon and steelhead trout catch and effort in the Canadian commercial fishery in the Taku River, 1996.

Week	Start Date	Catch							Effort		
		Chinook		Sockeye	Coho	Pink	Chum	Steelhead	Average Permits	Days Fished	Permit Days
		Jacks	Large								
25	16-Jun	54	1,176	1,125	0	0	0	0	10.00	2.00	20.00
26	23-Jun	32	755	2,135	3	0	0	0	11.25	4.00	45.00
27	30-Jun	36	701	1,555	11	0	0	0	10.00	3.00	30.00
28	7-Jul	20	500	3,527	114	0	0	0	11.50	4.00	46.00
29	14-Jul	2	152	4,472	209	0	0	0	11.25	4.00	45.00
30	21-Jul	0	44	8,284	257	0	0	0	11.75	4.00	47.00
31	28-Jul	0	3	9,045	363	0	0	2	11.33	3.00	34.00
32	4-Aug	0	0	8,360	923	0	0	2	11.00	4.00	44.00
33	11-Aug	0	0	1,721	793	0	0	5	7.67	3.00	23.00
34	18-Aug	0	0	701	723	0	0	0	5.50	2.00	11.00
35	25-Aug	0	0	381	861	0	0	6	4.25	4.00	17.00
36	1-Sep	0	0	79	394	0	0	33	3.00	4.00	12.00
37	8-Sep	0	0	201	155	0	0	39	2.00	3.00	6.00
38	15-Sep	0	0	34	70	0	0	0	1.00	7.00	7.00
39	22-Sep	0	0	44	83	0	0	3	2.00	7.00	14.00
40	29-Sep	0	0	1	69	0	0	8	2.00	7.00	14.00
Total		144	3,331	41,665	5,028	0	0	98		65.00	415.00

Appendix C. 5. Weekly stock proportions of sockeye salmon harvested in the Canadian commercial fishery in the Taku River, 1996.

Week	Start Date	Little Trapper				Tatsamenie	
		Kuthai	Wild	Planted ^a	Mainstem	Wild	Planted ^a
25	16-Jun	0.858	0.043	0.000	0.000	0.100	0.000
26	23-Jun	0.541	0.353	0.000	0.103	0.003	0.000
27	30-Jun	0.466	0.189	0.020	0.284	0.022	0.019
28	7-Jul	0.194	0.418	0.014	0.187	0.186	0.000
29	14-Jul	0.074	0.246	0.013	0.417	0.237	0.014
30	21-Jul	0.060	0.195	0.004	0.577	0.156	0.009
31	28-Jul	0.000	0.211	0.008	0.473	0.293	0.016
32	4-Aug	0.000	0.182	0.006	0.514	0.292	0.006
33	11-Aug	0.000	0.151	0.015	0.596	0.225	0.013
34	18-Aug	0.000	0.151	0.015	0.596	0.225	0.013
35	25-Aug	0.000	0.151	0.015	0.596	0.225	0.013
36	1-Sep	0.000	0.151	0.015	0.596	0.225	0.013
37	8-Sep	0.000	0.151	0.015	0.596	0.225	0.013
38	15-Sep	0.000	0.151	0.015	0.596	0.225	0.013
39	22-Sep	0.000	0.151	0.015	0.596	0.225	0.013
40	29-Sep	0.000	0.151	0.015	0.596	0.225	0.013
Total		0.105	0.221	0.008	0.442	0.215	0.010

^a Proportion estimated from the ratio in the US District 111 catch.

Appendix C. 6. Weekly stock-specific catch of sockeye salmon in the Canadian commercial fishery in the Taku River, 1996.

Week	Start Date	Kuthai	Little Trapper			Tatsamenie	
			Wild	Planted	Mainstem	Wild	Planted
25	16-Jun	965	48	0	0	112	0
26	23-Jun	1,155	754	0	220	6	0
27	30-Jun	724	294	31	442	34	30
28	7-Jul	686	1,473	50	661	657	0
29	14-Jul	331	1,098	60	1,863	1,058	62
30	21-Jul	496	1,615	29	4,778	1,291	75
31	28-Jul	0	1,910	68	4,275	2,646	146
32	4-Aug	0	1,525	46	4,298	2,445	46
33	11-Aug	0	260	26	1,026	386	23
34	18-Aug	0	106	10	418	157	9
35	25-Aug	0	58	6	227	86	5
36	1-Sep	0	12	1	47	18	1
37	8-Sep	0	30	3	120	45	3
38	15-Sep	0	5	1	20	8	0
39	22-Sep	0	7	1	26	10	1
40	29-Sep	0	0	0	1	0	0
Total		4,357	9,195	331	18,422	8,959	401

Appendix C. 7. Mark-recapture estimate of above border run of sockeye and coho salmon in the Taku River, 1996. The early season sockeye salmon expansion is based on the proportion of fish wheel sockeye salmon catch that occurs before the fishery opens and the late season expansion for coho salmon is based on the proportion of the CPUE of above border coho salmon stocks in the District 111-32 fishery that occurs after the tagging is stopped.

Recovery Week	Start Date	Above Border Run	Canadian Harvests			Above Border Escapement	
			Commercial	Test	Aboriginal ^a		
Sockeye Early season expansion							
25	16-Jun	2,329					
26-27	23-Jun	9,473	1,125	0		8,348	
28-29	7-Jul	14,714	3,690	0		11,024	
30-31	21-Jul	20,753	7,999	0		12,754	
32-33	21-Jul	35,726	17,329	0		18,397	
32-33	4-Aug	43,163	10,081	0		33,082	
34-40	18-Aug	8,493	1,441	0		7,052	
M-R Estimate							
95% C.I.		129,182					
Total Estimate	131,456	142,586	134,651	41,665	0	360	92,626
Coho							
27-29	30-Jun	1,362		337		1,025	
30-31	21-Jul	3,684		620		3,064	
32-33	4-Aug	11,553		1,716		9,837	
34-35	18-Aug	14,450		1,584		12,866	
36-39	1-Sep	13,123		771		12,352	
Late season expansion							
M-R Estimate							
95% C.I.		37,812					
Total Estimate	42,533	56,841	49,687	5,028	0	24	44,635

^a Aboriginal catch by week is not available.

^b Estimate based on proportion of fish wheel sockeye catch before the fishery opened.

^c Confidence interval for recovery period, weeks 25 to 40, was applied to the expanded run estimate.

^d The coho estimate covered approximately 88.9% of the run (based on District 111-32 gillnet CPUE excluding hatchery contribution).

Appendix C. 8. Daily counts of adult salmon passing through Tatsamenie weir, 1996.

Date	Sockeye			Coho ^a		
	Count	Cumulative Count	Percent	Count	Cumulative Count	Percent
16-Aug	-----Weir Operational-----					
17-Aug	41	41	0.4	0	0	0.0
18-Aug	260	301	3.2	0	0	0.0
19-Aug	297	598	6.4	0	0	0.0
20-Aug	365	963	10.3	0	0	0.0
21-Aug	452	1,415	15.1	0	0	0.0
22-Aug	423	1,838	19.6	0	0	0.0
23-Aug	410	2,248	24.0	0	0	0.0
24-Aug	416	2,664	28.4	0	0	0.0
25-Aug	691	3,355	35.8	0	0	0.0
26-Aug	525	3,880	41.4	0	0	0.0
27-Aug	293	4,173	44.5	0	0	0.0
28-Aug	178	4,351	46.4	0	0	0.0
29-Aug	299	4,650	49.6	0	0	0.0
30-Aug	329	4,979	53.1	0	0	0.0
31-Aug	102	5,081	54.2	0	0	0.0
1-Sep	253	5,334	56.9	0	0	0.0
2-Sep	290	5,624	60.0	0	0	0.0
3-Sep	88	5,712	60.9	0	0	0.0
4-Sep	137	5,849	62.3	0	0	0.0
5-Sep	158	6,007	64.0	0	0	0.0
6-Sep	99	6,106	65.1	0	0	0.0
7-Sep	110	6,216	66.3	0	0	0.0
8-Sep	342	6,558	69.9	0	0	0.0
9-Sep	225	6,783	72.3	0	0	0.0
10-Sep	24	6,807	72.6	0	0	0.0
11-Sep	279	7,086	75.5	0	0	0.0
12-Sep	169	7,255	77.3	0	0	0.0
13-Sep	169	7,424	79.1	0	0	0.0
14-Sep	60	7,484	79.8	0	0	0.0
15-Sep	0	7,484	79.8	0	0	0.0
16-Sep	115	7,599	81.0	0	0	0.0
17-Sep	129	7,728	82.4	0	0	0.0
18-Sep	4	7,732	82.4	0	0	0.0
19-Sep	54	7,786	83.0	0	0	0.0
20-Sep	119	7,905	84.3	0	0	0.0
21-Sep	0	7,905	84.3	0	0	0.0
22-Sep	229	8,134	86.7	0	0	0.0
23-Sep	232	8,366	89.2	0	0	0.0
24-Sep	44	8,410	89.6	0	0	0.0
25-Sep	69	8,479	90.4	0	0	0.0
26-Sep	298	8,777	93.6	3	3	14.3
27-Sep	0	8,777	93.6	0	3	14.3
28-Sep	119	8,896	94.8	0	3	14.3
29-Sep	30	8,926	95.1	0	3	14.3
30-Sep	13	8,939	95.3	0	3	14.3
1-Oct	0	8,939	95.3	0	3	14.3
2-Oct	63	9,002	96.0	2	5	23.8
3-Oct	95	9,097	97.0	8	13	61.9
4-Oct	14	9,111	97.1	1	14	66.7
5-Oct	13	9,124	97.3	1	15	71.4
6-Oct	7	9,131	97.3	2	17	81.0
7-Oct	80	9,211	98.2	4	21	100.0
8-Oct	1	9,212	98.2	0	21	100.0
9-Oct b	169	9,381	100.0	0	21	100.0
Counts	9,381			21		
Early Fish ^c		1,000				
Broodstock ^d		-2,355				
Spawners		8,026				

^a Operation of weir did not cover entire run.

^b Includes downstream count when weir was removed.

^c An estimated 1,000 sockeye entered the lake before the weir was installed.

^d Broodstock included 1,243 females and 1,050 males spawned and 14 female and 48 male mortalities.

Appendix C. 9. Daily counts of adult sockeye salmon passing through Little Trapper Lake weir, 1996.

Date	Count	Cumulative	
		Count	Percent
19-Jul	----		
20-Jul	0	0	0.00
21-Jul	0	0	0.00
22-Jul	0	0	0.00
23-Jul	0	0	0.00
24-Jul	8	8	0.15
25-Jul	32	40	0.73
26-Jul	119	159	2.90
27-Jul	198	357	6.51
28-Jul	270	627	11.44
29-Jul	172	799	14.57
30-Jul	296	1,095	19.97
31-Jul	231	1,326	24.18
1-Aug	266	1,592	29.04
2-Aug	235	1,827	33.32
3-Aug	135	1,962	35.78
4-Aug	166	2,128	38.81
5-Aug	197	2,325	42.40
6-Aug	240	2,565	46.78
7-Aug	108	2,673	48.75
8-Aug	143	2,816	51.36
9-Aug	47	2,863	52.22
10-Aug	168	3,031	55.28
11-Aug	200	3,231	58.93
12-Aug	294	3,525	64.29
13-Aug	296	3,821	69.69
14-Aug	303	4,124	75.21
15-Aug	258	4,382	79.92
16-Aug	137	4,519	82.42
17-Aug	174	4,693	85.59
18-Aug	188	4,881	89.02
19-Aug	31	4,912	89.59
20-Aug	103	5,015	91.46
21-Aug	50	5,065	92.38
22-Aug	29	5,094	92.91
23-Aug	46	5,140	93.74
24-Aug	54	5,194	94.73
25-Aug	62	5,256	95.86
26-Aug	25	5,281	96.32
27-Aug	10	5,291	96.50
28-Aug	35	5,326	97.14
29-Aug	39	5,365	97.85
30-Aug	45	5,410	98.67
31-Aug	26	5,436	99.14
1-Sep	28	5,464	99.65
2-Sep	10	5,474	99.84
3-Sep	0	5,474	99.84
4-Sep	0	5,474	99.84
5-Sep	0	5,474	99.84
6-Sep	5	5,479	99.93
7-Sep	3	5,482	99.98
8-Sep	1	5,483	100.00
9-Sep	0	5,483	100.00
10-Sep	0	5,483	100.00
Count	0	5,483	
Spawners		5,483	

Appendix C. 10. Daily counts of adult salmon passing through the Nahlin River weir, 1996. Chinook salmon counts represent an unknown portion of the escapement because the weir was not operated throughout the entire run.

Date	Jack Chinook Count	Count	Chinook Cum.	Percent	Count	Sockeye Cum.	Percent
23-Jun		6	6				
24-Jun		13	19	0.24		0	0.00
25-Jun		18	37	0.47		0	0.00
26-Jun		27	64	0.81	3	3	0.12
27-Jun		40	104	1.32	22	25	0.99
28-Jun		37	141	1.79	36	61	2.40
29-Jun		54	195	2.48	79	140	5.52
30-Jun		19	214	2.72	59	199	7.84
1-Jul		24	238	3.03	86	285	11.23
2-Jul		90	328	4.17	121	406	16.00
3-Jul		116	444	5.65	92	498	19.62
4-Jul		92	536	6.82	44	542	21.36
5-Jul		150	686	8.73	60	602	23.72
6-Jul		157	843	10.72	47	649	25.57
7-Jul		141	984	12.52	31	680	26.79
8-Jul		140	1,124	14.30	20	700	27.58
9-Jul		3,324	4,448	56.58	109	809	31.88
10-Jul		77	4,525	57.56	49	858	33.81
11-Jul		30	4,555	57.94	44	902	35.54
12-Jul		38	4,593	58.42	38	940	37.04
13-Jul		45	4,638	58.99	106	1,046	41.21
14-Jul		63	4,701	59.79	97	1,143	45.04
15-Jul		47	4,748	60.39	71	1,214	47.83
16-Jul		27	4,775	60.74	137	1,351	53.23
17-Jul		23	4,798	61.03	128	1,479	58.27
18-Jul		33	4,831	61.45	95	1,574	62.02
19-Jul		38	4,869	61.93	76	1,650	65.01
20-Jul		55	4,924	62.63	84	1,734	68.32
21-Jul		26	4,950	62.96	81	1,815	71.51
22-Jul		1,131	6,081	77.35	310	2,125	83.73
23-Jul		797	6,878	87.48	199	2,324	91.57
24-Jul		50	6,928	88.12	42	2,366	93.22
25-Jul		34	6,962	88.55	20	2,386	94.01
26-Jul		701	7,663	97.47	69	2,455	96.73
27-Jul		3	7,666	97.51	0	2,455	96.73
28-Jul		6	7,672	97.58	5	2,460	96.93
29-Jul		2	7,674	97.61	4	2,464	97.08
30-Jul		13	7,687	97.77	5	2,469	97.28
31-Jul		8	7,695	97.88	7	2,476	97.56
1-Aug		11	7,706	98.02	12	2,488	98.03
2-Aug		0	7,706	98.02	0	2,488	98.03
3-Aug		12	7,718	98.17	7	2,495	98.31
4-Aug		13	7,731	98.33	1	2,496	98.35
5-Aug		15	7,746	98.52	8	2,504	98.66
6-Aug		28	7,774	98.88	16	2,520	99.29
7-Aug		36	7,810	99.34	11	2,531	99.72
8-Aug		13	7,823	99.50	0	2,531	99.72
9-Aug		12	7,835	99.66	5	2,536	99.92
10-Aug		8	7,843	99.76	0	2,536	99.92
11-Aug		6	7,849	99.83	1	2,537	99.96
12-Aug		5	7,854	99.90	0	2,537	99.96
13-Aug		8	7,862	100.00	1	2,538	100.00
14-Aug	-----Weir Dismantled						
Counts	0	7,862			2,538		

Appendix C. 11. Daily counts of adult sockeye salmon passing through the Kuthai Lake weir, 1996.

Date	Count	Cum.	Percent
16-Jul			
	--- Weir installed ---		
17-Jul	7	7	0.16
18-Jul	260	267	6.29
19-Jul	220	487	11.48
20-Jul	228	715	16.85
21-Jul	245	960	22.63
22-Jul	644	1,604	37.80
23-Jul	194	1,798	42.38
24-Jul	264	2,062	48.60
25-Jul	187	2,249	53.00
26-Jul	152	2,401	56.59
27-Jul	157	2,558	60.29
28-Jul	95	2,653	62.53
29-Jul	262	2,915	68.70
30-Jul	267	3,182	74.99
31-Jul	142	3,324	78.34
1-Aug	152	3,476	81.92
2-Aug	73	3,549	83.64
3-Aug	77	3,626	85.46
4-Aug	98	3,724	87.77
5-Aug	67	3,791	89.35
6-Aug	77	3,868	91.16
7-Aug	41	3,909	92.13
8-Aug	45	3,954	93.19
9-Aug	48	4,002	94.32
10-Aug	88	4,090	96.39
11-Aug	30	4,120	97.10
12-Aug	10	4,130	97.34
13-Aug	15	4,145	97.69
14-Aug	4	4,149	97.78
15-Aug	8	4,157	97.97
16-Aug	21	4,178	98.47
17-Aug	0	4,178	98.47
18-Aug	9	4,187	98.68
19-Aug	2	4,189	98.73
20-Aug	20	4,209	99.20
21-Aug	4	4,213	99.29
22-Aug	0	4,213	99.29
23-Aug	6	4,219	99.43
24-Aug	0	4,219	99.43
25-Aug	0	4,219	99.43
26-Aug	4	4,223	99.53
27-Aug	0	4,223	99.53
28-Aug	7	4,230	99.69
29-Aug	0	4,230	99.69
30-Aug	13	4,243	100.00
Total	4,243		

APPENDIX D

Appendix D.1. Salmon catches and effort in the Alaskan District 111 and Subdistrict 111-32 (Taku Inlet) commercial drift gillnet fishery, 1960-1996. Days open are for the entire district and include openings to harvest spawner Chinook salmon, 1960-1975.

Year	Catch						Effort		
	Chinook	Sockeye	Coho	Pink	S. Chum ^a	F. Chum ^a	Steelhead	Boat Days	Days Open
District 111 Catches									
1960	8,810	42,819	22,374	33,155	8,754	33,098			60.00
1961	7,434	45,981	15,486	41,455	8,578	15,855			62.00
1962	5,931	36,745	15,661	17,280	7,453	13,182			52.00
1963	2,652	24,119	10,855	21,392	12,335	7,779			54.00
1964	2,509	34,140	29,315	26,593	4,970	7,883			56.00
1965	4,170	27,569	32,667	2,768	3,842	7,691			63.00
1966	4,829	33,925	26,065	23,833	5,015	30,118			64.00
1967	5,417	17,735	40,391	12,372	2,183	20,651			53.00
1968	4,904	19,501	39,103	67,365	5,747	16,143			60.00
1969	6,986	41,169	10,802	73,927	4,851	10,198	369	1,461	41.50
1970	3,357	50,922	44,960	197,017	19,593	90,797	1,055	2,688	53.00
1971	6,958	66,181	41,830	31,484	31,813	59,332	631	2,914	55.00
1972	10,955	80,404	49,780	144,339	67,126	80,831	574	3,100	51.00
1973	9,799	85,317	35,453	58,186	33,296	75,949	554	3,316	41.00
1974	2,908	38,670	38,667	57,731	11,263	75,423	465	2,237	29.50
1975	2,182	32,513	1,185	9,567	2,091	587	89	1,089	15.50
1976	1,757	61,749	41,729	14,962	6,027	75,776	499	1,939	25.00
1977	1,068	70,097	54,917	88,578	8,995	52,107	359	2,284	27.00
1978	1,926	55,398	31,944	51,385	9,076	27,178	397	2,176	26.00
1979	3,701	122,148	16,194	152,836	5,936	55,261	243	2,235	28.83
1980	2,251	123,451	41,677	296,572	33,627	159,020	363	4,080	30.92
1981	1,721	49,942	26,711	254,856	22,546	53,892	262	2,660	30.00
1982	3,057	83,625	29,072	109,297	14,867	22,741	476	2,437	35.50
1983	888	31,821	21,455	66,239	6,160	9,104	183	1,274	33.00
1984	1,773	77,233	33,836	145,971	45,811	40,930	366	2,690	52.50
1985	2,636	88,077	55,597	311,248	58,972	47,748	499	3,102	48.00
1986	2,584	73,061	30,512	16,568	29,909	28,883	529	2,102	32.83
1987	2,076	75,212	35,219	363,439	57,280	64,380	272	2,514	34.75
1988	1,779	38,923	44,881	157,831	80,307	59,271	226	2,146	32.00
1989	1,811	74,019	51,812	180,597	18,022	18,955	215	2,333	41.00
1990	3,480	126,884	67,530	153,036	112,336	33,463	310	3,202	38.33
1991	3,217	109,877	126,436	74,183	147,404	13,771	69	4,103	57.00
1992	2,341	135,411	172,662	314,445	97,725	14,802	166	4,550	50.00
1993	6,748	171,556	65,536	17,081	156,033	10,447	52	3,827	43.00
1994	5,047	105,861	188,501	401,525	198,002	16,169	459	5,082	66.00
1995	4,660	103,377	83,626	41,269	339,178	10,920	128	4,034	49.00
60-95 average	4,009	68,206	46,512	111,955	46,587	37,787	363	2,799	44.20
86-95 average	3,374	101,418	86,672	171,997	123,620	27,106	243	3,389	44.39
1996	2,659	199,014	33,633	12,660	347,612	6,455	240	3,229	46.00

-continued-

Appendix D.1. (Page 2 of 2).

Year	Catch							Effort	
	Chinook	Sockeye	Coho	Pink	S. Chum ^a	F. Chum ^a	Steelhead	Boat Days	Days Open
Subdistrict 111-32 Catches (Taku Inlet)									
1960	8,763	26,641	20,282	26,777	4,566	28,720		1,680	60.00
1961	7,269	30,805	14,618	34,615	6,863	14,876		2,901	62.00
1962	5,719	25,969	13,699	10,006	5,418	11,812		1,568	52.00
1963	2,547	16,079	9,406	18,102	8,085	7,071		1,519	51.00
1964	2,482	28,873	28,603	22,177	3,919	7,822		1,491	56.00
1965	4,146	23,828	32,382	2,641	3,604	7,691		1,332	60.00
1966	4,817	28,301	24,153	22,490	4,350	27,327		1,535	58.00
1967	5,351	14,537	39,983	11,619	1,569	20,463		1,663	50.00
1968	4,862	16,952	37,570	55,527	4,646	15,597		2,420	60.00
1969	6,874	38,260	10,131	66,991	4,233	9,926	366	1,413	42.00
1970	3,073	41,476	37,587	143,886	14,208	76,795	996	2,425	53.00
1971	6,753	62,459	38,571	30,765	31,110	54,696	627	2,849	55.00
1972	9,633	62,877	38,568	78,673	45,955	60,097	544	2,797	51.00
1973	9,525	80,063	29,770	55,234	30,817	61,025	513	3,135	41.00
1974	2,280	26,256	27,670	32,684	6,469	51,063	378	1,741	30.00
1975	1,998	28,201	429	8,084	1,639	31	77	986	15.00
1976	1,693	51,674	31,641	11,868	3,766	42,674	450	1,582	23.00
1977	754	47,512	48,403	67,072	5,436	43,595	318	1,879	27.00
1978	1,642	43,795	21,620	41,624	7,142	18,101	314	1,738	24.00
1979	3,016	103,043	12,741	114,324	4,317	46,142	225	2,011	29.00
1980	1,986	108,577	35,814	241,085	25,779	131,126	337	3,634	31.00
1981	1,325	39,963	20,936	98,524	10,407	40,212	233	1,740	22.00
1982	2,841	75,012	24,761	77,942	11,558	18,363	447	2,130	36.00
1983	689	25,957	17,665	40,996	3,171	7,813	172	1,065	31.00
1984	1,414	59,229	25,951	83,028	28,214	27,967	315	2,120	39.00
1985	2,152	70,160	45,106	176,710	35,897	40,530	436	2,116	37.00
1986	1,877	60,106	26,474	9,772	14,646	24,790	485	1,413	30.00
1987	1,534	54,436	23,342	200,203	31,992	28,891	197	1,517	30.00
1988	949	23,752	33,159	41,625	25,969	27,010	174	1,213	29.00
1989	1,606	68,104	44,034	141,385	15,254	15,491	183	1,909	36.00
1990	2,432	110,006	60,078	101,168	88,350	29,099	286	2,879	38.00
1991	2,614	96,006	118,902	44,347	97,577	12,279	63	3,324	52.00
1992	1,672	103,238	152,598	180,340	57,153	11,649	135	3,407	43.00
1993	4,413	144,982	58,062	8,801	101,356	7,760	46	3,372	43.00
1994	3,051	88,625	156,314	198,507	129,350	12,280	422	3,960	60.00
1995	3,497	81,266	70,826	18,469	192,557	8,786	119	3,061	45.00
60-95 average	3,535	55,751	39,774	69,946	29,648	29,155	328	2,153	41.69
86-95 average	2,365	83,052	74,379	94,462	75,420	17,804	211	2,606	40.60
1996	2,412	188,412	31,828	12,123	294,890	5,245	236	2,685	41.00

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

Appendix D. 2. Stock proportions and catches of sockeye salmon in the Alaska District 111 commercial drift gillnet fishery, 1983-1996. Data based on analysis of scale patterns, otolith marks, and incidence of brain parasites.

Week	Kuthai	Little Trapper		Mainstem	Tatsamenie		Total Taku	Crescent	Speel	Total Wild Snett.	U.S. Planted
		Wild	Planted		Wild	Planted					
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	0.616			0.156		0.848	0.051	0.100	0.152	
1990	0.036	0.197		0.336	0.286		0.855	0.112	0.033	0.145	
1991	0.039	0.297		0.373	0.232		0.941	0.059	0.000	0.059	
1992	0.048	0.220		0.445	0.191		0.904	0.036	0.060	0.096	
1993	0.062	0.328		0.308	0.123		0.822	0.069	0.109	0.178	
1994	0.110	0.356		0.361	0.091		0.917	0.036	0.022	0.058	0.025
1995	0.046	0.214	0.010	0.428	0.153	0.029	0.880	0.018	0.075	0.093	0.026
Averages ^b	0.067	0.252	0.010	0.499	0.232	0.014	0.941	0.013	0.032	0.045	0.014
1996	0.069	0.117	0.010	0.499	0.232	0.014	0.941	0.013	0.032	0.045	0.014
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	45,573			11,536		62,805	3,789	7,425	11,214	
1990	4,539	24,952		42,676	36,332		108,499	14,242	4,143	18,385	
1991	4,295	32,685		40,957	25,475		103,412	6,465	0	6,465	
1992	6,543	29,818		60,224	25,853		122,438	4,912	8,060	12,972	
1993	10,673	56,350		52,876	21,139		141,038	11,877	18,641	30,518	
1994	11,638	37,644		38,179	9,585		97,046	3,859	2,319	6,178	2,637
1995	4,788	22,109	1,017	44,278	15,767	3,049	91,008	1,901	7,741	9,642	2,727
Averages ^b	6,384	27,416	1,017	37,938	17,177	3,049	78,730	8,005	6,494	14,035	2,682
1996	13,742	23,307	1,920	99,231	46,148	2,859	187,207	2,544	6,415	8,959	2,848

^a The Trapper and Mainstem groups were combined in the 1989 analysis.

^b Averages for individual stocks do not include 1989.

Appendix D. 3. Proportion of wild Taku River sockeye salmon in the Alaskan District 111 commercial drift gillnet catch by week, 1983-1996. Data based on scale patterns and incidence of brain parasites.

Year	Week										Total
	25	26	27	28	29	30	31	32	33	34	
1983		0.996	0.842	0.819	0.663	0.527	0.836	0.534	0.719	0.759	0.755
1984	0.970	0.956	0.843	0.670	0.588	0.712	0.728	0.809	0.726		0.758
1985	0.999	0.986	0.928	0.974	0.868	0.706	0.737	0.826	0.801		0.838
1986	0.938	0.953	0.873	0.880	0.852	0.777	0.851	0.757	0.893	0.739	0.834
1987		0.982	0.901	0.884	0.948	0.414	0.619	0.689	0.841	0.731	0.720
1988		0.964	0.886	0.889	0.510	0.643	0.677	0.528	0.478	0.346	0.663
1989	0.943	0.989	0.979	0.852	0.835	0.641	0.681	0.919	0.676		0.848
1990	0.874	0.935	0.904	0.773	0.782	0.863	0.943	0.939	0.878	0.862	0.855
1991	0.988	0.979	0.953	0.979	0.951	0.933	0.936	0.890	0.885	0.875	0.941
1992		0.978	0.985	0.956	0.916	0.943	0.893	0.858	0.766	0.766	0.904
1993		0.961	0.901	0.837	0.856	0.781	0.790	0.829	0.738	0.706	0.822
1994		1.000	0.981	0.973	0.967	0.870	0.835	0.938	0.804	0.901	0.917
1995	0.942	0.889	0.903	0.858	0.872	0.868	0.761	0.759	0.705	0.740	0.841
83-95	0.951	0.967	0.914	0.873	0.816	0.744	0.791	0.790	0.762	0.742	0.823
86-95	0.937	0.963	0.927	0.888	0.849	0.773	0.799	0.811	0.766	0.741	0.835
1996	1.000	0.998	0.901	0.974	0.938	0.987	0.852	0.931	0.876	0.790	0.941

Appendix D. 4. Salmon catch in the U.S. subsistence and personal use fisheries in the Taku River, 1967-1996. The subsistence fishery was open 1967 to 1976 and 1985 and the personal use fishery was open 1989-1996.

Year	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
67-95 average	16	1,123	90	161	13
86-95 average	41	1,840	155	349	24
1996	87	2,977	163	285	15

Appendix D. 5. Salmon and steelhead trout catch and effort in the Canadian commercial fishery in the Taku River, 1979-1996.

Year	Chinook		Catch					Effort	
	Jack	Large	Sockeye	Coho	Pink	Chum	Steelhead	Boat Days	Days Open
1979		97	13,578	6,006	13,661	15,474	254	599	50
1980		225	22,602	6,405	26,821	18,516	457	476	39
1981		159	10,922	3,607	10,771	5,591	108	243	31
1982		54	3,144	51	202	3	1	38	13
1983	400	156	17,056	8,390	1,874	1,760	213	390	64
1984	221	294	27,242	5,357	6,964	2,492	367	288	30
1985	24	326	14,244	1,770	3,373	136	32	178	16
1986	77	275	14,739	1,783	58	110	48	148	17
1987	106	127	13,554	5,599	6,250	2,270	223	280	26
1988	186	555	12,014	3,123	1,030	733	86	185	15
1989	139	895	18,545	2,876	695	42	24	271	25
1990	128	1,258	21,100	3,207	378	12	22	295	28
1991	432	1,177	25,067	3,415	296	2	5	284	25
1992	147	1,445	29,472	4,077	0	7	15	291	27
1993	171	1,619	33,217	3,033	16	15	11	363	34
1994	235	2,065	28,762	14,531	168	18	232	497	74
1995	298	1,577	32,640	13,629	2	1	205	428	51
79-95 average ^a		875	19,876	5,109	4,268	2,775	135	309	33
86-95 average	192	1,099	22,911	5,527	889	321	87	304	32
1996	144	3,331	41,665	5,028	0	0	98	415	65

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

Appendix D. 6. Sockeye salmon stock proportions and catch by stock in the Canadian commercial fishery on the Taku River, 1986-1996. Data based on scale pattern analysis.

Year	Kuthai	Little Trapper Wild	Planted	Mainstem	Tatsamenie Wild	Planted	Total Wild	Total 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	0.744			0.203		1.000	
1990	0.112	0.388		0.338	0.163		1.000	
1991	0.064	0.308		0.452	0.176		1.000	
1992	0.092	0.240		0.569	0.099		1.000	
1993	0.126	0.392		0.432	0.049		1.000	
1994	0.158	0.482		0.302	0.058		1.000	
1995	0.047	0.427	0.010	0.373	0.112	0.031	0.959	0.041
86-95 averages ^b	0.101	0.361		0.423	0.110			
1996	0.105	0.221	0.008	0.442	0.215	0.010	0.982	0.018
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	13,792			3,763		18,545	
1990	2,355	8,183		7,131	3,431		21,100	
1991	1,601	7,721		11,327	4,418		25,067	
1992	2,699	7,085		16,764	2,924		29,472	
1993	4,192	13,036		14,347	1,641		33,217	
1994	4,544	13,858		8,684	1,676		28,762	
1995	1,528	13,934	331	12,185	3,659	1,003	31,306	1,334
86-95 averages ^b	2,344	8,601	331	9,834	2,469	1,003	22,778	1,334
1996	4,357	9,195	331	18,422	8,959	401	40,933	732

^a The Trapper and Mainstem groups were combined in the 1989 analysis.

^b Averages do not include 1989.

Appendix D. 7. Salmon catches in the Canadian Aboriginal fishery on the Taku River, 1980-1996.

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
80-95 average		34	143	67	0	2	2
86-95 average		38	164	90	0	1	2
1996		63	360	24	0	0	0

Appendix D. 8. Salmon and steelhead trout catch in the Canadian test fishery in the Taku River, 1987-1996.

Year	Chinook	Sockeye	Coho	Pink	Chum	Steelhead
1987		237	807			
1988	72	708	422	52	222	14
1989	31	207	1,011	0	13	26
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.					
87-93 average	25	258	1,084	9	109	34
1996	There was no Canadian test fishery in 1996.					

^a Incomplete harvest data.

Appendix D. 9. Taku River sockeye salmon run size, 1984-1996. Run estimate does not include spawning escapements below the U.S./ Canada border. The early season sockeye salmon expansion is based on the proportion of fish wheel sockeye salmon catch that occurs before the fishery opens.

Year	Above Border M-R		Expansion		Expanded Run Estimate	Canadian Catch	Escape.	U.S. Catch	Total Run
	Run Estimate	Start Date	Method	Factor					
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
84-95 average					128,584	22,854	105,729	84,718	213,301
1996	132,322	9-Jun	1996 FW CPUE	0.017	134,651	42,025	92,626	190,184	324,835

Appendix D. 10. Sockeye salmon escapement estimates of Taku River and Port Snettisham sockeye salmon stocks, 1979-1996. Spawners equals escapement to the weir minus fish collected for brood stock.

Year	Little Trapper		Little Tatsamenie		Hackett Weir	Kuthai L. Weir	Nahlin R. Weir	Crescent		Speel	
	Escape.	Spawners	Escape.	Spawners				Escape.	Spawners	Escape.	Spawners
1980						1,658					
1981						2,299					
1982											
1983 ^b	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 ^b	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 ^b	12,007	12,007	2,794	2,794	910			7,839	7,839	9,319	9,319
1988 ^{cd}	10,637	10,637	2,063	2,063	516		138	1,199	1,199	969	710
1989 ^d	9,606	9,606	3,039	3,039				1,109	775	12,229	10,114
1990 ^d	9,443	7,777	5,736	4,929			2,515	1,262	757	18,064	16,867
1991 ^a	22,942	21,001	8,381	7,585				9,208	8,666	299	299
1992 ^{ac}	14,372	12,732	6,576	5,681		1,457	297	22,674	21,849	9,439	8,136
1993 ^d	17,432	16,685	5,028	4,230		6,312	2,463				
1994	13,438	12,691	4,371	3,578		5,427	960				
1995 ^{ac}	11,524	11,524	8,000	6,607		3,310	3,711			16,208	14,260
83-95 average	13,123	12,604	6,412	5,913	1,185	3,411	1,681	8,008	7,788	9,064	8,401
1996 ^f	5,483	5,483	10,381	8,026		4,243	2,538			20,000	18,610

^a Mark-recapture estimates.

^b Weir count plus spawning ground survey.

^c Weir counts are incomplete.

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

^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.

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

Appendix D. 11. Aerial survey index escapement counts of large (3-ocean and older) Taku River Chinook salmon, 1975-1996.

Year	Kowatua	Tatsatua	Dudidontu	Tseta	Nakina	Nahlin	Total Index Count
1975			15		1,800	274	2,089
1976	341	620	40		3,000	725	4,726
1977	580	573	18		3,850	650	5,671
1978	490	550	0	21	1,620	624	3,305
1979	430	750	9		2,110	857	4,156
1980	450	905	158		4,500	1,531	7,544
1981	560	839	74	258	5,110	2,945	9,786
1982	289	387	130	228	2,533	1,246	4,813
1983	171	236	117	179	968	391	2,062
1984	279	616		176 ^a	1,887	951 ^b	3,909
1985	699	848	475	303	2,647	2,236	7,208
1986	548	886	413	193	3,868	1,612	7,520
1987	570	678	287	180	2,906	1,122	5,743
1988	1,010	1,272	243	66	4,500	1,535	8,626
1989	601	1,228	204	494	5,141	1,812	9,480
1990	614	1,068	820	172	7,917	1,658	12,249
1991	570	1,164	804	224	5,610	1,781	10,153
1992	782	1,624	768	313	5,750	1,821	11,058
1993	1,584	1,491	1,020	491	6,490	2,128	13,204
1994	410	1,106	573	614	4,792	2,418	9,913
1995	550	678	731	786	3,943	2,069	8,757
75-95 average	576	876	345	294	3,854	1,447	7,392
86-95 average	724	1,120	586	353	5,092	1,796	9,670
1996	1,620	2,011	1,810	1,201	7,720	5,415	19,777

^a Partial survey.

^b Extrapolated results.

Appendix D. 12. Taku River (above border) coho salmon run size, 1987-1996.

Year	Commercial	Canadian Catch		Test	Escapement	Above Border	Run
		Food					
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	
87-95 average	5,943	94		843	77,529	84,409	
1996	5,028	24		0	44,635	49,687 ⁱ	

^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 (0.559).

^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.

Appendix D. 13. Escapement counts of Taku River coho salmon, 1984-1996. Counts are for age-.1 fish and do not include jacks. Because of variability between methods, visibility, observers, and timing, these counts are not an index of run strength.

Year	Yehring Creek		Sockeye	Johnson	Fish	Flannigan	Tatsamenie	Hacket	Dudidontu	Upper Nahlin R.	
	Weir	Aerial	Creek	Creek	Creek	Slough	River	River	River	Aerial	
			Aerial	Ar/Foot	Aerial	Aerial	Weir	Weir	Aerial	Aerial	Weir
1984		2,900	275	235	700	1,480					
1985		560	740	150	1,000	2,320	201 ^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 ^e	
1991		475 ^c	399 ^c	120	1,378 ^c	1,348 ^c	1,101		458	176	
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				
84-95 average	1,852	772	397	272	537	1,130	446	1,682	225	322	1,183
1996		35	28	50	250	278	21 ^b				

^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 D. 14. Canyon Island fish wheel salmon counts and periods of operation on the Taku River, 1983-1996.

Year	Period of Operation	Count					Pink	
		Chinook	Sockeye	Coho	Pink	Chum	Even Year	Odd Year
1984	6/15-9/18	138	2,334	889	20,751	316	20,751	
1985	6/16-9/21	184	3,601	1,207	27,670	1,376		27,670
1986	6/14-8/25	571	5,808	758	7,256	80	7,256	
1987	6/15-9/20	285	4,307	2,240	42,786	1,533		42,786
1988	5/11-9/19	1,436	3,292	2,168	3,982	1,089	3,982	
1989	5/05-10/01	1,811	5,650	2,243	31,189	645		31,189
1990	5/03-9/23	1,972	6,091	1,860	13,358	748	13,358	
1991	6/08-10/15	680	5,102	4,922	23,553	1,063		23,553
1992	6/20-9/24	212	6,279	2,103	9,252	189	9,252	
1993	6/12-9/29	562	8,975	2,552	1,625	345		1,625
1994	6/10-9/21	906	6,485	4,792	27,100	367	27,100	
1995	5/4-9/27	1,535	6,228	2,535	1,712	218		1,712
84-95 average		858	5,346	2,356	17,520	664	13,617	21,423
86-95 average		997	5,822	2,617	16,181	628	12,190	20,173
1996	5/3-9/20	1,904	5,919	1,895	21,583	388	21,583	

APPENDIX E

Appendix E. 1. Weekly salmon catch and effort in the U.S. commercial fishery in the Alsek River, 1996.

Week	Start Date	Catch					Effort		
		Chinook	Sockeye	Coho	Pink	Chum	Boats	Days Open	Boat Days
23	2-Jun	144	438	0	0	0	22	0.5	11.0
24	9-Jun	348	1,325	0	0	0	25	1.0	25.0
25	16-Jun	190	2,336	0	0	0	25	2.0	50.0
26	23-Jun	63	1,008	0	0	0	16	3.0	48.0
27	30-Jun	14	1,136	0	0	1	22	2.0	44.0
28	7-Jul	9	1,159	0	0	4	19	3.0	57.0
29	14-Jul	2	933	0	0	0	4	3.0	12.0
30	21-Jul	0	1,860	0	0	1	^a	3.0	^a
31	28-Jul	0	1,279	1	0	0	4	2.0	8.0
32	4-Aug	0	3,123	198	0	8	11	4.0	44.0
33	11-Aug	0	394	566	0	2	10	2.0	20.0
34	18-Aug	1	115	996	0	2	6	3.0	18.0
35	25-Aug	0	15	1,002	0	1	4	3.0	12.0
36	1-Sep	0	39	1,434	0	24	8	4.0	32.0
37	8-Sep	0	15	463	0	22	5	4.0	20.0
38	15-Sep	0	7	809	0	100	6	4.0	24.0
39	22-Sep	0	0	45	0	0	^a	4.0	^a
Total		771	15,182	5,514	0	165		47.5	438

^a Effort is not listed by week, but is included in the season total.

Appendix E. 2. Weekly salmon catch and effort in the Canadian Aboriginal and sport fisheries in the Alsek River, 1996. Total catches do not include released fish.

Week	Date	Chinook				Sockeye				Coho			
		Sport	Release	Aboriginal ^a	Total ^b	Sport	Release	Aboriginal ^a	Total ^b	Sport	Release	Aboriginal ^a	Total ^b
25	16-Jun	14	5	3	17	0	1	0	0	0	0	0	0
26	23-Jun	40	15	31	71	0	7	4	4	0	0	0	0
27	30-Jun	135	74	171	306	0	19	32	32	0	0	0	0
28	7-Jul	207	94	114	321	0	27	5	5	0	0	0	0
29	14-Jul	173	115	90	263	0	18	63	63	0	0	0	0
30	21-Jul	67	22	24	91	0	3	12	12	0	0	0	0
31	28-Jul	7	6	5	12	0	3	39	39	0	0	0	0
32	4-Aug	2	1	2	4	0	1	27	27	0	0	0	0
33	11-Aug	1	2	2	3	6	5	67	73	0	0	0	0
34	18-Aug	3	1	3	6	36	12	121	157	0	0	0	0
35	25-Aug	1		0	1	25	5	325	350	0	0	1	1
36	1-Sep	0		0	0	29	10	204	233	0	0	2	2
37	8-Sep	0		0	0	61	27	70	131	0	0	4	4
38	15-Sep	0		0	0	0	56	205	205	0	0	5	5
39	22-Sep	0		3	3	0	0	5	5	2	6	30	32
40	29-Sep	0		0	0	0	0	25	25	7	35	14	21
41	6-Oct	0		0	0				0				0
42	13-Oct				0				0				0
Total		650	335	448	1,098	157	194	1,204	1,361	9	41	56	65

^a The total food fish catch above the Klukshu Weir was 215 Chinook, 429 sockeye, and 0 coho salmon. Village Creek food fish catch was 43 sockeye and 0 Chinook salmon.

^b Does not include released fish.

Appendix E. 3. Daily counts of salmon passing through Klukshu River weir, 1996.

Date	Chinook ^a			Sockeye			Coho		
	Daily	Cum. Daily	Prop.	Daily	Cum. Daily	Prop.	Daily	Cum. Daily	Prop.
5-Jun	0	0	0.000	0	0	0.000	0	0	0.000
6-Jun	0	0	0.000	0	0	0.000	0	0	0.000
7-Jun	0	0	0.000	0	0	0.000	0	0	0.000
8-Jun	0	0	0.000	0	0	0.000	0	0	0.000
9-Jun	0	0	0.000	0	0	0.000	0	0	0.000
10-Jun	1	1	0.000	0	0	0.000	0	0	0.000
11-Jun	0	1	0.000	0	0	0.000	0	0	0.000
12-Jun	1	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	1	3	0.001	0	0	0.000	0	0	0.000
15-Jun	0	3	0.001	0	0	0.000	0	0	0.000
16-Jun	0	3	0.001	0	0	0.000	0	0	0.000
17-Jun	2	5	0.001	0	0	0.000	0	0	0.000
18-Jun	0	5	0.001	0	0	0.000	0	0	0.000
19-Jun	0	5	0.001	0	0	0.000	0	0	0.000
20-Jun	1	6	0.002	0	0	0.000	0	0	0.000
21-Jun	0	6	0.002	0	0	0.000	0	0	0.000
22-Jun	1	7	0.002	4	4	0.000	0	0	0.000
23-Jun	0	7	0.002	3	7	0.001	0	0	0.000
24-Jun	2	9	0.003	9	16	0.002	0	0	0.000
25-Jun	9	18	0.005	7	23	0.003	0	0	0.000
26-Jun	5	23	0.006	0	23	0.003	0	0	0.000
27-Jun	2	25	0.007	1	24	0.003	0	0	0.000
28-Jun	2	27	0.008	0	24	0.003	0	0	0.000
29-Jun	0	27	0.008	0	24	0.003	0	0	0.000
30-Jun	2	29	0.008	1	25	0.003	0	0	0.000
1-Jul	1	30	0.008	0	25	0.003	0	0	0.000
2-Jul	7	37	0.010	4	29	0.003	0	0	0.000
3-Jul	9	46	0.013	3	32	0.004	0	0	0.000
4-Jul	5	51	0.014	5	37	0.004	0	0	0.000
5-Jul	29	80	0.022	18	55	0.007	0	0	0.000
6-Jul	5	85	0.024	2	57	0.007	0	0	0.000
7-Jul	22	107	0.030	3	60	0.007	0	0	0.000
8-Jul	54	161	0.045	66	126	0.015	0	0	0.000
9-Jul	137	298	0.083	26	152	0.018	0	0	0.000
10-Jul	152	450	0.125	43	195	0.023	0	0	0.000
11-Jul	101	551	0.153	49	244	0.029	0	0	0.000
12-Jul	100	651	0.181	15	259	0.031	0	0	0.000
13-Jul	66	717	0.199	11	270	0.032	0	0	0.000
14-Jul	32	749	0.208	25	295	0.035	0	0	0.000
15-Jul	86	835	0.232	27	322	0.039	0	0	0.000
16-Jul	96	931	0.259	23	345	0.041	0	0	0.000
17-Jul	968	1,899	0.528	366	711	0.085	0	0	0.000
18-Jul	44	1,943	0.540	49	760	0.091	0	0	0.000
19-Jul	70	2,013	0.559	34	794	0.095	0	0	0.000
20-Jul	82	2,095	0.582	9	803	0.097	0	0	0.000
21-Jul	43	2,138	0.594	0	803	0.097	0	0	0.000
22-Jul	325	2,463	0.684	3	806	0.097	0	0	0.000
23-Jul	44	2,507	0.697	6	812	0.098	0	0	0.000
24-Jul	58	2,565	0.713	69	881	0.106	0	0	0.000
25-Jul	176	2,741	0.762	72	953	0.115	0	0	0.000
26-Jul	260	3,001	0.834	55	1,008	0.121	0	0	0.000
27-Jul	103	3,104	0.862	25	1,033	0.124	0	0	0.000
28-Jul	151	3,255	0.904	112	1,145	0.138	0	0	0.000
29-Jul	35	3,290	0.914	84	1,229	0.148	0	0	0.000
30-Jul	48	3,338	0.927	33	1,262	0.152	0	0	0.000
31-Jul	51	3,389	0.942	1	1,263	0.152	0	0	0.000
1-Aug	16	3,405	0.946	2	1,265	0.152	0	0	0.000
2-Aug	23	3,428	0.952	0	1,265	0.152	0	0	0.000
3-Aug	19	3,447	0.958	1	1,266	0.152	0	0	0.000
4-Aug	5	3,452	0.959	15	1,281	0.154	0	0	0.000
5-Aug	25	3,477	0.966	3	1,284	0.154	0	0	0.000
6-Aug	14	3,491	0.970	2	1,286	0.155	0	0	0.000
7-Aug	32	3,523	0.979	35	1,321	0.159	0	0	0.000
8-Aug	31	3,554	0.987	65	1,386	0.167	0	0	0.000
9-Aug	6	3,560	0.989	26	1,412	0.170	0	0	0.000
10-Aug	2	3,562	0.990	3	1,415	0.170	0	0	0.000
11-Aug	1	3,563	0.990	3	1,418	0.170	0	0	0.000
12-Aug	0	3,563	0.990	3	1,421	0.171	0	0	0.000
13-Aug	5	3,568	0.991	27	1,448	0.174	0	0	0.000
14-Aug	12	3,580	0.995	44	1,492	0.179	0	0	0.000
15-Aug	2	3,582	0.995	10	1,502	0.181	0	0	0.000

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Appendix E.3. (Page 2 of 2)

Date	Chinook ^a			Sockeye			Coho		
	Daily	Cum. Daily	Prop.	Daily	Cum. Daily	Prop.	Daily	Cum. Daily	Prop.
16-Aug	2	3,584	0.996	6	1,508	0.181	0	0	0.000
17-Aug	1	3,585	0.996	1	1,509	0.181	0	0	0.000
18-Aug	0	3,585	0.996	4	1,513	0.182	0	0	0.000
19-Aug	0	3,585	0.996	5	1,518	0.182	0	0	0.000
20-Aug	4	3,589	0.997	28	1,546	0.186	0	0	0.000
21-Aug	2	3,591	0.998	14	1,560	0.188	0	0	0.000
22-Aug	1	3,592	0.998	16	1,576	0.189	0	0	0.000
23-Aug	2	3,594	0.999	24	1,600	0.192	0	0	0.000
24-Aug	1	3,595	0.999	4	1,604	0.193	0	0	0.000
25-Aug	0	3,595	0.999	5	1,609	0.193	0	0	0.000
26-Aug	0	3,595	0.999	23	1,632	0.196	0	0	0.000
27-Aug	1	3,596	0.999	41	1,673	0.201	0	0	0.000
28-Aug	0	3,596	0.999	814	2,487	0.299	0	0	0.000
29-Aug	3	3,599	1.000	2,113	4,600	0.553	0	0	0.000
30-Aug	0	3,599	1.000	328	4,928	0.592	0	0	0.000
31-Aug	0	3,599	1.000	28	4,956	0.596	0	0	0.000
1-Sep	0	3,599	1.000	3	4,959	0.596	0	0	0.000
2-Sep	0	3,599	1.000	3	4,962	0.596	0	0	0.000
3-Sep	0	3,599	1.000	12	4,974	0.598	0	0	0.000
4-Sep	0	3,599	1.000	120	5,094	0.612	0	0	0.000
5-Sep	0	3,599	1.000	16	5,110	0.614	0	0	0.000
6-Sep	0	3,599	1.000	0	5,110	0.614	0	0	0.000
7-Sep	0	3,599	1.000	8	5,118	0.615	0	0	0.000
8-Sep	0	3,599	1.000	14	5,132	0.617	0	0	0.000
9-Sep	0	3,599	1.000	6	5,138	0.618	0	0	0.000
10-Sep	0	3,599	1.000	80	5,218	0.627	0	0	0.000
11-Sep	0	3,599	1.000	50	5,268	0.633	0	0	0.000
12-Sep	0	3,599	1.000	22	5,290	0.636	0	0	0.000
13-Sep	0	3,599	1.000	2	5,292	0.636	0	0	0.000
14-Sep	0	3,599	1.000	0	5,292	0.636	0	0	0.000
15-Sep	0	3,599	1.000	1	5,293	0.636	0	0	0.000
16-Sep	0	3,599	1.000	12	5,305	0.638	0	0	0.000
17-Sep	0	3,599	1.000	2	5,307	0.638	0	0	0.000
18-Sep	0	3,599	1.000	3	5,310	0.638	2	2	0.001
19-Sep	0	3,599	1.000	4	5,314	0.639	0	2	0.001
20-Sep	0	3,599	1.000	3	5,317	0.639	2	4	0.001
21-Sep	0	3,599	1.000	6	5,323	0.640	4	8	0.002
22-Sep	0	3,599	1.000	17	5,340	0.642	10	18	0.005
23-Sep	0	3,599	1.000	14	5,354	0.644	5	23	0.007
24-Sep	0	3,599	1.000	46	5,400	0.649	17	40	0.012
25-Sep	0	3,599	1.000	1,774	7,174	0.862	968	1,008	0.291
26-Sep	0	3,599	1.000	577	7,751	0.932	933	1,941	0.560
27-Sep	0	3,599	1.000	29	7,780	0.935	48	1,989	0.574
28-Sep	0	3,599	1.000	12	7,792	0.937	129	2,118	0.611
29-Sep	0	3,599	1.000	14	7,806	0.938	39	2,157	0.623
30-Sep	0	3,599	1.000	0	7,806	0.938	6	2,163	0.624
1-Oct	0	3,599	1.000	7	7,813	0.939	43	2,206	0.637
2-Oct	0	3,599	1.000	1	7,814	0.939	14	2,220	0.641
3-Oct	0	3,599	1.000	3	7,817	0.940	56	2,276	0.657
4-Oct	0	3,599	1.000	3	7,820	0.940	15	2,291	0.661
5-Oct	0	3,599	1.000	23	7,843	0.943	151	2,442	0.705
6-Oct	0	3,599	1.000	0	7,843	0.943	21	2,463	0.711
7-Oct	0	3,599	1.000	3	7,846	0.943	124	2,587	0.747
8-Oct	0	3,599	1.000	18	7,864	0.945	427	3,014	0.870
9-Oct	0	3,599	1.000	3	7,867	0.946	86	3,100	0.895
10-Oct	0	3,599	1.000	0	7,867	0.946	9	3,109	0.897
11-Oct	0	3,599	1.000	1	7,868	0.946	178	3,287	0.949
12-Oct	0	3,599	1.000	0	7,868	0.946	10	3,297	0.952
13-Oct	0	3,599	1.000	1	7,869	0.946	2	3,299	0.952
14-Oct	0	3,599	1.000	1	7,870	0.946	10	3,309	0.955
15-Oct	0	3,599	1.000	0	7,870	0.946	2	3,311	0.956
16-Oct	0	3,599	1.000	0	7,870	0.946	4	3,315	0.957
17-Oct ^b	0	3,599	1.000	450	8,320	1.000	150	3,465	1.000
Totals		3,599			8,320			3,465	
Adjustments									
Broodstock		2			0			0	
Catch above weir		215			429			0	
Total Escapement		3,382			7,891			3,465	

^a Jack Chinook included in the counts.

^b Estimate of fish holding below weir during removal.

Appendix E. 4. Salmon catch and effort in the U.S. commercial fishery in the Alsek River, 1960-1996.

Year	Catch					Effort	
	Chinook	Sockeye	Coho	Pink	Chum	Boat Days	Days Open
	1960						
1961	2,120	23,339	7,679	84	86	1,436	80.0
1962	2,276	14,475	8,362	93	133		76.0
1963	131	6,055	7,164	42	34	692	68.0
1964	591	14,127	9,760	144	367	592	68.0
1965	719	28,487	9,638	10	72	1,016	72.0
1966	934	29,091	2,688	22	240	500	64.0
1967	225	11,108	10,090	107	30	600	68.0
1968	215	26,918	10,586	82	240	664	68.0
1969	685	29,259	2,493	38	61	807	61.0
1970	1,128	22,654	2,188	6	26	670	52.3
1971	1,222	25,314	4,730	3	120	794	60.5
1972	1,827	18,717	7,296	37	280	640	65.0
1973	1,757	26,523	4,395	26	283	894	52.0
1974	1,162	16,747	7,046	13	107	699	46.0
1975	1,379	13,842	2,230	16	261	738	58.0
1976	512	19,741	4,883	0	368	550	58.5
1977	1,402	40,780	11,817	689	483	882	57.0
1978	2,441	50,580	13,913	59	233	929	57.0
1979	2,525	41,449	6,158	142	263	1,110	51.0
1980	1,382	25,522	7,863	21	1,005	792	42.0
1981	779	23,641	10,232	65	816	585	40.0
1982	532	27,423	6,534	6	358	555	33.0
1983	94	18,293	5,253	20	432	479	38.0
1984	60	14,326	7,868	24	1,610	429	33.0
1985	213	5,940	5,490	3	427	279	33.0
1986	481	24,791	1,344	13	462	517	34.0
1987	347	11,393	2,517	0	1,924	388	40.5
1988	223	6,286	4,986	7	908	324	34.0
1989	228	13,513	5,972	2	1,031	367	38.0
1990	78	17,013	1,437	0	495	374	38.0
1991	103	17,542	5,956	0	103	530	49.0
1992	301	19,298	3,116	1	120	404	46.0
1993	300	20,043	1,215	0	49	383	40.0
1994	805	19,639	4,182	0	32	416	61.0
1995	670	33,112	14,184	13	347	926	53.5
60-95 average	853	21,628	6,322	51	394	646	52.4
86-95 average	354	18,263	4,491	4	547	463	43.4
1996	771	15,182	5,514	0	165	438	47.5

Appendix E. 5. Salmon catch in the U.S. subsistence and personal use fisheries in the Alsek River, 1976-1996. Catches are those reported on returned permits.

Year	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
76-95 average	39	99	33
86-95 average	37	129	28
1996	40	47	18

Appendix E. 6. Salmon catches in the Canadian Aboriginal and sport fisheries in the Alsek River, 1976-1996.

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
76-95 average	290	379	669	3,135	476	3,611	7	139	146
86-95 average	238	422	661	1,940	388	2,328	9	163	172
1996	448	650	1,098	1,204	157	1,361	56	9	65

Appendix E. 7. Klukshu River weir counts of Chinook, sockeye, and coho salmon, 1976-1996. The escapement count equals the weir count minus the aboriginal fishery catch above the weir and brook stock taken.

Year	Chinook		Early ^b	Sockeye		Total	Escape. ^d	Coho ^c	
	Count ^a	Escape. ^d		Late				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	
76-95	2,644	2,377	3,243	15,794	19,037	16,198	1,478		
86-95	2,830	2,686	3,315	15,230	18,545	17,081	2,090	3,041	
1996	3,599	3,382	1,502	6,818	8,320	7,891	3,465	3,465	

^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. Alek River sockeye salmon counts from U.S. and Canadian aerial surveys and from the electronic counter at Village Creek, 1985-1996.

Year	U.S. Aerial Surveys ^a				Canadian 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		350			11,485 ^f
1993	4,800			900			3,135 ^g
1994	250			600	366		4,007 ^h
1995	2,700			350			4,041
85-95 average	1,290	177	300	1,312	756	969	4,921
86-95 average	1,144	177	300	1,223	756	969	4,921
1996	325			650			1,583

^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 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.

Appendix E. 9. Aerial survey index counts of Alek Chinook salmon escapements, 1984-1996.

Year	Blanchard River	Takhanne River	Goat Creek
1984	304	158	28
1985	232	184	
1986	556	358	142
1987	624	295	85
1988	437	169	54
1989		158	34
1990		325	32
1991	121	86	63
1992	86	77	16
1993	326	351	50
1994	349	342	67
1995	338	260	5
84-95 average	337	230	52
86-95 average	355	242	55
1996	132	230	12

^a Not surveyed due to poor visibility. Blanchard 89, 90.

^b Late survey date which missed the peak of spawning, 1995.

Appendix E. 10. Aerial survey counts of coho salmon from U.S. lower Alsek River tributaries, 1984-1996.

Year	Combined U.S. Tributary Counts
1985	450
1986	1,100
1987	100
1988	1,900
1989	1,990
1990	1,600
1991	500 ^a
1992	1,010 ^a
1993	800 ^a
1994	975 ^a
1995	1,050
85-95 average	1,043
86-95 average	1,103
1996	1,350

^a Few systems surveyed.