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AGE, SEX, AND SIZE OF YUKON RIVER SALMON  
CATCHES AND ESCAPEMENTS, 1989

By

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## ABSTRACT

Catch statistics, escapement estimates, and age, sex, and length data for chinook *Oncorhynchus tshawytscha* (Walbaum), summer and fall chum *O. keta* (Walbaum), and coho *O. kisutch* (Walbaum) salmon catches and escapements for the Yukon River in 1989 were summarized. The total harvest was 2,482,865 salmon. Approximately 80% of the catch was taken commercially with gillnets and fish wheels. Subsistence gillnet and fish wheel catches comprised 20% of the salmon harvest. Commercial catches of summer chum salmon comprised 59% of the salmon harvest. Chinook salmon age composition was normal with age 1.4 contributing 50% of the catch. Summer chum salmon were predominantly age 0.4 with the age class composing 57% of commercial catch samples. Fall chum salmon were 87% age 0.3 and 11% age 0.4, while escapement samples ranged from 76% to 87% age 0.3, and from 13% to 17% age 0.4. Age 2.1 dominated coho catch (75%) and escapement (77%) samples.

KEY WORDS: Yukon, chinook, chum, coho, age, catch, escapement  
*Oncorhynchus, tshawytscha, keta, kisutch*



## 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. 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 are rarely documented. Neither species is harvested by commercial or subsistence fishermen to any extent. Summer chum salmon are distinguished from fall chum salmon by their earlier entry timing into the Yukon River (early June to mid-July), smaller size, lower oil content, and spawning distribution in the lower and middle portion 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.

Geographically, the Yukon Area includes all waters of the Yukon River and its tributary streams in Alaska (Figure 1) and all coastal waters from Canal Point light near Cape Stephens southward to the Naskonat Peninsula (Bergstrom et al. 1991, Bergstrom et al. 1992). The Alaska portion of the river is divided for management purposes into six fishing districts as follows: Districts 1, 2, and 3 form the Lower Yukon Area; and Districts 4, 5, and 6 form the Upper Yukon Area. The Yukon River chinook salmon stock identification study using scale pattern analysis employs the terms Lower, Middle, and Upper Run, to refer respectively to stocks originating in tributaries downriver from the Village of Koyukuk (including lower Koyukuk River tributaries), between Koyukuk and the U.S.-Canada border (including upper Koyukuk River tributaries), and upriver from the border in Canada (Schneiderhan and Wilcock 1992).

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 gillnets are the legal gear in the Lower Yukon, and set gillnets and fish wheels in the Upper Yukon. Chinook and fall chum salmon are also commercially harvested in a predominantly gillnet fishery near Dawson, Yukon Territory (Figure 2), where some fish wheels are also used.

Subsistence fishing is allowed throughout the drainage with most of the effort concentrated in the mainstem Yukon River. In Canada the Indian food fishery and the domestic fishery are subsistence type fisheries. The Indian food fishery in Canada, more recently termed the "Aboriginal fishery" (Wilson 1993), is analogous to the Alaska subsistence fishery, although it is limited to native fishers, while the Canadian domestic fishery is similar to Alaska personal use fisheries. The Yukon Area Annual Management Report, 1991 (Bergstrom et al. 1992) provides a complete description of the Yukon Area and its fisheries.

Most commercial fishing occurs in the lower 230 km (200 mi) 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 Department of Fisheries and Oceans, Canada (DFO) conduct a variety of programs that supply information used to manage and document the fisheries. These programs include: (1) documentation of the 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, weirs, tagging studies, and visually through a fishpass; and (4) sampling major spawning escapements for age, sex, and size data. The use of hydroacoustic counters by ADF&G to estimate salmon populations in the mainstem Yukon River near Pilot Station is being evaluated. DFO uses tag and recapture methods at the US-Canada border to estimate border escapement of chinook and fall chum salmon. ADF&G also estimates chinook salmon escapements to the Chena and Salcha Rivers in District 6 using tag and recovery methods (Skaugstad 1990, 1990a).

Between 1969 and 1981 Yukon River salmon age, sex, and size sample 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, Hamner, and Buklis (1983), by Buklis and Wilcock (1984, 1985, and 1986), by Buklis (1987), by Wilcock (1989), and by Wilcock and Schneiderhan (1990).

The purpose of this report is to present all 1989 Yukon River drainage salmon catches and escapements and to relate them to age, sex, and length (ASL) data wherever appropriate. This report summarizes Yukon River salmon commercial and subsistence harvests in numbers of fish by age and sex for each fishing district. Percent age composition is presented for sampled escapements as well as for commercial and subsistence harvests.

It should be noted that a multifaceted stock analysis of Yukon chinook salmon is performed annually to assign chinook harvests to three runs of origin, e.g., Lower Yukon Run, Middle Yukon Run, and Upper Yukon Run. The analysis is partially based on chinook data also presented in this report; however, in the analytic process, somewhat different results are obtained through a more thorough treatment of district and drainage-wide data which includes scale pattern analysis, age composition ratio analysis, and geographic analysis. A complete treatment of the chinook stock analysis for 1989 may be found in Schneiderhan and Wilcock (1992).

## METHODS

### *Quantifying Catch and Escapement*

Harvest and escapement enumeration data presented in this report were taken from 1989 and 1991 Yukon Area annual management reports (AMR; Bergstrom *et al.* 1991, 1992). The 1991 AMR was consulted for historical harvest data, e.g. 1989, which had been reanalyzed to reflect more recent thinking concerning estimation procedures for some harvest components, principally chum salmon roe harvests. Data concerning the 1989 subsistence harvest was extracted from AMRs but was originally collected and reported by ADF&G Division of Commercial Fisheries staff (Holder and Hamner, 1989).

#### **Subsistence**

Drainage-wide subsistence harvests were primarily determined through mail-out catch calendars and household interviews. The primary gear used to harvest subsistence fish in Districts 1, 2, and 3 was gillnets. Subsistence harvests by other gear types was negligible. Therefore, age and sex composition was assumed to be the same as the combined season age and sex composition from the appropriate commercial fishery. Usage patterns and differential catch ratios of subsistence gear types used to harvest salmon were not fully documented for the Upper Yukon Area, e.g. Districts 4-6. Gillnets and fish wheels were used, but because of inadequate gear survey information, subsistence catches by gear type were estimated using the proportion of commercial harvest by gear type for each district.

Salmon sport fishing harvests are very small in the Yukon River drainage relative to commercial and subsistence harvests. Estimates of sport fishing harvests in 1977-1989 for the Alaska portion of the Yukon River drainage became available in 1991 (Arvey and Mills 1991) and have been tabulated and referenced in this report for the first time. Estimates of sport fishing harvests in Alaska and Canada were included in the subsistence category along with personal use, Indian food and domestic fisheries harvests.

All Yukon Territory catch data were obtained from DFO as reported in the 1991 AMR (Bergstrom *et al.* 1992) and the March 1990 United States/Canada Yukon River Joint Technical Committee (JTC) report, *Yukon River Technical Report* (JTC 1990). No published information was available concerning 1989 Canadian harvest proportions by gillnet and fish wheel gear types; however, a subjective estimate in 1991 assigns a small portion of the 1991 chinook harvest and half or more of the fall chum harvest

to fish wheel gear (JTC 1990, 1991). For purposes of this report, the Canadian harvests are attributed to gillnets.

## Commercial

Alaskan commercial catch data were compiled by the Division of Commercial Fisheries for each management district and were based on computer tabulations of harvest receipts (fish tickets) which documented the volume of sales from fishermen to processors. Commercial harvests in districts where ADF&G operated test fishing projects include district test fishing harvests which were sold to processors by project personnel on behalf of the Department (Bergstrom *et al* 1991). The District 4 summer chum salmon commercial catch included an estimate of unsold males that were a byproduct of the commercial summer chum salmon roe fishery in the district. It was assumed that most of these fish were used for subsistence purposes.

District 1 commercial catch samples were obtained from fish at the time of delivery, or shortly thereafter, to local fish processors. District 1 sample age and sex compositions were used to apportion the commercial harvest separately by period and by gear type. A summation of fish by age and sex from each period also provided a combined season age and sex composition which is weighted by each period harvest.

District 2 commercial catch samples were obtained in some commercial periods from fish delivered to processors in the district. Some District 2 samples were obtained in District 1 from processor fish tenders which bought fish exclusively in District 2 and delivered them for processing in District 1. The age and sex composition for a District 1 commercial period which was not sampled was assumed to be the same as the composition obtained in a District 1 period which preceded the District 2 period by about two days. District 3 harvests were not sampled except inadvertently in District 2 where District 3 fish were sometimes delivered for sale. District 3 harvests for each commercial fishing period were assumed to have the same age and sex composition as that used for the concurrent District 2 period.

District 4 and 5 commercial catch samples were obtained from fish wheel and gillnet catches. Estimated subsistence harvests in those districts combined with the commercial harvests were apportioned by gear type based upon commercial samples.

The estimated number of male and female summer chum salmon harvested in the District 4, 5, and 6 roe fisheries has been termed "commercially related". The estimated Subdistrict 4-A commercially related harvest was calculated by dividing the harvested roe weight by pounds of roe per female to yield the number of females. The number of females was then divided by the estimated percentage of females in the catch to yield the estimated total commercially related harvest. Subdistrict 4-A fish which were commercially sold in the round were assumed to be males that were

accounted for in the calculation of the commercially related Subdistrict 4-A harvest; thus, fish sold in the round in Subdistrict 4-A were excluded from the calculation of total subdistrict harvest. In Subdistricts 4-B and 4-C, and Districts 5 and 6, only the estimated number of females to produce the roe sold are added to fish sold in the round to determine the commercial catch (Bergstrom *et al.* 1992). A conversion factor of 1.0 lbs of roe per female was used to estimate numbers of commercially related females in the harvest. Later work by Sandone (1991) supported the use of a smaller factor which results in somewhat larger commercially related harvest estimates.

District 6 commercial catches were obtained from fish harvested by fish wheels. Combined catches from fish wheels and gillnets were apportioned using the resulting sample age and sex composition.

Canadian commercial catches were attributed to gillnets as noted above for subsistence harvests.

### **Escapement**

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 of relative abundance were assumed to represent overall trends in escapement. Additional escapement estimates were obtained by other methods as follows:

1. Summer chum salmon escapement to the Anvik River (Sandone 1990) and fall chum salmon escapement to the Sheenjek River (Barton *In prep*) were enumerated by ADF&G using side scan sonar counters.
2. Fall chum salmon escapement to the Chandalar River was enumerated by the United States Fish and Wildlife Service (USFWS) using side scan sonar counters (Daum 1991).
3. Fall chum salmon escapement to the Fishing Branch in Canada was enumerated by DFO using a weir (JTC 1990).
4. Students hired by DFO and working for the private Yukon Fish and Game Association counted chinook salmon which were observed ascending the fishway at Whitehorse Dam in Yukon Territory, Canada (JTC 1990).
5. Fall chum salmon escapement to the Toklat and Delta Rivers was estimated by ADF&G from ground surveys and stream residency time expansion factors (Bergstrom *et al.* 1990).

6. A hydroacoustic counting site was operated by ADF&G on the mainstem Yukon River at river mile 123 to obtain total salmon population estimates by species (LaFlamme and Mesiar 1990).

8. Chinook salmon tag and recapture studies were conducted by ADF&G in the Chena and Salcha Rivers to obtain spawning escapement estimates (Skaugstad 1990, 1990a).

9. A chinook and fall chum salmon tag and recapture study was conducted by DFO immediately upstream from the US-Canada border to obtain population estimates for the Canadian portion of the drainage, excluding the Porcupine River (JTC 1990).

Indices of relative abundance were presented for selected tributaries with accompanying age and sex summaries where available. Other major spawning escapements without estimates of relative abundance were treated similarly. Mean length by age and sex for each sampled fishery and escapement were also tabulated. These data constitute the primary biological information necessary to manage Yukon River salmon fishery harvests and monitor the status of spawning stocks.

### *Age, Sex, and Length Determination*

A stratified systematic sampling design (Cochran 1977) was used to obtain samples for the estimation of age and sex composition. 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 each strata to estimate the proportion of each major age class in the catch with  $\alpha = 0.05$  and  $d = 0.1$  (Bromaghin 1993).

Age compositions and associated variances were estimated with procedures outlined by Cochran (1977) for stratified sampling designs:

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

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

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

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

where

- $C_t$  = number of fish caught in stratum  $t$ ,
- $P_{tj}$  = proportion of sample in stratum  $t$  of age  $j$ ,
- $N_t$  = number of samples during stratum  $t$ ,
- $C_{tj}$  = estimated number of fish of age  $j$  in stratum  $t$ ,
- $T$  = total number of strata, and
- $C_{.j}$  = estimated number of fish of age  $j$  for all strata, e.g., season,  $T$ .

If strata sample sizes were insufficient to attain the desired levels of precision and accuracy, the samples were pooled into a single strata for a fishery or escapement to estimate age and sex composition. While commercial and subsistence harvest estimates were categorized by age and sex, escapement sample data was simply presented along with escapement estimates where available. An exception was the Anvik River chum escapement where age and sex compositions were available for stratified samples and were used to estimate numbers of fish in the escapement by age and sex for each strata. Summation of the resulting stratified numbers of fish by age and sex provided estimates of the age by sex proportions which were weighted by escapement magnitude in each sample strata (Sandone 1990).

Lengths were measured from mid-orbit to fork-of-tail to the nearest 5 millimeters. Some samples collected in Yukon Territory 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 data were not stratified.

## Subsistence

ASL data were not taken from subsistence harvests. Estimates of ASL statistics for subsistence harvests were derived from commercial sample data from the same gear type in the same or a neighboring district.

## **Commercial**

Examination, measurement, and scale specimen analysis for ASL determination was completed on each fish in samples selected from each strata of interest, e.g., period, district, or season. Examination of scale annuli patterns as described in Gilbert (1922) provided age information for salmon in the catch and escapement. Scales were taken from the left side of the fish approximately two rows above the lateral line along the diagonal from the posterior insertion of the dorsal fin to the anterior insertion of the anal fin according to methods outlined by INPFC (1963). Scales were mounted on gum cards and permanent impressions made in cellulose acetate (Clutter and Whitesel 1956).

Sex determination was made for every sampled fish. Assignment of sex was principally determined through examination of external secondary sexual characteristics. Fish from District 1 harvests often did not exhibit well developed external sexual dimorphism. Occasional examination of the gonads of fish of uncertain sex were made to check the accuracy of sex determination. Gonads were examined in all fish which were opened for Genetic Stock Identification (GSI) tissue extraction.

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, 2, 4, and from commercial gillnets in Canada.

## **Escapement**

An attempt was made to sample the major chinook and chum salmon spawning populations. Canadian Yukon River tributaries were sampled primarily for chinook; however, fall chum samples were obtained from the Kluane River. Most escapement data were collected from carcasses, although live chum salmon were sampled from weir traps at the Fishing Branch River. Fish spears were also used to capture live, but spawned out, chinook salmon at all locations. In addition, live fish were captured with beach seines at the Anvik and Sheenjek Rivers; with snagging gear at the Andreafsky, Anvik, Big Salmon, Nisutlin, and Wolf Rivers; and with gillnets at the Chulinak (Atchuelinguk on some USGS maps), Gisasa, Melozitna, Rodo, and Tozitna Rivers.

Resorption of the margins of scales from fall chum salmon on the spawning grounds made correct age determination problematic. Therefore, vertebrae specimens were used as an alternate source of age information for several of the escapement samples. Ages were determined from vertebrae through examination of annuli patterns visible

on transverse sections. Ages from scales and vertebrae were recorded in European notation.

## RESULTS

### *Catches and Escapements*

#### **Subsistence**

The Yukon River subsistence harvest for Alaska and Canada totalled 62,818 chinook, 172,031 summer chum, 219,832 fall chum, and 44,598 coho salmon in 1989 (Table 1). The subsistence harvest of chinook was 8% above that of 1988 while summer chum was 17% below, fall chum was 34% above, and coho was 40% below the 1988 level. The large increase in the fall chum subsistence harvest is largely due to an increased harvest of about 50,000 fish above the 1988 level in Districts 4, 5, and 6.

During 1989, the largest chinook and fall chum subsistence harvests occurred in District 5, the largest subsistence summer chum harvest occurred in District 4, and the largest subsistence coho harvest occurred in District 6. Fish wheels accounted for the majority of the fall chum and coho subsistence harvests, while the majority of the chinook and summer chum subsistence salmon were taken by gillnet.

#### **Commercial**

Combined Alaska and Canada commercial harvests including sales of ADF&G test fishing catches and illegal harvests totaled 115,280 chinook, 1,463,345 summer chum, 319,477 fall chum, and 85,493 coho salmon in 1989 (Table 1). The summer chum commercial harvest includes an estimated 175,468 unsold males taken in the District 4 roe fishery (Sandone 1991).

The total chinook commercial harvest was 1% above that of 1988, and was 13% below the recent 5-year, 1984-88, average. The summer chum harvest was 10% below the 1988 level, and 43% above the recent 5-year average. The fall chum harvest was 64% above that of 1988 and 73% above the recent 5-year average. The coho harvest was 14% below 1988 and 49% above the recent 5-year average. The large increase of fall chum and coho salmon in 1989 over the recent 5-year average primarily reflected the 1987 fall season when no commercial fishing occurred in the Alaska portion of the Yukon River.

Fishermen in the Alaska portion of the drainage received an estimated 10.2 million dollars for their catch in 1989, 29% above the 1984-88 average. The largest commercial harvests of chinook and summer chum salmon occurred in District 1. The largest fall chum and coho harvest occurred in District 2. Commercial harvest by species by period and fishing effort by period is presented in Appendix A for each district and Canada. Gillnets accounted for the majority of the commercial harvest for each species (Appendix B).

## Escapements

Yukon River salmon interim escapement objectives have been established by ADF&G for the major spawning populations of chinook, summer chum, and fall chum salmon in the Alaska portion of the drainage for which a sufficient data base exists (Bergstrom *et al* 1991). Most escapement objectives are based on historical aerial survey indices of abundance, and are subject to reevaluation as more data becomes available. Yukon River salmon spawning escapement index counts and population estimates for all areas monitored in 1989 were presented in Table 2. Daily sonar, weir, and fishpass salmon escapement counts were tabulated in Appendix C. In general, observation conditions were poor in 1989 for aerial surveys conducted on the Alaska portion of the Yukon River drainage, while conditions were excellent for surveys completed on the Canadian portion of the drainage.

**Chinook.** Chinook salmon spawn in tributary streams throughout the Yukon River drainage (Figure 3). Chinook salmon minimum escapement objectives have been established for the East Fork Andreafsky (1,600), West Fork Andreafsky (1,000), Anvik index area (500), North Fork Nulato (500), South Fork Nulato (500), Chena (1,700), and Salcha (3,500) Rivers (Bergstrom *et al* 1991). Except for the Anvik River where a total river count of 442 chinook salmon was obtained and the Nulato River which was not surveyed, 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 (1,280) and Salcha (2,333) Rivers were both below established index objectives. In addition to aerial counts, total 1989 spawning populations to the Chena (2,730) and Salcha (3,572) Rivers were estimated from mark and recapture studies. As of 1989 optimum total spawning population levels had not yet been established for these rivers as spawning populations had only been estimated since 1986 for the Chena River and 1987 for the Salcha River.

Chinook salmon escapements in the Canadian portion of the drainage were at generally higher levels in 1989 than they have been in recent years. Index tributary escapements were well above the recent 5-year (1984-88) average. The peak count of 695 chinook salmon for index areas in the Nisutlin River and the Whitehorse fishway count of 549 chinook salmon (including 218 fish taken for hatchery brood stock) were the largest escapements observed since 1984. The Little Salmon River

aerial survey of 862 was the largest recorded. The 1989 DFO spawning population estimate of 25,201 chinook salmon for the Yukon River drainage in Canada was up from the 1988 estimate of 23,118 fish.

**Summer chum.** Spawning primarily in tributaries of the lower Yukon, the Koyukuk, and the Tanana Rivers (Figure 4), summer chum minimum aerial index objectives have been established for the East Fork Andreafsky (109,000), West Fork Andreafsky (116,000), Anvik (356,000), North Fork Nulato (53,000), and Hogatza (17,000) Rivers. A sonar-based escapement objective of 487,000 salmon has also been established for the Anvik River (Bergstrom *et al* 1991). The aerial survey count for the East Fork Andreafsky River was 21,460 summer chum salmon; however, the survey was conducted under early conditions. It was the only summer chum index area in the Lower Yukon drainage which was surveyed. The Anvik River sonar escapement count of 636,906 summer chum salmon was 31% above the escapement objective of 487,000 but was only slightly more than half of the estimated 1988 escapement of 1,125,449.

**Fall chum.** Spring fed upwelling areas in streams and sloughs in the upper portion of the Yukon River drainage are preferred spawning areas for fall chum salmon (Figure 5). Minimum total season escapement objectives have been established for the Sheenjek (62,000), Toklat (33,000), and Delta (11,000) Rivers (Bergstrom *et al* 1991). An interim spawning escapement objective range of 90,000-135,000 fish for mainstem Yukon River in Canada was in effect in 1989 (JTC 1990). In addition an interim escapement objective range of 50,000-120,000 fish had been established for the Fishing Branch River, a tributary of the Porcupine River (JTC 1987).

The total of fall chum escapements for selected spawning tributaries in 1989 (262,730) was below the level observed in 1987 when no fall chum commercial fishing took place on the Alaska portion of the Yukon River. Otherwise, it was the largest observed since 1985, and twice the escapement observed in 1988, e.g., 127,364. Escapement population estimates of 30,447 fall chum salmon for the Toklat River, 21,342 for the Delta River, and 101,748 for the Sheenjek River in 1989 were 8% below, 94% above, and 64% above the minimum escapement objectives for each of these streams. The escapement population estimate of 43,834 for the Fishing Branch River was 12% 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 69,161 fall chum salmon in 1989 was the largest count since program inception and was 106% higher than the 1988 count. The DFO spawning escapement estimate for 1989 was 35,750 fall chum salmon for the mainstem Yukon River drainage in Canada, excluding the Porcupine River drainage. This was below the 1988 estimate of 36,786 fish and far below the interim escapement objective range of 90,000 to 135,000 fish established by the JTC (1990).

**Coho.** Major concentrations of spawning coho salmon have been documented in the Tanana River drainage; however, spawning also occurs widely throughout the Yukon River drainage (Figure 6). Coho escapement counts are generally obtained in conjunction with fall chum escapement surveys; therefore, a comprehensive data base does not exist. Coho escapements in 1989 appeared to be average for most spawning areas in the Yukon River drainage. However, the Wood Creek estimate in 1989 (412) was the lowest since 1978 (300) and far below the recent 1984-1988 average of 3,748.

### *Age, Sex, and Length Composition*

#### **Chinook**

Age composition of the entire Yukon River harvest of chinook salmon in 1989 was estimated to be 50% age-1.4, 30% age-1.3, 8% age-1.5, and 7% age-1.2, with several other age classes present in smaller proportions (Table 3, Appendix D). Females accounted for an estimated 39% of total river harvest. In 1989, a more normal age class distribution was observed than in 1988 when the three major classes, e.g., age 1.3, 1.4, and 1.5, were nearly equally distributed.

District 1 and 2 combined commercial and subsistence gillnet catches comprised 61% of the total river harvest. Age and sex composition differed between periods where unrestricted mesh size was allowed and periods where mesh size was restricted to a 6-in (15.2 cm) maximum in Districts 1 and 2 (Appendix D). The percentage of females caught during unrestricted mesh periods ranged from 35.8 to 53.2 with an average of 47.6 for combined unrestricted gear in the two districts. The percentage of females landed during restricted mesh fishing ranged from 22.7% to 50.1% with an average of 32.2%. Age-1.4 fish, which have comprised 40% to 75% of District 1 and 2 harvests in recent years, were the most abundant age group in 1989, and comprised 50.8% of the season total harvest for both districts. Age-1.4 fish taken in restricted gear ranged from 22.3% to 43.9% in District 1 and 2 periods where mesh size was restricted to 6 inches or less and from 43.6% to 66.1% in unrestricted periods. The sample for District 1, period 11 was not considered in these comparisons because of the small sample size. Age-1.4 fish dominated each of the six unrestricted mesh periods for the two districts, as well as, five of the 15 restricted mesh periods that were sampled. While age-1.5 chinook salmon were unusually abundant in 1988, they did not dominate in any fishing period in District 1 or 2. Age-1.3 outnumbered other ages in eight of 15 restricted mesh periods which was expected because of a greater than normal abundance of 1988 age-1.2 fish in the return, e.g., 17% of the District 1 and 2 catch.

Subsistence harvests in Districts 1, 2, and 3, and in Canada were not sampled. Because subsistence fisheries in those locations utilize the same gear types and occur more or less concurrently with the commercial fisheries, age and sex frequencies of

commercial samples were applied to the subsistence harvests (Appendix D). Because of the intermixing of commercial and subsistence gillnet and fish wheel catches by fishermen in Districts 4, 5, and 6, estimates by gear type were made only when segregated samples were available.

In District 5 a chi-squared test for the difference between sample proportions revealed that a significantly greater proportion of younger, e.g., age 1.2 and 1.3, male chinook were captured in fish wheels than in gillnets ( $\chi^2$ ,  $P=0$ ). District 5 fish wheel samples were 31.2% age 1.2 males and 35.7% age 1.3 males while gillnet samples were composed of only 1.5% age 1.2 males and 12.1% age 1.3 males. Overall, the District 5 fish wheel catch sample was 80.8% male while the gillnet catch sample was 53% male. A different aspect of gear selectivity is apparent for age 1.4 where fish wheels captured a larger proportion of females than males while gillnets captured about equal numbers of the sexes. Similar trends were displayed in District 4 but not to the extent observed in District 5.

Mean size of male chinook salmon in the District 1 commercial gillnet catch ranged from 400 mm for an age-1.1 fish to 1,095 mm for an age-1.6 fish. Female chinook salmon ranged from 701 mm for an age-1.2 fish to 1000 mm for an age-2.5 fish (Table 4). Similarly, the size of male chinook salmon in the combined District 4 commercial and subsistence fish wheel catch ranged from 363 mm for age-1.1 fish to 833 mm for age-1.4 fish; females ranged from 392 mm for an age-1.1 fish to 846 mm for an age-1.4 fish. Other catch samples exhibited size frequencies within the range of the samples from Districts 1 and 4.

Age, sex, and size composition of chinook test fishing samples collected in 1989 is presented in Appendix D.14.

Age and sex composition of chinook escapements in 1989 (Table 5) indicated similar patterns of abundance (nonstatistical comparison, NSC) as previous years. Age-1.3 fish were the most abundant age group in Lower Yukon River escapements, ranging from 49.1% for the Anvik River to 71.8% for the Andreafsky River. Age group 1.4 was next most abundant ranging from 21.2% for the Andreafsky River to 43.5% for the Anvik River. All other age classes contributed less than 10% to the lower Yukon River tributaries.

In most previous years, escapements in the upper river, e.g., Canada, have displayed a consistent trend toward older fish and proportionally more females than escapements downriver (NSC). This relationship was again observed among ages 1.2, 1.3, 1.4, and 1.5 in 1989. Age-1.3 fish were more abundant (57%) in lower river escapements than in middle (29%), and upper river (14%) escapements. Abundance of age-1.5 increased slightly from approximately 4% for the Lower Yukon, to approximately 10% for the Middle Yukon, to approximately 15% for the Upper Yukon in 1989. This was much stronger than usual due to the abundance of age-1.5 fish.

The percentage of age-1.4 fish in the Chena (54.5) and Salcha (57.8) Rivers in the Middle Yukon was greater than that of age 1.4 to the Andreafsky (21.2), Chulinak (33.3), and Anvik (43.5) Rivers in the Lower Yukon. Middle river escapements were similar to most recent years. Age 1.4 dominated escapements in Canada to a greater extent (45.7% - 68.0% range) than in 1988 but was similar to other years.

The abundance of female chinook salmon in Yukon River escapement samples varied greatly in 1989, ranging from 13.6% in the Andreafsky River to 75.4% in the Nisutlin River. However, the carcass sample from the Andreafsky River may have been biased by a combination of early timing and high water levels: the timing of mortality from spawning activity is generally later for females than males and larger numbers of female carcasses often are retrieved from deeper areas of the streambed which become obscured by turbidity during times of high water.

Similar to previous years, the relatively uncommon occurrence of fish with two freshwater annuli was proportionally greater in the Upper Yukon River spawning streams than in other regions of the drainage (NSC), i.e., 40.3% of samples from the Nisutlin River in Canada were estimated to have two freshwater annuli in 1989.

The average size of male chinook salmon in Yukon River escapements ranged from 370 mm for a single age-1.1 fish from the Salcha River to 1,020 mm for age-1.5 fish from the West Fork Andreafsky River (Table 6). Average size of females ranged from 725 mm for age-1.3 fish from the Little Salmon River in Canada to 962 mm for age-1.5 fish from the Salcha River.

## Summer Chum

Sample sizes of summer chum salmon from the District 1 and the first five periods of the District 2 commercial gillnet fishery, Districts 4 and 6 combined commercial and subsistence fish wheel fisheries, and the District 4 combined commercial and subsistence gillnet fishery were sufficient ( $\alpha = 0.05$  and  $d = 0.1$ ) to permit estimates of harvest by age and sex. Harvest estimates for District 3, by age and sex, were based on the composition of the Districts 1 and 2 samples. Age and sex composition estimates for commercial and subsistence gillnet harvests in Districts 5 and 6, and fish wheel harvest in District 5 could not be estimated because of small sample sizes. Subsistence harvest age and sex composition for District 1 was estimated using the District 1 commercial gillnet catch samples. Districts 2 and 3 were estimated using District 2 commercial gillnet 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 composition for each fishery is presented by sample period in Appendix E. Age, sex, and size composition of test fishing samples is shown in Appendix E.11.

Age and sex composition for 99% of the total drainage summer chum harvest was estimated (Table 7). Uncharacteristically, age-0.4 accounted for the majority of total utilization, e.g., 61% of the total harvest, followed by ages 0.3 (39%), 0.5 (0.4%), and 0.2 (0.4%). The total harvest was composed of 46% females.

Samples from the commercial gillnet fishery in District 1 (Appendix E) were comprised of more age-0.4 fish (75.0%) and fewer females (27.8%) than were commercial and subsistence fish wheel samples pooled from the District 4 fishery (42.4% age-0.4 and 66.9% females). The District 6 commercial fishery sample was composed of 30.1% age 0.4 and 41.6% female (Table 8). Samples from the District 4 gillnet commercial and subsistence fisheries were very different from District 4 fish wheel with 56.2% age-0.4 fish but similar in sex composition, 61.3% female. No District 6 gillnet samples were collected in 1989.

A temporal trend in age composition (NSC) has been historically apparent for the District 1 commercial gillnet fishery. As the season progressed age-0.4 declined in relative abundance, while age-0.3 increased. This trend was not as pronounced in 1989 as in previous years.

Age, sex, and length data for summer chum salmon were collected for a number of spawning locations in 1989 (Tables 9, 10). Age-0.4 fish comprised 43.7% of the West Fork Andreafsky River to 72.5% of the Chulinak River spawning stocks. West Fork Andreafsky River age composition was dominated by age 0.3, e.g., 51.7%. Sex composition ranged from 16.6% female for the East Fork Andreafsky River to 66.5% for the Anvik River. This large difference is most likely due to sampling methods. Samples from the Anvik River were collected by beach seine gear throughout the spawning migration. Samples from the Andreafsky River were collected in a two week time frame while sampling for chinook salmon in early August. High water on the Andreafsky River probably contributed to sampling bias as well.

## **Fall Chum**

The number of fall chum salmon harvested by age, sex, and fishery for 1989 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 97% of the total drainage fall chum harvest was estimated. The sex composition was 48% female. Age-0.3 fall chum salmon contributed 87.0% to the total drainage harvest in 1989. The District 1 commercial gillnet harvest was composed of 83.7% age-0.3 and 54.2% female. Contribution of age-0.3 fish to District 4, 5, and 6 and Yukon Territory commercial and subsistence harvests were all similar, ranging from 84.2% in District 4 to 90.3% in District 5.

Mean length of males was larger than for females (NSC) for all ages from sampled harvests (Table 12).

Age and sex data was collected from spawning escapements by ADF&G in the Toklat, Delta, and Sheenjek Rivers, by USFWS in the Chandalar River, and by DFO in the Fishing Branch River in Yukon Territory (Table 13). Age compositions ranged from 76.6% age-0.3 for the Sheenjek River to 87.2% age-0.3 for the Fishing Branch River, and from 12.8% age 0.4 for the Fishing Branch River to 16.0% age-0.4 for the Toklat River.

Sex composition was variable, ranging from 36.7% female for the Delta River to 59.1% female for the Sheenjek River.

Because samples collected from spawning grounds in Canada by DFO were measured from tip-of-snout to fork-of-tail while samples collected in Alaska escapements were measured from mid-orbit to fork-of-tail, no direct comparisons of size can be made between Alaskan and Canadian samples (Table 14). Among Alaskan samples mean length of males was larger (NSC) than for females of all ages, except Toklat River age 0.2.

## **Coho**

Catch by age and sex was estimated for 88% of the total coho harvest for 1989 (Table 15). Approximately 75% were age-2.1. The contribution of age-2.1 coho salmon to District 1 commercial gillnet harvest (80.1%) was greater than the estimated contribution to District 6 (62.7%) commercial and subsistence fish wheel harvests (Appendix G). Males were dominant in both commercial samples of District 1 (59.8%) and District 6 (67.2%).

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

Samples from the Delta Clearwater River were similar to previous years with age-2.1 accounting for 77.3% of the escapement (Table 17). This was similar to the age composition for District 1 commercial gillnet catch samples; however, the age composition for the District 6 samples showed similar relationships but had a smaller percentage of age 2.1.

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## TABLES



Table 1. Yukon River commercial, subsistence, and sport salmon harvest by district and species, 1989.

| District                             | Chinook            |                    |         | Summer Chum        |                    |           | Fall Chum          |                    |         | Coho               |                    |         |
|--------------------------------------|--------------------|--------------------|---------|--------------------|--------------------|-----------|--------------------|--------------------|---------|--------------------|--------------------|---------|
|                                      | Comm. <sup>a</sup> | Subs. <sup>b</sup> | Total   | Comm. <sup>a</sup> | Subs. <sup>b</sup> | Total     | Comm. <sup>a</sup> | Subs. <sup>b</sup> | Total   | Comm. <sup>a</sup> | Subs. <sup>b</sup> | Total   |
| 1                                    | 62,364             | 4,888              | 67,252  | 547,781            | 52,844             | 600,625   | 77,876             | 4,934              | 82,810  | 24,672             | 5,144              | 29,816  |
| 2                                    | 33,225             | 7,147              | 40,372  | 343,962            | 39,703             | 383,665   | 97,906             | 10,015             | 107,921 | 38,522             | 5,039              | 43,561  |
| 3                                    | 1,645              | 4,746              | 6,391   | 7,578              | 3,982              | 11,560    | 15,332             | 1,019              | 16,351  | 3,988              | 537                | 4,525   |
| Lower Yukon                          | 97,234             | 16,781             | 114,015 | 899,321            | 96,529             | 995,850   | 191,114            | 15,968             | 207,082 | 67,182             | 10,720             | 77,902  |
| 4 <sup>c,d</sup>                     | 2,790              | 9,106              | 11,896  | 510,244            | 49,777             | 560,021   | 15,183             | 21,137             | 36,320  | 3                  | 4,030              | 4,033   |
| 5 <sup>e</sup>                       | 3,286              | 24,224             | 27,510  | 527                | 13,219             | 13,746    | 22,204             | 114,835            | 137,039 | 84                 | 7,192              | 7,276   |
| 6 <sup>b,e,f,g</sup>                 | 2,181              | 4,552              | 6,733   | 53,253             | 12,506             | 65,759    | 73,427             | 62,421             | 135,848 | 18,224             | 22,177             | 40,401  |
| Upper Yukon                          | 8,257              | 37,882             | 46,139  | 564,024            | 75,502             | 639,526   | 110,814            | 198,393            | 309,207 | 18,311             | 33,399             | 51,710  |
| U.S. Total                           | 105,491            | 54,663             | 160,154 | 1,463,345          | 172,031            | 1,635,376 | 301,928            | 214,361            | 516,289 | 85,493             | 44,119             | 129,612 |
| Porcupine                            | 0                  | 525                | 525     | 0                  | 0                  | 0         | 0                  | 2,909              | 2,909   | 0                  | 470                | 470     |
| Mainstem Yukon                       | 9,789              | 7,630              | 17,419  | 0                  | 0                  | 0         | 17,549             | 2,562              | 20,111  | 0                  | 0                  | 0       |
| Canada Total                         | 9,789              | 8,155              | 17,944  | 0                  | 0                  | 0         | 17,549             | 5,471              | 23,020  | 0                  | 470                | 470     |
| Yukon Drainage<br>Total <sup>h</sup> | 115,280            | 62,818             | 178,098 | 1,463,345          | 172,031            | 1,635,376 | 319,477            | 219,832            | 539,309 | 85,493             | 44,589             | 130,082 |

<sup>a</sup> Includes illegal District 1 catch (3,211 chinook; 150 summer chum) and District 6 ADF&G test fish sales (440 chinook; 6,267 summer chum).

<sup>b</sup> Subsistence harvest includes subsistence and personal use fisheries in Alaska, and domestic and Indian fisheries in Canada. Does not include Hooper Bay and Scammon Bay harvest of 16 chinook, 2,341 summer chum, 156 fall chum, and 213 coho salmon.

<sup>c</sup> Includes Koyukuk River subsistence harvest.

<sup>d</sup> Summer chum subsistence catch does not include fish taken during commercial roe fishery used or sold for dog food.

<sup>e</sup> Includes Chandalar R. and Black R. subsistence harvests.

<sup>f</sup> Includes the following fish sales (in the round) from the District 6 ADF&G test fish wheel: 440 chinook, 6,620 summer-run chum, 16,641 fall-run chum, and 2,130 coho salmon.

<sup>h</sup> Subsistence category includes sport harvest (Canada mainstem: 300 chinook; District 6: 1,053 chinook, 2,103 summer chum, 1,796 coho).

Table 2. Yukon River salmon spawning escapement indices and population estimates by species, 1989.

| Stream (drainage) <sup>a</sup>              | Date     | Survey Rating | Chinook | Summer Chums | Fall Chums | Coho    |
|---|----------|---------------|---------|--------------|------------|---------|
| <b>ALASKA STREAMS</b>                       |          |               |         |              |            |         |
| Andreafsky River                            |          |               |         |              |            |         |
| East Fork                                   | 7/3,7/27 | Early, Poor   | 1,399   | 21,460       |            |         |
| West Fork                                   | 7/27     | Fair          | 1,089   |              |            |         |
| Andreafsky River Total                      |          |               | 2,488   | 21,460       |            |         |
| Pilot Station Main River Sonar <sup>b</sup> | 6/8-9/11 |               | 91,548  | 1,603,647    | 605,843    | 169,358 |
| Anvik River                                 |          |               |         |              |            |         |
| Mainstem River                              | 7/24     | Poor          | 268     |              |            |         |
| Beaver Creek                                | 7/24     | Poor          | 131     |              |            |         |
| Canyon Creek                                | 7/24     | Poor          | 0       |              |            |         |
| Otter Creek                                 | 7/24     | Poor          | 35      |              |            |         |
| Swift River                                 | 7/24     | Poor          | 2       |              |            |         |
| Yellow River                                | 7/24     | Poor          | 6       |              |            |         |
| Sonar Count <sup>c</sup>                    | 6/19-26  |               |         | 636,906      |            |         |
| Anvik River Total                           |          |               | 442     | 636,906      |            |         |
| Koyukuk River Drainage                      |          |               |         |              |            |         |
| South Fork Koyukuk River (BLM) <sup>d</sup> | 7/25-8/8 | Poor          | 128     | 59           |            |         |
| South Fork Koyukuk River (ADF&G)            | 9/17     | Poor          |         |              | 241        |         |
| Jim River (BLM) <sup>d</sup>                | 8/8      | Poor          | 29      | 403          |            |         |
| Jim River (ADF&G)                           | 9/17     | Poor          |         |              | 1          |         |

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Table 2. (page 2 of 6)

| Stream (drainage) <sup>a</sup>                         | Date       | Survey Rating | Chinook | Summer Chums | Fall Chums     | Coho |
|--|------------|---------------|---------|--------------|----------------|------|
| Lower Tanana River Drainage                            |            |               |         |              |                |      |
| Kantishna River Drainage                               |            |               |         |              |                |      |
| Toklat River   |            |               |         |              |                |      |
| Barton Creek   | 8/3,10/12  | Poor,Poor     | 137     |              | 27             | 12   |
| Floodplain vic Roadhouse <sup>o</sup>                  | 10/21-26   | Good          |         |              | 24,035         | 4    |
| Gelger Creek <sup>f</sup>                              | 10/21-26   | Good          |         |              | 2,430          | 155  |
| Sushana River <sup>f</sup>                             | 10/21-26   | Good          |         |              | 2,982          | 9    |
| Population Estimate for upper Toklat area <sup>g</sup> |            |               |         |              | 30,447         |      |
| Clear Creek  | 8/3        | Poor          | 15      |              |                |      |
| Bear Paw River   | 8/3        | Poor          | 9       |              |                |      |
| Moose Creek  | 8/3        | Poor          | 5       |              |                |      |
| Nenana River Drainage                                  |            |               |         |              |                |      |
| Seventeen Mile Slough                                  | 9/7,10/13  | Fair,Poor     |         |              | 8              | 824  |
| Julius Creek   |            |               |         |              |                |      |
| Wood Creek Weir Counts <sup>b</sup>                    | 9/19-10/31 |               |         |              | 1,091          | 412  |
| Teklanika River  | 10/13      | Poor          |         |              |                | 251  |
| Chatanika River  | 7/22       | Fair          | 72      | 35           |                |      |
| Chena River (Aerial)                                   | 7/30       | Fair-Good     | 1,280   | 714          |                |      |
| Population Estimate <sup>h,i</sup>                     |            |               | 2,730   |              |                |      |
| Salcha River (Aerial)                                  | 7/30       | Good-Poor     | 2,333   | 1,574        |                |      |
| Population Estimate <sup>h,i</sup>                     |            |               | 3,572   |              |                |      |
| Aerial Radio Tracking                                  | 10/10      |               |         |              | 8 <sup>k</sup> |      |

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Table 2. (page 3 of 6)

| Stream (drainage) *                       | Date      | Survey Rating | Chinook | Summer Chums | Fall Chums | Coho   |
|---|-----------|---------------|---------|--------------|------------|--------|
| Upper Tanana River Drainage               |           |               |         |              |            |        |
| Slough vic Little Salcha River            | 11/2      | Fair-Poor     |         |              | 37         | 0      |
| Vicinity Benchmark 735 Slough             | 11/2      | Poor          |         |              | 118        | 0      |
| Slough vic of Little Delta R mouth        | 11/2      | Fair-Poor     |         |              | 680        | 0      |
| Open water area vic Canyon Cr Camp        | 11/2      |               |         |              | 9          | 0      |
| Richardson Clearwater River               | 11/2      | Fair-Poor     |         |              | 201        | 483    |
| Mainstem Tanana sloughs between           |           |               |         |              |            |        |
| Shaw Creek and Timber                     | 11/2      | Fair          |         |              | 1,301      | 2      |
| South Bank Tanana                         | 11/2      | Poor          |         |              | 939        | 0      |
| Blue Creek                                | 11/2      | Poor          |         |              | 40         | 25     |
| Delta River                               |           |               |         |              |            |        |
| Foot Survey (peak count)                  | 10/31     | Good          |         |              | 17,540     | 3      |
| Population Estimate <sup>8</sup>          |           |               |         |              | 20,000     | 0      |
| Bluff Cabin Slough                        |           |               |         |              |            |        |
| Aerial                                    | 11/2      | Poor-Fair     |         |              | 5,386      | 0      |
| Foot Survey                               | 11/1      | Poor          |         |              | 2,706      | 0      |
| Bluff Cabin Spring                        | 11/8      | Poor          |         |              | 47         | 17     |
| Clearwater Lake Outlet Slough             | 11/2      | Poor          |         |              | 1,273      | 0      |
| Clearwater Lake and Outlet <sup>1,1</sup> | 10/28     | Good          |         |              | 0          | 1,600  |
| Delta Clearwater River <sup>1,1</sup>     | 10/27-28  | Good-Fair     |         |              | 1,000      | 11,000 |
| Onemile Slough                            | 11/2      | Fair          |         |              | 1,108      | 0      |
| Slough adjacent Onemile Sl                | 11/2      | Poor          |         |              | 50         | 0      |
| Vicinity Pearse Slough                    | 11/2      | Fair          |         |              | 605        | 0      |
| Slough vic Gerstle Ri mouth               | 11/2      | Poor-Fair     |         |              | 102        | 0      |
| Chandalar River (Aerial)                  |           |               |         |              |            |        |
| Sonar Estimate <sup>c, d</sup>            | 9/19      | Good          |         |              | 20,232     |        |
|   | 8/10-9/30 |               |         |              | 69,161     |        |
| Porcupine River Drainage                  |           |               |         |              |            |        |
| Sheenjek River (Aerial) <sup>m</sup>      | 8/22      | Good-Poor     |         |              | 20,000     |        |
| Sonar Estimate <sup>c</sup>               | 8/24-9/25 |               |         |              | 81,748     |        |
| Sheenjek River Total                      |           |               |         |              | 101,748    |        |

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Table 2. (page 4 of 6)

| Stream (drainage) <sup>a</sup>              | Date       | Survey Rating | Chinook | Summer Chums | Fall Chums | Coho |
|---|------------|---------------|---------|--------------|------------|------|
| <b>YUKON TERRITORY STREAMS</b>              |            |               |         |              |            |      |
| Porcupine River Drainage                    |            |               |         |              |            |      |
| Fishing Branch River (Aerial) <sup>b</sup>  |            |               |         |              | 9,662      |      |
| Fishing Branch River (weir) <sup>b,c</sup>  | 8/30-10/16 |               | 6       |              | 43,834     | 11   |
| Yukon River Drainage (other than Porcupine) |            |               |         |              |            |      |
| White River                                 |            |               |         |              |            |      |
| Donjek River                                |            |               |         |              |            |      |
| Kluane River <sup>d</sup>                   | 10/19      | Fair          |         |              | 3,050      |      |
| Tincup Creek <sup>b</sup>                   | 8/19       | Good          | 88      |              |            |      |
| Koidern River <sup>b</sup>                  | 10/19      | Good          |         |              | 40         |      |
| Pelly River                                 |            |               |         |              |            |      |
| Ross River <sup>b</sup>                     | 8/21       | Fair          | 433     |              |            |      |
| Hoole River                                 | 8/17       | Good          | 50      |              |            |      |
| Tatchun Creek <sup>d</sup>                  | 8/25-28    |               | 100     |              |            |      |
| Nordenskjold River <sup>d</sup>             | 8/25-28    |               | 4       |              |            |      |
| Little Salmon River                         |            |               |         |              |            |      |
| ADF&G Aerial Survey                         | 8/16       | Good          | 718     |              |            |      |
| DFO Aerial Survey                           | 8/22       | Good          | 862     |              |            |      |
| Big Salmon River                            |            |               |         |              |            |      |
| Big Salmon Lake to Scurvy Cr                | 8/15       | Good          | 520     |              |            |      |
| Scurvy Cr                                   | 8/15       | Good          | 25      |              |            |      |
| Scurvy Cr to Moose Cr                       | 8/15       | Good          | 408     |              |            |      |
| Moose Cr to DFO weir                        | 8/15       | Good          | 458     |              |            |      |
| DFO weir to Bat Cr                          | 8/15       | Good          | 78      |              |            |      |
| Bat Cr to Souch Cr                          | 8/15       | Good          | 173     |              |            |      |
| Downstream Souch Cr                         | 8/15       | Flyover       | 337     |              |            |      |
| Big Salmon River Total                      |            |               | 1,999   |              |            |      |

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Table 2. (page 5 of 6)

| Stream (drainage) <sup>a</sup>               | Date    | Survey Rating | Chinook          | Summer Chums | Fall Chums | Coho |
|--|---------|---------------|------------------|--------------|------------|------|
| <b>Teslin River Drainage</b>                 |         |               |                  |              |            |      |
| Mainstem Teslin River <sup>a</sup>           | 11/1    | Poor          |                  |              | 210        |      |
| Nisutlin River                               | 8/15-16 | Good-Fair     | 1,328            |              |            |      |
| Wolf River                                   | 8/16    | Good          | 324              |              |            |      |
| Swift River <sup>d</sup>                     | 8/30    |               | 19               |              |            |      |
| Morley River <sup>e</sup>                    | 8/29    |               | 79               |              |            |      |
| Teslin River Total                           |         |               | 1,750            |              | 210        |      |
| <b>Takhini River<sup>a</sup></b>             |         |               |                  |              |            |      |
| Takhini River <sup>a</sup>                   | 8/28    | Poor          | 72               |              |            |      |
| Ibex River <sup>a</sup>                      | 8/28    | Good          | 0                |              |            |      |
| Whitehorse Fishway Counts <sup>a</sup>       |         |               | 549 <sup>f</sup> |              |            |      |
| <b>Mainstem Yukon River</b>                  |         |               |                  |              |            |      |
| Tatchun Creek to Ft Selkirk <sup>a</sup>     | 10/18   | Good          |                  |              | 5,320      |      |
| Border Escapement Estimate <sup>a, f</sup>   |         |               | 42,620           |              | 55,861     |      |
| Spawning Escapement Estimate <sup>a, f</sup> |         |               | 25,201           |              | 35,750     |      |
| Mainstem Yukon Total                         |         |               |                  |              | 5,320      |      |

<sup>a</sup> Only peak estimates listed; carcass counts included. Data in italics not included in totals or subtotals.

<sup>b</sup> Blossonics sonar estimate of total salmon passage. Since salmon are harvested in fisheries upriver from this site this is not an estimate of spawning escapement.

<sup>c</sup> Bendix side scan sonar estimate.

<sup>d</sup> U.S. Fish and Wildlife Service estimate.

<sup>e</sup> Combined foot and aerial estimate.

<sup>f</sup> Foot survey.

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<sup>g</sup> Population estimate based upon replicate foot surveys and streamlife data.

<sup>h</sup> F.R.E.D. Division estimate.

<sup>i</sup> Population estimate based upon mark and recapture study minus commercial, sport, domestic, and Indian Food Fishery (7,414 chinook and 19,987 fall chum) caught fish.

<sup>j</sup> Sport Fish Division estimate.

<sup>k</sup> A total of 8 radio tagged fall chum salmon were located on this survey up the Salcha River. No estimates of other salmon nor precise spawning areas were obtained.

<sup>l</sup> Boat survey.

<sup>m</sup> This is an estimate of chum salmon already in the Sheenjek River prior to sonar operations. It is an expansion of the actual aerial survey count on August 22 of 4,076 chums.

<sup>n</sup> Canadian Department of Fisheries and Oceans (DFO) estimate.

<sup>o</sup> Does not include 6 male chinook salmon and 11 male coho salmon passed.

<sup>p</sup> Total for Alaskan portion of drainage only.

<sup>q</sup> Stream not surveyed. Numbers are for adults sampled for AWL and/or stock ID.

<sup>r</sup> Only 331 of the chinook salmon which returned to the Fishway were passed; 41 females were artificially spawned for hatchery brood stock (average fecundity was 5,400 eggs). At least 85 more females and several males died unspawned at the Fishway as a result of warm water temperatures.

<sup>s</sup> Canadian estimates for Yukon Territory streams excluding the Fishing Branch River. Commercial and subsistence catches have not been removed from these estimates. These are border passage estimates.

Table 3. Harvest of Yukon River chinook salmon by age, sex, and fishery, 1989.

| District | Fishery                             | Sample Size |        | Brood Year and Age Group <sup>a</sup> |       |        |     |        |     |       |       |      |     | Total  |      |  |
|----------|-------------------------------------|-------------|--------|---------------------------------------|-------|--------|-----|--------|-----|-------|-------|------|-----|--------|------|--|
|          |                                     |             |        | 1986                                  |       | 1985   |     | 1984   |     | 1983  |       | 1982 |     |        | 1981 |  |
|          |                                     |             |        | 1.1                                   | 1.2   | 1.3    | 2.2 | 1.4    | 2.3 | 1.5   | 2.4   | 1.6  | 2.5 |        |      |  |
| 1        | Commercial <sup>b</sup><br>Gillnet  | 1,909       | Female | 0                                     | 118   | 4,133  | 0   | 16,474 | 0   | 2,716 | 709   | 59   | 295 | 24,504 |      |  |
|          |                                     |             | Male   | 0                                     | 2,657 | 15,529 | 236 | 13,817 | 236 | 1,535 | 354   | 59   | 118 | 34,541 |      |  |
|          |                                     |             | Total  | 0                                     | 2,775 | 19,662 | 236 | 30,290 | 236 | 4,251 | 1,063 | 118  | 413 | 59,045 |      |  |
| 1        | Subsistence <sup>c</sup><br>Gillnet | 0           | Female | 0                                     | 10    | 342    | 0   | 1,364  | 0   | 225   | 59    | 5    | 24  | 2,029  |      |  |
|          |                                     |             | Male   | 0                                     | 220   | 1,286  | 20  | 1,144  | 20  | 127   | 29    | 5    | 10  | 2,859  |      |  |
|          |                                     |             | Total  | 0                                     | 230   | 1,628  | 20  | 2,508  | 20  | 352   | 88    | 10   | 34  | 4,888  |      |  |
| 2        | Commercial<br>Gillnet               | 1,069       | Female | 0                                     | 66    | 1,960  | 0   | 9,303  | 33  | 1,429 | 432   | 33   | 133 | 13,390 |      |  |
|          |                                     |             | Male   | 0                                     | 1,761 | 8,871  | 100 | 7,276  | 299 | 1,163 | 266   | 33   | 66  | 19,835 |      |  |
|          |                                     |             | Total  | 0                                     | 1,827 | 10,831 | 100 | 16,579 | 332 | 2,592 | 698   | 66   | 199 | 33,225 |      |  |
| 2        | Subsistence <sup>c</sup><br>Gillnet | 0           | Female | 0                                     | 14    | 422    | 0   | 2,008  | 7   | 307   | 93    | 7    | 29  | 2,887  |      |  |
|          |                                     |             | Male   | 0                                     | 379   | 1,908  | 21  | 1,565  | 64  | 250   | 57    | 0    | 14  | 4,260  |      |  |
|          |                                     |             | Total  | 0                                     | 393   | 2,330  | 21  | 3,574  | 71  | 557   | 150   | 7    | 43  | 7,147  |      |  |

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| District | Fishery                             | Sample Size |        | Brood Year and Age Group <sup>a</sup> |       |       |     |       |     |      |     |      |     | Total |
|----------|-------------------------------------|-------------|--------|---------------------------------------|-------|-------|-----|-------|-----|------|-----|------|-----|-------|
|          |                                     |             |        | 1986                                  | 1985  | 1984  |     | 1983  |     | 1982 |     | 1981 |     |       |
|          |                                     |             |        | 1.1                                   | 1.2   | 1.3   | 2.2 | 1.4   | 2.3 | 1.5  | 2.4 | 1.6  | 2.5 |       |
| 3        | Commercial <sup>d</sup><br>Gillnet  | 0           | Female | 0                                     | 0     | 84    | 0   | 525   | 2   | 84   | 25  | 2    | 7   | 727   |
|          |                                     |             | Male   | 0                                     | 59    | 392   | 2   | 373   | 12  | 66   | 13  | 0    | 2   | 918   |
|          |                                     |             | Total  | 0                                     | 59    | 475   | 2   | 898   | 13  | 150  | 38  | 2    | 8   | 1,645 |
| 3        | Subsistence <sup>d</sup><br>Gillnet | 0           | Female | 0                                     | 0     | 247   | 0   | 1,528 | 5   | 242  | 71  | 5    | 0   | 2,098 |
|          |                                     |             | Male   | 0                                     | 171   | 1,130 | 5   | 1,082 | 33  | 190  | 38  | 0    | 0   | 2,648 |
|          |                                     |             | Total  | 0                                     | 171   | 1,376 | 5   | 2,610 | 38  | 432  | 109 | 5    | 0   | 4,746 |
| 4        | Comm & Sub<br>Gillnet               | 66          | Female | 0                                     | 0     | 371   | 0   | 432   | 0   | 0    | 0   | 0    | 0   | 803   |
|          |                                     |             | Male   | 0                                     | 554   | 2,226 | 0   | 493   | 0   | 0    | 0   | 0    | 0   | 3,273 |
|          |                                     |             | Total  | 0                                     | 554   | 2,597 | 0   | 925   | 0   | 0    | 0   | 0    | 0   | 4,076 |
| 4        | Comm & Sub<br>Fish Wheel            | 104         | Female | 78                                    | 78    | 297   | 0   | 1,728 | 0   | 0    | 0   | 0    | 0   | 2,182 |
|          |                                     |             | Male   | 751                                   | 1,806 | 2,174 | 0   | 829   | 78  | 0    | 0   | 0    | 0   | 5,638 |
|          |                                     |             | Total  | 829                                   | 1,885 | 2,471 | 0   | 2,557 | 78  | 0    | 0   | 0    | 0   | 7,820 |

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| District                    | Fishery                           | Sample Size |        | Brood Year and Age Group <sup>a</sup> |        |        |     |        |       |        |       |      |     | Total   |      |  |
|-----------------------------|-----------------------------------|-------------|--------|---------------------------------------|--------|--------|-----|--------|-------|--------|-------|------|-----|---------|------|--|
|                             |                                   |             |        | 1986                                  |        | 1985   |     | 1984   |       | 1983   |       | 1982 |     |         | 1981 |  |
|                             |                                   |             |        | 1.1                                   | 1.2    | 1.3    | 2.2 | 1.4    | 2.3   | 1.5    | 2.4   | 1.6  | 2.5 |         |      |  |
| 5                           | Comm & Sub Gillnet                | 132         | Female | 0                                     | 0      | 322    | 0   | 4,658  | 112   | 1,063  | 420   | 0    | 0   | 6,575   |      |  |
|                             |                                   |             | Male   | 0                                     | 210    | 1,693  | 0   | 4,868  | 0     | 532    | 112   | 0    | 0   | 7,414   |      |  |
|                             |                                   |             | Total  | 0                                     | 210    | 2,014  | 0   | 9,527  | 112   | 1,595  | 532   | 0    | 0   | 13,989  |      |  |
| 5                           | Comm & Sub Fish Wheel             | 135         | Female | 0                                     | 0      | 500    | 0   | 1,812  | 95    | 95     | 95    | 0    | 0   | 2,596   |      |  |
|                             |                                   |             | Male   | 95                                    | 4,218  | 4,827  | 95  | 703    | 595   | 95     | 297   | 0    | 0   | 10,925  |      |  |
|                             |                                   |             | Total  | 95                                    | 4,218  | 5,327  | 95  | 2,515  | 690   | 189    | 392   | 0    | 0   | 13,521  |      |  |
| 6                           | Comm & Sub Gillnet and Fish Wheel | 282         | Female | 0                                     | 0      | 364    | 0   | 2,198  | 23    | 585    | 40    | 0    | 0   | 3,209   |      |  |
|                             |                                   |             | Male   | 23                                    | 199    | 1,091  | 0   | 994    | 102   | 62     | 0     | 0    | 0   | 2,471   |      |  |
|                             |                                   |             | Total  | 23                                    | 199    | 1,454  | 0   | 3,192  | 125   | 648    | 40    | 0    | 0   | 5,680   |      |  |
| Alaska Harvest <sup>b</sup> |                                   |             |        | 946                                   | 12,521 | 50,166 | 478 | 75,175 | 1,715 | 10,765 | 3,109 | 208  | 698 | 155,782 |      |  |

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| District                   | Fishery                                       | Sample Size |        | Brood Year and Age Group <sup>a</sup> |        |        |     |        |       |        |       |      |     | Total   |
|----------------------------|---|-------------|--------|---------------------------------------|--------|--------|-----|--------|-------|--------|-------|------|-----|---------|
|                            |   |             |        | 1986                                  | 1985   | 1984   |     | 1983   |       | 1982   |       | 1981 |     |         |
|                            |   |             |        | 1.1                                   | 1.2    | 1.3    | 2.2 | 1.4    | 2.3   | 1.5    | 2.4   | 1.6  | 2.5 |         |
| Canada                     | Commercial Gillnet & Fish wheel               | 204         | Female | 0                                     | 98     | 333    | 0   | 2,760  | 0     | 812    | 49    | 0    | 49  | 4,102   |
|                            |   |             | Male   | 0                                     | 0      | 675    | 0   | 3,710  | 0     | 1,204  | 49    | 49   | 0   | 5,687   |
|                            |   |             | Total  |                                       | 98     | 1,008  |     | 6,471  |       | 2,017  | 98    | 49   | 49  | 9,789   |
| Canada                     | Subsistence <sup>c</sup> Gillnet & Fish wheel | 0           | Female | 0                                     | 82     | 277    | 0   | 2,300  | 0     | 677    | 41    | 0    | 41  | 3,417   |
|                            |   |             | Male   | 0                                     | 0      | 563    | 0   | 3,091  | 0     | 1,003  | 41    | 41   | 0   | 4,738   |
|                            |   |             | Total  | 0                                     | 82     | 840    | 0   | 5,390  | 0     | 1,680  | 82    | 41   | 41  | 8,155   |
| Canada Harvest             |   |             |        | 0                                     | 179    | 1,848  | 0   | 11,861 | 0     | 3,696  | 179   | 90   | 90  | 17,944  |
| Total Harvest <sup>b</sup> |   |             |        | 946                                   | 12,701 | 52,014 | 478 | 87,036 | 1,715 | 14,462 | 3,288 | 298  | 788 | 173,726 |

<sup>a</sup> Discrepancies in row and column addition by category are due to rounding error and may be ignored.

<sup>b</sup> Does not include illegal District 1 catch consisting of 3,211 chinook salmon.

<sup>c</sup> Subsistence harvest age and sex composition was assumed to be the same as that of the District catch samples.

<sup>d</sup> District 3 age and sex composition was assumed to be the same as that of the District 2 commercial catch samples.

Table 4. Length (mm measured from mid-orbit to fork-of-tail) by age and sex of Yukon River chinook commercial and subsistence catch samples, 1989.

|   |        |             | Brood Year and Age Group |      |      |      |      |      |      |      |      |      |
|---|--------|-------------|--------------------------|------|------|------|------|------|------|------|------|------|
|   |        |             | 1986                     | 1985 | 1984 | 1983 |      | 1982 |      | 1981 |      |      |
| Fishery   | Sex    |             | 1.1                      | 1.2  | 1.3  | 2.2  | 1.4  | 2.3  | 1.5  | 2.4  | 1.6  | 2.5  |
| District 1<br>Commercial<br>6 in Maximum<br>Gillnet | Female | Mean Length |                          | 701  | 756  |      | 866  |      | 911  | 865  | 975  | 1000 |
|   |        | Std. Error  |                          | 52.5 | 7.9  |      | 6.7  |      | 12.5 | 20.7 | 0.0  | 0.0  |
|   |        | Sample Size |                          | 6    | 70   |      | 197  |      | 18   | 9    | 1    | 1    |
|   | Male   | Mean Length | 400                      | 565  | 719  | 562  | 846  | 669  | 955  | 825  |      | 858  |
|   |        | Std. Error  | 0.0                      | 4.9  | 3.6  | 21.6 | 6.2  | 42.0 | 19.9 | 33.9 |      | 67.5 |
|   |        | Sample Size | 1                        | 89   | 302  | 6    | 183  | 5    | 17   | 4    |      | 2    |
| District 1<br>Commercial<br>Unrestricted<br>Gillnet | Female | Mean Length |                          |      | 804  |      | 871  |      | 907  | 873  | 995  | 889  |
|   |        | Std. Error  |                          |      | 7.9  |      | 4.2  |      | 7.2  | 15.7 | 0.0  | 10.2 |
|   |        | Sample Size |                          |      | 53   |      | 328  |      | 67   | 11   | 1    | 8    |
|   | Male   | Mean Length |                          | 601  | 761  |      | 855  | 875  | 929  | 811  | 1095 | 837  |
|   |        | Std. Error  |                          | 19.2 | 4.4  |      | 4.2  | 0.0  | 13.5 | 35.3 | 0.0  | 36.6 |
|   |        | Sample Size |                          | 9    | 183  |      | 265  | 1    | 32   | 5    | 1    | 3    |
| District 2<br>Commercial<br>6 in Maximum<br>Gillnet | Female | Mean Length |                          |      | 737  |      | 847  |      | 921  | 820  |      |      |
|   |        | Std. Error  |                          |      | 14.4 |      | 9.5  |      | 23.4 | 0.0  |      |      |
|   |        | Sample Size |                          |      | 22   |      | 36   |      | 7    | 1    |      |      |
|   | Male   | Mean Length | 575                      |      | 706  | 635  | 827  | 732  | 973  | 855  |      | 925  |
|   |        | Std. Error  | 5.9                      |      | 5.3  | 0.0  | 12.5 | 7.3  | 32.5 | 0.0  |      | 0.0  |
|   |        | Sample Size | 33                       |      | 97   | 1    | 41   | 3    | 2    | 1    |      | 1    |

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|   |        | Brood Year and Age Group |      |      |      |      |      |      |      |      |      |     |
|---|--------|--------------------------|------|------|------|------|------|------|------|------|------|-----|
|   |        | 1986                     | 1985 | 1984 |      | 1983 |      | 1982 |      | 1981 |      |     |
| Fishery   | Sex    | 1.1                      | 1.2  | 1.3  | 2.2  | 1.4  | 2.3  | 1.5  | 2.4  | 1.6  | 2.5  |     |
| District 2<br>Commercial<br>Unrestricted<br>Gillnet | Female | Mean Length              |      |      | 803  | 868  | 705  | 913  | 848  | 930  | 923  |     |
|   |        | Std. Error               |      |      | 9.9  | 3.0  | 0.0  | 8.3  | 12.6 | 0.0  | 24.9 |     |
|   |        | Sample Size              |      |      | 38   | 279  | 1    | 45   | 13   | 1    | 4    |     |
|   | Male   | Mean Length              |      | 599  | 754  | 590  | 852  | 749  | 921  | 799  |      | 860 |
|   |        | Std. Error               |      | 23.8 | 4.4  | 0.0  | 4.8  | 20.0 | 13.3 | 15.5 |      | 0.0 |
|   |        | Sample Size              |      | 13   | 176  | 1    | 198  | 7    | 37   | 7    |      | 1   |
| District 4<br>Comm. & Subs.<br>Gillnet              | Female | Mean Length              |      |      | 756  | 862  |      |      |      |      |      |     |
|   |        | Std. Error               |      |      | 40.2 | 11.5 |      |      |      |      |      |     |
|   |        | Sample Size              |      |      | 6    | 7    |      |      |      |      |      |     |
|   | Male   | Mean Length              |      | 547  | 714  |      | 806  |      |      |      |      |     |
|   |        | Std. Error               |      | 15.5 | 8.1  |      | 23.3 |      |      |      |      |     |
|   |        | Sample Size              |      | 9    | 36   |      | 8    |      |      |      |      |     |
| District 4<br>Comm. & Subs.<br>Fish Wheel           | Female | Mean Length              | 392  | 434  | 828  |      | 846  |      |      |      |      |     |
|   |        | Std. Error               | 0.0  | 0.0  | 32.6 |      | 38.9 |      |      |      |      |     |
|   |        | Sample Size              | 1    | 1    | 4    |      | 23   |      |      |      |      |     |
|   | Male   | Mean Length              | 363  | 518  | 725  |      | 833  | 670  |      |      |      |     |
|   |        | Std. Error               | 10.0 | 13.4 | 10.4 |      | 11.3 | 0.0  |      |      |      |     |
|   |        | Sample Size              | 10   | 24   | 29   |      | 11   | 1    |      |      |      |     |

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|   |        | Brood Year and Age Group |     |       |       |      |      |      |      |      |     |      |  |
|---|--------|--------------------------|-----|-------|-------|------|------|------|------|------|-----|------|--|
|   |        | 1986                     |     | 1985  |       | 1984 |      | 1983 |      | 1982 |     | 1981 |  |
| Fishery                                   | Sex    | 1.1                      | 1.2 | 1.3   | 2.2   | 1.4  | 2.3  | 1.5  | 2.4  | 1.6  | 2.5 |      |  |
| District 5<br>Comm. & Subs.<br>Gillnet    | Female | Mean Length              |     |       | 798.3 |      | 891  | 745  | 958  | 880  |     |      |  |
|   |        | Std. Error               |     |       | 21.7  |      | 7.1  | 0    | 12.6 | 31.9 |     |      |  |
|   |        | Sample Size              |     |       | 3     |      | 44   | 1    | 10   | 4    |     |      |  |
|   | Male   | Mean Length              |     | 613   | 760   |      | 880  |      | 1022 | 915  |     |      |  |
|   |        | Std. Error               |     | 12.5  | 16.7  |      | 10.9 |      | 26.1 | 0.0  |     |      |  |
|   |        | Sample Size              |     | 2     | 16    |      | 46   |      | 5    | 1    |     |      |  |
| District 5<br>Comm. & Subs.<br>Fish Wheel | Female | Mean Length              |     |       | 794   |      | 856  | 850  | 870  | 760  |     |      |  |
|   |        | Std. Error               |     |       | 67.1  |      | 14.3 | 0.0  | 0.0  | 0.0  |     |      |  |
|   |        | Sample Size              |     |       | 5     |      | 18   | 1    | 1    | 1    |     |      |  |
|   | Male   | Mean Length              | 615 | 564.8 | 700.2 | 585  | 874  | 696  | 920  | 829  |     |      |  |
|   |        | Std. Error               | 0.0 | 8.9   | 7.1   | 0.0  | 31.5 | 10.9 | 0.0  | 81.2 |     |      |  |
|   |        | Sample Size              | 1   | 41    | 48    | 1    | 7    | 6    | 1    | 3    |     |      |  |
| District 6<br>Comm. & Subs.<br>Fish Wheel | Female | Mean Length              |     |       | 831   |      | 884  | 790  | 945  | 878  |     |      |  |
|   |        | Std. Error               |     |       | 10.7  |      | 5.2  | 0.0  | 10.1 | 2.5  |     |      |  |
|   |        | Sample Size              |     |       | 18    |      | 106  | 1    | 29   | 2    |     |      |  |
|   | Male   | Mean Length              | 370 | 557   | 775   |      | 875  | 783  | 910  |      |     |      |  |
|   |        | Std. Error               | 0.0 | 17.1  | 7.6   |      | 28.9 | 29.8 | 85.1 |      |     |      |  |
|   |        | Sample Size              | 1   | 10    | 51    |      | 46   | 5    | 3    |      |     |      |  |

Table 5. Age and sex composition of Yukon River chinook escapements, 1989.

| River                   | Aerial Index | Sample Size <sup>b</sup> |        |                   | Brood Year and Age Group <sup>a</sup> |      |      |     |      |     |      |     |      |       |       |
|-------------------------|--------------|--------------------------|--------|-------------------|---------------------------------------|------|------|-----|------|-----|------|-----|------|-------|-------|
|                         |              |                          |        |                   | 1986                                  |      | 1985 |     | 1983 |     | 1982 |     | 1981 |       | Total |
|                         |              |                          |        |                   | 1.1                                   | 1.2  | 1.3  | 2.2 | 1.4  | 2.3 | 1.5  | 2.4 | 2.5  |       |       |
| Andreafsky <sup>c</sup> | 2,488        | 227                      | Female | Sample Size       | 0                                     | 0    | 16   | 0   | 14   | 0   | 1    | 0   | 0    | 31    |       |
|                         |              |                          |        | Percent of Sample | 0.0                                   | 0.0  | 7.0  | 0.0 | 6.2  | 0.0 | 0.4  | 0.0 | 0.0  | 13.6  |       |
|                         |              |                          | Male   | Sample Size       | 0                                     | 12   | 147  | 0   | 34   | 0   | 3    | 0   | 0    | 196   |       |
|                         |              |                          |        | Percent of Sample | 0.0                                   | 5.3  | 64.8 | 0.0 | 15.0 | 0.0 | 1.3  | 0.0 | 0.0  | 86.4  |       |
|                         |              |                          | Total  | Sample Size       | 0                                     | 12   | 163  | 0   | 48   | 0   | 4    | 0   | 0    | 227   |       |
|                         |              |                          |        | Percent of Sample | 0.0                                   | 5.3  | 71.8 | 0.0 | 21.2 | 0.0 | 1.7  | 0.0 | 0.0  | 100.0 |       |
| Standard Error          | 0.0          | 1.5                      | 3.0    | 0.0               | 2.7                                   | 0.0  | 0.9  | 0.0 | 0.0  | 0.0 |      |     |      |       |       |
| Chulinak <sup>d,e</sup> |              | 9                        | Female | Sample Size       | 0                                     | 0    | 0    | 0   | 2    | 0   | 1    | 0   | 0    | 3     |       |
|                         |              |                          |        | Percent of Sample | 0.0                                   | 0.0  | 0.0  | 0.0 | 22.2 | 0.0 | 11.1 | 0.0 | 0.0  | 33.3  |       |
|                         |              |                          | Male   | Sample Size       | 0                                     | 1    | 4    | 0   | 1    | 0   | 0    | 0   | 0    | 6     |       |
|                         |              |                          |        | Percent of Sample | 0.0                                   | 11.1 | 44.4 | 0.0 | 11.1 | 0.0 | 0.0  | 0.0 | 0.0  | 66.7  |       |
|                         |              |                          | Total  | Sample Size       | 0                                     | 1    | 4    | 0   | 3    | 0   | 1    | 0   | 0    | 9     |       |
|                         |              |                          |        | Percent of Sample | 0.0                                   | 11.1 | 44.4 | 0.0 | 33.3 | 0.0 | 11.1 | 0.0 | 0.0  | 100.0 |       |
| Standard Error          | 0.0          | 10.5                     | 16.6   | 0.0               | 15.7                                  | 0.0  | 10.5 | 0.0 | 0.0  | 0.0 |      |     |      |       |       |
| Anvik <sup>f</sup>      | 442          | 381                      | Female | Sample Size       | 0                                     | 0    | 38   | 0   | 106  | 0   | 11   | 0   | 0    | 155   |       |
|                         |              |                          |        | Percent of Sample | 0.0                                   | 0.0  | 10.0 | 0.0 | 27.8 | 0.0 | 2.9  | 0.0 | 0.0  | 40.7  |       |
|                         |              |                          | Male   | Sample Size       | 1                                     | 16   | 149  | 0   | 60   | 0   | 0    | 0   | 0    | 226   |       |
|                         |              |                          |        | Percent of Sample | 0.3                                   | 4.2  | 39.1 | 0.0 | 15.7 | 0.0 | 0.0  | 0.0 | 0.0  | 59.3  |       |
|                         |              |                          | Total  | Sample Size       | 1                                     | 16   | 187  | 0   | 166  | 0   | 11   | 0   | 0    | 381   |       |
|                         |              |                          |        | Percent of Sample | 0.3                                   | 4.2  | 49.1 | 0.0 | 43.5 | 0.0 | 2.9  | 0.0 | 0.0  | 100.0 |       |
| Standard Error          | 0.3          | 1.0                      | 2.6    | 0.0               | 2.5                                   | 0.0  | 0.9  | 0.0 | 0.0  | 0.0 |      |     |      |       |       |

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| River                | Aerial Index      | Sample <sup>b</sup> Size | Brood Year and Age Group <sup>a</sup> |                   |      |        |                   |     |      |     |      |       |     |       |     |     |       |
|----------------------|-------------------|--------------------------|---------------------------------------|-------------------|------|--------|-------------------|-----|------|-----|------|-------|-----|-------|-----|-----|-------|
|                      |                   |                          | 1986                                  |                   | 1985 |        | 1983              |     | 1982 |     | 1981 | Total |     |       |     |     |       |
|                      |                   |                          | 1.1                                   | 1.2               | 1.3  | 2.2    | 1.4               | 2.3 | 1.5  | 2.4 | 2.5  |       |     |       |     |     |       |
| Chena <sup>a</sup>   | 2,730             | 288                      | Female                                | Sample Size       | 0    | 1      | 35                | 0   | 122  | 0   | 29   | 0     | 0   | 1,773 |     |     |       |
|                      |                   |                          |                                       | Percent of Sample | 0.0  | 0.3    | 12.2              | 0.0 | 42.4 | 0.0 | 10.1 | 0.0   | 0.0 | 64.9  |     |     |       |
|                      |                   |                          | Male                                  | Sample Size       | 1    | 11     | 50                | 2   | 35   | 1   | 1    | 0     | 0   | 957   |     |     |       |
|                      |                   |                          |                                       | Percent of Sample | 0.3  | 3.8    | 17.4              | 0.7 | 12.2 | 0.3 | 0.3  | 0.0   | 0.0 | 35.1  |     |     |       |
|                      |                   |                          | Total                                 | Sample Size       | 1    | 12     | 85                | 2   | 157  | 1   | 30   | 0     | 0   | 2,730 |     |     |       |
|                      |                   |                          |                                       | Percent of Sample | 0.3  | 4.2    | 29.5              | 0.7 | 54.5 | 0.3 | 10.4 | 0.0   | 0.0 | 100.0 |     |     |       |
|                      |                   |                          |                                       | Standard Error    | 0.3  | 1.2    | 2.7               | 0.5 | 2.9  | 0.3 | 1.8  | 0.0   | 0.0 |       |     |     |       |
|                      |                   |                          | Salcha <sup>a</sup>                   | 3,572             | 222  | Female | Sample Size       | 0   | 0    | 18  | 0    | 100   | 0   | 20    | 0   | 0   | 2,213 |
|                      |                   |                          |                                       |                   |      |        | Percent of Sample | 0.0 | 0.0  | 8.2 | 0.0  | 45.2  | 0.0 | 8.8   | 0.0 | 0.0 | 62.2  |
| Male                 | Sample Size       | 1                        |                                       |                   |      | 9      | 46                | 0   | 28   | 0   | 0    | 0     | 0   | 1,359 |     |     |       |
|                      | Percent of Sample | 0.5                      |                                       |                   |      | 4.1    | 20.7              | 0.0 | 12.6 | 0.0 | 0.0  | 0.0   | 0.0 | 37.8  |     |     |       |
| Total                | Sample Size       | 1                        |                                       |                   |      | 9      | 64                | 0   | 128  | 0   | 20   | 0     | 0   | 3,572 |     |     |       |
|                      | Percent of Sample | 0.5                      |                                       |                   |      | 4.1    | 28.9              | 0.0 | 57.8 | 0.0 | 8.8  | 0.0   | 0.0 | 100.0 |     |     |       |
|                      | Standard Error    | 0.4                      |                                       |                   |      | 1.3    | 3.0               | 0.0 | 3.3  | 0.0 | 1.9  | 0.0   | 0.0 |       |     |     |       |
| Tatchun <sup>b</sup> | 100               | 31                       |                                       |                   |      | Female | Sample Size       | 0   | 0    | 1   | 0    | 16    | 0   | 0     | 0   | 0   | 17    |
|                      |                   |                          |                                       |                   |      |        | Percent of Sample | 0.0 | 0.0  | 3.2 | 0.0  | 51.6  | 0.0 | 0.0   | 0.0 | 0.0 | 54.8  |
|                      |                   |                          | Male                                  | Sample Size       | 0    | 2      | 9                 | 0   | 3    | 0   | 0    | 0     | 0   | 14    |     |     |       |
|                      |                   |                          |                                       | Percent of Sample | 0.0  | 6.5    | 29.0              | 0.0 | 9.7  | 0.0 | 0.0  | 0.0   | 0.0 | 45.2  |     |     |       |
|                      |                   |                          | Total                                 | Sample Size       | 0    | 2      | 10                | 0   | 19   | 0   | 0    | 0     | 0   | 31    |     |     |       |
|                      |                   |                          |                                       | Percent of Sample | 0.0  | 6.5    | 32.2              | 0.0 | 61.3 | 0.0 | 0.0  | 0.0   | 0.0 | 100.0 |     |     |       |

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Table 5. (page 3 of 5)

| River         | Aerial Index | Sample <sup>b</sup> Size | Brood Year and Age Group <sup>a</sup> |                   |      |     |      |     |      |     |      |     |       |       |
|---------------|--------------|--------------------------|---------------------------------------|-------------------|------|-----|------|-----|------|-----|------|-----|-------|-------|
|               |              |                          | 1986                                  |                   | 1985 |     | 1983 |     | 1982 |     | 1981 |     | Total |       |
|               |              |                          | 1.1                                   | 1.2               | 1.3  | 2.2 | 1.4  | 2.3 | 1.5  | 2.4 | 2.5  |     |       |       |
| Ross          | 433          | 58                       | Female                                | Sample Size       | 0    | 0   | 2    | 0   | 20   | 0   | 4    | 2   | 1     | 221   |
|               |              |                          |                                       | Percent of Sample | 0.0  | 0.0 | 3.8  | 0.0 | 34.9 | 0.0 | 6.9  | 3.4 | 1.7   | 50.7  |
|               |              |                          | Male                                  | Sample Size       | 0    | 0   | 9    | 0   | 14   | 2   | 3    | 0   | 0     | 212   |
|               |              |                          |                                       | Percent of Sample | 0.0  | 0.0 | 16.2 | 0.0 | 24.5 | 3.4 | 5.2  | 0.0 | 0.0   | 49.3  |
|               |              |                          | Total                                 | Sample Size       | 0    | 0   | 12   | 0   | 34   | 2   | 7    | 2   | 1     | 433   |
|               |              |                          |                                       | Percent of Sample | 0.0  | 0.0 | 20.0 | 0.0 | 59.4 | 3.4 | 12.1 | 3.4 | 1.7   | 100.0 |
|               |              |                          |                                       | Standard Error    | 0.0  | 0.0 | 5.3  | 0.0 | 6.4  | 2.4 | 4.3  | 2.4 | 1.7   |       |
| Little Salmon | 862          | 50                       | Female                                | Sample Size       | 0    | 0   | 1    | 0   | 26   | 0   | 6    | 0   | 0     | 569   |
|               |              |                          |                                       | Percent of Sample | 0.0  | 0.0 | 2.0  | 0.0 | 52.0 | 0.0 | 12.0 | 0.0 | 0.0   | 66.0  |
|               |              |                          | Male                                  | Sample Size       | 0    | 3   | 6    | 0   | 8    | 0   | 0    | 0   | 0     | 293   |
|               |              |                          |                                       | Percent of Sample | 0.0  | 6.0 | 12.0 | 0.0 | 16.0 | 0.0 | 0.0  | 0.0 | 0.0   | 34.0  |
|               |              |                          | Total                                 | Sample Size       | 0    | 3   | 7    | 0   | 34   | 0   | 6    | 0   | 0     | 862   |
|               |              |                          |                                       | Percent of Sample | 0.0  | 6.0 | 14.0 | 0.0 | 68.0 | 0.0 | 12.0 | 0.0 | 0.0   | 100.0 |
|               |              |                          |                                       | Standard Error    | 0.0  | 3.4 | 4.9  | 0.0 | 6.6  | 0.0 | 4.6  | 0.0 | 0.0   |       |
| Big Salmon    | 1,999        | 176                      | Female                                | Sample Size       | 0    | 0   | 3    | 0   | 47   | 0   | 30   | 4   | 2     | 977   |
|               |              |                          |                                       | Percent of Sample | 0.0  | 0.0 | 1.7  | 0.0 | 26.7 | 0.0 | 17.0 | 2.3 | 1.1   | 48.9  |
|               |              |                          | Male                                  | Sample Size       | 0    | 2   | 25   | 0   | 42   | 4   | 15   | 0   | 2     | 1,022 |
|               |              |                          |                                       | Percent of Sample | 0.0  | 1.1 | 14.2 | 0.0 | 23.9 | 2.3 | 8.5  | 0.0 | 1.1   | 51.1  |
|               |              |                          | Total                                 | Sample Size       | 0    | 2   | 28   | 0   | 89   | 4   | 45   | 4   | 4     | 1,999 |
|               |              |                          |                                       | Percent of Sample | 0.0  | 1.1 | 15.9 | 0.0 | 50.6 | 2.3 | 25.6 | 2.3 | 2.3   | 100.0 |
|               |              |                          |                                       | Standard Error    | 0.0  | 0.8 | 2.8  | 0.0 | 3.8  | 1.1 | 3.3  | 1.1 | 1.1   |       |

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Table 5. (page 4 of 5)

| River    | Aerial Index      | Sample <sup>b</sup> Size | Brood Year and Age Group <sup>a</sup> |                   |      |        |                   |     |      |      |      |       |     |       |     |     |      |
|----------|-------------------|--------------------------|---------------------------------------|-------------------|------|--------|-------------------|-----|------|------|------|-------|-----|-------|-----|-----|------|
|          |                   |                          | 1986                                  |                   | 1985 |        | 1983              |     | 1982 |      | 1981 | Total |     |       |     |     |      |
|          |                   |                          | 1.1                                   | 1.2               | 1.3  | 2.2    | 1.4               | 2.3 | 1.5  | 2.4  | 2.5  |       |     |       |     |     |      |
| Nisutlin | 1,328             | 129                      | Female                                | Sample Size       | 0    | 0      | 1                 | 0   | 44   | 0    | 3    | 27    | 3   | 803   |     |     |      |
|          |                   |                          |                                       | Percent of Sample | 0.0  | 0.0    | 0.8               | 0.0 | 34.1 | 0.0  | 2.3  | 20.9  | 2.3 | 60.5  |     |     |      |
|          |                   |                          | Male                                  | Sample Size       | 0    | 0      | 9                 | 0   | 15   | 10   | 0    | 15    | 2   | 525   |     |     |      |
|          |                   |                          |                                       | Percent of Sample | 0.0  | 0.0    | 7.0               | 0.0 | 11.6 | 7.8  | 0.0  | 11.6  | 1.6 | 39.5  |     |     |      |
|          |                   |                          | Total                                 | Sample Size       | 0    | 0      | 10                | 0   | 59   | 10   | 3    | 42    | 5   | 1,328 |     |     |      |
|          |                   |                          |                                       | Percent of Sample | 0.0  | 0.0    | 7.8               | 0.0 | 45.7 | 7.8  | 2.3  | 32.6  | 3.9 | 100.0 |     |     |      |
|          |                   |                          |                                       | Standard Error    | 0.0  | 0.0    | 2.4               | 0.0 | 4.4  | 2.4  | 1.3  | 4.1   | 1.7 |       |     |     |      |
|          |                   |                          | Wolf                                  | 324               | 49   | Female | Sample Size       | 0   | 0    | 2    | 0    | 22    | 1   | 3     | 3   | 1   | 212  |
|          |                   |                          |                                       |                   |      |        | Percent of Sample | 0.0 | 0.0  | 4.1  | 0.0  | 44.9  | 2.0 | 6.1   | 6.1 | 2.0 | 65.3 |
| Male     | Sample Size       | 0                        |                                       |                   |      | 1      | 2                 | 0   | 8    | 5    | 1    | 0     | 0   | 112   |     |     |      |
|          | Percent of Sample | 0.0                      |                                       |                   |      | 2.0    | 4.1               | 0.0 | 16.3 | 10.2 | 2.0  | 0.0   | 0.0 | 34.7  |     |     |      |
| Total    | Sample Size       | 0                        |                                       |                   |      | 1      | 4                 | 0   | 30   | 6    | 4    | 3     | 1   | 324   |     |     |      |
|          | Percent of Sample | 0.0                      |                                       |                   |      | 2.0    | 8.2               | 0.0 | 61.2 | 12.2 | 8.2  | 6.1   | 2.0 | 100.0 |     |     |      |
|          | Standard Error    | 0.0                      |                                       |                   |      | 2.0    | 3.9               | 0.0 | 7.0  | 4.7  | 3.9  | 3.4   | 2.0 |       |     |     |      |
| Morley*  |                   | 65                       |                                       |                   |      | Female | Sample Size       | 0   | 1    | 7    | 0    | 37    | 0   | 1     | 3   | 0   | 49   |
|          |                   |                          |                                       |                   |      |        | Percent of Sample | 0.0 | 1.5  | 10.8 | 0.0  | 56.9  | 0.0 | 1.5   | 4.6 | 0.0 | 75.4 |
|          |                   |                          | Male                                  | Sample Size       | 0    | 0      | 9                 | 0   | 7    | 0    | 0    | 0     | 0   | 16    |     |     |      |
|          |                   |                          |                                       | Percent of Sample | 0.0  | 0.0    | 13.8              | 0.0 | 10.8 | 0.0  | 0.0  | 0.0   | 0.0 | 24.6  |     |     |      |
|          |                   |                          | Total                                 | Sample Size       | 0    | 1      | 16                | 0   | 44   | 0    | 1    | 3     | 0   | 65    |     |     |      |
|          |                   |                          |                                       | Percent of Sample | 0.0  | 1.5    | 24.6              | 0.0 | 67.7 | 0.0  | 1.5  | 4.6   | 0.0 | 100.0 |     |     |      |
|          |                   |                          |                                       | Standard Error    | 0.0  | 1.5    | 5.3               | 0.0 | 5.8  | 0.0  | 1.5  | 2.6   | 0.0 |       |     |     |      |

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Table 5. (page 5 of 5)

| River              | Aerial Index | Sample <sup>b</sup> Size | Brood Year and Age Group <sup>a</sup> |     |      |     |      |      |      |      |      |       | Total |
|--------------------|--------------|--------------------------|---------------------------------------|-----|------|-----|------|------|------|------|------|-------|-------|
|                    |              |                          | 1986                                  |     | 1985 |     | 1983 |      | 1982 |      | 1981 |       |       |
|                    |              |                          | 1.1                                   | 1.2 | 1.3  | 2.2 | 1.4  | 2.3  | 1.5  | 2.4  | 2.5  |       |       |
| Swift <sup>e</sup> | Female       | Sample Size              | 0                                     | 0   | 0    | 0   | 4    | 0    | 0    | 2    | 0    | 6     |       |
|                    |              | Percent of Sample        | 0.0                                   | 0.0 | 0.0  | 0.0 | 25.0 | 0.0  | 0.0  | 12.5 | 0.0  | 37.5  |       |
|                    | Male         | Sample Size              | 0                                     | 0   | 1    | 0   | 5    | 3    | 0    | 1    | 0    | 10    |       |
|                    |              | Percent of Sample        | 0.0                                   | 0.0 | 6.3  | 0.0 | 31.3 | 18.8 | 0.0  | 6.3  | 0.0  | 62.5  |       |
|                    | Total        | Sample Size              | 0                                     | 0   | 1    | 0   | 9    | 3    | 0    | 3    | 0    | 16    |       |
|                    |              | Percent of Sample        | 0.0                                   | 0.0 | 6.3  | 0.0 | 56.3 | 18.8 | 0.0  | 18.8 | 0.0  | 100.0 |       |
|                    |              | Standard Error           | 0.0                                   | 0.0 | 6.1  | 0.0 | 12.4 | 9.8  | 0.0  | 9.8  | 0.0  |       |       |

<sup>a</sup> Discrepancies in row and column addition by category are due to rounding error and may be ignored.

<sup>b</sup> All samples collected from carcasses, speared and snagged live spawnouts except where noted.

<sup>c</sup> East and West Forks pooled due to biased sampling in lower stretches of the river where male carcasses tend to be more abundant.

<sup>d</sup> Samples were caught in small mesh gillnet (5.5 in).

<sup>e</sup> Poor aerial survey, salmon not allocated because of low population estimates.

<sup>f</sup> Age and sex composition from Sandone 1990.

<sup>g</sup> Population estimates accomplished with mark and recapture program.

<sup>h</sup> Foot Survey

Table 6. Length (mm measured from mid-orbit to fork-of-tail) by age and sex of Yukon River chinook escapement samples, 1989.

| Location                | Sex    | n   |             | Brood Year and Age Group <sup>a</sup> |      |      |      |      |     |       |     |      |  |      |
|-------------------------|--------|-----|-------------|---------------------------------------|------|------|------|------|-----|-------|-----|------|--|------|
|                         |        |     |             | 1986                                  |      | 1985 |      | 1984 |     | 1983  |     | 1982 |  | 1981 |
|                         |        |     |             | 1.1                                   | 1.2  | 1.3  | 2.2  | 1.4  | 2.3 | 1.5   | 2.4 | 2.5  |  |      |
| East Fork<br>Andreafsky | Female | 3   | Mean Length |                                       |      | 735  |      | 560  |     |       |     |      |  |      |
|                         |        |     | Std. Error  |                                       |      | 15.0 |      | 0.0  |     |       |     |      |  |      |
|                         |        |     | Sample Size |                                       |      | 2    |      | 1    |     |       |     |      |  |      |
|                         | Male   | 80  | Mean Length |                                       | 473  | 729  |      | 786  |     | 905   |     |      |  |      |
|                         |        |     | Std. Error  |                                       | 2.5  | 7.0  |      | 9.9  |     | 0.0   |     |      |  |      |
|                         |        |     | Sample Size |                                       | 2    | 60   |      | 17   |     | 1     |     |      |  |      |
| West Fork<br>Andreafsky | Female | 26  | Mean Length |                                       |      | 763  |      | 844  |     | 905   |     |      |  |      |
|                         |        |     | Std. Error  |                                       |      | 16.7 |      | 8.2  |     | 0.0   |     |      |  |      |
|                         |        |     | Sample Size |                                       |      | 14   |      | 11   |     | 1     |     |      |  |      |
|                         | Male   | 114 | Mean Length |                                       | 512  | 735  |      | 790  |     | 1,020 |     |      |  |      |
|                         |        |     | Std. Error  |                                       | 16.2 | 4.8  |      | 14.8 |     | 75.0  |     |      |  |      |
|                         |        |     | Sample Size |                                       | 10   | 85   |      | 17   |     | 2     |     |      |  |      |
| Chulinak                | Female | 3   | Mean Length |                                       |      |      |      | 845  |     | 910   |     |      |  |      |
|                         |        |     | Std. Error  |                                       |      |      |      | 40.0 |     | 0.0   |     |      |  |      |
|                         |        |     | Sample Size |                                       |      |      |      | 2    |     | 1     |     |      |  |      |
|                         | Male   | 6   | Mean Length |                                       | 555  | 695  |      | 815  |     |       |     |      |  |      |
|                         |        |     | Std. Error  |                                       | 0.0  | 22.7 |      | 0.0  |     |       |     |      |  |      |
|                         |        |     | Sample Size |                                       | 1    | 4    |      | 1    |     |       |     |      |  |      |
| Anvik                   | Female | 155 | Mean Length |                                       |      | 778  |      | 830  |     | 926   |     |      |  |      |
|                         |        |     | Std. Error  |                                       |      | 9.8  |      | 4.3  |     | 18.5  |     |      |  |      |
|                         |        |     | Sample Size |                                       |      | 38   |      | 106  |     | 11    |     |      |  |      |
|                         | Male   | 224 | Mean Length | 405                                   | 540  | 728  |      | 813  |     |       |     |      |  |      |
|                         |        |     | Std. Error  | 0.0                                   | 23.5 | 4.8  |      | 8.1  |     |       |     |      |  |      |
|                         |        |     | Sample Size | 1                                     | 15   | 149  |      | 59   |     |       |     |      |  |      |
| Chena                   | Female | 187 | Mean Length |                                       | 760  | 780  |      | 885  |     | 926   |     |      |  |      |
|                         |        |     | Std. Error  |                                       | 0.0  | 9.9  |      | 5.3  |     | 9.3   |     |      |  |      |
|                         |        |     | Sample Size |                                       | 1    | 35   |      | 122  |     | 29    |     |      |  |      |
|                         | Male   | 101 | Mean Length | 540                                   | 547  | 778  | 525  | 888  | 700 | 970   |     |      |  |      |
|                         |        |     | Std. Error  | 0.0                                   | 23.0 | 12.0 | 25.0 | 15.2 | 0.0 | 0     |     |      |  |      |
|                         |        |     | Sample Size | 1                                     | 11   | 50   | 2    | 35   | 1   | 1     |     |      |  |      |
| Salcha                  | Female | 137 | Mean Length |                                       |      | 847  |      | 885  |     | 962   |     |      |  |      |
|                         |        |     | Std. Error  |                                       |      | 7.8  |      | 5.0  |     | 8.5   |     |      |  |      |
|                         |        |     | Sample Size |                                       |      | 18   |      | 100  |     | 19    |     |      |  |      |
|                         | Male   | 82  | Mean Length | 370                                   | 516  | 782  |      | 926  |     |       |     |      |  |      |
|                         |        |     | Std. Error  | 0.0                                   | 15.2 | 11.9 |      | 17.6 |     |       |     |      |  |      |
|                         |        |     | Sample Size | 1                                     | 9    | 44   |      | 28   |     |       |     |      |  |      |

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Table 6. (page 2 of 3)

| Location      | Sex    | n  |             | Brood Year and Age Group <sup>a</sup> |      |      |     |      |      |      |      |      |  |
|---------------|--------|----|-------------|---------------------------------------|------|------|-----|------|------|------|------|------|--|
|               |        |    |             | 1986                                  | 1985 | 1984 |     | 1983 |      | 1982 |      | 1981 |  |
|               |        |    |             | 1.1                                   | 1.2  | 1.3  | 2.2 | 1.4  | 2.3  | 1.5  | 2.4  | 2.5  |  |
| Tatchun       | Female | 17 | Mean Length |                                       |      | 760  |     | 836  |      |      |      |      |  |
|               |        |    | Std. Error  |                                       |      | 0.0  |     | 9.7  |      |      |      |      |  |
|               |        |    | Sample Size |                                       |      | 1    |     | 16   |      |      |      |      |  |
|               | Male   | 14 | Mean Length |                                       | 583  | 723  |     | 840  |      |      |      |      |  |
|               |        |    | Std. Error  |                                       | 17.5 | 19.4 |     | 7.6  |      |      |      |      |  |
|               |        |    | Sample Size |                                       | 2    | 9    |     | 3    |      |      |      |      |  |
| Ross          | Female | 29 | Mean Length |                                       |      | 815  |     | 862  | 0    | 924  | 860  | 890  |  |
|               |        |    | Std. Error  |                                       |      | 45.0 |     | 10.4 | 0.0  | 30.1 | 0.0  | 0.0  |  |
|               |        |    | Sample Size |                                       |      | 2    |     | 20   | 0    | 4    | 2    | 1    |  |
|               | Male   | 27 | Mean Length |                                       |      | 736  |     | 865  | 695  | 957  |      |      |  |
|               |        |    | Std. Error  |                                       |      | 8.2  |     | 22.5 | 35.0 | 30   |      |      |  |
|               |        |    | Sample Size |                                       |      | 8    |     | 14   | 2    | 3    |      |      |  |
| Little Salmon | Female | 32 | Mean Length |                                       |      | 725  |     | 851  |      | 888  |      |      |  |
|               |        |    | Std. Error  |                                       |      | 0.0  |     | 10.0 |      | 30.0 |      |      |  |
|               |        |    | Sample Size |                                       |      | 1    |     | 25   |      | 6    |      |      |  |
|               | Male   | 17 | Mean Length |                                       | 525  | 699  |     | 810  |      |      |      |      |  |
|               |        |    | Std. Error  |                                       | 37.5 | 11.7 |     | 22.3 |      |      |      |      |  |
|               |        |    | Sample Size |                                       | 3    | 6    |     | 8    |      |      |      |      |  |
| Big Salmon    | Female | 85 | Mean Length |                                       |      | 813  |     | 860  |      | 914  | 826  | 890  |  |
|               |        |    | Std. Error  |                                       |      | 16.4 |     | 6.7  |      | 8.1  | 16.5 | 5.0  |  |
|               |        |    | Sample Size |                                       |      | 3    |     | 46   |      | 30   | 4    | 2    |  |
|               | Male   | 90 | Mean Length |                                       | 505  | 714  |     | 847  | 706  | 944  |      | 930  |  |
|               |        |    | Std. Error  |                                       | 45.0 | 9.4  |     | 13.6 | 27.5 | 16.9 |      | 10.0 |  |
|               |        |    | Sample Size |                                       | 2    | 25   |     | 42   | 4    | 15   |      | 2    |  |
| Nisutlin      | Female | 75 | Mean Length |                                       |      | 835  |     | 836  |      | 848  | 827  | 882  |  |
|               |        |    | Std. Error  |                                       |      | 0.0  |     | 4.4  |      | 39.3 | 9.2  | 19.2 |  |
|               |        |    | Sample Size |                                       |      | 1    |     | 41   |      | 3    | 27   | 3    |  |
|               | Male   | 49 | Mean Length |                                       |      | 749  |     | 798  | 703  |      | 838  | 890  |  |
|               |        |    | Std. Error  |                                       |      | 32.0 |     | 60.1 | 10.8 |      | 18.4 | 0.0  |  |
|               |        |    | Sample Size |                                       |      | 9    |     | 14   | 10   |      | 14   | 2    |  |
| Wolf          | Female | 31 | Mean Length |                                       |      | 788  |     | 818  | 830  | 853  | 778  | 885  |  |
|               |        |    | Std. Error  |                                       |      | 37.5 |     | 10.0 | 0.0  | 55.5 | 34.4 | 0.0  |  |
|               |        |    | Sample Size |                                       |      | 2    |     | 21   | 1    | 3    | 3    | 1    |  |
|               | Male   | 15 | Mean Length |                                       | 485  | 725  |     | 802  | 672  | 985  |      |      |  |
|               |        |    | Std. Error  |                                       | 0.0  | 5.0  |     | 10.4 | 41.0 | 0.0  |      |      |  |
|               |        |    | Sample Size |                                       | 1    | 2    |     | 8    | 3    | 1    |      |      |  |

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Table 6. (page 3 of 3)

| Location | Sex    | n  |             | Brood Year and Age Group <sup>a</sup> |      |      |      |      |      |      |      |      |
|----------|--------|----|-------------|---------------------------------------|------|------|------|------|------|------|------|------|
|          |        |    |             | 1986                                  | 1985 | 1984 |      | 1983 |      | 1982 |      | 1981 |
|          |        |    |             | 1.1                                   | 1.2  | 1.3  | 2.2  | 1.4  | 2.3  | 1.5  | 2.4  | 2.5  |
| Morley   | Female | 47 | Mean Length |                                       | 655  | 768  |      | 809  |      | 880  | 813  |      |
|          |        |    | Std. Error  |                                       | 0.0  | 19.0 |      | 6.0  |      | 0.0  | 28.5 |      |
|          |        |    | Sample Size |                                       | 1    | 6    |      | 36   |      | 1    | 3    |      |
|          | Male   | 16 | Mean Length |                                       |      | 735  |      | 844  |      |      |      |      |
|          |        |    | Std. Error  |                                       |      | 26.7 |      | 23.0 |      |      |      |      |
|          |        |    | Sample Size |                                       |      | 9    |      | 7    |      |      |      |      |
| Swift    | Female | 6  | Mean Length |                                       |      |      | 781  |      |      | 850  |      |      |
|          |        |    | Std. Error  |                                       |      |      | 14.2 |      |      | 5.0  |      |      |
|          |        |    | Sample Size |                                       |      |      | 4    |      |      | 2    |      |      |
|          | Male   | 10 | Mean Length |                                       |      | 640  |      | 844  | 665  |      | 965  |      |
|          |        |    | Std. Error  |                                       |      | 0.0  |      | 12.2 | 18.0 |      | 0.0  |      |
|          |        |    | Sample Size |                                       |      | 1    |      | 5    | 3    |      | 1    |      |

<sup>a</sup> All samples collected from carcasses or live spawnouts captured with fish spears.

Table 7. Harvest of Yukon River summer chum salmon by age, sex, and fishery, 1989.

| District | Fishery                          | Sample Size | Sex    | Brood Year and Age Group <sup>a</sup> |         |         |       | Total   |
|----------|----------------------------------|-------------|--------|---------------------------------------|---------|---------|-------|---------|
|          |                                  |             |        | 1986                                  | 1985    | 1984    | 1983  |         |
|          |                                  |             |        | 0.2                                   | 0.3     | 0.4     | 0.5   |         |
| 1        | Commercial Gillnet               | 1,589       | Female | 0                                     | 30,667  | 121,574 | 0     | 152,241 |
|          |                                  |             | Male   | 0                                     | 106,240 | 289,149 | 0     | 395,390 |
|          |                                  |             | Total  | 0                                     | 136,908 | 410,723 | 0     | 547,631 |
|          | Subsistence <sup>b</sup> Gillnet | 0           | Female | 0                                     | 7,134   | 16,170  | 106   | 23,410  |
|          |                                  |             | Male   | 53                                    | 9,459   | 19,764  | 159   | 29,434  |
|          |                                  |             | Total  | 53                                    | 16,593  | 35,934  | 264   | 52,844  |
| 2        | Commercial Gillnet               | 673         | Female | 344                                   | 50,906  | 96,997  | 688   | 148,936 |
|          |                                  |             | Male   | 344                                   | 68,104  | 124,858 | 1,720 | 195,026 |
|          |                                  |             | Total  | 688                                   | 119,011 | 221,855 | 2,408 | 343,962 |
|          | Subsistence <sup>b</sup> Gillnet | 0           | Female | 40                                    | 5,876   | 11,196  | 79    | 17,191  |
|          |                                  |             | Male   | 40                                    | 7,861   | 14,412  | 199   | 22,512  |
|          |                                  |             | Total  | 79                                    | 13,737  | 25,608  | 278   | 39,703  |
| 3        | Commercial <sup>c</sup> Gillnet  | 0           | Female | 8                                     | 1,122   | 2,137   | 15    | 3,281   |
|          |                                  |             | Male   | 8                                     | 1,500   | 2,751   | 38    | 4,297   |
|          |                                  |             | Total  | 15                                    | 2,622   | 4,888   | 53    | 7,578   |
|          | Subsistence <sup>c</sup> Gillnet | 0           | Female | 8                                     | 402     | 1,055   | 0     | 1,465   |
|          |                                  |             | Male   | 8                                     | 518     | 1,959   | 32    | 2,517   |
|          |                                  |             | Total  | 16                                    | 920     | 3,014   | 32    | 3,982   |
| 4        | Comm & Subs Gillnet              | 158         | Female | 0                                     | 24,607  | 36,462  | 0     | 61,068  |
|          |                                  |             | Male   | 199                                   | 18,231  | 19,526  | 598   | 38,554  |
|          |                                  |             | Total  | 199                                   | 42,837  | 55,988  | 598   | 99,622  |
|          | Comm & Subs Fish Wheel           | 698         | Female | 5,985                                 | 190,145 | 117,402 | 0     | 313,532 |
|          |                                  |             | Male   | 0                                     | 81,030  | 63,995  | 1,842 | 146,867 |
|          |                                  |             | Total  | 5,985                                 | 271,175 | 181,397 | 1,842 | 460,399 |

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| District                   | Fishery   | Sample Size | Sex    | Brood Year and Age Group <sup>a</sup> |         |         |       | Total     |
|----------------------------|---|-------------|--------|---------------------------------------|---------|---------|-------|-----------|
|                            |   |             |        | 1986                                  | 1985    | 1984    | 1983  |           |
|                            |   |             |        | 0.2                                   | 0.3     | 0.4     | 0.5   |           |
| 6                          | Comm & Subs <sup>d</sup><br>Gillnet and<br>Fish Wheel | 660         | Female | 58                                    | 8,520   | 16,235  | 115   | 24,928    |
|                            |   |             | Male   | 58                                    | 11,399  | 20,898  | 288   | 32,642    |
|                            |   |             | Total  | 115                                   | 19,919  | 37,133  | 403   | 57,570    |
| Total Harvest <sup>e</sup> |   |             | Female | 6,442                                 | 319,379 | 419,228 | 1,003 | 746,053   |
|                            |   |             | Male   | 709                                   | 304,343 | 557,312 | 4,874 | 867,238   |
|                            |   |             | Total  | 7,151                                 | 623,722 | 976,541 | 5,877 | 1,613,291 |

<sup>a</sup> Does not include illegal District 1 catch (150).

<sup>b</sup> Subsistence harvest age and sex composition was assumed to be the same as that of the District catch samples.

<sup>c</sup> District 3 age and sex composition was assumed to be the same as that of District 2 commercial catch samples.

<sup>d</sup> Includes 4,326 summer chum caught in gillnets and 12,509 caught in test fish wheel.

<sup>e</sup> Total does not include 13,451 commercial or subsistence summer chum salmon caught in District 5 due to the absence of age sample data.

Table 8. Length (mm measured from mid-orbit to fork-of-tail) by age and sex of Yukon River summer chum commercial and subsistence catch samples, 1989.

| Fishery   | Sex    | n   |             | Brood Year and Age Group |      |      |      |
|---|--------|-----|-------------|--------------------------|------|------|------|
|   |        |     |             | 1986                     | 1985 | 1984 | 1983 |
|   |        |     |             | 0.2                      | 0.3  | 0.4  | 0.5  |
| District 1<br>Commercial<br>6 in Maximum<br>Gillnet | Female | 540 | Mean Length |                          | 563  | 588  | 580  |
|   |        |     | Std. Error  |                          | 1.8  | 1.6  | 10.0 |
|   |        |     | Sample Size |                          | 218  | 320  | 2    |
|   | Male   | 602 | Mean Length | 725                      | 580  | 606  | 620  |
|   |        |     | Std. Error  | 0.0                      | 2.0  | 1.8  | 15.0 |
|   |        |     | Sample Size | 1                        | 253  | 344  | 4    |
| District 1<br>Commercial<br>Unrestricted<br>Gillnet | Female | 138 | Mean Length |                          | 572  | 587  | 618  |
|   |        |     | Std. Error  |                          | 4.8  | 2.4  | 7.5  |
|   |        |     | Sample Size |                          | 30   | 106  | 2    |
|   | Male   | 286 | Mean Length |                          | 583  | 631  | 675  |
|   |        |     | Std. Error  |                          | 4.2  | 2.6  | 15.0 |
|   |        |     | Sample Size |                          | 68   | 216  | 2    |
| District 2<br>Commercial<br>6 in Maximum<br>Gillnet | Female | 135 | Mean Length | 590                      | 555  | 583  |      |
|   |        |     | Std. Error  | 0.0                      | 5.8  | 2.6  |      |
|   |        |     | Sample Size | 1                        | 21   | 113  |      |
|   | Male   | 162 | Mean Length |                          | 581  | 612  | 612  |
|   |        |     | Std. Error  |                          | 4.8  | 3.3  | 13.0 |
|   |        |     | Sample Size |                          | 43   | 116  | 3    |
| District 2<br>Commercial<br>Unrestricted<br>Gillnet | Female | 104 | Mean Length |                          | 567  | 597  |      |
|   |        |     | Std. Error  |                          | 5.4  | 3.6  |      |
|   |        |     | Sample Size |                          | 36   | 68   |      |
|   | Male   | 273 | Mean Length | 655                      | 602  | 643  | 628  |
|   |        |     | Std. Error  | 0.0                      | 4.3  | 2.0  | 7.5  |
|   |        |     | Sample Size | 1                        | 53   | 217  | 2    |
| District 4<br>Comm. & Subs.<br>Gillnet              | Female | 97  | Mean Length |                          | 538  | 576  |      |
|   |        |     | Std. Error  |                          | 3.8  | 3.0  |      |
|   |        |     | Sample Size |                          | 39   | 58   |      |
|   | Male   | 61  | Mean Length |                          | 565  | 605  | 625  |
|   |        |     | Std. Error  |                          | 4.8  | 5.6  | 0.0  |
|   |        |     | Sample Size |                          | 29   | 31   | 1    |

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| Fishery                                   | Sex    | n   |             | Brood Year and Age Group |      |      |      |
|---|--------|-----|-------------|--------------------------|------|------|------|
|   |        |     |             | 1986                     | 1985 | 1984 | 1983 |
|   |        |     |             | 0.2                      | 0.3  | 0.4  | 0.5  |
| District 4<br>Comm. & Subs.<br>Fish Wheel | Female | 475 | Mean Length | 511                      | 540  | 570  |      |
|   |        |     | Std. Error  | 7.9                      | 3.6  | 2.1  |      |
|   |        |     | Sample Size | 9                        | 288  | 178  |      |
|   | Male   | 223 | Mean Length |                          | 572  | 614  | 616  |
|   |        |     | Std. Error  |                          | 8.4  | 4.0  | 21.0 |
|   |        |     | Sample Size |                          | 123  | 97   | 3    |
| District 6<br>Comm. & Subs.<br>Fish Wheel | Female | 270 | Mean Length | 530                      | 583  | 602  |      |
|   |        |     | Std. Error  | 10.0                     | 2.3  | 3.9  |      |
|   |        |     | Sample Size | 2                        | 186  | 82   |      |
|   | Male   | 379 | Mean Length | 541                      | 607  | 632  | 638  |
|   |        |     | Std. Error  | 24.4                     | 2.2  | 3.3  | 6.0  |
|   |        |     | Sample Size | 4                        | 259  | 113  | 3    |

Table 9. Age and sex composition of Yukon River summer chum salmon escapement samples, 1989.

| River                                | Aerial Index | n   |                |                   | Brood Year and Age Group <sup>a</sup> |      |      |     | Total |
|--------------------------------------|--------------|-----|----------------|-------------------|---------------------------------------|------|------|-----|-------|
|                                      |              |     |                |                   | 198                                   |      | 1983 |     |       |
|                                      |              |     |                |                   | 0.2                                   | 0.3  | 0.4  | 0.5 |       |
| East Fork<br>Andreafsky              | 21,460       | 48  | Female         | Sample Size       | 0                                     | 4    | 4    | 0   | 8     |
|                                      |              |     |                | Percent of Sample | 0.0                                   | 8.3  | 8.3  | 0.0 | 16.6  |
|                                      |              |     | Male           | Sample Size       | 0                                     | 12   | 27   | 1   | 40    |
|                                      |              |     |                | Percent of Sample | 0.0                                   | 25.0 | 56.3 | 2.1 | 83.4  |
|                                      |              |     | Total          | Sample Size       | 0                                     | 16   | 31   | 1   | 48    |
|                                      |              |     |                | Percent of Sample | 0.0                                   | 33.3 | 64.6 | 2.1 | 100.0 |
|                                      |              |     | Standard Error | 0.0               | 6.8                                   | 6.9  | 2.1  |     |       |
| West Fork <sup>b</sup><br>Andreafsky |              | 87  | Female         | Sample Size       | 3                                     | 29   | 18   | 0   | 50    |
|                                      |              |     |                | Percent of Sample | 3.4                                   | 33.3 | 20.7 | 0.0 | 57.5  |
|                                      |              |     | Male           | Sample Size       | 0                                     | 16   | 20   | 1   | 37    |
|                                      |              |     |                | Percent of Sample | 0.0                                   | 18.4 | 23.0 | 1.1 | 42.5  |
|                                      |              |     | Total          | Sample Size       | 3                                     | 45   | 38   | 1   | 87    |
|                                      |              |     |                | Percent of Sample | 3.4                                   | 51.7 | 43.7 | 1.1 | 100.0 |
|                                      |              |     | Standard Error | 2.0               | 5.4                                   | 5.3  | 1.1  |     |       |
| Chulinak <sup>b,c</sup>              |              | 98  | Female         | Sample Size       | 0                                     | 4    | 14   | 0   | 18    |
|                                      |              |     |                | Percent of Sample | 0.0                                   | 4.1  | 14.3 | 0.0 | 18.4  |
|                                      |              |     | Male           | Sample Size       | 0                                     | 22   | 57   | 1   | 80    |
|                                      |              |     |                | Percent of Sample | 0.0                                   | 22.4 | 58.2 | 1.0 | 81.6  |
|                                      |              |     | Total          | Sample Size       | 0                                     | 26   | 71   | 1   | 98    |
|                                      |              |     |                | Percent of Sample | 0.0                                   | 26.5 | 72.4 | 1.0 | 100.0 |
|                                      |              |     | Standard Error | 0.0               | 4.5                                   | 4.5  | 1.0  |     |       |
| Anvik <sup>d</sup>                   | 636,906      | 593 | Female         | Sample Size       | 7                                     | 169  | 213  | 0   | 390   |
|                                      |              |     |                | Percent of Sample | 1.2                                   | 28.5 | 36.0 | 0.0 | 65.7  |
|                                      |              |     | Male           | Sample Size       | 0                                     | 56   | 147  | 1   | 203   |
|                                      |              |     |                | Percent of Sample | 0.0                                   | 9.4  | 24.8 | 0.1 | 34.3  |
|                                      |              |     | Total          | Sample Size       | 7                                     | 225  | 361  | 1   | 593   |
|                                      |              |     |                | Percent of Sample | 1.2                                   | 37.9 | 60.8 | 0.1 | 100.0 |
|                                      |              |     | Standard Error | 0.4               | 2.0                                   | 2.0  | 0.1  |     |       |

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| River                    | Aerial Index | n  |                | Brood Year and Age Group |      |      |      | Total |       |
|--------------------------|--------------|----|----------------|--------------------------|------|------|------|-------|-------|
|                          |              |    |                | 198                      |      | 1983 |      |       |       |
|                          |              |    |                | 0.2                      | 0.3  | 0.4  | 0.5  |       |       |
| Rodo <sup>b,c</sup>      |              | 97 | Female         | Sample Size              | 0    | 1    | 21   | 3     | 25    |
|                          |              |    |                | Percent of Sample        | 0.0  | 1.3  | 21.8 | 2.8   | 25.9  |
|                          |              |    | Male           | Sample Size              | 0    | 1    | 54   | 17    | 72    |
|                          |              |    |                | Percent of Sample        | 0.0  | 1.3  | 55.3 | 17.5  | 74.1  |
|                          |              |    | Total          | Sample Size              | 0    | 3    | 75   | 20    | 97    |
|                          |              |    |                | Percent of Sample        | 0.0  | 2.6  | 77.1 | 20.3  | 100.0 |
|                          |              |    | Standard Error | 0.0                      | 1.6  | 4.3  | 4.1  |       |       |
| Gisasa <sup>b,c</sup>    |              | 95 | Female         | Sample Size              | 1    | 12   | 8    | 0     | 21    |
|                          |              |    |                | Percent of Sample        | 1.1  | 12.6 | 8.4  | 0.0   | 22.1  |
|                          |              |    | Male           | Sample Size              | 0    | 53   | 20   | 1     | 74    |
|                          |              |    |                | Percent of Sample        | 0.0  | 55.8 | 21.0 | 1.1   | 77.9  |
|                          |              |    | Total          | Sample Size              | 1    | 65   | 28   | 1     | 95    |
|                          |              |    |                | Percent of Sample        | 1.1  | 68.4 | 29.4 | 1.1   | 100.0 |
|                          |              |    | Standard Error | 1.1                      | 4.8  | 4.7  | 1.1  |       |       |
| Melozitna <sup>b,c</sup> |              | 16 | Female         | Sample Size              | 0    | 1    | 4    | 0     | 5     |
|                          |              |    |                | Percent of Sample        | 0.0  | 6.3  | 25.0 | 0.0   | 31.3  |
|                          |              |    | Male           | Sample Size              | 0    | 10   | 1    | 0     | 11    |
|                          |              |    |                | Percent of Sample        | 0.0  | 62.5 | 6.2  | 0.0   | 68.7  |
|                          |              |    | Total          | Sample Size              | 0    | 11   | 5    | 0     | 16    |
|                          |              |    |                | Percent of Sample        | 0.0  | 68.8 | 31.2 | 0.0   | 100.0 |
|                          |              |    | Standard Error | 0.0                      | 11.6 | 11.6 | 0.0  |       |       |
| Tozitna <sup>b,c</sup>   |              | 82 | Female         | Sample Size              | 0    | 6    | 6    | 0     | 12    |
|                          |              |    |                | Percent of Sample        | 0.0  | 7.3  | 7.3  | 0.0   | 14.6  |
|                          |              |    | Male           | Sample Size              | 0    | 49   | 21   | 0     | 70    |
|                          |              |    |                | Percent of Sample        | 0.0  | 59.8 | 25.6 | 0.0   | 85.4  |
|                          |              |    | Total          | Sample Size              | 0    | 55   | 27   | 0     | 82    |
|                          |              |    |                | Percent of Sample        | 0.0  | 67.1 | 32.9 | 0.0   | 100.0 |
|                          |              |    | Standard Error | 0.0                      | 5.2  | 5.2  | 0.0  |       |       |

<sup>a</sup> Discrepancies in row and column addition by category are due to rounding error and may be ignored.

<sup>b</sup> Stream not surveyed in any form to estimate population.

<sup>c</sup> Tissue samples for electrophoretic study were also collected from fish captured by gillnet.

<sup>d</sup> Population estimate was produced using sonar enumeration techniques.

Table 10. Length (mm measured from mid-orbit to fork-of-tail) by age and sex of Yukon River summer chum escapement samples, 1989.

| River                   | Sex    |             | Brood Year and Age Group |      |      |      |
|-------------------------|--------|-------------|--------------------------|------|------|------|
|                         |        |             | 1986                     | 1985 | 1984 | 1983 |
|                         |        |             | 0.2                      | 0.3  | 0.4  | 0.5  |
| East Fork<br>Andreafsky | Female | Mean Length |                          | 529  | 541  |      |
|                         |        | Std. Error  |                          | 19.1 | 7.5  |      |
|                         |        | Sample Size |                          | 4    | 4    |      |
|                         | Male   | Mean Length |                          | 569  | 598  | 650  |
|                         |        | Std. Error  |                          | 10.6 | 5.5  | 0.0  |
|                         |        | Sample Size |                          | 12   | 27   | 1    |
| West Fork<br>Andreafsky | Female | Mean Length | 527                      | 538  | 561  |      |
|                         |        | Std. Error  | 8.5                      | 5.9  | 6.0  |      |
|                         |        | Sample Size | 3                        | 29   | 18   |      |
|                         | Male   | Mean Length |                          | 569  | 618  | 645  |
|                         |        | Std. Error  |                          | 9.0  | 9.1  | 0.0  |
|                         |        | Sample Size |                          | 16   | 20   | 1    |
| Chulinak                | Female | Mean Length |                          | 571  | 589  |      |
|                         |        | Std. Error  |                          | 5.5  | 7.6  |      |
|                         |        | Sample Size |                          | 4    | 14   |      |
|                         | Male   | Mean Length |                          | 588  | 607  | 620  |
|                         |        | Std. Error  |                          | 5.6  | 4.3  | 0.0  |
|                         |        | Sample Size |                          | 22   | 57   | 1    |
| Anvik                   | Female | Mean Length | 518                      | 545  | 579  |      |
|                         |        | Std. Error  | 7.2                      | 2.0  | 1.8  |      |
|                         |        | Sample Size | 9                        | 183  | 202  |      |
|                         | Male   | Mean Length |                          | 586  | 626  | 655  |
|                         |        | Std. Error  |                          | 4.6  | 2.7  | 0.0  |
|                         |        | Sample Size |                          | 55   | 142  | 1    |

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| River     | Sex    |             | Brood Year and Age Group |      |      |      |
|-----------|--------|-------------|--------------------------|------|------|------|
|           |        |             | 1986                     | 1985 | 1984 | 1983 |
|           |        |             | 0.2                      | 0.3  | 0.4  | 0.5  |
| Rodo      | Female | Mean Length | 535                      | 541  | 585  |      |
|           |        | Std. Error  | 0.0                      | 8.4  | 25.0 |      |
|           |        | Sample Size | 1                        | 16   | 2    |      |
|           | Male   | Mean Length | 530                      | 572  | 593  |      |
|           |        | Std. Error  | 0.0                      | 4.2  | 8.7  |      |
|           |        | Sample Size | 1                        | 41   | 13   |      |
| Gisasa    | Female | Mean Length | 535                      | 553  | 593  |      |
|           |        | Std. Error  | 0.0                      | 7.8  | 4.9  |      |
|           |        | Sample Size | 1                        | 11   | 8    |      |
|           | Male   | Mean Length |                          | 569  | 628  | 630  |
|           |        | Std. Error  |                          | 4.1  | 6.0  | 0.0  |
|           |        | Sample Size |                          | 53   | 20   | 1    |
| Melozitna | Female | Mean Length |                          | 570  | 611  |      |
|           |        | Std. Error  |                          | 0.0  | 8.8  |      |
|           |        | Sample Size |                          | 1    | 4    |      |
|           | Male   | Mean Length |                          | 579  | 605  |      |
|           |        | Std. Error  |                          | 14.5 | 0.0  |      |
|           |        | Sample Size |                          | 10   | 1    |      |
| Tozitna   | Female | Mean Length |                          | 573  | 613  |      |
|           |        | Std. Error  |                          | 10.9 | 12.6 |      |
|           |        | Sample Size |                          | 6    | 6    |      |
|           | Male   | Mean Length |                          | 585  | 625  |      |
|           |        | Std. Error  |                          | 4.2  | 6.0  |      |
|           |        | Sample Size |                          | 49   | 21   |      |

Table 11. Harvest of Yukon River fall chum salmon by age, sex, and fishery, 1989.

| District | Fishery                                  | Sample Size | Sex    | Brood Year and Age Group <sup>a</sup> |        |        |      | Total  |
|----------|--|-------------|--------|---------------------------------------|--------|--------|------|--------|
|          |  |             |        | 1986                                  | 1985   | 1984   | 1983 |        |
|          |  |             |        | 0.2                                   | 0.3    | 0.4    | 0.5  |        |
| 1        | Commercial<br>6 in Gillnet               | 893         | Female | 45                                    | 29,531 | 4,712  | 110  | 34,398 |
|          |  |             | Male   | 0                                     | 35,633 | 7,846  | 0    | 43,478 |
|          |  |             | Total  | 45                                    | 65,164 | 12,558 | 110  | 77,876 |
|          | Subsistence <sup>b</sup><br>6 in Gillnet | 0           | Female | 5                                     | 1,870  | 301    | 5    | 2,181  |
|          |  |             | Male   | 0                                     | 2,260  | 493    | 0    | 2,753  |
|          |  |             | Total  | 5                                     | 4,130  | 794    | 5    | 4,934  |
| 2        | Commercial <sup>b</sup><br>6 in Gillnet  | 0           | Female | 489                                   | 46,250 | 6,561  | 382  | 53,681 |
|          |  |             | Male   | 0                                     | 37,167 | 7,058  | 0    | 44,225 |
|          |  |             | Total  | 489                                   | 83,417 | 13,618 | 382  | 97,906 |
|          | Subsistence <sup>b</sup><br>6 in Gillnet | 0           | Female | 50                                    | 4,727  | 671    | 40   | 5,488  |
|          |  |             | Male   | 0                                     | 3,806  | 721    | 0    | 4,527  |
|          |  |             | Total  | 50                                    | 8,533  | 1,392  | 40   | 10,015 |
| 3        | Commercial <sup>b</sup><br>6 in Gillnet  | 0           | Female | 77                                    | 7,237  | 1,027  | 61   | 8,402  |
|          |  |             | Male   | 0                                     | 5,826  | 1,104  | 0    | 6,930  |
|          |  |             | Total  | 77                                    | 13,063 | 2,131  | 61   | 15,332 |
|          | Subsistence <sup>b</sup><br>6 in Gillnet | 0           | Female | 5                                     | 481    | 68     | 4    | 558    |
|          |  |             | Male   | 0                                     | 387    | 73     | 0    | 461    |
|          |  |             | Total  | 5                                     | 868    | 142    | 4    | 1,019  |
| 4        | Comm & Subs <sup>c</sup><br>Fish Wheel   | 1,303       | Female | 163                                   | 11,723 | 1,818  | 54   | 13,758 |
|          |  |             | Male   | 190                                   | 11,126 | 2,035  | 27   | 13,378 |
|          |  |             | Total  | 353                                   | 22,848 | 3,853  | 81   | 27,136 |

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| District | Fishery   | Sample Size | Sex    | Brood Year and Age Group <sup>a</sup> |         |        |      | Total   |
|----------|---|-------------|--------|---------------------------------------|---------|--------|------|---------|
|          |   |             |        | 1986                                  | 1985    | 1984   | 1983 |         |
|          |   |             |        | 0.2                                   | 0.3     | 0.4    | 0.5  |         |
| 5        | Comm & Subs <sup>d</sup><br>Fish Wheel              | 62          | Female | 1,745                                 | 49,288  | 1,745  | 0    | 52,777  |
|          |   |             | Male   | 0                                     | 49,179  | 7,088  | 0    | 56,267  |
|          |   |             | Total  | 1,745                                 | 98,466  | 8,833  | 0    | 109,044 |
| 6        | Comm & Subs <sup>e</sup><br>Fish Wheel              | 534         | Female | 486                                   | 42,628  | 3,765  | 0    | 46,879  |
|          |   |             | Male   | 1,700                                 | 66,796  | 6,072  | 0    | 74,569  |
|          |   |             | Total  | 2,186                                 | 109,425 | 9,837  | 0    | 121,448 |
| Canada   | Commercial <sup>f</sup><br>Gillnet &<br>Fish Wheel  |             | Female | 16                                    | 7,405   | 1,561  | 41   | 9,024   |
|          |   |             | Male   | 0                                     | 6,613   | 1,880  | 33   | 8,525   |
|          |   |             | Total  | 16                                    | 14,018  | 3,441  | 74   | 17,549  |
|          | Subsistence <sup>f</sup><br>Gillnet &<br>Fish Wheel |             | Female | 5                                     | 2,309   | 487    | 13   | 2,813   |
|          |   |             | Male   | 0                                     | 2,061   | 586    | 10   | 2,658   |
|          |   |             | Total  | 5                                     | 4,370   | 1,073  | 23   | 5,471   |
|          | Total Harvest                                       |             | Female | 3,085                                 | 203,448 | 22,716 | 710  | 229,959 |
|          |   |             | Male   | 1,890                                 | 220,853 | 34,957 | 70   | 257,770 |
|          |   |             | Total  | 4,975                                 | 424,301 | 57,673 | 780  | 487,729 |

<sup>a</sup> Discrepancies in row and column addition by category are due to rounding error and may be ignored.

<sup>b</sup> Age and sex composition was assumed to be that of the District 1 commercial catch samples.

<sup>c</sup> Does not include 9,184 commercial and subsistence gillnet caught fall chum salmon.

<sup>d</sup> Does not include 27,995 commercial and subsistence gillnet caught fall chum salmon.

<sup>e</sup> Does not include 5,277 commercial and subsistence gillnet caught fall chum salmon.

<sup>f</sup> Age and sex composition from commercial gillnet samples (177), and samples (1,970) from the Yukon River tagging fish wheels.

Table 12. Length (mm measured from mid-orbit to fork-of-tail) by age and sex of Yukon River fall chum commercial and subsistence catch samples, 1989.

| Fishery                                   | Sex    |             | Brood Year and Age Group |      |      |      |
|---|--------|-------------|--------------------------|------|------|------|
|   |        |             | 1986                     | 1985 | 1984 | 1983 |
|   |        |             | 0.2                      | 0.3  | 0.4  | 0.5  |
| District 1<br>Commercial<br>6 in Gillnet  | Female | Mean Length | 558                      | 584  | 594  | 588  |
|   |        | Std. Error  | 22.5                     | 1.3  | 3.2  | 18.8 |
|   |        | Sample Size | 2                        | 389  | 70   | 4    |
|   | Male   | Mean Length |                          | 597  | 620  |      |
|   |        | Std. Error  |                          | 1.6  | 4.3  |      |
|   |        | Sample Size |                          | 346  | 82   |      |
| District 4<br>Comm. & Subs.<br>Fish Wheel | Female | Mean Length | 526                      | 572  | 596  | 596  |
|   |        | Std. Error  | 10.3                     | 2.8  | 3.9  | 10.5 |
|   |        | Sample Size | 8                        | 565  | 87   | 2    |
|   | Male   | Mean Length | 553                      | 596  | 626  | 620  |
|   |        | Std. Error  | 11.3                     | 1.4  | 3.0  | 0.0  |
|   |        | Sample Size | 9                        | 536  | 98   | 1    |
| District 5<br>Comm. & Subs.<br>Fish Wheel | Female | Mean Length | 530                      | 578  | 580  |      |
|   |        | Std. Error  | 0.0                      | 4.8  | 0.0  |      |
|   |        | Sample Size | 1                        | 28   | 1    |      |
|   | Male   | Mean Length |                          | 611  | 678  |      |
|   |        | Std. Error  |                          | 4.9  | 20.1 |      |
|   |        | Sample Size |                          | 28   | 4    |      |
| District 6<br>Comm. & Subs.<br>Fish Wheel | Female | Mean Length | 528                      | 597  | 619  |      |
|   |        | Std. Error  | 2.5                      | 2.2  | 8.2  |      |
|   |        | Sample Size | 2                        | 181  | 16   |      |
|   | Male   | Mean Length | 569                      | 611  | 628  |      |
|   |        | Std. Error  | 18.5                     | 1.9  | 5.2  |      |
|   |        | Sample Size | 7                        | 283  | 26   |      |

Table 13. Age and sex composition of Yukon River fall chum escapements, 1989.

| River                  | Aerial Index      | n   |                         |                   | Brood Year and Age Group <sup>a</sup> |        |                   |      | Total |     |     |      |
|------------------------|-------------------|-----|-------------------------|-------------------|---------------------------------------|--------|-------------------|------|-------|-----|-----|------|
|                        |                   |     |                         |                   | 1986                                  | 1985   | 1984              | 1983 |       |     |     |      |
|                        |                   |     |                         |                   | 0.2                                   | 0.3    | 0.4               | 0.5  |       |     |     |      |
| Chandalar <sup>b</sup> | 69,161            | 149 | Female                  | Sample Size       | 3                                     | 54     | 16                | 4    | 77    |     |     |      |
|                        |                   |     |                         | Percent of Sample | 2.2                                   | 36.1   | 10.8              | 2.6  | 51.7  |     |     |      |
|                        |                   |     | Male                    | Sample Size       | 1                                     | 61     | 10                | 0    | 72    |     |     |      |
|                        |                   |     |                         | Percent of Sample | 0.6                                   | 41.0   | 6.6               | 0.1  | 48.3  |     |     |      |
|                        |                   |     | Total                   | Sample Size       | 4                                     | 115    | 26                | 4    | 149   |     |     |      |
|                        |                   |     |                         | Percent of Sample | 2.8                                   | 77.1   | 17.4              | 2.7  | 100.0 |     |     |      |
|                        |                   |     |                         | % Standard Error  | 1.4                                   | 3.4    | 3.1               | 1.3  |       |     |     |      |
|                        |                   |     | Sheenjek <sup>b,c</sup> | 101,748           | 154                                   | Female | Sample Size       | 5    | 72    | 13  | 1   | 91   |
|                        |                   |     |                         |                   |                                       |        | Percent of Sample | 3.2  | 46.8  | 8.4 | 0.6 | 59.1 |
| Male                   | Sample Size       | 3   |                         |                   |                                       | 46     | 13                | 1    | 63    |     |     |      |
|                        | Percent of Sample | 1.9 |                         |                   |                                       | 29.9   | 8.4               | 0.6  | 40.9  |     |     |      |
| Total                  | Sample Size       | 8   |                         |                   |                                       | 118    | 26                | 2    | 154   |     |     |      |
|                        | Percent of Sample | 5.2 |                         |                   |                                       | 76.6   | 16.9              | 1.3  | 100.0 |     |     |      |
|                        | % Standard Error  | 1.8 |                         |                   |                                       | 3.4    | 3.0               | 0.9  |       |     |     |      |
| Toklat <sup>d</sup>    | 29,474            | 150 |                         |                   |                                       | Female | Sample Size       | 4    | 65    | 13  | 1   | 83   |
|                        |                   |     |                         |                   |                                       |        | Percent of Sample | 2.7  | 43.3  | 8.7 | 0.7 | 55.3 |
|                        |                   |     | Male                    | Sample Size       | 1                                     | 54     | 11                | 1    | 67    |     |     |      |
|                        |                   |     |                         | Percent of Sample | 0.7                                   | 36.0   | 7.3               | 0.7  | 44.7  |     |     |      |
|                        |                   |     | Total                   | Sample Size       | 5                                     | 119    | 24                | 2    | 150   |     |     |      |
|                        |                   |     |                         | Percent of Sample | 3.3                                   | 79.3   | 16.0              | 1.3  | 100.0 |     |     |      |
|                        |                   |     |                         | % Standard Error  | 1.5                                   | 3.3    | 3.0               | 0.9  |       |     |     |      |

-Continued-

Table 13 (page 2 of 3)

| River                  | Aerial Index      | n   |                                |                   | Brood Year and Age Group |        |                   |      | Total |     |     |      |
|------------------------|-------------------|-----|--------------------------------|-------------------|--------------------------|--------|-------------------|------|-------|-----|-----|------|
|                        |                   |     |                                |                   | 1986                     | 1985   | 1984              | 1983 |       |     |     |      |
|                        |                   |     |                                |                   | 0.2                      | 0.3    | 0.4               | 0.5  |       |     |     |      |
| Delta <sup>a</sup>     | 17,540            | 150 | Female                         | Sample Size       | 2                        | 40     | 13                | 0    | 55    |     |     |      |
|                        |                   |     |                                | Percent of Sample | 1.3                      | 26.7   | 8.7               | 0.0  | 36.7  |     |     |      |
|                        |                   |     | Male                           | Sample Size       | 5                        | 75     | 13                | 2    | 95    |     |     |      |
|                        |                   |     |                                | Percent of Sample | 3.3                      | 50.0   | 8.7               | 1.3  | 63.3  |     |     |      |
|                        |                   |     | Total                          | Sample Size       | 7                        | 115    | 26                | 2    | 150   |     |     |      |
|                        |                   |     |                                | Percent of Sample | 4.7                      | 76.7   | 17.3              | 1.3  | 100.0 |     |     |      |
|                        |                   |     |                                | % Standard Error  | 1.7                      | 3.5    | 3.1               | 0.9  |       |     |     |      |
|                        |                   |     | Fishing Branch <sup>d, g</sup> | 43,834            | 879                      | Female | Sample Size       | 0    | 329   | 49  | 0   | 378  |
|                        |                   |     |                                |                   |                          |        | Percent of Sample | 0.0  | 37.4  | 5.6 | 0.0 | 43.0 |
| Male                   | Sample Size       | 0   |                                |                   |                          | 438    | 63                | 0    | 501   |     |     |      |
|                        | Percent of Sample | 0.0 |                                |                   |                          | 49.8   | 7.2               | 0.0  | 57.0  |     |     |      |
| Total                  | Sample Size       | 0   |                                |                   |                          | 766    | 113               | 0    | 879   |     |     |      |
|                        | Percent of Sample | 0.0 |                                |                   |                          | 87.2   | 12.8              | 0.0  | 100.0 |     |     |      |
|                        | % Standard Error  | 0.0 |                                |                   |                          | 1.1    | 1.1               | 0.0  |       |     |     |      |
| Kluane <sup>d, g</sup> | 3,050             | 94  |                                |                   |                          | Female | Sample Size       | 0    | 39    | 8   | 0   | 47   |
|                        |                   |     |                                |                   |                          |        | Percent of Sample | 0.0  | 41.5  | 8.5 | 0.0 | 50.0 |
|                        |                   |     | Male                           | Sample Size       | 0                        | 41     | 6                 | 0    | 47    |     |     |      |
|                        |                   |     |                                | Percent of Sample | 0.0                      | 43.6   | 6.4               | 0.0  | 50.0  |     |     |      |
|                        |                   |     | Total                          | Sample Size       | 0                        | 80     | 14                | 0    | 94    |     |     |      |
|                        |                   |     |                                | Percent of Sample | 0.0                      | 85.1   | 14.9              | 0.0  | 100.0 |     |     |      |
|                        |                   |     | % Standard Error               | 0.0               | 3.7                      | 3.7    | 0.0               |      |       |     |     |      |

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Table 13 (page 3 of 3)

| River                                 | Aerial Index | n                 | Brood Year and Age Group |      |      |      | Total |
|---------------------------------------|--------------|-------------------|--------------------------|------|------|------|-------|
|                                       |              |                   | 1986                     | 1985 | 1984 | 1983 |       |
|                                       |              |                   | 0.2                      | 0.3  | 0.4  | 0.5  |       |
| Yukon <sup>g, h</sup><br>(Minto Area) | Female       | Sample Size       | 0                        | 65   | 2    | 0    | 67    |
|                                       |              | Percent of Sample | 0.0                      | 69.1 | 2.1  | 0.0  | 71.3  |
|                                       | Male         | Sample Size       | 0                        | 24   | 3    | 0    | 27    |
|                                       |              | Percent of Sample | 0.0                      | 25.5 | 3.2  | 0.0  | 28.7  |
|                                       | Total        | Sample Size       | 0                        | 89   | 5    | 0    | 94    |
|                                       |              | Percent of Sample | 0.0                      | 94.7 | 5.3  | 0.0  | 100.0 |
| % Standard Error                      |              | 0.0               | 2.3                      | 2.3  | 0.0  |      |       |

<sup>a</sup> Discrepancies in row and column addition by category are due to rounding error and may be ignored.

<sup>b</sup> Population estimate was produced using sonar enumeration techniques.

<sup>c</sup> Includes 20,000 salmon counted by aerial survey before sonar was installed.

<sup>d</sup> Population estimate was produced using aerial enumeration techniques.

<sup>e</sup> Population estimate was produced using foot survey data.

<sup>f</sup> Population estimate was produced from enumeration of weir passage.

<sup>g</sup> Age and sex composition provided by DFO in Whitehorse, Yukon Territory.

<sup>h</sup> No population estimate available.

Table 14. Length (mm measured from mid-orbit to fork-of-tail, except as noted) by age and sex of Yukon River fall chum escapement samples, 1989.

| River               | Sex    |             | Brood Year and Age Group |      |      |      |
|---------------------|--------|-------------|--------------------------|------|------|------|
|                     |        |             | 1986                     | 1985 | 1984 | 1983 |
|                     |        |             | 0.2                      | 0.3  | 0.4  | 0.5  |
| Sheenjek            | Female | Mean Length | 588                      | 596  | 610  | 610  |
|                     |        | Std. Error  | 13                       | 3.4  | 8.9  | 0    |
|                     |        | Sample Size | 5                        | 72   | 13   | 1    |
|                     | Male   | Mean Length | 588                      | 623  | 641  | 635  |
|                     |        | Std. Error  | 42                       | 5.4  | 8.7  | 0    |
|                     |        | Sample Size | 3                        | 46   | 13   | 1    |
| Delta               | Female | Mean Length | 543                      | 567  | 581  |      |
|                     |        | Std. Error  | 17.5                     | 3.7  | 7.9  |      |
|                     |        | Sample Size | 2                        | 40   | 13   |      |
|                     | Male   | Mean Length | 572                      | 603  | 612  | 640  |
|                     |        | Std. Error  | 19                       | 4.0  | 10.7 | 35.0 |
|                     |        | Sample Size | 5                        | 75   | 13   | 2    |
| Toklat              | Female | Mean Length | 523                      | 565  | 563  | 590  |
|                     |        | Std. Error  | 24.4                     | 3.7  | 7.1  | 0    |
|                     |        | Sample Size | 4                        | 65   | 13   | 1    |
|                     | Male   | Mean Length | 505                      | 584  | 564  | 600  |
|                     |        | Std. Error  | 0                        | 3.9  | 13.4 | 0    |
|                     |        | Sample Size | 1                        | 54   | 11   | 1    |
| Kluane <sup>a</sup> | Female | Mean Length |                          | 612  | 666  |      |
|                     |        | Std. Error  |                          | 31.6 | 52.4 |      |
|                     |        | Sample Size |                          | 39   | 8    |      |
|                     | Male   | Mean Length |                          | 661  | 682  |      |
|                     |        | Std. Error  |                          | 39.1 | 29.8 |      |
|                     |        | Sample Size |                          | 41   | 6    |      |

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Table 14 (page 2 of 2)

| River                              | Sex    |             | Brood Year and Age Group |      |      |      |
|------------------------------------|--------|-------------|--------------------------|------|------|------|
|                                    |        |             | 1986                     | 1985 | 1984 | 1983 |
|                                    |        |             | 0.2                      | 0.3  | 0.4  | 0.5  |
| Yukon <sup>a</sup><br>(Minto area) | Female | Mean Length |                          | 619  | 645  |      |
|                                    |        | Std. Error  |                          | 33.7 | 41.7 |      |
|                                    |        | Sample Size |                          | 65   | 2    |      |
|                                    | Male   | Mean Length |                          | 684  | 710  |      |
|                                    |        | Std. Error  |                          | 36.3 | 20.0 |      |
|                                    |        | Sample Size |                          | 24   | 3    |      |
| Fishing <sup>a</sup><br>Branch     | Female | Mean Length |                          | 621  | 662  |      |
|                                    |        | Sample Size |                          | 329  | 49   |      |
|                                    | Male   | Mean Length |                          | 676  | 724  |      |
|                                    |        | Sample Size |                          | 438  | 63   |      |

<sup>a</sup> Lengths are tip-of-snout to fork-of-tail.

Table 15. Harvest of Yukon River coho salmon by age, sex, and fishery, 1989.

| District | Fishery                                  | n   | Sex    | Brood Year and Age Group |        |       | Total  |
|----------|--|-----|--------|--------------------------|--------|-------|--------|
|          |  |     |        | 1986                     | 1985   | 1984  |        |
|          |  |     |        | 1.1                      | 2.1    | 3.1   |        |
| 1        | Commercial<br>6 in Gillnet               | 483 | Female | 2,196                    | 7,599  | 148   | 9,943  |
|          |  |     | Male   | 2,146                    | 12,114 | 469   | 14,729 |
|          |  |     | Total  | 4,342                    | 19,713 | 617   | 24,672 |
|          | Subsistence <sup>a</sup><br>6 in Gillnet | 0   | Female | 458                      | 1,584  | 31    | 2,073  |
|          |  |     | Male   | 448                      | 2,526  | 98    | 3,071  |
|          |  |     | Total  | 905                      | 4,110  | 129   | 5,144  |
| 2        | Commercial <sup>a</sup><br>6 in Gillnet  | 0   | Female | 3,428                    | 11,865 | 231   | 15,524 |
|          |  |     | Male   | 3,351                    | 18,914 | 732   | 22,998 |
|          |  |     | Total  | 6,780                    | 30,779 | 963   | 38,522 |
|          | Subsistence <sup>a</sup><br>6 in Gillnet | 0   | Female | 448                      | 1,552  | 30    | 2,031  |
|          |  |     | Male   | 438                      | 2,474  | 96    | 3,008  |
|          |  |     | Total  | 887                      | 4,026  | 126   | 5,039  |
| 3        | Commercial <sup>a</sup><br>6 in Gillnet  | 0   | Female | 355                      | 1,228  | 24    | 1,607  |
|          |  |     | Male   | 347                      | 1,958  | 76    | 2,381  |
|          |  |     | Total  | 702                      | 3,186  | 100   | 3,988  |
|          | Subsistence <sup>a</sup><br>6 in Gillnet | 0   | Female | 48                       | 165    | 3     | 216    |
|          |  |     | Male   | 47                       | 264    | 10    | 321    |
|          |  |     | Total  | 95                       | 429    | 13    | 537    |
| 6        | Comm & Sub<br>Fish Wheel                 | 266 | Female | 2,305                    | 8,139  | 1,369 | 11,813 |
|          |  |     | Male   | 6,771                    | 14,442 | 2,989 | 24,202 |
|          |  |     | Total  | 9,076                    | 22,581 | 4,358 | 36,014 |

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Table 15 (page 2 of 2)

| District                   | Fishery | n | Sex    | Brood Year and Age Group <sup>a</sup> |        |       | Total   |
|----------------------------|---------|---|--------|---------------------------------------|--------|-------|---------|
|                            |         |   |        | 1986                                  | 1985   | 1984  |         |
|                            |         |   |        | 1.1                                   | 2.1    | 3.1   |         |
| Total Harvest <sup>b</sup> |         |   | Female | 9,238                                 | 32,133 | 1,836 | 43,207  |
|                            |         |   | Male   | 13,548                                | 52,692 | 4,469 | 70,709  |
|                            |         |   | Total  | 22,786                                | 84,825 | 6,305 | 113,916 |

<sup>a</sup> Age and sex composition was assumed to be the same as District 1 commercial catch samples.

<sup>b</sup> 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 fish wheel (4,033); District 5 commercial and subsistence fish wheel (7,194); and District 6 commercial and subsistence gillnet (2,542) for a total of 13,769.

Table 16. Length (mm measured from mid-orbit to fork-of-tail) by age and sex of Yukon River coho commercial and subsistence catch samples, 1989.

| Fishery                                   | Sex    | n   |             | Brood Year and Age Group |      |      |
|---|--------|-----|-------------|--------------------------|------|------|
|   |        |     |             | 1986                     | 1985 | 1984 |
|   |        |     |             | 1.1                      | 2.1  | 3.1  |
| District 1<br>Commercial<br>6 in Gillnet  | Female | 47  | Mean Length | 572                      | 590  | 590  |
|   |        |     | Std. Error  | 3.9                      | 0.0  | 10.0 |
|   |        |     | Sample Size | 43                       | 1    | 3    |
|   | Male   | 55  | Mean Length | 576                      | 555  | 574  |
|   |        |     | Std. Error  | 5.6                      | 19.4 | 18.3 |
|   |        |     | Sample Size | 42                       | 4    | 9    |
| District 6<br>Comm. & Subs.<br>Fish Wheel | Female | 87  | Mean Length | 575                      | 583  | 593  |
|   |        |     | Std. Error  | 7.6                      | 4.8  | 5.2  |
|   |        |     | Sample Size | 17                       | 60   | 10   |
|   | Male   | 179 | Mean Length | 585                      | 566  | 575  |
|   |        |     | Std. Error  | 6.8                      | 4.8  | 8.1  |
|   |        |     | Sample Size | 50                       | 107  | 22   |

Table 17. Length (mm measured from mid-orbit to fork-of-tail) by age and sex of Delta Clearwater River coho escapements, 1989.

|              |                   | Brood Year and Age Group |      |      | Total |
|--------------|-------------------|--------------------------|------|------|-------|
|              |                   | 1986                     | 1985 | 1984 |       |
|              |                   | 1.1                      | 2.1  | 3.1  |       |
| Sample Date: | 11/22             |                          |      |      |       |
| Female       | Sample Size       | 18                       | 70   | 4    | 92    |
|              | Percent of Sample | 10.5                     | 40.7 | 2.3  | 53.5  |
|              | Mean Length       | 539                      | 548  | 570  |       |
|              | Standard Error    | 9                        | 5    | 11   |       |
| Male         | Sample Size       | 12                       | 63   | 5    | 80    |
|              | Percent of Sample | 7.0                      | 36.6 | 2.9  | 46.5  |
|              | Mean Length       | 537                      | 552  | 578  |       |
|              | Standard Error    | 13                       | 6    | 14   |       |
| Total        | Sample Size       | 30                       | 133  | 9    | 172   |
|              | Percent of Sample | 17.4                     | 77.3 | 5.2  | 100.0 |
|              | Standard Error    | 3.8                      | 4.2  | 2.2  |       |

**FIGURES**



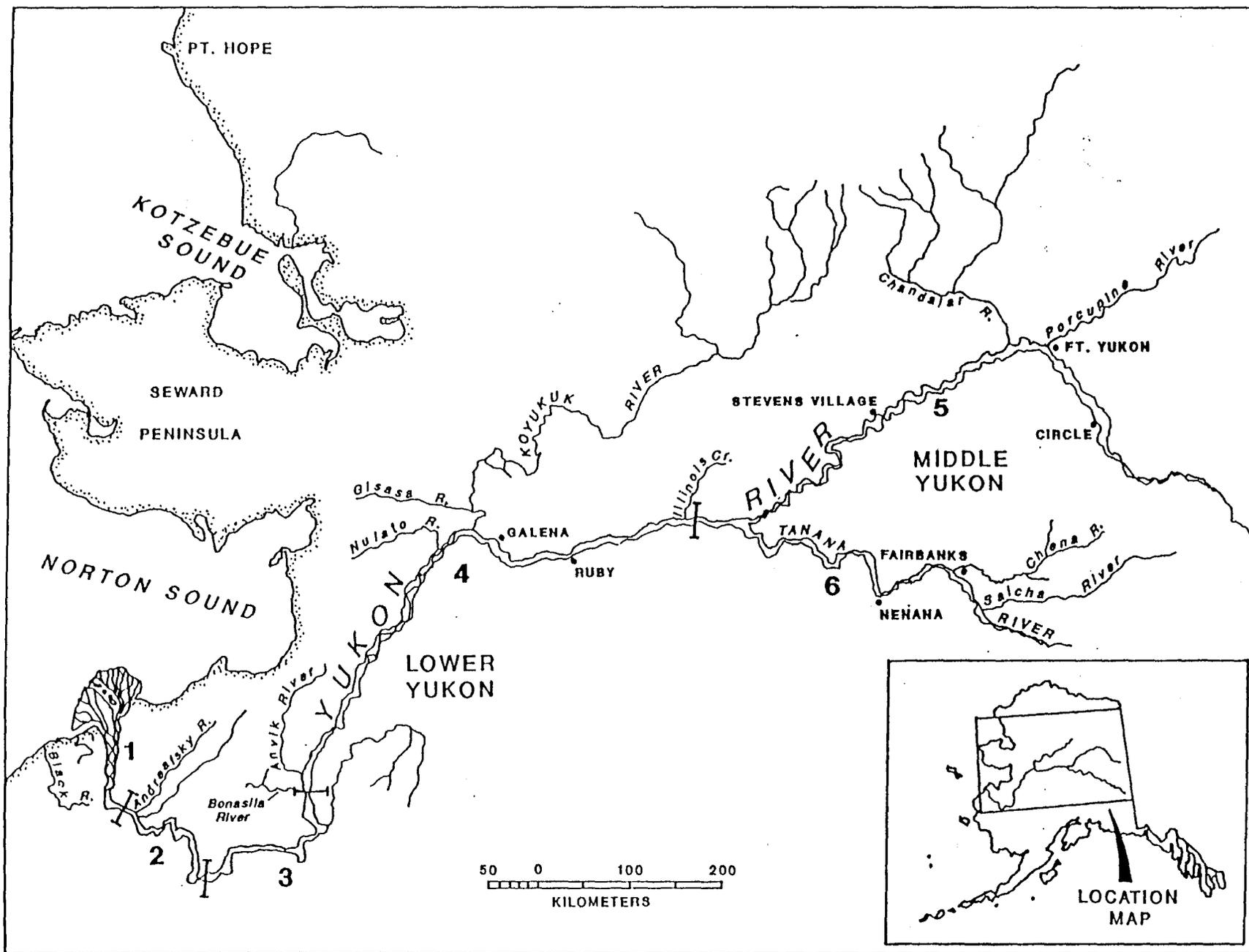


Figure 1. Alaskan portion of the Yukon River with fishing district boundaries.





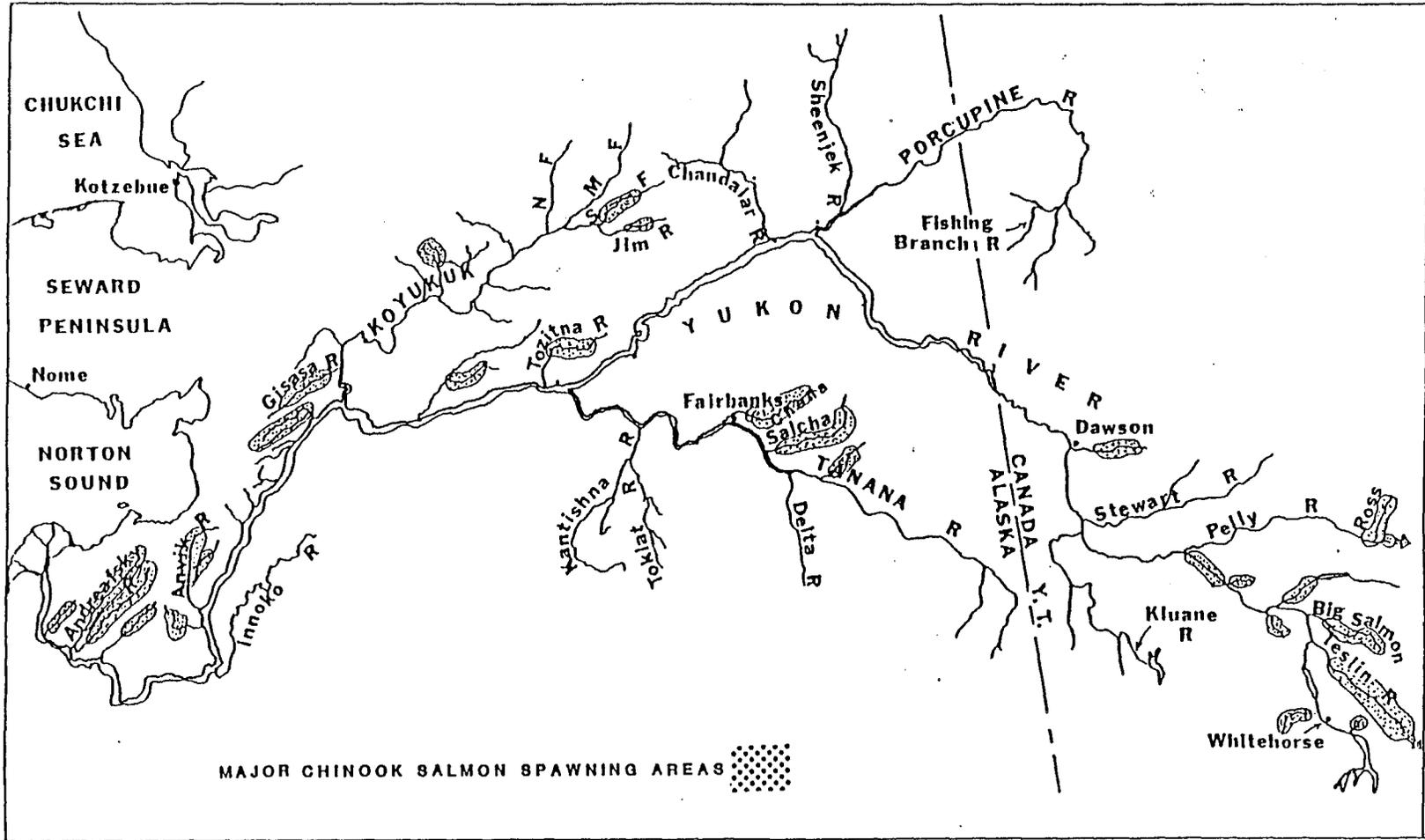


Figure 3. Chinook spawning areas in the Yukon River drainage.

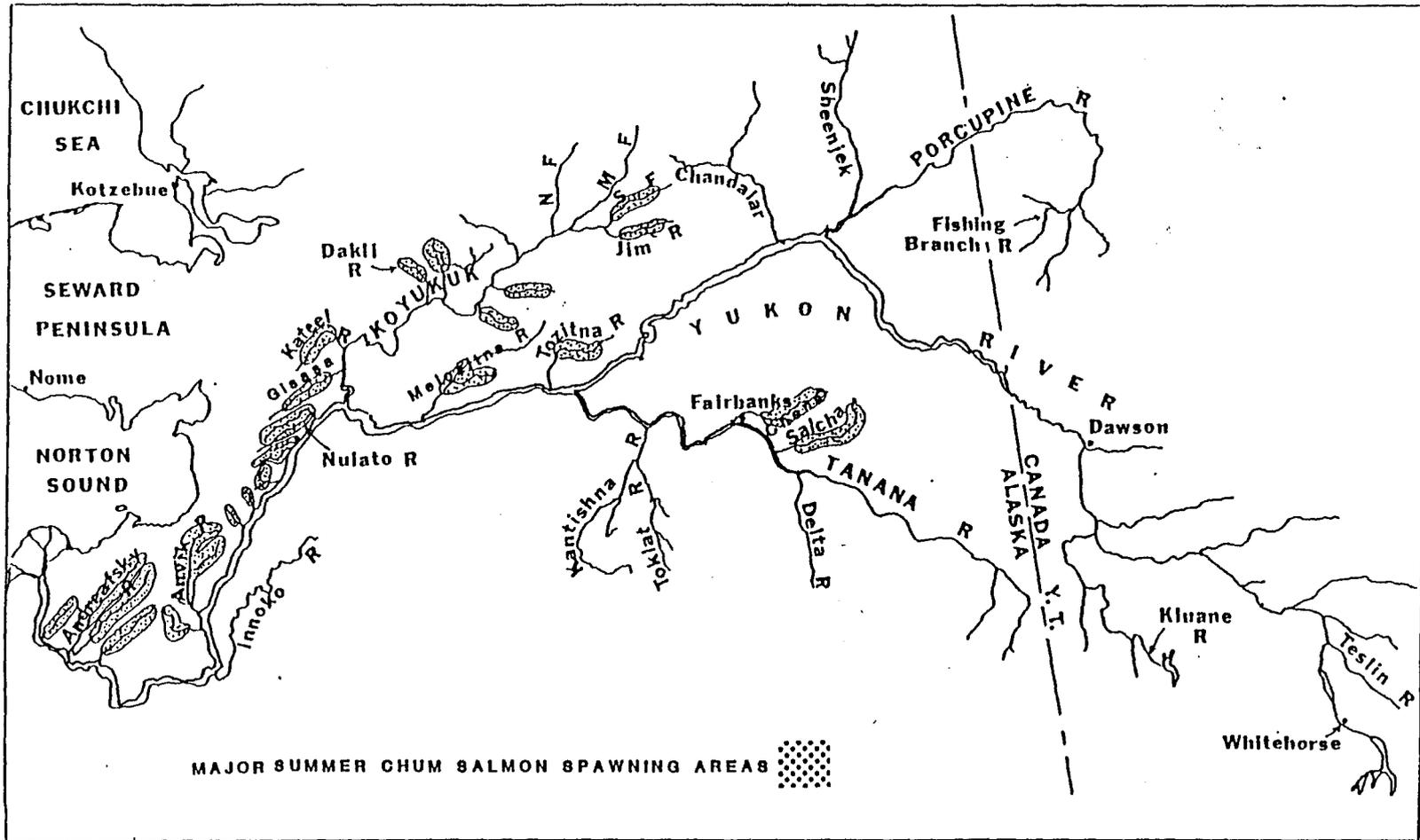


Figure 4. Summer chum spawning areas in the Yukon River drainage.

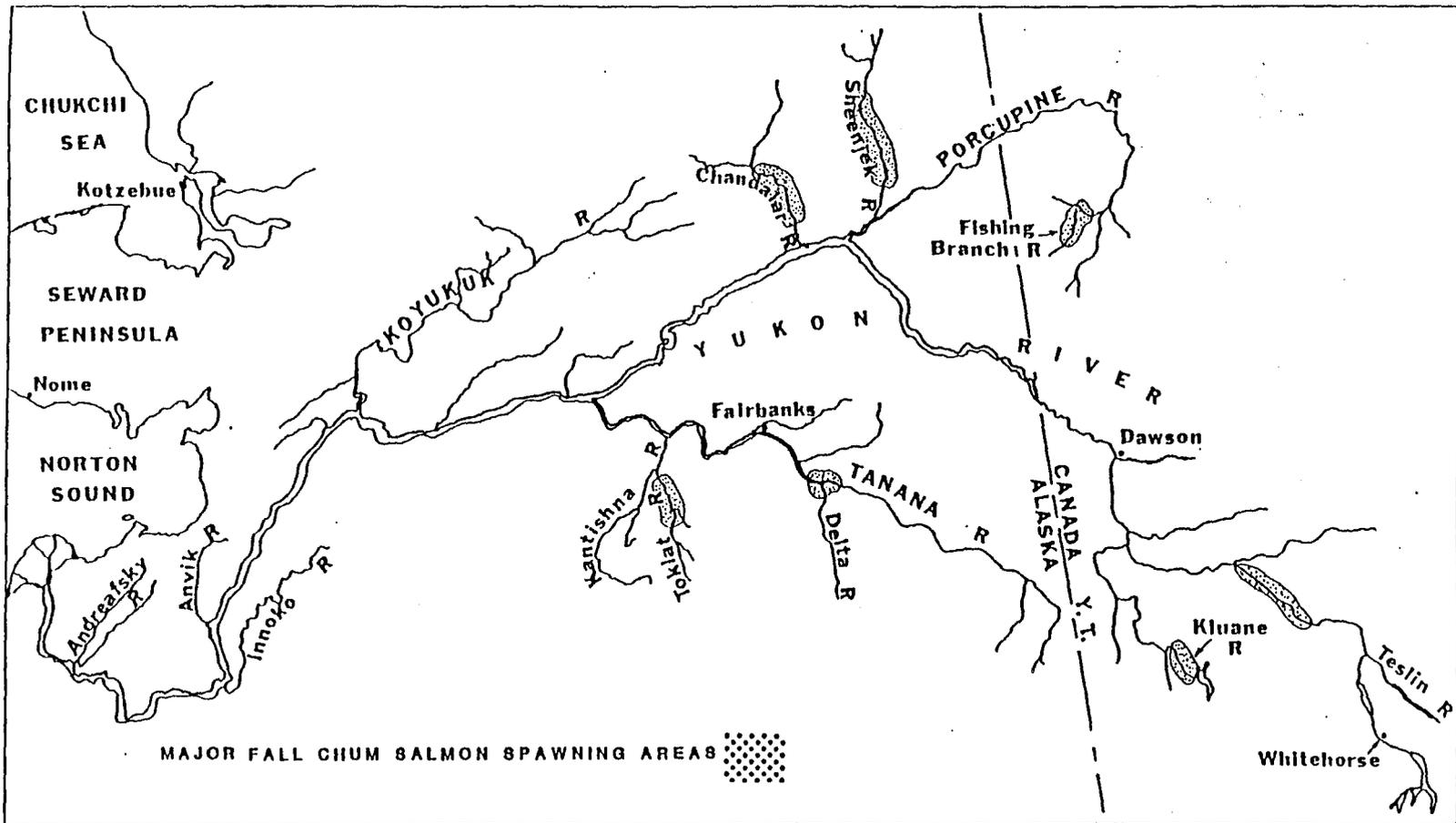


Figure 5. Fall chum spawning areas in the Yukon River drainage.

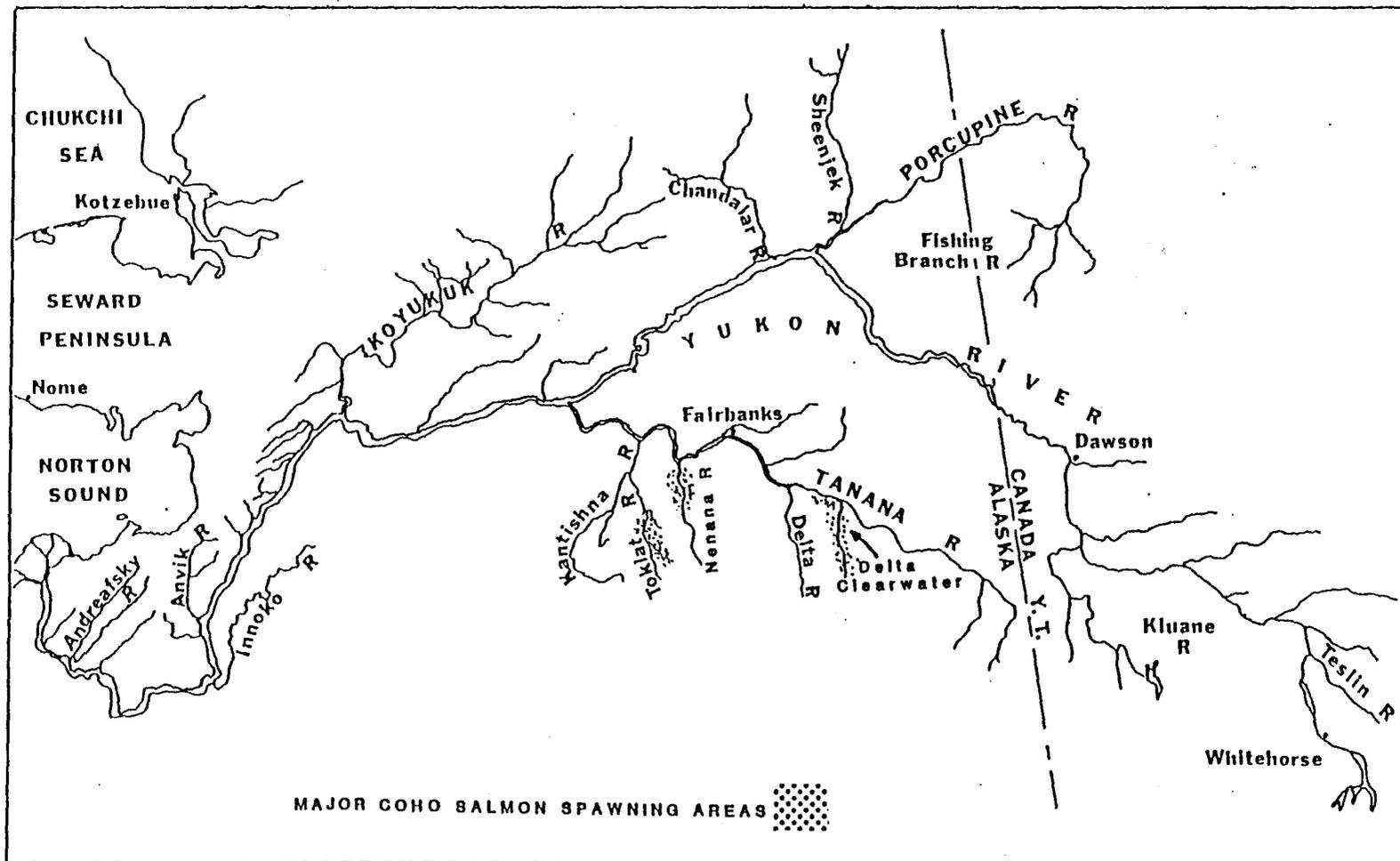


Figure 6. Coho spawning areas in the Yukon River drainage.

**APPENDIX**



Appendix A.1. Yukon River District 1 commercial salmon catch by period, 1989. Periods 2, 3, and 4 were unrestricted and periods 1, 5, 6, etc. were restricted.

| Period No.               | Period Dates | Hours Fished | No. of Fishermen | Period Catch and Catch Per Unit Effort <sup>a</sup> |      |        |      |         |       | Cumulative Catch and Catch Per Unit Effort <sup>a</sup> |      |        |      |         |       |
|--------------------------|--------------|--------------|------------------|---|------|--------|------|---------|-------|---|------|--------|------|---------|-------|
|                          |              |              |                  | Chinook   | CPUE | Coho   | CPUE | Chum    | CPUE  | Chinook   | CPUE | Coho   | CPUE | Chum    | CPUE  |
| 2                        | 6/15-6/16    | 12           | 414              | 18,944  | 3.81 | 0      | 0.00 | 51,824  | 10.43 | 18,944  | 3.81 | 0      | 0.00 | 51,824  | 10.43 |
| 3                        | 6/15-6/16    | 12           | 396              | 10,764  | 2.27 | 0      | 0.00 | 13,502  | 2.84  | 29,708  | 3.06 | 0      | 0.00 | 65,326  | 6.72  |
| 4                        | 6/22         | 6            | 379              | 2,472   | 1.09 | 0      | 0.00 | 9,543   | 4.20  | 32,180  | 2.68 | 0      | 0.00 | 74,869  | 6.24  |
| Subtotal <sup>b</sup>    |              | 30           | 434              | 32,180  | 2.68 | 0      | 0.00 | 74,869  | 6.24  |   |      |        |      |         |       |
| 1                        | 6/13-6/14    | 12           | 380              | 6,882   | 1.51 | 0      | 0.00 | 92,263  | 20.23 | 6,882   | 1.51 | 0      | 0.00 | 167,132 | 10.10 |
| 5                        | 6/24-6/25    | 12           | 400              | 7,677   | 1.60 | 0      | 0.00 | 120,735 | 25.15 | 14,559  | 1.56 | 0      | 0.00 | 287,867 | 13.48 |
| 6                        | 6/26-6/27    | 12           | 391              | 6,667   | 1.42 | 0      | 0.00 | 98,629  | 21.02 | 21,226  | 1.51 | 0      | 0.00 | 386,496 | 14.84 |
| 7                        | 6/29-6/30    | 12           | 396              | 2,822   | 0.59 | 0      | 0.00 | 64,914  | 13.66 | 24,048  | 1.28 | 0      | 0.00 | 451,410 | 14.66 |
| 8                        | 7/03-7/04    | 12           | 260              | 949   | 0.30 | 1      | 0.00 | 12,312  | 3.95  | 24,997  | 1.14 | 1      | 0.00 | 463,722 | 13.67 |
| 9                        | 7/06-7/07    | 12           | 341              | 1,147   | 0.28 | 1      | 0.00 | 45,212  | 11.05 | 26,144  | 1.00 | 2      | 0.00 | 508,934 | 13.39 |
| 10                       | 7/10-7/11    | 12           | 289              | 474   | 0.14 | 0      | 0.00 | 22,214  | 6.41  | 26,618  | 0.90 | 2      | 0.00 | 531,148 | 12.81 |
| 11                       | 7/13-7/14    | 12           | 263              | 247   | 0.08 | 0      | 0.00 | 16,483  | 5.22  | 26,865  | 0.82 | 2      | 0.00 | 547,631 | 12.27 |
| Subtotal <sup>c</sup>    |              | 126          | 445              | 26,865  | 0.82 | 2      | 0.00 | 547,631 | 12.27 |   |      |        |      |         |       |
| 12                       | 7/28-7/29    | 12/6         | 155              | 37  | 0.03 | 17     | 0.01 | 4,381   | 3.67  | 26,902  | 0.80 | 19     | 0.00 | 4,381   | 3.67  |
| 13                       | 7/31-8/01    | 12/6         | 50               | 11  | 0.03 | 20     | 0.05 | 155     | 0.37  | 26,913  | 0.79 | 39     | 0.00 | 4,536   | 2.82  |
| 14                       | 8/03-8/04    | 12/6         | 266              | 31  | 0.01 | 3,236  | 1.47 | 48,848  | 22.24 | 26,944  | 0.74 | 3,275  | 1.49 | 53,384  | 14.03 |
| 15                       | 8/07-8/08    | 12/6         | 197              | 12  | 0.01 | 1,466  | 0.91 | 3,811   | 2.36  | 26,956  | 0.71 | 4,741  | 1.24 | 57,195  | 10.56 |
| 16                       | 8/10-8/11    | 12/6         | 173              | 3   | 0.00 | 1,935  | 1.40 | 2,543   | 1.84  | 26,959  | 0.68 | 6,676  | 1.29 | 59,738  | 8.79  |
| 17                       | 8/14-8/15    | 16/9         | 239              | 7   | 0.00 | 9,094  | 3.33 | 14,946  | 5.47  | 26,966  | 0.64 | 15,770 | 1.99 | 74,684  | 7.84  |
| 18                       | 8/21-8/22    | 16/9         | 208              | 5   | 0.00 | 6,176  | 2.46 | 2,921   | 1.16  | 26,971  | 0.60 | 21,946 | 2.10 | 77,605  | 6.45  |
| 19                       | 8/24-8/25    | 16/9         | 145              | 2   | 0.00 | 2,726  | 1.66 | 271     | 0.16  | 26,973  | 0.58 | 24,672 | 2.04 | 77,876  | 5.69  |
| Subtotal <sup>d</sup>    |              | 108/57       | 322              | 108   | 0.79 | 24,670 | 2.04 | 77,876  | 5.69  |   |      |        |      |         |       |
| Grand Total <sup>e</sup> |              | 264/213      | 452              | 59,153  |      | 24,672 |      | 625,507 |       |   |      |        |      |         |       |

<sup>a</sup> Catches reported in numbers of fish sold in the round. Cumulative CPUE is calculated separately by gear type, i. e., restricted or unrestricted.

<sup>b</sup> Chinook periods; no mesh size restrictions.

<sup>c</sup> Summer chum periods (6/13 to 7/15). Mesh size restricted to 6 in (15.2 cm) or less during periods 1 and 5-11. Chinook subtotal represents catch during restricted mesh size fishing periods.

<sup>d</sup> Fall chum periods (7/16 to 8/25). Mesh size restricted to 6 in (15.2 cm) or less. The district was divided into a set net (12 or 16 hour) area and a drift net (6 or 9 hour) area.

<sup>e</sup> Illegal catch consisting of 3,211 chinook and 150 summer chum salmon is not included.

Appendix A.2. Yukon River District 2 commercial salmon catch by period, 1989.

| Period No.            | Period Dates | Hours Fished | No. of Fishermen | Period Catch and Catch Per Unit Effort <sup>a</sup> |      |        |       |         |       | Cumulative Catch and Catch Per Unit Effort <sup>a</sup> |      |        |      |         |       |
|-----------------------|--------------|--------------|------------------|---|------|--------|-------|---------|-------|---|------|--------|------|---------|-------|
|                       |              |              |                  | Chinook   | CPUE | Coho   | CPUE  | Chum    | CPUE  | Chinook   | CPUE | Coho   | CPUE | Chum    | CPUE  |
| 2                     | 6/18-6/19    | 12           | 235              | 10,988  | 3.90 | 0      | 0.00  | 19,972  | 7.08  | 10,988  | 3.90 | 0      | 0.00 | 19,972  | 7.08  |
| 3                     | 6/21-6/22    | 12           | 230              | 7,515   | 2.72 | 0      | 0.00  | 25,347  | 9.18  | 18,503  | 3.32 | 0      | 0.00 | 45,319  | 8.12  |
| 4                     | 6/25         | 6            | 218              | 2,991   | 2.29 | 0      | 0.00  | 6,172   | 4.72  | 21,494  | 3.12 | 0      | 0.00 | 51,491  | 7.48  |
| Subtotal <sup>b</sup> |              | 30           | 236              | 21,494  | 3.12 | 0      | 0.00  | 51,491  | 7.47  |   |      |        |      |         |       |
| 1                     | 6/15         | 12           | 220              | 2,463   | 0.93 | 0      | 0.00  | 51,715  | 19.59 | 2,463   | 0.93 | 0      | 0.00 | 103,206 | 10.83 |
| 5                     | 6/27         | 12           | 218              | 3,243   | 1.24 | 0      | 0.00  | 71,315  | 27.26 | 5,706   | 1.09 | 0      | 0.00 | 174,521 | 14.37 |
| 6                     | 6/29         | 6            | 203              | 2,189   | 1.80 | 0      | 0.00  | 47,130  | 38.69 | 7,895   | 1.22 | 0      | 0.00 | 221,651 | 16.59 |
| 7                     | 7/02-7/03    | 12           | 215              | 1,714   | 0.66 | 0      | 0.00  | 57,691  | 22.36 | 9,609   | 1.06 | 0      | 0.00 | 279,342 | 17.52 |
| 8                     | 7/05-7/06    | 12           | 154              | 887   | 0.48 | 0      | 0.00  | 25,605  | 13.86 | 10,496  | 0.96 | 0      | 0.00 | 304,947 | 17.14 |
| 9                     | 7/09-7/10    | 12           | 196              | 742   | 0.32 | 1      | 0.00  | 26,897  | 11.44 | 11,238  | 0.85 | 1      | 0.00 | 331,844 | 16.48 |
| 10                    | 7/12-7/13    | 12           | 181              | 445   | 0.20 | 4      | 0.00  | 12,118  | 5.58  | 11,683  | 0.76 | 5      | 0.00 | 343,962 | 15.41 |
| Subtotal <sup>c</sup> |              | 108          | 243              | 11,683  | 0.79 | 5      | 0.00  | 343,962 | 15.84 |   |      |        |      |         |       |
| 11                    | 7/30         | 6            | 127              | 14  | 0.02 | 37     | 0.05  | 6,874   | 9.02  | 11,697  | 0.72 | 42     | 0.00 | 6,874   | 9.02  |
| 12                    | 8/02         | 6            | 37               | 2   | 0.01 | 26     | 0.12  | 400     | 1.80  | 11,699  | 0.71 | 68     | 0.00 | 7,274   | 7.39  |
| 13                    | 8/06         | 6            | 180              | 6   | 0.01 | 740    | 0.69  | 18,032  | 16.70 | 11,705  | 0.67 | 808    | 0.75 | 25,306  | 12.26 |
| 14                    | 8/09         | 6            | 177              | 8   | 0.01 | 2,108  | 1.98  | 14,679  | 13.82 | 11,713  | 0.63 | 2,916  | 1.36 | 39,985  | 12.79 |
| 15                    | 8/13         | 9            | 139              | 12  | 0.01 | 1,324  | 1.06  | 2,099   | 1.68  | 11,725  | 0.59 | 4,240  | 1.25 | 42,084  | 9.61  |
| 16                    | 8/16         | 9            | 185              | 3   | 0.00 | 5,915  | 3.55  | 20,903  | 12.55 | 11,728  | 0.55 | 10,155 | 2.01 | 62,987  | 10.42 |
| 17                    | 8/20         | 9            | 193              | 1   | 0.00 | 8,715  | 5.02  | 21,931  | 12.63 | 11,729  | 0.51 | 18,870 | 2.78 | 84,918  | 10.92 |
| 18                    | 8/23         | 6            | 184              | 2   | 0.00 | 13,726 | 12.43 | 9,603   | 8.70  | 11,731  | 0.48 | 32,596 | 4.13 | 94,521  | 10.64 |
| 19                    | 8/27         | 9            | 164              | 0   | 0.00 | 5,926  | 4.01  | 3,385   | 2.29  | 11,731  | 0.45 | 38,522 | 4.11 | 97,906  | 9.45  |
| Subtotal <sup>d</sup> |              | 66           | 229              | 48  | 0.47 | 38,517 | 4.11  | 97,906  | 9.51  |   |      |        |      |         |       |
| Grand Total           |              | 174          | 257              | 33,225  |      | 38,522 |       | 441,868 |       |   |      |        |      |         |       |

<sup>a</sup> Catches reported in numbers of fish sold in the round. Cumulative CPUE is calculated separately by gear type, i. e., restricted or unrestricted.

<sup>b</sup> Chinook periods; no mesh size restrictions.

<sup>c</sup> Summer chum periods (6/15 to 7/15). Mesh size restricted to 6 in (15.2 cm) during periods 1 and 5-10. Chinook subtotal represents catch during restricted mesh size fishing periods.

<sup>d</sup> Fall chum periods (7/16 to 8/27). Mesh size restricted to 6 in (15.2 cm).

Appendix A.3. Yukon River District 3 commercial salmon catch by period, 1989.

| Period No.            | Period Dates | Hours Fished | No. of Fishermen | Period Catch and Catch Per Unit Effort <sup>a</sup> |      |       |       |        |       | Cumulative Catch and Catch Per Unit Effort <sup>a</sup> |      |       |      |        |       |
|-----------------------|--------------|--------------|------------------|---|------|-------|-------|--------|-------|---|------|-------|------|--------|-------|
|                       |              |              |                  | Chinook   | CPUE | Coho  | CPUE  | Chum   | CPUE  | Chinook   | CPUE | Coho  | CPUE | Chum   | CPUE  |
| 1                     | 6/21-6/22    | 12           | 11               | 563   | 4.27 | 0     | 0.00  | 670    | 5.08  | 563   | 4.27 | 0     | 0.00 | 670    | 5.08  |
| 2                     | 6/25-6/26    | 12           | 14               | 441   | 2.63 | 0     | 0.00  | 577    | 3.43  | 1,004   | 3.35 | 0     | 0.00 | 1,247  | 4.16  |
| 3                     | 6/28-6/29    | 12           | 12               | 271   | 1.88 | 0     | 0.00  | 327    | 2.27  | 1,275   | 2.87 | 0     | 0.00 | 1,574  | 3.55  |
| Subtotal <sup>b</sup> |              | 36           | 16               | 1,275   | 2.91 | 0     | 0.00  | 1,574  | 3.64  |   |      |       |      |        |       |
| 4                     | 7/02-7/03    | 12           | 12               | 193   | 1.34 | 0     | 0.00  | 3,021  | 20.98 | 193   | 1.34 | 0     | 0.00 | 4,595  | 7.81  |
| 5                     | 7/05-7/06    | 12           | 7                | 105   | 1.25 | 0     | 0.00  | 1,081  | 12.87 | 298   | 1.31 | 0     | 0.00 | 5,676  | 8.45  |
| 6                     | 7/09-7/10    | 12           | 9                | 72  | 0.67 | 0     | 0.00  | 1,902  | 17.61 | 370   | 1.10 | 0     | 0.00 | 7,578  | 9.72  |
| Subtotal <sup>c</sup> |              | 72           | 16               | 370   | 1.12 | 0     | 0.00  | 7,578  | 9.72  |   |      |       |      |        |       |
| 7                     | 7/30         | 6            | 4                | 0   | 0.00 | 1     | 0.04  | 535    | 22.29 | 370   | 1.03 | 1     | 0.04 | 535    | 22.29 |
| 8                     | 8/02         | 6            | 4                | 0   | 0.00 | 2     | 0.08  | 626    | 26.08 | 370   | 0.96 | 3     | 0.06 | 1,161  | 24.19 |
| 9                     | 8/06         | 6            | 0                | 0   | 0.00 | 0     | 0.00  | 0      | 0.00  | 370   | 0.96 | 3     | 0.06 | 1,161  | 24.19 |
| 10                    | 8/09         | 6            | 9                | 0   | 0.00 | 20    | 0.37  | 2,120  | 39.26 | 370   | 0.84 | 23    | 0.23 | 3,281  | 32.17 |
| 11                    | 8/13         | 9            | 11               | 0   | 0.00 | 339   | 3.42  | 1,758  | 17.76 | 370   | 0.69 | 362   | 1.80 | 5,039  | 25.07 |
| 12                    | 8/16         | 9            | 9                | 0   | 0.00 | 163   | 2.01  | 465    | 5.74  | 370   | 0.60 | 525   | 1.86 | 5,504  | 19.52 |
| 13                    | 8/20         | 9            | 16               | 0   | 0.00 | 547   | 3.80  | 2,792  | 19.39 | 370   | 0.49 | 1,072 | 2.52 | 8,296  | 19.47 |
| 14                    | 8/23         | 6            | 15               | 0   | 0.00 | 571   | 6.34  | 4,664  | 51.82 | 370   | 0.43 | 1,643 | 3.18 | 12,960 | 25.12 |
| 15                    | 8/27         | 9            | 16               | 0   | 0.00 | 2,345 | 16.28 | 2,372  | 16.47 | 370   | 0.37 | 3,988 | 6.04 | 15,332 | 23.23 |
| Subtotal <sup>d</sup> |              | 66           | 22               | 0   | 0.37 | 3,988 | 6.04  | 15,332 | 23.23 |   |      |       |      |        |       |
| Season Total          |              | 138          | 23               | 1,645   |      | 3,988 |       | 24,484 |       |   |      |       |      |        |       |

<sup>a</sup> Catches reported in numbers of fish sold in the round. Cumulative CPUE is calculated separately by gear type, i. e., restricted or unrestricted.

<sup>b</sup> Chinook periods; no mesh size restrictions.

<sup>c</sup> Summer chum periods (6/21 to 7/15). Mesh size restricted to 6 in (15.2 cm) or less after 6/29. Chinook subtotal represents catch during restricted mesh size fishing periods

<sup>d</sup> Fall chum periods (7/16 to 8/27). Mesh size restricted to 6 in (15.2 cm) or less.

Appendix A.4. Yukon River District 4 commercial salmon catch by period, 1989.

| Period         | Dates     | Hours Fished | Number of Fishermen | Chinook | Summer Chum <sup>a</sup>   |                            |                              |           | Fall Chum <sup>b</sup>     |                            |        | Coho |
|----------------|-----------|--------------|---------------------|---------|----------------------------|----------------------------|------------------------------|-----------|----------------------------|----------------------------|--------|------|
|                |           |              |                     |         | Sold in Round <sup>c</sup> | Females Converted from Roe | Converted Males <sup>d</sup> | Total     | Sold in Round <sup>c</sup> | Females Converted from Roe | Total  |      |
| Summer Season: |           |              |                     |         |                            |                            |                              |           |                            |                            |        |      |
| 1              | 6/21-6/23 | 48           | 19                  | 0       | 0                          | 7,941                      | 9,149                        | 17,090    |                            |                            |        |      |
| 2              | 6/25-6/27 | 48           | 65                  | 104     | 3,671                      | 20,477                     | 34,594                       | 58,742    |                            |                            |        |      |
| 3              | 6/28-6/30 | 48           | 83                  | 261     | 4,690                      | 36,814                     | 24,835                       | 66,339    |                            |                            |        |      |
| 4              | 7/02-7/04 | 48           | 85                  | 521     | 4,033                      | 32,957                     | 18,063                       | 55,053    |                            |                            |        |      |
| 5              | 7/05-7/07 | 48           | 79                  | 554     | 1,928                      | 40,629                     | 22,609                       | 65,166    |                            |                            |        |      |
| 6              | 7/09-7/11 | 48           | 87                  | 613     | 1,539                      | 48,983                     | 17,209                       | 67,731    |                            |                            |        |      |
| 7              | 7/12-7/14 | 48           | 90                  | 381     | 985                        | 45,238                     | 17,963                       | 64,186    |                            |                            |        |      |
| 8              | 7/16-7/18 | 48           | 85                  | 333     | 688                        | 37,239                     | 17,497                       | 55,424    |                            |                            |        |      |
| 9              | 7/19-7/21 | 48           | 59                  | 4       | 280                        | 20,746                     | 6,362                        | 27,388    |                            |                            |        |      |
| 10             | 7/23-7/25 | 48           | 69                  | 0       | 172                        | 13,664                     | 4,108                        | 17,944    |                            |                            |        |      |
| 11             | 7/26-7/28 | 48           | 58                  | 8       | 225                        | 8,212                      | 2,351                        | 10,788    |                            |                            |        |      |
| 12             | 7/30-8/01 | 48           | 35                  | 9       | 343                        | 3,322                      | 728                          | 4,393     |                            |                            |        |      |
| Subtotal       |           | 576          | 98                  | 2,788   | 18,554                     | 316,222                    | 175,468                      | 510,244 * |                            |                            |        |      |
| Fall Season:   |           |              |                     |         |                            |                            |                              |           |                            |                            |        |      |
| 13             | 8/06-8/08 | 48           | 6                   | 2       |                            |                            |                              | 594       | 0                          | 594                        | 0      |      |
| 14             | 8/09-8/11 | 48           | 8                   | 0       |                            |                            |                              | 985       | 0                          | 985                        | 0      |      |
| 15             | 8/13-8/15 | 48           | 5                   | 0       |                            |                            |                              | 734       | 0                          | 734                        | 0      |      |
| 16             | 8/16-8/18 | 48           | 5                   | 0       |                            |                            |                              | 1,652     | 0                          | 1,652                      | 0      |      |
| 17             | 8/20-8/22 | 48           | 15                  | 0       |                            |                            |                              | 3,412     | 240                        | 3,652                      | 0      |      |
| 18             | 8/23-8/25 | 48           | 14                  | 0       |                            |                            |                              | 1,744     | 135                        | 1,879                      | 0      |      |
| 19             | 8/27-8/29 | 48           | 14                  | 0       |                            |                            |                              | 2,004     | 772                        | 2,776                      | 0      |      |
| 20             | 8/30-9/01 | 48           | 9                   | 0       |                            |                            |                              | 553       | 752                        | 1,305                      | 3      |      |
| 21             | 9/03-9/05 | 48           | 6                   | 0       |                            |                            |                              | 69        | 1,204                      | 1,273                      | 0      |      |
| 22             | 9/06-9/08 | 48           | 5                   | 0       |                            |                            |                              | 29        | 304                        | 333                        | 0      |      |
| Subtotal       |           | 480          | 20                  | 2       |                            |                            |                              | 11,776    | 3,407                      | 15,183                     | 3      |      |
| Total          |           | 1,056        | 99                  | 2,790   | 18,554                     | 316,222                    | 175,468                      | 510,244 * | 11,776                     | 3,407                      | 15,183 | 3    |

-Continued-

<sup>a</sup> Converted fish are from measured roe weights (0.9 lbs per female) and proportions of females (0.6197 female) from the District 4 roe study.

<sup>b</sup> This total is all fish sold in round, females converted from roe weights (1.0 lbs roe per female), and females from observed sex ratio (0.6246 percent female).  
The converted females were later determined to have been counted in the subsistence catch also.

<sup>c</sup> Chums sold in the round are assumed to be males.

<sup>d</sup> Estimated harvest of males caught incidental to roe fishery, but not sold.

<sup>e</sup> Commercial catch was determined to be 429,884 as 80,360 fish were counted in the subsistence catch.

Appendix A.5. Yukon River District 5 commercial salmon catch by period, 1989.

| Period       | Dates     | Hours<br>Fished | Number of<br>Fishermen | Chinook | Summer Chum      |                                  |                                 |                    | Fall Chum        |                                  |                                 |                    | Coho |
|--------------|-----------|-----------------|------------------------|---------|------------------|----------------------------------|---------------------------------|--------------------|------------------|----------------------------------|---------------------------------|--------------------|------|
|              |           |                 |                        |         | Sold in<br>Round | Females<br>Converted<br>from Roe | Converted<br>Males <sup>a</sup> | Total <sup>b</sup> | Sold in<br>Round | Females<br>Converted<br>from Roe | Converted<br>Males <sup>a</sup> | Total <sup>b</sup> |      |
| 1            | 6/23-6/25 | 48              | 1                      | 20      | 0                | 0                                | 0                               | 0                  |                  |                                  |                                 |                    |      |
| 2            | 6/27-6/29 | 48              | 15                     | 517     | 0                | 92                               | 15                              | 92                 |                  |                                  |                                 |                    |      |
| 3            | 6/30-7/02 | 48              | 23                     | 1,059   | 25               | 125                              | 20                              | 150                |                  |                                  |                                 |                    |      |
| 4            | 7/04-7/06 | 48              | 26                     | 1,361   | 88               | 199                              | 32                              | 287                |                  |                                  |                                 |                    |      |
| 5            | 7/07-7/09 | 48              | 4                      | 128     | 6                | 0                                | 0                               | 6                  |                  |                                  |                                 |                    |      |
| 6            | 7/11-7/13 | 48              | 4                      | 201     | 35               | 0                                | 0                               | 35                 |                  |                                  |                                 |                    |      |
| Subtotal     |           | 288             | 32                     | 3,286   | 154              | 416                              | 67                              | 570                |                  |                                  |                                 |                    |      |
| 7            | 8/06-8/08 | 24              | 16                     | 0       |                  |                                  |                                 |                    | 3,397            | 134                              | 89                              | 3,531              | 0    |
| 8            | 8/09-8/11 | 24              | 12                     | 0       |                  |                                  |                                 |                    | 1,978            | 280                              | 187                             | 2,258              | 0    |
| 9            | 8/13-8/15 | 24              | 17                     | 0       |                  |                                  |                                 |                    | 7,687            | 1,334                            | 891                             | 9,021              | 0    |
| 10           | 8/16-8/18 | 24              | 15                     | 0       |                  |                                  |                                 |                    | 2,234            | 1,848                            | 1,234                           | 4,082              | 84   |
| 11           | 8/20-8/22 | 48              | 3                      | 0       |                  |                                  |                                 |                    | 1,056            | 121                              | 81                              | 1,177              | 0    |
| 12           | 8/23-8/25 | 48              | 4                      | 0       |                  |                                  |                                 |                    | 1,863            | 272                              | 182                             | 2,135              | 0    |
| Subtotal     |           | 192             | 24                     | 0       |                  |                                  |                                 |                    | 18,215           | 3,989                            | 2,664                           | 22,204             | 84   |
| Season Total |           | 480             | 38                     | 3,286   | 154              | 416                              | 67                              | 570                | 18,215           | 3,989                            | 2,664                           | 22,204             | 84   |

<sup>a</sup> Converted males are thought to be reported as subsistence caught fish and are not included in commercial harvest estimate.

<sup>b</sup> This total is all fish sold in round, females converted from roe weight (summer chum: 0.9 lbs/female; fall chum 1.0 lbs/female) and females from observed sex ratio (.6246 percent female) in the District 4 roe study. The converted females were later determined to be counted in the subsistence catch also.

Appendix A.6. Yukon River District 6 commercial salmon catch by period, 1989.

| Period          | Dates     | Hours Fished | Number of Fishermen | Chinook | Summer Chum   |                            |                              |                    | Fall Chum     |                            |                              |                    | Coho   |
|-----------------|-----------|--------------|---------------------|---------|---------------|----------------------------|------------------------------|--------------------|---------------|----------------------------|------------------------------|--------------------|--------|
|                 |           |              |                     |         | Sold in Round | Females Converted from Roe | Converted Males <sup>a</sup> | Total <sup>b</sup> | Sold in Round | Females Converted from Roe | Converted Males <sup>c</sup> | Total <sup>b</sup> |        |
| 1               | 6/21-6/23 | 42           | 5                   | 28      | 727           | 35                         | 21                           | 762                |               |                            |                              |                    | 0      |
| 2               | 6/25-6/27 | 42           | 12                  | 31      | 1,955         | 400                        | 239                          | 2,355              |               |                            |                              |                    | 0      |
| 3               | 6/28-6/30 | 42           | 23                  | 217     | 4,815         | 260                        | 156                          | 5,075              |               |                            |                              |                    | 0      |
| 4               | 7/02-7/04 | 42           | 22                  | 212     | 3,298         | 319                        | 191                          | 3,617              |               |                            |                              |                    | 0      |
| 5               | 7/05-7/07 | 42           | 25                  | 602     | 5,419         | 1105                       | 661                          | 6,524              |               |                            |                              |                    | 0      |
| 6               | 7/09-7/11 | 42           | 25                  | 345     | 6,462         | 846                        | 506                          | 7,308              |               |                            |                              |                    | 0      |
| 7               | 7/12-7/14 | 42           | 28                  | 170     | 7,128         | 789                        | 472                          | 7,917              |               |                            |                              |                    | 0      |
| 8               | 7/16-7/18 | 42           | 25                  | 83      | 5,323         | 794                        | 475                          | 6,117              |               |                            |                              |                    | 0      |
| 9               | 7/19-7/21 | 42           | 22                  | 31      | 3,623         | 202                        | 121                          | 3,825              |               |                            |                              |                    | 0      |
| 10              | 7/23-7/25 | 42           | 21                  | 22      | 3,365         | 688                        | 411                          | 4,053              |               |                            |                              |                    | 5      |
| Subtotal        |           | 420          | 29                  | 1,741   | 42,115        | 5,436                      | 3,253                        | 47,551             |               |                            |                              |                    | 5      |
| 11              | 8/06-8/08 | 24           | 21                  |         |               |                            |                              |                    | 5,600         | 369                        |                              | 5,969              | 515    |
| 12              | 8/09-8/11 | 42           | 23                  |         |               |                            |                              |                    | 16,760        | 1,582                      |                              | 18,342             | 1,828  |
| 13              | 8/13-8/15 | 42           | 26                  |         |               |                            |                              |                    | 17,645        | 2,557                      |                              | 20,202             | 6,995  |
| 14              | 8/16-8/18 | 42           | 23                  |         |               |                            |                              |                    | 9,085         | 2,845                      |                              | 11,930             | 6,741  |
| Subtotal        |           | 150          | 93                  |         |               |                            |                              |                    | 49,090        | 7,353                      |                              | 56,443             | 16,079 |
| Test Fish Sales |           |              |                     | 440     | 6,267         |                            |                              | 6,267              | 16,984        |                            |                              | 16,984             | 2,140  |
| Season Total    |           | 570          | 122                 | 2,181   | 48,382        | 5,436                      | 3,253                        | 53,818             | 66,074        | 7,353                      |                              | 73,427             | 18,224 |

<sup>a</sup> Converted males are thought to be reported as sold in the round or as subsistence caught fish and are not included in commercial harvest estimate.

<sup>b</sup> This total is all fish sold in round plus females converted from roe weight (summer chum: 0.9 lbs/female; fall chum: 1.0 lbs/female) and females from observed sex ratio (.6246 percent female) in the District 4 roe study. The converted females were later determined to be counted also in the subsistence catch.

<sup>c</sup> Estimates not made since males assumed to have been sold in the round or retained for subsistence use.

Appendix A.7. Yukon Territory, Canada, commercial salmon catch by week, 1989.

| Week                            | Number of Fishermen | Hours            |                  | Chinook      |       | Fall Chum     |        |
|---------------------------------|---------------------|------------------|------------------|--------------|-------|---------------|--------|
|                                 |                     | Below Sixty Mile | Above Sixty Mile | Weekly       | Cum.  | Weekly        | Cum.   |
| 7/10-7/16                       | 11                  | 48               | 72               | 339          | 339   |               |        |
| 7/17-7/23                       | 15                  | 48               | 72               | 1,582        | 1,921 | 4             | 4      |
| 7/24-7/30                       | 18                  | 96               | 120              | 2,680        | 4,601 | 8             | 12     |
| 7/31-8/06                       | 18                  | 96               | 120              | 2,964        | 7,565 | 11            | 23     |
| 8/07-8/13                       | 16                  | 96               | 120              | 1,139        | 8,704 | 21            | 44     |
| 8/14-8/20                       | 17                  | 96               | 120              | 695          | 9,399 | 30            | 74     |
| 8/21-8/27                       | 7                   | 72               | 96               | 29           | 9,428 | 530           | 604    |
| 8/28-9/03                       | 12                  | 72               | 96               | 6            | 9,434 | 2,005         | 2,609  |
| 9/04-9/10                       | 14                  | 96               | 120              | 2            | 9,436 | 2,025         | 4,634  |
| 9/11-9/17                       | 14                  | 96               | 120              | 2            | 9,438 | 4,319         | 8,953  |
| 9/18-9/24                       | 13                  | 96               | 120              | 1            | 9,439 | 4,173         | 13,126 |
| 9/25-10/01                      | 9                   | 72               | 96               |              |       | 2,706         | 15,832 |
| 10/02-10/08                     | 9                   | 48               | 72               |              |       | 980           | 16,812 |
| 10/09-10/15                     | 2                   | 48               | 72               |              |       | 102           | 16,914 |
| 10/16-10/22                     | 2                   | 48               | 72               |              |       | 35            | 16,949 |
| <b>Total by Week</b>            |                     | <b>1,128</b>     | <b>1,488</b>     | <b>9,439</b> |       | <b>16,949</b> |        |
| <b>Unkown Week <sup>a</sup></b> |                     |                  |                  | <b>350</b>   |       | <b>600</b>    |        |
| <b>Total Canada Catch</b>       |                     | <b>1,128</b>     | <b>1,488</b>     | <b>9,789</b> |       | <b>17,549</b> |        |

<sup>a</sup> Commercially caught and reported as totals although the week of capture is unknown and not included in the weekly totals.

Appendix B.1. Yukon River chinook commercial and subsistence gillnet (GN) and fish wheel (FW) catch by district, 1989.

| District                    | Commercial Catch |       |         | Subsistence Catch <sup>a</sup> |        |        | Total Catch |        |         |
|-----------------------------|------------------|-------|---------|--------------------------------|--------|--------|-------------|--------|---------|
|                             | GN               | FW    | Total   | GN                             | FW     | Total  | GN          | FW     | Total   |
| 1 <sup>b</sup>              | 62,364           | 0     | 62,364  | 4,888                          | 0      | 4,888  | 67,252      | 0      | 67,252  |
| 2                           | 33,225           | 0     | 33,225  | 7,147                          | 0      | 7,147  | 40,372      | 0      | 40,372  |
| 3                           | 1,645            | 0     | 1,645   | 4,746                          | 0      | 4,746  | 6,391       | 0      | 6,391   |
| 4A                          | 12               | 47    | 59      |                                |        |        | 12          | 47     | 59      |
| 4B                          | 195              | 501   | 696     |                                |        |        | 195         | 501    | 696     |
| 4C                          | 749              | 1,286 | 2,035   |                                |        |        | 749         | 1,286  | 2,035   |
| 4 Total <sup>c</sup>        | 956              | 1,834 | 2,790   | 3,120                          | 5,986  | 9,106  | 4,076       | 7,820  | 11,896  |
| 5A                          | 0                | 31    | 31      |                                |        |        | 0           | 31     | 31      |
| 5B                          | 710              | 701   | 1,411   |                                |        |        | 710         | 701    | 1,411   |
| 5C                          | 755              | 704   | 1,459   |                                |        |        | 755         | 704    | 1,459   |
| 5D                          | 206              | 179   | 385     |                                |        |        | 206         | 179    | 385     |
| 5 Total <sup>d</sup>        | 1,671            | 1,615 | 3,286   | 12,318                         | 11,906 | 24,224 | 13,989      | 13,521 | 27,510  |
| 6A                          | 201              | 608   | 809     |                                |        |        | 201         | 608    | 809     |
| 6B                          | 0                | 614   | 614     |                                |        |        | 0           | 614    | 614     |
| 6C                          | 67               | 251   | 318     |                                |        |        | 67          | 251    | 318     |
| ADF&G TF                    | 0                | 440   | 440     |                                |        |        | 0           | 440    | 440     |
| 6 Total <sup>e</sup>        | 268              | 1,913 | 2,181   | 430                            | 3,069  | 3,499  | 698         | 4,982  | 5,680   |
| Alaska Total <sup>a</sup>   | 100,129          | 5,362 | 105,491 | 32,650                         | 20,960 | 53,610 | 132,779     | 26,322 | 159,101 |
| Porcupine                   | 0                | 0     | 0       | 525                            | 0      | 525    | 525         | 0      | 525     |
| Mainstem Yukon              | 9,789            | 0     | 9,789   | 7,630                          | 0      | 7,630  | 17,419      | 0      | 17,419  |
| Canada Total <sup>f</sup>   | 9,789            | 0     | 9,789   | 8,155                          | 0      | 8,155  | 17,944      | 0      | 17,944  |
| Yukon R. Total <sup>a</sup> | 109,918          | 5,362 | 115,280 | 40,805                         | 20,960 | 61,765 | 150,723     | 26,322 | 177,045 |

<sup>a</sup> Includes illegal catch consisting of 3,211 chinook salmon taken in District 1.

<sup>b</sup> Catch by gear type for subsistence fisheries is estimated for District 4, 5, and 6 using the proportion caught by gear type in the commercial fisheries.

<sup>c</sup> Upper Koyukuk subsistence harvest (796) included.

<sup>d</sup> Chandalar/Black River subsistence harvests (88) included.

<sup>e</sup> District 6 sport harvest (1,053) was not included.

<sup>f</sup> Catch by gear type in Yukon Territory is not known, it is believed most fish are taken in gillnets. Canada subsistence catch includes domestic food fishery (400), sport fishery (300), and Indian food fishery (6,714).

Appendix B.2. Yukon River summer chum commercial and subsistence gillnet (GN) and fish wheel (FW) catch by district, 1989.

| District               | Commercial Related Harvest |        |         |                              |         |         |               |         |           | Reported Subsistence Catch <sup>a</sup> |        |         | Total <sup>b</sup> |         |           |
|------------------------|----------------------------|--------|---------|------------------------------|---------|---------|---------------|---------|-----------|---|--------|---------|--------------------|---------|-----------|
|                        | Fish Sold in the Round     |        |         | Fish Used for Roe Production |         |         | Total Removal |         |           |   |        |         |                    |         |           |
|                        | GN                         | FW     | Total   | GN                           | FW      | Total   | GN            | FW      | Total     | GN                                      | FW     | Total   | GN                 | FW      | Total     |
| 1                      | 547,781                    | 0      | 547,781 | 0                            | 0       | 0       | 547,781       | 0       | 547,781   | 52,844                                  | 0      | 52,844  | 600,625            | 0       | 600,625   |
| 2                      | 343,962                    | 0      | 343,962 | 0                            | 0       | 0       | 343,962       | 0       | 343,962   | 39,703                                  | 0      | 39,703  | 383,665            | 0       | 383,665   |
| 3                      | 7,578                      | 0      | 7,578   | 0                            | 0       | 0       | 7,578         | 0       | 7,578     | 3,982                                   | 0      | 3,982   | 11,560             | 0       | 11,560    |
| 4A                     | 635                        | 13,762 | 14,397  | 84,797                       | 383,869 | 468,666 | 85,432        | 397,631 | 483,063   | 8507                                    | 38621  | 47,128  | 93,939             | 436,252 | 530,191   |
| 4B                     | 408                        | 2,532  | 2,940   | 1,015                        | 16,193  | 17,208  | 1,423         | 18,725  | 20,148    | 142                                     | 1819   | 1,961   | 1,565              | 20,544  | 22,109    |
| 4C                     | 275                        | 942    | 1,217   | 1,793                        | 4,023   | 5,816   | 2,068         | 4,965   | 7,033     | 206                                     | 482    | 688     | 2,274              | 5,447   | 7,721     |
| 4 Total <sup>c</sup>   | 1,318                      | 17,236 | 18,554  | 87,605                       | 404,085 | 491,690 | 88,923        | 421,321 | 510,244   | 8,855                                   | 40,922 | 49,777  | 97,778             | 462,243 | 560,021   |
| 5A                     | 0                          | 0      | 0       | 0                            | 0       | 0       | 0             | 0       | 0         |   |        |         |                    |         |           |
| 5B                     | 9                          | 103    | 112     | 0                            | 204     | 204     | 9             | 307     | 316       |   |        |         |                    |         |           |
| 5C                     | 0                          | 1      | 1       | 169                          | 0       | 169     | 169           | 1       | 170       |   |        |         |                    |         |           |
| 5D                     | 0                          | 41     | 41      | 0                            | 0       | 0       | 0             | 41      | 41        |   |        |         |                    |         |           |
| 5 Total <sup>d,e</sup> | 9                          | 145    | 154     | 169                          | 204     | 373     | 178           | 349     | 527       | 4,465                                   | 8,754  | 13,219  | 4,643              | 9,103   | 13,746    |
| 6A                     | 2,091                      | 14,392 | 16,483  | 61                           | 0       | 61      | 2,152         | 14,392  | 16,544    |   |        |         | 2,091              | 14,392  | 16,483    |
| 6B                     | 0                          | 18,960 | 18,960  | 0                            | 4,277   | 4,277   | 0             | 23,237  | 23,237    |   |        |         | 0                  | 18,960  | 18,960    |
| 6C                     | 2,103                      | 4,569  | 6,672   | 13                           | 520     | 533     | 2,116         | 5,089   | 7,205     |   |        |         | 2,103              | 4,569   | 6,672     |
| ADF&G T                | 0                          | 6,267  | 6,267   |                              |         |         | 0             | 6,267   | 6,267     |   |        |         | 0                  | 6,267   | 6,267     |
| 6 Total <sup>f</sup>   | 4,194                      | 44,188 | 48,382  | 74                           | 4,797   | 4,871   | 4,268         | 48,985  | 53,253    | 834                                     | 9,569  | 10,403  | 5,102              | 58,554  | 63,656    |
| Total                  | 904,842                    | 61,569 | 971,282 | 87,848                       | 409,086 | 496,934 | 992,690       | 470,655 | 1,463,345 | 110,683                                 | 59,245 | 169,928 | 1,103,373          | 529,900 | 1,633,273 |

<sup>a</sup> Includes personal use catches in District 1 (381), District 5 (295), and District 6 (1,215). District 4 subsistence catch is apportioned to gear type using proportions for the commercial related catch.

<sup>b</sup> Includes illegal District 1 catch (150). Does not include District 6 sport catch (2,103).

<sup>c</sup> Fish sold in round plus number of fish taken during roe harvest (average roe weight of 1.0 lb per female).

<sup>d</sup> The conversion of pounds of roe to harvested fish assumes that all males are either sold in the round or are used for subsistence.

<sup>e</sup> District 5 total includes 30 fish from the Chandalar and Black Rivers and 295 fish from the personal use fishery

Appendix B.3. Yukon River fall chum commercial and subsistence gillnet (GN) and fish wheel (FW) catch by district, 1989.

| District             | Commercial Related Harvest |        |         |                      |        |        |               |        |         | Reported Subsistence Catch <sup>a</sup> |         |         | Total   |         |         |
|----------------------|----------------------------|--------|---------|----------------------|--------|--------|---------------|--------|---------|---|---------|---------|---------|---------|---------|
|                      | Fish Sold in the Round     |        |         | Unprocessed Roe (lb) |        |        | Total Removal |        |         |   |         |         |         |         |         |
|                      | GN                         | FW     | Total   | GN                   | FW     | Total  | GN            | FW     | Total   | GN                                      | FW      | Total   | GN      | FW      | Total   |
| 1                    | 77,876                     | 0      | 77,876  | 0                    | 0      | 0      | 77,876        | 0      | 77,876  | 4,934                                   | 0       | 4,934   | 82,810  | 0       | 82,810  |
| 2                    | 97,906                     | 0      | 97,906  | 0                    | 0      | 0      | 97,906        | 0      | 97,906  | 10,015                                  | 0       | 10,015  | 107,921 | 0       | 107,921 |
| 3                    | 15,332                     | 0      | 15,332  | 0                    | 0      | 0      | 15,332        | 0      | 15,332  | 1,019                                   | 0       | 1,019   | 16,351  | 0       | 16,351  |
| 4A                   | 0                          | 0      | 0       | 0                    | 0      | 0      | 0             | 0      | 0       |   |         |         |         |         |         |
| 4B                   | 2,682                      | 7,137  | 9,819   | 0                    | 2,023  | 2,023  | 2,682         | 9,160  | 11,842  |   |         |         |         |         |         |
| 4C                   | 828                        | 1,129  | 1,957   | 0                    | 1,384  | 1,384  | 828           | 2,513  | 3,341   |   |         |         |         |         |         |
| 4 Total <sup>b</sup> | 3,510                      | 8,266  | 11,776  | 0                    | 3,407  | 3,407  | 3,510         | 11,673 | 15,183  | 4,886                                   | 16,251  | 21,137  | 8,396   | 27,924  | 36,320  |
| 5A                   | 0                          | 372    | 372     | 0                    | 60     | 60     | 0             | 432    | 432     |   |         |         | 0       | 432     | 432     |
| 5B                   | 1,616                      | 8,321  | 9,937   | 335                  | 2,992  | 3,327  | 1,951         | 11,313 | 13,264  |   |         |         | 1,951   | 11,313  | 13,264  |
| 5C                   | 1,453                      | 3,534  | 4,987   | 123                  | 86     | 209    | 1,576         | 3,620  | 5,196   |   |         |         | 1,576   | 3,620   | 5,196   |
| 5D                   | 1,009                      | 1,910  | 2,919   | 0                    | 393    | 393    | 1,009         | 2,303  | 3,312   |   |         |         | 1,009   | 2,303   | 3,312   |
| 5 Total <sup>c</sup> | 4,078                      | 14,137 | 18,215  | 458                  | 3,531  | 3,989  | 4,536         | 17,668 | 22,204  | 23,459                                  | 91,376  | 114,835 | 27,995  | 109,044 | 137,039 |
| 6A                   | 946                        | 13,924 | 14,870  | 0                    | 173    | 173    | 946           | 14,097 | 15,043  |   |         |         | 946     | 14,097  | 15,043  |
| 6B                   | 136                        | 25,514 | 25,650  | 0                    | 7,050  | 7,050  | 136           | 32,564 | 32,700  |   |         |         | 136     | 32,564  | 32,700  |
| 6C                   | 1,808                      | 6,762  | 8,570   | 0                    | 130    | 130    | 1,808         | 6,892  | 8,700   |   |         |         | 1,808   | 6,892   | 8,700   |
| ADF&G TF             | 0                          | 16,984 | 16,984  |                      |        |        | 0             | 16,984 | 16,984  |   |         |         | 0       | 16,984  | 16,984  |
| 6 Total              | 2,890                      | 63,184 | 66,074  | 0                    | 7,353  | 7,353  | 2,890         | 70,537 | 73,427  | 2,457                                   | 59,964  | 62,421  | 5,347   | 130,501 | 135,848 |
| Alaska Total         | 201,592                    | 85,587 | 287,179 | 458                  | 14,291 | 14,749 | 202,050       | 99,878 | 301,928 | 46,771                                  | 167,590 | 214,361 | 248,821 | 267,468 | 516,289 |
| Porcupine R.         | 0                          | 0      | 0       | 0                    | 0      | 0      | 0             | 0      | 0       | 2,909                                   | 0       | 2,909   | 2,909   | 0       | 2,909   |
| Mainstem Yukon       | 17,549                     | 0      | 17,549  | 0                    | 0      | 0      | 17,549        | 0      | 17,549  | 2,562                                   |         | 2,562   | 20,111  | 0       | 20,111  |
| Canada Total         | 17,549                     | 0      | 17,549  | 0                    | 0      | 0      | 17,549        | 0      | 17,549  | 5,471                                   | 0       | 5,471   | 23,020  | 0       | 23,020  |
| Yukon R. Total       | 219,141                    | 85,587 | 304,728 | 458                  | 14,291 | 14,749 | 219,599       | 99,878 | 319,477 | 52,242                                  | 167,590 | 219,832 | 271,841 | 267,468 | 539,309 |

<sup>a</sup> Includes personal use harvests in Districts 1 (18), 5 (3,294), and 6 (1,770).

<sup>b</sup> District 4 total includes 3,957 fall chum salmon from the upper Koyukuk River.

<sup>c</sup> District 5 total includes 10,977 fall chum salmon from the Chandalar and Black Rivers.

Appendix B.4. Yukon River coho commercial and subsistence gillnet (GN) and fish wheel (FW) catch by district, 1989.

| District       | Commercial Catch |        |        | Subsistence Catch <sup>a</sup> |        |        | Total Catch <sup>b</sup> |        |         |
|----------------|------------------|--------|--------|--------------------------------|--------|--------|--------------------------|--------|---------|
|                | GN               | FW     | Total  | GN                             | FW     | Total  | GN                       | FW     | Total   |
| 1              | 24,672           | 0      | 24,672 | 5,144                          | 0      | 5,144  | 29,816                   | 0      | 29,816  |
| 2              | 38,522           | 0      | 38,522 | 5,039                          | 0      | 5,039  | 43,561                   | 0      | 43,561  |
| 3              | 3,988            | 0      | 3,988  | 537                            | 0      | 537    | 4,525                    | 0      | 4,525   |
| 4A             | 0                | 0      | 0      |                                |        |        | 0                        | 0      | 0       |
| 4B             | 0                | 0      | 0      |                                |        |        | 0                        | 0      | 0       |
| 4C             | 0                | 3      | 3      |                                |        |        | 0                        | 3      | 3       |
| 4 Total        | 0                | 3      | 3      | 0                              | 4,030  | 4,030  | 0                        | 4,033  | 4,033   |
| 5A             | 0                | 0      | 0      |                                |        |        | 0                        | 0      | 0       |
| 5B             | 0                | 0      | 0      |                                |        |        | 0                        | 0      | 0       |
| 5C             | 0                | 84     | 84     |                                |        |        | 0                        | 84     | 84      |
| 5D             | 0                | 0      | 0      |                                |        |        | 0                        | 0      | 0       |
| 5 Total        | 0                | 84     | 84     | 0                              | 7,192  | 7,192  | 0                        | 7,276  | 7,276   |
| 6A             | 283              | 2,535  | 2,818  |                                |        |        | 283                      | 2,535  | 2,818   |
| 6B             | 25               | 10,156 | 10,181 |                                |        |        | 25                       | 10,156 | 10,181  |
| 6C             | 915              | 2,170  | 3,085  |                                |        |        | 915                      | 2,170  | 3,085   |
| ADF&G TF       | 0                | 2,140  | 2,140  |                                |        |        | 0                        | 2,140  | 2,140   |
| 6 Total        | 1,223            | 17,001 | 18,224 | 1,368                          | 19,013 | 20,381 | 2,591                    | 36,014 | 38,605  |
| Yukon R. Total | 68,405           | 17,088 | 85,493 | 12,088                         | 30,235 | 42,323 | 80,493                   | 47,323 | 127,816 |

<sup>a</sup> Includes personal use catches for districts 1 (59), 5 (82), and 6 (731). Does not include District 6 sport catch (1,796).

<sup>b</sup> District 4 total includes 359 fish from the upper Koyukuk River. District 5 total includes 28 fish from the Chandalar and Black Rivers. Does not include District 6 sport catch (1,796).

Appendix C.1. Whitehorse fishway daily chinook counts, 1989.

| Date   | Male | Female | Daily              |        | Cumulative         |        |
|--------|------|--------|--------------------|--------|--------------------|--------|
|        |      |        | Count <sup>a</sup> | Prop.  | Count <sup>a</sup> | Prop.  |
| 24-Jul | 0    | 1      | 1                  | 0.0018 | 1                  | 0.0018 |
| 25-Jul | 0    | 0      | 0                  | 0.0000 | 1                  | 0.0018 |
| 26-Jul | 0    | 0      | 0                  | 0.0000 | 1                  | 0.0018 |
| 27-Jul | 0    | 1      | 1                  | 0.0018 | 2                  | 0.0036 |
| 28-Jul | 0    | 1      | 1                  | 0.0018 | 3                  | 0.0055 |
| 29-Jul | 0    | 0      | 0                  | 0.0000 | 3                  | 0.0055 |
| 30-Jul | 0    | 3      | 3                  | 0.0055 | 6                  | 0.0109 |
| 31-Jul | 4    | 6      | 10                 | 0.0182 | 16                 | 0.0291 |
| 01-Aug | 10   | 6      | 16                 | 0.0291 | 32                 | 0.0583 |
| 02-Aug | 13   | 4      | 17                 | 0.0310 | 49                 | 0.0893 |
| 03-Aug | 18   | 11     | 29                 | 0.0528 | 78                 | 0.1421 |
| 04-Aug | 7    | 4      | 11                 | 0.0200 | 89                 | 0.1621 |
| 05-Aug | 7    | 4      | 11                 | 0.0200 | 100                | 0.1821 |
| 06-Aug | 13   | 12     | 25                 | 0.0455 | 125                | 0.2277 |
| 07-Aug | 20   | 6      | 26                 | 0.0474 | 151                | 0.2750 |
| 08-Aug | 17   | 4      | 21                 | 0.0383 | 172                | 0.3133 |
| 09-Aug | 16   | 4      | 20                 | 0.0364 | 192                | 0.3497 |
| 10-Aug | 10   | 2      | 12                 | 0.0219 | 204                | 0.3716 |
| 11-Aug | 18   | 13     | 31                 | 0.0565 | 235                | 0.4281 |
| 12-Aug | 20   | 16     | 36                 | 0.0656 | 271                | 0.4936 |
| 13-Aug | 5    | 8      | 13                 | 0.0237 | 284                | 0.5173 |
| 14-Aug | 13   | 9      | 22                 | 0.0401 | 306                | 0.5574 |
| 15-Aug | 15   | 9      | 24                 | 0.0437 | 330                | 0.6011 |
| 16-Aug | 8    | 6      | 14                 | 0.0255 | 344                | 0.6266 |
| 17-Aug | 24   | 11     | 35                 | 0.0638 | 379                | 0.6903 |
| 18-Aug | 14   | 10     | 24                 | 0.0437 | 403                | 0.7341 |
| 19-Aug | 16   | 3      | 19                 | 0.0346 | 422                | 0.7687 |
| 20-Aug | 13   | 13     | 26                 | 0.0474 | 448                | 0.8160 |
| 21-Aug | 18   | 14     | 32                 | 0.0583 | 480                | 0.8743 |
| 22-Aug | 13   | 5      | 18                 | 0.0328 | 498                | 0.9071 |
| 23-Aug | 9    | 6      | 15                 | 0.0273 | 513                | 0.9344 |
| 24-Aug | 2    | 1      | 3                  | 0.0055 | 516                | 0.9399 |
| 25-Aug | 7    | 5      | 12                 | 0.0219 | 528                | 0.9617 |
| 26-Aug | 2    | 2      | 4                  | 0.0073 | 532                | 0.9690 |
| 27-Aug | 5    | 2      | 7                  | 0.0128 | 539                | 0.9818 |
| 28-Aug | 2    | 2      | 4                  | 0.0073 | 543                | 0.9891 |
| 29-Aug | 1    | 0      | 1                  | 0.0018 | 544                | 0.9909 |
| 30-Aug | 1    | 0      | 1                  | 0.0018 | 545                | 0.9927 |
| 31-Aug | 1    | 0      | 1                  | 0.0018 | 546                | 0.9945 |
| 01-Sep | 2    | 1      | 3                  | 0.0055 | 549                | 1.0000 |
|        | 344  | 205    | 549                |        |                    |        |

<sup>a</sup> Includes 84 males and 98 females taken for hatchery brood stock and 28 females and 8 males which died in the fishway leaving a Michie Creek escapement of 331 (252 male, 79 female).

Appendix C.2. Anvik River sonar project daily adjusted summer chum counts, 1989.

| Date                | West Bank <sup>a</sup> | East Bank <sup>a</sup> | Daily   |        | Cumulative |        |
|---------------------|------------------------|------------------------|---------|--------|------------|--------|
|                     |                        |                        | Count   | Prop.  | Count      | Prop.  |
| 20-Jun              | 0                      | 162                    | 162     | 0.0003 | 162        | 0.0003 |
| 21-Jun              | 351                    | 146                    | 497     | 0.0008 | 659        | 0.0010 |
| 22-Jun              | 1,691                  | 553                    | 2,244   | 0.0035 | 2,903      | 0.0046 |
| 23-Jun              | 4,696                  | 223                    | 4,919   | 0.0077 | 7,822      | 0.0123 |
| 24-Jun              | 4,638                  | 620                    | 5,258   | 0.0083 | 13,080     | 0.0205 |
| 25-Jun              | 6,936                  | 332                    | 7,268   | 0.0114 | 20,348     | 0.0319 |
| 26-Jun              | 6,999                  | 354                    | 7,353   | 0.0115 | 27,701     | 0.0435 |
| 27-Jun              | 16,745                 | 1,047                  | 17,792  | 0.0279 | 45,493     | 0.0714 |
| 28-Jun              | 21,049                 | 583                    | 21,632  | 0.0340 | 67,125     | 0.1054 |
| 29-Jun              | 31,799                 | 1,734                  | 33,533  | 0.0526 | 100,658    | 0.1580 |
| 30-Jun              | 25,179                 | 11,049                 | 36,228  | 0.0569 | 136,886    | 0.2149 |
| 01-Jul              | 24,592                 | 12,868                 | 37,460  | 0.0588 | 174,346    | 0.2737 |
| 02-Jul              | 24,821                 | 8,922                  | 33,743  | 0.0530 | 208,089    | 0.3267 |
| 03-Jul              | 21,039                 | 7,994                  | 29,033  | 0.0456 | 237,122    | 0.3723 |
| 04-Jul              | 16,980                 | 7,078                  | 24,058  | 0.0378 | 261,180    | 0.4101 |
| 05-Jul              | 16,305                 | 9,492                  | 25,797  | 0.0405 | 286,977    | 0.4506 |
| 06-Jul              | 16,659                 | 6,009                  | 22,668  | 0.0356 | 309,645    | 0.4862 |
| 07-Jul              | 18,121                 | 5,786                  | 23,907  | 0.0375 | 333,552    | 0.5237 |
| 08-Jul              | 20,370                 | 7,862                  | 28,232  | 0.0443 | 361,784    | 0.5680 |
| 09-Jul              | 20,936                 | 6,827                  | 27,763  | 0.0436 | 389,547    | 0.6116 |
| 10-Jul              | 14,623                 | 6,167                  | 20,790  | 0.0326 | 410,337    | 0.6443 |
| 11-Jul              | 16,879                 | 4,925                  | 21,804  | 0.0342 | 432,141    | 0.6785 |
| 12-Jul              | 21,068                 | 7,669                  | 28,737  | 0.0451 | 460,878    | 0.7236 |
| 13-Jul              | 24,641                 | 9,180                  | 33,821  | 0.0531 | 494,699    | 0.7767 |
| 14-Jul              | 20,555                 | 6,301                  | 26,856  | 0.0422 | 521,555    | 0.8189 |
| 15-Jul              | 26,014                 | 4,588                  | 30,602  | 0.0480 | 552,157    | 0.8669 |
| 16-Jul <sup>b</sup> | 15,505                 | 2,298                  | 17,803  | 0.0280 | 569,960    | 0.8949 |
| 17-Jul              | 4,995                  | 8                      | 5,003   | 0.0079 | 574,963    | 0.9027 |
| 18-Jul              | 10,329                 | 131                    | 10,460  | 0.0164 | 585,423    | 0.9192 |
| 19-Jul              | 8,857                  | 1,178                  | 10,035  | 0.0158 | 595,458    | 0.9349 |
| 20-Jul              | 9,292                  | 1,580                  | 10,872  | 0.0171 | 606,330    | 0.9520 |
| 21-Jul              | 7,033                  | 1,266                  | 8,299   | 0.0130 | 614,629    | 0.9650 |
| 22-Jul              | 4,664                  | 636                    | 5,300   | 0.0083 | 619,929    | 0.9733 |
| 23-Jul              | 4,902                  | 588                    | 5,490   | 0.0086 | 625,419    | 0.9820 |
| 24-Jul              | 2,880                  | 486                    | 3,366   | 0.0053 | 628,785    | 0.9872 |
| 25-Jul              | 3,126                  | 701                    | 3,827   | 0.0060 | 632,612    | 0.9933 |
| 26-Jul              | 3446                   | 848                    | 4,294   | 0.0067 | 636,906    | 1.0000 |
| Total               | 498,715                | 138,191                | 636,906 |        |            |        |

<sup>a</sup> Sonar enumeration was initiated on June 18, no fish were counted on June 18 or 19.

<sup>b</sup> Sonar was inoperable due to flooding conditions. The daily count was extrapolated from mean daily counts on July 15 and 17.

Appendix C.3. Chandalar River sonar project daily adjusted fall chum counts, 1989.

| Date   | South Bank | North Bank | Daily |        | Cumulative |        |
|--------|------------|------------|-------|--------|------------|--------|
|        |            |            | Count | Prop.  | Count      | Prop.  |
| 10-Aug | 79         | 343        | 422   | 0.0061 | 422        | 0.0061 |
| 11-Aug | 258        | 480        | 738   | 0.0107 | 1,160      | 0.0168 |
| 12-Aug | 150        | 388        | 538   | 0.0078 | 1,698      | 0.0246 |
| 13-Aug | 491        | 894        | 1,385 | 0.0200 | 3,083      | 0.0446 |
| 14-Aug | 212        | 571        | 783   | 0.0113 | 3,866      | 0.0559 |
| 15-Aug | 1,219      | 568        | 1,787 | 0.0258 | 5,653      | 0.0817 |
| 16-Aug | 1,428      | 1133       | 2,561 | 0.0370 | 8,214      | 0.1188 |
| 17-Aug | 2,149      | 617        | 2,766 | 0.0400 | 10,980     | 0.1588 |
| 18-Aug | 3,000      | 415        | 3,415 | 0.0494 | 14,395     | 0.2081 |
| 19-Aug | 1,827      | 519        | 2,346 | 0.0339 | 16,741     | 0.2421 |
| 20-Aug | 1,373      | 447        | 1,820 | 0.0263 | 18,561     | 0.2684 |
| 21-Aug | 1,429      | 790        | 2,219 | 0.0321 | 20,780     | 0.3005 |
| 22-Aug | 1,076      | 557        | 1,633 | 0.0236 | 22,413     | 0.3241 |
| 23-Aug | 635        | 713        | 1,348 | 0.0195 | 23,761     | 0.3436 |
| 24-Aug | 459        | 624        | 1,083 | 0.0157 | 24,844     | 0.3592 |
| 25-Aug | 570        | 820        | 1,390 | 0.0201 | 26,234     | 0.3793 |
| 26-Aug | 554        | 655        | 1,209 | 0.0175 | 27,443     | 0.3968 |
| 27-Aug | 513        | 570        | 1,083 | 0.0157 | 28,526     | 0.4125 |
| 28-Aug | 256        | 480        | 736   | 0.0106 | 29,262     | 0.4231 |
| 29-Aug | 240        | 355        | 595   | 0.0086 | 29,857     | 0.4317 |
| 30-Aug | 187        | 609        | 796   | 0.0115 | 30,653     | 0.4432 |
| 31-Aug | 207        | 567        | 774   | 0.0112 | 31,427     | 0.4544 |
| 01-Sep | 336        | 538        | 874   | 0.0126 | 32,301     | 0.4670 |
| 02-Sep | 323        | 791        | 1,114 | 0.0161 | 33,415     | 0.4831 |
| 03-Sep | 987        | 764        | 1,751 | 0.0253 | 35,166     | 0.5085 |
| 04-Sep | 683        | 1358       | 2,041 | 0.0295 | 37,207     | 0.5380 |
| 05-Sep | 1,208      | 1179       | 2,387 | 0.0345 | 39,594     | 0.5725 |
| 06-Sep | 1,160      | 794        | 1,954 | 0.0283 | 41,548     | 0.6007 |
| 07-Sep | 1,378      | 246        | 1,624 | 0.0235 | 43,172     | 0.6242 |
| 08-Sep | 938        | 391        | 1,329 | 0.0192 | 44,501     | 0.6434 |
| 09-Sep | 701        | 340        | 1,041 | 0.0151 | 45,542     | 0.6585 |
| 10-Sep | 614        | 263        | 877   | 0.0127 | 46,419     | 0.6712 |
| 11-Sep | 563        | 273        | 836   | 0.0121 | 47,255     | 0.6833 |
| 12-Sep | 748        | 602        | 1,350 | 0.0195 | 48,605     | 0.7028 |
| 13-Sep | 971        | 570        | 1,541 | 0.0223 | 50,146     | 0.7251 |
| 14-Sep | 968        | 330        | 1,298 | 0.0188 | 51,444     | 0.7438 |
| 15-Sep | 613        | 310        | 923   | 0.0133 | 52,367     | 0.7572 |
| 16-Sep | 847        | 281        | 1,128 | 0.0163 | 53,495     | 0.7735 |
| 17-Sep | 942        | 228        | 1,170 | 0.0169 | 54,665     | 0.7904 |

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Appendix C.3. (page 2 of 2)

| Date   | South Bank | North Bank | Daily  |        | Cumulative |        |
|--------|------------|------------|--------|--------|------------|--------|
|        |            |            | Count  | Prop.  | Count      | Prop.  |
| 18-Sep | 583        | 254        | 837    | 0.0121 | 55,502     | 0.8025 |
| 19-Sep | 900        | 148        | 1,048  | 0.0152 | 56,550     | 0.8177 |
| 20-Sep | 524        | 208        | 732    | 0.0106 | 57,282     | 0.8282 |
| 21-Sep | 352        | 276        | 628    | 0.0091 | 57,910     | 0.8373 |
| 22-Sep | 384        | 599        | 983    | 0.0142 | 58,893     | 0.8515 |
| 23-Sep | 264        | 871        | 1,135  | 0.0164 | 60,028     | 0.8679 |
| 24-Sep | 318        | 1487       | 1,805  | 0.0261 | 61,833     | 0.8940 |
| 25-Sep | 189        | 1461       | 1,650  | 0.0239 | 63,483     | 0.9179 |
| 26-Sep | 204        | 1928       | 2,132  | 0.0308 | 65,615     | 0.9487 |
| 27-Sep | 187        | 1100       | 1,287  | 0.0186 | 66,902     | 0.9673 |
| 28-Sep | 147        | 1077       | 1,224  | 0.0177 | 68,126     | 0.9850 |
| 29-Sep | 151        | 498        | 649    | 0.0094 | 68,775     | 0.9944 |
| 30-Sep | 0          | 386        | 386    | 0.0056 | 69,161     | 1.0000 |
|        | 36,495     | 32,666     | 69,161 |        |            |        |

Appendix C.4. Sheenjek River sonar project daily adjusted fall chum counts, 1989.

| Date                | Daily                |        | Cumulative         |        |
|---------------------|----------------------|--------|--------------------|--------|
|                     | Count <sup>a</sup>   | Prop.  | Count <sup>a</sup> | Prop.  |
| 23-Aug <sup>b</sup> | 346                  | 0.0042 | 346                | 0.0042 |
| 24-Aug              | 4,463                | 0.0546 | 4,809              | 0.0588 |
| 25-Aug              | 2,284                | 0.0279 | 7,093              | 0.0868 |
| 26-Aug              | 1,382                | 0.0169 | 8,475              | 0.1037 |
| 27-Aug              | 1,116                | 0.0137 | 9,591              | 0.1173 |
| 28-Aug              | 988                  | 0.0121 | 10,579             | 0.1294 |
| 29-Aug              | 744                  | 0.0091 | 11,323             | 0.1385 |
| 30-Aug              | 1,284                | 0.0157 | 12,607             | 0.1542 |
| 31-Aug              | 953                  | 0.0117 | 13,560             | 0.1659 |
| 01-Sep              | 1,605                | 0.0196 | 15,165             | 0.1855 |
| 02-Sep              | 1,783                | 0.0218 | 16,948             | 0.2073 |
| 03-Sep              | 1,758                | 0.0215 | 18,706             | 0.2288 |
| 04-Sep              | 2,796                | 0.0342 | 21,502             | 0.2630 |
| 05-Sep              | 2,531                | 0.0310 | 24,033             | 0.2940 |
| 06-Sep              | 2,960                | 0.0362 | 26,993             | 0.3302 |
| 07-Sep              | 4,230                | 0.0517 | 31,223             | 0.3819 |
| 08-Sep              | 3,671                | 0.0449 | 34,894             | 0.4268 |
| 09-Sep              | 4,950                | 0.0606 | 39,844             | 0.4874 |
| 10-Sep              | 4,011                | 0.0491 | 43,855             | 0.5365 |
| 11-Sep              | 3,567                | 0.0436 | 47,422             | 0.5801 |
| 12-Sep              | 3,404                | 0.0416 | 50,826             | 0.6217 |
| 13-Sep              | 3,231                | 0.0395 | 54,057             | 0.6613 |
| 14-Sep              | 2,813                | 0.0344 | 56,870             | 0.6957 |
| 15-Sep              | 2,051                | 0.0251 | 58,921             | 0.7208 |
| 16-Sep              | 2,509                | 0.0307 | 61,430             | 0.7515 |
| 17-Sep              | 3,057                | 0.0374 | 64,487             | 0.7889 |
| 18-Sep              | 2,097                | 0.0257 | 66,584             | 0.8145 |
| 19-Sep              | 1,831                | 0.0224 | 68,415             | 0.8369 |
| 20-Sep              | 2,320                | 0.0284 | 70,735             | 0.8653 |
| 21-Sep              | 1,249                | 0.0153 | 71,984             | 0.8806 |
| 22-Sep              | 1,090                | 0.0133 | 73,074             | 0.8939 |
| 23-Sep              | 3,036                | 0.0371 | 76,110             | 0.9310 |
| 24-Sep              | 2,971                | 0.0363 | 79,081             | 0.9674 |
| 25-Sep              | 2,667                | 0.0326 | 81,748             | 1.0000 |
| Season Total        | 101,748 <sup>c</sup> |        |                    |        |

<sup>a</sup> Counts are adjusted using oscilloscope calibration data and expanded with estimates for the unsonified river zone.

<sup>b</sup> Sonar operated 2 hours.

<sup>c</sup> Total estimated escapement to the Sheenjek River includes 20,000 fish (aerial survey data) which passed prior to commencement of sonar enumeration.

Appendix C.5. Fishing Branch River weir fall chum counts, 1989.

| Date               | Male   | Female | Unknown | Daily  |        | Cumulative |        |
|--------------------|--------|--------|---------|--------|--------|------------|--------|
|                    |        |        |         | Count  | Prop.  | Count      | Prop.  |
| 30-Aug             | 32     | 31     | 0       | 63     | 0.0014 | 63         | 0.0014 |
| 31-Aug             | 96     | 60     | 2       | 158    | 0.0036 | 221        | 0.0050 |
| 01-Sep             | 183    | 112    | 15      | 310    | 0.0071 | 531        | 0.0121 |
| 02-Sep             | 418    | 161    | 0       | 579    | 0.0132 | 1,110      | 0.0253 |
| 03-Sep             | 412    | 111    | 4       | 527    | 0.0120 | 1,637      | 0.0373 |
| 04-Sep             | 644    | 130    | 26      | 800    | 0.0183 | 2,437      | 0.0556 |
| 05-Sep             | 878    | 309    | 13      | 1,200  | 0.0274 | 3,637      | 0.0830 |
| 06-Sep             | 1284   | 463    | 27      | 1,774  | 0.0405 | 5,411      | 0.1234 |
| 07-Sep             | 1202   | 504    | 24      | 1,730  | 0.0395 | 7,141      | 0.1629 |
| 08-Sep             | 565    | 373    | 4       | 942    | 0.0215 | 8,083      | 0.1844 |
| 09-Sep             | 1359   | 790    | 11      | 2,160  | 0.0493 | 10,243     | 0.2337 |
| 10-Sep             | 863    | 884    | 9       | 1,756  | 0.0401 | 11,999     | 0.2737 |
| 11-Sep             | 858    | 774    | 11      | 1,643  | 0.0375 | 13,642     | 0.3112 |
| 12-Sep             | 667    | 731    | 9       | 1,407  | 0.0321 | 15,049     | 0.3433 |
| 13-Sep             | 394    | 512    | 15      | 921    | 0.0210 | 15,970     | 0.3643 |
| 14-Sep             | 597    | 693    | 19      | 1,309  | 0.0299 | 17,279     | 0.3942 |
| 15-Sep             | 80     | 59     | 10      | 149    | 0.0034 | 17,428     | 0.3976 |
| 16-Sep             | 504    | 489    | 183     | 1,176  | 0.0268 | 18,604     | 0.4244 |
| 17-Sep             | 403    | 377    | 31      | 811    | 0.0185 | 19,415     | 0.4429 |
| 18-Sep             | 397    | 416    | 14      | 827    | 0.0189 | 20,242     | 0.4618 |
| 19-Sep             | 366    | 367    | 9       | 742    | 0.0169 | 20,984     | 0.4787 |
| 20-Sep             | 456    | 455    | 3       | 914    | 0.0209 | 21,898     | 0.4996 |
| 21-Sep             | 410    | 513    | 14      | 937    | 0.0214 | 22,835     | 0.5209 |
| 22-Sep             | 427    | 499    | 7       | 933    | 0.0213 | 23,768     | 0.5422 |
| 23-Sep             | 649    | 808    | 3       | 1,460  | 0.0333 | 25,228     | 0.5755 |
| 24-Sep             | 868    | 884    | 10      | 1,762  | 0.0402 | 26,990     | 0.6157 |
| 25-Sep             | 716    | 1,069  | 12      | 1,797  | 0.0410 | 28,787     | 0.6567 |
| 26-Sep             | 457    | 555    | 0       | 1,012  | 0.0231 | 29,799     | 0.6798 |
| 27-Sep             | 637    | 681    | 2       | 1,320  | 0.0301 | 31,119     | 0.7099 |
| 28-Sep             | 466    | 602    | 5       | 1,073  | 0.0245 | 32,192     | 0.7344 |
| 29-Sep             | 404    | 545    | 0       | 949    | 0.0216 | 33,141     | 0.7561 |
| 30-Sep             | 407    | 467    | 7       | 881    | 0.0201 | 34,022     | 0.7762 |
| 01-Oct             | 405    | 433    | 0       | 838    | 0.0191 | 34,860     | 0.7953 |
| 02-Oct             | 474    | 542    | 2       | 1,018  | 0.0232 | 35,878     | 0.8185 |
| 03-Oct             | 395    | 539    | 0       | 934    | 0.0213 | 36,812     | 0.8398 |
| 04-Oct             | 390    | 549    | 0       | 939    | 0.0214 | 37,751     | 0.8612 |
| 05-Oct             | 368    | 545    | 1       | 914    | 0.0209 | 38,665     | 0.8821 |
| 06-Oct             | 358    | 488    | 0       | 846    | 0.0193 | 39,511     | 0.9014 |
| 07-Oct             | 316    | 495    | 4       | 815    | 0.0186 | 40,326     | 0.9200 |
| 08-Oct             | 255    | 396    | 0       | 651    | 0.0149 | 40,977     | 0.9348 |
| 09-Oct             | 299    | 558    | 3       | 860    | 0.0196 | 41,837     | 0.9544 |
| 10-Oct             | 195    | 336    | 0       | 531    | 0.0121 | 42,368     | 0.9666 |
| 11-Oct             | 150    | 271    | 0       | 421    | 0.0096 | 42,789     | 0.9762 |
| 12-Oct             | 138    | 291    | 0       | 429    | 0.0098 | 43,218     | 0.9859 |
| 13-Oct             | 73     | 188    | 0       | 261    | 0.0060 | 43,479     | 0.9919 |
| 14-Oct             | 42     | 109    | 0       | 151    | 0.0034 | 43,630     | 0.9953 |
| 15-Oct             | 37     | 64     | 0       | 101    | 0.0023 | 43,731     | 0.9977 |
| 16-Oct             | 43     | 45     | 0       | 88     | 0.0020 | 43,819     | 0.9997 |
| 17-Oct             | 7      | 8      | 0       | 15     | 0.0003 | 43,834     | 1.0000 |
| Total <sup>a</sup> | 22,044 | 21,281 | 509     | 43,834 |        |            |        |

<sup>a</sup> In addition, a total of 6 male chinook salmon and 11 male coho salmon passed.

Appendix D.1. Yukon River District 1 chinook commercial catch composition by age, sex, and fishing period, 1989.

|                 |                   | Brood Year and Age Group <sup>a</sup> |      |       |     |        |     |       |     |      |     |        |
|-----------------|-------------------|---------------------------------------|------|-------|-----|--------|-----|-------|-----|------|-----|--------|
|                 |                   | 1986                                  | 1985 | 1984  |     | 1983   |     | 1982  |     | 1981 |     | Total  |
|                 |                   | 1.1                                   | 1.2  | 1.3   | 2.2 | 1.4    | 2.3 | 1.5   | 2.4 | 1.6  | 2.5 |        |
| Stratum Dates:  | 6/13-6/14         | Period 1 <sup>b</sup>                 |      |       |     |        |     |       |     |      |     |        |
| Sampling Dates: | 6/14              |                                       |      |       |     |        |     |       |     |      |     |        |
| Sample Size:    | 125               |                                       |      |       |     |        |     |       |     |      |     |        |
| Female          | Percent of Sample | 0.0                                   | 0.8  | 9.6   | 0.0 | 24.8   | 0.0 | 3.2   | 2.4 | 0.0  | 0.0 | 40.8   |
|                 | Number in Catch   | 0                                     | 55   | 661   | 0   | 1,707  | 0   | 220   | 165 | 0    | 0   | 2,808  |
| Male            | Percent of Sample | 0.0                                   | 7.2  | 27.2  | 1.6 | 17.6   | 1.6 | 2.4   | 1.6 | 0.0  | 0.0 | 59.2   |
|                 | Number in Catch   | 0                                     | 496  | 1,872 | 110 | 1,211  | 110 | 165   | 110 | 0    | 0   | 4,074  |
| Total           | Percent of Sample | 0.0                                   | 8.0  | 36.8  | 1.6 | 42.4   | 1.6 | 5.6   | 4.0 | 0.0  | 0.0 | 100.0  |
|                 | Number in Catch   | 0                                     | 551  | 2,533 | 110 | 2,918  | 110 | 385   | 275 | 0    | 0   | 6,882  |
|                 | Standard Error    | 0                                     | 168  | 298   | 78  | 305    | 78  | 142   | 121 | 0    | 0   |        |
| Stratum Dates:  | 6/15-6/16         | Period 2 <sup>c</sup>                 |      |       |     |        |     |       |     |      |     |        |
| Sampling Dates: | 6/16              |                                       |      |       |     |        |     |       |     |      |     |        |
| Sample Size:    | 349               |                                       |      |       |     |        |     |       |     |      |     |        |
| Female          | Percent of Sample | 0.0                                   | 0.0  | 7.3   | 0.0 | 28.6   | 0.0 | 7.5   | 1.8 | 0.0  | 1.1 | 46.3   |
|                 | Number in Catch   | 0                                     | 0    | 1,383 | 0   | 5,418  | 0   | 1,421 | 341 | 0    | 217 | 8,780  |
| Male            | Percent of Sample | 0.0                                   | 0.6  | 22.7  | 0.0 | 25.7   | 0.0 | 3.4   | 1.0 | 0.3  | 0.0 | 53.7   |
|                 | Number in Catch   | 0                                     | 109  | 4,300 | 0   | 4,869  | 0   | 643   | 189 | 54   | 0   | 10,164 |
| Total           | Percent of Sample | 0.0                                   | 0.6  | 30.0  | 0.0 | 54.3   | 0.0 | 10.9  | 2.8 | 0.3  | 1.1 | 100.0  |
|                 | Number in Catch   | 0                                     | 109  | 5,683 | 0   | 10,287 | 0   | 2,063 | 530 | 54   | 217 | 18,944 |
|                 | Standard Error    | 0                                     | 77   | 465   | 0   | 506    | 0   | 316   | 168 | 54   | 108 |        |
| Stratum Dates:  | 6/19-6/20         | Period 3 <sup>c</sup>                 |      |       |     |        |     |       |     |      |     |        |
| Sampling Dates: | 6/20              |                                       |      |       |     |        |     |       |     |      |     |        |
| Sample Size:    | 323               |                                       |      |       |     |        |     |       |     |      |     |        |
| Female          | Percent of Sample | 0.0                                   | 0.0  | 5.4   | 0.0 | 41.6   | 0.0 | 4.7   | 0.7 | 0.3  | 0.4 | 53.2   |
|                 | Number in Catch   | 0                                     | 0    | 581   | 0   | 4,478  | 0   | 511   | 75  | 33   | 43  | 5,722  |
| Male            | Percent of Sample | 0.0                                   | 1.2  | 18.2  | 0.0 | 24.5   | 0.0 | 2.6   | 0.0 | 0.0  | 0.3 | 46.8   |
|                 | Number in Catch   | 0                                     | 133  | 1,959 | 0   | 2,637  | 0   | 280   | 0   | 0    | 33  | 5,043  |
| Total           | Percent of Sample | 0.0                                   | 1.2  | 23.6  | 0.0 | 66.1   | 0.0 | 7.3   | 0.7 | 0.3  | 0.7 | 100.0  |
|                 | Number in Catch   | 0                                     | 133  | 2,540 | 0   | 7,115  | 0   | 791   | 75  | 33   | 76  | 10,764 |
|                 | Standard Error    | 0                                     | 66   | 255   | 0   | 284    | 0   | 157   | 50  | 33   | 50  |        |

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|                 |                   | Brood Year and Age Group <sup>a</sup> |      |       |     |       |     |      |     |      |     |       |
|-----------------|-------------------|---------------------------------------|------|-------|-----|-------|-----|------|-----|------|-----|-------|
|                 |                   | 1986                                  | 1985 | 1984  |     | 1983  |     | 1982 |     | 1981 |     | Total |
|                 |                   | 1.1                                   | 1.2  | 1.3   | 2.2 | 1.4   | 2.3 | 1.5  | 2.4 | 1.6  | 2.5 |       |
| Stratum Dates:  | 6/22              | Period 4 <sup>c</sup>                 |      |       |     |       |     |      |     |      |     |       |
| Sampling Dates: | 6/23              |                                       |      |       |     |       |     |      |     |      |     |       |
| Sample Size:    | 310               |                                       |      |       |     |       |     |      |     |      |     |       |
| Female          | Percent of Sample | 0.0                                   | 0.0  | 3.5   | 0.0 | 31.9  | 0.0 | 8.4  | 1.0 | 0.0  | 1.0 | 45.8  |
|                 | Number in Catch   | 0                                     | 0    | 87    | 0   | 789   | 0   | 208  | 25  | 0    | 25  | 1,132 |
| Male            | Percent of Sample | 0.0                                   | 1.0  | 14.8  | 0.0 | 32.7  | 0.3 | 4.2  | 0.6 | 0.0  | 0.6 | 54.2  |
|                 | Number in Catch   | 0                                     | 25   | 366   | 0   | 808   | 7   | 104  | 15  | 0    | 15  | 1,340 |
| Total           | Percent of Sample | 0.0                                   | 1.0  | 18.3  | 0.0 | 64.6  | 0.3 | 12.6 | 1.6 | 0.0  | 1.6 | 100.0 |
|                 | Number in Catch   | 0                                     | 25   | 452   | 0   | 1,597 | 7   | 311  | 40  | 0    | 40  | 2,472 |
|                 | Standard Error    | 0                                     | 14   | 54    | 0   | 67    | 8   | 47   | 18  | 0    | 18  |       |
| Stratum Dates:  | 6/24-6/25         | Period 5 <sup>b</sup>                 |      |       |     |       |     |      |     |      |     |       |
| Sampling Dates: | 6/25              |                                       |      |       |     |       |     |      |     |      |     |       |
| Sample Size:    | 181               |                                       |      |       |     |       |     |      |     |      |     |       |
| Female          | Percent of Sample | 0.0                                   | 0.0  | 6.1   | 0.0 | 20.4  | 0.0 | 2.2  | 0.0 | 0.0  | 0.0 | 28.7  |
|                 | Number in Catch   | 0                                     | 0    | 468   | 0   | 1,566 | 0   | 169  | 0   | 0    | 0   | 2,203 |
| Male            | Percent of Sample | 0.0                                   | 5.5  | 40.3  | 0.0 | 23.2  | 0.6 | 1.7  | 0.0 | 0.0  | 0.0 | 71.3  |
|                 | Number in Catch   | 0                                     | 422  | 3,094 | 0   | 1,781 | 46  | 131  | 0   | 0    | 0   | 5,474 |
| Total           | Percent of Sample | 0.0                                   | 5.5  | 46.4  | 0.0 | 43.6  | 0.6 | 3.9  | 0.0 | 0.0  | 0.0 | 100.0 |
|                 | Number in Catch   | 0                                     | 422  | 3,562 | 0   | 3,347 | 46  | 299  | 0   | 0    | 0   | 7,677 |
|                 | Standard Error    | 0                                     | 130  | 285   | 0   | 284   | 44  | 111  | 0   | 0    | 0   |       |
| Stratum Dates:  | 6/26-6/27         | Period 6 <sup>b</sup>                 |      |       |     |       |     |      |     |      |     |       |
| Sampling Dates: | 6/27              |                                       |      |       |     |       |     |      |     |      |     |       |
| Sample Size:    | 228               |                                       |      |       |     |       |     |      |     |      |     |       |
| Female          | Percent of Sample | 0.0                                   | 0.0  | 8.3   | 0.0 | 18.4  | 0.0 | 2.2  | 0.4 | 0.4  | 0.0 | 29.8  |
|                 | Number in Catch   | 0                                     | 0    | 556   | 0   | 1,228 | 0   | 146  | 29  | 29   | 0   | 1,988 |
| Male            | Percent of Sample | 0.0                                   | 12.3 | 32.0  | 0.9 | 22.8  | 0.4 | 1.3  | 0.0 | 0.0  | 0.4 | 70.2  |
|                 | Number in Catch   | 0                                     | 819  | 2,135 | 58  | 1,521 | 29  | 88   | 0   | 0    | 29  | 4,679 |
| Total           | Percent of Sample | 0.0                                   | 12.3 | 40.4  | 0.9 | 41.2  | 0.4 | 3.5  | 0.4 | 0.4  | 0.4 | 100.0 |
|                 | Number in Catch   | 0                                     | 819  | 2,690 | 58  | 2,749 | 29  | 234  | 29  | 29   | 29  | 6,667 |
|                 | Standard Error    | 0                                     | 145  | 217   | 41  | 218   | 29  | 81   | 29  | 29   | 29  |       |

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|                 |                   | Brood Year and Age Group <sup>a</sup> |      |       |     |       |     |      |     |      |     |       |
|-----------------|-------------------|---------------------------------------|------|-------|-----|-------|-----|------|-----|------|-----|-------|
|                 |                   | 1986                                  | 1985 | 1984  |     | 1983  |     | 1982 |     | 1981 |     | Total |
|                 |                   | 1.1                                   | 1.2  | 1.3   | 2.2 | 1.4   | 2.3 | 1.5  | 2.4 | 1.6  | 2.5 |       |
| Stratum Dates:  | 6/29-6/30         | Period 7 <sup>b</sup>                 |      |       |     |       |     |      |     |      |     |       |
| Sampling Dates: | 6/30              |                                       |      |       |     |       |     |      |     |      |     |       |
| Sample Size:    | 148               |                                       |      |       |     |       |     |      |     |      |     |       |
| Female          | Percent of Sample | 0.0                                   | 0.0  | 5.4   | 0.0 | 20.9  | 0.0 | 0.7  | 2.0 | 0.0  | 0.7 | 29.7  |
|                 | Number in Catch   | 0                                     | 0    | 152   | 0   | 590   | 0   | 20   | 56  | 0    | 20  | 838   |
| Male            | Percent of Sample | 0.7                                   | 9.5  | 35.7  | 0.7 | 18.2  | 0.0 | 3.4  | 1.4 | 0.0  | 0.7 | 70.3  |
|                 | Number in Catch   | 20                                    | 268  | 1,007 | 20  | 514   | 0   | 96   | 40  | 0    | 20  | 1,984 |
| Total           | Percent of Sample | 0.7                                   | 9.5  | 41.1  | 0.7 | 39.1  | 0.0 | 4.1  | 3.4 | 0.0  | 1.4 | 100.0 |
|                 | Number in Catch   | 20                                    | 268  | 1,160 | 20  | 1,103 | 0   | 116  | 96  | 0    | 40  | 2,822 |
|                 | Standard Error    | 19                                    | 68   | 115   | 19  | 114   | 0   | 46   | 42  | 0    | 27  |       |
| Stratum Dates:  | 7/03-7/04         | Period 8 <sup>b</sup>                 |      |       |     |       |     |      |     |      |     |       |
| Sampling Dates: | 7/04              |                                       |      |       |     |       |     |      |     |      |     |       |
| Sample Size:    | 137               |                                       |      |       |     |       |     |      |     |      |     |       |
| Female          | Percent of Sample | 0.0                                   | 1.5  | 10.4  | 0.0 | 21.1  | 0.0 | 1.5  | 1.5 | 0.0  | 0.0 | 36.0  |
|                 | Number in Catch   | 0                                     | 14   | 99    | 0   | 200   | 0   | 14   | 14  | 0    | 0   | 342   |
| Male            | Percent of Sample | 0.0                                   | 9.5  | 32.6  | 0.7 | 18.2  | 1.5 | 1.5  | 0.0 | 0.0  | 0.0 | 64.0  |
|                 | Number in Catch   | 0                                     | 90   | 309   | 7   | 173   | 14  | 14   | 0   | 0    | 0   | 607   |
| Total           | Percent of Sample | 0.0                                   | 11.0 | 43.0  | 0.7 | 39.3  | 1.5 | 3.0  | 1.5 | 0.0  | 0.0 | 100.0 |
|                 | Number in Catch   | 0                                     | 104  | 408   | 7   | 373   | 14  | 28   | 14  | 0    | 0   | 949   |
|                 | Standard Error    | 0                                     | 25   | 40    | 7   | 40    | 10  | 14   | 10  | 0    | 0   |       |
| Stratum Dates:  | 7/06-7/07         | Period 9 <sup>b</sup>                 |      |       |     |       |     |      |     |      |     |       |
| Sampling Dates: | 7/07              |                                       |      |       |     |       |     |      |     |      |     |       |
| Sample Size:    | 82                |                                       |      |       |     |       |     |      |     |      |     |       |
| Female          | Percent of Sample | 0.0                                   | 2.4  | 4.9   | 0.0 | 26.8  | 0.0 | 2.4  | 0.0 | 0.0  | 0.0 | 36.5  |
|                 | Number in Catch   | 0                                     | 28   | 56    | 0   | 307   | 0   | 28   | 0   | 0    | 0   | 419   |
| Male            | Percent of Sample | 0.0                                   | 13.4 | 29.4  | 1.2 | 17.1  | 1.2 | 1.2  | 0.0 | 0.0  | 0.0 | 63.5  |
|                 | Number in Catch   | 0                                     | 154  | 337   | 14  | 196   | 14  | 14   | 0   | 0    | 0   | 728   |
| Total           | Percent of Sample | 0.0                                   | 15.8 | 34.3  | 1.2 | 43.9  | 1.2 | 3.6  | 0.0 | 0.0  | 0.0 | 100.0 |
|                 | Number in Catch   | 0                                     | 181  | 393   | 14  | 504   | 14  | 41   | 0   | 0    | 0   | 1,147 |
|                 | Standard Error    | 0                                     | 46   | 60    | 14  | 63    | 14  | 24   | 0   | 0    | 0   |       |

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|                 |                   | Brood Year and Age Group <sup>a</sup> |      |      |     |      |     |      |     |      |     |       |       |
|-----------------|-------------------|---------------------------------------|------|------|-----|------|-----|------|-----|------|-----|-------|-------|
|                 |                   | 1986                                  | 1985 | 1984 |     | 1983 |     | 1982 |     | 1981 |     | Total |       |
|                 |                   | 1.1                                   | 1.2  | 1.3  | 2.2 | 1.4  | 2.3 | 1.5  | 2.4 | 1.6  | 2.5 |       |       |
| Stratum Dates:  | 7/10-7/11         | Period 10 <sup>b</sup>                |      |      |     |      |     |      |     |      |     |       |       |
| Sampling Dates: | 7/11              |                                       |      |      |     |      |     |      |     |      |     |       |       |
| Sample Size:    | 18                |                                       |      |      |     |      |     |      |     |      |     |       |       |
| Female          | Percent of Sample | 0.0                                   | 5.6  | 16.7 | 0.0 | 16.7 | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 39.0  |
|                 | Number in Catch   | 0                                     | 27   | 79   | 0   | 79   | 0   | 0    | 0   | 0    | 0   | 0     | 185   |
| Male            | Percent of Sample | 0.0                                   | 16.6 | 38.8 | 0.0 | 5.6  | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 61.0  |
|                 | Number in Catch   | 0                                     | 79   | 184  | 0   | 27   | 0   | 0    | 0   | 0    | 0   | 0     | 289   |
| Total           | Percent of Sample | 0.0                                   | 22.2 | 55.5 | 0.0 | 22.3 | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 100.0 |
|                 | Number in Catch   | 0                                     | 105  | 263  | 0   | 106  | 0   | 0    | 0   | 0    | 0   | 0     | 474   |
|                 | Standard Error    | 0                                     | 48   | 57   | 0   | 48   | 0   | 0    | 0   | 0    | 0   | 0     |       |
| Stratum Dates:  | 7/13-7/14         | Period 11 <sup>b,d</sup>              |      |      |     |      |     |      |     |      |     |       |       |
| Sampling Dates: | 7/14              |                                       |      |      |     |      |     |      |     |      |     |       |       |
| Sample Size:    | 8                 |                                       |      |      |     |      |     |      |     |      |     |       |       |
| Female          | Percent of Sample | 0.0                                   | 0.0  | 0.0  | 0.0 | 50.1 | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 50.1  |
|                 | Number in Catch   | 0                                     | 0    | 0    | 0   | 178  | 0   | 0    | 0   | 0    | 0   | 0     | 178   |
| Male            | Percent of Sample | 0.0                                   | 12.5 | 12.5 | 0.0 | 24.9 | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 49.9  |
|                 | Number in Catch   | 0                                     | 44   | 44   | 0   | 88   | 0   | 0    | 0   | 0    | 0   | 0     | 177   |
| Total           | Percent of Sample | 0.0                                   | 12.5 | 12.5 | 0.0 | 75.0 | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 0.0   | 100.0 |
|                 | Number in Catch   | 0                                     | 44   | 44   | 0   | 266  | 0   | 0    | 0   | 0    | 0   | 0     | 355   |
|                 | Standard Error    | 0                                     | 44   | 44   | 0   | 58   | 0   | 0    | 0   | 0    | 0   | 0     |       |

<sup>a</sup> Total catch for each period is from Appendix A.1. Catches allocated to age and sex categories are calculated from total catch. Illegal catch consisting of 3,211 chinook salmon taken in District 1 is not reported in this table.

<sup>b</sup> Mesh size restricted to 6 in (15.2cm) maximum.

<sup>c</sup> No mesh size restriction; most fish taken with 8.5 in (21.6 cm) mesh gillnet.

<sup>d</sup> Number in catch includes 108 chinook salmon caught during fall chum season (after 15 July).

Appendix D.2. Yukon River District 1 chinook commercial catch composition by age, sex, and gill net mesh sizes, 1989.

|                 |                       | Brood Year and Age Group <sup>a</sup>    |       |        |     |        |     |       |       |      |     |        |
|-----------------|-----------------------|--|-------|--------|-----|--------|-----|-------|-------|------|-----|--------|
|                 |                       | 1986                                     | 1985  | 1984   |     | 1983   |     | 1982  |       | 1981 |     | Total  |
|                 |                       | 1.1                                      | 1.2   | 1.3    | 2.2 | 1.4    | 2.3 | 1.5   | 2.4   | 1.6  | 2.5 |        |
| Stratum Dates:  | 6/15-6/22             | Period 2-4 Unrestricted Mesh Gill net    |       |        |     |        |     |       |       |      |     |        |
| Sampling Dates: | 6/16-6/23             |  |       |        |     |        |     |       |       |      |     |        |
| Sample Size:    | 982                   |  |       |        |     |        |     |       |       |      |     |        |
| Female          | Percent of Sample     | 0.0                                      | 0.0   | 6.4    | 0.0 | 33.2   | 0.0 | 6.6   | 1.4   | 0.1  | 0.9 | 48.6   |
|                 | Number in Catch       | 0  | 0     | 2,060  | 0   | 10,684 | 0   | 2,124 | 451   | 32   | 290 | 15,639 |
| Male            | Percent of Sample     | 0.0                                      | 0.8   | 20.6   | 0.0 | 25.8   | 0.0 | 3.2   | 0.6   | 0.2  | 0.2 | 51.4   |
|                 | Number in Catch       | 0  | 257   | 6,629  | 0   | 8,302  | 0   | 1,030 | 193   | 64   | 64  | 16,541 |
| Total           | Percent of Sample     | 0.0                                      | 0.8   | 27.0   | 0.0 | 59.0   | 0.0 | 9.8   | 2.0   | 0.3  | 1.1 | 100.0  |
|                 | Number in Catch       | 0  | 257   | 8,689  | 0   | 18,986 | 0   | 3,154 | 644   | 97   | 354 | 32,180 |
|                 | Standard Error        | 0  | 92    | 456    | 0   | 505    | 0   | 305   | 144   | 56   | 107 |        |
| Stratum Dates:  | 6/13-6/14 & 6/24-7/14 | Period 1 & 5-11 Restricted Mesh Gill net |       |        |     |        |     |       |       |      |     |        |
| Sampling Dates: | 6/14 & 6/25-7/14      |  |       |        |     |        |     |       |       |      |     |        |
| Sample Size:    | 927                   |  |       |        |     |        |     |       |       |      |     |        |
| Female          | Percent of Sample     | 0.0                                      | 0.5   | 7.7    | 0.0 | 21.7   | 0.0 | 2.2   | 1.0   | 0.1  | 0.1 | 33.3   |
|                 | Number in Catch       | 0  | 134   | 2,069  | 0   | 5,830  | 0   | 591   | 269   | 27   | 27  | 8,946  |
| Male            | Percent of Sample     | 0.1                                      | 8.8   | 33.2   | 0.8 | 20.4   | 0.8 | 1.9   | 0.5   | 0.0  | 0.2 | 66.7   |
|                 | Number in Catch       | 27                                       | 2,364 | 8,919  | 215 | 5,480  | 215 | 510   | 134   | 0    | 54  | 17,919 |
| Total           | Percent of Sample     | 0.1                                      | 9.3   | 40.9   | 0.8 | 42.1   | 0.8 | 4.1   | 1.5   | 0.1  | 0.3 | 100.0  |
|                 | Number in Catch       | 27                                       | 2,498 | 10,988 | 215 | 11,310 | 215 | 1,101 | 403   | 27   | 81  | 26,865 |
|                 | Standard Error        | 28                                       | 256   | 434    | 79  | 436    | 79  | 175   | 107   | 28   | 48  |        |
| Stratum Dates:  | 6/13-7/14             | Season Total <sup>b</sup>                |       |        |     |        |     |       |       |      |     |        |
| Sampling Dates: | 6/14-7/14             |  |       |        |     |        |     |       |       |      |     |        |
| Sample Size:    | 1,909                 |  |       |        |     |        |     |       |       |      |     |        |
| Female          | Percent of Sample     | 0.0                                      | 0.2   | 7.0    | 0.0 | 27.9   | 0.0 | 4.6   | 1.2   | 0.1  | 0.5 | 41.5   |
|                 | Number in Catch       | 0  | 118   | 4,133  | 0   | 16,474 | 0   | 2,716 | 709   | 59   | 295 | 24,504 |
| Male            | Percent of Sample     | 0.0                                      | 4.5   | 26.3   | 0.4 | 23.4   | 0.4 | 2.6   | 0.6   | 0.1  | 0.2 | 58.5   |
|                 | Number in Catch       | 0  | 2,657 | 15,529 | 236 | 13,817 | 236 | 1,535 | 354   | 59   | 118 | 34,541 |
| Total           | Percent of Sample     | 0.0                                      | 4.7   | 33.3   | 0.4 | 51.3   | 0.4 | 7.2   | 1.8   | 0.2  | 0.7 | 100.0  |
|                 | Number in Catch       | 0  | 2,775 | 19,662 | 236 | 30,290 | 236 | 4,251 | 1,063 | 118  | 413 | 59,045 |
|                 | Standard Error        | 0  | 286   | 637    | 85  | 676    | 85  | 349   | 180   | 60   | 113 |        |

<sup>a</sup> Total catch is from Appendix B.1. Illegal catch consisting of 3,211 chinook salmon taken in District 1 is not included.

<sup>b</sup> Excludes 108 chinook salmon caught during fall chum salmon season in 6" mesh gillnets.

Appendix D.3. Yukon River District 1 chinook subsistence catch by age and sex, 1989.

|                    |                   | Brood Year and Age Group <sup>a</sup> |      |       |      |       |      |     |      |     |       |       |
|--------------------|-------------------|---------------------------------------|------|-------|------|-------|------|-----|------|-----|-------|-------|
|                    |                   | 1986                                  | 1985 | 1984  | 1983 |       | 1982 |     | 1981 |     | Total |       |
|                    |                   | 1.1                                   | 1.2  | 1.3   | 2.2  | 1.4   | 2.3  | 1.5 | 2.4  | 1.6 | 2.5   | Total |
| Stratum Dates:     | 6/13-7/14         |                                       |      |       |      |       |      |     |      |     |       |       |
| Sampling Dates:    | 6/14-7/14         |                                       |      |       |      |       |      |     |      |     |       |       |
| Sample Size:       | 1,909             |                                       |      |       |      |       |      |     |      |     |       |       |
| Female             | Percent of Sample | 0.0                                   | 0.2  | 7.0   | 0.0  | 27.9  | 0.0  | 4.6 | 1.2  | 0.1 | 0.5   | 41.5  |
|                    | Number in Catch   | 0                                     | 10   | 342   | 0    | 1,364 | 0    | 225 | 59   | 5   | 24    | 2,029 |
| Male               | Percent of Sample | 0.0                                   | 4.5  | 26.3  | 0.4  | 23.4  | 0.4  | 2.6 | 0.6  | 0.1 | 0.2   | 58.5  |
|                    | Number in Catch   | 0                                     | 220  | 1,286 | 20   | 1,144 | 20   | 127 | 29   | 5   | 10    | 2,859 |
| Total <sup>b</sup> | Percent of Sample | 0.0                                   | 4.7  | 33.3  | 0.4  | 51.3  | 0.4  | 7.2 | 1.8  | 0.2 | 0.7   | 100.0 |
|                    | Number in Catch   | 0                                     | 230  | 1,628 | 20   | 2,508 | 20   | 352 | 88   | 10  | 34    | 4,888 |
|                    | Standard Error    | 0                                     | 24   | 53    | 7    | 56    | 7    | 29  | 15   | 5   | 9     |       |

<sup>a</sup> Age and sex composition is based on Yukon River District 1 commercial catch.

<sup>b</sup> Total catch is from Appendix B.1.

Appendix D.4. Yukon River District 2 chinook commercial catch composition by age, sex, and fishing period, 1989.

|                 |                   | Brood Year and Age Group <sup>a</sup> |      |       |     |       |     |       |     |      |     |        |
|-----------------|-------------------|---------------------------------------|------|-------|-----|-------|-----|-------|-----|------|-----|--------|
|                 |                   | 1986                                  | 1985 | 1984  |     | 1983  |     | 1982  |     | 1981 |     | Total  |
|                 |                   | 1.1                                   | 1.2  | 1.3   | 2.2 | 1.4   | 2.3 | 1.5   | 2.4 | 1.6  | 2.5 |        |
| Stratum Dates:  | 6/15              | Period 1 <sup>b</sup>                 |      |       |     |       |     |       |     |      |     |        |
| Sampling Dates: | 6/15              |                                       |      |       |     |       |     |       |     |      |     |        |
| Sample Size:    | 114               |                                       |      |       |     |       |     |       |     |      |     |        |
| Female          | Percent of Sample | 0.0                                   | 0.0  | 9.6   | 0.0 | 10.5  | 0.0 | 2.6   | 0.0 | 0.0  | 0.0 | 22.7   |
|                 | Number in Catch   | 0                                     | 0    | 236   | 0   | 259   | 0   | 64    | 0   | 0    | 0   | 559    |
| Male            | Percent of Sample | 0.0                                   | 10.5 | 41.3  | 0.9 | 20.2  | 2.6 | 0.9   | 0.0 | 0.0  | 0.9 | 77.3   |
|                 | Number in Catch   | 0                                     | 259  | 1,017 | 22  | 498   | 64  | 22    | 0   | 0    | 22  | 1,904  |
| Total           | Percent of Sample | 0.0                                   | 10.5 | 50.9  | 0.9 | 30.7  | 2.6 | 3.5   | 0.0 | 0.0  | 0.9 | 100.0  |
|                 | Number in Catch   | 0                                     | 259  | 1,254 | 22  | 756   | 64  | 86    | 0   | 0    | 22  | 2,463  |
|                 | Standard Error    | 0                                     | 71   | 116   | 22  | 107   | 37  | 43    | 0   | 0    | 22  |        |
| Stratum Dates:  | 6/18-6/19         | Period 2 <sup>c</sup>                 |      |       |     |       |     |       |     |      |     |        |
| Sampling Dates: | 6/19              |                                       |      |       |     |       |     |       |     |      |     |        |
| Sample Size:    | 343               |                                       |      |       |     |       |     |       |     |      |     |        |
| Female          | Percent of Sample | 0.0                                   | 0.0  | 3.5   | 0.0 | 33.1  | 0.3 | 6.1   | 2.3 | 0.0  | 0.6 | 45.9   |
|                 | Number in Catch   | 0                                     | 0    | 385   | 0   | 3,637 | 33  | 670   | 253 | 0    | 66  | 5,043  |
| Male            | Percent of Sample | 0.0                                   | 0.3  | 19.9  | 0.0 | 25.2  | 1.5 | 5.2   | 1.7 | 0.0  | 0.3 | 54.1   |
|                 | Number in Catch   | 0                                     | 33   | 2,187 | 0   | 2,769 | 165 | 571   | 187 | 0    | 33  | 5,945  |
| Total           | Percent of Sample | 0.0                                   | 0.3  | 23.4  | 0.0 | 58.3  | 1.8 | 11.3  | 4.0 | 0.0  | 0.9 | 100.0  |
|                 | Number in Catch   | 0                                     | 33   | 2,571 | 0   | 6,406 | 198 | 1,242 | 440 | 0    | 99  | 10,988 |
|                 | Standard Error    | 0                                     | 32   | 252   | 0   | 293   | 79  | 188   | 116 | 0    | 56  |        |
| Stratum Dates:  | 6/21-6/22         | Period 3 <sup>c</sup>                 |      |       |     |       |     |       |     |      |     |        |
| Sampling Dates: | 6/22              |                                       |      |       |     |       |     |       |     |      |     |        |
| Sample Size:    | 354               |                                       |      |       |     |       |     |       |     |      |     |        |
| Female          | Percent of Sample | 0.0                                   | 0.0  | 5.4   | 0.0 | 36.9  | 0.0 | 5.9   | 1.4 | 0.3  | 0.6 | 50.5   |
|                 | Number in Catch   | 0                                     | 0    | 406   | 0   | 2,773 | 0   | 443   | 105 | 23   | 45  | 3,795  |
| Male            | Percent of Sample | 0.0                                   | 1.4  | 18.1  | 0.0 | 26.0  | 0.6 | 3.1   | 0.3 | 0.0  | 0.0 | 49.5   |
|                 | Number in Catch   | 0                                     | 105  | 1,360 | 0   | 1,954 | 45  | 233   | 23  | 0    | 0   | 3,720  |
| Total           | Percent of Sample | 0.0                                   | 1.4  | 23.5  | 0.0 | 62.9  | 0.6 | 9.0   | 1.7 | 0.3  | 0.6 | 100.0  |
|                 | Number in Catch   | 0                                     | 105  | 1,766 | 0   | 4,727 | 45  | 676   | 128 | 23   | 45  | 7,515  |
|                 | Standard Error    | 0                                     | 47   | 170   | 0   | 193   | 31  | 114   | 52  | 22   | 31  |        |

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|                 |                   | Brood Year and Age Group <sup>a</sup> |      |       |     |       |     |      |     |      |     |       |
|-----------------|-------------------|---------------------------------------|------|-------|-----|-------|-----|------|-----|------|-----|-------|
|                 |                   | 1986                                  | 1985 | 1984  |     | 1983  |     | 1982 |     | 1981 |     | Total |
|                 |                   | 1.1                                   | 1.2  | 1.3   | 2.2 | 1.4   | 2.3 | 1.5  | 2.4 | 1.6  | 2.5 |       |
| Stratum Dates:  | 6/25              | Period 4 <sup>c</sup>                 |      |       |     |       |     |      |     |      |     |       |
| Sampling Dates: | 6/25              |                                       |      |       |     |       |     |      |     |      |     |       |
| Sample Size:    | 126               |                                       |      |       |     |       |     |      |     |      |     |       |
| Female          | Percent of Sample | 0.0                                   | 0.0  | 5.6   | 0.0 | 27.8  | 0.0 | 2.4  | 0.0 | 0.0  | 0.0 | 35.8  |
|                 | Number in Catch   | 0                                     | 0    | 167   | 0   | 831   | 0   | 72   | 0   | 0    | 0   | 1,071 |
| Male            | Percent of Sample | 0.0                                   | 5.6  | 35.6  | 0.8 | 15.9  | 0.0 | 6.3  | 0.0 | 0.0  | 0.0 | 64.2  |
|                 | Number in Catch   | 0                                     | 167  | 1,065 | 24  | 476   | 0   | 188  | 0   | 0    | 0   | 1,920 |
| Total           | Percent of Sample | 0.0                                   | 5.6  | 41.2  | 0.8 | 43.7  | 0.0 | 8.7  | 0.0 | 0.0  | 0.0 | 100.0 |
|                 | Number in Catch   | 0                                     | 167  | 1,232 | 24  | 1,307 | 0   | 260  | 0   | 0    | 0   | 2,991 |
|                 | Standard Error    | 0                                     | 62   | 132   | 24  | 133   | 0   | 75   | 0   | 0    | 0   |       |
| Stratum Dates:  | 6/27              | Period 5 <sup>b</sup>                 |      |       |     |       |     |      |     |      |     |       |
| Sampling Dates: | 6/27              |                                       |      |       |     |       |     |      |     |      |     |       |
| Sample Size:    | 132               |                                       |      |       |     |       |     |      |     |      |     |       |
| Female          | Percent of Sample | 0.0                                   | 0.0  | 8.3   | 0.0 | 18.2  | 0.0 | 3.0  | 0.8 | 0.0  | 0.0 | 30.3  |
|                 | Number in Catch   | 0                                     | 0    | 269   | 0   | 590   | 0   | 97   | 26  | 0    | 0   | 983   |
| Male            | Percent of Sample | 0.0                                   | 15.9 | 37.8  | 0.0 | 14.4  | 0.0 | 0.8  | 0.8 | 0.0  | 0.0 | 69.7  |
|                 | Number in Catch   | 0                                     | 516  | 1,226 | 0   | 467   | 0   | 26   | 26  | 0    | 0   | 2,260 |
| Total           | Percent of Sample | 0.0                                   | 15.9 | 46.1  | 0.0 | 32.6  | 0.0 | 3.8  | 1.6 | 0.0  | 0.0 | 100.0 |
|                 | Number in Catch   | 0                                     | 516  | 1,495 | 0   | 1,057 | 0   | 123  | 52  | 0    | 0   | 3,243 |
|                 | Standard Error    | 0                                     | 104  | 141   | 0   | 133   | 0   | 54   | 36  | 0    | 0   |       |
| Stratum Dates:  | 6/29              | Period 6 <sup>b,d</sup>               |      |       |     |       |     |      |     |      |     |       |
| Sampling Dates: | 6/27              |                                       |      |       |     |       |     |      |     |      |     |       |
| Sample Size:    | 228               |                                       |      |       |     |       |     |      |     |      |     |       |
| Female          | Percent of Sample | 0.0                                   | 0.0  | 8.3   | 0.0 | 18.5  | 0.0 | 2.2  | 0.4 | 0.4  | 0.0 | 29.8  |
|                 | Number in Catch   | 0                                     | 0    | 182   | 0   | 405   | 0   | 48   | 9   | 9    | 0   | 652   |
| Male            | Percent of Sample | 0.0                                   | 12.3 | 32.1  | 0.9 | 22.8  | 0.4 | 1.3  | 0.0 | 0.0  | 0.4 | 70.2  |
|                 | Number in Catch   | 0                                     | 269  | 703   | 20  | 499   | 9   | 28   | 0   | 0    | 9   | 1,537 |
| Total           | Percent of Sample | 0.0                                   | 12.3 | 40.4  | 0.9 | 41.3  | 0.4 | 3.5  | 0.4 | 0.4  | 0.4 | 100.0 |
|                 | Number in Catch   | 0                                     | 269  | 884   | 20  | 904   | 9   | 77   | 9   | 9    | 9   | 2,189 |
|                 | Standard Error    | 0                                     | 48   | 71    | 14  | 72    | 9   | 27   | 9   | 9    | 9   |       |

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|                 |                   | Brood Year and Age Group <sup>a</sup> |      |      |     |      |     |      |     |      |     |       |
|-----------------|-------------------|---------------------------------------|------|------|-----|------|-----|------|-----|------|-----|-------|
|                 |                   | 1986                                  | 1985 | 1984 |     | 1983 |     | 1982 |     | 1981 |     | Total |
|                 |                   | 1.1                                   | 1.2  | 1.3  | 2.2 | 1.4  | 2.3 | 1.5  | 2.4 | 1.6  | 2.5 |       |
| Stratum Dates:  | 7/02–7/03         | Period 7 <sup>b,d</sup>               |      |      |     |      |     |      |     |      |     |       |
| Sampling Dates: | 6/30              |                                       |      |      |     |      |     |      |     |      |     |       |
| Sample Size:    | 148               |                                       |      |      |     |      |     |      |     |      |     |       |
| Female          | Percent of Sample | 0.0                                   | 0.0  | 5.4  | 0.0 | 20.9 | 0.0 | 0.7  | 2.0 | 0.0  | 0.7 | 29.7  |
|                 | Number in Catch   | 0                                     | 0    | 93   | 0   | 358  | 0   | 12   | 34  | 0    | 12  | 509   |
| Male            | Percent of Sample | 0.7                                   | 9.5  | 35.7 | 0.7 | 18.2 | 0.0 | 3.4  | 1.4 | 0.0  | 0.7 | 70.3  |
|                 | Number in Catch   | 12                                    | 163  | 612  | 12  | 312  | 0   | 58   | 24  | 0    | 12  | 1,205 |
| Total           | Percent of Sample | 0.7                                   | 9.5  | 41.1 | 0.7 | 39.1 | 0.0 | 4.1  | 3.4 | 0.0  | 1.4 | 100.0 |
|                 | Number in Catch   | 12                                    | 163  | 704  | 12  | 670  | 0   | 70   | 58  | 0    | 24  | 1,714 |
|                 | Standard Error    | 12                                    | 41   | 70   | 12  | 69   | 0   | 28   | 26  | 0    | 17  |       |
| Stratum Dates:  | 7/05–7/06         | Period 8 <sup>b,d</sup>               |      |      |     |      |     |      |     |      |     |       |
| Sampling Dates: | 7/04              |                                       |      |      |     |      |     |      |     |      |     |       |
| Sample Size:    | 137               |                                       |      |      |     |      |     |      |     |      |     |       |
| Female          | Percent of Sample | 0.0                                   | 1.5  | 10.2 | 0.0 | 21.1 | 0.0 | 1.5  | 1.5 | 0.0  | 0.0 | 35.8  |
|                 | Number in Catch   | 0                                     | 13   | 90   | 0   | 187  | 0   | 13   | 13  | 0    | 0   | 318   |
| Male            | Percent of Sample | 0.0                                   | 9.5  | 32.8 | 0.7 | 18.2 | 1.5 | 1.5  | 0.0 | 0.0  | 0.0 | 64.2  |
|                 | Number in Catch   | 0                                     | 84   | 291  | 6   | 161  | 13  | 13   | 0   | 0    | 0   | 569   |
| Total           | Percent of Sample | 0.0                                   | 11.0 | 43.0 | 0.7 | 39.3 | 1.5 | 3.0  | 1.5 | 0.0  | 0.0 | 100.0 |
|                 | Number in Catch   | 0                                     | 98   | 381  | 6   | 349  | 13  | 27   | 13  | 0    | 0   | 887   |
|                 | Standard Error    | 0                                     | 24   | 38   | 6   | 37   | 9   | 13   | 9   | 0    | 0   |       |
| Stratum Dates:  | 7/09–7/10         | Period 9 <sup>b,d</sup>               |      |      |     |      |     |      |     |      |     |       |
| Sampling Dates: | 7/07              |                                       |      |      |     |      |     |      |     |      |     |       |
| Sample Size:    | 82                |                                       |      |      |     |      |     |      |     |      |     |       |
| Female          | Percent of Sample | 0.0                                   | 2.4  | 4.9  | 0.0 | 26.8 | 0.0 | 2.4  | 0.0 | 0.0  | 0.0 | 36.5  |
|                 | Number in Catch   | 0                                     | 18   | 36   | 0   | 199  | 0   | 18   | 0   | 0    | 0   | 271   |
| Male            | Percent of Sample | 0.0                                   | 13.4 | 29.4 | 1.2 | 17.1 | 1.2 | 1.2  | 0.0 | 0.0  | 0.0 | 63.5  |
|                 | Number in Catch   | 0                                     | 99   | 218  | 9   | 127  | 9   | 9    | 0   | 0    | 0   | 471   |
| Total           | Percent of Sample | 0.0                                   | 15.8 | 34.3 | 1.2 | 43.9 | 1.2 | 3.6  | 0.0 | 0.0  | 0.0 | 100.0 |
|                 | Number in Catch   | 0                                     | 117  | 255  | 9   | 326  | 9   | 27   | 0   | 0    | 0   | 742   |
|                 | Standard Error    | 0                                     | 30   | 39   | 9   | 41   | 9   | 15   | 0   | 0    | 0   |       |

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|                 |                   | Brood Year and Age Group <sup>a</sup> |      |      |     |      |     |      |     |      |     |       |
|-----------------|-------------------|---------------------------------------|------|------|-----|------|-----|------|-----|------|-----|-------|
|                 |                   | 1986                                  | 1985 | 1984 |     | 1983 |     | 1982 |     | 1981 |     | Total |
|                 |                   | 1.1                                   | 1.2  | 1.3  | 2.2 | 1.4  | 2.3 | 1.5  | 2.4 | 1.6  | 2.5 |       |
| Stratum Dates:  | 7/12–7/13         | Period 10 <sup>b,d,e</sup>            |      |      |     |      |     |      |     |      |     |       |
| Sampling Dates: | 7/11              |                                       |      |      |     |      |     |      |     |      |     |       |
| Sample Size:    | 18                |                                       |      |      |     |      |     |      |     |      |     |       |
| Female          | Percent of Sample | 0.0                                   | 5.6  | 16.7 | 0.0 | 16.7 | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 39.0  |
|                 | Number in Catch   | 0                                     | 27   | 82   | 0   | 82   | 0   | 0    | 0   | 0    | 0   | 192   |
| Male            | Percent of Sample | 0.0                                   | 16.7 | 38.9 | 0.0 | 5.6  | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 61.2  |
|                 | Number in Catch   | 0                                     | 82   | 192  | 0   | 27   | 0   | 0    | 0   | 0    | 0   | 302   |
| Total           | Percent of Sample | 0.0                                   | 22.3 | 55.6 | 0.0 | 22.3 | 0.0 | 0.0  | 0.0 | 0.0  | 0.0 | 100.1 |
|                 | Number in Catch   | 0                                     | 110  | 274  | 0   | 110  | 0   | 0    | 0   | 0    | 0   | 493   |
|                 | Standard Error    | 0                                     | 50   | 60   | 0   | 50   | 0   | 0    | 0   | 0    | 0   |       |

<sup>a</sup> Total fish by period are from Appendix A.2.

<sup>b</sup> Mesh size restricted to 6 in (15.2 cm) maximum.

<sup>c</sup> No mesh size restriction; most fish taken with 8.5 in (21.6 cm) mesh size.

<sup>d</sup> Based on commercial catch samples from a corresponding fishing period in District 1.

<sup>e</sup> Number in catch includes 48 chinook salmon caught during fall chum season (after 15 July).

Appendix D.5. Yukon River District 2 chinook commercial catch composition by age, sex, and gillnet mesh size, 1989.

|                 |                   | Brood Year and Age Group                 |       |        |     |        |     |       |     |      |     |        |
|-----------------|-------------------|--|-------|--------|-----|--------|-----|-------|-----|------|-----|--------|
|                 |                   | 1986                                     | 1985  | 1984   |     | 1983   |     | 1982  |     | 1981 |     | Total  |
|                 |                   | 1.1                                      | 1.2   | 1.3    | 2.2 | 1.4    | 2.3 | 1.5   | 2.4 | 1.6  | 2.5 |        |
| Stratum Dates:  | 6/18–6/25         | Period 2–4 Unrestricted Mesh Gillnet     |       |        |     |        |     |       |     |      |     |        |
| Sampling Dates: | 6/19–6/25         |  |       |        |     |        |     |       |     |      |     |        |
| Sample Size:    | 823               |  |       |        |     |        |     |       |     |      |     |        |
| Female          | Percent of Sample | 0.0                                      | 0.0   | 4.6    | 0.0 | 33.9   | 0.1 | 5.5   | 1.6 | 0.1  | 0.5 | 46.3   |
|                 | Number in Catch   | 0  | 0     | 989    | 0   | 7,286  | 21  | 1,182 | 344 | 21   | 107 | 9,952  |
| Male            | Percent of Sample | 0.1                                      | 1.6   | 21.4   | 0.1 | 24.1   | 0.9 | 4.5   | 0.9 | 0.0  | 0.1 | 53.7   |
|                 | Number in Catch   | 21                                       | 344   | 4,600  | 21  | 5,180  | 193 | 967   | 193 | 0    | 21  | 11,542 |
| Total           | Percent of Sample | 0.1                                      | 1.6   | 26.0   | 0.1 | 58.0   | 1.0 | 10.0  | 2.5 | 0.1  | 0.6 | 100.0  |
|                 | Number in Catch   | 21                                       | 344   | 5,588  | 21  | 12,467 | 215 | 2,149 | 537 | 21   | 129 | 21,494 |
|                 | Standard Error    | 24                                       | 94    | 329    | 24  | 370    | 75  | 225   | 117 | 24   | 58  |        |
| Stratum Dates:  | 6/15 & 6/27–7/13  | Period 1 & 5–10 Restricted Mesh Gillnet* |       |        |     |        |     |       |     |      |     |        |
| Sampling Dates: | 6/15 & 6/25–7/11  |  |       |        |     |        |     |       |     |      |     |        |
| Sample Size:    | 859               |  |       |        |     |        |     |       |     |      |     |        |
| Female          | Percent of Sample | 0.0                                      | 0.6   | 8.1    | 0.0 | 19.1   | 0.0 | 2.0   | 0.8 | 0.1  | 0.1 | 30.8   |
|                 | Number in Catch   | 0  | 70    | 946    | 0   | 2,231  | 0   | 234   | 93  | 12   | 12  | 3,598  |
| Male            | Percent of Sample | 0.1                                      | 11.9  | 34.9   | 0.7 | 18.6   | 0.8 | 1.5   | 0.3 | 0.1  | 0.3 | 69.2   |
|                 | Number in Catch   | 12                                       | 1,390 | 4,077  | 82  | 2,173  | 93  | 175   | 35  | 12   | 35  | 8,085  |
| Total           | Percent of Sample | 0.1                                      | 12.5  | 43.0   | 0.7 | 37.7   | 0.8 | 3.5   | 1.1 | 0.2  | 0.4 | 100.0  |
|                 | Number in Catch   | 12                                       | 1,460 | 5,024  | 82  | 4,404  | 93  | 409   | 129 | 23   | 47  | 11,683 |
|                 | Standard Error    | 13                                       | 132   | 197    | 33  | 193    | 36  | 73    | 42  | 18   | 25  |        |
| Stratum Dates:  | 6/15–7/13         | Season Total <sup>b</sup>                |       |        |     |        |     |       |     |      |     |        |
| Sampling Dates: | 6/15–7/11         |  |       |        |     |        |     |       |     |      |     |        |
| Sample Size:    | 1,682             |  |       |        |     |        |     |       |     |      |     |        |
| Female          | Percent of Sample | 0.0                                      | 0.2   | 5.9    | 0.0 | 28.0   | 0.1 | 4.3   | 1.3 | 0.1  | 0.4 | 40.3   |
|                 | Number in Catch   | 0  | 66    | 1,960  | 0   | 9,303  | 33  | 1,429 | 432 | 33   | 133 | 13,390 |
| Male            | Percent of Sample | 0.0                                      | 5.3   | 26.7   | 0.3 | 21.9   | 0.9 | 3.5   | 0.8 | 0.1  | 0.2 | 59.7   |
|                 | Number in Catch   | 0  | 1,761 | 8,871  | 100 | 7,276  | 299 | 1,163 | 266 | 33   | 66  | 19,835 |
| Total           | Percent of Sample | 0.0                                      | 5.5   | 32.6   | 0.3 | 49.9   | 1.0 | 7.8   | 2.1 | 0.2  | 0.6 | 100.0  |
|                 | Number in Catch   | 0  | 1,827 | 10,831 | 100 | 16,579 | 332 | 2,592 | 698 | 66   | 199 | 33,225 |
|                 | Standard Error    | 0  | 185   | 380    | 44  | 405    | 81  | 217   | 116 | 36   | 63  |        |

\* Mesh size restricted to 6 in (15.2 cm). Restricted mesh summary is derived from samples taken in District 2 for periods 1 & 5 and District 1 samples from periods corresponding to District 2 periods 6–10.

<sup>b</sup> Number in catch includes 48 chinook salmon caught during fall chum season (after 15 July).

Appendix D.6. Yukon River District 2 chinook subsistence catch composition by age and sex, 1989.

|                    |                   | Brood Year and Age Group <sup>a</sup> |      |       |     |       |     |      |     |      |     |       |
|--------------------|-------------------|---------------------------------------|------|-------|-----|-------|-----|------|-----|------|-----|-------|
|                    |                   | 1986                                  | 1985 | 1984  |     | 1983  |     | 1982 |     | 1981 |     | Total |
|                    |                   | 1.1                                   | 1.2  | 1.3   | 2.2 | 1.4   | 2.3 | 1.5  | 2.4 | 1.6  | 2.5 |       |
| Stratum Dates:     | 6/13-7/14         |                                       |      |       |     |       |     |      |     |      |     |       |
| Sampling Dates:    | 6/14-7/14         |                                       |      |       |     |       |     |      |     |      |     |       |
| Sample Size:       | 1,682             |                                       |      |       |     |       |     |      |     |      |     |       |
| Female             | Percent of Sample | 0.0                                   | 0.2  | 5.9   | 0.0 | 28.1  | 0.1 | 4.3  | 1.3 | 0.1  | 0.4 | 40.4  |
|                    | Number in Catch   | 0                                     | 14   | 422   | 0   | 2,008 | 7   | 307  | 93  | 7    | 29  | 2,887 |
| Male               | Percent of Sample | 0.0                                   | 5.3  | 26.7  | 0.3 | 21.9  | 0.9 | 3.5  | 0.8 | 0.0  | 0.2 | 59.6  |
|                    | Number in Catch   | 0                                     | 379  | 1,908 | 21  | 1,565 | 64  | 250  | 57  | 0    | 14  | 4,260 |
| Total <sup>a</sup> | Percent of Sample | 0.0                                   | 5.5  | 32.6  | 0.3 | 50.0  | 1.0 | 7.8  | 2.1 | 0.1  | 0.6 | 100.0 |
|                    | Number in Catch   | 0                                     | 393  | 2,330 | 21  | 3,574 | 71  | 557  | 150 | 7    | 43  | 7,147 |
|                    | Standard Error    | 0                                     | 40   | 82    | 10  | 87    | 17  | 47   | 25  | 6    | 13  |       |

<sup>a</sup> Age and sex composition is based on Yukon River District 1 and 2 commercial catch samples (Appendix D.5). Total catch is from Appendix B.1.

Appendix D.7. Yukon River District 3 chinook commercial catch composition by age and sex, 1989.

|                    |                   | Brood Year and Age Group |      |      |      |      |     |      |     |      |       |       |
|--------------------|-------------------|--------------------------|------|------|------|------|-----|------|-----|------|-------|-------|
|                    |                   | 1985                     |      | 1984 |      | 1983 |     | 1982 |     | 1981 |       | Total |
|                    |                   | 1.2                      | 1.3  | 2.2  | 1.4  | 2.3  | 1.5 | 2.4  | 1.6 | 2.5  |       |       |
| Stratum Dates:     | 6/21–7/10         |                          |      |      |      |      |     |      |     |      |       |       |
| Sampling Dates:    | 6/19–6/27         |                          |      |      |      |      |     |      |     |      |       |       |
| Sample Size:       | 955               |                          |      |      |      |      |     |      |     |      |       |       |
| Female             | Percent of Sample | 0.0                      | 5.1  | 0.0  | 31.9 | 0.1  | 5.1 | 1.5  | 0.1 | 0.4  | 44.2  |       |
|                    | Number in Catch   | 0                        | 84   | 0    | 525  | 2    | 84  | 25   | 2   | 7    | 727   |       |
| Male               | Percent of Sample | 3.6                      | 23.8 | 0.1  | 22.7 | 0.7  | 4.0 | 0.8  | 0.0 | 0.1  | 55.8  |       |
|                    | Number in Catch   | 59                       | 392  | 2    | 373  | 12   | 66  | 13   | 0   | 2    | 918   |       |
| Total <sup>a</sup> | Percent of Sample | 3.6                      | 28.9 | 0.1  | 54.6 | 0.8  | 9.1 | 2.3  | 0.1 | 0.5  | 100.0 |       |
|                    | Number in Catch   | 59                       | 475  | 2    | 898  | 13   | 150 | 38   | 2   | 8    | 1,645 |       |
|                    | Standard Error    | 41                       | 115  | 7    | 157  | 19   | 65  | 33   | 7   | 15   |       |       |

<sup>a</sup> Age and sex composition is based on District 2 commercial catch.

Appendix D.8. Yukon River District 3 chinook subsistence catch composition by age and sex, 1989.

|                    |                   | Brood Year and Age Group |       |     |       |     |      |     |      | Total |
|--------------------|-------------------|--------------------------|-------|-----|-------|-----|------|-----|------|-------|
|                    |                   | 1985                     | 1984  |     | 1983  |     | 1982 |     | 1981 |       |
|                    |                   | 1.2                      | 1.3   | 2.2 | 1.4   | 2.3 | 1.5  | 2.4 | 1.6  |       |
| Stratum Dates:     | 6/13-7/14         |                          |       |     |       |     |      |     |      |       |
| Sampling Dates:    | 6/14-7/14         |                          |       |     |       |     |      |     |      |       |
| Sample Size:       | 955               |                          |       |     |       |     |      |     |      |       |
| Female             | Percent of Sample | 0.0                      | 5.2   | 0.0 | 32.2  | 0.1 | 5.1  | 1.5 | 0.1  | 44.2  |
|                    | Number in Catch   | 0                        | 247   | 0   | 1,528 | 5   | 242  | 71  | 5    | 2,098 |
| Male               | Percent of Sample | 3.6                      | 23.8  | 0.1 | 22.8  | 0.7 | 4.0  | 0.8 | 0.0  | 55.8  |
|                    | Number in Catch   | 171                      | 1,130 | 5   | 1,082 | 33  | 190  | 38  | 0    | 2,648 |
| Total <sup>a</sup> | Percent of Sample | 3.6                      | 29.0  | 0.1 | 55.0  | 0.8 | 9.1  | 2.3 | 0.1  | 100.0 |
|                    | Number in Catch   | 171                      | 1,376 | 5   | 2,610 | 38  | 432  | 109 | 5    | 4,746 |
|                    | Standard Error    | 29                       | 70    | 5   | 76    | 14  | 44   | 23  | 5    |       |

<sup>a</sup> Age and sex composition is based on District 2 commercial catch.

Appendix D.9. Yukon River District 4 chinook commercial and subsistence catch composition by age, sex, and gear type, 1989.

|                           |                   | Brood Year and Age Group |       |       |       |     | Total  |
|---------------------------|-------------------|--------------------------|-------|-------|-------|-----|--------|
|                           |                   | 1986                     | 1985  | 1984  | 1983  |     |        |
|                           |                   | 1.1                      | 1.2   | 1.3   | 1.4   | 2.3 |        |
| Stratum Dates: 7/2-7/27   |                   | Fish Wheel               |       |       |       |     |        |
| Sampling Dates: 7/2-7/27  |                   |                          |       |       |       |     |        |
| Sample Size: 104          |                   |                          |       |       |       |     |        |
| Female                    | Percent of Sample | 1.0                      | 1.0   | 3.8   | 22.1  | 0.0 | 27.9   |
|                           | Number in Catch   | 78                       | 78    | 297   | 1,728 | 0   | 2,182  |
| Male                      | Percent of Sample | 9.6                      | 23.1  | 27.8  | 10.6  | 1.0 | 72.1   |
|                           | Number in Catch   | 751                      | 1,806 | 2,174 | 829   | 78  | 5,638  |
| Total                     | Percent of Sample | 10.6                     | 24.1  | 31.6  | 32.7  | 1.0 | 100.0  |
|                           | Number in Catch   | 829                      | 1,885 | 2,471 | 2,557 | 78  | 7,820  |
|                           | Standard Error    | 237                      | 330   | 358   | 361   | 77  |        |
| Stratum Dates: 6/28-7/27  |                   | Gill net                 |       |       |       |     |        |
| Sampling Dates: 6/28-7/17 |                   |                          |       |       |       |     |        |
| Sample Size: 66           |                   |                          |       |       |       |     |        |
| Female                    | Percent of Sample | 0.0                      | 0.0   | 9.1   | 10.6  | 0.0 | 19.7   |
|                           | Number in Catch   | 0                        | 0     | 371   | 432   | 0   | 803    |
| Male                      | Percent of Sample | 0.0                      | 13.6  | 54.6  | 12.1  | 0.0 | 80.3   |
|                           | Number in Catch   | 0                        | 554   | 2,226 | 493   | 0   | 3,273  |
| Total                     | Percent of Sample | 0.0                      | 13.6  | 63.7  | 22.7  | 0.0 | 100.0  |
|                           | Number in Catch   | 0                        | 554   | 2,597 | 925   | 0   | 4,076  |
|                           | Standard Error    | 0                        | 173   | 243   | 212   | 0   |        |
| Stratum Dates: 6/28-7/17  |                   | Combined Gear            |       |       |       |     |        |
| Sampling Dates: 6/28-7/17 |                   |                          |       |       |       |     |        |
| Sample Size: 170          |                   |                          |       |       |       |     |        |
| Female                    | Percent of Sample | 0.6                      | 0.7   | 5.6   | 18.2  | 0.0 | 25.1   |
|                           | Number in Catch   | 71                       | 83    | 666   | 2,165 | 0   | 2,986  |
| Male                      | Percent of Sample | 6.3                      | 19.9  | 36.9  | 11.1  | 0.7 | 74.9   |
|                           | Number in Catch   | 749                      | 2,367 | 4,390 | 1,320 | 83  | 8,910  |
| Total                     | Percent of Sample | 6.9                      | 20.6  | 42.5  | 29.3  | 0.7 | 100.0  |
|                           | Number in Catch   | 821                      | 2,451 | 5,056 | 3,486 | 83  | 11,896 |
|                           | Standard Error    | 232                      | 370   | 452   | 416   | 76  |        |

Appendix D.10. Yukon River District 5 chinook commercial and subsistence catch composition by age, sex, and gear type, 1989.

|                          |                   | Brood Year and Age Group |       |       |     |        |     |       |     | Total  |
|--------------------------|-------------------|--------------------------|-------|-------|-----|--------|-----|-------|-----|--------|
|                          |                   | 1986                     | 1985  | 1984  |     | 1983   |     | 1982  |     |        |
|                          |                   | 1.1                      | 1.2   | 1.3   | 2.2 | 1.4    | 2.3 | 1.5   | 2.4 |        |
| Stratum Dates: 7/5-7/19  |                   | Fish Wheel               |       |       |     |        |     |       |     |        |
| Sampling Dates: 7/5-7/19 |                   |                          |       |       |     |        |     |       |     |        |
| Sample Size: 135         |                   |                          |       |       |     |        |     |       |     |        |
| Female                   | Percent of Sample | 0.0                      | 0.0   | 3.7   | 0.0 | 13.4   | 0.7 | 0.7   | 0.7 | 19.2   |
|                          | Number in Catch   | 0                        | 0     | 500   | 0   | 1,812  | 95  | 95    | 95  | 2,596  |
| Male                     | Percent of Sample | 0.7                      | 31.2  | 35.7  | 0.7 | 5.2    | 4.4 | 0.7   | 2.2 | 80.8   |
|                          | Number in Catch   | 95                       | 4,218 | 4,827 | 95  | 703    | 595 | 95    | 297 | 10,925 |
| Total                    | Percent of Sample | 0.7                      | 31.2  | 39.4  | 0.7 | 18.6   | 5.1 | 1.4   | 2.9 | 100.0  |
|                          | Number in Catch   | 95                       | 4,218 | 5,327 | 95  | 2,515  | 690 | 189   | 392 | 13,521 |
|                          | Standard Error    | 97                       | 541   | 571   | 97  | 454    | 257 | 137   | 196 |        |
| Stratum Dates: 7/5-7/19  |                   | Gillnet                  |       |       |     |        |     |       |     |        |
| Sampling Dates: 7/6-7/19 |                   |                          |       |       |     |        |     |       |     |        |
| Sample Size: 132         |                   |                          |       |       |     |        |     |       |     |        |
| Female                   | Percent of Sample | 0.0                      | 0.0   | 2.3   | 0.0 | 33.3   | 0.8 | 7.6   | 3.0 | 47.0   |
|                          | Number in Catch   | 0                        | 0     | 322   | 0   | 4,658  | 112 | 1,063 | 420 | 6,575  |
| Male                     | Percent of Sample | 0.0                      | 1.5   | 12.1  | 0.0 | 34.8   | 0.0 | 3.8   | 0.8 | 53.0   |
|                          | Number in Catch   | 0                        | 210   | 1,693 | 0   | 4,868  | 0   | 532   | 112 | 7,414  |
| Total                    | Percent of Sample | 0.0                      | 1.5   | 14.4  | 0.0 | 68.1   | 0.8 | 11.4  | 3.8 | 100.0  |
|                          | Number in Catch   | 0                        | 210   | 2,014 | 0   | 9,527  | 112 | 1,595 | 532 | 13,989 |
|                          | Standard Error    | 0                        | 149   | 429   | 0   | 570    | 109 | 388   | 234 |        |
| Stratum Dates: 7/5-7/19  |                   | Combined Gear            |       |       |     |        |     |       |     |        |
| Sampling Dates: 7/5-7/19 |                   |                          |       |       |     |        |     |       |     |        |
| Sample Size: 267         |                   |                          |       |       |     |        |     |       |     |        |
| Female                   | Percent of Sample | 0.0                      | 0.0   | 3.0   | 0.0 | 23.5   | 0.7 | 4.2   | 1.9 | 33.3   |
|                          | Number in Catch   | 0                        | 0     | 825   | 0   | 6,465  | 193 | 1,155 | 523 | 9,161  |
| Male                     | Percent of Sample | 0.4                      | 16.1  | 23.5  | 0.4 | 20.3   | 2.2 | 2.3   | 1.5 | 66.7   |
|                          | Number in Catch   | 110                      | 4,429 | 6,465 | 110 | 5,585  | 605 | 633   | 413 | 18,349 |
| Total                    | Percent of Sample | 0.4                      | 16.1  | 26.5  | 0.4 | 43.8   | 2.9 | 6.5   | 3.4 | 100.0  |
|                          | Number in Catch   | 110                      | 4,429 | 7,290 | 110 | 12,049 | 798 | 1,788 | 935 | 27,510 |
|                          | Standard Error    | 106                      | 620   | 744   | 106 | 837    | 283 | 416   | 306 |        |

Appendix D.11. Yukon River District 6 chinook commercial and subsistence catch composition by age and sex for combined gillnet and fish wheel harvests, 1989.

|                    |                   | Brood Year and Age Group |      |       |       |     |      |     | Total |
|--------------------|-------------------|--------------------------|------|-------|-------|-----|------|-----|-------|
|                    |                   | 1986                     | 1985 | 1984  | 1983  |     | 1982 |     |       |
|                    |                   | 1.1                      | 1.2  | 1.3   | 1.4   | 2.3 | 1.5  | 2.4 |       |
| Stratum Dates:     | 7/15–8/13         |                          |      |       |       |     |      |     |       |
| Sampling Dates:    | 7/15–8/13         |                          |      |       |       |     |      |     |       |
| Sample Size:       | 282               |                          |      |       |       |     |      |     |       |
| Female             | Percent of Sample | 0.0                      | 0.0  | 6.4   | 38.7  | 0.4 | 10.3 | 0.7 | 56.5  |
|                    | Number in Catch   | 0                        | 0    | 364   | 2,198 | 23  | 585  | 40  | 3,209 |
| Male               | Percent of Sample | 0.4                      | 3.5  | 19.2  | 17.5  | 1.8 | 1.1  | 0.0 | 43.5  |
|                    | Number in Catch   | 23                       | 199  | 1,091 | 994   | 102 | 62   | 0   | 2,471 |
| Total <sup>a</sup> | Percent of Sample | 0.4                      | 3.5  | 25.6  | 56.2  | 2.2 | 11.4 | 0.7 | 100.0 |
|                    | Number in Catch   | 23                       | 199  | 1,454 | 3,192 | 125 | 648  | 40  | 5,680 |
|                    | Standard Error    | 21                       | 62   | 148   | 168   | 50  | 108  | 28  |       |

<sup>a</sup> Age and sex composition is based on samples caught in fish wheels. Includes fish from ADF&G test fish wheel (440) and test gillnets (741). Excludes sport harvest (1,053).

Appendix D.12. Yukon Territory chinook commercial catch composition by age and sex, 1989.

|                 |                   | Brood Year and Age Group <sup>a</sup> |       |       |       |     |      |     | Total |
|-----------------|-------------------|---------------------------------------|-------|-------|-------|-----|------|-----|-------|
|                 |                   | 1985                                  | 1984  | 1983  | 1982  |     | 1981 |     |       |
|                 |                   | 1.2                                   | 1.3   | 1.4   | 1.5   | 2.4 | 1.6  | 2.5 |       |
| Stratum Dates:  | 7/10–9/24         |                                       |       |       |       |     |      |     |       |
| Sampling Dates: | 7/11–8/02         |                                       |       |       |       |     |      |     |       |
| Sample Size:    | 204               |                                       |       |       |       |     |      |     |       |
| Female          | Percent of Sample | 1.0                                   | 3.4   | 28.2  | 8.3   | 0.5 | 0.0  | 0.5 | 41.9  |
|                 | Number in Catch   | 98                                    | 333   | 2,760 | 812   | 49  | 0    | 49  | 4,102 |
| Male            | Percent of Sample | 0.0                                   | 6.9   | 37.9  | 12.3  | 0.5 | 0.5  | 0.0 | 58.1  |
|                 | Number in Catch   | 0                                     | 675   | 3,710 | 1,204 | 49  | 49   | 0   | 5,687 |
| Total           | Percent of Sample | 1.0                                   | 10.3  | 66.1  | 20.6  | 1.0 | 0.5  | 0.5 | 100.0 |
|                 | Number in Catch   | 98                                    | 1,008 | 6,471 | 2,017 | 98  | 49   | 49  | 9,789 |
|                 | Standard Error    | 68                                    | 209   | 325   | 278   | 68  | 48   | 48  |       |

<sup>a</sup> Data provided by Canada DFO.



Appendix D.13. Yukon Territory chinook subsistence catch composition by age and sex, 1989.

|                    |                   | Brood Year and Age Group <sup>a</sup> |      |       |       |     |      |     | Total |
|--------------------|-------------------|---------------------------------------|------|-------|-------|-----|------|-----|-------|
|                    |                   | 1985                                  | 1984 | 1983  | 1982  |     | 1981 |     |       |
|                    |                   | 1.2                                   | 1.3  | 1.4   | 1.5   | 2.4 | 1.6  | 2.5 |       |
| Stratum Dates:     | 6/13–7/14         |                                       |      |       |       |     |      |     |       |
| Sampling Dates:    | 6/14–7/14         |                                       |      |       |       |     |      |     |       |
| Sample Size:       | 204               |                                       |      |       |       |     |      |     |       |
| Female             | Percent of Sample | 1.0                                   | 3.4  | 28.2  | 8.3   | 0.5 | 0.0  | 0.5 | 41.9  |
|                    | Number in Catch   | 82                                    | 277  | 2,300 | 677   | 41  | 0    | 41  | 3,417 |
| Male               | Percent of Sample | 0.0                                   | 6.9  | 37.9  | 12.3  | 0.5 | 0.5  | 0.0 | 58.1  |
|                    | Number in Catch   | 0                                     | 563  | 3,091 | 1,003 | 41  | 41   | 0   | 4,738 |
| Total <sup>b</sup> | Percent of Sample | 1.0                                   | 10.3 | 66.1  | 20.6  | 1.0 | 0.5  | 0.5 | 100.0 |
|                    | Number in Catch   | 82                                    | 840  | 5,390 | 1,680 | 82  | 41   | 41  | 8,155 |
|                    | Standard Error    | 57                                    | 174  | 271   | 231   | 57  | 40   | 40  |       |

<sup>a</sup> Data provided by Canada DFO.

<sup>b</sup> All fish reported are from the Indian Food Fishery except an estimated 400 fish caught for domestic use, and an estimated 300 fish caught by sport fishermen.

Appendix D.14. Length (mm measured from mid-orbit to fork-of-tail) by age and sex of Yukon River chinook test fishing samples, 1989.

|                          |                   | Brood Year and Age Group                   |      |      |      |      |       |      |     |      |       |       |
|--------------------------|-------------------|--|------|------|------|------|-------|------|-----|------|-------|-------|
|                          |                   | 1985                                       |      | 1984 |      | 1983 |       | 1982 |     | 1981 |       | Total |
|                          |                   | 1.2  | 1.3  | 2.2  | 1.4  | 2.3  | 1.5   | 2.4  | 1.6 | 2.5  |       |       |
| Stratum Dates: 6/6-7/5   |                   | Big Eddy 8.5 in set gillnet <sup>a</sup>   |      |      |      |      |       |      |     |      |       |       |
| Sampling Dates: 6/6-7/5  |                   |  |      |      |      |      |       |      |     |      |       |       |
| Female                   | Mean Length       |  | 814  |      | 894  |      | 927   | 890  |     | 965  |       |       |
|                          | Standard Error    |  | 19.5 |      | 14.9 |      | 20.3  | 30.0 |     | 0.0  |       |       |
|                          | Sample Size       |  | 9    |      | 14   |      | 3     | 2    |     | 1    | 29    |       |
| Male                     | Mean Length       | 603  | 714  | 575  | 836  | 645  | 823   |      |     |      |       |       |
|                          | Standard Error    | 0.0  | 10.4 | 0.0  | 11.1 | 0.0  | 187.5 |      |     |      |       |       |
|                          | Sample Size       | 2  | 12   | 1    | 20   | 1    | 2     |      |     |      | 38    |       |
| Total                    | Percent of Sample | 3.0  | 31.3 | 1.5  | 50.7 | 1.5  | 7.5   | 3.0  |     | 1.5  | 100.0 |       |
|                          | Sample Size       | 2  | 21   | 1    | 34   | 1    | 5     | 2    |     | 1    | 67    |       |
|                          | Standard Error    | 2.1  | 5.7  | 1.5  | 6.2  | 1.5  | 3.2   | 2.1  |     | 1.5  |       |       |
| Stratum Dates: 6/6-6/12  |                   | Big Eddy 8.5 in drift gillnet <sup>a</sup> |      |      |      |      |       |      |     |      |       |       |
| Sampling Dates: 6/6-6/12 |                   |  |      |      |      |      |       |      |     |      |       |       |
| Female                   | Mean Length       |  | 765  |      | 855  |      | 860   |      |     |      |       |       |
|                          | Standard Error    |  | 15.0 |      | 11.9 |      | 17.3  |      |     |      |       |       |
|                          | Sample Size       |  | 2    |      | 12   |      | 3     |      |     |      | 17    |       |
| Male                     | Mean Length       | 630  | 714  |      | 800  |      |       |      |     |      |       |       |
|                          | Standard Error    | 0.0  | 10.4 |      | 11.1 |      |       |      |     |      |       |       |
|                          | Sample Size       | 1  | 7    |      | 5    |      |       |      |     |      | 13    |       |
| Total                    | Percent of Sample | 3.3  | 30.0 |      | 56.7 |      | 10.0  |      |     |      | 100.0 |       |
|                          | Sample Size       | 1  | 9    |      | 17   |      | 3     |      |     |      | 30    |       |
|                          | Standard Error    | 3.3  | 8.5  |      | 9.2  |      | 5.6   |      |     |      |       |       |

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|                          |                   | Brood Year and Age Group                     |      |     |      |     |      |      |      |     |       |
|--------------------------|-------------------|--|------|-----|------|-----|------|------|------|-----|-------|
|                          |                   | 1985   | 1984 |     | 1983 |     | 1982 |      | 1981 |     | Total |
|                          |                   | 1.2  | 1.3  | 2.2 | 1.4  | 2.3 | 1.5  | 2.4  | 1.6  | 2.5 | Total |
| Stratum Dates: 6/6-7/5   |                   | Big Eddy 5.5 in set gillnet <sup>a</sup>     |      |     |      |     |      |      |      |     |       |
| Sampling Dates: 6/6-7/5  |                   |  |      |     |      |     |      |      |      |     |       |
| Female                   | Mean Length       | 540  |      |     |      |     |      |      |      |     |       |
|                          | Standard Error    | 0.0  |      |     |      |     |      |      |      |     |       |
|                          | Sample Size       | 1  |      |     |      |     |      |      |      |     | 1     |
| Male                     | Mean Length       | 615  | 701  | 600 |      |     |      |      |      |     |       |
|                          | Standard Error    | 0.0  | 19.4 | 0.0 |      |     |      |      |      |     |       |
|                          | Sample Size       | 1  | 8    | 1   |      |     |      |      |      |     | 10    |
| Total                    | Percent of Sample | 18.2   | 72.7 | 9.1 |      |     |      |      |      |     | 100.0 |
|                          | Sample Size       | 2  | 8    | 1   |      |     |      |      |      |     | 11    |
|                          | Standard Error    | 12.2   | 14.1 | 9.1 |      |     |      |      |      |     |       |
| Stratum Dates: 6/6-7/12  |                   | Middle Mouth 8.5 in set gillnet <sup>a</sup> |      |     |      |     |      |      |      |     |       |
| Sampling Dates: 6/6-7/12 |                   |  |      |     |      |     |      |      |      |     |       |
| Female                   | Mean Length       |  | 828  |     | 881  | 810 | 951  | 916  |      | 915 |       |
|                          | Standard Error    |  | 14.0 |     | 5.2  | 0.0 | 12.5 | 18.0 |      | 0.0 |       |
|                          | Sample Size       |  | 18   |     | 119  | 1   | 20   | 5    |      | 1   | 164   |
| Male                     | Mean Length       |  | 786  |     | 893  | 783 | 936  | 952  |      |     |       |
|                          | Standard Error    |  | 12.9 |     | 12.4 | 7.5 | 15.0 | 38   |      |     |       |
|                          | Sample Size       |  | 22   |     | 95   | 2   | 13   | 5    |      |     | 137   |
| Total                    | Percent of Sample |  | 13.3 |     | 71.1 | 1.0 | 11.0 | 3.3  |      | 0.3 | 100.0 |
|                          | Sample Size       |  | 40   |     | 214  | 3   | 33   | 10   |      | 1   | 301   |
|                          | Standard Error    |  | 2.0  |     | 2.6  | 0.6 | 1.8  | 1.0  |      | 0.3 |       |

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|                 |                   | Brood Year and Age Group                     |      |      |      |      |      |      |       |      |       |       |
|-----------------|-------------------|--|------|------|------|------|------|------|-------|------|-------|-------|
|                 |                   | 1985   | 1984 |      |      | 1983 |      | 1982 |       | 1981 |       | Total |
|                 |                   | 1.2  | 1.3  | 2.2  | 1.4  | 2.3  | 1.5  | 2.4  | 1.6   | 2.5  |       |       |
| Stratum Dates:  | 6/6               | Middle Mouth 5.5 in set gillnet <sup>a</sup> |      |      |      |      |      |      |       |      |       |       |
| Sampling Dates: | 6/6               |  |      |      |      |      |      |      |       |      |       |       |
| Female          | Mean Length       |  |      |      |      |      |      |      |       |      |       |       |
|                 | Standard Error    |  |      |      |      |      |      |      |       |      |       |       |
|                 | Sample Size       |  |      |      |      |      |      |      |       |      | 0     |       |
| Male            | Mean Length       | 695  |      |      |      |      |      |      |       |      |       |       |
|                 | Standard Error    | 0.0  |      |      |      |      |      |      |       |      |       |       |
|                 | Sample Size       | 1  |      |      |      |      |      |      |       |      | 1     |       |
| Total           | Percent of Sample | 100.0  |      |      |      |      |      |      |       |      | 100.0 |       |
|                 | Sample Size       | 1  |      |      |      |      |      |      |       |      | 1     |       |
|                 | Standard Error    | 0  |      |      |      |      |      |      |       |      |       |       |
| Stratum Dates:  | 6/6–7/12          | Canada test/tagging fish wheel <sup>b</sup>  |      |      |      |      |      |      |       |      |       |       |
| Sampling Dates: | 6/6–7/12          |  |      |      |      |      |      |      |       |      |       |       |
| Female          | Mean Length       | 641  | 852  |      | 915  | 800  | 968  | 851  | 1,030 | 920  |       |       |
|                 | Standard Error    | 45.6   | 9.5  |      | 4.0  | 24.1 | 23.2 | 11.9 | 30.0  | 0.0  |       |       |
|                 | Sample Size       | 8  | 47   |      | 217  | 6    | 46   | 26   | 2     | 1    | 353   |       |
| Male            | Mean Length       | 617  | 780  | 645  | 901  | 776  | 1048 | 848  |       | 940  |       |       |
|                 | Standard Error    | 8.6  | 4.7  | 25.0 | 10.5 | 12.6 | 31.9 | 23.4 |       | 0.0  |       |       |
|                 | Sample Size       | 63   | 236  | 2    | 110  | 20   | 16   | 14   |       | 1    | 462   |       |
| Total           | Percent of Sample | 8.7  | 34.7 | 0.2  | 40.1 | 3.2  | 7.6  | 4.9  | 0.2   | 0.2  | 100.0 |       |
|                 | Sample Size       | 71   | 283  | 2    | 327  | 26   | 62   | 40   | 2     | 2    | 815   |       |
|                 | Standard Error    | 1.0  | 1.7  | 0.2  | 1.7  | 0.6  | 0.9  | 0.8  | 0.2   | 0.2  |       |       |

<sup>a</sup> Test net sites located in District 1 near Emmonak.

<sup>b</sup> Canada mark/recapture test fish wheel operated by Department of Fisheries and Oceans located near the U.S.–Canada border. Length measured from snout to fork–of–tail.

Appendix D.15. Whitehorse fish ladder and Rapids Fish Hatchery chinook adipose-fin-clipped returns by age and sex, 1989.

|                |                   | Brood Year and Age Group |      |      |      |      |      | Total |      |
|----------------|-------------------|--------------------------|------|------|------|------|------|-------|------|
|                |                   | 1985                     |      | 1984 |      | 1983 |      |       | 1982 |
|                |                   | 1.2                      | 1.3  | 2.2  | 1.4  | 2.3  | 2.4  |       |      |
| Stratum Dates: | 8/21-9/04         |                          |      |      |      |      |      |       |      |
| Sample Size:   | 40                |                          |      |      |      |      |      |       |      |
| Female         | Percent of Sample | 0.0                      | 15.0 | 0.0  | 15.0 | 5.0  | 2.5  | 37.5  |      |
|                | Number in Catch   | 0                        | 82   | 0    | 82   | 27   | 14   | 206   |      |
| Male           | Percent of Sample | 2.5                      | 35.0 | 5.0  | 15.0 | 5.0  | 0.0  | 62.5  |      |
|                | Number in Catch   | 14                       | 192  | 27   | 82   | 27   | 0    | 343   |      |
| Total          | Percent of Sample | 2.5                      | 50.0 | 5.0  | 30.0 | 10.0 | 2.5  | 100.0 |      |
|                | Number in Catch   | 14                       | 275  | 27   | 165  | 55   | 14   | 549   |      |
|                | Standard Error    | 13.7                     | 44.0 | 19.2 | 40.3 | 26.4 | 13.7 |       |      |

Appendix E.1. Yukon River District 1 summer chum commercial catch composition by age, sex, and fishing period, 1989.

|                          |                   | Brood Year and Age Group <sup>a</sup> |        |        |      | Total  |
|--------------------------|-------------------|---------------------------------------|--------|--------|------|--------|
|                          |                   | 1986                                  | 1985   | 1984   | 1983 |        |
|                          |                   | 0.2                                   | 0.3    | 0.4    | 0.5  |        |
| Stratum Dates: 6/13-6/14 |                   | Period 1 <sup>b</sup>                 |        |        |      |        |
| Sampling Dates: 6/14     |                   |                                       |        |        |      |        |
| Sample Size: 146         |                   |                                       |        |        |      |        |
| Female                   | Percent of Sample | 0.0                                   | 8.2    | 43.1   | 0.0  | 51.3   |
|                          | Number in Catch   | 0                                     | 7,566  | 39,765 | 0    | 47,331 |
| Male                     | Percent of Sample | 0.0                                   | 11.0   | 37.0   | 0.7  | 48.7   |
|                          | Number in Catch   | 0                                     | 10,149 | 34,137 | 646  | 44,932 |
| Total                    | Percent of Sample | 0.0                                   | 19.2   | 80.1   | 0.7  | 100.0  |
|                          | Number in Catch   | 0                                     | 17,714 | 73,903 | 646  | 92,263 |
|                          | Standard Error    | 0                                     | 3,018  | 3,059  | 639  |        |
| Stratum Dates: 6/15-6/16 |                   | Period 2 <sup>c</sup>                 |        |        |      |        |
| Sampling Dates: 6/16     |                   |                                       |        |        |      |        |
| Sample Size: 148         |                   |                                       |        |        |      |        |
| Female                   | Percent of Sample | 0.0                                   | 3.9    | 20.6   | 0.8  | 25.3   |
|                          | Number in Catch   | 0                                     | 2,021  | 10,676 | 415  | 13,111 |
| Male                     | Percent of Sample | 0.0                                   | 10.8   | 63.1   | 0.8  | 74.7   |
|                          | Number in Catch   | 0                                     | 5,597  | 32,701 | 415  | 38,713 |
| Total                    | Percent of Sample | 0.0                                   | 14.7   | 83.7   | 1.6  | 100.0  |
|                          | Number in Catch   | 0                                     | 7,618  | 43,377 | 829  | 51,824 |
|                          | Standard Error    | 0                                     | 1,514  | 1,579  | 536  |        |

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|                 |                   | Brood Year and Age Group <sup>a</sup> |       |        |      |        |
|-----------------|-------------------|---------------------------------------|-------|--------|------|--------|
|                 |                   | 1986                                  | 1985  | 1984   | 1983 | Total  |
|                 |                   | 0.2                                   | 0.3   | 0.4    | 0.5  |        |
| Stratum Dates:  | 6/19-6/20         | Period 3 <sup>c</sup>                 |       |        |      |        |
| Sampling Dates: | 6/20              |                                       |       |        |      |        |
| Sample Size:    | 144               |                                       |       |        |      |        |
| Female          | Percent of Sample | 0.0                                   | 5.6   | 22.2   | 0.0  | 27.8   |
|                 | Number in Catch   | 0                                     | 756   | 2,997  | 0    | 3,754  |
| Male            | Percent of Sample | 0.0                                   | 19.4  | 52.8   | 0.0  | 72.2   |
|                 | Number in Catch   | 0                                     | 2,619 | 7,129  | 0    | 9,748  |
| Total           | Percent of Sample | 0.0                                   | 25.0  | 75.0   | 0.0  | 100.0  |
|                 | Number in Catch   | 0                                     | 3,376 | 10,127 | 0    | 13,502 |
|                 | Standard Error    | 0                                     | 489   | 489    | 0    |        |
| Stratum Dates:  | 6/22              | Period 4 <sup>c</sup>                 |       |        |      |        |
| Sampling Dates: | 6/23              |                                       |       |        |      |        |
| Sample Size:    | 150               |                                       |       |        |      |        |
| Female          | Percent of Sample | 0.0                                   | 12.0  | 32.6   | 0.7  | 45.3   |
|                 | Number in Catch   | 0                                     | 1,145 | 3,111  | 67   | 4,323  |
| Male            | Percent of Sample | 0.0                                   | 17.3  | 36.7   | 0.7  | 54.7   |
|                 | Number in Catch   | 0                                     | 1,651 | 3,502  | 67   | 5,220  |
| Total           | Percent of Sample | 0.0                                   | 29.3  | 69.3   | 1.4  | 100.0  |
|                 | Number in Catch   | 0                                     | 2,796 | 6,613  | 134  | 9,543  |
|                 | Standard Error    | 0                                     | 356   | 361    | 92   |        |

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|                 |                   | Brood Year and Age Group <sup>a</sup> |        |        |      |         |
|-----------------|-------------------|---------------------------------------|--------|--------|------|---------|
|                 |                   | 1986                                  | 1985   | 1984   | 1983 |         |
|                 |                   | 0.2                                   | 0.3    | 0.4    | 0.5  | Total   |
| Stratum Dates:  | 6/24–6/25         | Period 5 <sup>b</sup>                 |        |        |      |         |
| Sampling Dates: | 6/25              |                                       |        |        |      |         |
| Sample Size:    | 143               |                                       |        |        |      |         |
| Female          | Percent of Sample | 0.0                                   | 12.9   | 30.4   | 0.0  | 43.3    |
|                 | Number in Catch   | 0                                     | 15,575 | 36,703 | 0    | 52,278  |
| Male            | Percent of Sample | 0.0                                   | 22.0   | 34.7   | 0.0  | 56.7    |
|                 | Number in Catch   | 0                                     | 26,562 | 41,895 | 0    | 68,457  |
| Total           | Percent of Sample | 0.0                                   | 34.9   | 65.1   | 0.0  | 100.0   |
|                 | Number in Catch   | 0                                     | 42,137 | 78,598 | 0    | 120,735 |
|                 | Standard Error    | 0                                     | 4,829  | 4,829  | 0    |         |
| Stratum Dates:  | 6/26–6/27         | Period 6 <sup>b</sup>                 |        |        |      |         |
| Sampling Dates: | 6/27              |                                       |        |        |      |         |
| Sample Size:    | 154               |                                       |        |        |      |         |
| Female          | Percent of Sample | 0.0                                   | 15.6   | 31.2   | 0.0  | 46.8    |
|                 | Number in Catch   | 0                                     | 15,386 | 30,772 | 0    | 46,158  |
| Male            | Percent of Sample | 0.0                                   | 13.6   | 39.6   | 0.0  | 53.2    |
|                 | Number in Catch   | 0                                     | 13,414 | 39,057 | 0    | 52,471  |
| Total           | Percent of Sample | 0.0                                   | 29.2   | 70.8   | 0.0  | 100.0   |
|                 | Number in Catch   | 0                                     | 28,800 | 69,829 | 0    | 98,629  |
|                 | Standard Error    | 0                                     | 3,625  | 3,625  | 0    |         |

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Appendix E.1. (page 4 of 6)

|                 |                   | Brood Year and Age Group <sup>a</sup> |        |        |       |        |
|-----------------|-------------------|---------------------------------------|--------|--------|-------|--------|
|                 |                   | 1986                                  | 1985   | 1984   | 1983  | Total  |
|                 |                   | 0.2                                   | 0.3    | 0.4    | 0.5   |        |
| Stratum Dates:  | 6/29–6/30         | Period 7 <sup>b</sup>                 |        |        |       |        |
| Sampling Dates: | 6/30              |                                       |        |        |       |        |
| Sample Size:    | 155               |                                       |        |        |       |        |
| Female          | Percent of Sample | 0.0                                   | 12.9   | 33.6   | 1.3   | 47.8   |
|                 | Number in Catch   | 0                                     | 8,374  | 21,811 | 844   | 31,029 |
| Male            | Percent of Sample | 0.6                                   | 12.9   | 38.1   | 0.6   | 52.2   |
|                 | Number in Catch   | 389                                   | 8,374  | 24,732 | 389   | 33,885 |
| Total           | Percent of Sample | 0.6                                   | 25.8   | 71.7   | 1.9   | 100.0  |
|                 | Number in Catch   | 389                                   | 16,748 | 46,543 | 1,233 | 64,914 |
|                 | Standard Error    | 404                                   | 2,289  | 2,356  | 714   |        |
| Stratum Dates:  | 7/03–7/04         | Period 8 <sup>b</sup>                 |        |        |       |        |
| Sampling Dates: | 7/04              |                                       |        |        |       |        |
| Sample Size:    | 80                |                                       |        |        |       |        |
| Female          | Percent of Sample | 0.0                                   | 11.2   | 23.8   | 0.0   | 35.0   |
|                 | Number in Catch   | 0                                     | 1,379  | 2,930  | 0     | 4,309  |
| Male            | Percent of Sample | 0.0                                   | 28.8   | 36.2   | 0.0   | 65.0   |
|                 | Number in Catch   | 0                                     | 3,546  | 4,457  | 0     | 8,003  |
| Total           | Percent of Sample | 0.0                                   | 40.0   | 60.0   | 0.0   | 100.0  |
|                 | Number in Catch   | 0                                     | 4,925  | 7,387  | 0     | 12,312 |
|                 | Standard Error    | 0                                     | 679    | 679    | 0     |        |

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|                 |                   | Brood Year and Age Group <sup>a</sup> |        |        |      |        |
|-----------------|-------------------|---------------------------------------|--------|--------|------|--------|
|                 |                   | 1986                                  | 1985   | 1984   | 1983 |        |
|                 |                   | 0.2                                   | 0.3    | 0.4    | 0.5  | Total  |
| Stratum Dates:  | 7/06–7/07         | Period 9 <sup>b</sup>                 |        |        |      |        |
| Sampling Dates: | 7/07              |                                       |        |        |      |        |
| Sample Size:    | 157               |                                       |        |        |      |        |
| Female          | Percent of Sample | 0.0                                   | 19.7   | 28.0   | 0.0  | 47.7   |
|                 | Number in Catch   | 0                                     | 8,907  | 12,659 | 0    | 21,566 |
| Male            | Percent of Sample | 0.0                                   | 32.5   | 19.8   | 0.0  | 52.3   |
|                 | Number in Catch   | 0                                     | 14,694 | 8,952  | 0    | 23,646 |
| Total           | Percent of Sample | 0.0                                   | 52.2   | 47.8   | 0.0  | 100.0  |
|                 | Number in Catch   | 0                                     | 23,601 | 21,611 | 0    | 45,212 |
|                 | Standard Error    | 0                                     | 1,808  | 1,808  | 0    |        |
| Stratum Dates:  | 7/10–7/11         | Period 10 <sup>b</sup>                |        |        |      |        |
| Sampling Dates: | 7/11              |                                       |        |        |      |        |
| Sample Size:    | 158               |                                       |        |        |      |        |
| Female          | Percent of Sample | 0.0                                   | 32.9   | 15.2   | 0.0  | 48.1   |
|                 | Number in Catch   | 0                                     | 7,308  | 3,377  | 0    | 10,685 |
| Male            | Percent of Sample | 0.0                                   | 31.7   | 19.6   | 0.6  | 51.9   |
|                 | Number in Catch   | 0                                     | 7,042  | 4,354  | 133  | 11,529 |
| Total           | Percent of Sample | 0.0                                   | 64.6   | 34.8   | 0.6  | 100.0  |
|                 | Number in Catch   | 0                                     | 14,350 | 7,730  | 133  | 22,214 |
|                 | Standard Error    | 0                                     | 848    | 844    | 137  |        |

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|                 |                   | Brood Year and Age Group |        |       |      | Total  |
|-----------------|-------------------|--------------------------|--------|-------|------|--------|
|                 |                   | 1986                     | 1985   | 1984  | 1983 |        |
|                 |                   | 0.2                      | 0.3    | 0.4   | 0.5  |        |
| Stratum Dates:  | 7/13–7/14         | Period 11 <sup>b</sup>   |        |       |      |        |
| Sampling Dates: | 7/14              |                          |        |       |      |        |
| Sample Size:    | 154               |                          |        |       |      |        |
| Female          | Percent of Sample | 0.0                      | 33.8   | 18.2  | 0.0  | 52.0   |
|                 | Number in Catch   | 0                        | 5,571  | 3,000 | 0    | 8,571  |
| Male            | Percent of Sample | 0.0                      | 27.3   | 20.1  | 0.6  | 48.0   |
|                 | Number in Catch   | 0                        | 4,500  | 3,313 | 99   | 7,912  |
| Total           | Percent of Sample | 0.0                      | 61.1   | 38.3  | 0.6  | 100.0  |
|                 | Number in Catch   | 0                        | 10,071 | 6,313 | 99   | 16,483 |
|                 | Standard Error    | 0                        | 650    | 648   | 103  |        |

<sup>a</sup> Illegal catch consisting of 150 summer chum salmon taken in District 1 is not reported in this table.

<sup>b</sup> Mesh size restricted to 6 in (15.2 cm) or less.

<sup>c</sup> No mesh size restrictions; most fish taken with 8.5 in (21.6 cm) gillnet.

Appendix E.2. Yukon River District 1 summer chum commercial catch composition by age, sex and gillnet mesh size, 1989.

|                 |                       | Brood Year and Age Group <sup>a</sup> |         |         |       |         |
|-----------------|-----------------------|---------------------------------------|---------|---------|-------|---------|
|                 |                       | 1986                                  | 1985    | 1984    | 1983  | Total   |
|                 |                       | 0.2                                   | 0.3     | 0.4     | 0.5   |         |
| Stratum Dates:  | 6/15-6/22             | Period 2-4 Unrestricted Mesh Gillnet  |         |         |       |         |
| Sampling Dates: | 6/16-6/23             |                                       |         |         |       |         |
| Sample Size:    | 442                   |                                       |         |         |       |         |
| Female          | Percent of Sample     | 0.0                                   | 5.2     | 22.4    | 0.6   | 28.2    |
|                 | Number in Catch       | 0                                     | 3,893   | 16,771  | 449   | 21,113  |
| Male            | Percent of Sample     | 0.0                                   | 13.2    | 58.0    | 0.6   | 71.8    |
|                 | Number in Catch       | 0                                     | 9,883   | 43,424  | 449   | 53,756  |
| Total           | Percent of Sample     | 0.0                                   | 18.4    | 80.4    | 1.2   | 100.0   |
|                 | Number in Catch       | 0                                     | 13,776  | 60,195  | 898   | 74,869  |
|                 | Standard Error        | 0                                     | 1,381   | 1,415   | 388   |         |
| Stratum Dates:  | 6/13-6/14 & 6/24-7/14 | Period 1, & 5-11                      |         |         |       |         |
| Sampling Dates: | 6/14 & 6/25-7/14      | Restricted Mesh Gillnet               |         |         |       |         |
| Sample Size:    | 1,147                 |                                       |         |         |       |         |
| Female          | Percent of Sample     | 0.0                                   | 14.8    | 32.0    | 0.2   | 47.0    |
|                 | Number in Catch       | 0                                     | 69,969  | 151,284 | 946   | 222,198 |
| Male            | Percent of Sample     | 0.1                                   | 18.7    | 33.9    | 0.3   | 53.0    |
|                 | Number in Catch       | 473                                   | 88,406  | 160,266 | 1,418 | 250,564 |
| Total           | Percent of Sample     | 0.1                                   | 33.5    | 65.9    | 0.5   | 100.0   |
|                 | Number in Catch       | 473                                   | 158,375 | 311,550 | 2,364 | 472,762 |
|                 | Standard Error        | 441                                   | 6,591   | 6,620   | 985   |         |
| Stratum Dates:  | 6/13-7/14             | Season Total                          |         |         |       |         |
| Sampling Dates: | 6/14-7/14             |                                       |         |         |       |         |
| Sample Size:    | 1,589                 |                                       |         |         |       |         |
| Female          | Percent of Sample     | 0.0                                   | 5.6     | 22.2    | 0.0   | 27.8    |
|                 | Number in Catch       | 0                                     | 30,667  | 121,574 | 0     | 152,241 |
| Male            | Percent of Sample     | 0.0                                   | 19.4    | 52.8    | 0.0   | 72.2    |
|                 | Number in Catch       | 0                                     | 106,240 | 289,149 | 0     | 395,390 |
| Total           | Percent of Sample     | 0.0                                   | 25.0    | 75.0    | 0.0   | 100.0   |
|                 | Number in Catch       | 0                                     | 136,908 | 410,723 | 0     | 547,631 |
|                 | Standard Error        | 0                                     | 5,951   | 5,951   | 0     |         |

<sup>a</sup> Illegal catch consisting of 150 summer chum salmon is not included.

Appendix E.3. Yukon River District 1 summer chum subsistence catch composition by age and sex, 1989.

|                 |                   | Brood Year and Age Group <sup>a</sup> |        |        |      | Total  |
|-----------------|-------------------|---------------------------------------|--------|--------|------|--------|
|                 |                   | 1986                                  | 1985   | 1984   | 1983 |        |
|                 |                   | 0.2                                   | 0.3    | 0.4    | 0.5  |        |
| Stratum Dates:  | 6/13-7/14         |                                       |        |        |      |        |
| Sampling Dates: | 6/14-7/14         |                                       |        |        |      |        |
| Sample Size:    | 1,589             |                                       |        |        |      |        |
| Female          | Percent of Sample | 0.0                                   | 13.5   | 30.6   | 0.2  | 44.3   |
|                 | Number in Catch   | 0                                     | 7,134  | 16,170 | 106  | 23,410 |
| Male            | Percent of Sample | 0.1                                   | 17.9   | 37.4   | 0.3  | 55.7   |
|                 | Number in Catch   | 53                                    | 9,459  | 19,764 | 159  | 29,434 |
| Total           | Percent of Sample | 0.1                                   | 31.4   | 68.0   | 0.5  | 100.0  |
|                 | Number in Catch   | 53                                    | 16,593 | 35,934 | 264  | 52,844 |
|                 | Standard Error    | 42                                    | 615    | 619    | 94   |        |

<sup>a</sup> Age and sex composition is based on District 1 commercial catch.

Appendix E.4. Yukon River District 2 summer chum commercial catch composition by age, sex, and gillnet mesh size, 1989.

|                 |                   | Brood Year and Age Group                             |         |         |       |         |
|-----------------|-------------------|--|---------|---------|-------|---------|
|                 |                   | 1986   | 1985    | 1984    | 1983  | Total   |
|                 |                   | 0.2  | 0.3     | 0.4     | 0.5   |         |
| Stratum Dates:  | 6/18-6/25         | Periods 2-4 Unrestricted Mesh Gillnet                |         |         |       |         |
| Sampling Dates: | 6/19-6/25         |  |         |         |       |         |
| Sample Size:    | 377               |  |         |         |       |         |
| Female          | Percent of Sample | 0.0  | 9.5     | 18.0    | 0.0   | 27.5    |
|                 | Number in Catch   | 0  | 4,892   | 9,268   | 0     | 14,160  |
| Male            | Percent of Sample | 0.3  | 14.1    | 57.5    | 0.6   | 72.5    |
|                 | Number in Catch   | 154  | 7,260   | 29,607  | 309   | 37,331  |
| Total           | Percent of Sample | 0.3  | 23.6    | 75.5    | 0.6   | 100.0   |
|                 | Number in Catch   | 154  | 12,152  | 38,876  | 309   | 51,491  |
|                 | Standard Error    | 145  | 1,128   | 1,142   | 205   |         |
| Stratum Dates:  | 6/15 & 6/27-7/13  | Periods 1, 5-10 Restricted Mesh Gillnet <sup>a</sup> |         |         |       |         |
| Sampling Dates: | 6/15 & 6/27-7/11  |  |         |         |       |         |
| Sample Size:    | 1,000             |  |         |         |       |         |
| Female          | Percent of Sample | 0.1  | 15.7    | 30.0    | 0.2   | 46.0    |
|                 | Number in Catch   | 292  | 45,918  | 87,741  | 585   | 134,537 |
| Male            | Percent of Sample | 0.1  | 20.8    | 32.6    | 0.5   | 54.0    |
|                 | Number in Catch   | 292  | 60,834  | 95,346  | 1,462 | 157,934 |
| Total           | Percent of Sample | 0.2  | 36.5    | 62.6    | 0.7   | 100.0   |
|                 | Number in Catch   | 585  | 106,752 | 183,087 | 2,047 | 292,471 |
|                 | Standard Error    | 413  | 4,455   | 4,477   | 771   |         |
| Stratum Dates:  | 6/15-7/13         | Season Total   |         |         |       |         |
| Sampling Dates: | 6/15-7/11         |  |         |         |       |         |
| Sample Size:    | 1,377             |  |         |         |       |         |
| Female          | Percent of Sample | 0.1  | 14.8    | 28.2    | 0.2   | 43.3    |
|                 | Number in Catch   | 344  | 50,906  | 96,997  | 688   | 148,936 |
| Male            | Percent of Sample | 0.1  | 19.8    | 36.3    | 0.5   | 56.7    |
|                 | Number in Catch   | 344  | 68,104  | 124,858 | 1,720 | 195,026 |
| Total           | Percent of Sample | 0.2  | 34.6    | 64.5    | 0.7   | 100.0   |
|                 | Number in Catch   | 688  | 119,011 | 221,855 | 2,408 | 343,962 |
|                 | Standard Error    | 414  | 4,411   | 4,437   | 773   |         |

<sup>a</sup> Restricted mesh gillnet age and sex compositions are from District 2 samples from periods 1 & 5, and District 1 samples from periods corresponding to District 2 periods 6-10.

Appendix E.5. Yukon River District 2 summer chum subsistence catch composition by age and sex, 1989.

|                 |                   | Brood Year and Age Group <sup>a</sup> |        |        |      |        |
|-----------------|-------------------|---------------------------------------|--------|--------|------|--------|
|                 |                   | 1986                                  | 1985   | 1984   | 1983 | Total  |
|                 |                   | 0.2                                   | 0.3    | 0.4    | 0.5  |        |
| Stratum Dates:  | 6/13-7/14         |                                       |        |        |      |        |
| Sampling Dates: | 6/14-7/14         |                                       |        |        |      |        |
| Sample Size:    | 1,377             |                                       |        |        |      |        |
| Female          | Percent of Sample | 0.1                                   | 14.8   | 28.2   | 0.2  | 43.3   |
|                 | Number in Catch   | 40                                    | 5,876  | 11,196 | 79   | 17,191 |
| Male            | Percent of Sample | 0.1                                   | 19.8   | 36.3   | 0.5  | 56.7   |
|                 | Number in Catch   | 40                                    | 7,861  | 14,412 | 199  | 22,512 |
| Total           | Percent of Sample | 0.2                                   | 34.6   | 64.5   | 0.7  | 100.0  |
|                 | Number in Catch   | 79                                    | 13,737 | 25,608 | 278  | 39,703 |
|                 | Standard Error    | 48                                    | 509    | 512    | 89   |        |

<sup>a</sup> Age and sex composition is based on District 2 season summary total.

Appendix E.6. Yukon River District 3 summer chum commercial catch composition by age and sex, 1989.

|                 |                   | Brood Year and Age Group <sup>a</sup> |       |       |      |       |
|-----------------|-------------------|---------------------------------------|-------|-------|------|-------|
|                 |                   | 1986                                  | 1985  | 1984  | 1983 | Total |
|                 |                   | 0.2                                   | 0.3   | 0.4   | 0.5  |       |
| Stratum Dates:  | 6/21-7/10         |                                       |       |       |      |       |
| Sampling Dates: | 6/19-6/27         |                                       |       |       |      |       |
| Sample Size:    | 525               |                                       |       |       |      |       |
| Female          | Percent of Sample | 0.1                                   | 14.8  | 28.2  | 0.2  | 43.3  |
|                 | Number in Catch   | 8                                     | 1,122 | 2,137 | 15   | 3,281 |
| Male            | Percent of Sample | 0.1                                   | 19.8  | 36.3  | 0.5  | 56.7  |
|                 | Number in Catch   | 8                                     | 1,500 | 2,751 | 38   | 4,297 |
| Total           | Percent of Sample | 0.2                                   | 34.6  | 64.5  | 0.7  | 100.0 |
|                 | Number in Catch   | 15                                    | 2,622 | 4,888 | 53   | 7,578 |
|                 | Standard Error    | 15                                    | 157   | 158   | 28   |       |

<sup>a</sup> Age and sex composition is based on District 2 season summary total.

Appendix E.7. Yukon River District 3 summer chum subsistence catch composition by age and sex, 1989.

|                 |                   | Brood Year and Age Group |      |       |      |       |
|-----------------|-------------------|--------------------------|------|-------|------|-------|
|                 |                   | 1986                     | 1985 | 1984  | 1983 | Total |
|                 |                   | 0.2                      | 0.3  | 0.4   | 0.5  |       |
| Stratum Dates:  | 6/13-7/14         |                          |      |       |      |       |
| Sampling Dates: | 6/14-7/14         |                          |      |       |      |       |
| Sample Size:    | 525               |                          |      |       |      |       |
| Female          | Percent of Sample | 0.2                      | 10.1 | 26.5  | 0.0  | 36.8  |
|                 | Number in Catch   | 8                        | 402  | 1,055 | 0    | 1,465 |
| Male            | Percent of Sample | 0.2                      | 13.0 | 49.2  | 0.8  | 63.2  |
|                 | Number in Catch   | 8                        | 518  | 1,959 | 32   | 2,517 |
| Total           | Percent of Sample | 0.4                      | 23.1 | 75.7  | 0.8  | 100.0 |
|                 | Number in Catch   | 16                       | 920  | 3,014 | 32   | 3,982 |
|                 | Standard Error    | 11                       | 73   | 75    | 15   |       |

Appendix E.8. Yukon River District 4 summer chum commercial and subsistence catch composition by age, sex, and gear type, 1989.

|                 |                   | Brood Year and Age Group |         |         |       |         |
|-----------------|-------------------|--------------------------|---------|---------|-------|---------|
|                 |                   | 1986                     | 1985    | 1984    | 1983  |         |
|                 |                   | 0.2                      | 0.3     | 0.4     | 0.5   | Total   |
| Stratum Dates:  | 6/21-8/01         | Gillnet                  |         |         |       |         |
| Sampling Dates: | 6/26-7/17         |                          |         |         |       |         |
| Sample Size:    | 158               |                          |         |         |       |         |
| Female          | Percent of Sample | 0.0                      | 24.7    | 36.6    | 0.0   | 61.3    |
|                 | Number in Catch   | 0                        | 24,151  | 35,787  | 0     | 59,938  |
| Male            | Percent of Sample | 0.2                      | 18.3    | 19.6    | 0.6   | 38.7    |
|                 | Number in Catch   | 196                      | 17,893  | 19,165  | 587   | 37,840  |
| Total           | Percent of Sample | 0.2                      | 43.0    | 56.2    | 0.6   | 100.0   |
|                 | Number in Catch   | 196                      | 42,045  | 54,951  | 587   | 97,778  |
|                 | Standard Error    | 349                      | 3,863   | 3,872   | 603   |         |
| Stratum Dates:  | 6/21-8/01         | Fish Wheel               |         |         |       |         |
| Sampling Dates: | 6/22-7/26         |                          |         |         |       |         |
| Sample Size:    | 698               |                          |         |         |       |         |
| Female          | Percent of Sample | 1.3                      | 41.3    | 25.5    | 0.0   | 68.1    |
|                 | Number in Catch   | 6,009                    | 190,906 | 117,872 | 0     | 314,787 |
| Male            | Percent of Sample | 0.0                      | 17.6    | 13.9    | 0.4   | 31.9    |
|                 | Number in Catch   | 0                        | 81,355  | 64,252  | 1,849 | 147,455 |
| Total           | Percent of Sample | 1.3                      | 58.9    | 39.4    | 0.4   | 100.0   |
|                 | Number in Catch   | 6,009                    | 272,261 | 182,124 | 1,849 | 462,243 |
|                 | Standard Error    | 1,983                    | 8,615   | 8,555   | 1,105 |         |
| Stratum Dates:  | 6/21-8/01         | Combined Gear            |         |         |       |         |
| Sampling Dates: | 6/21-7/26         |                          |         |         |       |         |
| Sample Size:    | 856               |                          |         |         |       |         |
| Female          | Percent of Sample | 1.1                      | 38.3    | 27.5    | 0.0   | 66.9    |
|                 | Number in Catch   | 6,160                    | 214,488 | 154,006 | 0     | 374,654 |
| Male            | Percent of Sample | 0.0                      | 17.7    | 14.9    | 0.5   | 33.1    |
|                 | Number in Catch   | 0                        | 99,124  | 83,443  | 2,800 | 185,367 |
| Total           | Percent of Sample | 1.1                      | 56.0    | 42.4    | 0.5   | 100.0   |
|                 | Number in Catch   | 6,160                    | 313,612 | 237,449 | 2,800 | 560,021 |
|                 | Standard Error    | 1,998                    | 9,507   | 9,465   | 1,351 |         |

Appendix E.9. Yukon River District 6 summer chum commercial and subsistence gillnet and fish wheel catch composition by age and sex, 1989.

|                 |                   | Brood Year and Age Group                         |        |        |      |        |
|-----------------|-------------------|--|--------|--------|------|--------|
|                 |                   | 1986   | 1985   | 1984   | 1983 | Total  |
|                 |                   | 0.2  | 0.3    | 0.4    | 0.5  |        |
| Stratum Dates:  | 7/07-8/09         | Commercial                                       |        |        |      |        |
| Sampling Dates: | 7/15-8/16         |  |        |        |      |        |
| Sample Size:    | 660               |  |        |        |      |        |
| Female          | Percent of Sample | 0.4  | 28.6   | 12.6   | 0.0  | 41.6   |
|                 | Number in Catch   | 213  | 15,230 | 6,710  | 0    | 22,153 |
| Male            | Percent of Sample | 0.6  | 39.8   | 17.5   | 0.5  | 58.4   |
|                 | Number in Catch   | 320  | 21,195 | 9,319  | 266  | 31,100 |
| Total           | Percent of Sample | 1.0  | 68.4   | 30.1   | 0.5  | 100.0  |
|                 | Number in Catch   | 533  | 36,425 | 16,029 | 266  | 53,253 |
|                 | Standard Error    | 206  | 964    | 952    | 146  |        |
| Stratum Dates:  | 7/07-8/09         | Subsistence <sup>a</sup>                         |        |        |      |        |
| Sampling Dates: | 7/15-8/16         |  |        |        |      |        |
| Sample Size:    |                   |  |        |        |      |        |
| Female          | Percent of Sample | 0.1  | 15.7   | 30.0   | 0.2  | 46.0   |
|                 | Number in Catch   | 10   | 1,633  | 3,121  | 21   | 4,785  |
| Male            | Percent of Sample | 0.1  | 20.8   | 32.6   | 0.5  | 54.0   |
|                 | Number in Catch   | 10   | 2,164  | 3,391  | 52   | 5,618  |
| Total           | Percent of Sample | 0.2  | 36.5   | 62.6   | 0.7  | 100.0  |
|                 | Number in Catch   | 21   | 3,797  | 6,512  | 73   | 10,403 |
|                 | Standard Error    | 18   | 195    | 196    | 34   |        |
| Stratum Dates:  | 7/07-8/09         | Commercial and Subsistence Combined <sup>b</sup> |        |        |      |        |
| Sampling Dates: | 7/15-8/16         |  |        |        |      |        |
| Sample Size:    | 660               |  |        |        |      |        |
| Female          | Percent of Sample | 0.1  | 14.8   | 28.2   | 0.2  | 43.3   |
|                 | Number in Catch   | 64   | 9,421  | 17,951 | 127  | 27,563 |
| Male            | Percent of Sample | 0.1  | 19.8   | 36.3   | 0.5  | 56.7   |
|                 | Number in Catch   | 64   | 12,604 | 23,107 | 318  | 36,093 |
| Total           | Percent of Sample | 0.2  | 34.6   | 64.5   | 0.7  | 100.0  |
|                 | Number in Catch   | 127  | 22,025 | 41,058 | 446  | 63,656 |
|                 | Standard Error    | 111  | 1,180  | 1,187  | 207  |        |

<sup>a</sup> Age and sex composition is based on commercial catch.

Appendix E.10. Length (mm measured from mid-orbit to fork-of-tail) of Yukon River District 1 summer chum test fishing samples by age and sex, 1989.

|                                       |        |                   | Brood Year and Age Group |       |       | Total |
|---------------------------------------|--------|-------------------|--------------------------|-------|-------|-------|
|                                       |        |                   | 1985                     | 1984  | 1983  |       |
|                                       |        |                   | 0.3                      | 0.4   | 0.5   |       |
| Big Eddy<br>5.5 in drift<br>Gillnet   | Female | Mean Length       | 575.7                    | 589.7 |       |       |
|                                       |        | Standard Error    | 6.94                     | 4.53  |       |       |
|                                       |        | Number in Sample  | 7                        | 21    |       | 28    |
|                                       | Male   | Mean Length       | 586.7                    | 610.0 |       |       |
|                                       |        | Standard Error    | 11.74                    | 8.85  |       |       |
|                                       |        | Number in Sample  | 6                        | 15    |       | 21    |
|                                       | Total  | Percent of Sample | 26.5                     | 73.5  |       | 100.0 |
|                                       |        | Number in Sample  | 13                       | 36    |       | 49    |
|                                       |        | Standard Error    | 6.4                      | 6.4   |       |       |
| Big Eddy<br>5.5 in set<br>Gillnet     | Female | Mean Length       | 564.7                    | 584.9 | 580   |       |
|                                       |        | Standard Error    | 2.34                     | 1.77  | 0     |       |
|                                       |        | Number in Sample  | 130                      | 181   | 1     | 312   |
|                                       | Male   | Mean Length       | 583.8                    | 613.8 |       |       |
|                                       |        | Standard Error    | 3.50                     | 4.02  |       |       |
|                                       |        | Number in Sample  | 75                       | 73    |       | 148   |
|                                       | Total  | Percent of Sample | 44.6                     | 55.2  | 0.2   | 100.0 |
|                                       |        | Number in Sample  | 205                      | 254   | 1     | 460   |
|                                       |        | Standard Error    | 2.3                      | 2.3   | 0.2   |       |
| Middle Mouth<br>5.5 in set<br>Gillnet | Female | Mean Length       | 556.0                    | 581.1 | 580   |       |
|                                       |        | Standard Error    | 2.09                     | 2.43  | 15.28 |       |
|                                       |        | Number in Sample  | 132                      | 219   | 3     | 354   |
|                                       | Male   | Mean Length       | 581.6                    | 601.4 | 625   |       |
|                                       |        | Standard Error    | 3.3                      | 2.75  | 15    |       |
|                                       |        | Number in Sample  | 91                       | 164   | 2     | 257   |
|                                       | Total  | Percent of Sample | 36.5                     | 62.7  | 0.8   | 100.0 |
|                                       |        | Number in Sample  | 223                      | 383   | 5     | 611   |
|                                       |        | Standard Error    | 1.9                      | 2.0   | 0.4   |       |

Appendix F.1. Yukon River District 1 fall chum commercial catch composition by age, sex, and fishing period, 1989.

|                 |                   | Brood Year and Age Group |       |       |      |       |
|-----------------|-------------------|--------------------------|-------|-------|------|-------|
|                 |                   | 1986                     | 1985  | 1984  | 1983 |       |
|                 |                   | 0.2                      | 0.3   | 0.4   | 0.5  | Total |
| Stratum Dates:  | 7/28-7/29         | Period 12                |       |       |      |       |
| Sampling Dates: | 7/29              |                          |       |       |      |       |
| Sample Size:    | 153               |                          |       |       |      |       |
| Female          | Percent of Sample | 0.0                      | 34.0  | 13.7  | 2.0  | 49.7  |
|                 | Number in Catch   | 0                        | 1,490 | 600   | 88   | 2,177 |
| Male            | Percent of Sample | 0.0                      | 38.5  | 11.8  | 0.0  | 50.3  |
|                 | Number in Catch   | 0                        | 1,687 | 517   | 0    | 2,204 |
| Total           | Percent of Sample | 0.0                      | 72.5  | 25.5  | 2.0  | 100.0 |
|                 | Number in Catch   | 0                        | 3,176 | 1,117 | 88   | 4,381 |
|                 | Standard Error    | 0                        | 159   | 155   | 50   |       |
| Stratum Dates:  | 7/31-8/01         | Period 13                |       |       |      |       |
| Sampling Dates: | 8/01              |                          |       |       |      |       |
| Sample Size:    | 36                |                          |       |       |      |       |
| Female          | Percent of Sample | 0.0                      | 41.7  | 11.1  | 0.0  | 52.8  |
|                 | Number in Catch   | 0                        | 65    | 17    | 0    | 82    |
| Male            | Percent of Sample | 0.0                      | 25.0  | 22.2  | 0.0  | 47.2  |
|                 | Number in Catch   | 0                        | 39    | 34    | 0    | 73    |
| Total           | Percent of Sample | 0.0                      | 66.7  | 33.3  | 0.0  | 100.0 |
|                 | Number in Catch   | 0                        | 103   | 52    | 0    | 155   |
|                 | Standard Error    | 0                        | 12    | 12    | 0    |       |

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|                 |                   | Brood Year and Age Group |        |       |      |        |
|-----------------|-------------------|--------------------------|--------|-------|------|--------|
|                 |                   | 1986                     | 1985   | 1984  | 1983 | Total  |
|                 |                   | 0.2                      | 0.3    | 0.4   | 0.5  |        |
| Stratum Dates:  | 8/03-8/04         | Period 14                |        |       |      |        |
| Sampling Dates: | 8/04              |                          |        |       |      |        |
| Sample Size:    | 155               |                          |        |       |      |        |
| Female          | Percent of Sample | 0.0                      | 34.2   | 4.5   | 0.0  | 38.7   |
|                 | Number in Catch   | 0                        | 16,706 | 2,198 | 0    | 18,904 |
| Male            | Percent of Sample | 0.0                      | 50.3   | 11.0  | 0.0  | 61.3   |
|                 | Number in Catch   | 0                        | 24,571 | 5,373 | 0    | 29,944 |
| Total           | Percent of Sample | 0.0                      | 84.5   | 15.5  | 0.0  | 100.0  |
|                 | Number in Catch   | 0                        | 41,277 | 7,571 | 0    | 48,848 |
|                 | Standard Error    | 0                        | 1,425  | 1,425 | 0    |        |
| Stratum Dates:  | 8/07-8/08         | Period 15                |        |       |      |        |
| Sampling Dates: | 8/08              |                          |        |       |      |        |
| Sample Size:    | 151               |                          |        |       |      |        |
| Female          | Percent of Sample | 0.0                      | 48.3   | 9.3   | 0.0  | 57.6   |
|                 | Number in Catch   | 0                        | 1,841  | 354   | 0    | 2,195  |
| Male            | Percent of Sample | 0.0                      | 32.5   | 9.9   | 0.0  | 42.4   |
|                 | Number in Catch   | 0                        | 1,239  | 377   | 0    | 1,616  |
| Total           | Percent of Sample | 0.0                      | 80.8   | 19.2  | 0.0  | 100.0  |
|                 | Number in Catch   | 0                        | 3,079  | 732   | 0    | 3,811  |
|                 | Standard Error    | 0                        | 123    | 123   | 0    |        |

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|                 |                   | Brood Year and Age Group |        |       |      |        |
|-----------------|-------------------|--------------------------|--------|-------|------|--------|
|                 |                   | 1986                     | 1985   | 1984  | 1983 |        |
|                 |                   | 0.2                      | 0.3    | 0.4   | 0.5  | Total  |
| Stratum Dates:  | 8/10-8/11         | Period 16                |        |       |      |        |
| Sampling Dates: | 8/11              |                          |        |       |      |        |
| Sample Size:    | 107               |                          |        |       |      |        |
| Female          | Percent of Sample | 0.0                      | 45.8   | 4.7   | 0.0  | 50.5   |
|                 | Number in Catch   | 0                        | 1,165  | 120   | 0    | 1,284  |
| Male            | Percent of Sample | 0.0                      | 42.1   | 7.4   | 0.0  | 49.5   |
|                 | Number in Catch   | 0                        | 1,071  | 188   | 0    | 1,259  |
| Total           | Percent of Sample | 0.0                      | 87.9   | 12.1  | 0.0  | 100.0  |
|                 | Number in Catch   | 0                        | 2,235  | 308   | 0    | 2,543  |
|                 | Standard Error    | 0                        | 81     | 81    | 0    |        |
| Stratum Dates:  | 8/14-8/15         | Period 17                |        |       |      |        |
| Sampling Dates: | 8/15              |                          |        |       |      |        |
| Sample Size:    | 152               |                          |        |       |      |        |
| Female          | Percent of Sample | 0.0                      | 42.7   | 8.6   | 0.0  | 51.3   |
|                 | Number in Catch   | 0                        | 6,382  | 1,285 | 0    | 7,667  |
| Male            | Percent of Sample | 0.0                      | 40.1   | 8.6   | 0.0  | 48.7   |
|                 | Number in Catch   | 0                        | 5,993  | 1,285 | 0    | 7,279  |
| Total           | Percent of Sample | 0.0                      | 82.8   | 17.2  | 0.0  | 100.0  |
|                 | Number in Catch   | 0                        | 12,375 | 2,571 | 0    | 14,946 |
|                 | Standard Error    | 0                        | 459    | 459   | 0    |        |

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|                 |                   | Brood Year and Age Group |       |      |      |       |
|-----------------|-------------------|--------------------------|-------|------|------|-------|
|                 |                   | 1986                     | 1985  | 1984 | 1983 | Total |
|                 |                   | 0.2                      | 0.3   | 0.4  | 0.5  |       |
| Stratum Dates:  | 8/21-8/22         | Period 18                |       |      |      |       |
| Sampling Dates: | 8/22              |                          |       |      |      |       |
| Sample Size:    | 139               |                          |       |      |      |       |
| Female          | Percent of Sample | 1.4                      | 59.0  | 4.3  | 0.7  | 65.4  |
|                 | Number in Catch   | 41                       | 1,723 | 126  | 20   | 1,910 |
| Male            | Percent of Sample | 0.0                      | 32.4  | 2.2  | 0.0  | 34.6  |
|                 | Number in Catch   | 0                        | 946   | 64   | 0    | 1,011 |
| Total           | Percent of Sample | 1.4                      | 91.4  | 6.5  | 0.7  | 100.0 |
|                 | Number in Catch   | 41                       | 2,670 | 190  | 20   | 2,921 |
|                 | Standard Error    | 29                       | 70    | 61   | 21   |       |
| Stratum Dates:  | 8/24-8/25         | Period 19 <sup>a</sup>   |       |      |      |       |
| Sampling Dates: | 8/25              |                          |       |      |      |       |
| Sample Size:    |                   |                          |       |      |      |       |
| Female          | Percent of Sample | 1.4                      | 59.0  | 4.3  | 0.7  | 65.4  |
|                 | Number in Catch   | 4                        | 160   | 12   | 2    | 177   |
| Male            | Percent of Sample | 0.0                      | 32.4  | 2.2  | 0.0  | 34.6  |
|                 | Number in Catch   | 0                        | 88    | 6    | 0    | 94    |
| Total           | Percent of Sample | 1.4                      | 91.4  | 6.5  | 0.7  | 100.0 |
|                 | Number in Catch   | 4                        | 248   | 18   | 2    | 271   |
|                 | Standard Error    | 3                        | 6     | 6    | 2    |       |

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|                 |                   | Brood Year and Age Group |        |        |      |        |
|-----------------|-------------------|--------------------------|--------|--------|------|--------|
|                 |                   | 1986                     | 1985   | 1984   | 1983 | Total  |
|                 |                   | 0.2                      | 0.3    | 0.4    | 0.5  |        |
| Stratum Dates:  | 7/28-8/25         | Season Total             |        |        |      |        |
| Sampling Dates: | 7/29-8/26         |                          |        |        |      |        |
| Sample Size:    | 893               |                          |        |        |      |        |
| Female          | Percent of Sample | 0.1                      | 37.9   | 6.1    | 0.1  | 44.2   |
|                 | Number in Catch   | 45                       | 29,531 | 4,712  | 110  | 34,398 |
| Male            | Percent of Sample | 0.0                      | 45.8   | 10.1   | 0.0  | 55.8   |
|                 | Number in Catch   | 0                        | 35,633 | 7,846  | 0    | 43,478 |
| Total           | Percent of Sample | 0.1                      | 83.7   | 16.1   | 0.1  | 100.0  |
|                 | Number in Catch   | 45                       | 65,164 | 12,558 | 110  | 77,876 |
|                 | Standard Error    | 29                       | 1,514  | 1,513  | 54   |        |

<sup>a</sup> Age and sex composition is based on Period 18 catch.

Appendix F.2. Yukon River District 1 fall chum subsistence catch composition by age and sex, 1989.

|                 |                   | Brood Year and Age Group <sup>a</sup> |       |      |      | Total |
|-----------------|-------------------|---------------------------------------|-------|------|------|-------|
|                 |                   | 1986                                  | 1985  | 1984 | 1983 |       |
|                 |                   | 0.2                                   | 0.3   | 0.4  | 0.5  |       |
| Stratum Dates:  | 7/28-8/25         |                                       |       |      |      |       |
| Sampling Dates: | 7/29-8/26         |                                       |       |      |      |       |
| Sample Size:    | 893               |                                       |       |      |      |       |
| Female          | Percent of Sample | 0.1                                   | 37.9  | 6.1  | 0.1  | 44.2  |
|                 | Number in Catch   | 5                                     | 1,870 | 301  | 5    | 2,181 |
| Male            | Percent of Sample | 0.0                                   | 45.8  | 10.0 | 0.0  | 55.8  |
|                 | Number in Catch   | 0                                     | 2,260 | 493  | 0    | 2,753 |
| Total           | Percent of Sample | 0.1                                   | 83.7  | 16.1 | 0.1  | 100.0 |
|                 | Number in Catch   | 5                                     | 4,130 | 794  | 5    | 4,934 |
|                 | Standard Error    | 5                                     | 61    | 61   | 5    |       |

<sup>a</sup> Age and sex composition is based on District 1 commercial catch.

Appendix F.3. Yukon River District 2 fall chum commercial catch composition by age, sex, and fishing period, 1989.

|                 |                   | Brood Year and Age Group <sup>a</sup> |       |       |      |       |
|-----------------|-------------------|---------------------------------------|-------|-------|------|-------|
|                 |                   | 1986                                  | 1985  | 1984  | 1983 | Total |
|                 |                   | 0.2                                   | 0.3   | 0.4   | 0.6  |       |
| Stratum Dates:  | 7/30              | Period 11                             |       |       |      |       |
| Sampling Dates: | 7/29              |                                       |       |       |      |       |
| Sample Size:    | 153               |                                       |       |       |      |       |
| Female          | Percent of Sample | 0.0                                   | 34.0  | 13.7  | 2.0  | 49.7  |
|                 | Number in Catch   | 0                                     | 2,337 | 942   | 137  | 3,416 |
| Male            | Percent of Sample | 0.0                                   | 38.5  | 11.8  | 0.0  | 50.3  |
|                 | Number in Catch   | 0                                     | 2,646 | 811   | 0    | 3,458 |
| Total           | Percent of Sample | 0.0                                   | 72.5  | 25.5  | 2.0  | 100.0 |
|                 | Number in Catch   | 0                                     | 4,984 | 1,753 | 137  | 6,874 |
|                 | Standard Error    | 0                                     | 249   | 243   | 78   |       |
| Stratum Dates:  | 8/02              | Period 12                             |       |       |      |       |
| Sampling Dates: | 8/01              |                                       |       |       |      |       |
| Sample Size:    | 36                |                                       |       |       |      |       |
| Female          | Percent of Sample | 0.0                                   | 41.7  | 11.1  | 0.0  | 52.8  |
|                 | Number in Catch   | 0                                     | 167   | 44    | 0    | 211   |
| Male            | Percent of Sample | 0.0                                   | 25.0  | 22.2  | 0.0  | 47.2  |
|                 | Number in Catch   | 0                                     | 100   | 89    | 0    | 189   |
| Total           | Percent of Sample | 0.0                                   | 66.7  | 33.3  | 0.0  | 100.0 |
|                 | Number in Catch   | 0                                     | 267   | 133   | 0    | 400   |
|                 | Standard Error    | 0                                     | 32    | 32    | 0    |       |

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|                 |                   | Brood Year and Age Group <sup>a</sup> |        |       |      |        |
|-----------------|-------------------|---------------------------------------|--------|-------|------|--------|
|                 |                   | 1986                                  | 1985   | 1984  | 1983 | Total  |
|                 |                   | 0.2                                   | 0.3    | 0.4   | 0.6  |        |
| Stratum Dates:  | 8/06              | Period 13                             |        |       |      |        |
| Sampling Dates: | 8/05              |                                       |        |       |      |        |
| Sample Size:    | 155               |                                       |        |       |      |        |
| Female          | Percent of Sample | 0.0                                   | 34.2   | 4.5   | 0.0  | 38.7   |
|                 | Number in Catch   | 0                                     | 6,167  | 811   | 0    | 6,978  |
| Male            | Percent of Sample | 0.0                                   | 50.3   | 11.0  | 0.0  | 61.3   |
|                 | Number in Catch   | 0                                     | 9,070  | 1,984 | 0    | 11,054 |
| Total           | Percent of Sample | 0.0                                   | 84.5   | 15.5  | 0.0  | 100.0  |
|                 | Number in Catch   | 0                                     | 15,237 | 2,795 | 0    | 18,032 |
|                 | Standard Error    | 0                                     | 526    | 526   | 0    |        |
| Stratum Dates:  | 8/09              | Period 14                             |        |       |      |        |
| Sampling Dates: | 8/08              |                                       |        |       |      |        |
| Sample Size:    | 151               |                                       |        |       |      |        |
| Female          | Percent of Sample | 0.0                                   | 48.3   | 9.3   | 0.0  | 57.6   |
|                 | Number in Catch   | 0                                     | 7,090  | 1,365 | 0    | 8,455  |
| Male            | Percent of Sample | 0.0                                   | 32.5   | 9.9   | 0.0  | 42.4   |
|                 | Number in Catch   | 0                                     | 4,771  | 1,453 | 0    | 6,224  |
| Total           | Percent of Sample | 0.0                                   | 80.8   | 19.2  | 0.0  | 100.0  |
|                 | Number in Catch   | 0                                     | 11,861 | 2,818 | 0    | 14,679 |
|                 | Standard Error    | 0                                     | 472    | 472   | 0    |        |

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|                 |                   | Brood Year and Age Group <sup>a</sup> |        |       |      |        |
|-----------------|-------------------|---------------------------------------|--------|-------|------|--------|
|                 |                   | 1986                                  | 1985   | 1984  | 1983 |        |
|                 |                   | 0.2                                   | 0.3    | 0.4   | 0.6  | Total  |
| Stratum Dates:  | 8/13              | Period 15                             |        |       |      |        |
| Sampling Dates: | 8/11              |                                       |        |       |      |        |
| Sample Size:    | 107               |                                       |        |       |      |        |
| Female          | Percent of Sample | 0.0                                   | 45.8   | 4.7   | 0.0  | 50.5   |
|                 | Number in Catch   | 0                                     | 961    | 99    | 0    | 1,060  |
| Male            | Percent of Sample | 0.0                                   | 42.1   | 7.4   | 0.0  | 49.5   |
|                 | Number in Catch   | 0                                     | 884    | 155   | 0    | 1,039  |
| Total           | Percent of Sample | 0.0                                   | 87.9   | 12.1  | 0.0  | 100.0  |
|                 | Number in Catch   | 0                                     | 1,845  | 254   | 0    | 2,099  |
|                 | Standard Error    | 0                                     | 66     | 66    | 0    |        |
| Stratum Dates:  | 8/16              | Period 16                             |        |       |      |        |
| Sampling Dates: | 8/15              |                                       |        |       |      |        |
| Sample Size:    | 152               |                                       |        |       |      |        |
| Female          | Percent of Sample | 0.0                                   | 42.7   | 8.6   | 0.0  | 51.3   |
|                 | Number in Catch   | 0                                     | 8,926  | 1,798 | 0    | 10,723 |
| Male            | Percent of Sample | 0.0                                   | 40.1   | 8.6   | 0.0  | 48.7   |
|                 | Number in Catch   | 0                                     | 8,382  | 1,798 | 0    | 10,180 |
| Total           | Percent of Sample | 0.0                                   | 82.8   | 17.2  | 0.0  | 100.0  |
|                 | Number in Catch   | 0                                     | 17,308 | 3,595 | 0    | 20,903 |
|                 | Standard Error    | 0                                     | 642    | 642   | 0    |        |

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Appendix F.3. (page 4 of 4)

|                 |                   | Brood Year and Age Group <sup>a</sup> |        |        |      |        |
|-----------------|-------------------|---------------------------------------|--------|--------|------|--------|
|                 |                   | 1986                                  | 1985   | 1984   | 1983 |        |
|                 |                   | 0.2                                   | 0.3    | 0.4    | 0.6  | Total  |
| Stratum Dates:  | 8/20–8/27         | Period 17–19                          |        |        |      |        |
| Sampling Dates: | 8/21–8/22         |                                       |        |        |      |        |
| Sample Size:    | 139               |                                       |        |        |      |        |
| Female          | Percent of Sample | 1.4                                   | 59.0   | 4.3    | 0.7  | 65.4   |
|                 | Number in Catch   | 489                                   | 20,602 | 1,502  | 244  | 22,837 |
| Male            | Percent of Sample | 0.0                                   | 32.4   | 2.2    | 0.0  | 34.6   |
|                 | Number in Catch   | 0                                     | 11,314 | 768    | 0    | 12,082 |
| Total           | Percent of Sample | 1.4                                   | 91.4   | 6.5    | 0.7  | 100.0  |
|                 | Number in Catch   | 489                                   | 31,916 | 2,270  | 244  | 34,919 |
|                 | Standard Error    | 349                                   | 833    | 733    | 248  |        |
| Stratum Dates:  | 7/30–8/27         | Season Total                          |        |        |      |        |
| Sampling Dates: | 7/29–8/22         |                                       |        |        |      |        |
| Sample Size:    | 893               |                                       |        |        |      |        |
| Female          | Percent of Sample | 0.5                                   | 47.2   | 6.7    | 0.4  | 54.8   |
|                 | Number in Catch   | 489                                   | 46,250 | 6,561  | 382  | 53,681 |
| Male            | Percent of Sample | 0.0                                   | 38.0   | 7.2    | 0.0  | 45.2   |
|                 | Number in Catch   | 0                                     | 37,167 | 7,058  | 0    | 44,225 |
| Total           | Percent of Sample | 0.5                                   | 85.2   | 13.9   | 0.4  | 100.0  |
|                 | Number in Catch   | 489                                   | 83,417 | 13,618 | 382  | 97,906 |
|                 | Standard Error    | 349                                   | 1,269  | 1,206  | 248  |        |

<sup>a</sup> Age and sex composition is based on District 1 commercial catch.

Appendix F.4. Yukon River District 2 fall chum subsistence catch composition by age and sex, 1989.

|                 |                   | Brood Year and Age Group <sup>a</sup> |       |       |      | Total  |
|-----------------|-------------------|---------------------------------------|-------|-------|------|--------|
|                 |                   | 1986                                  | 1985  | 1984  | 1983 |        |
|                 |                   | 0.2                                   | 0.3   | 0.4   | 0.5  |        |
| Stratum Dates:  | 7/28-8/25         |                                       |       |       |      |        |
| Sampling Dates: | 7/29-8/26         |                                       |       |       |      |        |
| Sample Size:    | 893               |                                       |       |       |      |        |
| Female          | Percent of Sample | 0.5                                   | 47.2  | 6.7   | 0.4  | 54.8   |
|                 | Number in Catch   | 50                                    | 4,727 | 671   | 40   | 5,488  |
| Male            | Percent of Sample | 0.0                                   | 38.0  | 7.2   | 0.0  | 45.2   |
|                 | Number in Catch   | 0                                     | 3,806 | 721   | 0    | 4,527  |
| Total           | Percent of Sample | 0.5                                   | 85.2  | 13.9  | 0.4  | 100.0  |
|                 | Number in Catch   | 50                                    | 8,533 | 1,392 | 40   | 10,015 |
|                 | Standard Error    | 24                                    | 119   | 116   | 21   |        |

<sup>a</sup> Age and sex composition is based on District 1 commercial catch.

Appendix F.5. Yukon River District 3 fall chum commercial gillnet catch composition by age and sex, 1989.

|                 |                   | Brood Year and Age Group <sup>a</sup> |        |       |      |        |
|-----------------|-------------------|---------------------------------------|--------|-------|------|--------|
|                 |                   | 1986                                  | 1985   | 1984  | 1983 | Total  |
|                 |                   | 0.2                                   | 0.3    | 0.4   | 0.5  |        |
| Stratum Dates:  | 7/30-8/27         |                                       |        |       |      |        |
| Sampling Dates: | 7/29-8/22         |                                       |        |       |      |        |
| Sample Size:    | 893               |                                       |        |       |      |        |
| Female          | Percent of Sample | 0.5                                   | 47.2   | 6.7   | 0.4  | 54.8   |
|                 | Number in Catch   | 77                                    | 7,237  | 1,027 | 61   | 8,402  |
| Male            | Percent of Sample | 0.0                                   | 38.0   | 7.2   | 0.0  | 45.2   |
|                 | Number in Catch   | 0                                     | 5,826  | 1,104 | 0    | 6,930  |
| Total           | Percent of Sample | 0.5                                   | 85.2   | 13.9  | 0.4  | 100.0  |
|                 | Number in Catch   | 77                                    | 13,063 | 2,131 | 61   | 15,332 |
|                 | Standard Error    | 36                                    | 182    | 178   | 32   |        |

<sup>a</sup>Age and sex composition is based on District 1 commercial catch.

Appendix F.6. Yukon River District 3 fall chum subsistence gillnet catch composition by age and sex, 1989.

|                 |                   | Brood Year and Age Group <sup>a</sup> |      |      |      |       |
|-----------------|-------------------|---------------------------------------|------|------|------|-------|
|                 |                   | 1986                                  | 1985 | 1984 | 1983 | Total |
|                 |                   | 0.2                                   | 0.3  | 0.4  | 0.5  |       |
| Stratum Dates:  | 7/28-8/25         |                                       |      |      |      |       |
| Sampling Dates: | 7/29-8/26         |                                       |      |      |      |       |
| Sample Size:    | 893               |                                       |      |      |      |       |
| Female          | Percent of Sample | 0.5                                   | 47.2 | 6.7  | 0.4  | 54.8  |
|                 | Number in Catch   | 5                                     | 481  | 68   | 4    | 558   |
| Male            | Percent of Sample | 0.0                                   | 38.0 | 7.2  | 0.0  | 45.2  |
|                 | Number in Catch   | 0                                     | 387  | 73   | 0    | 461   |
| Total           | Percent of Sample | 0.5                                   | 85.2 | 13.9 | 0.4  | 100.0 |
|                 | Number in Catch   | 5                                     | 868  | 142  | 4    | 1,019 |
|                 | Standard Error    | 2                                     | 12   | 12   | 2    |       |

<sup>a</sup> Age and sex composition is based on District 1 commercial catch.

Appendix F.7. Yukon River District 4 fall chum commercial and subsistence fish wheel catch composition by age and sex, 1989.

|                    |                   | Brood Year and Age Group <sup>a</sup> |        |       |      |        |
|--------------------|-------------------|---------------------------------------|--------|-------|------|--------|
|                    |                   | 1986                                  | 1985   | 1984  | 1983 | Total  |
|                    |                   | 0.2                                   | 0.3    | 0.4   | 0.5  |        |
| Stratum Dates:     | 8/06–9/08         |                                       |        |       |      |        |
| Sampling Dates:    | 8/07–9/012        |                                       |        |       |      |        |
| Sample Size:       | 1,303             |                                       |        |       |      |        |
| Female             | Percent of Sample | 0.6                                   | 43.2   | 6.7   | 0.2  | 50.7   |
|                    | Number in Catch   | 168                                   | 12,063 | 1,871 | 56   | 14,157 |
| Male               | Percent of Sample | 0.7                                   | 41.0   | 7.5   | 0.1  | 49.3   |
|                    | Number in Catch   | 195                                   | 11,449 | 2,094 | 28   | 13,766 |
| Total <sup>b</sup> | Percent of Sample | 1.3                                   | 84.2   | 14.2  | 0.3  | 100.0  |
|                    | Number in Catch   | 363                                   | 23,512 | 3,965 | 84   | 27,924 |
|                    | Standard Error    | 88                                    | 282    | 270   | 42   |        |

<sup>a</sup> Age and sex composition is based on District 4 commercial catch.

<sup>b</sup> Commercial and subsistence gillnet catch (9,184) was not included because of insufficient data.

Appendix F.8. Yukon River District 5 fall chum commercial and subsistence fish wheel catch composition by age and sex, 1989.

|                    |                   | Brood Year and Age Group <sup>a</sup> |        |       | Total   |
|--------------------|-------------------|---------------------------------------|--------|-------|---------|
|                    |                   | 1986                                  | 1985   | 1984  |         |
|                    |                   | 0.2                                   | 0.3    | 0.4   |         |
| Stratum Dates:     | 8/12–9/10         |                                       |        |       |         |
| Sampling Dates:    | 8/18–9/08         |                                       |        |       |         |
| Sample Size:       | 62                |                                       |        |       |         |
| Female             | Percent of Sample | 1.6                                   | 45.2   | 1.6   | 48.4    |
|                    | Number in Catch   | 1,745                                 | 49,288 | 1,745 | 52,777  |
| Male               | Percent of Sample | 0.0                                   | 45.1   | 6.5   | 51.6    |
|                    | Number in Catch   | 0                                     | 49,179 | 7,088 | 56,267  |
| Total <sup>b</sup> | Percent of Sample | 1.6                                   | 90.3   | 8.1   | 100.0   |
|                    | Number in Catch   | 1,745                                 | 98,466 | 8,833 | 109,044 |
|                    | Standard Error    | 1,752                                 | 4,132  | 3,809 |         |

<sup>a</sup> Age and sex composition is based on District 5 commercial catch.

<sup>b</sup> Commercial and subsistence gillnet catches (27,995) were not included because of insufficient data.

Appendix F.9. Yukon River District 6 fall chum commercial and subsistence fish wheel catch composition by age and sex, 1989.

|                    |                   | Brood Year and Age Group <sup>a</sup> |         |        | Total   |
|--------------------|-------------------|---------------------------------------|---------|--------|---------|
|                    |                   | 1986                                  | 1985    | 1984   |         |
|                    |                   | 0.2                                   | 0.3     | 0.4    |         |
| Stratum Dates:     | 9/02–9/24         |                                       |         |        |         |
| Sampling Dates:    | 9/09–9/30         |                                       |         |        |         |
| Sample Size:       | 534               |                                       |         |        |         |
| Female             | Percent of Sample | 0.4                                   | 35.1    | 3.1    | 38.6    |
|                    | Number in Catch   | 522                                   | 45,806  | 4,046  | 50,373  |
| Male               | Percent of Sample | 1.4                                   | 55.0    | 5.0    | 61.4    |
|                    | Number in Catch   | 1,827                                 | 71,776  | 6,525  | 80,128  |
| Total <sup>b</sup> | Percent of Sample | 1.8                                   | 90.1    | 8.1    | 100.0   |
|                    | Number in Catch   | 2,349                                 | 117,582 | 10,571 | 130,501 |
|                    | Standard Error    | 752                                   | 1,688   | 1,542  |         |

<sup>a</sup> Age and sex composition is based on District 6 commercial catch.

<sup>b</sup> Includes 16,641 fall chum salmon from ADF&G test fish wheel. Commercial and subsistence gillnet catches (totaling 5,347) were not included because of insufficient data.

Appendix F.10. Yukon Territory, Canada fall chum commercial catch composition by, age and sex, 1989.

|                 |                   | Brood Year and Age Group <sup>a</sup> |        |       |      | Total  |
|-----------------|-------------------|---------------------------------------|--------|-------|------|--------|
|                 |                   | 1986                                  | 1985   | 1984  | 1983 |        |
|                 |                   | 0.2                                   | 0.3    | 0.4   | 0.5  |        |
| Stratum Dates:  |                   |                                       |        |       |      |        |
| Sampling Dates: |                   |                                       |        |       |      |        |
| Sample Size:    |                   | 2,147                                 |        |       |      |        |
| Female          | Percent of Sample | 0.1                                   | 42.2   | 8.9   | 0.2  | 51.4   |
|                 | Number in Catch   | 16                                    | 7,405  | 1,561 | 41   | 9,024  |
| Male            | Percent of Sample | 0.0                                   | 37.7   | 10.7  | 0.2  | 48.6   |
|                 | Number in Catch   | 0                                     | 6,613  | 1,880 | 33   | 8,525  |
| Total           | Percent of Sample | 0.1                                   | 79.9   | 19.6  | 0.4  | 100.0  |
|                 | Number in Catch   | 16                                    | 14,018 | 3,441 | 74   | 17,549 |
|                 | Standard Error    | 12                                    | 152    | 150   | 24   |        |

<sup>a</sup> Age and sex composition is based on commercial gillnet samples (177), and samples (1,970) from the River tagging fish wheels.

Appendix F.11. Yukon Territory, Canada fall chum subsistence catch composition by age and sex, 1989.

|                 |                   | Brood Year and Age Group <sup>a</sup> |       |       |      |       |
|-----------------|-------------------|---------------------------------------|-------|-------|------|-------|
|                 |                   | 1986                                  | 1985  | 1984  | 1983 | Total |
|                 |                   | 0.2                                   | 0.3   | 0.4   | 0.5  |       |
| Stratum Dates:  |                   |                                       |       |       |      |       |
| Sampling Dates: |                   |                                       |       |       |      |       |
| Sample Size:    |                   | 2,147                                 |       |       |      |       |
| Female          | Percent of Sample | 0.1                                   | 42.2  | 8.9   | 0.2  | 51.4  |
|                 | Number in Catch   | 5                                     | 2,309 | 487   | 13   | 2,813 |
| Male            | Percent of Sample | 0.0                                   | 37.7  | 10.7  | 0.2  | 48.6  |
|                 | Number in Catch   | 0                                     | 2,061 | 586   | 10   | 2,658 |
| Total           | Percent of Sample | 0.1                                   | 79.9  | 19.6  | 0.4  | 100.0 |
|                 | Number in Catch   | 5                                     | 4,370 | 1,073 | 23   | 5,471 |
|                 | Standard Error    | 4                                     | 47    | 47    | 8    |       |

<sup>a</sup> Age and sex composition is based on commercial gillnet samples (177), and samples (1,970) from the Yukon River tagging fish wheels.

Appendix G.1. Yukon River District 1 coho commercial catch composition by age, sex and fishing period, 1989.

|                          |                   | Brood Year and Age Group |      |      | Total |
|--------------------------|-------------------|--------------------------|------|------|-------|
|                          |                   | 1986                     | 1985 | 1984 |       |
|                          |                   | 1.1                      | 2.1  | 3.1  |       |
| Stratum Dates: 7/28–7/29 |                   | Period 12 <sup>a</sup>   |      |      |       |
| Sampling Dates:          |                   |                          |      |      |       |
| Sample Size: 0           |                   |                          |      |      |       |
| Female                   | Percent of Sample | 20.0                     | 0.0  | 0.0  | 20.0  |
|                          | Number in Catch   | 4                        | 0    | 0    | 4     |
| Male                     | Percent of Sample | 20.0                     | 60.0 | 0.0  | 80.0  |
|                          | Number in Catch   | 4                        | 11   | 0    | 15    |
| Total                    | Percent of Sample | 40.0                     | 60.0 | 0.0  | 100.0 |
|                          | Number in Catch   | 8                        | 11   | 0    | 19    |
|                          | Standard Error    | 5                        | 5    | 0    |       |
| Stratum Dates: 7/31–8/01 |                   | Period 13                |      |      |       |
| Sampling Dates: 8/01     |                   |                          |      |      |       |
| Sample Size: 5           |                   |                          |      |      |       |
| Female                   | Percent of Sample | 20.0                     | 0.0  | 0.0  | 20.0  |
|                          | Number in Catch   | 4                        | 0    | 0    | 4     |
| Male                     | Percent of Sample | 20.0                     | 60.0 | 0.0  | 80.0  |
|                          | Number in Catch   | 4                        | 12   | 0    | 16    |
| Total                    | Percent of Sample | 40.0                     | 60.0 | 0.0  | 100.0 |
|                          | Number in Catch   | 8                        | 12   | 0    | 20    |
|                          | Standard Error    | 5                        | 5    | 0    |       |

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|                 |                   | Brood Year and Age Group |       |      |           |
|-----------------|-------------------|--------------------------|-------|------|-----------|
|                 |                   | 1986                     | 1985  | 1984 | Total     |
|                 |                   | 1.1                      | 2.1   | 3.1  |           |
| Stratum Dates:  | 8/03–8/04         |                          |       |      | Period 14 |
| Sampling Dates: | 8/04              |                          |       |      |           |
| Sample Size:    | 73                |                          |       |      |           |
| Female          | Percent of Sample | 12.3                     | 15.1  | 0.0  | 27.4      |
|                 | Number in Catch   | 398                      | 489   | 0    | 887       |
| Male            | Percent of Sample | 13.7                     | 57.5  | 1.4  | 72.6      |
|                 | Number in Catch   | 443                      | 1,861 | 45   | 2,349     |
| Total           | Percent of Sample | 26.0                     | 72.6  | 1.4  | 100.0     |
|                 | Number in Catch   | 841                      | 2,349 | 45   | 3,236     |
|                 | Standard Error    | 167                      | 170   | 45   |           |
| Stratum Dates:  | 8/07–8/08         |                          |       |      | Period 15 |
| Sampling Dates: | 8/08              |                          |       |      |           |
| Sample Size:    | 90                |                          |       |      |           |
| Female          | Percent of Sample | 6.6                      | 31.1  | 0.0  | 37.7      |
|                 | Number in Catch   | 97                       | 456   | 0    | 553       |
| Male            | Percent of Sample | 5.6                      | 55.6  | 1.1  | 62.3      |
|                 | Number in Catch   | 82                       | 815   | 16   | 913       |
| Total           | Percent of Sample | 12.2                     | 86.7  | 1.1  | 100.0     |
|                 | Number in Catch   | 179                      | 1,271 | 16   | 1,466     |
|                 | Standard Error    | 51                       | 53    | 16   |           |

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|                 |                   | Brood Year and Age Group |       |      |           |
|-----------------|-------------------|--------------------------|-------|------|-----------|
|                 |                   | 1986                     | 1985  | 1984 | Total     |
|                 |                   | 1.1                      | 2.1   | 3.1  |           |
| Stratum Dates:  | 8/10–8/11         |                          |       |      | Period 16 |
| Sampling Dates: | 8/10              |                          |       |      |           |
| Sample Size:    | 67                |                          |       |      |           |
| Female          | Percent of Sample | 5.9                      | 38.8  | 1.5  | 46.2      |
|                 | Number in Catch   | 114                      | 751   | 29   | 894       |
| Male            | Percent of Sample | 9.0                      | 44.8  | 0.0  | 53.8      |
|                 | Number in Catch   | 174                      | 867   | 0    | 1,041     |
| Total           | Percent of Sample | 14.9                     | 83.6  | 1.5  | 100.0     |
|                 | Number in Catch   | 288                      | 1,618 | 29   | 1,935     |
|                 | Standard Error    | 85                       | 88    | 29   |           |
| Stratum Dates:  | 8/14–8/15         |                          |       |      | Period 17 |
| Sampling Dates: | 8/15              |                          |       |      |           |
| Sample Size:    | 104               |                          |       |      |           |
| Female          | Percent of Sample | 9.6                      | 33.7  | 0.0  | 43.3      |
|                 | Number in Catch   | 873                      | 3,065 | 0    | 3,938     |
| Male            | Percent of Sample | 8.7                      | 45.1  | 2.9  | 56.7      |
|                 | Number in Catch   | 791                      | 4,101 | 264  | 5,156     |
| Total           | Percent of Sample | 18.3                     | 78.8  | 2.9  | 100.0     |
|                 | Number in Catch   | 1,664                    | 7,166 | 264  | 9,094     |
|                 | Standard Error    | 346                      | 366   | 150  |           |

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|                 |                   | Brood Year and Age Group |       |      |                        |
|-----------------|-------------------|--------------------------|-------|------|------------------------|
|                 |                   | 1986                     | 1985  | 1984 |                        |
|                 |                   | 1.1                      | 2.1   | 3.1  | Total                  |
| Stratum Dates:  | 8/21-8/22         |                          |       |      | Period 18              |
| Sampling Dates: | 8/22              |                          |       |      |                        |
| Sample Size:    | 144               |                          |       |      |                        |
| Female          | Percent of Sample | 9.1                      | 34.0  | 1.4  | 44.5                   |
|                 | Number in Catch   | 562                      | 2,100 | 86   | 2,748                  |
| Male            | Percent of Sample | 7.6                      | 45.1  | 2.8  | 55.5                   |
|                 | Number in Catch   | 469                      | 2,785 | 173  | 3,428                  |
| Total           | Percent of Sample | 16.7                     | 79.1  | 4.2  | 100.0                  |
|                 | Number in Catch   | 1,031                    | 4,885 | 259  | 6,176                  |
|                 | Standard Error    | 193                      | 210   | 104  |                        |
| Stratum Dates:  | 8/24-8/25         |                          |       |      | Period 19 <sup>b</sup> |
| Sampling Dates: |                   |                          |       |      |                        |
| Sample Size:    | 0                 |                          |       |      |                        |
| Female          | Percent of Sample | 9.1                      | 34.0  | 1.4  | 44.5                   |
|                 | Number in Catch   | 248                      | 927   | 38   | 1,213                  |
| Male            | Percent of Sample | 7.6                      | 45.1  | 2.8  | 55.5                   |
|                 | Number in Catch   | 207                      | 1,229 | 76   | 1,513                  |
| Total           | Percent of Sample | 16.7                     | 79.1  | 4.2  | 100.0                  |
|                 | Number in Catch   | 455                      | 2,156 | 114  | 2,726                  |
|                 | Standard Error    | 85                       | 93    | 46   |                        |

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|                 |                   | Brood Year and Age Group |        |      | Total  |
|-----------------|-------------------|--------------------------|--------|------|--------|
|                 |                   | 1986                     | 1985   | 1984 |        |
|                 |                   | 1.1                      | 2.1    | 3.1  |        |
| Stratum Dates:  | 7/28-8/25         | Season Total             |        |      |        |
| Sampling Dates: | 7/29-8/22         |                          |        |      |        |
| Sample Size:    | 483               |                          |        |      |        |
| Female          | Percent of Sample | 8.9                      | 30.8   | 0.6  | 40.3   |
|                 | Number in Catch   | 2,196                    | 7,599  | 148  | 9,943  |
| Male            | Percent of Sample | 8.7                      | 49.1   | 1.9  | 59.7   |
|                 | Number in Catch   | 2,146                    | 12,114 | 469  | 14,729 |
| Total           | Percent of Sample | 17.6                     | 79.9   | 2.5  | 100.0  |
|                 | Number in Catch   | 4,342                    | 19,713 | 617  | 24,672 |
|                 | Standard Error    | 450                      | 476    | 196  |        |

<sup>a</sup> No fish were sampled; age and sex composition for this stratum is from Period 13. Includes 2 coho caught during summer chum season; all other were caught during fall chum season with 15.2 cm (6 in) maximum gillnet mesh size.

<sup>b</sup> No fish were sampled; age and sex composition for this stratum is from Period 18.

Appendix G.2. Yukon River District 1 coho subsistence catch composition by age and sex, 1989.

|                 |                   | Brood Year and Age Group <sup>a</sup> |       |      | Total |
|-----------------|-------------------|---------------------------------------|-------|------|-------|
|                 |                   | 1986                                  | 1985  | 1984 |       |
|                 |                   | 1.1                                   | 2.1   | 3.1  |       |
| Stratum Dates:  | 7/28–8/25         |                                       |       |      |       |
| Sampling Dates: | 7/29–8/22         |                                       |       |      |       |
| Sample Size:    | 483               |                                       |       |      |       |
| Female          | Percent of Sample | 8.9                                   | 30.8  | 0.6  | 40.3  |
|                 | Number in Catch   | 458                                   | 1,584 | 31   | 2,073 |
| Male            | Percent of Sample | 8.7                                   | 49.1  | 1.9  | 59.7  |
|                 | Number in Catch   | 448                                   | 2,526 | 98   | 3,071 |
| Total           | Percent of Sample | 17.6                                  | 79.9  | 2.5  | 100.0 |
|                 | Number in Catch   | 905                                   | 4,110 | 129  | 5,144 |
|                 | Standard Error    | 89                                    | 94    | 37   |       |

<sup>a</sup> Age and sex composition is based on District 1 commercial catch.

Appendix G.3. Yukon River District 2 coho commercial catch composition by age and sex, 1989.

|                 |                   | Brood Year and Age Group <sup>a</sup> |        |      | Total  |
|-----------------|-------------------|---------------------------------------|--------|------|--------|
|                 |                   | 1986                                  | 1985   | 1984 |        |
|                 |                   | 1.1                                   | 2.1    | 3.1  |        |
| Stratum Dates:  | 7/30–8/27         |                                       |        |      |        |
| Sampling Dates: | 7/28–8/22         |                                       |        |      |        |
| Sample Size:    | 483               |                                       |        |      |        |
| Female          | Percent of Sample | 8.9                                   | 30.8   | 0.6  | 40.3   |
|                 | Number in Catch   | 3,428                                 | 11,865 | 231  | 15,524 |
| Male            | Percent of Sample | 8.7                                   | 49.1   | 1.9  | 59.7   |
|                 | Number in Catch   | 3,351                                 | 18,914 | 732  | 22,998 |
| Total           | Percent of Sample | 17.6                                  | 79.9   | 2.5  | 100.0  |
|                 | Number in Catch   | 6,780                                 | 30,779 | 963  | 38,522 |
|                 | Standard Error    | 668                                   | 703    | 274  |        |

<sup>a</sup> Age and sex composition is based on District 1 commercial catch.

Appendix G.4. Yukon River District 2 coho subsistence catch composition by age and sex, 1989.

|                 |                   | Brood Year and Age Group <sup>a</sup> |       |      | Total |
|-----------------|-------------------|---------------------------------------|-------|------|-------|
|                 |                   | 1986                                  | 1985  | 1984 |       |
|                 |                   | 1.1                                   | 2.1   | 3.1  |       |
| Stratum Dates:  | 7/28–8/25         |                                       |       |      |       |
| Sampling Dates: | 7/29–8/22         |                                       |       |      |       |
| Sample Size:    | 483               |                                       |       |      |       |
| Female          | Percent of Sample | 8.9                                   | 30.8  | 0.6  | 40.3  |
|                 | Number in Catch   | 448                                   | 1,552 | 30   | 2,031 |
| Male            | Percent of Sample | 8.7                                   | 49.1  | 1.9  | 59.7  |
|                 | Number in Catch   | 438                                   | 2,474 | 96   | 3,008 |
| Total           | Percent of Sample | 17.6                                  | 79.9  | 2.5  | 100.0 |
|                 | Number in Catch   | 887                                   | 4,026 | 126  | 5,039 |
|                 | Standard Error    | 87                                    | 92    | 36   |       |

<sup>a</sup> Age and sex composition is based on District 1 commercial catch.

Appendix G.5. Yukon River District 3 coho commercial catch composition by age and sex, 1989.

|                 |                   | Brood Year and Age Group <sup>a</sup> |       |      | Total |
|-----------------|-------------------|---------------------------------------|-------|------|-------|
|                 |                   | 1986                                  | 1985  | 1984 |       |
|                 |                   | 1.1                                   | 2.1   | 3.1  |       |
| Stratum Dates:  | 7/30–8/27         |                                       |       |      |       |
| Sampling Dates: | 7/29–8/22         |                                       |       |      |       |
| Sample Size:    |                   | 483                                   |       |      |       |
| Female          | Percent of Sample | 8.9                                   | 30.8  | 0.6  | 40.3  |
|                 | Number in Catch   | 355                                   | 1,228 | 24   | 1,607 |
| Male            | Percent of Sample | 8.7                                   | 49.1  | 1.9  | 59.7  |
|                 | Number in Catch   | 347                                   | 1,958 | 76   | 2,381 |
| Total           | Percent of Sample | 17.6                                  | 79.9  | 2.5  | 100.0 |
|                 | Number in Catch   | 702                                   | 3,186 | 100  | 3,988 |
|                 | Standard Error    | 69                                    | 73    | 28   |       |

<sup>a</sup> Age and sex composition is based on District 1 commercial catch.

Appendix G.6. Yukon River District 3 coho subsistence catch composition by age and sex, 1989.

|                 |                   | Brood Year and Age Group <sup>a</sup> |      |      | Total |
|-----------------|-------------------|---------------------------------------|------|------|-------|
|                 |                   | 1986                                  | 1985 | 1984 |       |
|                 |                   | 1.1                                   | 2.1  | 3.1  |       |
| Stratum Dates:  | 7/28–8/25         |                                       |      |      |       |
| Sampling Dates: | 7/29–8/22         |                                       |      |      |       |
| Sample Size:    | 483               |                                       |      |      |       |
| Female          | Percent of Sample | 8.9                                   | 30.8 | 0.6  | 40.3  |
|                 | Number in Catch   | 48                                    | 165  | 3    | 216   |
| Male            | Percent of Sample | 8.7                                   | 49.1 | 1.9  | 59.7  |
|                 | Number in Catch   | 47                                    | 264  | 10   | 321   |
| Total           | Percent of Sample | 17.6                                  | 79.9 | 2.5  | 100.0 |
|                 | Number in Catch   | 95                                    | 429  | 13   | 537   |
|                 | Standard Error    | 9                                     | 10   | 4    |       |

<sup>a</sup> Age and sex composition is based on District 1 commercial catch.

Appendix G.7. Yukon River District 6 coho commercial and subsistence fish wheel catch composition by age and sex, 1989.

|                    |                   | Brood Year and Age Group |        |       |        |
|--------------------|-------------------|--------------------------|--------|-------|--------|
|                    |                   | 1986                     | 1985   | 1984  | Total  |
|                    |                   | 1.1                      | 2.1    | 3.1   |        |
| Stratum Dates:     | 9/9-9/10          |                          |        |       |        |
| Sampling Dates:    | 9/9-9/10          |                          |        |       |        |
| Sample Size:       | 266               |                          |        |       |        |
| Female             | Percent of Sample | 6.4                      | 22.6   | 3.8   | 32.8   |
|                    | Number in Catch   | 2,305                    | 8,139  | 1,369 | 11,813 |
| Male               | Percent of Sample | 18.8                     | 40.1   | 8.3   | 67.2   |
|                    | Number in Catch   | 6,771                    | 14,442 | 2,989 | 24,202 |
| Total <sup>a</sup> | Percent of Sample | 25.2                     | 62.7   | 12.1  | 100.0  |
|                    | Number in Catch   | 9,076                    | 22,581 | 4,358 | 36,014 |
|                    | Standard Error    | 961                      | 1,070  | 722   |        |

<sup>a</sup> Includes 2,140 coho salmon from sales of catches in ADF&G test fish wheel. Commercial and subsistence gillnet catches (2,591) were not included because of insufficient data.

Appendix G.8. Length (mm measured from mid-orbit to fork-of-tail) of Yukon River District 1 and District 6 coho test fishing catches by age and sex, 1989.

|                                     |                   |                   | Brood Year and Age Group |       |       |       |
|-------------------------------------|-------------------|-------------------|--------------------------|-------|-------|-------|
|                                     |                   |                   | 1986                     | 1985  | 1984  |       |
|                                     |                   |                   | 1.1                      | 2.1   | 3.1   | Total |
| Big Eddy<br>6 in set<br>Gillnet     | Females           | Mean Length       | 591.1                    | 582.3 | 583.8 |       |
|                                     |                   | Standard Error    | 6.47                     | 3.94  | 8.98  |       |
|                                     |                   | Number in Sample  | 14                       | 41    | 4     | 59    |
|                                     | Males             | Mean Length       | 574.6                    | 577.2 | 583   |       |
|                                     |                   | Standard Error    | 8.98                     | 4.89  | 15.05 |       |
|                                     |                   | Number in Sample  | 14                       | 48    | 5     | 67    |
|                                     | Total             | Percent of Sample | 22.2                     | 70.6  | 7.1   | 100.0 |
|                                     |                   | Number in Sample  | 28                       | 89    | 9     | 126   |
|                                     |                   | Standard Error    | 3.7                      | 4.1   | 2.3   |       |
| Middle Mouth<br>6 in set<br>Gillnet | Females           | Mean Length       | 596.9                    | 581.9 | 564   |       |
|                                     |                   | Standard Error    | 5.62                     | 3.1   | 11.08 |       |
|                                     |                   | Number in Sample  | 18                       | 75    | 10    | 103   |
|                                     | Males             | Mean Length       | 581.3                    | 583   | 579.3 |       |
|                                     |                   | Standard Error    | 10.95                    | 3.34  | 8.59  |       |
|                                     |                   | Number in Sample  | 15                       | 116   | 15    | 146   |
|                                     | Total             | Percent of Sample | 13.3                     | 76.7  | 10.0  | 100.0 |
|                                     |                   | Number in Sample  | 33                       | 191   | 25    | 249   |
|                                     |                   | Standard Error    | 2.2                      | 2.7   | 1.9   |       |
| Ruby Test<br>Fish Wheel             | Females           | Mean Length       |                          | 572.5 | 575   |       |
|                                     |                   | Standard Error    |                          | 22.5  | 0     |       |
|                                     |                   | Number in Sample  |                          | 2     | 1     | 3     |
|                                     | Males             | Mean Length       |                          | 543.1 |       |       |
|                                     |                   | Standard Error    |                          | 15.84 |       |       |
|                                     |                   | Number in Sample  |                          | 8     |       | 8     |
| Total                               | Percent of Sample |                   | 90.9                     | 9.1   | 100.0 |       |
|                                     | Number in Sample  |                   | 10                       | 1     | 11    |       |
|                                     | Standard Error    |                   | 9.1                      | 9.1   |       |       |