TECHNICAL FISHERY REPORT 91-01

Alaska Department of Fish and Game
Division of Commercial Fisheries
P.O. Box 3-2000
Juneau, Alaska 99802

March 1991

Age, Sex, and Size of Yukon River Salmon Catches and Escapements, 1988

by

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and

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ACKNOWLEDGMENTS

The authors would like to thank Tracy Lingnau for assistance with scale aging and data compilation. Craig Whitmore, Dan Bergstrom, Louis Barton and Fred Andersen provided the basic harvest and escapement information. Critical review of the manuscript was provided by Larry Buklis.

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ABSTRACT

Catch statistics, escapement estimates, and age, sex, and length data for chinook *Oncorhynchus tshawytscha* (Walbaum), summer and fall run chum *O. keta* (Walbaum), and coho salmon *O. kisutch* (Walbaum) catches and escapements for the Yukon River in 1988 were summarized. The total harvest was 2,466,502 salmon. Approximately 80% of the catch was taken commercially with gill nets and fish wheels. Subsistence gill net and fish wheel catches comprised 20% of the salmon harvest. Commercial catches of summer chum salmon comprised 64% of the total salmon harvest. Age-1.5 chinook salmon made stronger than normal contributions to catches and escapements, while age-1.4 chinook salmon catches and escapements were relatively low. Summer chum salmon were predominantly age 0.3, although the age-0.4 contribution was higher than in recent years. Fall chum catch samples were 46% age 0.3 and 47% age 0.4, while escapement samples ranged from 39% to 68% for age 0.3 and from 29% to 57% for age 0.4. Age 2.1 was the predominant age class in coho catch (85%) and escapement (90%) samples.

KEY WORDS: Yukon River, chinook salmon (*Oncorhynchus tshawytscha*), chum salmon (*O. keta*), coho salmon (*O. kisutch*), age classification, catch, escapement

INTRODUCTION

The Yukon River drainage supports major runs of chinook salmon *Oncorhynchus tshawytscha* (Walbaum), summer and fall chum salmon *O. keta* (Walbaum), and coho salmon *O. kisutch* (Walbaum). These species contribute to commercial and subsistence fisheries throughout the Yukon River drainage; legal gear for both fisheries includes gill nets and fish wheels. Pink salmon *O. gorbuscha* (Walbaum) and sockeye salmon *O. nerka* (Walbaum) are also indigenous to the Yukon River drainage. Pink salmon returns are stronger in even-numbered years, while sockeye salmon runs are very small and known only through occurrence in commercial and subsistence harvests. Neither species is harvested by commercial or subsistence fishermen to any extent. Summer-run chum salmon are distinguished from fall-run chum salmon by their earlier entry timing into the Yukon River (early June to mid-July), smaller size, and lower oil content; they also spawn in the lower and middle portions of the Yukon River drainage. Fall chum salmon enter the Yukon River from mid-July to early September and spawn primarily in the upper portion of the drainage.

The Yukon Area includes all waters of the Yukon River and its tributary streams in Alaska (Figure 1) and the Yukon Territory, Canada (Figure 2), and all coastal waters from Canal Point light near Cape Stephens southward to the Naskonat Peninsula. The Alaska portion of the river is divided into six fishing districts as follows: Districts 1, 2, and 3 in the Lower Yukon Area; and Districts 4, 5, and 6 in the Upper Yukon Area. Commercial fishing occurs throughout the mainstem Yukon River and in the lower 360 km (225 mi) of the Tanana River. Most of the commercial harvest is taken in Districts 1 and 2. Set and drift gill nets are the legal gear in the Lower Yukon, and set gill nets and fish wheels in the Upper Yukon. Chinook and fall chum salmon are also commercially harvested in the Yukon Territory near Dawson City; harvests are mostly with gill nets but some fish wheels are also used. Subsistence fishing with gill nets and fish wheels is allowed throughout the drainage with most of the effort concentrated in the mainstem Yukon River. ADF&G (1988) provides a complete description of the Yukon Area and its fisheries.

Most commercial fishing occurs in the lower 230 km of the river, where the harvest consists of mixed species and stocks of salmon bound for spawning areas throughout the Yukon River drainage. The Alaska Department of Fish and Game (ADF&G) and the Canada Department of Fisheries and Oceans (DFO) conduct a variety of programs that supply information used to manage and document the fisheries. These programs include (1) documentation of catch in each fishery; (2) catch sampling for age, sex, and size data; (3) assessing the magnitude of spawning escapements by aerial and ground surveys, hydroacoustic counters, towers, weirs, and visually through a fishpass; and (4) sampling major spawning escapements for age, sex, and size data. Total run estimates are obtained by ADF&G using hydroacoustic counters in the mainstem Yukon River near Pilot Station and by DFO using tag and recapture methods at the U.S.-Canada border.

Between 1969 and 1981 Yukon River salmon age, sex, and size data summaries were annually reported in the ADF&G Arctic-Yukon-Kuskokwim Region Age, Sex, and Size Composition of Salmon Report Series. Since 1982 the composition of Yukon River salmon catches and escapements by age, sex, and size have been reported by McBride et al (1983), Buklis and Wilcock (1984, 1985, and 1986), Buklis (1987), and Wilcock (1989).

Yukon River commercial and subsistence salmon harvests and spawning escapements were summarized in numbers of fish by age and sex for indices of relative abundance. Other major spawning escapements without estimates of relative abundance were summarized by age and sex in percentages of the total sample. Mean lengths by age and sex were compiled for each sampled fishery and escapement. These data constitute the primary biological information necessary to regulate Yukon River salmon fishery harvests and monitor the status of the spawning stocks.

METHODS

Quantifying Catch and Escapement

Commercial catch data presented in this report for fisheries in Alaska were compiled by the Division of Commercial Fisheries for each management district and were based on computer tabulations of harvest receipts (fish tickets) that by law document the volume of sale from fishermen to processors. Subsistence catch data were tabulated by Subsistence Division from personal interviews of subsistence fishermen in selected villages and from mail-in questionnaires. The District 4 summer chum salmon commercial catch included an estimate of unused males that were a by-product of the commercial summer chum fishery for salmon roe in this district. The numbers of female summer chum salmon harvested for roe were estimated using harvest data for District 4.

Gear types used to harvest salmon in the subsistence fishery were not accurately documented for the Upper Yukon Area, where both gill nets and fish wheels are used. Because of inadequate gear information, subsistence catches for each district by gear type were estimated in most cases using the proportion of commercial harvest by gear type for that district. Estimates of coho salmon subsistence harvest by gear type in Districts 4 and 5 were subjective estimates made by F.M. Andersen (ADF&G, Fairbanks, personal communications). All Yukon Territory catch data were obtained from DFO. Canadian catch was entirely reported as gill net, though an unknown portion of the commercial and subsistence harvest was taken by fish wheels. Although DFO did not provide harvest data by gear type, gill nets are thought to account for the majority of both the chinook and chum salmon harvest in the Yukon Territory.

Most escapement data were peak aerial survey estimates for selected spawning streams. An effort was made to survey the major spawning populations and these indices were assumed to represent annual trends in escapement abundance. Additional escapement estimates were obtained by other methods as described below.

1. Summer chum, chinook, and pink salmon escapements to the East Fork Andreafsky River were enumerated by ADF&G using counting towers (Sandone 1989).

2. Summer chum salmon escapement to the Anvik River (Sandone 1989) and fall chum salmon escapement to the Sheenjek River (L. Barton, ADF&G, Fairbanks, personal communications) were enumerated by ADF&G using side-scanning sonar counters.

3. Fall chum salmon escapement to the Chandalar River was enumerated by the United States Fish and Wildlife Service (USFWS) using side-scanning sonar counters (D. Daum, USFWS, Fairbanks, personal communications).

4. Fall chum and coho salmon escapements to Clear Creek were enumerated by ADF&G (D. Parks and J. Raymond, ADF&G, Fairbanks, personal communications) using a weir. In addition, DFO used weirs to enumerate chinook salmon escapement to the Big Salmon River and fall chum salmon escapement to the Fishing Branch River.

5. DFO personnel visually counted chinook salmon ascending a fishpass at Whitehorse Dam in Yukon Territory, Canada. Primary spawning tributaries above the dam include Mitchie Creek and the M'Clintock River.

6. Fall chum salmon escapement to the Toklat and Delta Rivers was estimated by ADF&G from ground surveys and stream residency time expansion factors (L. Barton, ADF&G, Fairbanks, personal communications).

7. A hydroacoustic counting site was operated by ADF&G on the mainstem Yukon River at kilometer 198 to obtain total population estimates for chinook, summer and fall chum, and coho salmon (R. Berning and T. LaFlamme, ADF&G, Anchorage, personal communications).

8. Chinook salmon tag and recapture studies were conducted by ADF&G in the Chena (Barton and Conrad 1989) and Salcha (Skaugstad 1989) Rivers to obtain spawning escapement estimates. A chinook and fall chum salmon tag and recapture study was conducted by DFO immediately upstream from the U.S.-Canada border to obtain population estimates for the Canadian portion of the drainage, excluding the Porcupine River.

Age, Sex, and Length Determination

Salmon were sampled for scales, sex, and length. The annuli on the scales provided age information for salmon in the catch and escapement (Gilbert 1922). Scales were taken from the left side of the fish approximately two rows above the lateral line in an area transected by a diagonal from the posterior insertion of the dorsal fin to the anterior insertion of the anal fin (INPFC 1963). Scales were mounted on gum cards and permanent impressions made in cellulose acetate (Clutter and Whitesel 1956). Resorption of scale margins required collection of vertebrae from fall chum salmon escapement samples as an alternate source of age information for those stocks. Ages are reported in European notation. Sex determination was based on examination of external morphological features for fish which had secondary sexual characteristics sufficiently developed to permit estimation of sex; accuracy of the method is not known. Gonads were examined whenever external characteristics were not sufficiently distinct.

An attempt was made to sample fish from the commercial catch for each gear type in each district. However, because of the logistics involved in sampling such widely dispersed fisheries, many of the smaller harvests were not sampled. The majority of the commercial catch samples were collected in Districts 1 and 2. Subsistence catches were generally not sampled. Age and sex composition of subsistence harvests for each district and gear type which were not sampled were based on commercial catch samples taken by that gear type in the same or, in some cases, a neighboring district. Limiting the method to harvests taken with the same gear in the same geographic location provided an unbiased means of estimating the age and sex composition of unsampled harvests. The approach treated the harvest as the population of interest. Because of the use of identical gear among fisheries, it was assumed that there was no size differential selectivity between harvests, therefore no sex or age differential selectivity. In limiting the application of sampled harvest data to an unsampled harvest in a nearby geographic location, it was assumed that both harvests were of the same stocks.

An attempt was made to sample the major chinook and chum salmon spawning populations. Most escapement data were collected from carcasses, although live salmon were sampled from weir traps at Clear Creek and Fishing Branch River. Fish spears were also used to capture live spawned out chinook salmon at all locations. In addition, live fish were captured with beach seines at the East Fork Andreafsky, Anvik, and Sheenjek Rivers; with snagging gear at the Andreafsky, Anvik, Big Salmon, and Nulato Rivers; and with gill nets at the Nulato River.

Age and sex composition was estimated for each sampled fishery with a stratified systematic sampling design (Cochran 1977). Strata were defined as individual fishing periods for District 1 and 2. For the other districts and fisheries, time strata were of variable length depending on the number of samples collected. An attempt was made to sample sufficient numbers of fish within strata to estimate the true proportion of each major age class in the catch within ± 10 percent 95% of the time. Sample sizes to achieve stated accuracy and precision were estimated using Thompson's (1987) method for multinomial proportions. Sample goals for most fisheries and escapements were 150 fish sampled to obtain at least 128 readable scales for each stratum sampled. Sample goals for chinook salmon were set at 400 scales for each stratum to obtain sufficient numbers of usable scales for stock identification studies. In addition, a number of chum salmon escapements were sampled for scales ancillary to electrophoresis tissue sample collections and sample sizes reflect goals for those studies rather than for age and sex composition estimates. Age compositions and associated variances were estimated with procedures outlined by Cochran (1977) for stratified sampling programs:

$$C_{tj} = C_t P_{tj}$$

$$V[C_{tj}] = \frac{(C_t)^2 \cdot P_{tj}(1-P_{tj})}{N_t - 1}$$

$$C_{.j} = \sum_{t=1}^{T} C_{tj}$$

$$V[C_{.j}] = \sum_{t=1}^{T} V[C_{tj}]$$

where

C_t = number of fish caught in stratum t,

P_{tj} = fraction of sample in stratum t of age j,

N_t = number of samples during stratum t,

C_{tj} = estimated number of fish of age j during stratum t,

T = total number of strata, and

$C_{.j}$ = estimated number of fish of age j for the season, T.

If there were insufficient samples to attain the above levels of precision and accuracy by time strata, samples were pooled into a single sample period for that fishery or escapement to estimate catch or escapement by age and sex. Sample data were presented for those escapements with only aerial survey indices of abundance, but indices of abundance were not estimated by age and sex.

Lengths were measured from mid-orbit to fork of tail to the nearest 5 mm. Some samples collected in Yukon by DFO were measured from tip of snout to fork of tail. Average lengths, by age and sex, were reported for each sampled fishery and escapement. Length samples were not stratified by time.

RESULTS

Commercial and Subsistence Harvest

Commercial harvest in Alaska and Canada totaled 114,638 chinook, 1,511,459 summer chum, 191,226 fall chum, and 99,907 coho salmon in 1988 (Table 1, Appendix A). The summer chum salmon commercial removal includes an estimated 99,520 unused males taken in the District 4 roe fishery.

The commercial chinook salmon harvest was 24% below that of 1987, and was 19% below the recent 5-year (1983-87) average. The record summer chum salmon harvest was 190% above the 1987 level, and 82% above the recent 5-year average. The fall chum salmon harvest was 371% above that of 1987 when the only legal commercial harvest occurred in Yukon Territory, Canada, but was still 9% below the recent 5-year average. There was no commercial harvest of coho salmon in 1987, but the 1988 harvest was 150% above the recent 5-year average.

Fishermen in the Alaska portion of the drainage received an estimated $13,379,000 for their catch in 1988, 102% above the 1983-87 average. The largest commercial harvests of chinook, summer-run chum, and coho salmon occurred in District 1. The largest fall chum harvest occurred in District 6. Commercial harvest and catch per unit effort by species and fishing period is presented for each district in Appendix A. Gill nets accounted for the majority of the commercial harvest for each species (Appendix B).

Subsistence harvests in Alaska and Canada totalled 54,769 chinook, 311,724 summer chum, 163,005 fall chum, and 69,138 coho salmon in 1988 (Table 1). The subsistence chinook salmon harvest was 8% below that of 1987, summer-run chum salmon 13% above, fall-run chum salmon 55% below, and the coho salmon harvest 19% below the 1987 level.

The largest chinook and fall chum salmon subsistence harvests occurred in District 5, the largest summer chum salmon harvest in District 4, and the largest coho salmon harvest in District 6. Fish wheels accounted for the majority of the summer chum, fall chum, and coho salmon subsistence harvests, while the majority of the chinook salmon were taken by gill nets.

Escapement Abundance

Minimum and optimum escapement objectives have been established by ADF&G for the major spawning populations of chinook, summer-run chum, and fall-run chum salmon for which a sufficient data base exists (Bergstrom et al. *in press*). Most escapement objectives are based on historical aerial survey indices of abundance and are subject to change as more complete information becomes available. Yukon River salmon spawning escapement index counts and population estimates for all areas monitored in 1988 are presented in Table 2. Daily tower, sonar, weir, and fishpass salmon escapement counts are presented in Appendix C.

Chinook salmon spawn in tributary streams throughout the Yukon River drainage (Figure 3). Chinook salmon optimum escapement objectives have been established for the East (1,600) and West Fork (1,000) Andreafsky, Anvik (500), North (500) and South (500) Fork Nulato, Chena (1,700), and Salcha (3,500) Rivers. Except for the East Fork Andreafsky River aerial survey count (1,020), optimum escapement objectives were achieved for all streams in the lower portion of the drainage for which objectives have been established. Aerial survey counts for the Chena River (1,966) were above the established optimum index levels, while counts for the Salcha River (2,761) were below. Optimum total spawning population levels have not yet been established for these rivers because total escapements have only been estimated since 1986 for the Chena River and 1987 for the Salcha River. Total 1988 spawning populations to the Chena (3,045) and Salcha (4,562) Rivers were estimated from mark and recapture studies.

Chinook salmon escapements to the Canadian portion of the drainage in 1988 were variable, but were generally below desired levels, as they have been for most years since 1982. The peak count of 482 chinook salmon for index areas in the Nisutlin River and the Whitehorse fishway count of 405 chinook salmon (including 134 fish taken for hatchery brood stock) were somewhat improved over 1987 levels but were still below historical levels. The 1988 DFO spawning escapement estimate of 23,118 chinook salmon for the Yukon River drainage in Canada was well above the 1987 estimate of 13,210 fish and well below the objective of 33,000 to 43,000 fish established by the U.S./Canada Joint Technical Committee.

Summer-run chum salmon spawn primarily in tributaries of the lower Yukon, the Koyukuk, and the Tanana Rivers (Figure 4). Aerial survey optimum escapement objectives have been established for summer chum salmon in the East (109,000) and West Forks (116,000) Andreafsky, Anvik (356,000), North Fork Nulato (53,000), and Hogatza (17,000) Rivers. Summer chum salmon escapement objectives for systems surveyed by air were not achieved for any Yukon River spawning tributaries in 1988. Aerial survey counts for the East and West Forks of the Andreafsky River were 43,056 and 45,432 summer chum salmon, while the tower count estimate for the East Fork was 68,937 fish. Although still below optimum levels, these counts were improvements over very low levels observed in 1987. In contrast to aerial survey counts, the Anvik River sonar escapement count of 1,125,449 summer chum salmon was 131% above the optimum sonar escapement objective of 487,000.

Fall-run chum salmon spawn in spring-fed upwelling areas in streams and sloughs in the upper portion of the Yukon River drainage (Figure 5). Minimum total season escapement objectives have been established for the Sheenjek (62,000), Toklat (33,000), and Delta (11,000) Rivers. Interim escapement objectives of 50,000-120,000 fish for the Fishing Branch River and 90,000-135,000 fish for the mainstem Yukon River in Canada were established by the U.S./Canada Joint Technical Committee (JTC) in 1987; however, the U.S. contingent of the JTC recently withdrew support for the mainstem Yukon River interim escapement objective.

Fall-run chum salmon escapements in 1988 were well below escapement levels in 1987 and were scantly improved over the poor escapements observed in 1982 through 1984. Escapement population estimates of 13,324 fall chum salmon for the Toklat River, 18,024 for the Delta River, and 38,800 for the Sheenjek River in 1988 were

60% below, 64% above, and 37%, respectively, below the minimum escapement objectives for each of these streams. The escapement population estimate of 23,597 for the Fishing Branch River was 53% below the recently established minimum objective.

Comprehensive enumeration of fall chum salmon with side-scanning sonar has been conducted on the Chandalar River since 1986. The USFWS estimate of 33,619 fall chum salmon in 1988 was 36% below the 1987 estimate.

The DFO spawning escapement estimate was 36,786 fall chum salmon for the mainstem Yukon River drainage in Canada (excluding the Porcupine River drainage) in 1988. This was well below the 1987 estimate of 80,776 fish.

Coho salmon spawn in widely scattered tributaries throughout the Yukon River drainage, although the major concentrations have been documented in the Tanana River drainage (Figure 6). Coho salmon escapement counts are generally obtained ancillary to fall chum salmon escapement survey priorities; therefore, a comprehensive data base does not exist. Coho salmon escapements in 1988 appeared to be average for most spawning areas in the Yukon River drainage. An exception was the escapement to the Delta Clearwater River (21,600) which was similar to the highest previously recorded count (22,300) observed in 1987.

Age, Sex, and Length Composition

Chinook Salmon

Calculations using data from Table 3 resulted in age composition estimates of the entire Yukon River harvest of chinook salmon in 1988: 31% age-1.4, 28% age-1.5, 23% age-1.3, and 15% age-1.2, with several other age classes present in smaller proportions (Appendix D). Females accounted for an estimated 40% of total river harvest. In 1988, weaker than normal contributions by age-1.4 fish indicate relatively poor production from escapements in 1982, and stronger than normal contributions by age-1.5 fish indicate good production from the large escapements observed in 1981.

District 1 and 2 combined commercial and subsistence gill net catches comprised 59% of the total river harvest. Age and sex composition differed between unrestricted mesh and 6-in (15.2 cm) maximum mesh size fishing periods in Districts 1 and 2 (Appendix D). Somewhat lower than in previous years, the contribution of females caught during unrestricted mesh periods ranged from 39.9% to 49.1% with an average of 45.2% for the two districts combined (Appendices D.1 and D.4). Contributions during restricted-mesh fishing ranged from 15.2% to 37.8%, with an average of 25.3%, and were the lowest observed since 1980. Age-1.4 fish, which in recent years have comprised from 40% to 75% of District 1 and 2 harvest, were the most abundant age group in 1988 but comprised only 30.4% of the season total harvest for both districts (Appendices D.2 and D.5). Age-1.4 fish ranged form 12.5% to 45.9% in restricted-mesh periods in District 1 and 2 and from 35.4% to 45.4% in unrestricted periods (Appendices D.1 and D.4). Age-1.4 chinook salmon predominated in only 3 of 6 unrestricted mesh periods for the two districts and in none of the restricted mesh periods sampled. Age-1.5 chinook salmon were unusually abundant in 1988 and predominated in 3

unrestricted-mesh periods. They were less abundant in restricted-mesh catches and were the second most abundant age group (25.8%) of the season total harvest. Age-1.2 fish, which in recent years have comprised from 1% to 7% of District 1 and 2 catches, were also unusually abundant comprising 17.0% of District 1 and 2 season total in 1988.

Subsistence gill net harvests in Districts 1, 2, and 3 and in Canada were not sampled (Appendices D.3, D.6, and D.8). Since these fisheries utilize the same gear types and occur concurrently with the commercial fisheries in these districts, commercial harvest age and sex frequencies were applied to the subsistence harvests (Appendix D). Because of the significant intermixing of commercial and subsistence gill net and fish wheel catches by fishermen in Districts 4 and 6, estimates for both gear types and fisheries were pooled and assumed to be self-weighting (Appendices D.9 and D.11). More intensive sampling effort, and reasonable estimates of harvest by gear type in District 5 allowed for separate catch age and sex composition estimates by gear type, although commercial and subsistence catches were pooled for each gear type (Appendix D.10).

In District 5 fish wheels captured a greater proportion of younger male fish than did gill nets (z-test, $P<.01$). The District 5 gill net catch sample was 48.8% female and 52.1% were age 1.5; the fish wheel catch sample was only 13.7% female and 41.1% were age 1.3 (Appendix D.10).

Mean size of chinook salmon in the District 1 commercial gill net catch ranged from 579 mm for age-1.2 to 1,035 mm for age-1.6 males and from 700 mm for age-1.2 to 985 mm for age-1.6 females (Table 4). Size of chinook salmon in the District 4 combined commercial and subsistence fish wheel catch ranged from 370 mm for age-1.1 to 1,057 mm for age-1.5 males, and from 688 mm for age-1.2 to 910 mm for age-1.5 females. Other catch samples exhibited size frequencies within the range of the samples from Districts 1 and 4.

Age, sex, and size composition of chinook salmon test fishing samples collected in 1988 are presented in Appendix D.14.

A nonstatistical comparison (NSC) of age and sex composition of chinook salmon escapements in 1988 indicated similar trends in relative abundance of sex and age groups as previous years (Table 5). Age-1.3 fish were the most abundant age group in Lower Yukon River escapements, ranging from 29.5% for the Andreafsky River to 59.3% for the Nulato River. Ages 1.2 and 1.4 were next in abundance to age-1.3 in Lower Yukon River escapements and were generally similar to each other in abundance for each stream. Similar to previous years, age-1.5 fish were generally low in abundance in lower river tributaries, ranging from 3.7% to 15.6%.

In most previous years, escapements in the upper river have displayed a consistent trend toward older fish and proportionally more females than escapements downriver (NSC). This trend was observed for ages 1.2, 1.3, and 1.5 in 1988. Age-1.2 and age-1.3 fish were more abundant in downriver escapements (approximately 24% and 42%) than in upper river (non-Canada; approximately 15% and 20%) and Canadian Yukon drainage (Yukon Territory; approximately 2% and 25%) escapements. Abundance of age-1.5 increased from approximately 8% for the Lower

Yukon (Yukon drainage in Districts 1, 2, and 3), to approximately 20% for the Upper Yukon (Yukon drainage in Districts 4, 5, and 6), to approximately 35% for tributaries in the Yukon Territory in 1988. The abundance of age-1.4 fish in the Chena (46.4%) and Salcha (42.1%) Rivers in the Upper Yukon was roughly twice the range of Lower Yukon streams (18.7% to 27.2%) and was similar to most recent years for the upper portion of the drainage in Alaska. However, the relative abundances of age-1.4 fish in most escapements sampled in Yukon Territory were lower than in most years and were in most cases similar to abundances observed in Lower Yukon River escapements in 1988.

The abundance of female chinook salmon in Yukon River escapements varied greatly and ranged from 20.3% for the Nulato River to 77.8% for the small sample from the Nisutlin River (Table 5).

Similar to previous years, the occurrence of fish with two freshwater annuli (age 2.) was much greater in the Upper Yukon River spawning streams than in other regions of the drainage (NSC). For example, 65.6% of samples from the Takhini River were estimated to have two freshwater annuli in 1988.

Average size of male chinook salmon in Yukon River escapements ranged from 335 mm for a single age-1.1 fish from the Andreafsky River to 1,035 mm for an age-2.5 fish from the Big Salmon River in Canada (Table 6). Average size of females ranged from 765 mm for age-1.3 fish from Tatchun Creek to 973 mm for age-1.5 fish from the Takhini River.

Summer Chum Salmon

Samples sizes of summer chum salmon from the District 1 commercial gill net fishery, District 4 and 6 commercial and subsistence fish wheel fisheries, and the District 6 commercial and subsistence gill net fishery were sufficient to permit estimates of harvest by age and sex. The age and sex compositions of the harvests for Districts 2 and 3 were assumed to be the same as the District 1 sample. Age and sex composition estimates for commercial and subsistence gill net harvests in Districts 4 and 5, and fish wheel harvest in District 5 could not be estimated because of a lack of appropriate sample data. Subsistence harvest age and sex compositions for District 1, 2, and 3 were estimated using the District 1 commercial gill net catch samples. The number of summer chum salmon harvested by age, sex, and fishery for the entire drainage is presented in Table 7, while age and sex compositions for each fishery are presented by sample period in Appendix E. Age, sex, and size compositions of test fishing samples are shown in Appendix E.11.

Age and sex composition for 94% of total drainage summer chum salmon harvest was estimated (Table 7). As in most years, age 0.3 accounted for the majority of total utilization comprising 70% of total harvest, followed by ages 0.4 (29%), 0.5 (0.8%), and 0.2 (0.01%). Sex composition was 50% female.

Samples from the commercial gill net fishery in District 1 were comprised of more age-0.3 fish (74.0%) and fewer females (44.8%) than were commercial and subsistence fish wheel samples pooled from the District 4 fishery (62.7% age-0.3 and 61.8% females), and District 6 fishery (47.4% age-0.3 and 59.4% females;

Appendices E.2, E.8, and E.10). Gill net samples from the District 6 commercial and subsistence fishery were composed of both fewer age-0.3 fish (37.0%) and fewer females (32.6%) than were fish wheel samples from the district (47.4% age-0.3 and 59.4% females; Appendices E.9 and E.10). Average size by age and sex group did not differ substantially (NSC) between districts or gear types (Table 8). These results are similar to those of previous years.

A temporal trend in age composition (NSC) is apparent for the District 1 commercial gill net fishery. As the season progressed age 0.4 declined in relative contribution, while age 0.3 increased (Appendix E.1). This trend has been noted for most previous years with sufficient sample data.

Age, sex, and length data for summer chum salmon were collected for a number of spawning locations in 1988 (Tables 9 and 10). Age-0.3 fish comprised 69.9% of the East Fork Andreafsky River and 77.4% of the Anvik River spawning stocks (NSC). Sex composition was 49.3% female for the East Fork Andreafsky River and 66.1% for the Anvik River. Samples from both locations were collected by beach seine gear throughout the spawning migration.

Fall Chum Salmon

The number of fall chum salmon harvested by age, sex, and fishery for 1988 is presented in Table 11. Age and sex composition for each district fishery and test fishing sample is presented in Appendix F. Age and sex composition for 93% of the total drainage fall chum salmon harvest was estimated. Age-0.3 and age-0.4 fall chum salmon contributed nearly equally (46% and 47%, respectively) to the total drainage harvest in 1988. The District 1 commercial gill net harvest was 60.9% age 0.3 and 60.7% were female fall-run chum salmon (Appendix F.1). Contribution of age-0.3 fish to District 4, 5, and 6 and Yukon Territory commercial and subsistence harvests was somewhat less, ranging from 32.6% in District 5 to 52.6% in District 4 (Appendices F.7-F.9).

Mean length of males was larger than for females (NSC) for all ages from sampled harvests, except age-0.2 fish from District 2 (Table 12).

Age and sex samples were collected from spawning escapements to the Toklat, Delta, and Sheenjek Rivers, and Bluff Cabin Slough on the Tanana River in the Alaska portion of the drainage by ADF&G, and from the Fishing Branch River in Yukon Territory by DFO (Table 13). Age compositions ranged from 38.8% age 0.3 for Bluff Cabin Slough to 68.3% age 0.3 for the Sheenjek River, and from 29.2% age 0.4 for the Sheenjek River to 57.1% age 0.4 for Bluff Cabin Slough.

Sex composition was variable, ranging from 49.2% female for the Fishing Branch River to 81.7% female for the Sheenjek River.

Size of fall chum salmon by age and sex group was smaller (NSC) for samples from the Tanana (Toklat, Delta, and Bluff Cabin) drainage than for samples from the Porcupine (Sheenjek) drainage (Table 14). Samples collected from spawning grounds in Canada by DFO were measured differently and cannot be directly compared. Mean length of males was larger (NSC) than for females of all ages for each sampled escapement.

Coho Salmon

Catch by age and sex was estimated for 85% of the total coho salmon harvest for 1988 (Table 15). An estimated 85% of the total was age 2.1. The contribution of age-2.1 coho salmon to District 1 commercial gill net harvest (87.1%) was similar to the estimated contribution to District 4 (80.3%) and District 6 (83.3%) commercial and subsistence fish wheel harvests (Appendices G.1, G.7, and G.8).

Mean length of coho salmon was similar (NSC) for all ages and both sexes from all catches that were sampled (Table 16).

A coho salmon escapement sample was collected from the Delta Clearwater River for the fifth consecutive year. As in previous years, age-2.1 predominated, accounting for 89.8% of the sample (Table 17). This was similar to the age composition for District 1 commercial gill net catch samples.

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Table 1. Yukon River commercial and subsistence salmon harvest in numbers of fish by district and species, 1988.

District	Chinook			Summer Chum			Fall Chum			Coho			Pink		
	Comm.	Subs.[a]	Total	Comm.	Subs.[a]	Total	Comm.	Subs.[a]	Total	Comm.	Subs.[a]	Total	Comm.	Subs.[a]	Total
1	57,109	4,020	61,129	648,198	29,439	677,637	45,529	5,482	51,011	36,435	4,389	40,824	1,001	0	1,001
2	35,188	3,823	39,011	425,172	28,787	453,959	31,861	8,600	40,461	34,776	7,104	41,880	56	0	56
3	1,767	4,443	6,210	13,965	5,830	19,795	2,090	1,747	3,837	1,419	1,539	2,958	0	0	0
4	3,159	9,619	12,778	383,273	202,185	585,458	15,662	18,379	34,041	2	4,842	4,844	0	0	0
5	3,436	19,213	22,649	722	33,436	34,158	16,989	86,862	103,851	8	19,755	19,763	0	0	0
6	762	5,441	6,203	40,129	12,047	52,176	48,832	38,633	87,465	27,267	31,509	58,776	0	0	0
US Total	101,421	46,559	147,980	1,511,459	311,724	1,823,183	160,963	159,703	320,666	99,907	69,138	169,045	1,057	0	1,057
Canada															
Mainstem[b]	13,217	7,510	21,327	0	0	0	30,263	2,231	32,494	0	0	0	0	0	0
Porcupine	0	100	100	0	0	0	0	1,071	1,071	0	0	0	0	0	0
Canada Total	13,217	8,210	21,427	0	0	0	30,263	3,302	33,565	0	0	0	0	0	0
Yukon Drainage Total	114,638	54,769	169,407	1,511,459	311,724	1,823,183	191,226	163,005	354,231	99,907	69,138	169,045	1,057	0	1,057

[a]Subsistence harvest includes subsistence and personal use fisheries in Alaska, and domestic, Indian food, and sport fisheries in Canada.

[b]Mainstem Yukon River includes the Yukon River drainage upstream of the U.S.-Canada border; it does not include any Porcupine River stocks in Canada.

Table 2. Yukon River salmon spawning escapement index counts (peak aerial surveys) and population estimates, by species, 1988. Carcasses were included in aerial index counts unless otherwise noted.

Stream	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho
Andreafsky River						
East Fork Tower Count	6/21-7/25		1,339	68,937	--	--
East Fork Aerial Survey	7/16,9/13	Good,Good	1,020	43,056	--	1,913
West Fork Aerial Survey	7/16,9/13	Fair,Fair	1,448	45,432	--	430
Atchuelinguk River (Chulinak R)	7/16	Fair	915	47,174	--	176
Yukon R Sonar (Pilot Station)[abc]	6/2-9/14		80,834	1,875,880	506,993	263,887
Innoko River						
Reindeer Lake and River	7/29	Poor	0	21	--	--
Anvik River						
Aerial Survey						
Mainstem River	7/16,9/7	Fair,Fair	1,637	120,450	--	1,012
Beaver Creek	7/16	Fair	26	5,700	--	--
Canyon Creek	7/16	Fair	10	5,800	--	--
Otter Creek	7/16,9/7	Fair,Fair	108	31,140	--	76
Swift River	7/16,9/7	Fair,Fair	17	7,750	--	115
Yellow River	7/16	Fair	7	1,510	--	--
Sonar Count[bd]	6/21-7/27		--	1,125,449	--	--
Rodo River	7/14	Fair	282	13,872	--	--
Nulato River						
Below Forks	7/14	Good	72	8,565	--	--
South Fork	7/14	Good	714	15,132	--	--
North Fork	7/14	Good	989	18,386	--	--
Koyukuk River Drainage						
Gisasa River	7/14,7/29	Good,Good	797	9,284	--	--
Dakli River	7/15	Good	0	4,985	--	--
Wheeler Creek	7/15	Good	0	6,793	--	--
Hogatza River						
Caribou Creek	7/15	Good	0	4,020	--	--
Clear Creek	7/15	Good	0	2,870	--	--
Henshaw Creek	7/28	Good-Poor	180	1,106	--	--
South Fork Koyukuk River	7/28,10/8[e]	Good,Poor	260	437	250[e]	--
Jim River	7/28,10/8[e]	Good,Poor	159	291	30[e]	--
Melozitna River						
Melozi Hot Springs Creek	7/15	Fair	0	1,503	--	--
Tozitna River	7/23	Good	116	2,983	--	--
Lower Tanana River Drainage						
Kantishna River Drainage						
Toklat River						
Barton Creek	10/22	Fair	--	--	--	437
Floodplain (vic Rdhse)[f]	10/19-22	Good	--	--	10,786	36
Floodplain (vic Rdhse) aerial	10/11	Fair	--	--	14,225[g]	0
Geiger Creek[h]	10/20	Good	--	--	1,952	159
Sushana River[h]	10/21	Good	--	--	25	1
Population Estimate[i]			--	--	13,324	--

- Continued -

Table 2. (p. 2 of 4)

Stream	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho
Lower Tanana River Drainage (Continued)						
Nenana River Drainage						
Seventeen Mile Slough	9/7	Good	--	--	200	--
Lost Slough	10/11	Fair	--	--	--	348
Julius Creek						
Clear Creek[e]	7/9-29		200[e]	--	--	--
Wood Creek Weir Counts[j]	9/19-10/14		--	--	3,991[k]	2,046[l]
Chena River Aerial Survey	7/20,7/27	Fair-Poor	1,966	432	--	--
Population Estimate[mn]			3,045	--	--	--
Salcha River Aerial Survey	7/27,8/1	Good,Poor	2,761	2,889	--	--
Population Estimate[bmo]			4,562	--	--	--
Foot Survey - Mouth to Bridge	10/23		--	--	10	--
Upper Tanana River Drainage						
Vicinity Benchmark 735 Slough	10/21	Good	--	--	20	--
Mainstem Tanana sloughs between Little Delta R. and vicinity of Andersen Slough	10/21	Good	--	--	550	--
Vicinity Andersen Slough	10/21	Good	--	--	315	--
Southbank Tanana	10/21	Fair	--	--	7,000	--
Delta River Aerial Survey	10/21	Good	--	--	5,560	--
Foot Survey	10/31	Good	--	--	16,591	17
Population Estimate[i]			--	--	18,024	--
Bluff Cabin Slough	10/21	Good	--	--	4,481	--
Bluff Cabin Spring	10/21	Good	--	--	--	40
Slough across from Bluff C.Sl.	10/28	Good	--	--	33	--
Clearwater Lake Outlet Slough	10/21	Good	--	--	2,312	--
Clearwater Lake Outlet[op]	10/28	Good	--	--	--	825
Delta Clearwater River[op]	10/27-28	Good-Fair	--	--	75	21,600
Onemile Slough	10/21	Fair	--	--	1,520	--
Vicinity Pearse Slough	10/21	Good	--	--	1,715	--
Billy Creek Slough	10/28	Poor	--	--	151	--
Bear Creek	7/21		--	67	--	--
Chandalar R Sonar Count[bdq]	8/11-9/24		--	--	33,619	--
Porcupine River Drainage						
Sheenjek River Sonar Count[bd]	8/25-9/24		--	--	38,800	--
Coleen River[e]	9/12		--	--	28	--
Fishing Branch R Weir Count[br]	9/5-10/16		--	--	23,597	--
Nation River[pq]	8/1-4,9/15		3	2	--	--
Tatonduk River[pq]	8/19		--	4	--	--
Yukon Territory Streams						
White River						
Donjek River						
Kluane River[r]	10/19	Fair	--	--	6,950	--
Tincup Creek[r]	8/18	Good	204	--	--	--
Koidern River[r]	10/19	Good	--	--	0	--

- Continued -

Table 2. (p. 3 of 4)

Stream	Date	Survey Rating	Chinook	Summer Chum	Fall Chum	Coho
Yukon Territory Streams (Continued)						
Pelly River						
Ross River[r]	8/22	Fair	202	--	--	--
Lewis Lake Outlet	8/18	Poor	40	--	--	--
Hoole River	8/18	Fair	132	--	--	--
Tatchun Creek[hr]	8/30		130	--	--	--
Little Salmon R Aerial Survey[r]	8/23	Fair	368	--	--	--
Big Salmon River						
Aerial Survey Above DFO weir	8/16	Good-Fair	619	--	--	--
DFO Weir Count[b]	8/9-30	Incomplete	344	--	--	--
Aerial Survey Below DFO weir	8/16	Good	146	--	--	--
Teslin River Drainage						
Nisutlin River	8/15-16	Good-Fair	482	--	--	--
Wolf River	8/17	Fair-Good	121	--	--	--
Swift River	8/19	Poor	29	--	--	--
Morley River	8/19	Poor	17	--	--	--
Jennings River	8/19	Poor	14	--	--	--
Takhihi River[r]	8/20	Good	225	--	--	--
Ibex River[r]	8/29	?	3	--	--	--
Whitehorse Fishway Counts[rs]	7/31-9/3		405	--	--	--
Mainstem Yukon River						
Tatchun Creek to Fort Selkirk[r]	10/18	Fair	--	--	1,550	--
Border Escapement Estimate[bmrt]			44,445	--	68,082	--
Spawning Escapement Estimate[u]			23,118	--	36,786	--

[a]Biosonics sonar estimate.

[b]Preliminary.

[c]An estimated 536,312 pink salmon were also estimated passing the sonar site.

[d]Bendix side scan sonar estimate.

[e]Documentation by public.

[f]Combined foot and aerial estimate.

[g]Aerial estimate was less reliable than combined aerial/foor surveys conducted October 19-20.

[h]Foot survey.

[i]Population estimate based upon replicate foot surveys and streamlife data.

[j]F.R.E.D. Division estimate.

[k]A total of 300 chum salmon were artificially spawned.

[l]A total of 362 coho salmon were artificially spawned for the Clear Hatchery. A total of 150 coho salmon returning to the weir were hatchery marked fish included in the egg take.

[m]Population estimate based upon mark and recapture study near the U.S./Canada border.

[n]Population estimate for section from Grange Hall Road to 3 miles up the East Fork.

[o]Sport Fish Division estimate.

[p]Boat survey.

[q]U.S. Fish and Wildlife Service estimate.

[r]Canadian Department of Fisheries and Oceans estimate.

[s]Includes 134 (74 females, 60 males) fish taken for hatchery brood stock. Of the remaining 271, 50 were hatchery marked jack males.

[t]Transboundary escapement estimates for the Canadian Yukon River drainage excluding the Fishing Branch River. Commercial and subsistence catches have not been removed from these estimates.

[u]Transboundary escapement estimates after removal of estimated commercial and subsistence harvests.

Table 3. Harvest of Yukon River chinook salmon by age, sex, and fishery, 1988.

District	Fishery	Sample Size	Sex	Brood Year and Age Group										Total
				1985	1984	1983		1982		1981		1980		
				1.1	1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	
1	Commercial Gill Net	1,898	Female	0	506	2,352	0	9,050	48	8,591	426	32	272	21,276
			Male	0	8,987	11,588	121	8,686	206	5,771	224	12	239	35,834
			Total	0	9,493	13,942	121	17,733	254	14,362	650	44	510	57,109
1	Subsistence Gill Net	0	Female	0	36	166	0	637	3	605	30	2	19	1,498
			Male	0	633	816	9	611	15	406	16	1	17	2,522
			Total	0	668	981	9	1,248	18	1,012	46	3	36	4,020
2	Commercial Gill Net	1,064	Female	0	391	1,251	7	5,145	0	5,496	232	7	64	12,592
			Male	0	5,851	7,271	21	5,138	228	3,957	66	7	58	22,597
			Total	0	6,241	8,522	28	10,281	228	9,453	298	14	122	35,188
2	Subsistence Gill Net	0	Female	0	42	136	1	559	0	597	25	1	7	1,368
			Male	0	636	790	2	558	25	430	7	1	6	2,455
			Total	0	678	926	3	1,117	25	1,027	32	1	13	3,823
3	Commercial Gill Net	0	Female	0	20	63	0	258	0	276	12	0	3	632
			Male	0	294	365	1	258	11	199	3	0	3	1,135
			Total	0	313	428	1	516	11	475	15	1	6	1,767
3	Subsistence Gill Net	0	Female	0	49	158	1	650	0	694	29	1	8	1,590
			Male	0	739	918	3	649	29	500	8	1	7	2,853
			Total	0	788	1,076	3	1,298	29	1,194	38	2	15	4,443
4	Comm & Subs Gill Net and Fish Wheel	364	Female	0	35	632	0	3,195	70	2,984	70	0	211	7,196
			Male	105	1,018	1,509	35	1,790	70	983	0	35	35	5,582
			Total	105	1,053	2,141	35	4,985	140	3,967	70	35	246	12,778
5	Comm & Subs Gill Net	572	Female	0	0	214	0	2,492	0	4,314	188	54	214	7,475
			Male	0	375	1,661	27	1,688	27	3,671	241	0	161	7,851
			Total	0	375	1,876	27	4,180	27	7,985	429	54	375	15,326
5	Comm & Subs Fish Wheel	548	Female	0	0	120	0	441	0	388	27	13	13	1,002
			Male	40	2,165	2,886	27	641	107	388	67	0	0	6,321
			Total	40	2,165	3,007	27	1,082	107	775	94	13	13	7,323

-Continued-

Table 3. (p. 2 of 2)

District	Fishery	Sample Size	Sex	Brood Year and Age Group										Total
				1985	1984	1983		1982		1981		1980		
				1.1	1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	
6	Comm & Subs	306	Female	0	18	234	0	1,133	0	527	0	0	0	1,912
	Gill Net and		Male	72	1,954	1,354	0	749	0	144	0	18	0	4,291
	Fish Wheel		Total	72	1,972	1,588	0	1,882	0	671	0	18	0	6,203
Canada	Comm Gill Net	356	Female	0	0	371	0	3,044	0	2,859	111	0	297	6,683
			Male	0	817	2,042	0	1,893	111	1,411	74	74	111	6,534
			Total	0	817	2,413	0	4,938	111	4,270	186	74	408	13,217
Canada	Subs Gill Net	0	Female	0	0	212	0	1,741	0	1,635	64	0	170	3,822
			Male	0	467	1,168	0	1,083	64	807	42	42	64	3,738
			Total	0	467	1,380	0	2,824	64	2,442	106	42	234	7,560
Total Harvest			Female	0	1,097	5,910	9	28,344	122	28,965	1,214	110	1,279	67,048
			Male	217	23,935	32,370	245	23,746	893	18,665	749	192	701	101,712
			Total	217	25,031	38,281	254	52,085	1,015	47,631	1,963	302	1,979	168,757

Table 4. Length (mm measured from mid-orbit to fork-of-tail) by age and sex of Yukon River chinook salmon commercial and subsistence catch samples, 1988.

			Brood Year and Age Group									
			1985	1984	1983		1982		1981		1980	
Fishery	Sex		1.1	1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5
District 1	Female	Mean Length		700	757		857	780	930	900		940
Commercial		Std. Error		40.9	11.6		5.8	0.0	5.5	15.3		0.0
6 in (15.2 cm) Maximum Mesh		Sample Size		15	46		88	1	86	3		1
Size Gill Net	Male	Mean Length		579	694	587	825	625	963	875	1035	895
		Std Error		3.1	4.2	20.3	8.7	5.0	12.7	20.0	0.0	75.0
		Sample Size		229	251	3	87	2	53	2	1	2
District 1	Female	Mean Length			785		866	783	931	853	985	944
Commercial		Std Error			7.4		3.2	57.5	3.5	18.9	0.0	11.9
Unrestricted Mesh Size Gill Net		Sample Size			35		215	2	203	9	1	8
	Male	Mean Length		590	724	585	840		949	836		946
		Std Error		9.0	4.6	40.0	5.1		5.3	22.3		23.7
		Sample Size		30	145	2	192		164	5		7
District 2	Female	Mean Length		603	729	605	858		956	888	960	898
Commercial		Std Error		8.6	17.1	0.0	8.7		8.9	14.9	0.0	27.5
6 in (15.2 cm) Maximum Mesh		Sample Size		5	10	1	39		30	5	1	2
Size Gill Net	Male	Mean Length		604	704		836	790	966	745		985
		Std Error		4.2	5.1		8.9	0.0	9.9	38.2		0.0
		Sample Size		68	101		66	1	43	4		1
District 2	Female	Mean Length			760		870		931	860		940
Commercial		Std Error			12.5		3.8		3.7	13.3		20.2
Unrestricted Mesh Size Gill Net		Sample Size			24		196		215	6		3
	Male	Mean Length		580	724		855	713	957	863	1045	955
		Std Error		6.9	5.0		4.7	40.5	5.1	13.3	0.0	27.5
		Sample Size		46	159		198	4	182	3	1	3

-Continued-

Table 4. (page 2 of 3).

			Brood Year and Age Group									
			1985	1984	1983		1982		1981		1980	
Fishery	Sex		1.1	1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5
District 4	Female	Mean Length		688	753		847	799	910	873	0	872
Comm & Subs		Std Error		0.0	7.9		6.1	40.0	5.9	26.0	0.0	24.1
Gill Net		Sample Size		1	16		87	2	83	2	0	6
	Male	Mean Length		568	724		817	521	945	0	969	930
		Std Error		10.4	8.6		11.1	0.0	13.3	0.0	0.0	0.0
		Sample Size		14	37		48	1	27	0	1	1
District 4	Female	Mean Length			789		788		869			
Comm & Subs		Std Error			98.0		28.7		46.0			
Fish Wheel		Sample Size			2		4		2			
	Male	Mean Length	370	490	690	494	663	445	1057			
		Std Error	16.5	11.5	44.9	0.0	46.7	0.0	0.0			
		Sample Size	3	15	6	1	3	1	1			
District 5	Female	Mean Length			792		867		934	831	945	931
Comm & Subs		Std Error			21.9		5.0		3.7	14.1	55.0	13.4
Gill Net		Sample Size			8		93		161	7	2	8
	Male	Mean Length		571	723	510	870	685	960	833		914
		Std Error		8.8	7.4	0.0	9.9	0.0	5.0	19.1		27.6
		Sample Size		14	61	1	63	1	137	9		6
District 5	Female	Mean Length			774		837		922	798	940	840
Comm & Subs		Std Error			19.6		10.0		10.6	7.5	0.0	0.0
Fish Wheel		Sample Size			9		33		29	2	1	1
	Male	Mean Length	425	569	708	533	791	727	955	816		
		Std Error	20.2	4.0	3.1	12.5	11.5	14.8	13.4	34.5		
		Sample Size	3	163	217	2	47	8	29	5		

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Table 4. (page 3 of 3).

			Brood Year and Age Group									
			1985	1984	1983		1982		1981		1980	
Fishery	Sex		1.1	1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5
District 6	Female	Mean Length					790		960			
Comm & Subs		Std Error					0.0		0.0			
Gill Net		Sample Size					1		1			
	Male	Mean Length		597	730		865					
		Std Error		16.1	0.0		15.0					
		Sample Size		5	1		2					
District 6	Female	Mean Length		580	778		872		942			
Comm & Subs		Std Error		0.0	16.7		5.9		9.7			
Fish Wheel		Sample Size		1	13		62		24			
	Male	Mean Length	388	570	720		848		978		1055	
		Std Error	29.8	5.5	7.1		14.9		18.4		0.0	
		Sample Size	4	82	70		31		8		1	

Table 5. Age and sex composition of Yukon River chinook salmon escapement samples, 1988.

		Brood Year and Age Group[a]										
		1985	1984	1983		1982		1981		1980		
		1.1	1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Location:	Andreafsky River											
Sample Dates:	6/30-8/17											
Escapement:	2,787[b]											
Sample Size:	403[c]											
Female	Percent of Sample	0.0	0.0	5.2	0.0	19.4	0.0	14.1	0.0	0.0	0.0	38.7
Male	Percent of Sample	0.2	27.8	24.3	0.0	7.4	0.0	1.5	0.0	0.0	0.0	61.3
Total	Percent of Sample	0.2	27.8	29.5	0.0	26.8	0.0	15.6	0.0	0.0	0.0	100.0
	Standard Error	0.2	2.2	2.3	0.0	2.2	0.0	1.8	0.0	0.0	0.0	
Location:	Anvik River											
Sample Dates:	8/4-8/17											
Escapement:	1,805											
Sample Size:	246[d]											
Female	Percent of Sample	0.0	0.0	9.8	0.0	16.7	0.0	3.3	0.0	0.0	0.0	29.7
Male	Percent of Sample	0.0	30.5	28.0	0.4	10.6	0.0	0.4	0.4	0.0	0.0	70.3
Total	Percent of Sample	0.0	30.5	37.8	0.4	27.2	0.0	3.7	0.4	0.0	0.0	100.0
	Standard Error	0.0	2.9	3.1	0.4	2.8	0.0	1.2	0.4	0.0	0.0	
Location:	Nulato River											
Sample Dates:	7/26-7/29											
Escapement:	1,775											
Sample Size:	123[e]											
Female	Percent of Sample	0.0	0.0	5.7	0.0	10.6	0.0	3.3	0.0	0.8	0.0	20.3
Male	Percent of Sample	0.0	14.6	53.7	0.0	8.1	0.8	2.4	0.0	0.0	0.0	79.7
Total	Percent of Sample	0.0	14.6	59.3	0.0	18.7	0.8	5.7	0.0	0.8	0.0	100.0
	Standard Error	0.0	3.2	4.4	0.0	3.5	0.8	2.1	0.0	0.8	0.0	

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Table 5. (Page 2 of 6)

		Brood Year and Age Group[a]										
		1985	1984	1983		1982		1981		1980		
		1.1	1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Location:	Gisasa River											
Sample Dates:	8/2-8/6											
Escapement:	797											
Sample Size:	175[e]											
Female	Percent of Sample	0.6	0.6	3.4	0.0	16.0	0.0	5.1	0.0	0.0	0.0	25.7
Male	Percent of Sample	0.6	29.1	37.7	0.6	5.7	0.0	0.0	0.6	0.0	0.0	74.3
Total	Percent of Sample	1.1	29.7	41.1	0.6	21.7	0.0	5.1	0.6	0.0	0.0	100.0
	Standard Error	0.8	3.5	3.7	0.6	3.1	0.0	1.7	0.6	0.0	0.0	
Location:	Jim/S.F. Koyukuk Rivers[c]											
Sample Dates:	8/9-8/11											
Escapement:	419											
Sample Size:	24[ef]											
Female	Percent of Sample	0.0	0.0	12.5	0.0	45.8	0.0	8.3	0.0	0.0	0.0	66.7
Male	Percent of Sample	0.0	4.2	20.8	0.0	8.3	0.0	0.0	0.0	0.0	0.0	33.3
Total	Percent of Sample	0.0	4.2	33.3	0.0	54.2	0.0	8.3	0.0	0.0	0.0	100.0
	Standard Error	0.0	4.2	9.8	0.0	10.4	0.0	5.8	0.0	0.0	0.0	
Location:	Chena River											
Sample Dates:	7/29-8/12											
Escapement:	3,045[g]											
Sample Size:	468[h]											
Female	Percent of Sample	0.0	0.0	3.6	0.0	35.5	0.0	21.4	0.0	0.0	0.4	60.9
Male	Percent of Sample	0.6	10.5	13.9	0.0	10.9	0.0	3.2	0.0	0.0	0.0	39.1
Total	Percent of Sample	0.6	10.5	17.5	0.0	46.4	0.0	24.6	0.0	0.0	0.4	100.0
	Standard Error	11	43	54	0	70	0	61	0	0	9	

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Table 5. (Page 3 of 6)

		Brood Year and Age Group[a]										
		1985	1984	1983		1982		1981		1980		
		1.1	1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Location:	Salcha River[d]											
Sample Dates:	7/30-8/15											
Escapement:	4,562[i]											
Sample Size:	497[h]											
Female	Percent of Sample	0.0	0.2	2.6	0.0	27.4	0.0	9.5	0.0	0.0	0.0	39.6
Male	Percent of Sample	0.4	20.1	19.7	0.2	14.7	0.0	5.0	0.2	0.0	0.0	60.4
Total	Percent of Sample	0.4	20.3	22.3	0.2	42.1	0.0	14.5	0.2	0.0	0.0	100.0
	Standard Error	13	82	85	9	101	0	72	9	0	0	
Location:	Ross River											
Sample Dates:	8/24											
Escapement:	202											
Sample Size:	123											
Female	Percent of Sample	0.0	0.0	1.6	0.0	17.1	0.0	44.7	0.0	0.0	0.0	63.4
Male	Percent of Sample	0.0	2.4	10.6	0.0	8.9	0.0	14.6	0.0	0.0	0.0	36.6
Total	Percent of Sample	0.0	2.4	12.2	0.0	26.0	0.0	59.3	0.0	0.0	0.0	100.0
	Standard Error	0.0	1.4	3.0	0.0	4.0	0.0	4.4	0.0	0.0	0.0	
Location:	Mainstem Yukon R. (Yukon Crossing to Ingersoll Islands)											
Sample Dates:	8/3-8/31											
Escapement:[j]												
Sample Size:	51											
Female	Percent of Sample	0.0	0.0	2.0	0.0	17.6	0.0	27.5	0.0	0.0	0.0	47.1
Male	Percent of Sample	0.0	5.9	23.5	2.0	11.8	0.0	9.8	0.0	0.0	0.0	52.9
Total	Percent of Sample	0.0	5.9	25.5	2.0	29.4	0.0	37.3	0.0	0.0	0.0	100.0
	Standard Error	0.0	3.3	6.2	2.0	6.4	0.0	6.8	0.0	0.0	0.0	

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Table 5. (Page 4 of 6)

		Brood Year and Age Group[a]										
		1985	1984	1983		1982		1981		1980		
		1.1	1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Location:	Tatchun Creek											
Sample Dates:	8/30											
Escapement:	130[k]											
Sample Size:	56											
Female	Percent of Sample	0.0	0.0	5.4	0.0	10.7	0.0	8.9	0.0	0.0	0.0	25.0
Male	Percent of Sample	0.0	10.7	58.9	0.0	5.4	0.0	0.0	0.0	0.0	0.0	75.0
Total	Percent of Sample	0.0	10.7	64.3	0.0	16.1	0.0	8.9	0.0	0.0	0.0	100.0
	Standard Error	0.0	4.2	6.5	0.0	5.0	0.0	3.8	0.0	0.0	0.0	
Location:	Little Salmon River											
Sample Dates:	8/22-8/24											
Escapement:	368											
Sample Size:	188											
Female	Percent of Sample	0.0	0.0	2.1	0.0	26.6	0.5	21.3	1.6	0.0	1.1	53.2
Male	Percent of Sample	0.0	4.3	17.6	0.0	13.8	0.5	10.1	0.5	0.0	0.0	46.8
Total	Percent of Sample	0.0	4.3	19.7	0.0	40.4	1.1	31.4	2.1	0.0	1.1	100.0
	Standard Error	0.0	1.5	2.9	0.0	3.6	0.8	3.4	1.1	0.0	0.8	
Location:	Big Salmon River	Combined: Carcass (ADF&G), Weir Carcass & Weir Live (DFO)										
Sample Dates:	8/26-8/28											
Escapement:	765[l]											
Sample Size:	354[m]											
Female	Percent of Sample	0.0	0.0	1.1	0.0	15.0	0.0	13.8	1.4	0.0	1.4	32.8
Male	Percent of Sample	0.0	4.0	19.5	0.0	28.5	0.3	9.3	3.1	0.0	2.5	67.2
Total	Percent of Sample	0.0	4.0	20.6	0.0	43.5	0.3	23.2	4.5	0.0	4.0	100.0
	Standard Error	0.0	2.0	4.1	0.0	5.0	0.5	4.2	2.1	0.0	2.0	

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Table 5. (Page 5 of 6)

		Brood Year and Age Group[a]										
		1985	1984	1983		1982		1981		1980		
		1.1	1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Location:	Nisutlin River											
Sample Dates:	8/27											
Escapement:	482											
Sample Size:	18											
Female	Percent of Sample	0.0	0.0	11.1	0.0	0.0	0.0	0.0	50.0	0.0	16.7	77.8
Male	Percent of Sample	0.0	0.0	11.1	0.0	0.0	5.6	5.6	0.0	0.0	0.0	22.2
Total	Percent of Sample	0.0	0.0	22.2	0.0	0.0	5.6	5.6	50.0	0.0	16.7	100.0
	Standard Error	0.0	0.0	10.1	0.0	0.0	5.6	5.6	12.1	0.0	9.0	
Location:	Takhini River											
Sample Dates:	9/2											
Escapement:	225											
Sample Size:	61											
Female	Percent of Sample	0.0	0.0	6.6	0.0	4.9	1.6	3.3	21.3	0.0	19.7	57.4
Male	Percent of Sample	0.0	0.0	14.8	0.0	4.9	9.8	0.0	11.5	0.0	1.6	42.6
Total	Percent of Sample	0.0	0.0	21.3	0.0	9.8	11.5	3.3	32.8	0.0	21.3	100.0
	Standard Error	0.0	0.0	5.3	0.0	3.8	4.1	2.3	6.1	0.0	5.3	

[a]All samples collected from carcasses and live spawnouts captured with fish spears, except as noted. Escapement Index abundance estimates are from aerial surveys. Age composition is the composition of the sample, except streams for which total population size was estimated and age composition was reported in numbers of fish.

[b]Includes East Fork tower count of 1,339 and West Fork aerial survey count of 1,448.

[c]Includes samples from live fish captured with snagging gear and beach seine.

[d]Includes samples from live fish captured with snagging gear.

[e]Includes samples from live fish captured with snagging gear and gill nets.

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Table 5. (p. 6 of 6)

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[f]Includes 12 samples from the South Fork Koyukuk River and 12 samples from the Jim River.

[g]Mark and recapture population estimate for the section of river from Grange Hall Road to 3 miles up the East Fork.

[h]Includes samples from live fish captured with a direct current electroshocker.

[i]Mark and recapture population estimate.

[j]Turbid water precludes aerial surveys in this portion of the river.

[k]DFO foot survey.

[l]High water delayed weir intallation. Total count is probably an underestimate.

[m]Includes samples from live fish from weir trap, carcasses washed down onto weir, and carcasses collected during boat surveys.

Table 6. Length by age and sex of Yukon River chinook salmon escapement samples, 1988.

River	Sex		Brood Year and Age Group[a]									
			1985	1984	1983		1982		1981		1980	
			1.1	1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5
Andreafsky[b]	Female	Mean Length			786		872		925			
		Std Error			8.8		5.8		5.9			
		Sample Size			21		74		56			
	Male	Mean Length	335	562	699		835		912			
		Std Error	0.0	4.7	6.8		13.7		17.7			
		Sample Size	1	119	93		27		6			
Anvik[c]	Female	Mean Length			785		859		913			
		Std Error			11.0		8.9		22.5			
		Sample Size			25		41		8			
	Male	Mean Length		587	714	650	799		880	940		
		Std Error		6.4	7.4	0.0	14.6		0.0	0.0		
		Sample Size		75	69	1	25		1	1		
Nulato[d]	Female	Mean Length			799		859		933		940	
		Std Error			27.6		10.5		14.9		0.0	
		Sample Size			7		13		4		1	
	Male	Mean Length		576	719		844	790	928			
		Std Error		14.2	5.5		11.3	0.0	63.5			
		Sample Size		18	66		10	1	3			
Gisasa[d]	Female	Mean Length			783		863		921			
		Std Error			20.7		8.7		15.3			
		Sample Size			6		26		8			
	Male	Mean Length	475	570	706	550	835			830		
		Std Error	0.0	6.1	8.2	0.0	24.7			0.0		
		Sample Size	1	50	62	1	10			1		
Upper Koyukuk Drainage[d]	Female	Mean Length			798		861		938			
		Std Error			16.7		12.6		7.5			
		Sample Size			3		11		2			
	Male	Mean Length		595	734		755					
		Std Error		0.0	14.7		10.0					
		Sample Size		1	5		2					
Chena[e]	Female	Mean Length			800		849		920			933
		Std Error			13.1		3.3		4.9			12.5
		Sample Size			17		166		99			2
	Male	Mean Length	522	557	711		815		983			
		Std Error	14.2	6.8	6.1		10.1		18.3			
		Sample Size	3	49	65		51		15			

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Table 6. (p. 2 of 3)

River	Sex		Brood Year and Age Group[a] 1985 1.1	1984 1.2	1983 1.3	1983 2.2	1982 1.4	1982 2.3	1981 1.5	1981 2.4	1980 1.6	1980 2.5
Salcha[e]	Female	Mean Length		790	800		871		952			
		Std Error		0.0	18.7		3.7		8.2			
		Sample Size		1	12		135		47			
	Male	Mean Length	395	594	742	650	860		987	850		
		Std Error	15.0	6.2	5.8	0.0	10.3		15.4	0.0		
		Sample Size	2	100	98	1	73		25	1		
Ross River	Female	Mean Length			773		867		919			
		Std Error			67.5		7.2		5.7			
		Sample Size			2		21		54			
	Male	Mean Length		555	715		871		949			
		Std Error		20.8	17.4		23.3		14.7			
		Sample Size		3	13		11		18			
Mainstem Yukon	Female	Mean Length					861		948			
		Std Error					18.7		10.6			
		Sample Size					8		14			
	Male	Mean Length		557	710	615	964		975			
		Std Error		19.2	19.3	0.0	28.9		75.2			
		Sample Size		3	11	1	6		3			
Tatchun	Female	Mean Length			765		795		881			
		Std Error			7.6		16.6		32.4			
		Sample Size			3		4		4			
	Male	Mean Length		599	697		760					
		Std Error		24.0	8.7		31.2					
		Sample Size		5	31		3					
Little Salmon	Female	Mean Length			773		855	800	925	850		933
		Std Error			29.8		6.7	0.0	7.1	40.0		7.5
		Sample Size			4		50	1	40	2		2
	Male	Mean Length		525	678		885	735	950	905		
		Std Error		10.7	9.9		15.0	0.0	13.1	0.0		
		Sample Size		8	33		26	1	19	1		
Big Salmon	Female	Mean Length					874		926	925		932
		Std Error					8.1		5.9	40.0		8.3
		Sample Size					29		40	2		3
	Male	Mean Length		535	723		856		951	935		1035
		Std Error		10.0	14.4		27.6		21.8	0.0		0.0
		Sample Size		2	7		10		6	1		1

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Table 6. (p. 3 of 3)

River	Sex		Brood Year and Age Group[a] 1985 1.1	1984 1.2	1983 1.3	1983 2.2	1982 1.4	1982 2.3	1981 1.5	1981 2.4	1980 1.6	1980 2.5
Nisutlin	Female	Mean Length			805					838	885	
		Std Error			45.0					8.3	25.2	
		Sample Size			2					8	3	
	Male	Mean Length			745			675	940			
		Std Error			20.0			0.0	0.0			
		Sample Size			2			1	1			
Takhini	Female	Mean Length			828		810		973	855		923
		Std Error			14.4		48.6		7.5	20.3		12.8
		Sample Size			4		3		2	13		12
		Mean Length			742		868	794		844		970
	Male	Std Error			17.8		57.8	17.4		33.1		0.0
		Sample Size			9		3	6		7		1

[a]All samples collected from carcasses and live spawnouts captured with fish spears, except as noted. Length (mm) measured from mid-orbit to fork-of-tail.

[b]Includes samples from live fish captured with snagging gear and beach seine.

[c]Includes samples from live fish captured with snagging gear.

[d]Includes samples from live fish captured with snagging gear and gill nets.

[e]Includes samples from live fish captured with a direct current electroshocker.

Table 7. Harvest of Yukon River summer chum salmon by age, sex, and fishery, 1988.

District	Fishery	Sample Size	Sex	Brood Year and Age Group 1985 0.2	1984 0.3	1983 0.4	1982 0.5	Total
1	Commercial Gill Net	2,636	Female	41	205,564	82,736	2,008	290,349
			Male	83	274,374	79,161	4,228	357,846
			Total	124	479,938	161,897	6,236	648,198
1	Subsistence Gill Net	0	Female	2	9,336	3,758	91	13,187
			Male	4	12,461	3,595	192	16,252
			Total	6	21,797	7,353	283	29,439
2	Commercial Gill Net	0	Female	27	134,835	54,269	1,317	190,448
			Male	54	179,970	51,924	2,773	234,722
			Total	81	314,805	106,193	4,090	425,170
2	Subsistence Gill Net	0	Female	2	9,129	3,674	89	12,895
			Male	4	12,185	3,516	188	15,892
			Total	6	21,314	7,190	277	28,787
3	Commercial Gill Net	0	Female	1	4,429	1,782	43	6,255
			Male	2	5,911	1,705	91	7,710
			Total	3	10,340	3,488	134	13,965
3	Subsistence Gill Net	0	Female	0	1,849	744	18	2,611
			Male	1	2,468	712	38	3,219
			Total	1	4,317	1,456	56	5,830
4	Comm & Subs Fish Wheel	445	Female	0	196,967	84,121	1,026	282,114
			Male	0	89,250	84,121	1,026	174,397
			Total	0	286,217	168,242	2,052	497,943
6	Comm & Subs Gill Net	262	Female	0	270	742	0	1,012
			Male	0	877	1,215	0	2,092
			Total	0	1,147	1,957	0	3,104
6	Comm & Subs Fish Wheel	1,769	Female	0	15,368	13,593	166	29,127
			Male	28	7,906	11,540	472	19,945
			Total	28	23,274	25,132	638	49,072
TOTAL HARVEST			Female	73	577,747	245,420	4,759	827,998
			Male	175	585,403	237,489	9,008	832,074
			Total	248	1,163,150	482,908	13,767	1,660,076[a]

[a]Total does not include the following harvests due to lack of appropriate sample data:

District 4 Commercial & Subsistence Gill Net	80,233
District 5 Commercial & Subsistence Gill Net	12,097
District 5 Commercial & Subsistence Fish Wheel	22,061
Total	114,391

Table 8. Length (mm measured from mid-orbit to fork-of-tail) by age and sex of Yukon River summer chum salmon commercial and subsistence catch samples, 1988.

			Brood Year and Age Group			
			1985	1984	1983	1982
Fishery	Sex		0.2	0.3	0.4	0.5
District 1 Commercial 6 in (15.2 cm) Maximum Mesh Size Gill Net	Female	Mean Length	600	568	589	597
		Std. Error	0.0	0.9	1.8	7.6
		Sample Size	1	731	238	12
	Male	Mean Length	548	589	611	620
		Std. Error	7.5	0.9	1.9	6.6
		Sample Size	2	820	217	12
District 1 Commercial Unresricted Mesh Size Gill Net	Female	Mean Length		575	586	575
		Std. Error		2.1	2.4	0.0
		Sample Size		112	92	1
	Male	Mean Length		595	618	613
		Std. Error		1.6	2.9	9.6
		Sample Size		266	107	7
District 4 Comm. & Subs. Fish Wheel	Female	Mean Length		549	580	610
		Std. Error		1.8	3.4	0.0
		Sample Size		192	82	1
	Male	Mean Length		581	615	651
		Std. Error		3.5	3.7	0.0
		Sample Size		87	82	1
District 6 Comm. & Subs. Gill Net	Female	Mean Length		594	601	
		Std. Error		9.7	6.0	
		Sample Size		4	11	
	Male	Mean Length		603	620	
		Std. Error		8.9	7.1	
		Sample Size		13	18	
District 6 Comm. & Subs. Fish Wheel	Female	Mean Length		565	594	626
		Std. Error		1.0	1.2	11.7
		Sample Size		551	486	6
	Male	Mean Length	575	589	622	644
		Std. Error	0.0	1.7	1.3	7.2
		Sample Size	1	284	414	17

Table 9. Age and sex compostion of Yukon River summer chum salmon escapement samples, 1988.

		Brood Year and Age Group					
		1985	1984	1983	1982	1981	
		0.2	0.3	0.4	0.5	0.6	Total
Location: East Fork Andreafsky River							
Sample Dates:	6/21-7/17						
Sample Size:	525[a]						
Female	Percent of Sample	0.4	35.6	11.8	1.5	0.0	49.3
	Number of Fish	263	24,555	8,141	1,050	0	34,009
Male	Percent of Sample	1.0	34.3	13.9	1.3	0.2	50.7
	Number of Fish	657	23,636	9,586	919	131	34,928
Total	Percent of Sample	1.3	69.9	25.7	2.9	0.2	100.0
	Number of Fish	919	48,190	17,727	1,970	131	68,937[b]
	Standard Error	345	1,381	1,316	502	131	
Location:	Anvik River						
Sample Dates:	6/26-7/22						
Sample Size:	531[a]						
Female	Percent of Sample	5.6	53.1	7.0	0.4	0.0	66.1
	Number of Fish	63,585	597,696	78,421	4,239	0	743,941
Male	Percent of Sample	0.2	24.3	9.0	0.4	0.0	33.9
	Number of Fish	2,119	273,414	101,736	4,239	0	381,508[c]
Total	Percent of Sample	5.8	77.4	16.0	0.8	0.0	100.0
	Number of Fish	65,704	871,110	180,157	8,478	0	1,125,449
	Standard Error	11,462	20,446	17,925	4,227	0	
Location:	Nulato River						
Sample Dates:	7/30						
Sample Size:	184[d]						
Aerial Survey:	42,083						
Female	Percent of Sample	1.6	53.3	6.0	0.0	0.0	60.9
Male	Percent of Sample	0.0	33.7	5.4	0.0	0.0	39.1
Total	Percent of Sample	1.6	87.0	11.4	0.0	0.0	100.0
	Standard Error	0.9	2.5	2.4	0.0	0.0	
Location:	Gisasa River						
Sample Dates:	8/4						
Sample Size:	32[d]						
Aerial Survey:	9,284						
Female	Percent of Sample	3.1	50.0	9.4	0.0	0.0	62.5
Male	Percent of Sample	0.0	31.3	6.3	0.0	0.0	37.5
Total	Percent of Sample	3.1	81.3	15.6	0.0	0.0	100.0
	Standard Error	3.1	7.0	6.5	0.0	0.0	

-Continued-

Table 9. (p. 2 of 2)

		Brood Year and Age Group					
		1985	1984	1983	1982	1981	
		0.2	0.3	0.4	0.5	0.6	Total
Location:	Salcha River						
Sample Dates:	7/30						
Sample Size:	47[e]						
Aerial Survey:	2,889						
Female	Percent of Sample	0.0	19.1	23.4	2.1	0.0	44.7
Male	Percent of Sample	2.1	29.8	23.4	0.0	0.0	55.3
Total	Percent of Sample	2.1	48.9	46.8	2.1	0.0	100.0
	Standard Error	2.1	7.4	7.4	2.1	0.0	

[a]Samples collected from beach seine catches.

[b]Tower count.

[c]Bendix sidescan sonar count.

[d]Samples collected from carcasses.

[e]Samples collected from fish captured with a direct current electroshocker.

Table 10. Length (mm measured from mid-orbit to fork-of-tail) by age and sex of Yukon River summer chum salmon escapement samples, 1988.

			Brood Year and Age Group				
			1985	1984	1983	1982	1981
Location	Sex		0.2	0.3	0.4	0.5	0.6
Andreafsky River[a]	Female	Mean Length	548	548	571	571	0
		Std. Error	10.4	1.8	3.4	8.3	0.0
		Sample Size	5	188	58	8	0
	Male	Mean Length	583	585	612	632	600
		Std. Error	16.7	3.3	3.7	10.0	0.0
		Sample Size	8	188	64	5	1
Anvik River[a]	Female	Mean Length	535	554	597	590	
		Std. Error	14.0	3.6	20.9	0.0	
		Sample Size	4	297	50	1	
	Male	Mean Length		599	622	593	
		Std. Error		2.4	3.7	17.5	
		Sample Size		115	64	2	
Nulato River[b]	Female	Mean Length	533	537	573		
		Std. Error	24.6	7.6	5.7		
		Sample Size	3	94	11		
	Male	Mean Length		570	603		
		Std. Error		9.1	8.7		
		Sample Size		60	10		
Gisasa River[b]	Female	Mean Length		559	573		
		Std. Error		9.1	12.5		
		Sample Size		7	2		
	Male	Mean Length		594			
		Std. Error		9.5			
		Sample Size		7			
Salcha River[c]	Female	Mean Length	0	588	602	620	
		Std. Error	0.0	8.6	11.0	0.0	
		Sample Size	0	9	11	1	
	Male	Mean Length	590	589	613	0	
		Std. Error	0.0	9.8	6.3	0.0	
		Sample Size	1	14	11	0	

[a]Samples collected from live fish captured with beach seines.

[b]Samples collected from carcasses.

[c]Samples collected from fish captured with a direct current electroshocker.

Table 11. Harvest of Yukon River fall chum salmon by age, sex and fishery, 1988.

District	Fishery	Sample Size	Sex	Brood Year and Age Group 1985 0.2	1984 0.3	1983 0.4	1982 0.5	1981 0.6	Total
1	Commercial Gill Net	981	Female	2,475	17,869	7,274	36	0	27,654
			Male	2,379	9,853	5,641	0	0	17,873
			Total	4,854	27,722	12,915	36	0	45,529
1	Subsistence Gill Net	0	Female	298	2,152	876	4	0	3,330
			Male	286	1,186	679	0	0	2,152
			Total	584	3,338	1,555	4	0	5,482
2	Commercial Gill Net	[a]	Female	1,842	13,240	4,295	63	0	19,440
			Male	2,277	6,805	3,337	0	0	12,420
			Total	4,119	20,045	7,633	63	0	31,861
2	Subsistence Gill Net	0	Female	1,234	3,366	791	11	0	5,401
			Male	1,217	1,549	431	0	0	3,197
			Total	2,451	4,915	1,222	11	0	8,600
3	Commercial Gill Net	0	Female	300	818	192	3	0	1,313
			Male	296	376	105	0	0	777
			Total	596	1,195	297	3	0	2,090
3	Subsistence Gill Net	0	Female	251	684	161	2	0	1,097
			Male	247	315	88	0	0	649
			Total	498	999	248	2	0	1,747
4	Comm & Subs Fish Wheel	485	Female	0	8,548	6,999	344	0	15,891
			Male	57	6,081	5,335	459	0	11,933
			Total	57	14,629	12,334	803	0	27,824
5	Comm & Subs Fish Wheel	975	Female	0	13,825	24,282	2,127	89	40,322
			Male	0	14,357	28,270	3,456	0	46,083
			Total	0	28,181	52,552	5,583	89	86,405
6	Comm & Subs Fish Wheel	1,180	Female	0	16,263	19,227	2,024	0	37,514
			Male	0	17,637	27,178	2,891	72	47,778
			Total	0	33,900	46,405	4,915	72	85,292
Canada	Commercial GN & FW	409	Female	296	7,251	7,325	0	0	14,873
			Male	74	6,363	8,879	74	0	15,390
			Total	370	13,615	16,204	74	0	30,263
Canada	Subsistence GN & FW	0	Female	32	791	799	0	0	1,623
			Male	8	694	969	8	0	1,679
			Total	40	1,485	1,768	8	0	3,302
TOTAL HARVEST			Female	6,727	84,807	72,221	4,614	89	168,458
			Male	6,842	65,217	80,912	6,888	72	159,932
			Total	13,570	150,024	153,133	11,502	161	328,394[b]

[a]Based on commercial gill net catch samples from District 1 (719) and 2 (173).

[b]Total drainage harvest by age and sex does not include the following fisheries and catches due to lack of appropriate sample data:

District 4 Commercial and Subsistence Gill Net	6,217
District 5 Commercial and Subsistence Gill Net	17,446
District 6 Commercial and Subsistence Gill Net	2,173
Total Unestimated Harvest	25,836

Table 12. Length (mm measured from mid-orbit to fork-of-tail) by age and sex of Yukon River fall chum salmon commercial and subsistence catch samples, 1988.

			Brood Year and Age Group				
			1985	1984	1983	1982	1981
Fishery	Sex		0.2	0.3	0.4	0.5	0.6
District 1	Female	Mean Length	571	601	610	628	
Commercial		Std. Error	2.6	1.4	2.6	12.5	
6 in (15.2 cm)		Sample Size	104	381	134	2	
Maximum Mesh							
Size Gill Net	Male	Mean Length	578	610	630		
		Std. Error	3.1	2.2	3.7		
		Sample Size	94	193	72		
District 2	Female	Mean Length	569	601	607	580	
Commercial		Std. Error	7.3	2.6	6.0	0.0	
6 in (15.2 cm)		Sample Size	10	76	19	1	
Maximum Mesh							
Size Gill Net	Male	Mean Length	565	605	629		
		Std. Error	5.4	3.6	9.8		
		Sample Size	17	37	11		
District 4	Female	Mean Length		575	600	607	
Comm & Subs		Std. Error		2.5	2.9	7.2	
Fish Wheel		Sample Size		149	122	6	
	Male	Mean Length	554	599	625	657	
		Std. Error	0.0	3.5	3.2	7.0	
		Sample Size	1	106	93	8	
District 5	Female	Mean Length		592	608	627	630
Comm & Subs		Std. Error		2.3	1.8	5.2	0.0
Fish Wheel		Sample Size		156	274	24	1
	Male	Mean Length		618	634	636	
		Std. Error		2.2	1.8	4.1	
		Sample Size		162	319	39	
District 6	Female	Mean Length		588	612	627	
Comm & Subs		Std. Error		2.2	1.8	4.8	
Fish Wheel		Sample Size		225	266	28	
	Male	Mean Length		616	636	651	750
		Std. Error		2.3	1.5	5.0	0.0
		Sample Size		244	376	40	1

Table 13. Age and sex composition of Yukon River fall chum salmon escapement samples, 1988.

		Brood Year and Age Group[a]				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Location:	Toklat River					
Sampling Dates:	10/18					
Sample Size:	156					
Female	Percent of Sample	3.2	30.1	23.7	0.0	57.1
	Number of Fish	427	4,014	3,160	0	7,602
Male	Percent of Sample	0.6	18.6	23.1	0.6	42.9
	Number of Fish	85	2,477	3,075	85	5,722
Total	Percent of Sample	3.8	48.7	46.8	0.6	100.0
	Number of Fish	512	6,491	6,235	85	13,324[b]
	Standard Error	206	535	534	85	
Location:	Delta River					
Sampling Dates:	11/19					
Sample Size:	150					
Female	Percent of Sample	0.7	35.3	18.7	0.0	54.7
	Number of Fish	120	6,368	3,364	0	9,853
Male	Percent of Sample	1.3	24.0	19.3	0.7	45.3
	Number of Fish	240	4,326	3,485	120	8,171
Total	Percent of Sample	2.0	59.3	38.0	0.7	100.0
	Number of Fish	360	10,694	6,849	120	18,024[b]
	Standard Error	207	725	717	120	
Location:	Bluff Cabin Slough					
Sampling Dates:	11/2					
Escapement:	4,481[c]					
Sample Size:	147					
Female	Percent of Sample	0.0	23.8	25.9	0.0	49.7
Male	Percent of Sample	0.0	15.0	31.3	4.1	50.3
Total	Percent of Sample	0.0	38.8	57.1	4.1	100.0
	Standard Error	0.0	4.0	4.1	1.6	

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Table 13. (p. 2 of 2)

		Brood Year and Age Group[a]				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Location:	Sheenjek River					
Sampling Dates:	9/20-9/25					
Sample Size:	120[d]					
Female	Percent of Sample	2.5	58.3	20.8	0.0	81.7
	Number of Fish	970	22,633	8,083	0	31,687
Male	Percent of Sample	0.0	10.0	8.3	0.0	18.3
	Number of Fish	0	3,880	3,233	0	7,113
Total	Percent of Sample	2.5	68.3	29.2	0.0	100.0
	Number of Fish	970	26,513	11,317	0	38,800[e]
	Standard Error	555	1,655	1,617	0	
Location:	Fishing Branch River					
Sampling Dates:	N.A.					
Sample Size:	662[f]					
Female	Percent of Sample	0.3	30.7	17.8	0.5	49.2
	Number of Fish	117	11,898	6,916	176	19,107
Male	Percent of Sample	0.2	32.5	17.7	0.5	50.8
	Number of Fish	59	12,601	6,857	176	19,693
Total	Percent of Sample	0.5	63.1	35.5	0.9	100.0
	Number of Fish	176	24,499	13,773	352	23,597[g]
	Standard Error	62	443	439	87	

[a]All samples collected from carcasses except as noted.

[b]Population estimate based upon replicate foot surveys and streamlife data.

[c]Aerial survey.

[d]Samples collected from live fish captured with beach seine.

[e]Bendix sidescan sonar estimate.

[f]Samples collected from weir trap catches.

[g]Weir count.

Table 14. Length (mm measured from mid-orbit to fork-of-tail) by age and sex of Yukon River fall chum salmon escapement carcass samples, 1988.

			Brood Year and Age Group			
			1985	1984	1983	1982
Location	Sex		0.2	0.3	0.4	0.5
Toklat River	Female	Mean Length	499	563	593	
		Std. Error	11.1	4.1	4.2	
		Sample Size	5	47	37	
	Male	Mean Length	535	591	614	655
		Std. Error	0.0	5.6	4.3	0.0
		Sample Size	1	29	36	1
Delta River	Female	Mean Length	510	584	608	
		Std. Error	0	3.2	3.6	
		Sample Size	1	53	28	
	Male	Mean Length	543	610	644	710
		Std. Error	17.5	4.1	3.5	0.0
		Sample Size	2	36	29	1
Bluff Cabin Slough	Female	Mean Length		582	605	
		Std. Error		4.4	4.1	
		Sample Size		35	38	
	Male	Mean Length		610	645	661
		Std. Error		5.5	3.8	8.0
		Sample Size		22	46	6
Sheenjek River[a]	Female	Mean Length	560	595	601	
		Std. Error	10.0	3.5	4.9	
		Sample Size	3	70	25	
	Male	Mean Length		639	650	
		Std. Error		9.1	9.9	
		Sample Size		12	10	

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Table 14. (p. 2 of 2)

Location	Sex		Brood Year and Age Group 1985 0.2	1984 0.3	1983 0.4	1982 0.5
Fishing Branch River[b]	Female	Mean Length	601	649	667	622
		Std. Error	6.9	5.5	5.7	6.7
		Sample Size	2	203	118	3
	Male	Mean Length	592	700	724	715
		Std. Error	0.0	5.6	6.1	4.9
		Sample Size	1	215	117	3

[a]Samples collected from live fish captured with beach seine.

[b]Samples collected from weir trap catches. Length measured from tip-of-snout to fork-of-tail.

Table 15. Harvest of Yukon River coho salmon by age, sex, and fishery, 1988.

District	Fishery	Sample Size	Sex	Brood Year and Age Group 1985 1.1	1984 2.1	1983 3.1	Total
1	Commercial Gill Net	650	Female	1,920	15,179	298	17,397
			Male	1,610	16,558	867	19,035
			Total	3,530	31,737	1,165	36,435
1	Subsistence Gill Net	0	Female	231	1,828	36	2,096
			Male	194	1,995	104	2,293
			Total	425	3,823	140	4,389
2	Commercial Gill Net	0	Female	1,833	14,488	284	16,605
			Male	1,537	15,804	828	18,168
			Total	3,369	30,292	1,112	34,776
2	Subsistence Gill Net	0	Female	374	2,960	58	3,392
			Male	314	3,228	169	3,711
			Total	688	6,188	227	7,104
3	Commercial Gill Net	0	Female	75	591	12	678
			Male	63	645	34	741
			Total	137	1,236	45	1,419
3	Subsistence Gill Net	0	Female	81	641	13	735
			Male	68	699	37	804
			Total	149	1,341	49	1,539
4	Comm & Subs Fish Wheel	0	Female	229	1,033	0	1,262
			Male	631	2,467	0	3,098
			Total	861	3,499	0	4,360
6	Comm & Subs Fish Wheel	0	Female	2,421	18,003	454	20,877
			Male	6,203	27,988	151	34,342
			Total	8,623	45,991	605	55,219
TOTAL HARVEST			Female	7,164	54,723	2,417	63,041
			Male	10,619	69,384	5,288	82,193
			Total	17,783	124,107	3,344	145,240[a]

[a]Total drainage harvest by age and sex does not include the following fisheries and catches due to lack of appropriate sample data:

District 4 Commercial and Subsistence Gill Net	484
District 5 Commercial and Subsistence Gill Net	1,976
District 5 Commercial and Subsistence Fish Wheel	17,788
District 6 Commercial and Subsistence Gill Net	3,557
Total Unestimated Harvest	23,805

Table 16. Length (mm) by age and sex of Yukon River coho salmon commercial and subsistence catch samples, 1988.

			Brood Year and Age Group		
			1985	1984	1983
Fishery	Sex		1.1	2.1	3.1
District 1	Female	Mean Length	583	586	578
Commercial		Std. Error	6.1	1.6	10.1
6 in (15.2 cm)		Sample Size	32	261	5
Maximum Mesh					
Size Gill Net	Male	Mean Length	574	585	593
		Std. Error	5.6	3.9	8.7
		Sample Size	31	304	15
District 4	Female	Mean Length	571	572	
Comm & Subs		Std. Error	12.5	5.3	
Fishwheel		Sample Size	4	18	
	Male	Mean Length	573	565	
		Std. Error	11.6	5.9	
		Sample Size	11	43	
District 6	Female	Mean Length	585	589	602
Comm & Subs		Std. Error	6.1	2.2	17.6
Fishwheel		Sample Size	16	119	3
	Male	Mean Length	564	577	580
		Std. Error	6.9	2.7	0.0
		Sample Size	41	185	1

Table 17. Length (mm) by age and sex of Delta Clearwater River coho salmon escapement samples, 1988.

		Brood Year and Age Group		
		1985	1984	
		1.1	2.1	Total
Sample Dates:	11/11			
Female	Sample Size	9	112	121
	Percent of Sample	4.0	49.8	53.8
	Mean Length	543	550	
	Std. Error	12.2	2.9	
Male	Sample Size	14	90	104
	Percent of Sample	6.2	40.0	46.2
	Mean Length	558	560	
	Std. Error	7.3	3.4	
Total	Sample Size	23	202	225
	Percent of Sample	10.2	89.8	100.0
	Std. Error	2.0	2.0	

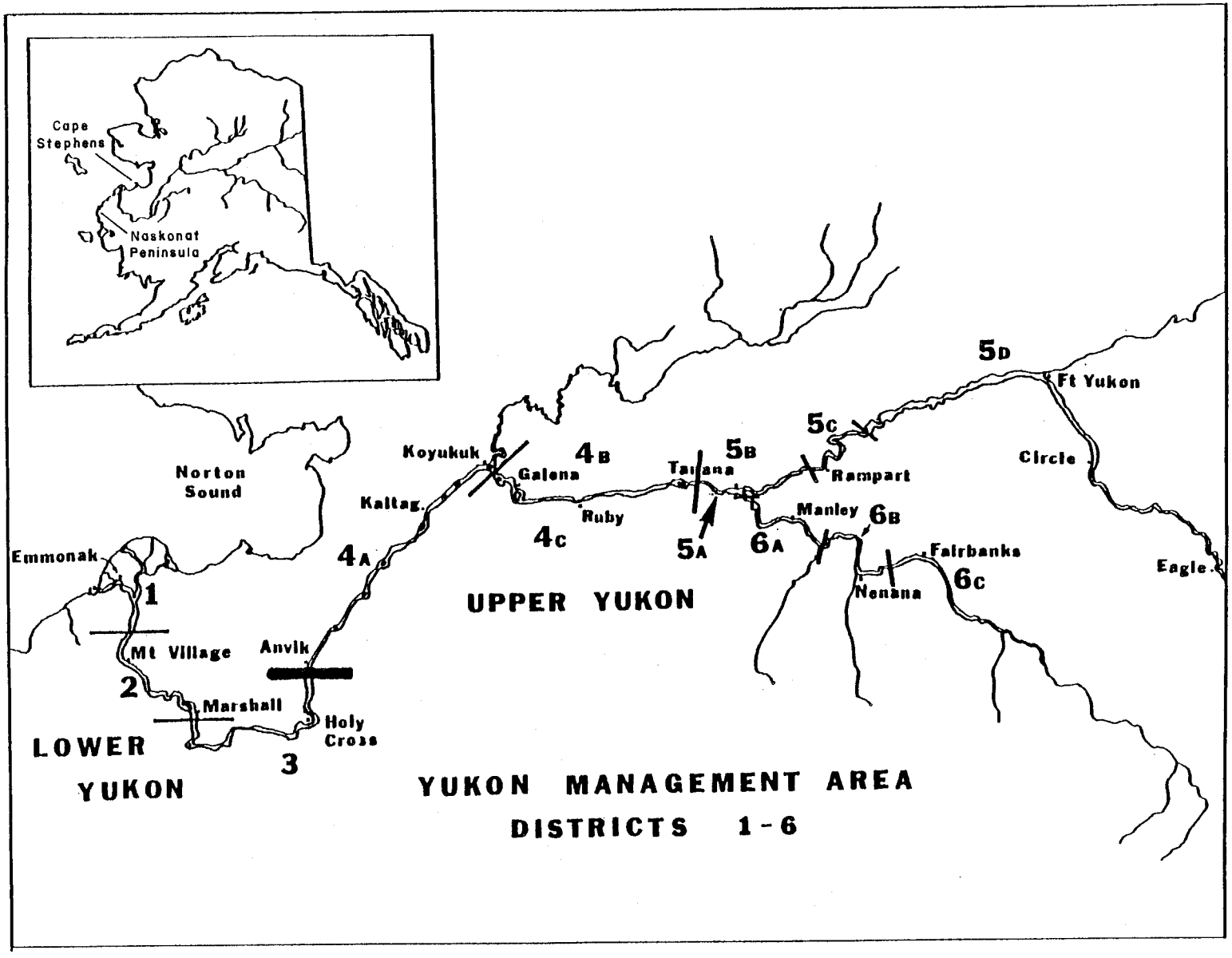

Figure 1. Alaskan portion of the Yukon River, showing fishing district boundaries.

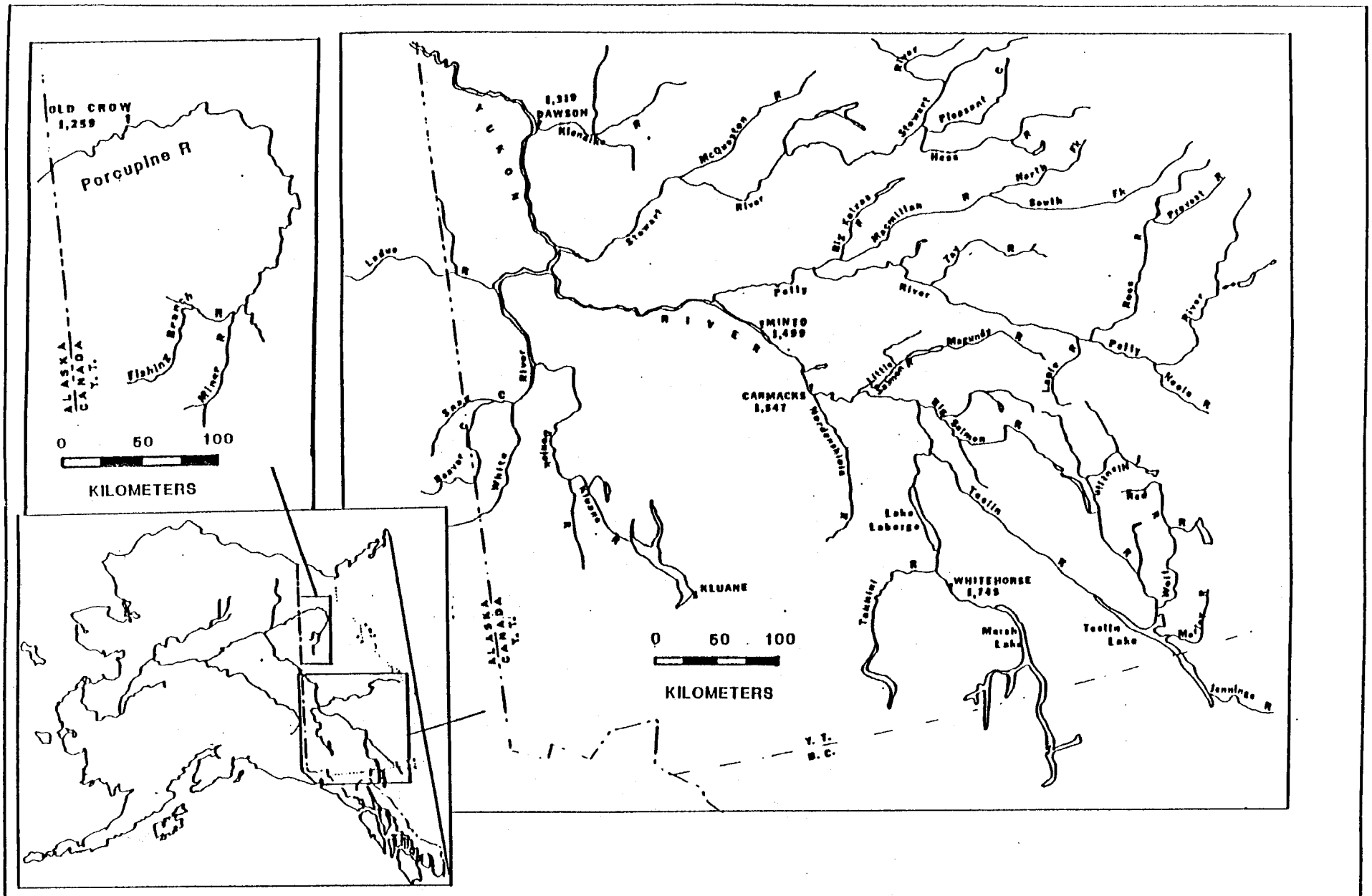

Figure 2. Canadian portion of the Yukon River drainage.

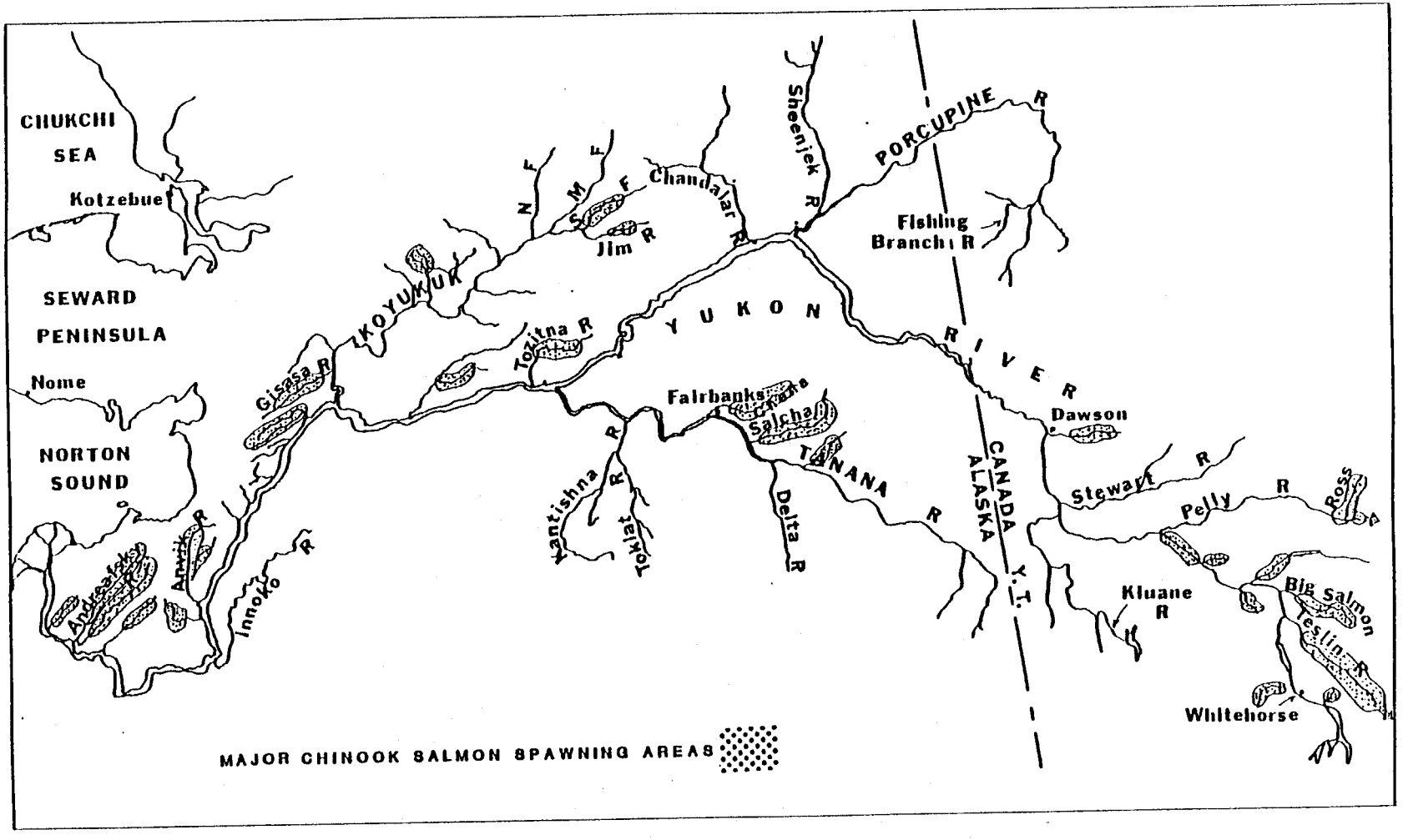

Figure 3. Chinook salmon spawning areas in the Yukon River drainage.

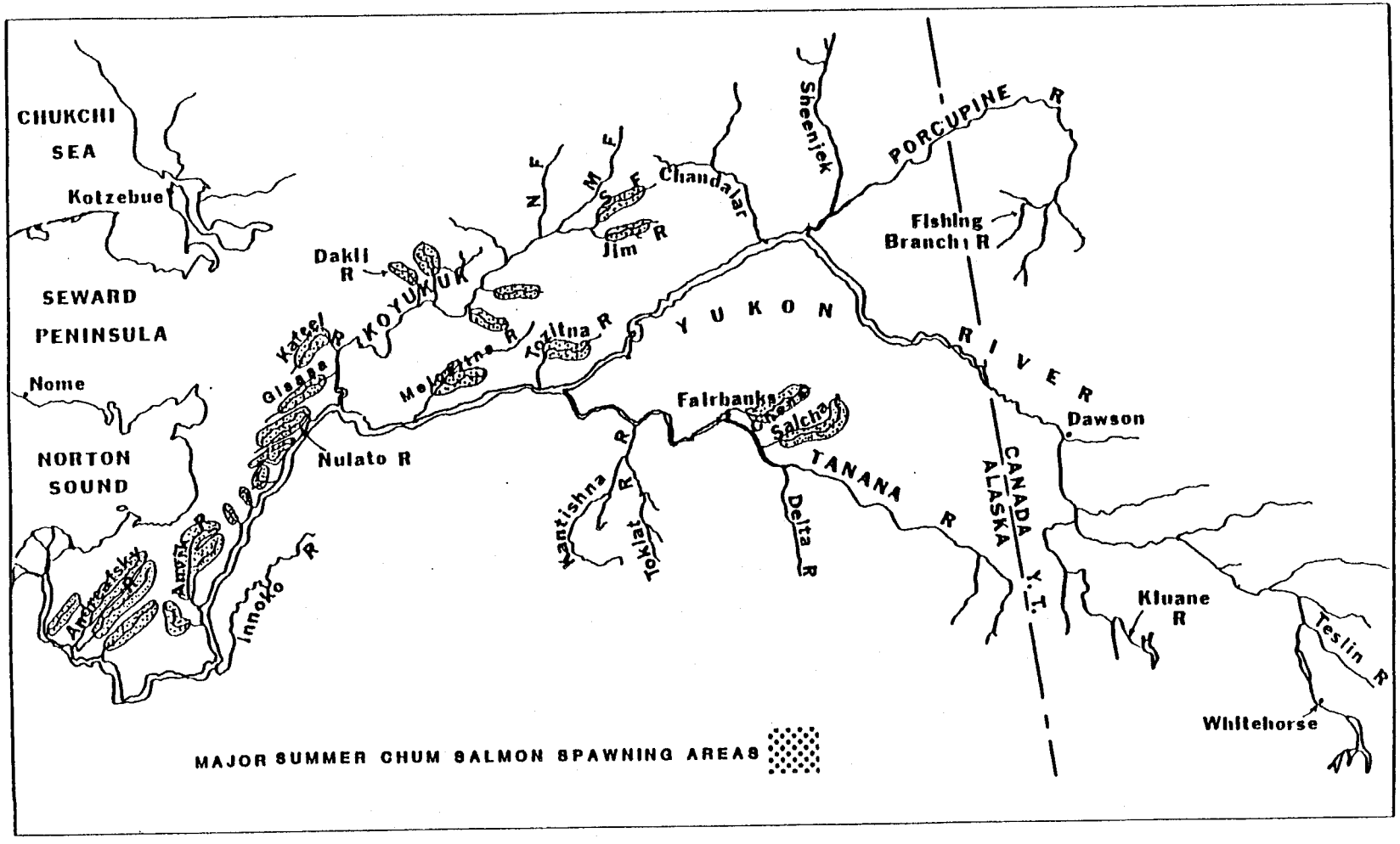

Figure 4. Summer-run chum salmon spawning areas in the Yukon River drainage.

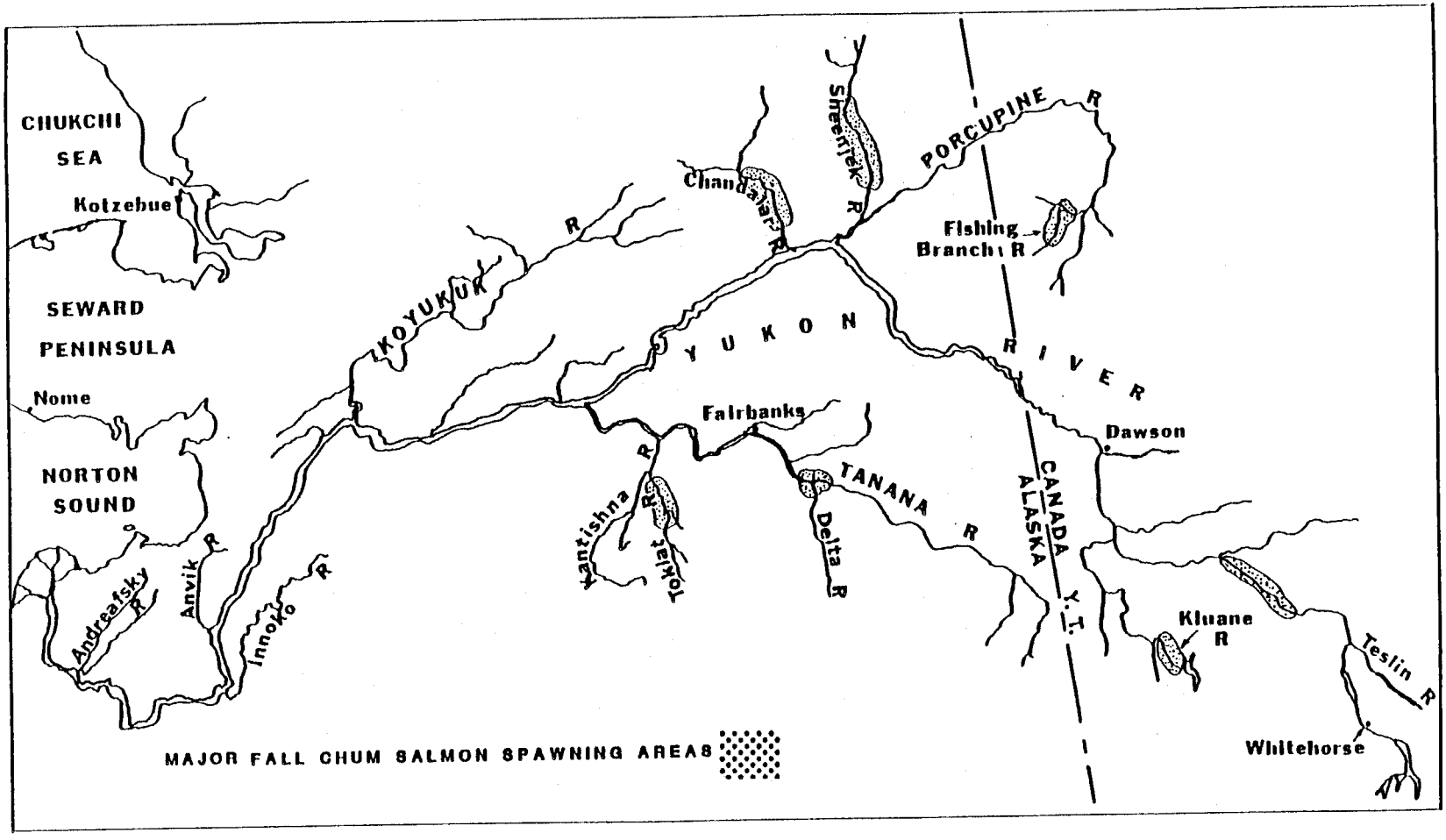

Figure 5. Fall-run chum salmon spawning areas in the Yukon River drainage.

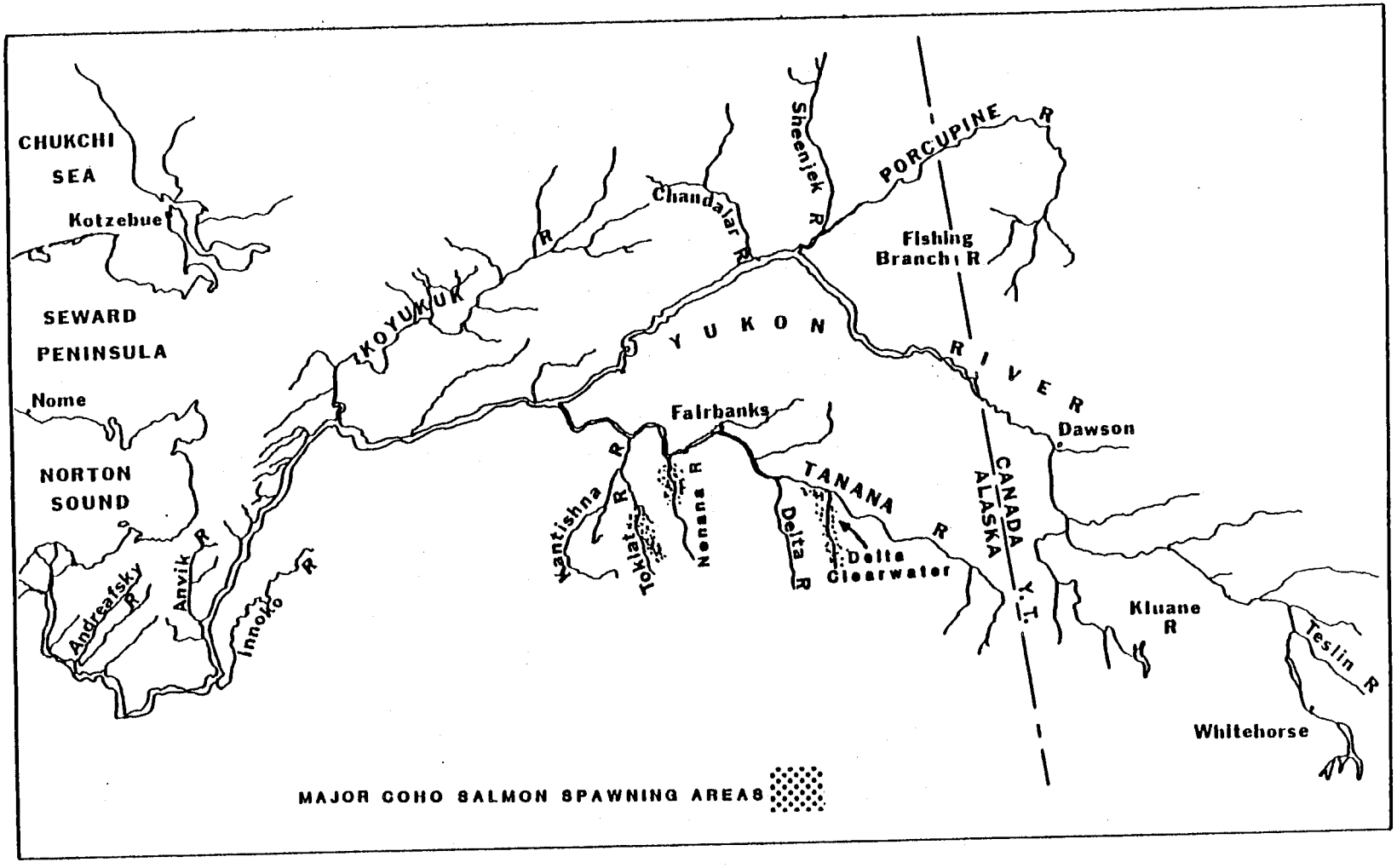

Figure 6. Coho salmon spawning areas in the Yukon River drainage.

APPPENDIX A

COMMERCIAL CATCH BY DISTRICT

Appendix A.1. Yukon River District 1 salmon commercial catch by period, 1988.

Period	Dates	Mesh Size	Hours Fished[a]	No. of Permits Fished	Chinook		Summer Chum		Fall Chum		Coho		Pink	
					Fish	CPUE	Fish	CPUE	Fish	CPUE	Fish	CPUE	Fish	CPUE
1	6/09-6/10	Restricted	12	374	3,330	0.74	64,010	14.26					0	0.00
2	6/13-6/14	Unrestricted	12	388	5,862	1.26	46,383	9.96					0	0.00
3	6/15	Restricted	6	280	1,650	0.98	42,824	25.49					0	0.00
4	6/16-6/17	Unrestricted	12	400	15,971	3.33	91,647	19.09					0	0.00
5	6/20-6/21	Unrestricted	12	402	10,959	2.27	21,186	4.39					0	0.00
6	6/23-6/24	Restricted	12	410	8,773	1.78	148,242	30.13					5	0.00
7	6/27-6/28	Restricted	12	392	3,280	0.70	38,744	8.24					49	0.01
8	6/30-7/01	Restricted	24	398	4,588	0.48	119,891	12.55					148	0.02
9	7/04-7/05	Restricted	24	312	1,610	0.22	33,269	4.44					774	0.10
10	7/07-7/08	Restricted	12	278	601	0.18	20,706	6.21					0	0.00
11	7/11-7/12	Restricted	12	222	268	0.10	9,712	3.65					0	0.00
12	7/14-7/15	Restricted	12	215	197	0.08	11,584	4.49					0	0.00
13	8/8-8/9	Restricted	12/6	284	8	0.00			32,480	13.88	8,410	3.59	15	0.00
14	8/18-8/19	Restricted	12/6	164	2	0.00			533	0.38	2,543	1.83	2	0.00
15	8/22-8/23	Restricted	12/6	246	5	0.00			6,870	3.49	11,714	5.95	6	0.00
16	8/25-8/26	Restricted	12/6	198	2	0.00			4,109	2.75	7,884	5.28	0	0.00
17	8/29-8/30	Restricted	12/6	178	3	0.00			1,537	0.69	5,884	2.66	2	0.00
	Total		222/192	460	57,109		648,198		45,529		36,435		1,001	

[a]District divided into two management subunits: a coastal area open to the use of set gill nets only for a period of 12 hr, and the remainder of the district open to the use of either set or drift gill nets for a period of 6 hr.

Appendix A.2. Yukon River District 2 salmon commercial catch by period, 1988.

Period	Dates	Mesh Size	Hours Fished	No. of Permits Fished	Chinook		Summer Chum		Fall Chum		Coho		Pink	
					Fish	CPUE	Fish	CPUE	Fish	CPUE	Fish	CPUE	Fish	CPUE
1	6/12-6/13	Restricted	12	222	1,705	0.64	39,339	14.77					0	0.00
2	6/15-6/16	Unrestricted	12	211	2,666	1.05	12,899	5.09					0	0.00
3	6/17	Restricted	6	188	852	0.76	28,024	24.84					0	0.00
4	6/19-6/20	Unrestricted	12	222	9,031	3.39	32,012	12.02					0	0.00
5	6/22-6/23	Unrestricted	12	224	8,312	3.09	20,922	7.78					0	0.00
6	6/26-6/27	Restricted	12	227	4,526	1.66	91,587	33.62					0	0.00
7	6/29-6/30	Restricted	24	228	3,912	0.71	59,487	10.87					0	0.00
8	7/03-7/04	Restricted	24	215	2,229	0.43	70,792	13.72					54	0.01
9	7/06-7/07	Restricted	24	199	1,277	0.27	39,730	8.32					0	0.00
10	7/10-7/11	Restricted	12	167	451	0.23	15,733	7.85					0	0.00
11	7/13-7/14	Restricted	12	137	220	0.13	14,647	8.91					0	0.00
12	8/10	Restricted	6	173	3	0.00			16,018	15.43	2,682	2.58	0	0.00
13	8/17	Restricted	6	210	3	0.00			9,482	7.53	13,068	10.37	0	0.00
14	8/21	Restricted	6	164	0	0.00			2,126	2.16	6,935	7.05	1	0.00
15	8/28	Restricted	6	200	0	0.00			3,133	2.61	8,181	6.82	0	0.00
16	8/31	Restricted	6	148	1	0.00			1,102	1.24	3,910	4.40	1	0.00
Total			192	260	35,188		425,172		31,861		34,776		56	

Appendix A.3. Yukon River District 3 salmon commercial catch by period, 1988.

Period	Dates	Mesh Size	Hours Fished	No. of Permits Fished	Chinook		Summer Chum		Fall Chum		Coho	
					Fish	CPUE	Fish	CPUE	Fish	CPUE	Fish	CPUE
1	6/19-6/20	Unrestricted	12	11	297	2.25	1,358	10.29				
2	6/22-6/23	Unrestricted	12	13	995	6.38	1,588	10.18				
3	6/26-6/27	Restricted	12	17	309	1.51	5,394	26.44				
4	6/29-6/30	Restricted	24	16	166	0.43	5,625	14.65				
5	8/10	Restricted	6	3					98	5.44	10	0.56
6	8/17	Restricted	6	12					1,450	20.14	641	8.90
7	8/21	Restricted	6	10					542	9.03	768	12.80
	Total		78	24	1,767		13,965		2,090		1,419	

Appendix A.4. Yukon River District 4 salmon commercial catch and roe sales by period, set gill nets and fish wheels combined, 1988.

					Summer Chum				Fall Chum			
Period	Dates	Hours Fished	No. of Permits Fished	Chinook	Fish Sold Round[a]	Females Harvested for Roe[b]	Unsold Males[c]	Total	Fish Sold Round	Females Harvested for Roe[d]	Total	Coho
1	6/19-6/21	48	52	0	1,557	5,695		7,252				
2	6/22-6/24	48	64	92	1,862	8,019		9,881				
3	6/26-6/28	48	79	131	3,890	31,337		35,227				
4	6/29-7/1	48	83	263	7,305	39,835		47,140				
5	7/3-7/5	48	88	779	3,795	53,690		57,485				
6	7/6-7/8	48	89	858	2,959	42,011		44,970				
7	7/10-7/12	48	87	506	1,138	35,127		36,265				
8	7/13-7/15	48	78	241	369	27,751		28,120				
9	7/17-7/19	48	67	106	324	15,355		15,679				
10	7/20-7/22	48	63	79	135	11,129		11,264				
11	7/24-7/26	48	40	42	44	7,842		7,886				
12	7/27-7/29	48	42	50	454	5,292		5,746				
13	7/31-8/1	30	15	3	219	670		889				
14	8/7-8/9	48	13	6					2,015	194	2,209	0
15	8/10-8/12	48	12	2					1,997	198	2,195	0
16	8/14-8/16	48	12	1					1,275	156	1,431	0
17	8/17-8/19	48	10	0					577	129	706	0
18	8/21-8/23	48	11	0					2,073	212	2,285	2
19	9/24-8/26	48	14	0					3,806	275	4,081	0
20	8/28-8/30	48	14	0					3,919	257	4,176	0
	Total	942	97	3,159	24,051	283,753	182,270	490,074[e]	15,662	1,421	17,083	2

[a]Chum salmon sold in the round in this district assumed to be all males.

[b]Harvest of females estimated by dividing pounds of unprocessed roe by observed average roe weight per female for each fishing period. Estimate of total females harvested for roe differs slightly from 1988 Annual Management Report and tables presenting District 4 totals within this report because the season total average roe weight per female (0.897 lb) was used to compute those totals.

[c]Estimated harvest of males caught incidental to roe fishery, but not sold. This estimate is based on the mean proportion of females observed at Stink Creek test fishery 1981-85 (0.579).

[d]Harvest of females estimated using an assumed average roe weight per female of 1.0 lb. These fish assumed to be reported as subsistence.

[e]Of this total, an estimated 106,801 fish were believed to also have been reported as subsistence harvest.

Appendix A.5. Yukon River District 5 salmon commercial catch and roe sales by period, set gill nets and fish wheels combined, 1988.

Period	Dates	Hours Fished	No. of Permits Fished	Chinook	Summer Chum			Fall Chum	Coho
					Fish Sold Round	Females Harvested for Roe[a]	Total		
1	6/15-6/16	42	1	5	0	0	0		
2	6/17-6/19	48	3	23	0	0	0		
3	6/21-6/23	48	15	277	19	47	66		
4	6/24-6/26	48	14	360	122	59	181		
5	6/28-6/30	48	20	640	186	94	280		
6	7/1-7/4	72	22	764	126	57	183		
7	7/5-7/6	18	26	985	269	149	418		
8	7/7-7/9	72	3	87	0	0	0		
9	7/10-7/14	114	3	295	0	0	0		
10	8/18-8/19	24	15	0				6,591	0
11	8/20-8/21	24	16	0				7,626	0
12	9/9-9/14	110	2	0				2,772	8
	Total	668	35	3,436	722	405	1,127	16,989	8

[a]Harvest of female summer chum estimated by dividing pounds of unprocessed roe for each fishing period by season total average weight of roe per female estimated for District 4 harvest (0.879 lb). These fish assumed to be reported as subsistence.

Appendix A.6. Yukon River District 6 salmon commercial catch and roe sales by period, set gill nets and fish wheels combined, 1988.

Period	Dates	Hours Fished	No. of Permits Fished	Chinook	Summer Chum			Fall Chum			Coho
					Fish Sold Round	Females Harvested for Roe[a]	Total	Fish Sold Round	Females Harvested for Roe[b]	Total	
1	7/1-7/3	42	1	0	62	0	62				
2	7/4-7/6	42	5	0	203	13	216				
3	7/8-7/10	42	15	105	1,578	190	1,768				
4	7/11-7/13	42	22	90	3,582	105	3,687				
5	7/15-7/17	42	21	38	3,876	241	4,117				
6	7/18-7/20	42	25	30	5,855	121	5,976				
7	7/22-7/24	42	25	168	5,065	122	5,187				
8	7/25-7/27	42	24	153	4,518	258	4,776				
9	7/29-7/31	42	24	83	3,619	169	3,788				
10	8/1-8/3	42	23	39	2,767	166	2,933				
11	8/5-8/7	42	22	31	2,252	138	2,390				
12	8/8-8/10	42	20	16	2,552	182	2,734				
13	8/12-8/14	42	14	3	1,962	71	2,033				
14	8/15-8/17	42	14	6	2,238	61	2,299				
15	9/9-9/10	24	28					8,084	389	8,473	2,296
16	9/13-9/14	24	29					8,933	255	9,188	6,014
17	9/20-9/21	24	28					4,827	1,374	6,201	5,662
ADF&G Test Fishery Catch								26,988		26,988	13,295
	Total	660	38	762	40,129	1,838	41,967	48,832	2,017	50,849	27,267

[a]Harvest of females estimated by dividing pounds of unprocessed roe for each fishing period by season total average weight of roe per female estimated for District 4 harvest (0.879 lb). These fish assumed to be reported as subsistence.

[b]Harvest of females estimated using an assumed average roe weight per female of 1.0 lb. These fish assumed to be reported as subsistence.

Appendix A.7. Yukon Territory, Canada, salmon commercial catch by period, 1988.

Period	Dates	Hours Fished[a]	Number Fishermen	Chinook		Chum	
				Fish	CPUE	Fish	CPUE
1	6/25-6/27	48	2	4	0.04		
2	7/2-7/4	48	10	55	0.11		
3	7/9-7/11	48	13	363	0.58		
4	7/16-7/21	120	16	2,267	1.18		
5	7/23-7/28	120	17	4,292	2.10	14	0.01
6	7/30-8/4	120	20	3,678	1.53	84	0.04
7	8/6-8/11	120	17	1,967	0.96	53	0.03
8	8/13-8/17	96	10	399	0.42	56	0.06
9	8/20-8/24	96	6	68	0.12	154	0.27
10	8/27-8/31	96	8	30	0.04	2,208	2.88
11	9/3-9/7	96	10	10	0.01	6,994	7.29
12	9/10-9/14	96	10	9	0.01	5,227	5.44
13	9/17-9/21	96	12			8,679	7.53
14	9/24-9/28	96	13			5,085	4.07
15	10/1-10/5	96	8			839	1.09
16	10/8-10/12	96	4			521	1.36
Subtotal		1,488		13,142		29,914	
Catches with unknown date:				75		349	
Total				13,217		30,263	

[a]Below Sixty Mile River (above Sixty Mile River fishing was open an additional 24 hr each period).

APPPENDIX B

ESTIMATED CATCH BY GEAR TYPE

Appendix B.1. Yukon River chinook salmon commercial and subsistence gill net (GN) and fish wheel (FW) catch by district, 1988.

	Commercial Catch			Subsistence Catch[a]			Total Catch		
District	GN	FW	Total	GN	FW	Total	GN	FW	Total
1 Total	57,109		57,109	4,020		4,020	61,129		61,129
2 Total	35,188		35,188	3,823		3,823	39,011		39,011
3 Total	1,767		1,767	4,443		4,443	6,210		6,210
4A	0	19	19			5,751			5,770
4B	659	940	1,599						
4C	657	884	1,541						
4B+4C						3,384			6,524
Koyukuk R						484			484
4 Total	1,316	1,843	3,159	4,007	5,612	9,619	5,323	7,455	12,778
5A+5B	852	646	1,498			3,537			5,035
5C	1,146	331	1,477			5,189			6,666
5D	327	134	461			10,366			10,827
Chandalar R						121			121
5 Total	2,325	1,111	3,436	13,001	6,212	19,213	15,326	7,323	22,649
6A	25	280	305			572			877
6B	0	253	253			4,312			4,565
6C	81	123	204			557			761
6 Total	106	656	762	757	4,684	5,441	863	5,340	6,203
US Total	97,811	3,610	101,421	30,051	16,508	46,559	127,862	20,118	147,980
Canada Total[b]	13,217		13,217	7,560		7,560	20,777		20,777
Yukon Drainage Total	111,028	3,610	114,638	37,611	16,508	54,119	148,639	20,118	168,757

[a]Catch by gear type for subsistence fisheries is estimated for Districts 4, 5, and 6 using the proportion caught by gear type in the commercial fishery.

[b]Catch by gear type in Yukon Territory is not known, but most fish are believed to be taken in gill nets.

Appendix B.2. Yukon River summer chum salmon commercial and subsistence gill net (GN) and fish wheel (FW) catch by district, 1988.

	Commercial Related Harvest														Reported Subsistence Catch[e]			
	Fish Sold in Round			Unprocessed Roe[a] (lb)			Females Taken for Roe[b]				Total			Claimed as				
District	GN	FW	Total	GN	FW	Total	GN	FW	Total	Unsold Males[c]	GN	FW	Total	Subs.[d]	GN	FW	Total	Drainage Total
1	648,198		648,198										648,198		29,439		29,439	677,637
2	425,172		425,172										425,172		28,787		28,787	453,959
3	13,965		13,965										13,965		5,830		5,830	19,795
4A	845	18,225	19,070	39,598	190,678	230,276	44,145	212,573	256,718		44,990	230,798	275,788				58,097	
4B	180	4,412	4,592	639	21,127	21,766	712	23,553	24,265		892	27,965	28,857					
4C	105	284	389	21	2,463	2,484	23	2,746	2,769		128	3,030	3,158					
4B+4C																	11,423	
Koyukuk R																	25,864	
4	1,130	22,921	24,051	40,258	214,268	254,526	44,881	238,872	283,753	182,270	73,257	416,817	490,074	106,801	14,258	81,126	95,384	585,458
5A+5B	219	498	717	150	187	337	167	208	376		386	706	1,093				13,972	14,689
5C	5	0	5	7	19	26	8	21	29		13	21	34				4,710	4,715
5D	0	0	0	0	0	0	0	0	0		0	0	0				9,440	9,440
Chandalar R																	5,314	5,314
5	224	498	722	157	206	363	175	230	405	[f]	399	728	1,127	405	11,842	21,594	33,436	34,158
6A	426	7,552	7,978	0	71	71	0	79	79		426	7,631	8,057				3,731	11,709
6B	728	24,183	24,911	73	1,092	1,165	81	1,217	1,299		809	25,400	26,210				6,601	31,512
6C	1,231	6,009	7,240	27	383	410	30	427	457		1,261	6,436	7,697				1,715	8,955
6	2,385	37,744	40,129	100	1,546	1,646	111	1,724	1,835	[f]	2,496	39,468	41,964	1,835	717	11,330	12,047	52,176
US Total	1,091,074	61,163	1,152,237	40,515	216,020	256,535	45,167	240,825	285,992	182,270	76,152	457,012	1,620,499		90,873	114,050	204,923	1,823,183
Yukon Drainage Total[g]			1,152,237			256,535			285,992				1,620,499				204,923	1,823,183

[a]May include small amounts of chinook salmon roe.

[b]Harvest of females estimated by dividing pounds of unprocessed roe by average roe weight per female calculated for District 4 harvest (0.897 lb).

[c]Estimated number of males taken incidental to roe fishery which were not sold. The estimate is based on mean proportion of females observed at Stink Creek fest fishery 1981-85 (0.579).

[d]Fish harvested in commercial related fishery but reported as subsistence catch. For District 4 it is estimated using a proportion of 0.802 of subsistence harvest, excluding Shaguluk, observed in 1986. For Districts 5 and 6, it is assumed that all females stripped of roe are reported as subsistence catch.

[e]Catch by gear type for subsistence fisheries is estimated for Districts 4, 5, and 6 using the proportion caught by gear type in the commercial fishery.

[f]All males for this district are believed to be either sold in the round or reported as subsistence.

[g]Summer chums are of minor importance in Canada and are not reported.

Appendix B.3. Yukon River fall chum salmon commercial and subsistence gill net (GN) and fish wheel (FW) catch by district, 1988.

	Commercial Related Harvest												Reported Subsistence Catch[c]			Total Catch		
	Fish Sold in Round[a]			Unprocessed Roe[b] (lb)			Females Taken for Roe[c]			Total								
District	GN	FW	Total	GN	FW	Total	GN	FW	Total	GN	FW	Total	GN	FW	Total	GN	FW	Total
1	45,529		45,529							45,529		45,529	5,482		5,482	51,011		51,011
2	31,861		31,861							31,861		31,861	8,600		8,600	40,461		40,461
3	2,090		2,090							2,090		2,090	1,747		1,747	3,837		3,837
4A	0	0	0	0	0	0	0	0	0	0	0	0			6,449			6,449
4B	2,254	7,903	10,157	0	703	703	0	703	703	2,254	8,606	10,860						
4C	866	4,639	5,505	0	718	718	0	718	718	866	5,357	6,223						
4B+4C															9,479			25,141
Koyukuk R															2,451			2,451
4	3,120	12,542	15,662	0	1,421	1,421	0	1,421	1,421	3,120	13,963	17,083	3,357	15,022	18,379	6,217	27,824	34,041
5A+5B	626	9,058	9,684	0	0	0	0	0	0	626	9,058	9,684			55,998			65,682
5C	2,228	2,305	4,533	0	0	0	0	0	0	2,228	2,305	4,533			6,253			10,786
5D	0	2,772	2,772	0	0	0	0	0	0	0	2,772	2,772			23,509			26,281
Chandalar R															1,102			1,102
5	2,854	14,135	16,989	0	0	0	0	0	0	2,854	14,135	16,989	14,592	72,270	86,862	17,446	86,405	103,851
6A	78	4,422	4,500	0	0	0	0	0	0	78	4,422	4,500			6,899			11,399
6B	918	12,699	13,617	0	1,035	1,035	0	1,035	1,035	918	13,734	14,652			29,504			43,121
6C	262	3,465	3,727	0	771	771	0	771	771	262	4,236	4,498			2,230			5,957
ADF&G TF[d]		26,988	26,988								26,988	26,988						26,988
6	1,258	47,574	48,832	0	1,806	1,806	0	1,806	1,806	1,258	49,380	50,638	960	37,673	38,633	2,173	85,292	87,465
US Total	86,712	74,251	160,963	0	3,227	3,227	0	3,227	3,227	86,712	77,478	164,190	34,737	124,966	159,703	121,145	199,521	320,666
Canada Total[e]			30,263			0			0			30,263			3,302			33,565
Yukon Drainage Total			191,226			3,227			3,227			194,453			163,005	121,145	199,521	354,231

[a] May include small amounts of coho salmon roe.

[b] Harvest of females estimated by dividing pounds of unprocessed roe by an assumed average roe weight per female of 1.0 lb.

[c] Catch by gear type for subsistence fisheries is estimated for Districts 4, 5, and 6 using the porportion caught by gear type in the commercial fishery. All females stripped for roe in these districts are believed to be reported as subsistence harvest.

[d] Harvest from a Department test fishing project initiated in 1988.

[e] Harvest by gear type not available.

Appendix B.4. Yukon River coho salmon commercial and subsistence gill net (GN) and fish wheel (FW) catch by district, 1988.

	Commercial Catch			Subsistence Catch[a]			Total Catch		
District	GN	FW	Total	GN	FW	Total	GN	FW	Total
1	36,435		36,435	4,389		4,389	40,824		40,824
2	34,776		34,776	7,104		7,104	41,880		41,880
3	1,419		1,419	1,539		1,539	2,958		2,958
4A	0	0	0			1,161			1,161
4B	0	2	2						
4C	0	0	0						
4B+4C						3,198			3,200
Koyukuk R						483			483
4	0	2	2	484	4,358	4,842	484	4,360	4,844
5A+5B	0	0	0			16,922			16,922
5C	0	0	0			842			842
5D	0	8	8			1,190			1,198
Chandalar R						801			801
5	0	8	8	1,976	17,780	19,755	1,976	17,787	19,763
6A	12	1,228	1,240			2,103			3,343
6B	1,410	8,962	10,372			28,098			38,470
6C	228	2,132	2,360			1,308			3,668
ADF&G TF[b]		13,295	13,295						13,295
6	1,650	25,617	27,267	1,907	29,602	31,509	3,557	55,219	58,776
US Total	74,280	25,627	99,907	17,398	51,740	69,138	91,679	77,366	169,045
Canada Total			N.A.			N.A.			N.A.
Yukon Drainage Total	74,280	25,627	99,907	17,398	51,740	69,138	91,679	77,366	169,045

[a]Subsistence catch is not known by gear type, but a subjective estimate is that fish wheels account for 90% of the coho salmon subisitence catch in Districts 4 and 5. Catch by gear type for District 6 is estimated using proportion caught by gear type for the commercial fishery.

[b]Harvest from a Department test fishing project initiated in 1988.

APPPENDIX C

ESTIMATED ESCAPEMENT BY LOCATION

Appendix C.1. Whitehorse fishway daily chinook salmon escapement counts, 1988.

Date	Daily Counts	Cumulative	
		Total	Percent
31-Jul	1	1	0.2
01-Aug	1	2	0.5
02-Aug	1	3	0.7
03-Aug	6	9	2.2
04-Aug	4	13	3.2
05-Aug	3	16	4.0
06-Aug	7	23	5.7
07-Aug	15	38	9.4
08-Aug	3	41	10.1
09-Aug	20	61	15.1
10-Aug	17	78	19.3
11-Aug	13	91	22.5
12-Aug	26	117	28.9
13-Aug	34	151	37.3
14-Aug	36	187	46.2
15-Aug	30	217	53.6
16-Aug	23	240	59.3
17-Aug	23	263	64.9
18-Aug	15	278	68.6
19-Aug	18	296	73.1
20-Aug	22	318	78.5
21-Aug	21	339	83.7
22-Aug	9	348	85.9
23-Aug	9	357	88.1
24-Aug	12	369	91.1
25-Aug	3	372	91.9
26-Aug	4	376	92.8
27-Aug	7	383	94.6
28-Aug	8	391	96.5
29-Aug	2	393	97.0
30-Aug	4	397	98.0
31-Aug	3	400	98.8
01-Sep	4	404	99.8
02-Sep	0	404	99.8
03-Sep	1	405	100.0

Appendix C.2. Big Salmon River weir daily chinook salmon escapement counts, 1988.

Date	Male	Female	Daily Counts	Cumulative Total	Cumulative Percent
09-Aug[a]	16	19	35	35	10.2
10-Aug	61	65	126	161	46.8
11-Aug	19	14	33	194	56.4
12-Aug	7	8	15	209	60.8
13-Aug	8	17	25	234	68.0
14-Aug	8	24	32	266	77.3
15-Aug	5	13	18	284	82.6
16-Aug	5	11	16	300	87.2
17-Aug	7	9	16	316	91.9
18-Aug	1	2	3	319	92.7
19-Aug	2	4	6	325	94.5
20-Aug		1	1	326	94.8
21-Aug	1	1	2	328	95.3
22-Aug		2	2	330	95.9
23-Aug			0	330	95.9
24-Aug	3		3	333	96.8
25-Aug		1	1	334	97.1
26-Aug	1	1	2	336	97.7
27-Aug	1		1	337	98.0
28-Aug	1	3	4	341	99.1
29-Aug	1	2	3	344	100.0
30-Aug			0	344	100.0
31-Aug			0	344	100.0
Total	147	197	344		

[a]Late start due to high water.

Appendix C.3. East Fork Andreafsky River expanded tower counts of salmon escapement by species and date, 1988. Tower counts (parentheses denote negative values) were conducted for 24 hours unless otherwise noted.

Date	Summer Chum Salmon			Chinook Salmon			Pink Salmon		
	Daily Count	Total Count	Total Prop	Daily Count	Total Count	Total Prop	Daily Count	Total Count	Total Prop
21 - Jun	536	536	0.0078	60	60	0.0447	21	21	0.0001
22 - Jun[a]	301	837	0.0121	3	63	0.0470	23	44	0.0001
23 - Jun	(129)	708	0.0103		63	0.0470	15	59	0.0002
24 - Jun[a]	465	1,173	0.0170		63	0.0470	25	84	0.0003
25 - Jun	2,709	3,882	0.0563		63	0.0470	555	639	0.0022
26 - Jun[a]	2,148	6,030	0.0875	4	67	0.0500	109	748	0.0025
27 - Jun	6,252	12,282	0.1782	12	79	0.0589	228	976	0.0033
28 - Jun	6,588	18,870	0.2737	18	97	0.0723	669	1,645	0.0056
29 - Jun[a]	3,254	22,124	0.3209	55	152	0.1133	955	2,600	0.0088
30 - Jun[a]	6,996	29,120	0.4224	39	191	0.1424	1,768	4,368	0.0148
1 - Jul	4,647	33,767	0.4898	81	272	0.2028	2,589	6,957	0.0235
2 - Jul	5,247	39,014	0.5659	252	524	0.3908	4,215	11,172	0.0378
3 - Jun[a]	1,825	40,839	0.5924	90	614	0.4579	2,632	13,804	0.0467
4 - Jul	4,086	44,925	0.6517	30	644	0.4802	4,182	17,986	0.0608
5 - Jun[a]	865	45,790	0.6642	43	687	0.5123	3,394	21,380	0.0723
6 - Jul	2,828	48,618	0.7053	105	792	0.5906	10,632	32,012	0.1082
7 - Jul	2,136	50,754	0.7362	69	861	0.6421	8,031	40,043	0.1354
8 - Jun[a]	1,808	52,562	0.7625	23	884	0.6592	20,843	60,886	0.2059
9 - Jul	4,467	57,029	0.8273	42	926	0.6905	20,940	81,826	0.2767
10 - Jul	2,220	59,249	0.8595	69	995	0.7420	18,570	100,396	0.3395
11 - Jun[a]	2,782	62,031	0.8998	94	1,089	0.8121	23,443	123,839	0.4188
12 - Jul	1,773	63,804	0.9255	93	1,182	0.8814	43,083	166,922	0.5645
13 - Jul	439	64,243	0.9319	35	1,217	0.9075	7,166	174,088	0.5887
14 - Jul	423	64,666	0.9380	24	1,241	0.9254	24,939	199,027	0.6730
15 - Jul	975	65,641	0.9522	51	1,292	0.9635	32,394	231,421	0.7826
16 - Jun[a]	706	66,347	0.9624	12	1,304	0.9724	23,958	255,379	0.8636
17 - Jul	432	66,779	0.9687	12	1,316	0.9814	20,103	275,482	0.9316
18 - Jun[a]	868	67,647	0.9813		1,316	0.9814	8,120	283,602	0.9590
19 - Jul	228	67,875	0.9846	9	1,325	0.9881	3,468	287,070	0.9707
20 - Jul	231	68,106	0.9879	3	1,328	0.9903	2,742	289,812	0.9800
21 - Jun[a]	238	68,344	0.9914	4	1,332	0.9933	1,644	291,456	0.9856
22 - Jul	207	68,551	0.9944	6	1,338	0.9978	1,509	292,965	0.9907
23 - Jun[a]	152	68,703	0.9966		1,338	0.9978	715	293,680	0.9931
24 - Jul	204	68,907	0.9996	3	1,341	1.0000	1,488	295,168	0.9981
25 - Jul	30	68,937	1.0000		1,341	1.0000	555	295,723	1.0000
Total	68,937			1,341			295,723		

[a]Tower counts were conducted for 16 hours. Therefore, daily escapement estimates were expanded using an expansion factor.

Appendix C.4. Anvik River summer chum salmon sonar counts by date, 1988.

Date	Daily Count	Season Count	Cumulative Proportion
21 - Jun	2,503	2,503	0.0022
22 - Jun	1,092	3,595	0.0032
23 - Jun	1,841	5,436	0.0048
24 - Jun	1,853	7,289	0.0065
25 - Jun	5,264	12,553	0.0112
26 - Jun	9,187	21,740	0.0193
27 - Jun	24,682	46,422	0.0412
28 - Jun	57,538	103,960	0.0924
29 - Jun	96,842	200,802	0.1784
30 - Jun	84,240	285,042	0.2533
1 - Jul[a]	94,566	379,608	0.3373
2 - Jul	104,891	484,499	0.4305
3 - Jul	73,286	557,785	0.4956
4 - Jul	57,432	615,217	0.5466
5 - Jul	60,081	675,298	0.6000
6 - Jul	68,021	743,319	0.6605
7 - Jul	40,829	784,148	0.6967
8 - Jul	42,795	826,943	0.7348
9 - Jul	46,130	873,073	0.7758
10 - Jul	25,614	898,687	0.7985
11 - Jul	23,131	921,818	0.8191
12 - Jul[b]	30,350	952,168	0.8460
13 - Jul	30,468	982,636	0.8731
14 - Jul	26,287	1,008,923	0.8965
15 - Jul	27,474	1,036,397	0.9209
16 - Jul	15,922	1,052,319	0.9350
17 - Jul	5,340	1,057,659	0.9398
18 - Jul	12,676	1,070,335	0.9510
19 - Jul	11,987	1,082,322	0.9617
20 - Jul	5,382	1,087,704	0.9665
21 - Jul	7,000	1,094,704	0.9727
22 - Jul	5,323	1,100,027	0.9774
23 - Jul	5,460	1,105,487	0.9823
24 - Jul	6,264	1,111,751	0.9878
25 - Jul	8,105	1,119,856	0.9950
26 - Jul	4,378	1,124,234	0.9989
27 - Jul	1,215	1,125,449	1.0000
Total	1,125,449		

[a]Daily count interpolated from counts of 30 June and 02 July.

[b]Adjusted for estimated pink salmon passage.

Appendix C.5. Clear Creek weir daily salmon escapement counts by species, 1988.

Date	Coho					Fall Chum				
	Daily			Cumulative		Daily			Cumulative	
	Males	Females	Total	Total	Percent	Males	Females	Total	Total	Percent
19 - Sept	4	2	6	6	0.3	7	8	15	15	0.4
20 - Sept	41	15	56	62	3.0	74	39	113	128	3.2
21 - Sept	106	46	152	214	10.5	241	184	425	553	14.0
22 - Sept	94	36	130	344	16.8	103	70	173	726	18.3
23 - Sept	58	28	86	430	21.0	88	42	130	856	21.6
24 - Sept	30	20	50	480	23.5	116	100	216	1,072	27.1
25 - Sept	17	8	25	505	24.7	58	30	88	1,160	29.3
26 - Sept	52	37	89	594	29.0	110	89	199	1,359	34.3
27 - Sept	32	18	50	644	31.5	34	17	51	1,410	35.6
28 - Sept	23	25	48	692	33.8	50	27	77	1,487	37.5
29 - Sept	68	56	124	816	39.9	161	117	278	1,765	44.6
30 - Sept	67	45	112	928	45.4	118	112	230	1,995	50.4
1 - Oct	45	36	81	1,009	49.3	67	107	174	2,166	54.7
2 - Oct	150	150	300	1,309	64.0	170	221	391	2,557	64.6
3 - Oct	79	98	177	1,486	72.6	15	35	50	2,607	65.8
4 - Oct	71	108	179	1,665	81.4	130	161	291	2,898	73.2
5 - Oct	30	51	81	1,746	85.3	45	39	84	2,982	75.3
6 - Oct	27	32	59	1,805	88.2	18	25	43	3,025	76.4
7 - Oct	15	26	41	1,846	90.2	55	68	123	3,148	79.5
8 - Oct	18	21	39	1,885	92.1	85	119	204	3,322	83.9
9 - Oct	8	16	24	1,909	93.3	25	80	105	3,427	86.5
10 - Oct	15	26	41	1,950	95.3	61	153	214	3,641	91.9
11 - Oct	11	11	22	1,972	96.4	8	33	41	3,682	93.0
12 - Oct	22	19	41	2,013	98.4	45	122	167	3,849	97.2
13 - Oct	2	7	9	2,022	98.8	3	13	16	3,865	97.6
14 - Oct	18	6	24	2,046	100.0	22	74	96	3,961	100.0

Appendix C.6. Chandalar River daily adjusted fall chum salmon escapement sonar counts, 1988.

Date	Daily Count	Cumulative Count	Daily Proportion
11 - Aug	80	80	0.0024
12 - Aug	183	263	0.0054
13 - Aug	211	474	0.0063
14 - Aug	291	765	0.0086
15 - Aug	221	986	0.0066
16 - Aug	256	1,242	0.0076
17 - Aug	362	1,604	0.0107
18 - Aug	327	1,931	0.0097
19 - Aug	732	2,663	0.0217
20 - Aug	576	3,239	0.0171
21 - Aug	482	3,721	0.0143
22 - Aug	510	4,231	0.0151
23 - Aug	366	4,597	0.0109
24 - Aug	490	5,087	0.0145
25 - Aug	600	5,687	0.0178
26 - Aug	710	6,397	0.0211
27 - Aug	825	7,222	0.0245
28 - Aug	940	8,162	0.0279
29 - Aug	1,055	9,217	0.0313
30 - Aug	1,170	10,387	0.0347
31 - Aug	1,738	12,125	0.0515
1 - Sep	2,090	14,215	0.0620
2 - Sep	1,140	15,355	0.0338
3 - Sep	577	15,932	0.0171
4 - Sep	699	16,631	0.0207
5 - Sep	438	17,069	0.0130
6 - Sep	345	17,414	0.0102
7 - Sep	665	18,079	0.0197
8 - Sep	985	19,064	0.0292
9 - Sep	1,300	20,364	0.0386
10 - Sep	1,629	21,993	0.0483
11 - Sep	1,410	23,403	0.0418
12 - Sep	753	24,156	0.0223
13 - Sep	654	24,810	0.0194
14 - Sep	1,043	25,853	0.0309
15 - Sep	1,054	26,907	0.0313
16 - Sep	1,122	28,029	0.0333
17 - Sep	1,014	29,043	0.0301
18 - Sep	996	30,039	0.0295
19 - Sep	786	30,825	0.0233
20 - Sep	482	31,307	0.0143
21 - Sep	565	31,872	0.0168
22 - Sep	703	32,575	0.0208
23 - Sep	572	33,147	0.0170
24 - Sep	572	33,719	0.0170
Total	33,719		1.0000

Appendix C.7. Sheenjek River daily adjusted fall chum salmon escapement sonar counts, 1988.

Date	Daily Counts	Cumulative Total	Cumulative Percent
20-Aug	57	57	0.1
21-Aug	958	1,015	2.6
22-Aug	1,026	2,041	5.3
23-Aug	881	2,922	7.5
24-Aug	744	3,666	9.4
25-Aug	758	4,424	11.4
26-Aug	1,528	5,952	15.3
27-Aug	1,201	7,153	18.4
28-Aug	1,084	8,237	21.2
29-Aug	645	8,882	22.9
30-Aug	865	9,747	25.1
31-Aug	1,494	11,241	29.0
01-Sep	1,559	12,800	33.0
02-Sep	1,491	14,291	36.8
03-Sep	2,200	16,491	42.5
04-Sep	1,988	18,479	47.6
05-Sep	1,307	19,786	51.0
06-Sep	1,284	21,070	54.3
07-Sep	1,124	22,194	57.2
08-Sep	88	22,282	57.4
09-Sep	1,442	23,724	61.1
10-Sep	1,072	24,796	63.9
11-Sep	508	25,304	65.2
12-Sep	320	25,624	66.0
13-Sep	674	26,298	67.8
14-Sep	700	26,998	69.6
15-Sep	1,036	28,034	72.2
16-Sep	1,275	29,309	75.5
17-Sep	1,931	31,240	80.5
18-Sep	1,635	32,875	84.7
19-Sep	1,208	34,083	87.8
20-Sep	1,150	35,233	90.8
21-Sep	710	35,943	92.6
22-Sep	742	36,685	94.5
23-Sep	582	37,267	96.0
24-Sep	522	37,789	97.4
25-Sep	364	38,153	98.3
26-Sep	344	38,497	99.2
27-Sep	319	38,816	100.0

Appendix C.8. Fishing Branch River weir daily fall chum salmon escapement counts, 1988.

Date	Male	Female	Unknown	Daily Counts	Cumulative Total	Cumulative Percent
05-Sep	14	12	65	91	91	0.4
06-Sep	82	77	139	298	389	1.6
07-Sep	98	86	170	354	743	3.1
08-Sep	362	290	9	661	1,404	5.9
09-Sep	354	386	5	745	2,149	9.1
10-Sep	365	343		708	2,857	12.1
11-Sep	541	589		1,130	3,987	16.9
12-Sep	631	729	1	1,361	5,348	22.7
13-Sep	481	510		991	6,339	26.9
14-Sep	463	562		1,025	7,364	31.2
15-Sep	402	484		886	8,250	35.0
16-Sep	443	673		1,116	9,366	39.7
17-Sep	317	488		805	10,171	43.1
18-Sep	289	435		724	10,895	46.2
19-Sep	313	437		750	11,645	49.3
20-Sep	339	465		804	12,449	52.8
21-Sep	241	425		666	13,115	55.6
22-Sep	251	358		609	13,724	58.2
23-Sep	267	402		669	14,393	61.0
24-Sep	279	439		718	15,111	64.0
25-Sep	252	458		710	15,821	67.0
26-Sep	220	290		510	16,331	69.2
27-Sep	277	390		667	16,998	72.0
28-Sep	223	382		605	17,603	74.6
29-Sep	237	408		645	18,248	77.3
30-Sep	317	488		805	19,053	80.7
01-Oct	167	358		525	19,578	83.0
02-Oct	159	274		433	20,011	84.8
03-Oct	197	307		504	20,515	86.9
04-Oct	160	304		464	20,979	88.9
05-Oct	128	292		420	21,399	90.7
06-Oct	139	282		421	21,820	92.5
07-Oct	117	236		353	22,173	94.0
08-Oct	105	223		328	22,501	95.4
09-Oct	109	193		302	22,803	96.6
10-Oct	85	205		290	23,093	97.9
11-Oct	53	172		225	23,318	98.8
12-Oct	30	81		111	23,429	99.3
13-Oct	26	49		75	23,504	99.6
14-Oct	13	28		41	23,545	99.8
15-Oct	12	21		33	23,578	99.9
16-Oct	8	11		19	23,597	100.0
Total	9,566	13,642	389	23,597		

APPPENDIX D

CHINOOK SALMON

Appendix D.1. Yukon River District 1 chinook salmon commercial gill net catch, age, and sex composition by fishing period, 1988.

		Brood Year and Age Group									
		1984	1983		1982		1981		1980		
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Stratum Dates:	6/09-6/10	Period 1 - Restricted Mesh[a]									
Sample Dates:	6/10										
Sample Size:	280										
Female	Percent of Sample	0.0	4.6	0.0	10.0	0.4	10.4	0.4	0.0	0.0	25.7
	Number in Catch	0	155	0	333	12	345	12	0	0	857
Male	Percent of Sample	22.1	26.8	0.7	13.6	0.0	9.6	0.7	0.4	0.4	74.3
	Number in Catch	737	891	24	452	0	321	24	12	12	2,473
Total	Percent of Sample	22.1	31.4	0.7	23.6	0.4	20.0	1.1	0.4	0.4	100.0
	Number in Catch	737	1,047	24	785	12	666	36	12	12	3,330
	Standard Error	83	93	17	85	12	80	21	12	12	
Stratum Dates:	6/13-6/14	Period 2 - Unrestricted Mesh[b]									
Sample Dates:	6/14										
Sample Size:	328										
Female	Percent of Sample	0.0	4.3	0.0	19.5	0.6	23.2	0.6	0.0	0.9	49.1
	Number in Catch	0	250	0	1,144	36	1,358	36	0	54	2,878
Male	Percent of Sample	1.5	10.4	0.0	15.9	0.0	22.3	0.0	0.0	0.9	50.9
	Number in Catch	89	608	0	929	0	1,305	0	0	54	2,985
Total	Percent of Sample	1.5	14.6	0.0	35.4	0.6	45.4	0.6	0.0	1.8	100.0
	Number in Catch	89	858	0	2,073	36	2,663	36	0	107	5,862
	Standard Error	40	115	0	155	25	161	25	0	43	
Stratum Dates:	6/15	Period 3 - Restricted Mesh[a]									
Sample Dates:	6/15										
Sample Size:	33										
Female	Percent of Sample	0.0	0.0	0.0	9.1	0.0	6.1	0.0	0.0	0.0	15.2
	Number in Catch	0	0	0	150	0	100	0	0	0	250
Male	Percent of Sample	30.3	33.3	0.0	15.2	0.0	6.1	0.0	0.0	0.0	84.8
	Number in Catch	500	550	0	250	0	100	0	0	0	1,400
Total	Percent of Sample	30.3	33.3	0.0	24.2	0.0	12.1	0.0	0.0	0.0	100.0
	Number in Catch	500	550	0	400	0	200	0	0	0	1,650
	Standard Error	134	138	0	125	0	95	0	0	0	
Stratum Dates:	6/16-6/17	Period 4 - Unrestricted Mesh[b]									
Sample Dates:	6/17										
Sample Size:	355										
Female	Percent of Sample	0.0	3.9	0.0	23.1	0.0	18.0	1.1	0.0	0.8	47.0
	Number in Catch	0	630	0	3,689	0	2,879	180	0	135	7,513
Male	Percent of Sample	3.4	14.9	0.0	22.3	0.0	11.0	0.8	0.0	0.6	53.0
	Number in Catch	540	2,384	0	3,554	0	1,755	135	0	90	8,458
Total	Percent of Sample	3.4	18.9	0.0	45.4	0.0	29.0	2.0	0.0	1.4	100.0
	Number in Catch	540	3,014	0	7,243	0	4,634	315	0	225	15,971
	Standard Error	153	332	0	423	0	385	118	0	100	

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		Brood Year and Age Group									
		1984	1983		1982		1981		1980		
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Stratum Dates:	6/20-6/21	Period 5 - Unrestricted Mesh[b]									
Sample Dates:	6/21										
Sample Size:	339										
Female	Percent of Sample	0.0	2.4	0.0	20.6	0.0	18.6	1.2	0.3	0.6	43.7
	Number in Catch	0	259	0	2,263	0	2,037	129	32	65	4,785
Male	Percent of Sample	3.8	17.4	0.6	18.0	0.0	15.3	0.6	0.0	0.6	56.3
	Number in Catch	420	1,907	65	1,972	0	1,681	65	0	65	6,175
Total	Percent of Sample	3.8	19.8	0.6	38.6	0.0	33.9	1.8	0.3	1.2	100.0
	Number in Catch	420	2,166	65	4,235	0	3,718	194	32	129	10,959
	Standard Error	114	237	46	290	0	282	79	32	64	
Stratum Dates:	6/23-6/24	Period 6 - Restricted Mesh[a]									
Sample Dates:	6/24										
Sample Size:	113										
Female	Percent of Sample	1.8	4.4	0.0	5.3	0.0	8.0	0.0	0.0	0.0	19.5
	Number in Catch	155	388	0	466	0	699	0	0	0	1,708
Male	Percent of Sample	46.0	23.9	0.0	8.0	1.8	0.9	0.0	0.0	0.0	80.5
	Number in Catch	4,038	2,096	0	699	155	78	0	0	0	7,066
Total	Percent of Sample	47.8	28.3	0.0	13.3	1.8	8.8	0.0	0.0	0.0	100.0
	Number in Catch	4,193	2,484	0	1,165	155	776	0	0	0	8,773
	Standard Error	414	373	0	281	109	235	0	0	0	
Stratum Dates:	6/27-6/28	Period 7 - Restricted Mesh[a]									
Sample Dates:	6/28										
Sample Size:	64										
Female	Percent of Sample	4.7	0.0	0.0	4.7	0.0	14.1	1.6	0.0	0.0	25.0
	Number in Catch	154	0	0	154	0	461	51	0	0	820
Male	Percent of Sample	32.8	29.7	0.0	7.8	1.6	3.1	0.0	0.0	0.0	75.0
	Number in Catch	1,076	974	0	256	51	103	0	0	0	2,460
Total	Percent of Sample	37.5	29.7	0.0	12.5	1.6	17.2	1.6	0.0	0.0	100.0
	Number in Catch	1,230	974	0	410	51	564	51	0	0	3,280
	Standard Error	200	189	0	137	51	156	51	0	0	
Stratum Dates:	6/30-7/01	Period 8 - Restricted Mesh[a]									
Sample Dates:	7/01										
Sample Size:	142										
Female	Percent of Sample	1.4	12.0	0.0	12.7	0.0	9.2	0.0	0.0	0.0	35.2
	Number in Catch	65	549	0	582	0	420	0	0	0	1,616
Male	Percent of Sample	21.8	29.6	0.7	6.3	0.0	6.3	0.0	0.0	0.0	64.8
	Number in Catch	1,002	1,358	32	291	0	291	0	0	0	2,974
Total	Percent of Sample	23.2	41.5	0.7	19.0	0.0	15.5	0.0	0.0	0.0	100.0
	Number in Catch	1,066	1,907	32	872	0	711	0	0	0	4,588
	Standard Error	163	190	32	152	0	140	0	0	0	

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		Brood Year and Age Group									
		1984	1983		1982		1981		1980		
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Stratum Dates:	7/04-7/05	Period 9 - Restricted Mesh[a]									
Sample Dates:	7/05										
Sample Size:	88										
Female	Percent of Sample	6.8	4.5	0.0	6.8	0.0	12.5	1.1	0.0	1.1	33.0
	Number in Catch	110	73	0	110	0	201	18	0	18	530
Male	Percent of Sample	20.5	27.3	0.0	12.5	0.0	5.7	0.0	0.0	1.1	67.0
	Number in Catch	329	439	0	201	0	91	0	0	18	1,078
Total	Percent of Sample	27.3	31.8	0.0	19.3	0.0	18.2	1.1	0.0	2.3	100.0
	Number in Catch	439	512	0	311	0	293	18	0	37	1,610
	Standard Error	77	80	0	68	0	67	18	0	26	
Stratum Dates:	7/07-7/08	Period 10 - Restricted Mesh[a]									
Sample Dates:	7/08										
Sample Size:	83										
Female	Percent of Sample	2.4	6.0	0.0	13.3	0.0	6.0	0.0	0.0	0.0	27.7
	Number in Catch	14	36	0	80	0	36	0	0	0	166
Male	Percent of Sample	30.1	34.9	0.0	3.6	0.0	3.6	0.0	0.0	0.0	72.3
	Number in Catch	181	210	0	22	0	22	0	0	0	435
Total	Percent of Sample	32.5	41.0	0.0	16.9	0.0	9.6	0.0	0.0	0.0	100.0
	Number in Catch	196	246	0	101	0	58	0	0	0	601
	Standard Error	31	33	0	25	0	20	0	0	0	
Stratum Dates:	7/11-7/12	Period 11 - Restricted Mesh[a]									
Sample Dates:	7/12										
Sample Size:	36										
Female	Percent of Sample	2.8	0.0	0.0	11.1	0.0	13.9	0.0	0.0	0.0	27.8
	Number in Catch	7	0	0	30	0	37	0	0	0	74
Male	Percent of Sample	19.4	44.4	0.0	5.6	0.0	2.8	0.0	0.0	0.0	72.2
	Number in Catch	52	118	0	15	0	7	0	0	0	192
Total	Percent of Sample	22.2	44.4	0.0	16.7	0.0	16.7	0.0	0.0	0.0	100.0
	Number in Catch	60	118	0	45	0	45	0	0	0	268
	Standard Error	19	23	0	17	0	17	0	0	0	
Stratum Dates:	7/14-7/15	Period 12 - Restricted Mesh[a]									
Sample Dates:	7/15										
Sample Size:	37										
Female	Percent of Sample	0.0	5.4	0.0	24.3	0.0	8.1	0.0	0.0	0.0	37.8
	Number in Catch	0	11	0	47	0	16	0	0	0	74
Male	Percent of Sample	8.1	24.3	0.0	21.6	0.0	8.1	0.0	0.0	0.0	62.2
	Number in Catch	16	48	0	43	0	16	0	0	0	123
Total	Percent of Sample	8.1	29.7	0.0	45.9	0.0	16.2	0.0	0.0	0.0	100.0
	Number in Catch	16	59	0	90	0	32	0	0	0	197
	Standard Error	9	15	0	16	0	12	0	0	0	

[a]Fishing restricted to 6 in (15.2 cm) mesh size maximum.

[b]Chinook salmon season. No mesh size restriction, most fish taken with 8-1/2 in (21.6 cm) mesh.

Appendix D.2. Yukon River District 1 chinook salmon commercial gill net catch, age, and sex composition by mesh size gear type, 1988.

		Brood Year and Age Group									
		1984	1983		1982		1981		1980		
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Stratum Dates: 6/09-6/15 Periods 1, 3 Restricted Mesh[a]											
Sample Dates: 6/10,6/15											
Sample Size: 313											
Female	Percent of Sample	0.0	3.1	0.0	9.7	0.2	8.9	0.2	0.0	0.0	22.2
	Number in Catch	0	155	0	483	12	445	12	0	0	1,107
Male	Percent of Sample	24.8	28.9	0.5	14.1	0.0	8.5	0.5	0.2	0.2	77.8
	Number in Catch	1,237	1,441	24	702	0	421	24	12	12	3,873
Total	Percent of Sample	24.8	32.1	0.5	23.8	0.2	17.4	0.7	0.2	0.2	100.0
	Number in Catch	1,237	1,597	24	1,185	12	866	36	12	12	4,980
	Standard Error	158	166	17	151	12	124	21	12	12	
Stratum Dates: 6/13-6/24 Periods 2, 3-4 Unrestricted Mesh[b]											
Sample Dates: 6/14,6/17,6/24											
Sample Size: 1,022											
Female	Percent of Sample	0.0	3.5	0.0	21.6	0.1	19.1	1.1	0.1	0.8	46.3
	Number in Catch	0	1,139	0	7,096	36	6,274	345	32	254	15,176
Male	Percent of Sample	3.2	14.9	0.2	19.7	0.0	14.5	0.6	0.0	0.6	53.7
	Number in Catch	1,049	4,899	65	6,455	0	4,741	200	0	209	17,618
Total	Percent of Sample	3.2	18.4	0.2	41.3	0.1	33.6	1.7	0.1	1.4	100.0
	Number in Catch	1,049	6,038	65	13,551	36	11,015	545	32	461	32,792
	Standard Error	195	424	46	536	25	504	144	32	127	
Stratum Dates: 6/23-8/30 Periods 6-17 Restricted Mesh[a]											
Sample Dates: 6/24-7/15											
Sample Size: 563											
Female	Percent of Sample	2.6	5.5	0.0	7.6	0.0	9.7	0.4	0.0	0.1	25.8
	Number in Catch	506	1,058	0	1,471	0	1,872	69	0	18	4,993
Male	Percent of Sample	34.7	27.1	0.2	7.9	1.1	3.1	0.0	0.0	0.1	74.2
	Number in Catch	6,701	5,248	32	1,529	206	609	0	0	18	14,343
Total	Percent of Sample	37.3	32.6	0.2	15.5	1.1	12.8	0.4	0.0	0.2	100.0
	Number in Catch	7,207	6,307	32	2,997	206	2,482	69	0	37	19,337
	Standard Error	495	469	32	356	121	323	54	0	26	

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		Brood Year and Age Group									
		1984	1983		1982		1981		1980		
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Stratum Dates:	6/13-8/30	Season Total									
Sample Dates:	6/14-7/15										
Sample Size:	1,898										
Female	Percent of Sample	0.9	4.1	0.0	15.8	0.1	15.0	0.7	0.1	0.5	37.3
	Number in Catch	506	2,352	0	9,050	48	8,591	426	32	272	21,276
Male	Percent of Sample	15.7	20.3	0.2	15.2	0.4	10.1	0.4	0.0	0.4	62.7
	Number in Catch	8,987	11,588	121	8,686	206	5,771	224	12	239	35,834
Total	Percent of Sample	16.6	24.4	0.2	31.1	0.4	25.1	1.1	0.1	0.9	100.0
	Number in Catch	9,493	13,942	121	17,736	254	14,363	650	44	510	57,109
	Standard Error	555	653	58	660	124	612	155	34	130	

[a]Fishing restricted to 6 in (15.2 cm) mesh size maximum.

[b]Chinook salmon season. No mesh size restriction, most fish taken with 8-1/2 in (21.6 cm) mesh.

Appendix D.3. Yukon River District 1 chinook salmon subsistence gill net catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]									
		1984	1983		1982		1981		1980		
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Female	Percent of Sample	0.9	4.1	0.0	15.8	0.1	15.0	0.7	0.1	0.5	37.3
	Number in Catch	36	166	0	637	3	605	30	2	19	1,498
Male	Percent of Sample	15.7	20.3	0.2	15.2	0.4	10.1	0.4	0.0	0.4	62.7
	Number in Catch	633	816	9	611	15	406	16	1	17	2,522
Total	Percent of Sample	16.6	24.4	0.2	31.1	0.4	25.1	1.1	0.1	0.9	100.0
	Number in Catch	668	981	9	1,248	18	1,011	46	3	36	4,020

[a]Based on District 1 commercial 6 in (15.2 cm) and 8-1/2 in (21.6 cm) mesh gill net samples.

Appendix D.4. Yukon River District 2 chinook salmon commercial gill net catch, age, and sex composition by fishing period, 1988.

		Brood Year and Age Group									
		1984	1983		1982		1981		1980		
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Stratum Dates: 6/12-6/13		Period 1 - Restricted Mesh[a]									
Sample Dates: 6/13											
Sample Size: 378											
Female	Percent of Sample	1.3	2.6	0.3	10.3	0.0	7.9	1.3	0.3	0.5	24.6
	Number in Catch	23	45	5	176	0	135	23	5	9	421
Male	Percent of Sample	18.0	26.7	0.0	17.7	0.3	11.4	1.1	0.0	0.3	75.4
	Number in Catch	307	454	0	302	5	194	18	0	5	1,285
Total	Percent of Sample	19.3	29.4	0.3	28.0	0.3	19.3	2.4	0.3	0.8	100.0
	Number in Catch	329	499	5	478	5	329	41	5	14	1,705
	Standard Error	35	40	5	39	5	35	13	5	8	
Stratum Dates: 6/15-6/16		Period 2 - Unrestricted Mesh[b]									
Sample Dates: 6/16											
Sample Size: 358											
Female	Percent of Sample	0.0	1.7	0.0	16.8	0.0	20.9	0.0	0.0	0.6	39.9
	Number in Catch	0	45	0	447	0	559	0	0	15	1,066
Male	Percent of Sample	2.5	14.5	0.0	20.7	0.3	20.7	0.6	0.3	0.6	60.1
	Number in Catch	67	387	0	551	7	551	15	7	15	1,600
Total	Percent of Sample	2.5	16.2	0.0	37.4	0.3	41.6	0.6	0.3	1.1	100.0
	Number in Catch	67	432	0	998	7	1,110	15	7	30	2,666
	Standard Error	22	52	0	68	7	70	11	7	15	
Stratum Dates: 6/19-6/20		Period 4 - Unrestricted Mesh[b]									
Sample Dates: 6/20											
Sample Size: 373											
Female	Percent of Sample	0.0	3.5	0.0	18.8	0.0	23.6	0.8	0.0	0.3	46.9
	Number in Catch	0	315	0	1,695	0	2,131	73	0	24	4,238
Male	Percent of Sample	3.8	13.7	0.0	18.0	0.0	17.2	0.3	0.0	0.3	53.1
	Number in Catch	339	1,235	0	1,622	0	1,550	24	0	24	4,794
Total	Percent of Sample	3.8	17.2	0.0	36.7	0.0	40.8	1.1	0.0	0.5	100.0
	Number in Catch	339	1,550	0	3,317	0	3,680	97	0	48	9,031
	Standard Error	89	177	0	226	0	230	48	0	34	

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		Brood Year and Age Group									
		1984	1983		1982		1981		1980		
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Stratum Dates:	6/22-6/23	Period 5 - Unrestricted Mesh[b]									
Sample Dates:	6/23										
Sample Size:	313										
Female	Percent of Sample	0.3	1.6	0.0	21.4	0.0	16.6	1.0	0.0	0.0	40.9
	Number in Catch	27	133	0	1,779	0	1,381	80	0	0	3,400
Male	Percent of Sample	7.3	18.5	0.0	18.2	1.0	14.1	0.0	0.0	0.0	59.1
	Number in Catch	611	1,540	0	1,514	80	1,168	0	0	0	4,913
Total	Percent of Sample	7.7	20.1	0.0	39.6	1.0	30.7	1.0	0.0	0.0	100.0
	Number in Catch	637	1,673	0	3,293	80	2,549	80	0	0	8,312
	Standard Error	125	189	0	230	46	217	46	0	0	

[a]Fishing restricted to 6 in (15.2 cm) mesh size maximum.

[b]Chinook salmon season. No mesh size restriction, most fish taken with 8-1/2 in (21.6 cm) mesh.

Appendix D.5. Yukon River District 2 chinook salmon commercial gill net catch, age, and sex composition by mesh size gear type, 1988.

		Brood Year and Age Group									
		1984	1983		1982		1981		1980		
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Stratum Dates: 6/12-6/17		Periods 1, 3 Restricted Mesh[a]									
Sample Dates: 6/13											
Sample Size: 378											
Female	Percent of Sample	1.3	2.6	0.3	10.3	0.0	7.9	1.3	0.3	0.5	24.6
	Number in Catch	34	68	7	264	0	203	34	7	14	629
Male	Percent of Sample	18.0	26.7	0.0	17.7	0.3	11.4	1.1	0.0	0.3	75.4
	Number in Catch	460	683	0	453	7	291	27	0	7	1,928
Total	Percent of Sample	19.3	29.4	0.3	28.0	0.3	19.3	2.4	0.3	0.8	100.0
	Number in Catch	494	751	7	717	7	494	61	7	20	2,557
Stratum Dates: 6/15-6/23		Periods 2, 4-5 Unrestricted Mesh[b]									
Sample Dates: 6/16,6/20,6/23											
Sample Size: 686											
Female	Percent of Sample	0.1	2.5	0.0	19.6	0.0	20.3	0.8	0.0	0.2	43.5
	Number in Catch	27	493	0	3,921	0	4,071	153	0	39	8,704
Male	Percent of Sample	5.1	15.8	0.0	18.4	0.4	16.3	0.2	0.0	0.2	56.5
	Number in Catch	1,017	3,162	0	3,687	87	3,269	39	7	39	11,307
Total	Percent of Sample	5.2	18.3	0.0	38.0	0.4	36.7	1.0	0.0	0.4	100.0
	Number in Catch	1,043	3,655	0	7,608	87	7,339	192	7	78	20,009
	Standard Error	155	264	0	330	46	324	67	7	37	
Stratum Dates: 6/26-8/31		Periods 6-16 Restricted Mesh[ac]									
Female	Percent of Sample	2.6	5.5	0.0	7.6	0.0	9.7	0.4	0.0	0.1	25.8
	Number in Catch	330	691	0	960	0	1,222	45	0	12	3,259
Male	Percent of Sample	34.7	27.1	0.2	7.9	1.1	3.1	0.0	0.0	0.1	74.2
	Number in Catch	4,374	3,426	21	998	135	397	0	0	12	9,362
Total	Percent of Sample	37.3	32.6	0.2	15.5	1.1	12.8	0.4	0.0	0.2	100.0
	Number in Catch	4,705	4,117	21	1,956	135	1,620	45	0	24	12,622
Stratum Dates: 6/13-8/31		Season Total									
Sample Dates: 6/14-7/15											
Sample Size: 1,064											
Female	Percent of Sample	1.1	3.6	0.0	14.6	0.0	15.6	0.7	0.0	0.2	35.8
	Number in Catch	391	1,251	7	5,145	0	5,496	232	7	64	12,592
Male	Percent of Sample	16.6	20.7	0.1	14.6	0.6	11.2	0.2	0.0	0.2	64.2
	Number in Catch	5,851	7,271	21	5,138	228	3,957	66	7	58	22,597
Total	Percent of Sample	17.7	24.2	0.1	29.2	0.6	26.9	0.8	0.0	0.3	100.0
	Number in Catch	6,241	8,522	28	10,281	228	9,453	298	14	122	35,188

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[a]Fishing restricted to 6 in (15.2 cm) mesh size maximum.

[b]Chinook salmon season. No mesh size restriction, most fish taken with 8-1/2 in (21.6 cm) mesh.

[c]Based on District 1 commercial 6 in (15.2 cm) mesh gill net samples.

Appendix D.6. Yukon River District 2 chinook salmon subsistence gill net catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]									
		1984	1983		1982		1981		1980		
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
	Season Total										
Female	Percent of Sample	1.1	3.6	0.0	14.6	0.0	15.6	0.7	0.0	0.2	35.8
	Number in Catch	42	136	1	559	0	597	25	1	7	1,368
Male	Percent of Sample	16.6	20.7	0.1	14.6	0.6	11.2	0.2	0.0	0.2	64.2
	Number in Catch	636	790	2	558	25	430	7	1	6	2,455
Total	Percent of Sample	17.7	24.2	0.1	29.2	0.6	26.9	0.8	0.0	0.3	100.0
	Number in Catch	678	926	3	1,117	25	1,027	32	1	13	3,823

[a]Based on District 2 commercial 6 in (15.2 cm) and 8-1/2 in (21.6 cm) mesh gill net samples.

Appendix D.7. Yukon River District 3 chinook salmon commercial gill net catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]									
		1984	1983		1982		1981		1980		
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
	Season Total										
Female	Percent of Sample	1.1	3.6	0.0	14.6	0.0	15.6	0.7	0.0	0.2	35.8
	Number in Catch	20	63	0	258	0	276	12	0	3	632
Male	Percent of Sample	16.6	20.7	0.1	14.6	0.6	11.2	0.2	0.0	0.2	64.2
	Number in Catch	294	365	1	258	11	199	3	0	3	1,135
Total	Percent of Sample	17.7	24.2	0.1	29.2	0.6	26.9	0.8	0.0	0.3	100.0
	Number in Catch	313	428	1	516	11	475	15	1	6	1,767

[a]Based on District 2 commercial 6 in (15.2 cm) and 8-1/2 in (21.6 cm) mesh gill net samples.

Appendix D.8. Yukon River District 3 chinook salmon subsistence gill net catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]									
		1984	1983		1982		1981		1980		
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
	Season Total										
Female	Percent of Sample	1	4	0	15	0	16	1	0	0	36
	Number in Catch	49	158	1	650	0	694	29	1	8	1,590
Male	Percent of Sample	16.6	20.7	0.1	14.6	0.6	11.2	0.2	0.0	0.2	64.2
	Number in Catch	739	918	3	649	29	500	8	1	7	2,853
Total	Percent of Sample	17.7	24.2	0.1	29.2	0.6	26.9	0.8	0.0	0.3	100.0
	Number in Catch	788	1,076	3	1,298	29	1,194	38	2	15	4,443

[a]Based on District 2 commercial 6 in (15.2 cm) and 8-1/2 in (21.6 cm) mesh gill net samples.

Appendix D.9. Yukon River District 4 chinook salmon commercial and subsistence catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]										
		1985	1984	1983		1982		1981		1980		
		1.1	1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Stratum Dates:	6/19-8/30[b]	Season Total - Gear Types Combined										
Sample Dates:	6/26-7/26											
Sample Size:	364											
Female	Percent of Sample	0.0	0.3	4.9	0.0	25.0	0.5	23.4	0.5	0.0	1.6	56.3
	Sample Size	0	1	18	0	91	2	85	2	0	6	205
	Number in Catch	0	35	632	0	3,195	70	2,984	70	0	211	7,196
Male	Percent of Sample	0.8	8.0	11.8	0.3	14.0	0.5	7.7	0.0	0.3	0.3	43.7
	Sample Size	3	29	43	1	51	2	28	0	1	1	159
	Number in Catch	105	1,018	1,509	35	1,790	70	983	0	35	35	5,582
Total	Percent of Sample	0.8	8.2	16.8	0.3	39.0	1.1	31.0	0.5	0.3	1.9	100.0
	Sample Size	3	30	61	1	142	4	113	2	1	7	364
	Number in Catch	105	1,053	2,141	35	4,985	140	3,967	70	35	246	12,778
	Standard Error	61	184	250	35	327	70	310	50	35	92	

[a]Based on District 4 commercial and subsistence gill net and fish wheel samples pooled.

[b]Commercial season.

Appendix D.10. Yukon River District 5 chinook salmon commercial and subsistence catch, age, and sex composition by gear type, 1988.

		Brood Year and Age Group[a]										
		1985	1984	1983		1982		1981		1980		
		1.1	1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Sample Dates: 6/29-7/27		Season Total - Gill Net										
Sample Size: 572												
Female	Percent of Sample	0.0	0.0	1.4	0.0	16.3	0.0	28.1	1.2	0.3	1.4	48.8
	Number in Catch	0	0	214	0	2,492	0	4,314	188	54	214	7,475
Male	Percent of Sample	0.0	2.4	10.8	0.2	11.0	0.2	24.0	1.6	0.0	1.0	51.2
	Number in Catch	0	375	1,661	27	1,688	27	3,671	241	0	161	7,851
Total	Percent of Sample	0.0	2.4	12.2	0.2	27.3	0.2	52.1	2.8	0.3	2.4	100.0
	Number in Catch	0	375	1,876	27	4,180	27	7,985	429	54	375	15,326
	Standard Error	0	99	210	27	286	27	320	106	38	99	
Sample Dates: 6/29-7/27		Season Total - Fish Wheel										
Sample Size: 548												
Female	Percent of Sample	0.0	0.0	1.6	0.0	6.0	0.0	5.3	0.4	0.2	0.2	13.7
	Number in Catch	0	0	120	0	441	0	388	27	13	13	1,002
Male	Percent of Sample	0.5	29.6	39.4	0.4	8.8	1.5	5.3	0.9	0.0	0.0	86.3
	Number in Catch	40	2,165	2,886	27	641	107	388	67	0	0	6,321
Total	Percent of Sample	0.5	29.6	41.1	0.4	14.8	1.5	10.6	1.3	0.2	0.2	100.0
	Number in Catch	40	2,165	3,007	27	1,082	107	775	94	13	13	7,323
	Standard Error	23	143	154	19	111	38	96	35	13	13	
Sample Dates: 6/29-7/27		Season Total - Gear Types Combined										
Sample Size: 1120												
Female	Percent of Sample	0.0	0.0	1.5	0.0	12.9	0.0	20.8	0.9	0.3	1.0	37.4
	Number in Catch	0	0	335	0	2,933	0	4,701	214	67	228	8,478
Male	Percent of Sample	0.2	11.2	20.1	0.2	10.3	0.6	17.9	1.4	0.0	0.7	62.6
	Number in Catch	40	2,540	4,548	54	2,329	134	4,058	308	0	161	14,171
Total	Percent of Sample	0.2	11.2	21.6	0.2	23.2	0.6	38.7	2.3	0.3	1.7	100.0
	Number in Catch	40	2,540	4,882	54	5,262	134	8,760	522	67	388	22,649
	Standard Error	23	174	261	33	306	46	335	111	40	100	

[a]Pooled commercial and subsistence catch, where the proportion of commercial catch taken by gear type is applied to total subsistence catch to obtain subsistence catch by gear type. Based on District 5 commercial and subsistence catch samples pooled.

Appendix D.11. Yukon River District 6 chinook salmon commercial and subsistence catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]						
		1985	1984	1983	1982	1981	1980	
		1.1	1.2	1.3	1.4	1.5	1.6	Total
Sample Dates:	7/10-8/3	Season Total - Gear Types Combined						
Sample Size:	306							
Female	Percent of Sample	0.0	0.3	3.8	18.3	8.5	0.0	30.8
	Number in Catch	0	18	234	1,133	527	0	1,912
Male	Percent of Sample	1.2	31.5	21.8	12.1	2.3	0.3	69.2
	Number in Catch	72	1,954	1,354	749	144	18	4,291
Total	Percent of Sample	1.2	31.8	25.6	30.3	10.8	0.3	100.0
	Number in Catch	72	1,972	1,588	1,882	671	18	6,203
	Standard Error	38	165	155	163	110	19	

[a]Pooled commercial and subsistence catch, where the proportion of commercial catch taken by each gear type is applied to total subsistence catch to obtain subsistence catch by gear type. Based on District 6 commercial and subsistence catch samples pooled.

Appendix D.12. Yukon Territory chinook salmon commercial catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]									
		1984	1983		1982		1981		1980		
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Stratum Dates:		7/6-9/18[b]									
Sample Dates:		N.A.									
Sample Size:		356									
Female	Percent of Sample	0.0	2.8	0.0	23.0	0.0	21.6	0.8	0.0	2.2	50.6
	Number in Catch	0	371	0	3,044	0	2,859	111	0	297	6,683
Male	Percent of Sample	6.2	15.4	0.0	14.3	0.8	10.7	0.6	0.6	0.8	49.4
	Number in Catch	817	2,042	0	1,893	111	1,411	74	74	111	6,534
Total	Percent of Sample	6.2	18.3	0.0	37.4	0.8	32.3	1.4	0.6	3.1	100.0
	Number in Catch	817	2,413	0	4,938	111	4,270	186	74	408	13,217
	Standard Error	169	271	0	339	64	328	83	52	121	

[a]Based on Yukon Territory 8-1/2 in (21.6 cm) mesh commercial gill net catch samples.

[b]Commercial season.

Appendix D.13. Yukon Territory chinook salmon subsistence catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]									
		1984	1983		1982		1981		1980		
		1.2	1.3	2.2	1.4	2.3	1.5	2.4	1.6	2.5	Total
Female	Percent of Sample	0.0	2.8	0.0	23.0	0.0	21.6	0.8	0.0	2.2	50.6
	Number in Catch	0	212	0	1,741	0	1,635	64	0	170	3,822
Male	Percent of Sample	6.2	15.4	0.0	14.3	0.8	10.7	0.6	0.6	0.8	49.4
	Number in Catch	467	1,168	0	1,083	64	807	42	42	64	3,738
Total	Percent of Sample	6.2	18.3	0.0	37.4	0.8	32.3	1.4	0.6	3.1	100.0
	Number in Catch	467	1,380	0	2,824	64	2,442	106	42	234	7,560

[a]Based on Yukon Territory 8-1/2 in (21.6 cm) mesh commercial gill net catch samples.

Appendix D.14. Length (mm) by age and sex of Yukon River District 1 chinook salmon test fishing catches, 1988.

			Brood Year and Age Group								
			1984	1983	1982		1981		1980		
	Sex		1.2	1.3	1.4	2.3	1.5	2.4	1.6	2.5	Total
Big Eddy	Female	Mean Length	600	800	846		929				
5.5 in (14.0 cm)		Standard Error	0.0	0.0	20.0		29.1				
Set Gill Net		Sample Size	1	1	6		5				13
	Male	Mean Length	577	691	840	610	1023			1000	
		Standard Error	6.3	14.8	14.7	25.0	26.0			0.0	
		Sample Size	34	18	4	2	3			1	62
	Total	Percent of Sample	46.7	25.3	13.3	2.7	10.7			1.3	100.0
		Sample Size	35	19	10	2	8			1	75
		Standard Error	5.8	5.1	4.0	1.9	3.6			1.3	
Big Eddy	Female	Mean Length	640	817	886		925	887			
8.5 in (21.6 cm)		Standard Error	0.0	6.0	5.5		8.4	16.7			
Set Gill Net		Sample Size	1	3	43		47	3			97
	Male	Mean Length	626	740	853		977	805	930		
		Standard Error	24.8	12.7	8.1		24.5	0.0	0.0		
		Sample Size	4	18	26		16	1	1		66
	Total	Percent of Sample	3.1	12.9	42.3		38.7	2.5	0.6		100.0
		Sample Size	5	21	69		63	4	1		163
		Standard Error	1.4	2.6	3.9		3.8	1.2	0.6		
Big Eddy	Female	Mean Length			847		928				
8.5 in (21.6 cm)		Standard Error			15.3		17.8				
Drift Gill Net		Sample Size			5		8				13
	Male	Mean Length	530	786	723		915			950	
		Standard Error	0.0	9.3	53.4		22.6			0.0	
		Sample Size	1	5	3		4			1	14
	Total	Percent of Sample	3.7	18.5	29.6		44.4			3.7	100.0
		Sample Size	1	5	8		12			1	27
		Standard Error	3.7	7.6	9.0		9.7			3.7	

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			Brood Year and Age Group								
			1984	1983	1982		1981		1980		
	Sex		1.2	1.3	1.4	2.3	1.5	2.4	1.6	2.5	Total
Middle Mouth 5.5 in (14.0 cm) Set Gill Net	Female	Mean Length	535	693			825				
		Standard Error	0.0	17.6			0.0				
		Sample Size	1	4			1				6
	Male	Mean Length	578	667		740					
		Standard Error	8.4	24.3		0.0					
		Sample Size	11	7		1					19
	Total	Percent of Sample	48.0	44.0		4.0	4.0				100.0
		Sample Size	12	11		1	1				25
		Standard Error	10.2	10.1		4.0	4.0				
Middle Mouth 8.5 in (21.6 cm) Set Gill Net	Female	Mean Length		793	861		972	885		915	
		Standard Error		6.0	12.3		13.1	0.0		0.0	
		Sample Size		3	20		14	1		1	39
	Male	Mean Length		754	851		955	820			
		Standard Error		15.6	14.0		24.3	0.0			
		Sample Size		10	13		8	1			32
	Total	Percent of Sample		18.3	46.5		31.0	2.8		1.4	100.0
		Sample Size		13	33		22	2		1	71
		Standard Error		4.6	6.0		5.5	2.0		1.4	

APPPENDIX E

SUMMER CHUM SALMON

Appendix E.1. Yukon River District 1 summer chum salmon commercial gill net catch, age, and sex composition by fishing period, 1988.

		Brood Year and Age Group				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Stratum Dates: 6/09-6/10 Sample Dates: 6/10 Sample Size: 209		Period 1 - Restricted Mesh[a]				
Female	Percent of Sample	0.0	17.2	23.4	1.0	41.6
	Number in Catch	0	11,026	15,007	613	26,646
Male	Percent of Sample	0.0	39.2	18.2	1.0	58.4
	Number in Catch	0	25,114	11,638	613	37,365
Total	Percent of Sample	0.0	56.5	41.6	1.9	100.0
	Number in Catch	0	36,140	26,645	1,225	64,010
	Standard Error	0	2,201	2,188	608	
Stratum Dates: 6/13-6/14 Sample Dates: 6/14 Sample Size: 220		Period 2 - Unrestricted Mesh[b]				
Female	Percent of Sample	0.0	17.7	20.5	0.0	38.2
	Number in Catch	0	8,222	9,487	0	17,709
Male	Percent of Sample	0.0	37.3	23.6	0.9	61.8
	Number in Catch	0	17,288	10,963	422	28,673
Total	Percent of Sample	0.0	55.0	44.1	0.9	100.0
	Number in Catch	0	25,511	20,451	422	46,383
	Standard Error	0	1,559	1,556	297	

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		Brood Year and Age Group				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Stratum Dates: 6/15 Sample Dates: 6/15 Sample Size: 220		Period 3 - Restricted Mesh[a]				
Female	Percent of Sample	0.0	24.5	19.5	1.4	45.5
	Number in Catch	0	10,511	8,370	584	19,465
Male	Percent of Sample	0.0	31.4	22.3	0.9	54.5
	Number in Catch	0	13,431	9,538	389	23,358
Total	Percent of Sample	0.0	55.9	41.8	2.3	100.0
	Number in Catch	0	23,943	17,908	973	42,824
	Standard Error	0	1,437	1,427	431	
Stratum Dates: 6/16-6/17 Sample Dates: 6/17 Sample Size: 231		Period 4 - Unrestricted Mesh[b]				
Female	Percent of Sample	0.0	16.9	16.0	0.4	33.3
	Number in Catch	0	15,473	14,679	397	30,549
Male	Percent of Sample	0.0	50.2	16.0	0.4	66.7
	Number in Catch	0	46,022	14,679	397	61,098
Total	Percent of Sample	0.0	67.1	32.0	0.9	100.0
	Number in Catch	0	61,495	29,359	793	91,647
	Standard Error	0	2,839	2,820	560	

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		Brood Year and Age Group				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Stratum Dates: 6/21-6/21 Sample Dates: 6/21 Sample Size: 146		Period 5 - Unrestricted Mesh[b]				
Female	Percent of Sample	0.0	26.0	7.5	0.0	33.6
	Number in Catch	0	5,514	1,596	0	7,110
Male	Percent of Sample	0.0	50.7	13.0	2.7	66.4
	Number in Catch	0	10,738	2,757	580	14,075
Total	Percent of Sample	0.0	76.7	20.5	2.7	100.0
	Number in Catch	0	16,253	4,353	580	21,186
	Standard Error	0	744	711	287	
Stratum Dates: 6/23-6/24 Sample Dates: 6/24 Sample Size: 225		Period 6 - Restricted Mesh[a]				
Female	Percent of Sample	0.0	37.3	9.8	0.0	47.1
	Number in Catch	0	55,344	14,495	0	69,839
Male	Percent of Sample	0.0	44.9	8.0	0.0	52.9
	Number in Catch	0	66,544	11,859	0	78,403
Total	Percent of Sample	0.0	82.2	17.8	0.0	100.0
	Number in Catch	0	121,888	26,354	0	148,242
	Standard Error	0	3,787	3,787	0	

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		Brood Year and Age Group				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Stratum Dates: 6/27-6/28 Sample Dates: 6/28 Sample Size: 224		Period 7 - Restricted Mesh[a]				
Female	Percent of Sample	0.0	39.7	7.6	0.0	47.3
	Number in Catch	0	15,394	2,940	0	18,334
Male	Percent of Sample	0.0	42.9	8.5	1.3	52.7
	Number in Catch	0	16,605	3,286	519	20,410
Total	Percent of Sample	0.0	82.6	16.1	1.3	100.0
	Number in Catch	0	31,998	6,227	519	38,744
	Standard Error	0	984	953	298	
Stratum Dates: 6/30-7/01 Sample Dates: 7/01 Sample Size: 232		Period 8 - Restricted Mesh[a]				
Female	Percent of Sample	0.0	45.3	7.8	0.0	53.0
	Number in Catch	0	54,261	9,302	0	63,563
Male	Percent of Sample	0.0	39.2	6.9	0.9	47.0
	Number in Catch	0	47,026	8,268	1,034	56,328
Total	Percent of Sample	0.0	84.5	14.7	0.9	100.0
	Number in Catch	0	101,287	17,570	1,034	119,891
	Standard Error	0	2,856	2,790	729	

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		Brood Year and Age Group				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Stratum Dates: 7/04-7/05 Sample Dates: 7/05 Sample Size: 234		Period 9 - Restricted Mesh[a]				
Female	Percent of Sample	0.0	41.0	8.1	0.0	49.1
	Number in Catch	0	13,649	2,701	0	16,350
Male	Percent of Sample	0.0	42.7	8.1	0.0	50.9
	Number in Catch	0	14,218	2,701	0	16,919
Total	Percent of Sample	0.0	83.8	16.2	0.0	100.0
	Number in Catch	0	27,866	5,403	0	33,269
	Standard Error	0	804	804	0	
Stratum Dates: 7/7-7/8 Sample Dates: 7/8 Sample Size: 227		Period 10 - Restricted Mesh[a]				
Female	Percent of Sample	0.0	39.2	8.4	0.9	48.5
	Number in Catch	0	8,118	1,733	182	10,033
Male	Percent of Sample	0.0	42.7	7.5	1.3	51.5
	Number in Catch	0	8,848	1,551	274	10,673
Total	Percent of Sample	0.0	81.9	15.9	2.2	100.0
	Number in Catch	0	16,966	3,284	456	20,706
	Standard Error	0	530	503	202	

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		Brood Year and Age Group				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Stratum Dates: 7/11-7/12 Sample Dates: 7/12 Sample Size: 235		Period 11 - Restricted Mesh[a]				
Female	Percent of Sample	0.4	40.4	8.1	0.9	49.8
	Number in Catch	41	3,926	785	83	4,835
Male	Percent of Sample	0.9	43.4	6.0	0.0	50.2
	Number in Catch	83	4,215	579	0	4,877
Total	Percent of Sample	1.3	83.8	14.0	0.9	100.0
	Number in Catch	124	8,141	1,364	83	9,712
	Standard Error	71	234	221	58	
Stratum Dates: 7/14-7/15 Sample Dates: 7/15 Sample Size: 233		Period 12 - Restricted Mesh[a]				
Female	Percent of Sample	0.2	35.6	14.2	1.3	51.1
	Number in Catch	0	4,126	1,641	149	5,916
Male	Percent of Sample	0.0	37.3	11.6	0.0	48.9
	Number in Catch	0	4,325	1,342	0	5,667
Total	Percent of Sample	0.0	73.0	25.8	1.3	100.0
	Number in Catch	0	8,452	2,983	149	11,584
	Standard Error	0	338	333	86	

[a]Fishing restricted to 6 in (15.2 cm) mesh size maximum.

[b]Chinook salmon season. No mesh size restriction, most fish taken with 8-1/2 in (21.6 cm) mesh.

Appendix E.2. Yukon River District 1 summer chum salmon commercial gill net catch, age, and sex composition by mesh size gear type, 1988.

		Brood Year and Age Group				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Stratum Dates:	6/9-7/15	Periods 1, 3, 6-17 Restricted Mesh[a]				
Sample Dates:	6/10-7/15					
Sample Size:	2,039					
Female	Percent of Sample	0.0	24.7	8.7	0.3	33.8
	Number in Catch	41	176,355	56,974	1,611	234,981
Male	Percent of Sample	0.0	27.4	8.0	0.6	35.9
	Number in Catch	83	200,326	50,762	2,829	254,000
Total	Percent of Sample	0.0	77.0	22.0	0.9	100.0
	Number in Catch	124	376,681	107,738	4,439	488,982
	Standard Error	71	5,610	5,560	1,108	
Stratum Dates:	6/9-7/15	Periods 2, 3-4 Unrestricted Mesh[b]				
Sample Dates:	6/10-7/15					
Sample Size:	597					
Female	Percent of Sample	0.0	18.3	16.2	0.2	34.8
	Number in Catch	0	29,209	25,762	397	55,368
Male	Percent of Sample	0.0	46.5	17.8	0.9	65.2
	Number in Catch	0	74,048	28,399	1,399	103,846
Total	Percent of Sample	0.0	64.9	34.0	1.1	100.0
	Number in Catch	0	103,259	54,163	1,795	159,216
	Standard Error	0	3,324	3,298	696	
Stratum Dates:	6/9-7/15	Season Total				
Sample Dates:	6/10-7/15					
Sample Size:	2,636					
Female	Percent of Sample	0.0	31.7	12.8	0.3	44.8
	Number in Catch	41	205,564	82,736	2,008	290,349
Male	Percent of Sample	0.0	42.3	12.2	0.7	55.2
	Number in Catch	83	274,374	79,161	4,228	357,846
Total	Percent of Sample	0.0	74.0	25.0	1.0	100.0
	Number in Catch	124	479,940	161,901	6,234	648,198
	Standard Error	71	6,520	6,465	1,309	

[a]Fishing restricted to 6 in (15.2 cm) mesh size maximum.

[b]Chinook salmon season. No mesh size restriction, most fish taken with 8-1/2 in (21.6 cm) mesh.

Appendix E.3. Yukon River District 1 summer chum salmon subsistence gill net catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Female	Percent of Sample	0.0	31.7	12.8	0.3	44.8
	Number in Catch	2	9,336	3,758	91	13,187
Male	Percent of Sample	0.0	42.3	12.2	0.7	55.2
	Number in Catch	4	12,461	3,595	192	16,252
Total	Percent of Sample	0.0	74.0	25.0	1.0	100.0
	Number in Catch	6	21,797	7,353	283	29,439

[a]Based on samples from District 1 commercial gill net catches.

Appendix E.4. Yukon River District 2 summer chum salmon commercial gill net catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Stratum Dates:	6/12-7/14					
Female	Percent of Sample	0.01	31.71	12.76	0.31	44.8
	Number in Catch	27	134,835	54,269	1,317	190,448
Male	Percent of Sample	0.0	42.3	12.2	0.7	55.2
	Number in Catch	54	179,970	51,924	2,773	234,722
Total	Percent of Sample	0.0	74.0	25.0	1.0	100.0
	Number in Catch	81	314,807	106,196	4,089	425,172

[a]Based on samples from District 1 commercial gill net catches.

Appendix E.5. Yukon River District 2 summer chum salmon subsistence gill net catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Female	Percent of Sample	0.0	31.7	12.8	0.3	44.8
	Number in Catch	2	9,129	3,674	89	12,895
Male	Percent of Sample	0.0	42.3	12.2	0.7	55.2
	Number in Catch	4	12,185	3,516	188	15,892
Total	Percent of Sample	0.0	74.0	25.0	1.0	100.0
	Number in Catch	6	21,315	7,190	277	28,787

[a]Based on samples from District 1 commercial gill net catches.

Appendix E.6. Yukon River District 3 summer chum salmon commercial gill net catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Stratum Dates:	6/19-6/30					
Female	Percent of Sample	0.0	31.7	12.8	0.3	44.8
	Number in Catch	1	4,429	1,782	43	6,255
Male	Percent of Sample	0.0	42.3	12.2	0.7	55.2
	Number in Catch	2	5,911	1,705	91	7,710
Total	Percent of Sample	0.0	74.0	25.0	1.0	100.0
	Number in Catch	3	10,340	3,488	134	13,965

[a]Based on samples from District 1 commercial gill net catches.

Appendix E.7. Yukon River District 3 summer chum salmon subsistence gill net catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Female	Percent of Sample	0.0	31.7	12.8	0.3	44.8
	Number in Catch	0	1,849	744	18	2,611
Male	Percent of Sample	0.0	42.3	12.2	0.7	55.2
	Number in Catch	1	2,468	712	38	3,219
Total	Percent of Sample	0.0	74.0	25.0	1.0	100.0
	Number in Catch	1	4,317	1,456	56	5,830

[a]Based on samples from District 1 commercial gill net catches.

Appendix E.8. Yukon River District 4 summer chum salmon commercial and subsistence fish wheel catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]			
		1985	1984	1983	
		0.3	0.4	0.5	Total
Stratum Dates:	6/19-8/1[b]				
Sampling Dates:	6/26-8/1				
Sample Size:	445				
Female	Percent of Sample	43.1	18.4	0.2	61.8
	Number in Catch	214,843	91,756	1,119	282,114
Male	Percent of Sample	19.6	18.4	0.2	38.2
	Number in Catch	97,351	91,756	1,119	174,397
Total	Percent of Sample	62.7	36.9	0.4	100.0
	Number in Catch	312,193	183,512	2,238	497,943
	Standard Error	11,416	11,387	1,579	

[a]Based on samples from District 4 commercial and subsistence fish wheel catches pooled.

[b]Commercial season.

Appendix E.9. Yukon River District 6 summer chum salmon commercial and subistence gill net catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]		
		1985	1984	
		0.3	0.4	Total
Stratum Dates:	7/1-8/17[b]			
Sampling Dates:	7/10-7/23			
Sample Size:	46			
Female	Percent of Sample	8.7	23.9	32.6
	Number in Catch	270	742	1,012
Male	Percent of Sample	28.3	39.1	67.4
	Number in Catch	877	1,215	2,092
Total	Percent of Sample	37.0	63.0	100.0
	Number in Catch	1,147	1,957	3,104
	Standard Error	223	223	

[a]Based on samples from District 6 commercial gill net catches.

[b]Commercial season.

Appendix E.10. Yukon River District 6 summer chum salmon commercial and subsistence fish wheel catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]				
		1986	1985	1984	1983	
		0.2	0.3	0.4	0.5	Total
Stratum Dates:	7/1-8/17[b]					
Sampling Dates:	7/10-8/17					
Sample Size:	1,769					
Female	Percent of Sample	0.0	31.3	27.7	0.3	59.4
	Number in Catch	0	15,368	13,593	166	29,127
Male	Percent of Sample	0.1	16.1	23.5	1.0	40.6
	Number in Catch	28	7,906	11,540	472	19,945
Total	Percent of Sample	0.1	47.4	51.2	1.3	100.0
	Number in Catch	28	23,274	25,132	638	49,072
	Standard Error	28	583	583	132	

[a]Based on samples from District 6 commercial and subsistence fish wheel catches pooled.

[b]Commercial season.

Appendix E.11. Length (mm) by age and sex of Yukon River District 1 summer chum salmon test fishing catches, 1988.

Test Site	Sex		Brood Year and Age Group 1985 0.2	1984 0.3	1983 0.4	1982 0.5	Total
Big Eddy 5.5 in (14.0 cm) Set Gill Net	Female	Mean Length		569	588	583	
		Standard Error		1.7	2.1	8.8	
		Sample Size		193	165	3	361
	Male	Mean Length	550	591	611	595	
		Standard Error	0.0	2.6	2.7	12.6	
		Sample Size	1	128	122	4	255
	Total	Percent of Sample	0.2	52.1	46.6	1.1	100.0
		Sample Size	1	321	287	7	616
		Standard Error	0.2	2.0	2.0	0.4	
Big Eddy 8.5 in (21.6 cm) Set Gill Net	Female	Mean Length		565	557		
		Standard Error		0.0	11.7		
		Sample Size		2	3		5
	Male	Mean Length		575	623	630	
		Standard Error		0.0	8.2	0.0	
		Sample Size		1	5	1	7
	Total	Percent of Sample		25.0	66.7	8.3	100.0
		Sample Size		3	8	1	12
		Standard Error		13.1	14.2	8.3	
Middle Mouth 5.5 in (14.0 cm) Set Gill Net	Female	Mean Length		565	585	580	
		Standard Error		2.5	2.7	0.0	
		Sample Size		49	66	1	116
	Male	Mean Length		585	601		
		Standard Error		4.1	4.5		
		Sample Size		33	34		67
	Total	Percent of Sample		44.8	54.6	0.5	100.0
		Sample Size		82	100	1	183
		Standard Error		3.7	3.7	0.5	

APPPENDIX F

FALL CHUM SALMON

Appendix F.1. Yukon River District 1 fall chum salmon commercial gill net catch, age, and sex composition by fishing period, 1988.

		Brood Year and Age Group				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Stratum Dates: 8/08-8/09		Period 13				
Sample Dates: 8/09						
Sample Size:	252					
Female	Percent of Sample	2.4	40.1	16.7	0.0	59.1
	Number in Catch	773	13,018	5,413	0	19,204
Male	Percent of Sample	2.8	23.0	15.1	0.0	40.9
	Number in Catch	902	7,476	4,898	0	13,276
Total	Percent of Sample	5.2	63.1	31.7	0.0	100.0
	Number in Catch	1,676	20,493	10,311	0	32,480
	Standard Error	453	989	954	0	
Stratum Dates: 8/18-8/19		Period 14				
Sample Dates: 8/19						
Sample Size:	29					
Female	Percent of Sample	6.9	58.6	13.8	0.0	79.3
	Number in Catch	37	312	74	0	423
Male	Percent of Sample	0.0	17.2	3.4	0.0	20.7
	Number in Catch	0	92	18	0	110
Total	Percent of Sample	6.9	75.9	17.2	0.0	100.0
	Number in Catch	37	404	92	0	533
	Standard Error	26	43	38	0	

-Continued-

			Brood Year and Age Group				
			1985	1984	1983	1982	
			0.2	0.3	0.4	0.5	Total
Stratum Dates:	8/22-8/23		Period 15				
Sample Dates:	8/23						
Sample Size:		233					
Female	Percent of Sample		12.4	33.9	18.5	0.4	65.2
	Number in Catch		855	2,329	1,268	29	4,481
Male	Percent of Sample		9.9	18.5	6.4	0.0	34.8
	Number in Catch		678	1,268	442	0	2,388
Total	Percent of Sample		22.3	52.4	24.9	0.4	100.0
	Number in Catch		1,533	3,598	1,710	29	6,870
	Standard Error		188	225	195	29	
Stratum Dates:	8/25-8/26		Period 16				
Sample Dates:	8/26						
Sample Size:		244					
Female	Percent of Sample		14.3	38.5	8.6	0.0	61.5
	Number in Catch		589	1,583	354	0	2,526
Male	Percent of Sample		14.8	17.2	6.6	0.0	38.5
	Number in Catch		606	707	269	0	1,582
Total	Percent of Sample		29.1	55.7	15.2	0.0	100.0
	Number in Catch		1,196	2,290	623	0	4,109
	Standard Error		120	131	95	0	
Stratum Dates:	8/29-8/30		Period 17				
Sample Dates:	8/30						
Sample Size:		223					
Female	Percent of Sample		14.3	40.8	10.8	0.4	66.4
	Number in Catch		221	627	165	7	1,020
Male	Percent of Sample		12.6	20.2	0.9	0.0	33.6
	Number in Catch		193	310	14	0	517
Total	Percent of Sample		26.9	61.0	11.7	0.4	100.0
	Number in Catch		414	937	179	7	1,537
	Standard Error		46	50	33	7	

-Continued-

			Brood Year and Age Group				
			1985	1984	1983	1982	
			0.2	0.3	0.4	0.5	Total
Stratum Dates:	8/8-8/30	Season Total					
Sample Dates:	8/9-8/30						
Sample Size:		981					
Female	Percent of Sample		5.4	39.2	16.0	0.1	60.7
	Number in Catch		2,475	17,869	7,274	36	27,654
Male	Percent of Sample		5.2	21.6	12.4	0.0	39.3
	Number in Catch		2,379	9,853	5,641	0	17,873
Total	Percent of Sample		10.7	60.9	28.4	0.1	100.0
	Number in Catch		4,856	27,722	12,915	36	45,529
	Standard Error		508	1,025	980	30	

Appendix F.2. Yukon River District 1 fall chum salmon subsistence gill net catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Female	Percent of Sample	5.4	39.2	16.0	0.1	60.7
	Number in Catch	298	2,152	876	4	3,330
Male	Percent of Sample	5.2	21.6	12.4	0.0	39.3
	Number in Catch	286	1,186	679	0	2,152
Total	Percent of Sample	10.7	60.9	28.4	0.1	100.0
	Number in Catch	585	3,338	1,555	4	5,482

[a]Based on samples from Districts 1 and 2 commercial gill net catches.

Appendix F.3. Yukon River District 2 fall chum salmon commercial gill net catch, age, and sex composition by fishing period, 1988.

		Brood Year and Age Group				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Stratum Dates: 8/10[a]		Period 12				
Female	Percent of Sample	2.4	40.1	16.7	0.0	59.1
	Number in Catch	381	6,420	2,670	0	9,471
Male	Percent of Sample	2.8	23.0	15.1	0.0	40.9
	Number in Catch	445	3,687	2,415	0	6,547
Total	Percent of Sample	5.2	63.1	31.7	0.0	100.0
	Number in Catch	826	10,107	5,085	0	16,018
Stratum Dates: 8/17 Sample Dates: 8/17 Sample Size: 173		Period 13				
Female	Percent of Sample	5.8	45.7	11.0	0.6	63.0
	Number in Catch	548	4,330	1,041	55	5,974
Male	Percent of Sample	9.8	20.8	6.4	0.0	37.0
	Number in Catch	932	1,973	603	0	3,508
Total	Percent of Sample	15.6	66.5	17.3	0.6	100.0
	Number in Catch	1,480	6,303	1,644	55	9,482
	Standard Error	262	341	274	55	
Stratum Dates: 8/21-8/31[b]		Periods 14-16				
Female	Percent of Sample	14.3	39.1	9.2	0.1	62.8
	Number in Catch	913	2,490	585	8	3,995
Male	Percent of Sample	14.2	18.0	5.0	0.0	37.2
	Number in Catch	900	1,146	319	0	2,365
Total	Percent of Sample	28.5	57.2	14.2	0.1	100.0
	Number in Catch	1,814	3,636	904	8	6,361

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		Brood Year and Age Group				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Stratum Dates: 8/10-8/31		Season Total				
Female	Percent of Sample	5.8	41.6	13.5	0.2	61.0
	Number in Catch	1,842	13,240	4,295	63	19,440
Male	Percent of Sample	7.1	21.4	10.5	0.0	39.0
	Number in Catch	2,277	6,805	3,337	0	12,420
Total	Percent of Sample	12.9	62.9	24.0	0.2	100.0
	Number in Catch	4,120	20,045	7,633	63	31,861

[a]Based on samples from District 1 period 13 commercial gill net catches.

[b]Based on samples from District 1 periods 16 and 17 commercial gill net catches.

Appendix F.4. Yukon River District 2 fall chum salmon subsistence gill net catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Female	Percent of Sample	14.3	39.1	9.2	0.1	62.8
	Number in Catch	1,234	3,366	791	11	5,401
Male	Percent of Sample	14.2	18.0	5.0	0.0	37.2
	Number in Catch	1,217	1,549	431	0	3,197
Total	Percent of Sample	28.5	57.2	14.2	0.1	100.0
	Number in Catch	2,452	4,915	1,222	11	8,600

[a]Based on samples from Districts 1 and 2 commercial gill net catches.

Appendix F.5. Yukon River District 3 fall chum salmon commercial gill net catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Female	Percent of Sample	14.3	39.1	9.2	0.1	62.8
	Number in Catch	300	818	192	3	1,313
Male	Percent of Sample	14.2	18.0	5.0	0.0	37.2
	Number in Catch	296	376	105	0	777
Total	Percent of Sample	28.5	57.2	14.2	0.1	100.0
	Number in Catch	596	1,195	297	3	2,090

[a]Based on samples from Districts 1 and 2 commercial gill net catches.

Appendix F.6. Yukon River District 3 fall chum salmon subsistence gill net catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Female	Percent of Sample	14.3	39.1	9.2	0.1	62.8
	Number in Catch	251	684	161	2	1,097
Male	Percent of Sample	14.2	18.0	5.0	0.0	37.2
	Number in Catch	247	315	88	0	649
Total	Percent of Sample	28.5	57.2	14.2	0.1	100.0
	Number in Catch	498	999	248	2	1,747

[a]Based on samples from Districts 1 and 2 commercial gill net catches.

Appendix F.7. Yukon River District 4 fall chum salmon commercial and subsistence fish wheel catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]				
		1985	1984	1983	1981	
		0.2	0.3	0.4	0.5	Total
Stratum Dates:	8/7-8/30[b]					
Sampling Dates:	8/7-8/29					
Sample Size:	485					
Female	Percent of Sample	0.0	30.7	25.2	1.2	57.1
	Number in Catch	0	8,548	6,999	344	15,891
Male	Percent of Sample	0.2	21.9	19.2	1.6	42.9
	Number in Catch	57	6,081	5,335	459	11,933
Total	Percent of Sample	0.2	52.6	44.3	2.9	100.0
	Number in Catch	57	14,629	12,334	803	27,824
	Standard Error	57	632	628	212	

[a]Based on District 4 commercial and subsistence fish wheel catch samples pooled.

[b]Commercial season.

Appendix F.8. Yukon River District 5 fall chum salmon commercial and subsistence fish wheel catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]				
		1984	1983	1982	1981	
		0.3	0.4	0.5	0.6	Total
Stratum Dates:	8/18-9/14[b]					
Sampling Dates:	8/10-9/2					
Sample Size:	975					
Female	Percent of Sample	16.0	28.1	2.5	0.1	46.7
	Number in Catch	13,825	24,282	2,127	89	40,322
Male	Percent of Sample	16.6	32.7	4.0	0.0	53.3
	Number in Catch	14,357	28,270	3,456	0	46,083
Total	Percent of Sample	32.6	60.8	6.5	0.1	100.0
	Number in Catch	28,181	52,552	5,583	89	86,405
	Standard Error	1,298	1,351	681	89	

[a]Based on District 5 commercial and subsistence fish wheel catch samples pooled.

[b]Commercial season.

Appendix F.9. Yukon River District 6 fall chum salmon commercial and subsistence fish wheel catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]				
		1984	1983	1982	1981	
		0.3	0.4	0.5	0.6	Total
Stratum Dates:	9/9-9/21[b]					
Sampling Dates:	8/24-9/21					
Sample Size:	1,180					
Female	Percent of Sample	19.1	22.5	2.4	0.0	44.0
	Number in Catch	16,263	19,227	2,024	0	37,514
Male	Percent of Sample	20.7	31.9	3.4	0.1	56.0
	Number in Catch	17,637	27,178	2,891	72	47,778
Total	Percent of Sample	39.7	54.4	5.8	0.1	100.0
	Number in Catch	33,900	46,405	4,915	72	85,292
	Standard Error	1,216	1,237	579	72	

[a]Based on District 6 commercial and subsistence fish wheel catch samples pooled.

[b]Commercial season.

Appendix F.10. Yukon Territory, Canada, fall chum salmon commercial catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Stratum Dates: 7/23-10/12 Sampling Dates: N.A. Sample Size: 409						
Female	Percent of Sample	1.0	24.0	24.2	0.0	49.1
	Number in Catch	296	7,251	7,325	0	14,873
Male	Percent of Sample	0.2	21.0	29.3	0.2	50.9
	Number in Catch	74	6,363	8,879	74	15,390
Total	Percent of Sample	1.2	45.0	53.5	0.2	100.0
	Number in Catch	370	13,615	16,204	74	30,263
	Standard Error	165	745	747	74	

[a]Based on Yukon Territory commercial gill net and fish wheel catch samples.

Appendix F.11. Yukon Territory, Canada, fall chum salmon subsistence catch, age and sex composition, 1988.

		Brood Year and Age Group[a]				
		1985	1984	1983	1982	
		0.2	0.3	0.4	0.5	Total
Female	Percent of Sample	1.0	24.0	24.2	0.0	49.1
	Number in Catch	32	791	799	0	1,623
Male	Percent of Sample	0.2	21.0	29.3	0.2	50.9
	Number in Catch	8	694	969	8	1,679
Total	Percent of Sample	1.2	45.0	53.5	0.2	100.0
	Number in Catch	40	1,485	1,768	8	3,302

[a]Based on Yukon Territory commercial gill net and fish wheel catch samples.

Appendix F.12. Length (mm) by age and sex of Yukon River fall chum salmon test fishing catches, 1988.

			Brood Year and Age Group				
			1985	1984	1983	1982	
Test Site	Sex		0.2	0.3	0.4	0.5	Total
Big Eddy	Female	Mean Length	569	606	623	0	
6 in (15.2 cm)		Standard Error	11.6	2.3	2.5	0.0	
Set Gill Net		Sample Size	6	107	83	0	196
	Male	Mean Length	571	615	632	685	
		Standard Error	4.8	2.5	3.4	0.0	
		Sample Size	10	136	62	1	209
	Total	Percent of Sample	4.0	60.0	35.8	0.2	100.0
		Sample Size	16	243	145	1	405
		Standard Error	1.0	2.4	2.4	0.2	
Big Eddy	Female	Mean Length	585	598	621		
8.5 in (21.6 cm)		Standard Error	4.9	1.7	2.7		
Set Gill Net		Sample Size	25	221	108		354
	Male	Mean Length	593	616	636		
		Standard Error	7.3	2.1	3.2		
		Sample Size	20	149	91		260
	Total	Percent of Sample	7.3	60.3	32.4		100.0
		Sample Size	45	370	199		614
		Standard Error	1.1	2.0	1.9		
Middle Mouth	Female	Mean Length	512	581	605	600	
6 in (15.2 cm)		Standard Error	1.7	1.5	2.1	20.0	
Set Gill Net		Sample Size	3	323	166	2	494
	Male	Mean Length	525	609	628	655	
		Standard Error	0.0	2.1	2.2	24.7	
		Sample Size	1	213	181	3	398
	Total	Percent of Sample	0.4	60.1	38.9	0.6	100.0
		Sample Size	4	536	347	5	892
		Standard Error	0.2	1.6	1.6	0.3	

APPPENDIX G

COHO SALMON

Appendix G.1. Yukon River District 1 coho salmon commercial gill net catch, age, and sex composition by fishing period, 1988.

		Brood Year and Age Group 1985	1984	1983	
		1.1	2.1	3.1	Total
Stratum Dates:	8/8-8/9		Period 13		
Sample Dates:	8/9				
Sample Size:	127				
Female	Percent of Sample	1.6	48.8	0.8	51.2
	Number in Catch	132	4,105	66	4,303
Male	Percent of Sample	1.6	44.9	2.4	48.8
	Number in Catch	132	3,774	199	4,105
Total	Percent of Sample	3.1	93.7	3.1	100.0
	Number in Catch	264	7,880	265	8,410
	Standard Error	131	182	131	
Stratum Dates:	8/18-8/19		Period 14		
Sample Dates:	8/19				
Sample Size:	120				
Female	Percent of Sample	1.7	37.5	0.8	40.0
	Number in Catch	42	954	21	1,017
Male	Percent of Sample	4.2	53.3	2.5	60.0
	Number in Catch	106	1,356	64	1,526
Total	Percent of Sample	5.8	90.8	3.3	100.0
	Number in Catch	148	2,310	85	2,543
	Standard Error	55	67	42	
Stratum Dates:	8/22-8/23		Period 15		
Sample Dates:	8/23				
Sample Size:	154				
Female	Percent of Sample	6.5	42.2	0.6	49.4
	Number in Catch	761	4,944	76	5,781
Male	Percent of Sample	3.9	43.5	3.2	50.6
	Number in Catch	456	5,096	380	5,932
Total	Percent of Sample	10.4	85.7	3.9	100.0
	Number in Catch	1,217	10,041	456	11,714
	Standard Error	289	331	183	

-Continued-

		Brood Year and Age Group 1985 1.1	1984 2.1	1983 3.1	Total
Stratum Dates:	8/25-8/26		Period 16		
Sample Dates:	8/26				
Sample Size:	117				
Female	Percent of Sample	6.8	45.3	1.7	53.8
	Number in Catch	539	3,571	135	4,245
Male	Percent of Sample	4.3	40.2	1.7	46.2
	Number in Catch	337	3,167	135	3,639
Total	Percent of Sample	11.1	85.5	3.4	100.0
	Number in Catch	876	6,738	270	7,884
	Standard Error	230	258	133	
Stratum Dates:	8/29-8/30		Period 17		
Sample Dates:	8/30				
Sample Size:	132				
Female	Percent of Sample	7.6	27.3	0.0	34.8
	Number in Catch	446	1,605	0	2,051
Male	Percent of Sample	9.8	53.8	1.5	65.2
	Number in Catch	579	3,165	89	3,833
Total	Percent of Sample	17.4	81.1	1.5	100.0
	Number in Catch	1,025	4,770	89	5,884
	Standard Error	195	201	63	
Stratum Dates:	8/29-8/30		Season Summary		
Sample Dates:	8/30				
Sample Size:	650				
Female	Percent of Sample	5.3	41.7	0.8	47.7
	Number in Catch	1,920	15,179	298	17,397
Male	Percent of Sample	4.4	45.4	2.4	52.2
	Number in Catch	1,610	16,558	867	19,035
Total	Percent of Sample	9.7	87.1	3.2	100.0
	Number in Catch	3,530	31,739	1,165	36,435
	Standard Error	441	505	272	

Appendix G.2. Yukon River District 1 coho salmon subsistence gill net catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]			
		1985	1984	1983	
		1.1	2.1	3.1	Total
Female	Percent of Sample	5.3	41.7	0.8	47.7
	Number in Catch	231	1,828	36	2,096
Male	Percent of Sample	4.4	45.4	2.4	52.2
	Number in Catch	194	1,995	104	2,293
Total	Percent of Sample	9.7	87.1	3.2	100.0
	Number in Catch	425	3,823	140	4,389

[a]Based on District 1 commercial gill net catch samples.

Appendix G.3. Yukon River District 2 coho salmon commercial gill net catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]			
		1985	1984	1983	
		1.1	2.1	3.1	Total
Stratum Dates:	8/10-8/31	Season Total			
Female	Percent of Sample	5.3	41.7	0.8	47.7
	Number in Catch	1,833	14,488	284	16,605
Male	Percent of Sample	4.4	45.4	2.4	52.2
	Number in Catch	1,537	15,804	828	18,168
Total	Percent of Sample	9.7	87.1	3.2	100.0
	Number in Catch	3,369	30,294	1,112	34,776

[a]Based on District 1 commercial gill net catch samples.

Appendix G.4. Yukon River District 2 coho salmon subsistence gill net catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]			
		1985	1984	1983	
		1.1	2.1	3.1	Total
Female	Percent of Sample	5.3	41.7	0.8	47.7
	Number in Catch	374	2,960	58	3,392
Male	Percent of Sample	4.4	45.4	2.4	52.2
	Number in Catch	314	3,228	169	3,711
Total	Percent of Sample	9.7	87.1	3.2	100.0
	Number in Catch	688	6,188	227	7,104

[a]Based on District 1 commercial gill net catch samples.

Appendix G.5. Yukon River District 3 coho salmon commercial gill net catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]			
		1985	1984	1983	
		1.1	2.1	3.1	Total
Stratum Dates:		Season Summary			
Female	Percent of Sample	5.3	41.7	0.8	47.7
	Number in Catch	75	591	12	678
Male	Percent of Sample	4.4	45.4	2.4	52.2
	Number in Catch	63	645	34	741
Total	Percent of Sample	9.7	87.1	3.2	100.0
	Number in Catch	137	1,236	45	1,419

[a]Based on District 1 commercial gill net catch samples.

Appendix G.6. Yukon River District 3 coho salmon subsistence gill net catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]			
		1985	1984	1983	
		1.1	2.1	3.1	Total
Female	Percent of Sample	5.3	41.7	0.8	47.7
	Number in Catch	81	641	13	735
Male	Percent of Sample	4.4	45.4	2.4	52.2
	Number in Catch	68	699	37	804
Total	Percent of Sample	9.7	87.1	3.2	100.0
	Number in Catch	149	1,341	49	1,539

[a]Based on District 1 commercial gill net catch samples.

Appendix G.7. Yukon River District 4 coho salmon commercial and subsistence fish wheel catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]		
		1985	1984	
		1.1	2.1	Total
Stratum Dates:	8/7-8/30[b]			
Sampling Dates:	8/26-9/3			
Sample Size:	76			
Female	Percent of Sample	5.3	23.7	28.9
	Number in Catch	229	1,033	1,262
Male	Percent of Sample	14.5	56.6	71.1
	Number in Catch	631	2,467	3,098
Total	Percent of Sample	19.7	80.3	100.0
	Number in Catch	861	3,499	4,360
	Standard Error	223	223	

[a]Based on District 4 commercial and subsistence fish wheel samples pooled.

[b]Commercial season.

Appendix G.8. Yukon River District 6 coho salmon commercial and subsistence fish wheel catch, age, and sex composition, 1988.

		Brood Year and Age Group[a]			
		1985	1984	1983	
		1.1	2.1	3.1	Total
Stratum Dates:	9/9-9/21[b]				
Sampling Dates:	8/31-9/6				
Sample Size:	365				
Female	Percent of Sample	4.4	32.6	0.8	37.8
	Number in Catch	2,421	18,003	454	20,877
Male	Percent of Sample	11.2	50.7	0.3	62.2
	Number in Catch	6,203	27,988	151	34,342
Total[c]	Percent of Sample	15.6	83.3	1.1	100.0
	Number in Catch	8,623	45,991	605	55,219
	Standard Error	1,051	1,080	301	

[a]Based on District 4 subsistence fish wheel samples.

[b]Commercial season.

[c]Includes 13,295 fish harvested from a Department test fishing project initiated in 1988.

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