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UPPER COOK INLET SALMON (*Oncorhynchus* spp.) ESCAPEMENT STUDIES, 1985

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November 1987

ALASKA DEPARTMENT OF FISH AND GAME
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Don W. Collinsworth
Commissioner

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Alaska Department of Fish and Game
Division of Commercial Fisheries
Juneau, Alaska

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ABSTRACT

Sockeye salmon (*Oncorhynchus nerka*) 1985 escapements into the four major river systems of Upper Cook Inlet, Alaska were estimated by hydroacoustic and other techniques. Escapements totaled 502,820 fish into the Kenai River, 505,049 fish into the Kasilof River, 128,628 fish into the Crescent River, and 227,924 fish into the Susitna River. Escapements of chum salmon (*O. keta*), coho salmon (*O. kisutch*), pink salmon (*O. gorbuscha*), and king salmon (*O. tshawytscha*) into the Susitna River were also documented from various sources. Estimates derived by a combination of sonar and mark-recapture techniques were 163,590 pink salmon, 385,692 chum salmon, 45,981 coho salmon, and 185,700 chinook salmon. Age, sex, length, and weight data for the above salmon species are also presented. In addition, sockeye salmon migratory behavior data in the form of spatial and temporal distribution and migratory timing information are given. Finally, escapement information for Upper Cook Inlet streams compiled by other Alaska Department of Fish and Game Divisions, state and federal agencies, private consultants, and nonprofit corporations are documented.

KEY WORDS: Pacific salmon escapements, hydroacoustic enumeration, biological sampling, migratory behavior

INTRODUCTION

In 1985 sockeye salmon (*Oncorhynchus nerka*) escapements were monitored daily by the Alaska Department of Fish and Game (ADF&G) in the Kenai, Kasilof, Crescent, Yentna and Susitna River drainages of Upper Cook Inlet (Figures 1 through 4). Pink salmon (*O. gorbuscha*), chum salmon (*O. keta*), and coho salmon (*O. kisutch*) escapements into the Yentna and Susitna River were also monitored during the sockeye salmon run.

A description of the Upper Cook Inlet (UCI) Management Area and its major sockeye salmon producing rivers was presented in Tarbox et al. (1983). Historical information on escapement enumeration efforts was described by Waltemyer et al. (1980).

The objectives of UCI escapement research projects conducted by the Commercial Fisheries Division on the Kenai River, Kasilof River, Susitna River, Yentna River and Crescent River in 1985 were to estimate:

1) the magnitude of escapement and migration timing of sockeye salmon in the mainstem river;

2) the age, weight, length (AWL), and sex characteristics of the sockeye salmon escapement; and

3) the magnitude, timing, and distribution of spawning sockeye salmon within established tributary index areas (excluding Crescent River).

Secondary objectives for the Susitna and Yentna River projects were to assess:

1) the relative magnitude of escapement of coho salmon, chum salmon, and pink salmon in the mainstem river; and

2) the age, weight, length, and sex characteristics of coho salmon, chum salmon, and pink salmon escapements.

An additional objective was to document salmon research conducted on major tributaries of the Kenai River, Kasilof River, Susitna River, and Crescent River drainages as well as other systems in the UCI area. This included population estimates or peak counts of salmon in Upper Cook Inlet streams made by other ADF&G divisions, state and federal agencies, private consultants, and nonprofit corporations.

METHODS

Since the early 1960's, the Department has contracted the Bendix Corporation to develop sonar equipment to count the number of sockeye salmon migrating to spawning grounds in the major rivers of Cook Inlet. Glacial silt in these rivers severely limits more direct visual means of escapement assessment. This development has resulted in the installation of Bendix Corp. side-

scanning sonar counters in the Kenai River, Kasilof River, Susitna River, and Crescent River.

Procedures for deployment, operation, and calibration of side- scanning sonar equipment are summarized in Tarbox et al. (1983). The normal procedure of operating individual counters on opposite sides of the river and in close proximity to each other was abandoned at Susitna Station in 1985 because of the lack of a suitable site on the west bank of the river (King and Tarbox, 1984). Sonar counts and fishwheel catches from Yentna Station were combined with Susitna Station east bank sonar counts in 1985 to provide daily in-season escapement estimates under the assumption that most sockeye salmon following the west bank near Susitna Station were destined for the Yentna River. Postseason estimates of escapement combined data from Yentna Station sonar counters and the Susitna Hydroelectric mark/recapture project at Sunshine Station (Thompson et al. 1986).

In-season sonar counts for the east bank of the Susitna River were obtained with the Bendix 1984 model long range side-scanning sonar counter operating over a tubular aluminum substrate . The counting range was maintained at approximately 27 m.

Also in 1985, Biosonics Corporation was contracted by the department to provide information on the following topics as a first step in the design of a counting system more suitable to the unique characteristics of the mainstem Susitna River:

1) horizontal distribution of fish targets across the mainstem river,

2) vertical distribution of fish targets,

3) salmon target strength measurements, and

4) fish upstream migration speed.

Results of this study are presented in Ransom et al. (1986).

Field enumeration activities in 1985 began and ended on the following dates:

Kenai River	- 22 June to 11 August
Kasilof River	- 13 June to 11 August
Susitna River	- 9 July to 4 August
Crescent River	- 15 June to 30 July
Yentna River	- 1 July to 8 August

Estimates of escapement into the Kasilof and Kenai Rivers prior to and after termination of hydroacoustic activities were generated by fitting seasonal daily escapement proportions to the historic migratory timing profile developed during years when sonar operations were maintained throughout the run.

An estimate of sockeye salmon escapement into Crescent River after 31 July was derived using the Western Subdistrict set gill net catch from 31 July through 20 August, and the average exploitation rate (59%) calculated using

total Western Subdistrict catch and escapement through 30 July (the end date of sonar counting). The estimate was based on the assumption that the exploitation rate after 30 July did not change. This seemed reasonable because:

1) the cumulative exploitation rate leveled off at approximately 59% very early during continuous fishing; and,

2) the rate of catch and escapement (measured as percent of the total enumerated or caught daily) was relatively constant throughout the period of continuous harvest (Figure 5).

Migratory behavior of sockeye salmon at the sonar site was assessed by analysis of:

1) distribution from shore (expressed in percentage of targets by counting sector);

2) hourly distribution;

3) bank preference for travel; and

4) cumulative percentage of sonar counts by day (migratory timing). The distribution of sonar counts by sector and hour was analyzed over time using analysis programs described in Roberson et al. (1982).

Fishwheels were installed at all sites except Crescent River to assist in assessing migrational timing of salmon species, apportion sonar counts, and obtain escapement samples for AWL analysis. Crescent River samples were obtained by trip seine and gill net.

To derive species apportionment of sonar counts, daily fishwheel (or seine/gill net) catches were grouped into samples of at least 150 salmon. The daily sonar count was then multiplied by the proportion of each species in the catch to get the apportioned sonar count by species.

All fish captured in the fishwheels were enumerated by species and sampled according to methods provided in the Upper Cook Inlet Field Operations Manual.

The AWL data obtained for each salmon species were as follows.

1) Chum and coho salmon. Age (scale), weight, length (mid-eye to fork-of-tail), and sex composition data were collected from all adults captured to a maximum of 600 fish.

2) Pink salmon. A minimum of 10 weight, length,and sex composition samples were collected daily to a maximum of 600 fish.

3) Sockeye salmon. Weight data from sockeye salmon were limited to approximately 600 samples per river. All fish captured were sampled until this level was achieved under

the assumption that weights by age class and sex did not change significantly through time. All fish captured for age composition samples were measured and examined for sex related characteristics. Sex ratios were calculated by grouping all samples together regardless of timing of sampling.

Scales were taken from the first 300 adults captured to provide "known" growth pattern samples for the stock separation catch allocation program described by Cross et al. (1984). The age composition (scale) sampling program was then scheduled to provide data necessary to determine the degree of seasonal variation in age composition occurring in the Kasilof River, Kenai River, and Susitna River.

Bernard (1983) outlined the sample size by period necessary to estimate the true proportion of each major age group in the escapement within five percentage points (+/-) 90% of the time. The sample sizes presented below are maximum numbers of samples necessary to meet the above precision level and are based on historical age composition data for each site. Because there is generally a larger degree of variation in the proportion of the dominant age class in historical data, the maximum sample level given in Bernard (1983) was used for the Kasilof and Susitna Rivers.

Kenai River. The first day after the number of hydroacoustic fish targets apportioned to sockeye salmon exceeded 10,000 per day, 500 fish were sampled in a 24- hour period. This 24-hour sampling level was repeated every 5 days until sonar counts dropped below 10,000 per day.

Kasilof River. When daily fishwheel catches of sockeye salmon approached the necessary sample size, 640 fish were sampled in the shortest feasible time frame within a 5- to 7-day period. This sampling schedule was continued until fishwheel catches dropped below the level where 640 sockeye salmon could be obtained in 2-3 days.

Susitna River. Fishwheel catches from Flathorn Station, the Susitna Hydroelectric Project adult anadromous fish tagging site located approximately 3 km downstream of Susitna Station, provided the scale samples necessary to determine the age composition for the mainstem Susitna River. The first day that fishwheel catches of sockeye salmon exceeded the necessary sample size, 640 fish were sampled in a 24-hour period. An equal number of sockeye salmon was sampled within a 24-hour period every 4-5 days until the necessary number of fish were not available for sampling.

The age composition sampling program was also designed to determine if there was a difference in age structure between fishwheels. This was done to avoid biasing the final age composition for the river by using larger proportions of samples from any one fishwheel. The potential bias was thought

to be a possibility because of the proximity of Flathorn Station to the confluence of the Susitna and Yentna Rivers, for which differences in age structure within each arm of the drainage were previously documented (King and Tarbox, 1986).

Age composition data analysis consisted of breaking the escapement of each river into several periods and weighting the age composition within each period by the apportioned sonar count obtained during that period. These data were then recombined to derive a weighted total season age composition. The number of fish (Ej), variance (V), and confidence interval (CI) of each major age class were calculated using the following formulae (Cochran 1977).

$$E_{tj} = E_t * P_{tj}$$

$$V[E_{tj}] = (E_t)^2 * P_{tj}(1-P_{tj})/N_t-1$$

$$E_j = \sum_{t=1}^{T} E_{tj}$$

$$V[E_j] = \sum_{t=1}^{T} V[E_{tj}]$$

$$CI = +/- \ V[E_j] * t(\text{alpha} = 0.05, \text{n-1 d.f.})$$

Where:

E_t = Estimated number of fish escaping during stratum t.

P_{tj} = Proportion of the sample taken during stratum t that is age j.

N_t = Sample size for stratum t.

E_{tj} = Estimated number of fish of age j escaping during stratum t.

T = Number of strata.

E_j = Estimated number of fish age j escaping during the season.

Data were then formatted in a contingency table using number of fish by age class (R) by sampling period (C). A chi-square test was performed on the data set to determine if the numbers of fish by age class was independent of time of sampling. If the null hypothesis was rejected (indicating a difference in age class frequency by period), then the chi-square test was repeated between sampling periods to determine when changes in age composition occurred.

Index-area escapement surveys were conducted by staff personnel on the Kenai River, Kasilof River, and Susitna River, and various minor Northern District river systems. A combination of helicopter, fixed-wing aircraft, and foot surveys were conducted from 1 August to 15 September. Index area counts and

other survey data documented in this report represent peak live and dead counts. Data from additional surveys are stored in Commercial Fisheries Division stream survey files in Soldotna.

RESULTS AND DISCUSSION

Escapement data and related information are presented by drainage. Factors affecting accuracy of counts, and sources of mortality above the sonar site (notably the sport fishing harvest) are presented where known.

Kenai River

During the period of 22 June through 11 August, 491,154 fish targets were enumerated in the Kenai River (Appendix Table 1). The apportioned sockeye salmon total of 482,899 fish was expanded to 502,820 fish to account for fish passing the sonar site after 11 August (Table 1). This level of escapement slightly exceeds the upper bound of the desired escapement goal range (350,000-500,000 fish). The estimated number of potential spawners (sonar count minus sport harvest above the Soldotna bridge) was 414,410 fish (Table 2).

Individual tributary escapement estimates and sources of data are presented in Tables 3 and 4. Record numbers of fish were enumerated in Ptarmigan Creek and Russian River. Peak counts for all tributaries contributed to an index area escapement total which exceeded any year on record, and represented a minimum of 41% of the estimated spawners in the drainage. Quartz Creek, a major spawning tributary monitored by a weir crew in previous years, was not monitored in 1985 due to budget constraints.

Approximately 33% of the estimated late run sockeye salmon spawners in the drainage were enumerated in the Russian River and associated lake system. This disproportionate number of spawners in the Russian River drainage was also apparent in 1984, and has raised concerns about the carrying capacity of the system (Nelson, 1985). However, parent-year escapements in 1979 and 1980 were of similar levels and, to date (with not all age classes returned), have resulted in near-record return per spawner ratios (7.0 fish per spawner for the 1979 parent-year and 8.6 fish per spawner for the 1980 parent year).

As in the previous two years, the degree of bank orientation exhibited by sockeye salmon changed as the season progressed. Fish migrating up both banks followed the historic pattern of moving closer to shore as passage rate increased (Appendix Tables 2 and 3). During the period of 20 July through 31 July when approximately 80%, of the estimated escapement passed the counters, greater than 90% of the targets were enumerated within 5 m of the transducer (Appendix Tables 4 and 5). Hourly distribution of fish targets was concentrated between 1700 and 0400 hours on both banks during the peak of the run (Appendix Tables 6 and 7).

Fifty-four percent of the recorded fish targets were counted on the north bank in 1985 (Table 5). The peak sockeye salmon passage date preceded the midpoint (25 July) of the run by one day on both banks (Table 6 and Appendix Tables 8 and 9). The midpoint of the run occurred approximately 6 days later

than the mean midpoint for the previous six years (19 July). Eighty percent of the escapement passed the sonar counters in a period of 16 days, giving the appearance of an escapement of long duration relative to recent years (Table 6). However, the entry pattern was influenced by an early pulse of fish on 16 July followed by a relatively quiet period until the arrival of the main body of the escapement. Removal of the 16 July counts from the data set results in a more typical entry pattern of approximately 10 days.

A total of 5,125 sockeye salmon was captured in fishwheels (Appendix Tables 10 and 11). Length and weight data were obtained from 2,291 and 582 fish, respectively. Average length, average weight, and ratio of males to females is presented by age class and sex in Appendix Tables 12 and 13.

For the past three years (including 1985) the age composition sampling program in the Kenai River was structured to determine if any significant change in age composition over time occurred. Table 7 summarizes results from chi square analysis of significance of change. In the years 1983 and 1985, when greater than 70% of the sockeye salmon were age 1.3 and 1.2, the analysis indicated that no significant change in age composition over time occurred. Similar results were obtained when testing the three major age classes ages in the 1984 escapement: 1.2, 1.3, and 2.3 which were an estimated 81% of the escapement. Although this analysis indicated that all samples collected in 1985 could be combined to calculate the age composition of the escapement, results were presented by period (Table 8) and weighted to derive the total age composition estimate. The resultant age structure was made up of age 1.3 (56.4%), 1.2 (15.9%), 2.3 (11.4%), and 2.2 (14.7%) fish.

Fish targets attributed to pink salmon, coho salmon, and chinook salmon are considered minimum estimates. Run timing, counter limitations, and spawning site locations relative to the sonar site are factors discussed in Tarbox et al. (1981 and 1983) which influence accuracy of escapement estimates for these species. No additional pink salmon and coho salmon escapement estimates were made for the mainstem Kenai River, but available information concerning tributary spawning populations is summarized in Table 4. The Sport Fish Division estimated 29,763 late run chinook salmon (range 23,972 - 41,087) entered the Kenai River in 1985, with a harvest of 8,055 fish (Hammarstrom et al 1985). The early run total return was estimated to be 15,972 fish (range: 5,109 - 26,385) including a harvest of 7,971.

Sonar counts attributed to sockeye salmon appear to be a relatively accurate measurement of escapement within the Kenai River drainage. The magnitude of the run and short duration of entry are ideal for counting with the Bendix system. In addition, entry of sockeye salmon into the drainage is earlier than coho salmon and pink salmon escapements, and the difference in run size between sockeye salmon and chinook salmon implies that this is essentially a single-species system relative to escapement estimation errors caused by incorrect apportionment of fish targets.

Kasilof River

A total of 493,095 fish targets were counted at the Kasilof River sonar site from 13 June through 11 August 1985 (Appendix Table 14). The apportioned sockeye salmon count of 478,033 fish was expanded to account for fish migration into the system prior to 13 June and after 11 August, resulting in

a total sockeye salmon escapement estimate of 505,049 fish (Table 1). This total exceeded the maximum escapement goal of 150,000 fish and represents the sixth consecutive year that the goal has been exceeded.

Results of juvenile and smolt outmigration studies on Tustumena Lake (Flagg et al. 1986), and analysis of total adult return and subsequent return per spawner information (Tarbox and Waltemyer 1985) were reviewed relative to the validity of existing escapement goals. These data, when combined with results of Ricker curve analysis provided sufficient background for changing the escapement goal for sockeye salmon into the Kasilof River (Tarbox and Waltemyer 1986). Beginning in 1986 the escapement goal range will be 150,000 to 250,000 fish.

The Fisheries Rehabilitation, Enhancement, and Development Division (FRED) Crooked Creek Hatchery contribution to the sockeye escapement was estimated to be approximately 34% (preliminary data; Flagg 1985). Hatchery contribution varied by spawning tributary, accounting for an estimated 42% and 72% of the adults returning to Bear Creek and Glacier Flats Creek, respectively. A higher proportion of hatchery fish was expected in these tributaries where eggs for the Crooked Creek facility are collected.

Adults returning in 1985 used for artificial propagation numbered 23,953, reducing the number of potential natural spawners to 481,096 (Table 9).

Approximately 55% of the estimated sockeye salmon escapement was enumerated in tributaries of Tustumena Lake (Table 10). Eighty-seven percent of the counted tributary spawners entered Bear and Glacier Flat Creeks (Table 11). The number of spawners in these two tributaries, as well as Crystal, Clear, and Seepage Creeks, exceeded maximum spawner densities presented by Tarbox et al. (1983).

The midpoint of the sockeye salmon escapement for both banks occurred on 22 July, 9 days later than the mean for the previous 6 years (Table 12 and Appendix Tables 15 and 16). Eighty percent of the escapement occurred in 28 days (Table 12), typical of recent run duration data.

Seventy percent of the enumerated fish targets were recorded on the north bank at the sonar site (Table 5). During the 28-day period when 80% of the targets were counted, nearly 90% were within approximately 3 m of the transducer (Appendix Tables 17 and 18). On the south bank there was a tendency for more offshore distribution prior to 16 July, however, as the passage rate of fish increased, the proportion of targets within 3 m of the transducer increased (Appendix Tables 19 and 20). As in previous years, there was very little change in passage rate throughout the day (Appendix Tables 21 and 22).

A total of 7,204 salmon were captured in fishwheels at the Kasilof River sonar site from 28 June through 7 August (Appendix Tables 23 and 24), of which 7,022 were sockeye salmon. Age 1.2 (57.3%), 1.3 (21.8%), and 2.2 (17.8%) fish were the dominant age classes of sockeye salmon (Table 13). Statistical comparison (chi-square analysis) of age composition over time revealed an increase in the proportion of age 1.2 fish and a decrease in the proportion of 1.3 fish as the season progressed. Examination of the changes between sampling periods (period dates and proportion of fish by age class by

period are presented in Table 13) revealed that significant change occurred between all periods except periods three and four (Table 14).

Sockeye salmon average length and weight data by age class, and sex ratios (males to females) are presented in Appendix Table 25 and 26. Similar information for the limited numbers of other salmon species sampled are stored in Commercial Fisheries Division files in Soldotna.

Run timing, counter limitations, and spawning locations relative to the sonar site are factors which prevent escapement estimates for Kasilof River pink salmon, coho salmon, and chinook salmon. Weir counts of chinook salmon and coho salmon were conducted by the FRED Division on Crooked Creek (a lower river tributary of the Kasilof River). A total of 5,861 chinook salmon of Crooked Creek origin was estimated in 1985, consisting of 73 % fish thought to be hatchery reared (Waite and Flagg 1986). The coho salmon count at the weir was 1,898 (Och, ADF&G, personal communication).

It appears from the data gathered that fish targets attributed to sockeye salmon are a relatively accurate measure of the escapement of this species into the Kasilof River. Shore and bottom oriented migratory behavior conducive to counting with the Bendix counter are likely a result of relatively high water velocities which are found at this site. Additionally, the predominance of sockeye salmon in fishwheel catches indicated this was primarily a single species system during the monitoring period, and finally, documented sockeye salmon spawning areas are above the sonar site.

Crescent River

A total of 107,934 fish targets were counted entering Crescent River from 15 June through 30 July 1985. The apportioned sockeye salmon count of 105,595 (Appendix Table 27) was expanded to 128,628 to account for fish passing the sonar site after 30 July (Table 1).

The escapement estimate exceeded the goal of 50,000 established in 1979 (Tarbox et al. 1983). In addition, there was a record commercial catch of over 185,000 fish taken in the Western Subdistrict where the predominant number of Crescent River fish are thought to be caught (Ruesch, ADF&G, personal communication). Based on these record escapement and catch data, and preliminary return per spawner calculations (approximately 3.5 returns for every spawner in 1979 with some age classes not yet returned), the escapement goal has been changed to a range of 50,000 to 100,000 fish for 1986.

Fish movement was concentrated very close to shore at the lower river enumeration site. Over 95% of the north bank and 90% of the south bank fish targets were enumerated within 2 m of the transducer (Appendix Tables 28 through 31). Fish movement was also concentrated between 1300 and 2200 hours throughout the counting period (Appendix Tables 32 and 33). Both shore orientation and hourly distribution were similar to the range of historical data collected at the Crescent Lake outlet site, and the existing lower river site in 1984.

Run duration in 1985 was similar to that seen in 1984 at the lower river site. The midpoint of the escapement occurred on 18 July (Table 15), also comparable to the previous year. The lack of movement of fish past the

counters prior to 4 July may have been influenced by extremely low flow conditions and excellent water clarity early in the season. Heavy rains beginning 3 July resulted in an increase in water depth and velocity, and a decrease in water clarity. These hydrologic changes were followed by the three highest daily escapements for the season from 4 July through 6 July. The remainder of the counting period consisted of a relatively constant passage rate of 2-4% of the escapement entering the river each day.
Apparent preference for the north bank for travel (71% of the counts; Table 5, Appendix Tables 34 and 35) may be a result of direction of entry into the river from Cook Inlet as water velocities are uniformly high throughout the lower river and may inhibit significant crossover after entry from saltwater.

Collection of fish for AWL samples was accomplished using a trip seine and gill net in the lower river (Appendix Table 36). A total of 594 sockeye salmon were sampled for age, length, and weight data. Age composition information for the two gear types were combined after chi-square analysis indicated that the age compositions generated from each data set were not significantly different at the 0.05 alpha level. Age structure of fish sampled was 43.0% age 2.3 fish, 31.3% age 1.3 fish, and 20.5% age 2.2 fish (Table 16). Average length and weight by sex and age class, and the ratio of males to females for sockeye salmon collected are presented in Appendix Tables 37 and 38.

Evaluation of migratory behavior information (targets inshore and near bottom) was interpreted to mean that most fish were available to ensonification by the Bendix counter. In addition, fish passage occurred primarily during the daylight hours when counter accuracy could be measured, to some degree, by visual observation. Other factors entering the process of evaluating the accuracy of sockeye salmon escapement estimate were the predominance of sockeye salmon in the sampling program, and the absence of known spawning sites downriver of the site. The combination of these factors implies that the total number of fish targets attributed to sockeye salmon entering the Crescent River is probably reasonable.

Postseason regression analysis revealed that there was no significant correlation between daily commercial harvest in the Western Subdistrict and daily escapement into the river (the slope of the line was not significantly different than 0, and $r = 0.17$ (21 df). The estimate of escapement after cessation of counting activities obtained via this technique was used despite potential problems, but a more suitable approach would have been to continue the counting operation until a significant drop in escapement was detected.

Susitna River

Salmon escapement estimates by species reported for 1985 are a compilation of data gathered for the Susitna Hydroelectric Project (Thompson et al. 1986) in addition to information from Commercial Fisheries Division sonar enumeration efforts at Yentna Station.

Counts recorded on the east bank of the Susitna River near Susitna Station were for selected time periods only, and designed to provide an index of sockeye salmon escapement for inseason management of the commercial fishery. In addition, inseason problems were encountered with hydroacoustic equipment which further precluded use of these data for postseason estimates of

escapement. Therefore, data collected from the east bank of the Susitna River at Susitna Station were not included in this report. Apportioned sonar counts and fishwheel catches are on file in the Soldotna office of the Division of Commercial Fisheries.

Sockeye Salmon:

A postseason estimate of 227,924 sockeye salmon was generated for 1985 (Table 1). This value represents a combination of Yentna Station sonar counts (107,124; Appendix Table 39), and the Sunshine Station mark/recapture (Petersen) estimate (120,800; Appendix Table 40). The Susitna Hydroelectric Project also enumerated an early run of sockeye salmon totaling 3,945 fish at Sunshine Station, which reached a midpoint in migration (based on fishwheel catch) on 13 June (Thompson et al. 1986). The escapement goal for sockeye salmon established in 1979 is 200,000 late run fish (Tarbox et al. 1983). Additional sockeye salmon escapement estimates made for various points on the mainstem Susitna River for the Susitna Hydroelectric Project are presented in Appendix Table 40.

Spawning ground surveys in historic index areas accounted for approximately 71,600 sockeye salmon (peak counts only; Table 17). Additional counts of sockeye salmon within the drainage conducted by Susitna Hydroelectric project and Sport Fish Division personnel enumerated 2,834 sockeye salmon in other tributaries (Table 18). In addition to the Larson Lake weir count (Table 17), Cook Inlet Aquaculture Association personnel enumerated 120,650 sockeye salmon within the drainage, 114,340 in Yentna River tributaries (Marcuson, Cook Inlet Aquaculture Association, personal communication).

The midpoint of the return to the Yentna River passed the counters on 26 July, one day after the peak passage date (Table 19). Run timing, as measured by the midpoint, was approximately 7 days (19 July) later than the mean for the previous four years. The south bank apportioned sockeye salmon count, which contributed 91% of the total (Table 5), had the same midpoint and peak passage dates (26 July; Appendix Table 41). Respective dates for the north bank were one day later (27 July; Appendix Table 42). Eighty percent of the escapement passed the counters in 6 days (Table 19), making the 1985 escapement the shortest duration on record. Fishwheel catch information essentially reflect the same migratory timing as sonar data (Appendix Tables 43 and 44).

Analysis of sector distribution data from the south bank indicated that greater than 95% of the fish counted during the peak of the run (22 July through 30 July; approximately 93% of the escapement) were within 5 m of the transducer (Appendix Tables 45 and 46). Moving the location of the north bank counting equipment in 1985, relative to previous years, resulted in an improvement in shore orientation of fish relative to previous years although some offshore distribution was recorded (Appendix Tables 47 and 48). Field observation indicated that a portion of the inshore and offshore sector counts were compensatory for fish undercounting in the middle sectors. Counts on both banks were relatively evenly distributed throughout the day (Appendix Tables 49 and 50).

Fishwheel catches at Yentna Station are presented in Appendix Tables 43 and 44. These data were used only to apportion sonar counts, provide tag recovery

information for the Susitna Hydroelectric program, and obtain length and weight data from all salmon species.

The midpoint of the fishwheel catch at Flathorn Station was 28 July (Thompson et al. 1986), 2 days after the midpoint of the run at Yentna Station, and only 2 days prior to the 50% date at Sunshine Station (58 river miles upstream). Average travel time for tagged fish (Thompson et al., 1986) was more consistent with previous years data (6.9 days from Flathorn Station to Sunshine Station at an average speed of 8.3 miles per day), although there was some evidence of stress related impedence of migratory rate.

Results of age composition analysis by fishwheel at Flathorn Station are presented in Table 20 and Appendix Tables 51 through 54. Postseason chi-square analysis of the independence of age structure relative to wheel location revealed a statistical difference (0.05 alpha level) in age composition by fishwheel when all data from all wheels are tested together (Table 21). By testing various combinations of fishwheels it was determined that there was no difference in age composition of the sockeye salmon captured in the two east channel fishwheels. The null hypothesis was, however, rejected (alpha = 0.05) for all other combinations of data tested. Three possible explanations are suggested: 1) the age composition of fish passing different banks was significantly different; 2) at least one of the fishwheels provided a sample that was not representative of the fish passing by; or, 3) some combination of the two factors occurred. Inadequate data were available from escapement enumeration stations of the Yentna and upper Susitna Rivers to evaluate the differences in age composition of sockeye salmon continuing up each tributary.

Despite the uncertainties of the influence of fishwheel location on age structure, samples obtained from all wheels were lumped together for analysis of age composition changes over time. This was done primarily because it was felt that the best estimate of numbers of spawners by age was arrived at by weighting the age data by numbers of fish in the escapement. Minimum sample size for by-period analysis could be achieved only if the samples from all fishwheels were included during those periods.

Since no daily estimate of escapement was possible at Flathorn Station, periods for age composition analysis were weighted by combined fishwheel catches from all wheels. Three periods were selected, each representing approximately one-third of the catch for the season.

Age structure by period was tested for significance of difference using the two major age classes (1.2 and 1.3). When all periods were tested, the calculated chi-square statistic (x^2= 113.9, 2 df) was significant. Testing of periods one and two (7/22- 7/26/85 and 7/27-7/30/85) provided a calculated chi-square statistic of 3.67 (table x^2 =3.84 with alpha = 0.05 and 1 df). These results were interpreted to mean that there was no change in age composition between the two periods, therefore, these data were combined for further analysis.

The age composition for the period of 22 July through 30 July was then tested against the age composition calculated for the period of 31 July through 4 August. The results indicated that there was a significant difference in age structure between these two periods (calculated chi-square statistic = 108.1;

table value = 3.84 at alpha of 0.05 and 1 df). Therefore, the data were weighted by the fishwheel catch within each period and combined for the seasonal age composition.

The results of this analysis are presented in Table 22. The two major age classes, 1.2 and 1.3, accounted for 34.4% and 45.6% of the escapement, respectively. It appears from these data that there was a substantial difference in migratory timing between four- and five-year-old fish.

Samples collected at Yentna Station and Flathorn Station were combined for calculation of mean length and weight of sockeye salmon by age class and sex under the assumption that these parameters would not be significantly different between the two major tributaries. These data, as well as ratio of males to females are presented in Appendix Tables 55 and 56.

Pink Salmon:

The pink salmon sonar count at Yentna Station in 1985 was 120,990 fish (Appendix Table 39). An additional 42,600 pink salmon were estimated to have reached Sunshine Station (Appendix Table 40; Thompson et al. 1986). Results of enumeration efforts at additional Susitna Hydroelectric sites are also presented in Appendix Table 40.

Spawning ground survey estimates accounted for approximately 2,496 pink salmon in selected streams within the drainage (Table 18). Comprehensive surveys were conducted only on tributaries and side sloughs of the Susitna River above Talkeetna (Thompson et al. 1986). Remaining counts were obtained in conjunction with surveys of sockeye salmon spawning grounds and do not reflect pink salmon peak spawning periods or major spawning grounds.

The daily pink salmon count recorded at Yentna Station peaked on 29 July, the same day as the midpoint of the total pink salmon count (Appendix Table 39). Eighty percent of the fish targets attributed to pink salmon were recorded in 9 days (Table 23). Migration midpoint (as measured by fishwheel catch) was 1 August at Flathorn Station and 2 August at Sunshine Station (Thompson et al. 1986). As with sockeye salmon, these data, as well as mean migration rates of tagged fish, indicated some discrepancy in migratory timing measured by peak passage information between the respective stations of the river. Past studies have noted an approximate one-week difference in run timing between even and odd years (Tarbox et al. 1981). The 1985 escapement into the Yentna River did not appear to follow this pattern, however this may be an artifact of the relatively late return of all species to the river in 1985. Mean travel time of tagged pink salmon between Flathorn Station and Yentna Station was approximately 1 day (Thompson et al. 1986).

A combined total of 528 pink salmon were sampled for length, weight, and sex data at Yentna and Flathorn Stations. Results are presented in Appendix Tables 57 and 58.

Chum Salmon:

Fish targets apportioned to chum salmon at Yentna Station numbered 12,092 in 1985 (Appendix Table 39). The mark/recapture estimate generated at Sunshine Station was 373,600 (Appendix Table 40; Thompson et al. 1986). The combined

estimate from these two stations (385,692) has been used to represent the escapement into the drainage for the previous three years (King and Tarbox, 1984 and 1986). Escapement estimates from additional selected sites on the Susitna River above Talkeetna are also presented in Appendix Table 40.

Spawning ground surveys accounted for 4,151 chum salmon within the Susitna River drainage (Table 18). As with pink salmon, comprehensive enumeration efforts on spawning grounds are limited to the Susitna River above Talkeetna (Thompson et al. 1986). Chunilna Creek, the largest known clearwater spawning tributary, was not surveyed in 1985.

Complete migratory timing information for chum salmon was not available from Yentna Station due to cessation of enumeration activities in early August. Timing information from previous years at Yentna Station when enumeration efforts were of longer duration, is presented in Table 24. At Flathorn Station, 90% of the chum salmon were captured over a 29-day period, peaking on 2 August and reaching the midpoint on 4 August (Thompson et al. 1986). However, timing data may have been biased because the fishwheel which ultimately caught the most chum salmon was moved to a new location during the first part of August. Migratory information available from sonar counts at Yentna Station (primarily shore orientation and hourly distribution data) for chum salmon were essentially masked during peak sonar counting periods in July by more abundant species.

A total of 586 chum salmon was sampled for age, length, weight, and sex characteristics at Yentna and Flathorn Stations. The proportion of samples by age class was 73% age 0.3, 23.4% age 0.4, and 3.6% age 0.2 fish (Table 25). Length and weight characteristics by age class and sex, and the ratio of males to females are presented in Appendix Tables 59 and 60.

Coho Salmon:

Estimates of coho salmon escapement into the Susitna River included an apportioned sonar count of 9,181 at Yentna Station (Appendix Table 39), and a mark/recapture total of 36,800 fish at Sunshine Station (Appendix Table 40; Thompson et al. 1986). Estimates of escapement from additional Susitna Hydroelectric Project sites on the Susitna River are presented in Appendix Table 40. Spawning ground survey data compiled to date enumerated 2,327 coho salmon (Table 18), although extensive surveys were conducted only on the Susitna River and its tributaries above the Talkeetna River confluence.

As with chum salmon, migratory timing information at Yentna Station was precluded by cessation of sonar enumeration efforts in early August. Historic run timing information for the location is summarized in Table 26. The relative abundance of other species migrating concurrent to coho salmon during peak periods effectively masked migratory behavior data collected by sonar for this species.

The midpoint of migration of coho salmon past Flathorn Station and Sunshine Station was 30 July and 14 August, respectively (Thompson et al. 1986).

Of the 811 coho salmon sampled for AWL characteristics at Yentna and Flathorn Stations, 624 provided legible scales for determination of age structure. The resultant age class proportions were 57.5%, 38.5%, and 4.0%, for age 2.1,

1.1, 3.1 fish, respectively (Table 27). Length and weight characteristics by age class and sex, and the ratio of males to females are presented in Appendix Tables 61 and 62.

Chinook Salmon:

Chinook salmon escapement estimates have not been generated using hydroacoustic equipment at Susitna Station since 1978. Migratory behavior not conducive to enumeration by side-scan sonar, and early run timing in comparison to other salmon species are the primary reasons for the lack of an enumeration program. The Petersen mark/recapture program conducted at Sunshine Station resulted in an estimate of 185,700 fish (with a 95% confidence interval of 167,700 to 208,100; Thompson et al. 1986). This estimate did not include fish smaller than 400 mm. Stream survey information compiled to date identified 62,366 chinook salmon in selected tributaries (primarily below Sunshine Station) in the Susitna River drainage (Table 18). Petersen mark/recapture estimates were also obtained for Flathorn and Curry Stations on the Susitna River (Appendix Table 40). Migratory timing, age, weight, and length information for Susitna Hydroelectric project sites are found in Thompson et al. (1986).

Evaluation of Data:

Data from various studies conducted on the Susitna River indicate that, in general, chum salmon, coho salmon, and chinook salmon do not exhibit strong inshore orientation in the lower Susitna and Yentna Rivers. Therefore, only that component of the escapement migrating within the counting range of the respective sonar equipment will be included in the total fish target counts. Additionally, various siting criteria (King 1984) must be met to insure that even normally shore oriented species (sockeye salmon and pink salmon) move through the hydroacoustic beam during migration. Failure to meet these criteria can result in undercounting.

King (1986) documents vertical and horizontal distribution studies of upstream migrating salmon at Susitna Station in 1984. The conclusion that the majority of the fish were migrating within 44 m of shore is consistent with results of horizontal distribution studies performed by Ransom et al. (1986) in 1985. The program involved monitoring of horizontal distribution of targets via mobile hydroacoustic equipment across the entire river on a transect starting near the existing Commercial Fisheries Division east bank sonar site. They determined that nearly all upstream moving targets monitored were within 61 m of the shoreline. In addition, within these two nearshore cells, 75% of the estimated upstream migrants passed within 18.3 m of the west shore and 86% within 24.4 m of the east shore.

Analysis of Flathorn Station tag recovery information indicated however, that there was some degree of crossover which occurred below the Yentna River confluence. That is, some proportion of the fish tagged on the west bank were later recaptured at Sunshine Station, and fish tagged of the east bank were later recaptured at Yentna Station. The proportion of fish exhibiting this behavior varied by species and ranged from 4% (west bank caught chum salmon recaptured at Sunshine Station) to 43% (east bank caught pink salmon recaptured at Yentna Station). Sockeye salmon crossover rates were 10.5% west bank to east bank, and 19.6% east bank to west bank (Thompson et al. 1986).

Some, and perhaps all, of these fish were outside the counting range of the 1978 model Bendix side-scanning sonar counters typically used to monitor upstream migrants.

Examination of the results provided by Ransom et al. (1986) indicates an additional problem affecting the accuracy of escapement information collected with the Bendix counters. Of the 4,962 targets observed during the study with Biosonics, Inc. equipment, 2,652, or 52% were downstream migrants. Problems encountered in monitoring the near-shore and near-bottom areas of the transect prevented any analysis of the magnitude of this phenomenon relative to the total number of upstream migrating targets available. However, this information does indicate a potential for multiple counting of targets with any hydroacoustic equipment (such as the existing Bendix Corp. units) not able to provide data on the direction of target movement.

Accuracy of apportioned sonar counts can also be affected by differences in migratory behavior between species. This results in problems in apportioning total fish targets based on fishwheel catches. Fish that cross the substrate in the outer sectors may not be subject to fishwheel capture, resulting in apportioned fish targets being biased toward those species which exhibit the strongest inshore preference. The degree to which these factors affect the accuracy of apportioned fish targets by species is dependent yearly on shore orientation and run strength of each species relative to the others.

Other factors such as fishwheel location and efficiency can also influence the fish target apportioning process. Results of changing fishwheel locations in-season at Flathorn Station in 1985 are documented in Thompson et al. (1986).

Assessment of escapement estimates should also include some evaluation of factors affecting accuracy of mark/recapture estimates. Several assumptions must be met in any mark/recapture estimate (Jones 1977, Ricker 1958, Jones 1976). The effects of violating these assumptions can be to over or underestimate the population size although in general most errors result in overestimation. In the absence of adequate studies to measure sources of error which result in assumption violations, the potential error in a population estimate cannot be quantified. Thompson et al. (1986) provides information on potential biases in estimates calculated for salmon species escapement in 1985. Data analysis techniques were modified to account for some of these sources of error.

Finally, using reported escapements as estimates of total spawners in the Susitna River is complicated by the fact that it is not known what proportion of each species escapement spawns between and below established enumeration sites. Significantly different escapement estimates generated by different gear types, and questions relative to disadvantages of each gear type imply that reported escapement estimates may not reflect actual escapement. Further, lack of complete analysis and documentation of factors which affect escapement estimates suggest that there is no valid way of determining the accuracy of existing estimation techniques in the Susitna River.

Upper Cook Inlet Minor Systems

Escapement estimates for various UCI rivers (Figure 6) not regularly monitored by Commercial Fisheries Division staff are summarized in Table 28. Additional detail is provided for systems where an effort was made to quantify total escapement, or where index areas have been established to provide relative year to year comparative data.

Big River:

Sockeye salmon entering Wolverine Creek were sampled for length, sex, and age composition information. Results are presented in Table 29 and Appendix Table 63. Nearly 74% of the fish sampled were age 2.2.

McArthur/Chakachatna River:

Five aerial overflights were conducted from 2 August through 30 September 1985. Counts from clearwater spawning areas of the Chilligan and Igitna Rivers (tributaries of Chakachamna Lake) were used to estimate escapement of sockeye salmon by the area under the curve method (Neilson and Geen, 1981; Table 30). The calculated escapement of sockeye salmon into the two clearwater spawning areas was approximately 28,934 fish. A single survey of known McArthur River spawning tributaries enumerated 6,582 sockeye salmon and 103 pink salmon. Age and length composition of fish sampled in the Chilligan River and tributaries of the McArthur is presented in Table 31 and Appendix Tables 64 and 65. Fish sampled from the McArthur River tributaries were primarily age 1.2 and 1.3 (39% for each age class), while the Chilligan River samples were primarily age 2.3 fish (66.7%).

Fish Creek (Big Lake):

Salmon enumeration was accomplished primarily through a weir operated below Big Lake. Final escapement counts were 68,577 sockeye salmon and 5,089 coho salmon (Chlupach, ADF&G, personal communication). AWL data and migratory timing information for sockeye salmon spawning in this drainage are presented in Appendix Table 66 and Table 32, respectively.

Packers Lake (Kalgin Island):

A total of 36,850 sockeye salmon were counted through a weir established below the outlet of Packers Lake (Marcuson, Cook Inlet Aquaculture Association, personal communication). Age, sex, and length information are presented in Appendix Table 67.

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Table 1. Estimated sockeye salmon escapement recorded by side scan sonar in the Kenai, Kasilof, Crescent, and Susitna Rivers, 1978-1985.

	System			
Year	Kenai R.[1]	Kasilof R.	Crescent R.	Susitna R.[2]
1978	398,900	116,600	3	94,400
1979	285,020	152,179[4]	86,654	156,890
1980	464,038	187,154[4]	90,863	190,866
1981	407,639	256,625[4]	41,213	340,232
1982	619,831	180,239[4]	58,957	215,856[5]-265,332[6]
1983	630,340	210,271[4]	92,343	112,314 -175,936[6]
1984	344,571	231,685[4]	118,345	194,480[5]-279,446[6]
1985	502,820	505,049[4]	128,628	227,924[6]

[1] Includes counts after 21 June only.
[2] Apportioned sonar counts from Susitna Station unless otherwise indicated.
[3] No counts conducted.
[4] Includes counts or estimates from designated early period (prior to 15 June).
[5] Apportioned sonar counts from Yentna Station and Susitna Station east bank.
[6] Apportioned sonar count from Yentna Station and mark/recapture estimate from Sunshine Station.

Table 2. Late run Kenai River sockeye salmon escapement summary, 1968-1985.

Year	Estimated Escapement at Sonar Site[1]	Russian River Sport Harvest[2]	Kenai River Mainstem Sport Harvest[3]	Estimated Total Harvest Above Sonar Site[4]	Sonar Count Less Sport Harvest[5]
1968	88,000	5,820			
1969	53,000	1,150			
1970	73,000	600			
1971	--	10,730			
1972	318,000	16,050			
1973	367,000	8,930			
1974	161,000	8,500	8,030	16,530[6]	144,470
1975	142,000	8,390	5,110	13,500[6]	128,500
1976	380,000	13,700	13,140	26,840[6]	353,160
1977	708,000	27,440	16,933	44,373[6]	663,627
1978	398,900	24,530	24,542	49,072[6]	349,828
1979	285,020	26,830	12,328	39,158[6]	245,862
1980	464,038	33,490	18,592	52,082[6]	411,956
1981	407,639	23,720	14,451	38,171	369,468
1982	619,831	10,321	38,397	48,718	571,113
1983	630,340	16,000	48,306	64,306	560,034
1984	344,571	21,970	11,280	33,250	311,321
1985	502,820	58,410	30,000	88,410[7]	414,410

[1] Multiple transducer sonar 1968-1977, side scan sonar 1978-1985.
[2] Nelson (1985).
[3] Data from Sport Fish Division Statewide Harvest Estimate. Includes harvest above the Soldotna bridge (and sonar site) only.
[4] Total of Russian River sport harvest and Kenai River mainstem harvest above the Soldotna bridge.
[5] Considered estimate of spawners above the sonar site.
[6] Cross et al. 1983.
[7] Preliminary.

Table 3. Peak late run sockeye salmon escapement counts in eight index areas, Kenai River drainage, 1969-1985.

Year	Railroad Creek	Johnson Creek	Carter-Moose Creek	Ptarmigan Creek	Tern (Mud) Lake	Quartz Creek	Hidden Lake	Russian River[1]	Total Index Area Escapement[2]
1969	100	75	598	5	487	487	500	30,020	32,200
1970	99	118	348	7	561	200	323	28,420	30,100
1971	194	160	3,201	45	1,370	808	1,958[4]	64,430	72,200
1972	700	150	3,400	(400)[3]	1,200	(2,000)[3]	4,956	85,000	97,900
1973	521	1,714	660	1,041	1,731	3,173	690[4]	31,660	41,200
1974	3	46	939	558	(700)[3]	255	1,150	26,860	30,600
1975	522	105	1,278	186	1,214	1,068	1,375	32,600	38,400
1976	1,032	(800)[3]	5,558	(500)[3]	1,548	3,372	4,860[4]	35,420	53,100
1977	1,262	450	6,515	1,513	2,230	3,037	1,055[4]	38,500	54,600
1978	1,749	780	1,933	3,529	1,126	10,627	4,647[4]	52,560	76,900
1979	--	588	3,986	523	1,693	277	5,762[4]	91,840	104,700
1980	1,259	253	4,879	5,752	2,575	7,982	27,448[4]	87,200	137,300
1981	1,276	142	4,370	1,421	3,402	5,998	15,939[4]	48,690	81,200
1982	2,518	498	4,752	7,525	4,300	70,540[4]	8,648[4]	75,630	174,400
1983	1,289	338	1,819	9,709	[5]	73,345[4]	11,297[4]	78,000	176,400
1984	2,090[6]	939[6]	5,927[6]	18,000[6]	2,728[4]	37,659[4]	27,792[4]	95,660	190,800
1985	2,884[6]	151[6]	5,928[6]	26,879	[5]	[5]	24,784[4]	145,620	206,200

[1] Includes total weir counts of fish entering Lower Russian Lake and peak count of escapement below falls.
[2] Total of individual counts rounded to the nearest hundred fish.
[3] Actual data not available. Average contribution to the total index for years 1968, 1970, 1971, 1973, 1975, and 1977 used to estimate the escapement.
[4] F.R.E.D. Division weir count.
[5] No counts conducted.
[6] Ralph Browning, pers. comm.

Table 4. Salmon escapement counts conducted on selected tributaries of the Kenai River, 1985.

Tributary	Method	Peak Count				
		Sockeye	Pink	Coho	Chum	Chinook
Russian River	Weir	30,610[1]				
Crescent Creek[2]	Stream Count					108
Ptarmigan Creek[3]	Weir	26,879				
Grant Creek[3]	Weir	400	3	1,020	1	53
Juneau Creek[2]	Stream Count					98
Railroad Creek	Stream Count				1	
Moose Creek[4]	Stream Count	3,743				
Carter-Moose Cr.[3]	Stream Count				3	

[1] Early run only. Counted from 9 June through 16 July (Nelson et al, 1986).
[2] Flagg 1985.
[3] Browning, pers. comm.
[4] Jack Dean, pers. comm.

Table 5. Bank distribution of sockeye salmon escapement recorded by side scan sonar in the Kenai, Kasilof, Crescent, and Yentna Rivers, 1980-1985.

	Percent of Total Fish Targets[1]					
	1980	1981	1982	1983	1984	1985
Kenai River						
North Bank	61	72	39	42	65	54
South Bank	39	28	61	58	35	46
Kasilof River						
North Bank	52	69	73	51	56	70
South Bank	48	31	27	49	44	30
Crescent River						
North Bank	49	57	54	39	71	70
South Bank	51	43	46	61	29	30
Yentna River						
North Bank						9
South Bank						91

[1] Does not include estimates of numbers of fish which entered the systems prior to or after enumeration operations.

Table 6. Cumulative percent by date of late run sockeye salmon counts recorded in the Kenai River, 1979-1985.*

	Cumulative Percent						
Date	1979	1980	1981	1982	1983	1984	1985
22-Jun	0.1%	0.2%	0.1%	0.2%	0.1%	0.3%	0.1%
23-Jun	0.3%	0.4%	0.1%	0.3%	0.1%	0.7%	0.2%
24-Jun	0.6%	0.5%	0.2%	0.4%	0.2%	1.0%	0.3%
25-Jun	0.8%	0.6%	0.3%	0.4%	0.3%	1.2%	0.4%
26-Jun	1.0%	0.8%	0.4%	0.5%	0.4%	1.3%	0.5%
27-Jun	1.2%	0.8%	0.6%	0.6%	0.5%	1.5%	0.6%
28-Jun	1.3%	0.9%	0.7%	0.7%	0.6%	1.7%	0.7%
29-Jun	1.5%	1.0%	0.8%	0.7%	0.6%	1.8%	0.9%
30-Jun	1.7%	1.1%	0.9%	0.8%	0.7%	2.1%	1.0%
01-Jul	1.9%	1.2%	1.0%	0.9%	0.7%	2.3%	1.4%
02-Jul	2.0%	1.3%	1.2%	1.0%	0.8%	2.4%	1.6%
03-Jul	2.3%	1.4%	1.2%	1.1%	0.8%	2.5%	1.7%
04-Jul	2.5%	1.5%	1.3%	1.1%	0.9%	2.7%	1.9%
05-Jul	3.0%	1.6%	1.3%	1.2%	0.9%	2.9%	2.1%
06-Jul	5.0%	1.6%	1.4%	1.2%	0.9%	3.1%	2.4%
07-Jul	6.7%	1.7%	1.6%	1.3%	1.0%	3.2%	2.6%
08-Jul	7.7%	1.7%	1.8%	1.3%	1.0%	3.6%	3.0%
09-Jul	8.2%	1.8%	6.4%	1.5%	1.1%	4.4%	3.2%
10-Jul	8.6%	1.8%	18.6%	1.6%	1.3%	5.4%	3.3%
11-Jul	8.9%	1.9%	26.2%	1.6%	1.7%	6.3%	3.6%
12-Jul	9.2%	2.0%	36.6%	1.7%	2.1%	6.7%	3.8%
13-Jul	9.5%	2.0%	46.3%	1.9%	4.1%	7.1%	3.9%
14-Jul	10.0%	2.1%	51.2%	2.1%	8.5%	7.3%	4.8%
15-Jul	12.6%	2.7%	54.9%	2.6%	17.4%	7.6%	6.6%
16-Jul	17.0%	5.7%	55.9%	4.7%	24.2%	11.2%	10.4%
17-Jul	23.8%	31.0%	57.2%	6.7%	29.7%	17.3%	11.1%
18-Jul	34.2%	48.9%	60.5%	18.2%	43.7%	30.7%	11.4%
19-Jul	50.4%	60.7%	66.7%	32.2%	56.6%	36.3%	11.5%
20-Jul	67.0%	77.7%	74.7%	47.4%	69.5%	40.6%	11.6%
21-Jul	79.5%	89.9%	80.3%	56.3%	76.6%	46.4%	12.0%
22-Jul	84.0%	92.0%	83.5%	59.8%	79.6%	55.5%	17.8%
23-Jul	87.2%	92.6%	84.8%	64.2%	81.3%	65.2%	29.1%
24-Jul	88.8%	93.2%	86.4%	68.1%	83.3%	72.0%	46.3%
25-Jul	91.3%	93.5%	87.6%	72.2%	84.4%	78.1%	57.4%
26-Jul	92.5%	93.8%	89.4%	75.2%	86.1%	83.3%	69.3%
27-Jul	93.1%	94.4%	91.1%	84.2%	86.5%	86.7%	75.3%
28-Jul	93.4%	94.7%	92.1%	88.3%	87.2%	89.7%	82.2%
29-Jul	93.9%	95.2%	93.2%	90.3%	87.8%	91.3%	86.4%
30-Jul	94.5%	95.5%	94.0%	91.8%	88.2%	92.1%	89.7%
31-Jul	95.0%	95.7%	94.8%	93.1%	89.1%	92.8%	91.1%
01-Aug	95.3%	96.0%	95.5%	94.0%	90.6%	93.3%	91.9%
02-Aug	95.5%	96.2%	96.4%	94.6%	91.6%	93.7%	92.2%
03-Aug	95.8%	96.4%	100.0%	95.1%	92.0%	94.3%	92.5%
04-Aug	96.1%	96.6%		95.5%	93.4%	94.8%	92.9%
05-Aug	96.5%	96.8%		100.0%	96.4%	95.6%	93.1%
06-Aug	96.8%	97.0%			97.7%	96.0%	93.5%

-Continued-

Table 6 (continued). Cumulative percent by date of late run sockeye salmon counts recorded in the Kenai River, 1979-1985. *

	Cumulative Percent						
Date	1979	1980	1981	1982	1983	1984	1985
07-Aug	97.1%	97.2%			98.3%	96.3%	93.8%
08-Aug	97.7%	97.5%			99.3%	100.0%	94.7%
09-Aug	98.1%	97.8%			99.6%		95.3%
10-Aug	98.7%	98.2%			99.9%		96.0%
11-Aug	99.3%	98.5%			100.0%		100.0%
12-Aug	99.5%	99.2%					
13-Aug	99.6%	99.3%					
14-Aug	100.0%	99.3%					
15-Aug		99.5%					
16-Aug		99.6%					
17-Aug		99.7%					
18-Aug		99.7%					
19-Aug		99.7%					
20-Aug		99.8%					
21-Aug		99.8%					
22-Aug		99.9%					
23-Aug		99.9%					
24-Aug		99.9%					
25-Aug		99.9%					
26-Aug		99.9%					
27-Aug		100.0%					
28-Aug		100.0%					
29-Aug		100.0%					
30-Aug		100.0%					
31-Aug		100.0%					
01-Sep		100.0%					
02-Sep		100.0%					
03-Sep		100.0%					

* Proportion accrued on last day (1981, 1982, 1984, 1985) represents that portion of the escapement estimated after termination of enumeration activities.

Table 7. Summary of chi square analysis of change in Kenai River sockeye salmon age composition over time, 1983-1985.

Year	Number Periods	No. Area Classes	Chi Square Calc.	Table Alpha	Table DF	Table Value	Signif?	Hypoth[1]
1983	4	4	18.98	0.05	9	16.92	yes	reject
1984	4	4	20.38	0.05	9	16.92	yes	reject
1985	4	4	18.46	0.05	9	16.92	yes	reject
1984	4	3	12.09	0.05	6	12.59	no	accept
1983	4	2	6.24	0.05	3	7.81	no	accept
1984	4	2	0.51	0.05	3	7.81	no	accept
1985	4	2	1.83	0.05	3	7.81	no	accept
1983	2	4	6.51	0.05	3	7.81	no	accept

[1] Hypothesis: Age class structure is independent of time of sampling.

Table 8. Age composition of sockeye salmon collected in the Kenai River, 1969-1985.

Sample Period	Percent Composition by Age Class								Sample Size
	1.1	1.2	1.3	1.4	2.1	2.2	2.3	Other	
6/22-7/13/85	0	15.3	60.4	0.3	0	15.9	7.6	0.9	328
7/14-7/21/85	0	15.8	60.7	0.5	0.1	11.6	10.6	0.7	811
7/22-7/25/85	0.2	17.3	55.5	0.2	0	12.6	12.9	1.3	467
7/26-end	0	14.5	56.3	0.3	0.2	17.5	10.3	0.8	595
Seasonal Summary									
1970	tr	10.0	17.0	tr	26.0	25.0	15.0	6.0	225
1971		8.0	39.0	1.0	3.0	38.0	11.0		168
1972		21.0	34.0			23.0	20.0		403
1973		5.0	68.0	1.0	1.0	8.0	16.0		632
1974	2.0	18.0	46.0		3.0	18.0	12.0		295
1975	2.0	10.0	36.0	2.0	4.0	31.0	14.0	1.0	163
1976	1.0	46.0	20.0		2.0	22.0	8.0	1.0	948
1977		6.0	76.0	1.0	tr	7.0	10.0		1,265
1978[1]		2.5	86.7			4.9	5.4	tr	811
1979[2]	tr	20.2	61.1			11.8	6.2	tr	601
1980[2]		27.7	45.1			16.2	10.1	tr	715
1981[2]		16.2	70.9			8.1	4.8		1,757
1982[2]	0.1	5.8	87.5	tr		2.9	3.7		1,787
1983[2]	0.4	8.2	79.1	0.2	0.5	2.2	8.9	0.4	1,765
1984[2]	0.2	23.4	38.2	3.5	0.6	12.8	19.2	2.2	2,364
1985[2]	0.1	15.9 (20.3)[3]	56.4 (7.7)	0.3	0.1	14.7 (21.0)	11.4 (24.8)	1.1	2,201

[1] 1978 weighted - Source: Bethe et al. (1980).
[2] Percentages weighted by total numbers of fish in escapement.
[3] 95% confidence interval: +/- figures in parentheses.

Table 9. Kasilof River sockeye salmon escapement summary, 1968-1985.

Year	Escapement Estimated by Sonar Count[1]	Fish Used for Artificial Propagation of Tustumena Lake	Sonar Count Less Egg Take[2]
1968	89,000		
1969	46,000		
1970	38,000		
1971	---		
1972	113,000		
1973	40,000		
1974	70,000	205[3]	69,795
1975	48,000	3,365[3]	44,635
1976	139,000	5,463[3]	133,537
1977	155,300	1,794[3]	153,506
1978	116,600	6,681[3]	109,919
1979	152,179	3,024[3]	149,155
1980	187,154	6,030[3]	181,124
1981	256,625	9,700[4]	246,925
1982	180,239	11,571[4]	168,668
1983	210,271	9,903[4]	200,368
1984	231,685	11,141[4]	220,544
1985	505,049	23,953[4]	481,096

[1] Multiple transducer sonar counts rounded to the nearest thousand (1968-1977) from Namtvedt et al. (1979). Side scan sonar counts (1979-1981) from Tarbox et al. (1983).
[2] Considered estimate of natural spawners above sonar site.
[3] From Cross et al. (1983).
[4] Waite, personal communication.

Table 10. Peak sockeye salmon escapement counts in seven index areas, Kasilof River drainage, 1975-1985.[1]

Year	Nikolai	Crystal	Clear	Glacier Flat	Seepage	Moose	Bear	Total Index Count[2]
1975	5,700	400	300	14,400	3,700	3,300	27,700	55,500
1976	12,000	800	300	7,100	800	14,000	51,800	86,800
1977	29,100	600	1,800	5,800	800	16,600	58,000	112,700
1978	34,200	200	200	4,700	1,100	15,900	43,400	99,700
1979	19,100	500	400	5,600	800	8,100	35,900	70,400
1980	10,000	1,000	2,100	15,500[3]	1,800	15,600	125,000[3]	171,400
1981	36,000	860	2,978	40,071[3]	3,376	12,968	75,117[3]	171,400
1982	16,800	1,785	4,183	17,348[3]	1,638	13,400	51,350[3]	106,500
1983	17,100	1,657	860	38,776[3]	3,305	19,245	61,957[3]	142,900
1984	8,270	141	2,619	76,217[3]	6,250	13,999	54,328[3]	161,800
1985	17,500	800	3,500	121,400[3]	5,700	9,200	120,400[3]	278,500

[1] Counts standardized to common unit for years entire stream was not surveyed. Relative abundance per section (when entire system surveyed) was used to extrapolate for years when only a portion of stream was surveyed. Numbers rounded to nearest hundred fish.
[2] Rounded to nearest 100 fish.
[3] F.R.E.D. Division weir count.

Table 11. Distribution (percent) of sockeye salmon in the major index tributary systems of Tustumena Lake, 1975-1985.

Year	Nikolai	Moose	Bear	Glacier Flat	Other
1975	10.2	5.9	49.9	25.9	8.1
1976	13.8	16.2	59.8	8.2	2.0
1977	25.8	14.7	51.5	5.1	2.9
1978	34.3	15.9	43.5	4.7	1.6
1979	27.1	11.5	51.0	7.9	2.5
1980	5.8	9.1	73.1[2]	9.0[2]	3.0
1981	21.0	7.6	43.8[2]	23.3[2]	4.3
1982	15.8	12.6	48.2[2]	16.3[2]	7.1
1983	12.0	13.5	43.4[2]	27.1[2]	4.0
1984	5.1	8.7	33.6[2]	47.1[2]	5.6
1985	6.0	3.0	43.0[2]	44.0[2]	4.0

[1] Percent of total index count.
[2] F.R.E.D. Division weir count.

Table 12. Cumulative percent by date of sockeye salmon counts recorded in the Kasilof River, 1979-1985. *

	Cumulative Percent						
Date	1979	1980	1981	1982	1983	1984	1985
14-May			.0%				
15-May			0.1%				
16-May			0.3%				
17-May			0.3%				
18-May			0.5%				
19-May			0.6%				
20-May			0.6%				
21-May			0.7%				
22-May			0.8%				
23-May	.0%		0.8%				
24-May	0.3%		1.0%				
25-May	0.4%		1.1%				
26-May	0.6%		1.2%				
27-May	0.8%		1.3%				
28-May	0.9%		1.4%				
29-May	1.1%		1.5%				
30-May	1.4%		1.6%				
31-May	1.7%		1.8%				
01-Jun	2.0%		2.0%				
02-Jun	2.3%		2.2%				
03-Jun	2.6%		2.5%				
04-Jun	3.0%		2.7%				
05-Jun	3.4%		3.0%				
06-Jun	3.6%		3.2%				
07-Jun	3.7%		3.5%				
08-Jun	3.9%		3.8%				
09-Jun	4.0%		4.0%			0.7%	
10-Jun	4.1%		4.3%	0.1%	4.5%	0.8%	
11-Jun	4.1%		4.5%	0.3%	4.6%	0.9%	
12-Jun	4.2%		4.7%	0.5%	4.8%	1.1%	0.2%
13-Jun	4.3%		4.9%	0.7%	5.0%	1.2%	0.3%
14-Jun	4.4%		5.1%	0.8%	5.1%	1.3%	0.3%
15-Jun	4.4%		5.5%	1.0%	5.3%	1.5%	0.4%
16-Jun	4.5%		5.9%	1.1%	5.6%	1.8%	0.4%
17-Jun	4.6%		6.4%	1.3%	5.8%	2.0%	0.5%
18-Jun	4.8%		7.5%	1.5%	6.0%	2.2%	0.5%
19-Jun	4.9%		8.2%	2.7%	6.3%	2.5%	0.6%
20-Jun	5.1%		9.9%	3.5%	6.5%	3.1%	0.7%
21-Jun	5.4%		11.4%	4.0%	6.8%	3.9%	0.7%
22-Jun	6.0%	0.3%	13.3%	4.3%	7.0%	4.8%	0.8%
23-Jun	6.6%	0.7%	16.2%	4.5%	7.4%	5.8%	0.9%
24-Jun	7.7%	0.9%	19.5%	4.9%	7.6%	6.9%	1.2%
25-Jun	9.3%	2.2%	22.3%	5.3%	7.8%	7.5%	1.5%
26-Jun	10.8%	3.5%	26.1%	5.5%	8.0%	8.0%	1.7%
27-Jun	12.5%	5.1%	28.8%	5.8%	8.2%	8.9%	1.9%
28-Jun	15.3%	7.5%	34.2%	6.1%	8.5%	9.9%	2.2%

-Continued-

Table 12 (Continued). Cumulative percent by date of sockeye salmon counts recorded in the Kasilof River, 1979-1985. *

	Cumulative Percent						
Date	1979	1980	1981	1982	1983	1984	1985
29-Jun	16.9%	9.4%	38.9%	6.4%	9.0%	11.1%	2.5%
30-Jun	19.6%	13.6%	43.8%	6.9%	11.0%	12.3%	2.9%
01-Jul	22.9%	16.6%	50.0%	7.8%	15.3%	13.6%	3.5%
02-Jul	24.8%	21.7%	51.2%	9.1%	16.5%	15.0%	3.9%
03-Jul	28.1%	25.0%	52.2%	10.4%	18.8%	15.7%	4.4%
04-Jul	32.5%	28.0%	52.9%	11.5%	21.2%	17.8%	5.6%
05-Jul	37.4%	31.4%	53.4%	12.2%	22.1%	21.7%	6.6%
06-Jul	40.4%	33.8%	54.3%	12.9%	23.1%	24.3%	7.1%
07-Jul	45.8%	35.3%	55.1%	13.6%	24.0%	26.3%	7.8%
08-Jul	47.3%	36.6%	56.2%	14.5%	24.7%	30.4%	9.5%
09-Jul	49.6%	37.9%	60.4%	15.6%	26.3%	35.8%	10.3%
10-Jul	50.9%	39.3%	64.9%	16.4%	29.4%	39.1%	11.4%
11-Jul	51.9%	41.3%	67.7%	17.7%	31.5%	41.1%	11.9%
12-Jul	53.2%	42.1%	71.2%	19.7%	34.4%	41.6%	12.6%
13-Jul	55.0%	42.6%	74.6%	21.7%	39.5%	42.7%	14.8%
14-Jul	57.9%	43.6%	79.7%	24.7%	46.5%	44.5%	20.8%
15-Jul	62.9%	46.4%	83.8%	29.3%	51.4%	48.4%	26.7%
16-Jul	64.3%	52.8%	86.3%	35.8%	54.7%	54.3%	38.2%
17-Jul	67.4%	57.0%	87.7%	40.4%	66.3%	59.0%	41.8%
18-Jul	70.3%	60.9%	89.1%	49.1%	75.9%	63.6%	43.2%
19-Jul	73.0%	64.9%	90.4%	57.7%	77.5%	69.3%	43.6%
20-Jul	75.5%	69.3%	92.2%	64.2%	78.5%	73.9%	43.9%
21-Jul	76.7%	71.5%	93.6%	70.2%	80.4%	77.8%	46.4%
22-Jul	78.1%	73.8%	94.2%	74.4%	82.2%	81.0%	55.1%
23-Jul	84.8%	77.5%	94.7%	75.9%	83.3%	83.2%	60.9%
24-Jul	86.0%	78.8%	95.2%	76.9%	84.2%	86.4%	64.9%
25-Jul	87.5%	80.3%	95.4%	78.4%	84.9%	88.8%	68.3%
26-Jul	89.6%	81.8%	95.7%	80.0%	85.4%	91.0%	73.3%
27-Jul	91.0%	83.0%	95.9%	81.8%	85.8%	91.8%	79.1%
28-Jul	93.0%	84.0%	96.2%	83.6%	86.2%	92.6%	82.6%
29-Jul	94.1%	85.3%	96.3%	84.7%	86.7%	93.3%	84.2%
30-Jul	94.7%	86.4%	96.4%	85.7%	87.4%	93.9%	85.3%
31-Jul	95.4%	87.8%	96.6%	86.6%	88.9%	94.3%	86.5%
01-Aug	95.7%	88.9%	100.0%	87.6%	100.0%	100.0%	87.5%
02-Aug	96.3%	90.0%		88.6%			88.1%
03-Aug	96.6%	90.6%		89.5%			89.0%
04-Aug	96.9%	91.5%		100.0%			89.8%
05-Aug	98.0%	92.5%					90.4%
06-Aug	98.3%	93.2%					90.9%
07-Aug	98.6%	93.9%					91.7%
08-Aug	98.9%	94.6%					92.7%
09-Aug	99.1%	96.1%					93.8%
10-Aug	99.4%	96.8%					94.5%
11-Aug	99.8%	97.9%					94.9%
12-Aug	100.0%	98.8%					100.0%
13-Aug	100.0%	100.0%					

* Proportion accrued on last day (1981-1985) represents that portion of the escapement estimated after termination of enumeration activities.

Table 13. Age composition of sockeye salmon collected in the Kasilof River, 1969-1985.[1]

Sample Period	1.1	1.2	1.3	1.4	2.1	2.2	2.3	Other	Sample Size
6/13 - 7/09/85	0.1	45.7	30.9	0.3		20.0	3.0		980
7/10 - 7/14/85		36.6	36.6	0.6		21.6	4.6		524
7/15 - 7/21/85	0.2	52.5	24.7	0.2		18.7	3.7		539
7/22 - 7/27/85	0.2	53.9	23.2			20.0	2.6		534
7/28 - 8/11/85	0.4	84.2	4.5		0.4	10.3	0.2		486
Seasonal Summary									
1969		14.0	39.0	1.0		30.0	16.0		399
1970	tr	32.0	37.0	2.0		16.0	11.0	1.0	297
1971		6.0	69.0			8.0	16.0		153
1972	tr	42.0	36.0	1.0	tr	3.0	18.0	tr	668
1973		20.0	57.0			19.0	4.0		374
1974		35.0	59.0		tr	4.0	2.0		254
1975	1.0	29.0	7.0			58.0	4.0	1.0	931
1976	tr	32.0	20.0		tr	35.0	12.0		755
1977	tr	30.0	30.0		1.0	28.0	11.0		1,209
1978		42.0	35.0			14.0	9.0		967
1979[1]		52.2	37.2		tr	8.4	1.7	tr	590
1980[1]		58.7	27.8			8.0	4.5	1.0	899
1981[1]		30.2	62.2			6.0	1.6		1,479
1982[1]	1.0	34.0	49.5		0.1	10.7	4.7	0.1	1,518
1983[1]		48.4	34.3			12.8	4.5		1,997
1984[1]		50.5	24.8	tr	0.2	17.9	6.6		2,269
1985[1]	0.2	57.3	21.8	0.1	0.1	17.8	2.6		3,063
		(5.2)[2]	(10.9)			(12.8)			

[1] Percentages weighted by total numbers in escapement.
[2] 95% confidence interval: +/- figures in parentheses.

Table 14. Summary of chi square analysis of change in Kasilof River sockeye salmon age composition over time, 1985.

Periods[1]	No. Age Classes[2]	Chi Square Calc.	Table Alpha	Table DF	Table Value	Signif?	Hypoth[3]
1-5	3	177.05	0.05	10	18.31	yes	reject
1-2	3	6.67	0.05	2	5.99	yes	reject
2-3	3	28.43	0.05	2	5.99	yes	reject
3-4	3	0.53	0.05	2	5.99	no	accept
4-5	3	111.68	0.05	2	5.99	yes	reject

[1] Period 1: 6/13-7/9.
Period 2: 7/10-7/14.
Period 3: 7/15-7/21.
Period 4: 7/22-7/27.
Period 5: 7/28-8/11.
[2] Age classes: 1.2, 1.3, 2.2.
[3] Hypothesis: Age class structure is independent of time of sampling.

Table 15. Cumulative percent by date of sockeye salmon counts recorded in the Crescent River, 1979-1985. *

Date	Cumulative Percent						
	1979	1980	1981	1982	1983	1984	1985
15-Jun						.0%	.0%
16-Jun						0.1%	.0%
17-Jun						0.2%	.0%
18-Jun						0.3%	.0%
19-Jun						0.3%	.0%
20-Jun						0.5%	0.1%
21-Jun						0.8%	0.1%
22-Jun						1.2%	0.1%
23-Jun						1.7%	0.1%
24-Jun						2.0%	0.1%
25-Jun						2.4%	0.1%
26-Jun						2.7%	0.1%
27-Jun						3.6%	0.2%
28-Jun		0.0%				4.1%	0.2%
29-Jun	.0%	0.0%				4.9%	0.5%
30-Jun	.0%	0.0%				6.9%	0.7%
01-Jul	0.4%	0.0%	0.0%	.0%	.0%	8.1%	0.8%
02-Jul	2.5%	0.0%	1.2%	.0%	.0%	10.0%	1.2%
03-Jul	3.7%	0.0%	3.6%	0.1%	0.1%	11.8%	1.6%
04-Jul	5.1%	0.0%	6.1%	0.1%	0.2%	14.0%	5.7%
05-Jul	5.9%	0.0%	8.3%	0.2%	1.9%	15.6%	13.8%
06-Jul	6.8%	0.0%	9.7%	0.2%	4.1%	17.0%	18.8%
07-Jul	7.9%	.0%	11.7%	0.5%	6.8%	18.4%	19.6%
08-Jul	9.1%	.0%	14.9%	2.1%	9.8%	22.5%	22.6%
09-Jul	10.7%	.0%	16.6%	5.7%	11.8%	26.8%	25.1%
10-Jul	18.2%	2.9%	18.0%	9.8%	13.7%	32.2%	27.4%
11-Jul	26.8%	8.9%	19.3%	12.7%	16.7%	36.0%	29.3%
12-Jul	32.7%	12.6%	20.2%	15.7%	20.7%	38.7%	31.9%
13-Jul	39.5%	13.2%	21.5%	19.0%	26.6%	40.9%	36.4%
14-Jul	42.3%	14.5%	23.4%	21.7%	33.8%	42.5%	38.8%
15-Jul	46.2%	16.1%	26.6%	24.5%	39.2%	45.4%	41.5%
16-Jul	48.8%	17.6%	31.1%	25.8%	43.1%	49.9%	44.5%
17-Jul	51.1%	19.3%	34.7%	28.6%	45.7%	54.8%	48.0%
18-Jul	53.7%	22.8%	38.6%	32.8%	49.9%	59.9%	50.6%
19-Jul	57.2%	28.6%	43.4%	37.7%	55.9%	63.9%	52.5%
20-Jul	61.0%	37.0%	49.3%	46.0%	61.7%	68.4%	54.6%
21-Jul	67.3%	45.5%	55.0%	53.3%	66.7%	72.1%	57.3%
22-Jul	73.1%	52.0%	60.4%	58.6%	70.2%	74.3%	59.6%
23-Jul	77.9%	59.6%	65.5%	63.6%	73.2%	78.3%	63.2%
24-Jul	80.7%	65.1%	70.3%	68.5%	76.4%	80.2%	66.5%
25-Jul	81.4%	68.1%	72.7%	71.3%	78.7%	81.3%	69.8%
26-Jul	82.0%	72.1%	74.1%	75.1%	81.3%	82.4%	72.9%
27-Jul	82.9%	75.0%	76.0%	78.4%	83.9%	83.8%	75.6%
28-Jul	84.8%	78.6%	77.6%	80.1%	85.8%	85.2%	77.5%
29-Jul	86.9%	81.1%	79.8%	81.6%	88.1%	87.0%	79.4%
30-Jul	89.2%	83.7%	82.1%	82.6%	91.5%	88.2%	82.1%

-Continued-

Table 15 (continued). Cumulative percent by date of sockeye salmon counts recorded in the Crescent River, 1979-1985. *

	Cumulative Percent						
Date	1979	1980	1981	1982	1983	1984	1985
31-Jul	90.7%	85.6%	83.6%	83.3%	94.5%	89.3%	100.0%
01-Aug	92.1%	87.8%	84.7%	100.0%	100.0%	100.0%	
02-Aug	93.2%	89.6%	86.6%				
03-Aug	94.3%	91.4%	88.6%				
04-Aug	95.0%	93.2%	90.1%				
05-Aug	95.8%	94.4%	91.8%				
06-Aug	96.6%	95.4%	93.4%				
07-Aug	97.5%	96.1%	94.9%				
08-Aug	98.3%	97.0%	96.4%				
09-Aug	98.9%	98.0%	97.3%				
10-Aug	99.3%	98.5%	100.0%				
11-Aug	99.7%	98.9%					
12-Aug	100.0%	99.4%					
13-Aug		99.8%					
14-Aug		100.0%					

* Proportion accrued on last day (1982-1985) represents that portion of the escapement estimated after termination of enumeration activities.

Table 16. Age composition of sockeye salmon collected in the Crescent River, 1979-1985.

	Percent Composition by Age Class								
Year	1.1	1.2	1.3	1.4	2.1	2.2	2.3	Other	Sample Size
1979[1]	tr	27.8	70.1			tr	tr	tr	643
1980[1]		6.5	86.9			2.9	1.6	2.1	511
1981[1]		8.2	32.1			9.6	49.9	tr	1,117
1982		12.9	79.2	.10		0.8	7.0		711
1083		10.9	42.2	0.2	0.7	27.4	18.6		731
1984		3.5	16.9			20.0	59.4	tr	780
1985	0.2	4.7	31.3		0.3	20.5	43.0		594

[1] Percentages weighted by total numbers in escapement.

Table 17. Peak sockeye salmon escapement counts in Susitna River tributary index areas, 1976-1985.

Index Area	Year									
	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Byers Lake	50	300	1	1	1	275	1	1	1	139
Talachulitna River[2]	13,210	25,935	14,308	11,696	21,125	9,926	14,560	9,590	27,736	22,350
Trinity-Movie Lakes	42	186	150	195	200	500	138	260	920	286
Shell Lake	344	247	127	1,480	5,800	6,050	3,150	2,811	8,600	1,102
Hewitt-Whiskey Lakes[3]	2,289	792	1,998	1,205	3,250	9,850	2,675	3,425	6,593	370
Red Salmon Lake	376	372	235	480	1,100	1,212	1,000	150	142	1
Puntilla Lake	1	2,100	1,105	90	550	200	1	1	1	1
West Fork Yentna River[6]	550	4,000	6,000	456[4]	5,500	9,000	10,340	9,660	6,350	8,200
Chelatna Lake[5]	4	171	0	0[4]	4,120	14,000	23,180	520	575	554
Fish Lake	82	611	299	100[6]	2,100	176	280	1	191	1
Clear Creek[7,8]	30	75	310	365	320	450	2,060	1,315	421	750
Stephan-Murder Lakes[9]	462	539	1,142	140	220	475	452	1	235	1
Larson Lake	85	330	117	160	1	4,600	2,150	1,200	35,254[10]	37,879[10]
Swan Lake[11]	516	827	917	40[6]	4	350	760	340	49	1
Red Shirt Lake[12]	215	43	13	645	650	505	100	6,350	1,640	1
Susitna River Drainage Total Index Area Escapement[13]	18,400	36,500	26,800	17,100	44,900	58,000	60,800	35,600	88,700	71,600

1 No counts conducted.
2 Includes counts from Upper Talachulitna Creek, Talachulitna Lake, Talachulitna Creek, North and South Judd Springs, Judd Spring No. 2, Judd Lake, and Upper Talachulitna River Index Areas.
3 Includes Hewitt Lake, Whiskey Lake, Hewitt Creek, Huckleberry Creek, and Christmas Tree Creek Index Areas.
4 Glacially occluded.
5 Includes Coffee Creek and Snowslide Creek Index Areas.
6 Low visibility-turbid water.
7 Known as Chunilna River in past reports.
8 Includes Mama and Papa Bear Lakes Index Areas.
9 Includes Prairie Creek Index Area.
10 Cook Inlet Aquaculture Association weir count (Marcuson, pers. comm.).
11 Includes Slim Creek and "T" Creek Index Areas.
12 Includes Rolo Jo Creek Index Area.
13 Rounded to the nearest 100 fish.

Table 18. Salmon escapement counts in Susitna River tributaries, 1985.[1]

Tributary	Count				
	Sockeye	Pink	Chum	Coho	Chinook
Alexander Creek	2[1]				6,241[2]
Answer Creek[1]				27	
Byers Creek[1]			8	3	3
Cache Creek[1]	7		45	2	
Caswell Creek[1]				238	
Chase Creek[1]		4		218	16
Cheechako Creek[1]					18
Chinook Creek[1]					1
Chulitna River[1]					3,039
Chunilna Creek (Clear Cr.)[2]					2,430
Clyde Creek		7			
Deception Creek[2]					1,044
Deshka River		1[1]	1[1]	35[1]	18,151[2]
5th of July Creek[1]		36	9		21
Fish Ck. (Talkeetna R.)[1]	45	308	63	55	1
Fish Cr. (Yentna R.)[1]	1,768				15
Fish Lake (Birch Creek)[1]	3	579	8	14	22
4th of July Creek[1]		177	140		85
Fromunda Creek[1]		4			
Gash Creek[1]	2	2		71	
Gold Creek[1]		2			36
Goose Creek	30[1]	30[1]	59[1]	10[1]	401[2]
Indian River[1]	2	648	1,228	71	977
Jack Long Creek[1]				11	7
Lake Creek		21[1]	52[1]		5,803[2]
Lane Creek[1]	20	127		13	17
Lawson Lake[3]					10
Little Portage Creek[1]		7	4	2	
Little Willow Creek[2]					1,305
Lower McKenzie Creek[1]		3		50	
Maggot Creek[1]		4			
Montana Creek		30[1]	5[1]	15[1]	1,767[2]
Peters/Martin Creek[2]					2,901
Portage Creek[1]		149	529	25	2,629
Prairie Creek	5[1]				6,500[2]
Question Creek[1]				76	
Rabideaux Creek[1]			4	55	118
Red Shirt Lake[1]					1
Sheep Creek		4[1]	8[1]		1,634[2]
Shell Creek[1]				201	
Sherman Creek[1]		12			1
Skull Creek[1]		3	2		
Slash Creek[1]			5	8	
Sunshine Creek[1]	1	90	3	65	31
Susitna River[4]	918	14	1,964	13	

-Continued-

Table 18, continued. Salmon escapement counts in Susitna River tributaries, 1985.[1]

Tributary	Count				
	Sockeye	Pink	Chum	Coho	Chinook
Talachulitna River		200[5]	1[1]	7[1]	5,145[2]
Trapper Creek[1]	31			294	22
Troublesome Creek[1]					25
Whiskers Creek[1]				443	103
Whitsol Creek[1]				307	
Willow Creek		34[1]	13[1]		1,856[2]

[1] Data from Susitna Hydroelectric Project surveys (Thompson et al, 1986; report notes that these counts are for stream sections only and reflect only counts where both tagged and untagged fish were clearly visible).
[2] Data from Sport Fish Division surveys.
[3] Cook Inlet Aquaculture Association (Marcuson, pers. comm.).
[4] Peak survey counts along the Susitna River above Talkeetna (Thompson et al., 1986).
[5] Data from Commercial Fisheries Division surveys.

Table 19. Cumulative percent by date of sockeye salmon counts recorded in the Yentna River, 1981-1985.

Date	Cumulative Percent 1981	1982	1983	1984	1985
27-Jun		.0%			
28-Jun		.0%			
29-Jun	0.1%	.0%			
30-Jun	0.4%	.0%	.0%		
01-Jul	0.8%	0.1%	0.1%	0.1%	.0%
02-Jul	1.3%	0.1%	0.1%	0.1%	0.1%
03-Jul	1.6%	0.1%	0.2%	0.2%	0.1%
04-Jul	1.7%	0.2%	0.3%	0.3%	0.1%
05-Jul	1.8%	0.2%	0.3%	0.4%	0.1%
06-Jul	2.0%	0.2%	0.4%	0.4%	0.2%
07-Jul	2.1%	0.2%	0.4%	0.5%	0.3%
08-Jul	2.3%	0.2%	0.4%	0.5%	0.3%
09-Jul	2.6%	0.2%	0.5%	0.6%	0.4%
10-Jul	5.6%	0.2%	0.5%	0.7%	0.5%
11-Jul	9.2%	0.3%	0.6%	0.9%	0.6%
12-Jul	15.5%	0.3%	0.8%	1.1%	0.7%
13-Jul	23.0%	0.3%	1.1%	1.2%	0.8%
14-Jul	34.4%	0.3%	3.4%	1.5%	0.9%
15-Jul	45.4%	0.4%	5.9%	1.7%	1.0%
16-Jul	52.1%	0.5%	9.6%	2.3%	1.0%
17-Jul	56.3%	1.6%	13.1%	14.2%	1.1%
18-Jul	59.9%	4.3%	17.9%	23.2%	1.2%
19-Jul	63.8%	15.5%	35.1%	34.5%	1.3%
20-Jul	68.1%	32.9%	56.7%	45.8%	1.4%
21-Jul	73.2%	52.7%	69.3%	55.4%	1.4%
22-Jul	80.1%	62.7%	72.2%	62.6%	1.6%
23-Jul	84.6%	66.5%	75.8%	68.1%	1.9%
24-Jul	88.2%	71.1%	78.6%	75.5%	14.5%
25-Jul	90.5%	73.4%	82.4%	78.5%	35.9%
26-Jul	92.5%	78.0%	86.7%	80.8%	50.7%
27-Jul	94.0%	81.1%	89.4%	83.6%	63.6%
28-Jul	95.0%	83.1%	90.5%	85.5%	78.2%
29-Jul	95.8%	84.7%	91.3%	86.6%	90.3%
30-Jul	96.9%	85.9%	92.1%	87.4%	94.2%
31-Jul	97.6%	89.0%	92.5%	88.5%	96.0%
01-Aug	98.0%	93.3%	92.9%	89.3%	97.0%
02-Aug	98.6%	94.8%	93.7%	90.1%	97.8%
03-Aug	98.8%	95.5%	94.1%	90.9%	98.3%
04-Aug	99.0%	96.2%	94.5%	92.0%	98.7%
05-Aug	99.1%	96.5%	94.9%	92.6%	99.0%
06-Aug	99.2%	96.7%	95.3%	93.4%	99.4%
07-Aug	99.2%	97.0%	95.5%	93.9%	99.7%
08-Aug	99.2%	97.2%	95.8%	94.4%	100.0%
09-Aug	99.3%	97.5%	95.9%	94.9%	
10-Aug	99.4%	97.7%	95.9%	95.4%	
11-Aug	99.5%	97.9%	96.2%	95.8%	
12-Aug	99.6%	98.1%	96.8%	96.2%	

-Continued-

Table 19 (continued). Cumulative percent by date of sockeye salmon counts recorded in the Yentna River, 1981-1985.

	Cumulative Percent				
Date	1981	1982	1983	1984	1985
13-Aug	99.7%	98.2%	97.4%	96.5%	
14-Aug	99.7%	98.4%	97.7%	96.8%	
15-Aug	99.8%	98.5%	97.9%	97.0%	
16-Aug	99.8%	98.6%	98.2%	97.3%	
17-Aug	99.8%	98.7%	98.5%	97.5%	
18-Aug	99.8%	98.8%	98.7%	97.7%	
19-Aug	99.8%	98.9%	98.8%	97.9%	
20-Aug	99.9%	99.0%	99.0%	98.0%	
21-Aug	99.9%	99.0%	99.1%	98.1%	
22-Aug	99.9%	99.0%	99.2%	98.4%	
23-Aug	99.9%	99.1%	99.3%	98.7%	
24-Aug	100.0%	99.2%	99.4%	98.9%	
25-Aug	100.0%	99.3%	99.4%	99.2%	
26-Aug	100.0%	99.4%	99.5%	99.4%	
27-Aug	100.0%	99.4%	99.6%	99.6%	
28-Aug	100.0%	99.5%	99.7%	99.6%	
29-Aug	100.0%	99.6%	99.8%	99.8%	
30-Aug		99.7%	99.8%	99.9%	
31-Aug		99.7%	99.9%	99.9%	
01-Sep		99.8%	99.9%	100.0%	
02-Sep		99.9%	99.9%	100.0%	
03-Sep		99.9%	99.9%	100.0%	
04-Sep		100.0%	100.0%	100.0%	
05-Sep		100.0%	100.0%	100.0%	

Table 20. Susitna River (Flathorn Station) sockeye salmon age summary by fishwheel, 1985.

Fishwheel	AGE GROUP *												
	2.0	1.1	0.3	1.2	2.1	0.4	1.3	2.2	3.1	1.4	2.3	3.2	Total
EAST CHANNEL													
right bank	4.00	6.90	4.20	41.70	1.20		32.20	7.00	0.20		2.40	0.20	
	(21)	(36)	(22)	(219)	(6)		(169)	(37)	(1)		(13)	(1)	(525)
left bank	3.30	2.90	2.80	41.10	0.60	0.20	40.50	6.60			2.00		
	(17)	(15)	(14)	(211)	(3)	(1)	(208)	(34)			(10)		(513)
WEST CHANNEL													
right bank	1.80	0.80	2.40	31.00			52.70	6.80		1.3	3.20		
	(7)	(3)	(9)	(118)			(200)	(26)		(5)	(12)		(380)
left bank	2.40	2.00	3.40	36.00		0.20	40.90	8.90		1.5	4.70		
	(14)	(12)	(20)	(215)		(1)	(244)	(53)		(9)	(28)		(596)

* Sample size in paretheses

Table 21. Chi square analysis of change in age class by fishwheel in the Susitna River at Flathorn Station, 1985.

Age classes (R)	Fishwheels* (C)	Chi Sq Calc.	Alpha level	DF	Chi Sq Tabled	Null ** Hypothesis
1.2, 1.3, 2.2	WL, WR, EL, ER	30.68	0.05	6	12.59	reject
1.2, 1.3	WL, WR, EL, ER	27.35	0.05	3	7.81	reject
1.2, 1.3, 2.2	WL, WR	9.23	0.05	2	5.99	reject
1.2, 1.3, 2.2	EL, ER	3.42	0.05	2	5.99	accept
1.2, 1.3, 2.2	(EL, ER), WR	24.05	0.05	2	5.99	reject
1.2, 1.3, 2.2	(EL, ER), WL	6.87	0.05	2	5.99	reject

* WL - west channel, left side fishwheel.
WR - west channel, right side fishwheel.
EL - east channel, left side fishwheel.
ER - east channel, right side fishwheel.
Tests which combined age composition data from two fishwheels have acronyms for those fishwheels in parenthesis.

** Null hypothesis: Age structure was independant of Fishwheel location

Table 22. Age composition of sockeye salmon collected in the Susitna River, 1975-1985.

Sample Period	Percent Composition by Age Class												Sample Size
	0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	3.2	2.4	
7/22-7/30/85	2.8	0.8	3.0	28.8		0.1	52.9	6.4	1.0	4.0	0.1		1085
7/31-8/04/85	2.4	7.5	3.4	48.2	0.9	0.2	27.8	6.9	0.4	2.2			707
Seasonal Summary													
1975[1]				57.8	tr		38.4	2.8		tr			498
1976[1]				47.9			49.4	1.7		tr			1,046
1977[1]				22.0	tr		73.8	3.5		tr			1,450
1978		3.7		48.2	8.0		36.0	2.5		1.5			767
1979[2]		4.5		61.0	1.4		20.6	5.3		1.0			830
1980[2]				50.0			36.2	4.7		5.2			823
1981[2]				8.9			83.0	3.0		4.5			2,233
1982		2.3		23.5	0.5		59.6	3.3		10.7			1,032
1983	3.1	0.2	4.9	55.1	0.5		23.6	9.2	0.2	2.9		0.3	1,899
1984[3]	0.3	1.0	3.6	41.7	0.5		33.7	11.6		7.3		0.3	397
1985[24]	2.7	2.8	3.1	34.4 (6.4)[5]	0.3	0.1	45.6 (5.1)	6.5	0.8	3.5	0.1		1,792

[1] Precocious males, age 3_2, were excluded from the analysis since a representative sample of this age class was not taken each year.
[2] Percentages weighted by total numbers in escapement.
[3] Samples from east bank Susitna River only.
[4] Samples from Flathorn Station.
[5] 95% confidence interval: +/- figures in parentheses.

Table 23. Cumulative percent by date of pink salmon counts recorded in the Yentna River, 1981-1985.

Date	Cumulative Percent 1981	1982	1983	1984	1985
27-Jun		0.0%			
28-Jun		0.0%			
29-Jun	.0%	0.0%			
30-Jun	0.2%	0.0%	.0%		
01-Jul	0.3%	0.0%	0.1%	.0%	0.1%
02-Jul	0.5%	0.0%	0.1%	.0%	0.2%
03-Jul	0.7%	0.0%	0.1%	.0%	0.3%
04-Jul	0.8%	0.0%	0.2%	.0%	0.3%
05-Jul	0.8%	.0%	0.3%	.0%	0.5%
06-Jul	1.1%	.0%	0.3%	.0%	0.7%
07-Jul	1.5%	.0%	0.3%	.0%	1.1%
08-Jul	2.1%	.0%	0.3%	.0%	1.2%
09-Jul	2.5%	.0%	0.4%	.0%	1.5%
10-Jul	3.7%	.0%	0.4%	.0%	1.8%
11-Jul	3.9%	.0%	0.5%	0.1%	2.1%
12-Jul	3.9%	.0%	0.6%	0.1%	2.5%
13-Jul	4.2%	.0%	0.9%	0.1%	3.0%
14-Jul	5.0%	.0%	3.0%	0.1%	3.3%
15-Jul	5.7%	.0%	3.9%	0.1%	3.8%
16-Jul	6.1%	.0%	5.6%	0.1%	4.2%
17-Jul	6.2%	0.1%	9.8%	0.3%	4.6%
18-Jul	7.2%	0.2%	17.1%	0.8%	5.0%
19-Jul	8.2%	1.0%	28.8%	2.3%	5.3%
20-Jul	10.5%	2.1%	40.0%	6.7%	5.6%
21-Jul	13.2%	4.0%	51.1%	12.6%	6.0%
22-Jul	15.8%	5.6%	56.5%	19.0%	6.4%
23-Jul	23.6%	7.8%	63.8%	27.7%	7.8%
24-Jul	31.1%	12.6%	70.4%	36.5%	13.5%
25-Jul	39.8%	16.2%	74.3%	42.0%	22.6%
26-Jul	46.4%	19.2%	79.1%	46.6%	32.9%
27-Jul	51.2%	23.7%	82.0%	51.0%	47.5%
28-Jul	58.0%	33.0%	84.3%	57.8%	63.6%
29-Jul	63.9%	44.7%	85.5%	66.9%	76.3%
30-Jul	70.5%	56.2%	86.4%	72.8%	83.3%
31-Jul	75.2%	65.4%	87.1%	78.4%	87.7%
01-Aug	79.5%	73.5%	87.9%	83.7%	90.3%
02-Aug	81.9%	82.4%	90.3%	87.3%	92.6%
03-Aug	83.4%	89.6%	90.8%	90.3%	94.2%
04-Aug	84.9%	93.4%	91.2%	92.5%	95.6%
05-Aug	86.5%	95.3%	91.8%	94.3%	96.6%
06-Aug	88.3%	96.2%	92.4%	95.6%	97.8%
07-Aug	89.7%	96.9%	93.1%	96.2%	99.1%
08-Aug	90.5%	97.8%	93.6%	96.9%	100.0%
09-Aug	91.3%	98.4%	93.7%	97.5%	
10-Aug	91.8%	98.9%	93.8%	98.2%	
11-Aug	92.4%	99.1%	94.3%	98.6%	

-Continued-

Table 23 (Continued). Cumulative percent by date of pink salmon counts recorded in the Yentna River, 1981-1985.

	Cumulative Percent				
Date	1981	1982	1983	1984	1985
12-Aug	92.9%	99.4%	95.1%	98.8%	
13-Aug	93.0%	99.6%	95.8%	99.1%	
14-Aug	93.1%	99.7%	96.6%	99.2%	
15-Aug	93.5%	99.8%	97.1%	99.4%	
16-Aug	94.2%	99.8%	97.8%	99.4%	
17-Aug	94.9%	99.9%	98.4%	99.5%	
18-Aug	95.8%	99.9%	98.8%	99.6%	
19-Aug	96.7%	99.9%	99.0%	99.7%	
20-Aug	97.9%	99.9%	99.2%	99.7%	
21-Aug	98.4%	99.9%	99.3%	99.7%	
22-Aug	98.9%	100.0%	99.3%	99.8%	
23-Aug	99.2%	100.0%	99.4%	99.8%	
24-Aug	99.5%	100.0%	99.5%	99.8%	
25-Aug	99.7%	100.0%	99.6%	99.9%	
26-Aug	99.9%	100.0%	99.6%	99.9%	
27-Aug	100.0%	100.0%	99.7%	99.9%	
28-Aug	100.0%	100.0%	99.8%	99.9%	
29-Aug	100.0%	100.0%	99.8%	99.9%	
30-Aug		100.0%	99.9%	100.0%	
31-Aug		100.0%	99.9%	100.0%	
01-Sep		100.0%	99.9%	100.0%	
02-Sep		100.0%	99.9%	100.0%	
03-Sep		100.0%	100.0%	100.0%	
04-Sep		100.0%	100.0%	100.0%	
05-Sep		100.0%	100.0%	100.0%	

Table 24. Cumulative percent by date of chum salmon counts recorded in the Yentna River, 1981-1985.

DATE	Cumulative Percent 1981	1982	1983	1984	1985
27-Jun		0.0%			
28-Jun		0.0%			
29-Jun	0.1%	0.0%			
30-Jun	0.4%	0.0%	.0%		
01-Jul	0.7%	0.0%	.0%	0.1%	.0%
02-Jul	1.2%	0.0%	.0%	0.2%	.0%
03-Jul	1.3%	0.0%	0.1%	0.3%	.0%
04-Jul	1.3%	0.0%	0.1%	0.4%	0.1%
05-Jul	1.3%	0.0%	0.1%	0.4%	0.1%
06-Jul	1.3%	0.0%	0.1%	0.4%	0.1%
07-Jul	1.3%	0.0%	0.1%	0.5%	0.2%
08-Jul	1.4%	0.0%	0.2%	0.5%	0.3%
09-Jul	1.5%	0.0%	0.2%	0.6%	0.4%
10-Jul	1.9%	0.0%	0.2%	0.7%	0.4%
11-Jul	2.1%	0.0%	0.2%	0.9%	0.5%
12-Jul	2.2%	0.0%	0.3%	1.0%	0.6%
13-Jul	3.4%	0.0%	0.5%	1.2%	0.7%
14-Jul	3.9%	0.0%	2.0%	1.3%	0.7%
15-Jul	4.6%	0.0%	4.1%	1.5%	0.8%
16-Jul	5.0%	0.0%	6.6%	2.0%	0.8%
17-Jul	6.1%	0.3%	9.6%	4.7%	0.9%
18-Jul	8.8%	1.2%	13.8%	9.1%	0.9%
19-Jul	11.7%	6.3%	23.4%	14.2%	1.0%
20-Jul	14.6%	9.9%	31.0%	18.8%	1.0%
21-Jul	17.9%	16.3%	38.3%	22.5%	1.1%
22-Jul	22.4%	20.6%	45.1%	25.0%	1.1%
23-Jul	26.8%	21.8%	53.8%	28.0%	1.3%
24-Jul	31.1%	23.7%	57.3%	30.9%	6.2%
25-Jul	35.7%	24.8%	59.2%	33.2%	18.6%
26-Jul	41.1%	25.5%	61.6%	34.9%	30.8%
27-Jul	45.1%	26.2%	62.6%	36.2%	41.4%
28-Jul	49.6%	26.9%	64.0%	37.4%	62.0%
29-Jul	52.5%	28.6%	64.4%	38.7%	76.4%
30-Jul	56.3%	32.0%	64.7%	40.6%	82.3%
31-Jul	59.0%	43.9%	64.8%	43.3%	87.7%
01-Aug	61.9%	59.5%	64.9%	48.1%	91.0%
02-Aug	62.9%	68.1%	65.4%	51.6%	94.1%
03-Aug	64.0%	74.6%	65.6%	56.1%	95.8%
04-Aug	65.8%	78.5%	65.7%	59.2%	97.4%
05-Aug	67.3%	83.6%	65.7%	62.0%	98.1%
06-Aug	68.3%	85.4%	66.2%	64.2%	99.0%
07-Aug	69.2%	86.3%	66.7%	66.1%	99.6%
08-Aug	70.0%	87.0%	67.5%	68.1%	100.0%
09-Aug	71.0%	88.8%	67.6%	70.5%	
10-Aug	72.7%	90.3%	67.7%	73.2%	
11-Aug	74.5%	91.2%	68.4%	75.3%	

-Continued-

Table 24 (Continued). Cumulative percent by date of chum salmon counts recorded in the Yentna River, 1981-1985.

	Cumulative Percent				
DATE	1981	1982	1983	1984	1985
12-Aug	76.4%	92.0%	69.8%	76.6%	
13-Aug	77.3%	92.6%	71.2%	78.0%	
14-Aug	78.3%	93.0%	72.7%	78.7%	
15-Aug	79.0%	93.3%	73.9%	79.2%	
16-Aug	80.0%	93.6%	77.1%	79.8%	
17-Aug	81.2%	94.0%	80.5%	80.3%	
18-Aug	83.0%	94.5%	82.4%	80.7%	
19-Aug	85.4%	95.2%	83.8%	81.0%	
20-Aug	88.7%	95.8%	85.3%	81.2%	
21-Aug	91.0%	96.0%	86.7%	81.3%	
22-Aug	93.0%	96.3%	87.4%	81.9%	
23-Aug	94.4%	96.5%	88.8%	83.5%	
24-Aug	95.3%	96.7%	90.4%	84.7%	
25-Aug	95.8%	97.0%	91.7%	85.9%	
26-Aug	96.3%	97.1%	92.5%	87.3%	
27-Aug	97.0%	97.3%	94.4%	90.2%	
28-Aug	97.4%	97.4%	95.8%	91.7%	
29-Aug	97.6%	97.6%	96.8%	93.9%	
30-Aug	98.2%	97.8%	97.3%	96.1%	
31-Aug	98.5%	98.0%	97.9%	97.8%	
01-Sep	99.0%	98.3%	98.2%	98.8%	
02-Sep	99.6%	98.8%	98.5%	99.2%	
03-Sep	100.0%	99.4%	99.0%	99.5%	
04-Sep	100.0%	99.9%	99.5%	99.9%	
05-Sep	100.0%	100.0%	100.0%	100.0%	

Table 25. Unweighted age composition of chum salmon collected in the Susitna River, 1975-1985.

Year	Percent Composition by Age Class				Sample Size
	0.2	0.3	0.4	0.5	
1975	9.8	88.3	2.0	0	613
1976	17.2	68.1	14.6	0	267
1977	9.1	86.5	4.3	tr	927
1978	18.7	52.6	28.3	0.4	963
1979	5.1	90.5	4.3	0	391
1980	38.0	49.3	12.7	0	71
1981	1.9	90.9	7.1	0	154
1982	5.3	83.2	11.5	0	340
1983	0	55.0	45.0	0	131
1984	6.0	80.0	14.0	0	201
1985	3.6	73.0	23.4	0	622

Table 26. Cumulative percent by date of coho salmon counts recorded in the Yentna River, 1981-1985.

Date	Cumulative Percent 1981	1982	1983	1984	1985
27-Jun		0.0%			
28-Jun		0.0%			
29-Jun	0.0%	0.0%			
30-Jun	0.0%	0.0%	0.1%		
01-Jul	0.0%	0.0%	0.1%	0.0%	.0%
02-Jul	0.0%	0.0%	0.2%	0.0%	0.1%
03-Jul	0.0%	0.0%	0.2%	.0%	0.1%
04-Jul	0.0%	0.0%	0.3%	.0%	0.1%
05-Jul	0.0%	0.0%	0.3%	.0%	0.1%
06-Jul	.0%	0.0%	0.4%	.0%	0.2%
07-Jul	0.1%	0.0%	0.4%	.0%	0.2%
08-Jul	0.1%	0.0%	0.4%	.0%	0.3%
09-Jul	0.1%	0.0%	0.5%	.0%	0.3%
10-Jul	0.2%	0.0%	0.5%	.0%	0.4%
11-Jul	0.2%	0.0%	0.6%	.0%	0.5%
12-Jul	0.2%	0.0%	0.7%	.0%	0.6%
13-Jul	0.2%	.0%	0.9%	.0%	0.7%
14-Jul	0.3%	.0%	1.9%	0.1%	0.8%
15-Jul	0.4%	0.1%	3.5%	0.1%	0.9%
16-Jul	0.8%	0.1%	8.8%	0.1%	1.0%
17-Jul	0.8%	0.5%	14.2%	0.8%	1.1%
18-Jul	1.0%	1.4%	19.0%	1.4%	1.2%
19-Jul	1.3%	5.3%	31.0%	2.2%	1.2%
20-Jul	2.0%	7.5%	37.6%	3.6%	1.3%
21-Jul	2.9%	9.7%	45.4%	6.6%	1.4%
22-Jul	7.2%	14.3%	51.3%	10.1%	1.6%
23-Jul	13.0%	16.3%	58.5%	15.6%	2.0%
24-Jul	16.4%	18.4%	64.2%	21.9%	5.2%
25-Jul	17.3%	19.8%	67.0%	25.8%	18.8%
26-Jul	23.2%	20.6%	70.3%	28.4%	28.4%
27-Jul	27.4%	21.8%	73.5%	30.7%	38.0%
28-Jul	35.8%	24.6%	76.0%	34.3%	53.4%
29-Jul	39.6%	30.4%	77.3%	37.0%	60.4%
30-Jul	46.0%	33.5%	78.5%	38.0%	65.5%
31-Jul	50.2%	38.1%	79.3%	39.4%	74.0%
01-Aug	58.0%	58.4%	80.3%	41.9%	81.6%
02-Aug	63.2%	69.6%	82.2%	44.3%	87.5%
03-Aug	65.9%	75.0%	82.6%	49.4%	90.3%
04-Aug	68.9%	78.2%	82.9%	54.2%	92.9%
05-Aug	71.8%	82.0%	83.3%	59.5%	94.9%
06-Aug	73.2%	84.0%	84.0%	61.1%	97.2%
07-Aug	74.9%	85.4%	84.7%	62.2%	98.8%
08-Aug	76.1%	86.3%	85.4%	65.9%	100.0%
09-Aug	77.2%	87.6%	85.5%	68.7%	
10-Aug	78.8%	88.6%	85.6%	72.1%	
11-Aug	80.4%	89.4%	86.4%	76.6%	

-Continued-

Table 26 (Continued). Cumulative percent by date of coho salmon counts recorded in the Yentna River, 1981-1985.

Date	Cumulative Percent				
	1981	1982	1983	1984	1985
12-Aug	81.3%	89.9%	87.7%	79.6%	
13-Aug	81.6%	90.5%	89.1%	82.8%	
14-Aug	81.9%	91.1%	90.0%	85.1%	
15-Aug	83.8%	91.6%	90.8%	86.8%	
16-Aug	86.7%	92.0%	91.6%	87.7%	
17-Aug	89.7%	92.5%	92.7%	88.5%	
18-Aug	92.1%	93.1%	93.4%	89.2%	
19-Aug	94.1%	93.5%	94.0%	89.7%	
20-Aug	97.0%	93.9%	94.8%	90.1%	
21-Aug	97.8%	94.1%	95.3%	90.6%	
22-Aug	98.4%	94.3%	95.5%	91.8%	
23-Aug	98.9%	94.5%	96.1%	93.1%	
24-Aug	99.3%	94.9%	96.6%	94.4%	
25-Aug	99.6%	95.2%	97.1%	95.6%	
26-Aug	99.9%	95.6%	97.4%	96.6%	
27-Aug	99.9%	96.0%	98.0%	97.3%	
28-Aug	99.9%	96.4%	98.5%	97.8%	
29-Aug	99.9%	96.8%	98.9%	98.4%	
30-Aug	99.9%	97.1%	99.1%	98.9%	
31-Aug	99.9%	97.4%	99.3%	99.4%	
01-Sep	99.9%	97.7%	99.4%	99.6%	
02-Sep	99.9%	98.6%	99.5%	99.8%	
03-Sep	100.0%	99.3%	99.7%	99.9%	
04-Sep	100.0%	99.9%	99.9%	100.0%	
05-Sep	100.0%	100.0%	100.0%	100.0%	

Table 27. Unweighted age composition of coho salmon collected in the Susitna River, 1975-1985.

	Percent Composition by Age Class						
Year	1.1	2.0	2.1	3.0	2.2	3.1	Sample Size
1975	24.4	0	75.6	0	0	0	406
1976	4.5	0	93.5	0	0.2	1.7	418
1977	8.5	0	90.8	0	0.1	0.6	1,112
1978	28.2	0	71.7	0	0	0.1	773
1979	21.5	3.0	74.1	1.0	0	0.3	297
1980	17.6	2.7	72.9	0	0	6.9	336
1981	13.1	tr	81.4	0	0	5.0	221
1982	22.0	0	74.4	0	0	3.6	305
1983	26.7	0	67.2	0	0	6.1	235
1984	29.9	0	67.5	0	0	2.6	76
1985	38.5	0	57.5	0	0	4.0	624

Table 28. Salmon escapement observations in selected Upper Cook Inlet anadromous streams, 1985. (1)

Stream	Method	Number of fish observed or estimated				
		Sockeye	Pink	Chum	Coho	Chinook
Fitz Creek (2)	air			250		
Clearwater Creek (2)	air			3250		
Chinitna River (2)	air			250		
Little Jack Slough (3,4)	air	13000				
Cannery Creek (3)	air				1500	
Chakachatna River/ McArthur River (2)	air	35516	103			
Chuitna River (5)	air					1600
Threemile Creek (3)	air	1300				
Drill Creek (3)	air					1400
Coal Creek (2)	air	5500				
Theodore River (5)	air		32 (3)			1458
Lewis River (5)	air					861
Fish Creek (6)	weir	68577			5089	
Twenty Mile R. (3)	air	1500				
Placer River (7)	air	1002	1	12		
Ingram Creek (7)	ground		51	4		
Chikaloon R. (8)	ground	5675				4112
Bishop Creek (3)	air	6988				
Ninilchik R. (9)	air					650
Deep Creek (9)	air					1110
Anchor R. (9)	air					1330
Packers Lake (3)	weir	36850				

(1) Aerial and ground counts are not considered total escapement counts unless indicated.
(2) ADF&G Commercial Fisheries Division surveys.
(3) Cook Inlet Aquaculture Association surveys (Marcuson, pers comm).
(4) Includes Blue (Elling) Lake.
(5) Hepler and Bentz, 1985.
(6) Clupach, pers comm.
(7) Nelson, K., pers comm.
(8) Dean, pers comm.
(9) Nelson, D., 1985b.

Table 29. Age composition of sockeye salmon collected in Big River, 1982-1985.

Year	Tributary	Percent Composition by Age Class											Sample Size
		0.2	1.1	0.3	1.2	2.1	1.3	2.2	3.1	1.4	2.3	3.2	
1982[1]	Mainstem		1.9	0.7	15.9	2.2	28.2	32.3			11.7	0.2	967
1983[2]	Mainstem	0.3	1.1	0.3	26.6	0.8	60.0	8.8		0.1	1.9	0.1	2,741
	Wolverine Cr.		0.4		38.2		7.5	40.0			13.9		280
1984	Wolverine Cr.				4.5	0.9	10.8	72.7			11.1		352
	South Fork		5.1		28.3		40.6	3.6		0.7	21.7		138
1985	Wolverine Cr.				4.5	0.4	2.0	73.7	0.1		18.9	0.3	684

[1] Cook Inlet Aquaculture Association 1982.
[2] Marcuson 1984.

Table 30. Results of stream surveys conducted on sockeye salmon spawning tributaries of the McArthur/Chakachatna Rivers drainage, 1985.

Location	Date 8/02	8/26	9/04	9/21	9/30	Average Stream Life Used
Faro's Lake	1,650					
13U Creek	73					
12.1 Creek	3,225					
12.2 Creek	875					
12.3 Creek	614					
Igitna River		2,375	1,125		250	12
Chilligan River		20,500	12,500	4,500	1,200	12

Table 31. Age composition of sockeye salmon collected in the McArthur/Chakachatna River drainage, 1983-1985.

		Percent Composition by Age Class									
Year	Tributary	0.2	1.1	0.3	1.2	2.1	1.3	2.2	1.4	2.3	Sample Size
1983	McArthur R.	1.2		6.2	34.0		54.6	1.2		2.8	244
	Chilligan R.				2.9	2.0	37.7	17.8	0.1	39.5	758
1984	McArthur R.	0.7		3.7	24.8		67.5	1.5		1.8	592
	Chilligan R.				1.2		9.2	8.0		81.6	598
1985	McArthur R.	16.7	0.8	4.5	39.0		39.0				492
	Chilligan R.				1.1	0.5	12.9	18.8		66.7	549

Table 32. Cumulative percent by date of sockeye salmon escapement into Fish Creek (Big Lake), 1980-1985.

	Cumulative Percent					
Date	1980	1981	1982	1983	1984	1985
29-Jun					0%	
30-Jun					0%	
01-Jul					0%	
02-Jul					0%	
03-Jul					0%	
04-Jul	0%				0%	
05-Jul	0%			0%	0%	
06-Jul	0%			0%	0%	
07-Jul	0%			0%	0%	
08-Jul	0%			0%	0%	0%
09-Jul	0%	1%		0%	0%	0%
10-Jul	0%	1%		0%	0%	0%
11-Jul	0%	6%		0%	0%	0%
12-Jul	0%	13%	0%	0%	1%	0%
13-Jul	0%	16%	0%	0%	1%	0%
14-Jul	0%	27%	0%	0%	2%	0%
15-Jul	0%	41%	0%	0%	3%	1%
16-Jul	0%	52%	0%	1%	3%	1%
17-Jul	1%	58%	0%	1%	3%	1%
18-Jul	6%	64%	0%	1%	8%	1%
19-Jul	14%	71%	1%	2%	13%	1%
20-Jul	18%	75%	6%	4%	19%	1%
21-Jul	29%	79%	13%	14%	21%	1%
22-Jul	40%	83%	25%	30%	28%	3%
23-Jul	52%	83%	31%	39%	34%	4%
24-Jul	68%	85%	44%	46%	42%	6%
25-Jul	80%	87%	52%	55%	56%	8%
26-Jul	85%	90%	59%	61%	62%	11%
27-Jul	86%	90%	65%	68%	70%	13%
28-Jul	91%	93%	72%	72%	74%	24%
29-Jul	92%	94%	78%	76%	76%	36%
30-Jul	93%	97%	85%	79%	76%	42%
31-Jul	94%	98%	86%	80%	80%	50%
01-Aug	95%	98%	86%	83%	83%	55%
02-Aug	96%	99%	88%	86%	86%	58%
03-Aug	97%	99%	89%	87%	87%	66%
04-Aug	98%	99%	89%	91%	88%	70%
05-Aug	99%	99%	90%	94%	88%	74%
06-Aug	99%	99%	90%	94%	89%	77%
07-Aug	99%	99%	90%	95%	90%	91%
08-Aug	99%	99%	90%	95%	93%	92%
09-Aug	99%	100%	90%	97%	93%	92%
10-Aug	99%	100%	91%	97%	94%	92%
11-Aug	100%	100%	92%	98%	94%	93%
12-Aug	100%	100%	92%	98%	94%	94%
13-Aug	100%	100%	92%	98%	95%	97%
14-Aug	100%	100%	93%	98%	95%	99%

-Continued-

Table 32 (Continued). Cumulative percent by date of sockeye salmon escapement into Fish Creek (Big Lake), 1980-1985.

	Cumulative Percent					
Date	1980	1981	1982	1983	1984	1985
15-Aug	100%	100%	93%	98%	95%	99%
16-Aug	100%	100%	93%	99%	96%	99%
17-Aug	100%	100%	94%	99%	96%	99%
18-Aug	100%	100%	95%	99%	96%	100%
19-Aug	100%	100%	96%	99%	96%	100%
20-Aug	100%	100%	96%	99%	96%	100%
21-Aug	100%	100%	96%	99%	97%	100%
22-Aug	100%	100%	96%	99%	97%	100%
23-Aug	100%		96%	100%	97%	100%
24-Aug	100%		97%	100%	98%	100%
25-Aug	100%		97%	100%	99%	100%
26-Aug	100%		97%	100%	99%	100%
27-Aug	100%		97%	100%	99%	100%
28-Aug			97%	100%	99%	100%
29-Aug			97%	100%	100%	100%
30-Aug			98%	100%	100%	
31-Aug			98%		100%	
01-Sep			98%		100%	
02-Sep			98%		100%	
03-Sep			98%		100%	
04-Sep			99%		100%	
05-Sep			99%		100%	
06-Sep			99%		100%	
07-Sep			99%		100%	
08-Sep			99%		100%	
09-Sep			100%		100%	
10-Sep					100%	
11-Sep					100%	
12-Sep					100%	
13-Sep					100%	
14-Sep					100%	
15-Sep					100%	
16-Sep					100%	
17-Sep					100%	
18-Sep					100%	
19-Sep					100%	

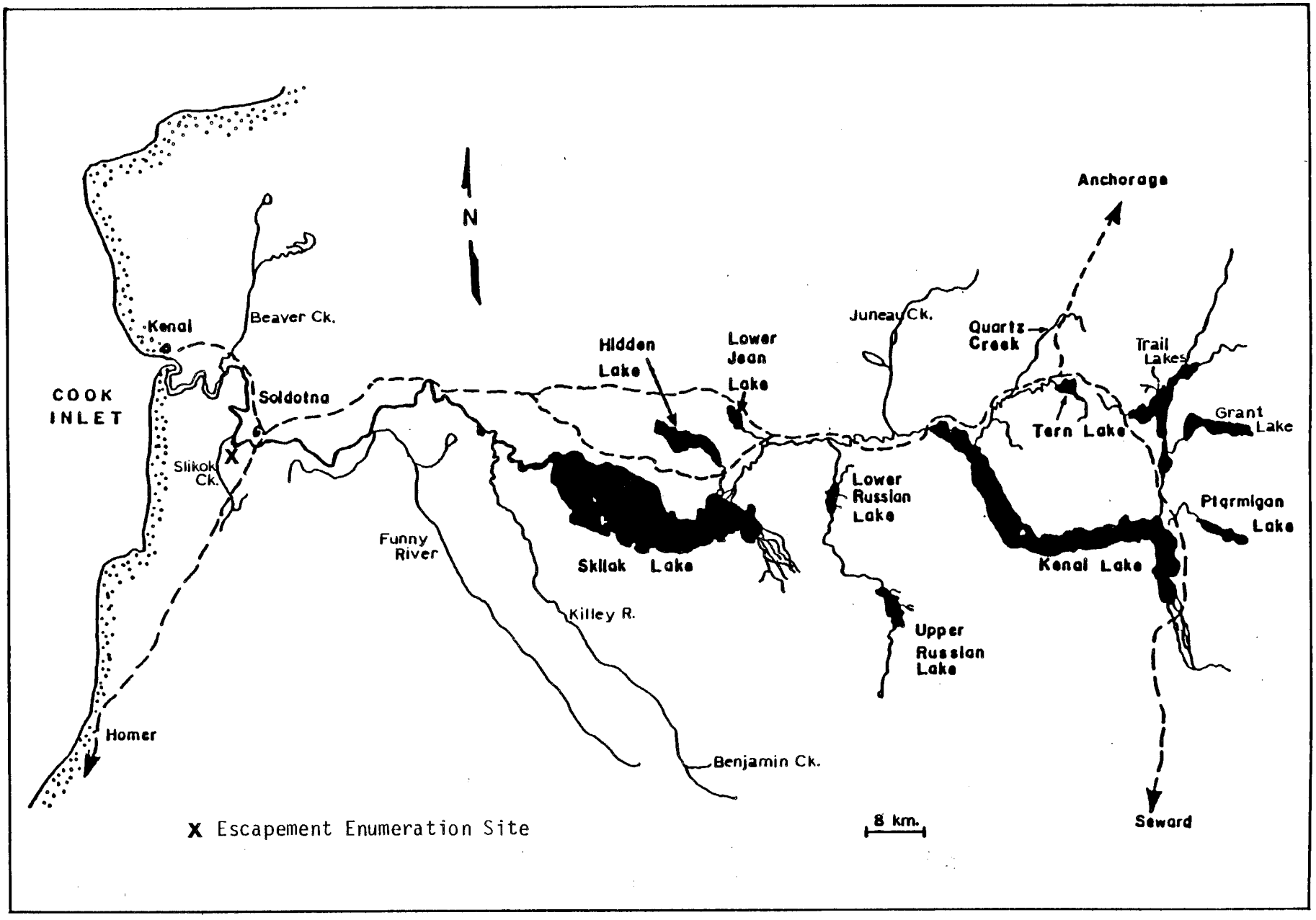

Figure 1. Kenai River drainage and major sockeye salmon rearing lakes.

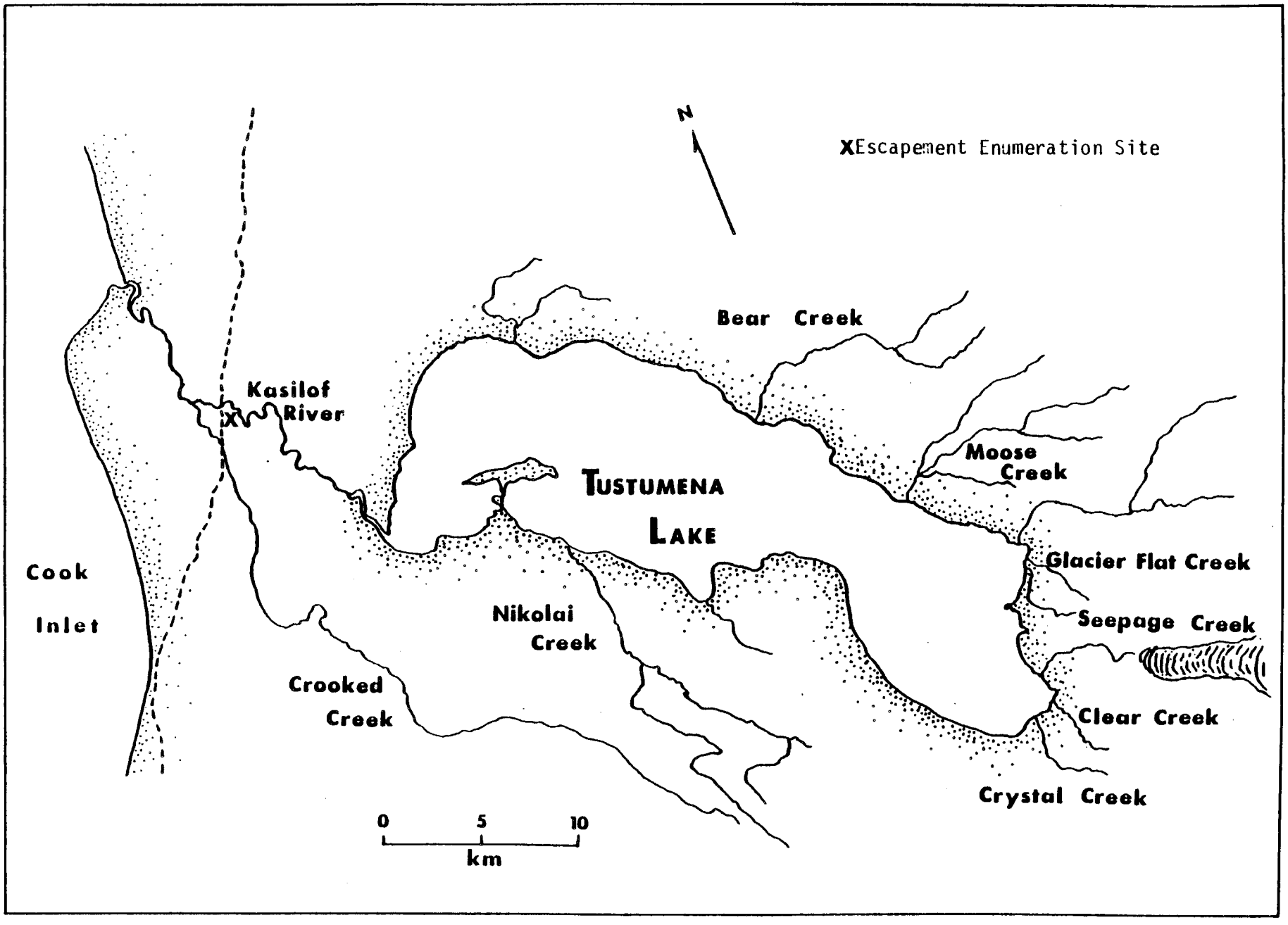

Figure 2. Kasilof River drainage and major sockeye salmon spawning and rearing areas.

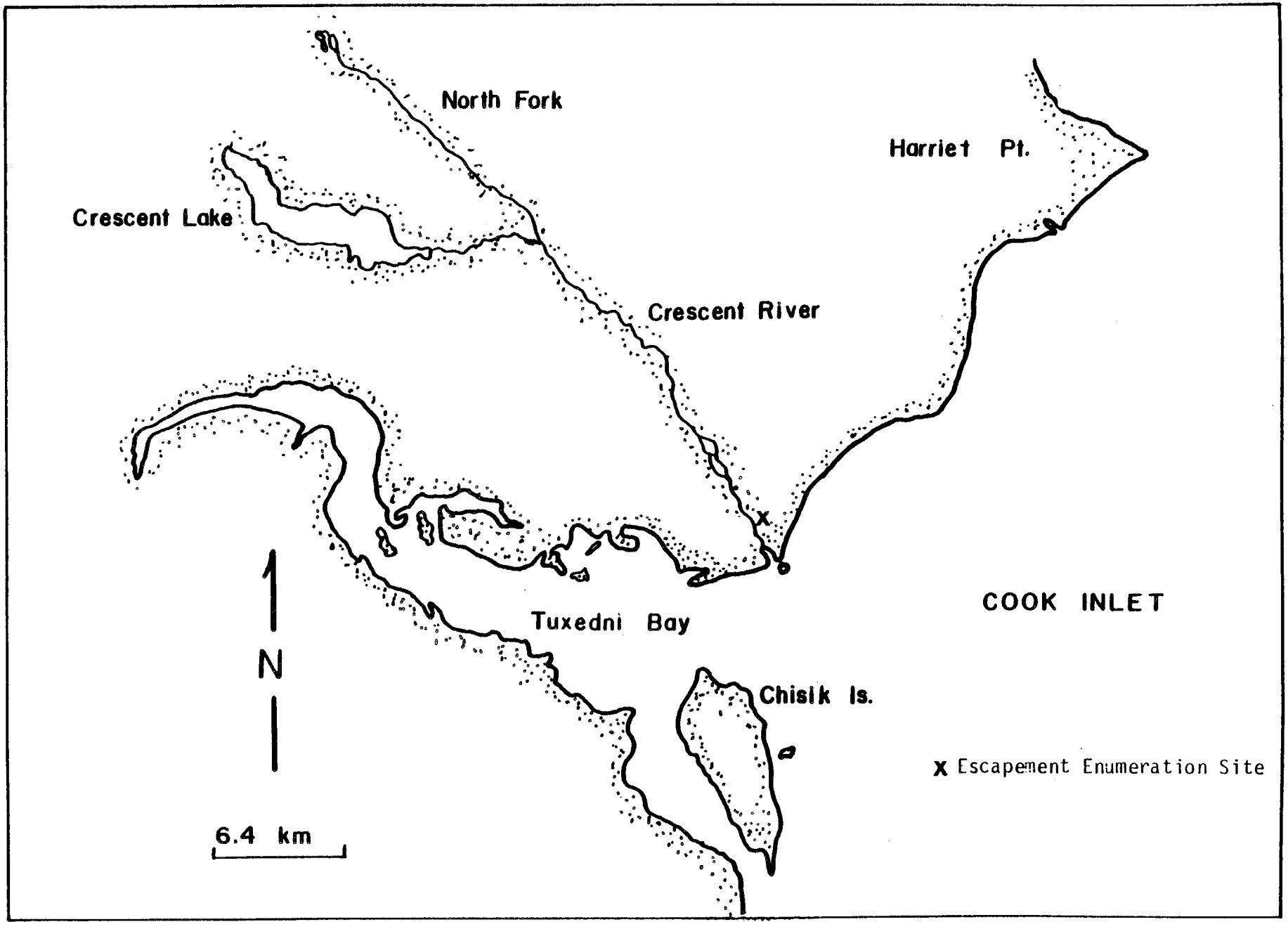

Figure 3. Crescent River drainage and major sockeye salmon rearing lake.

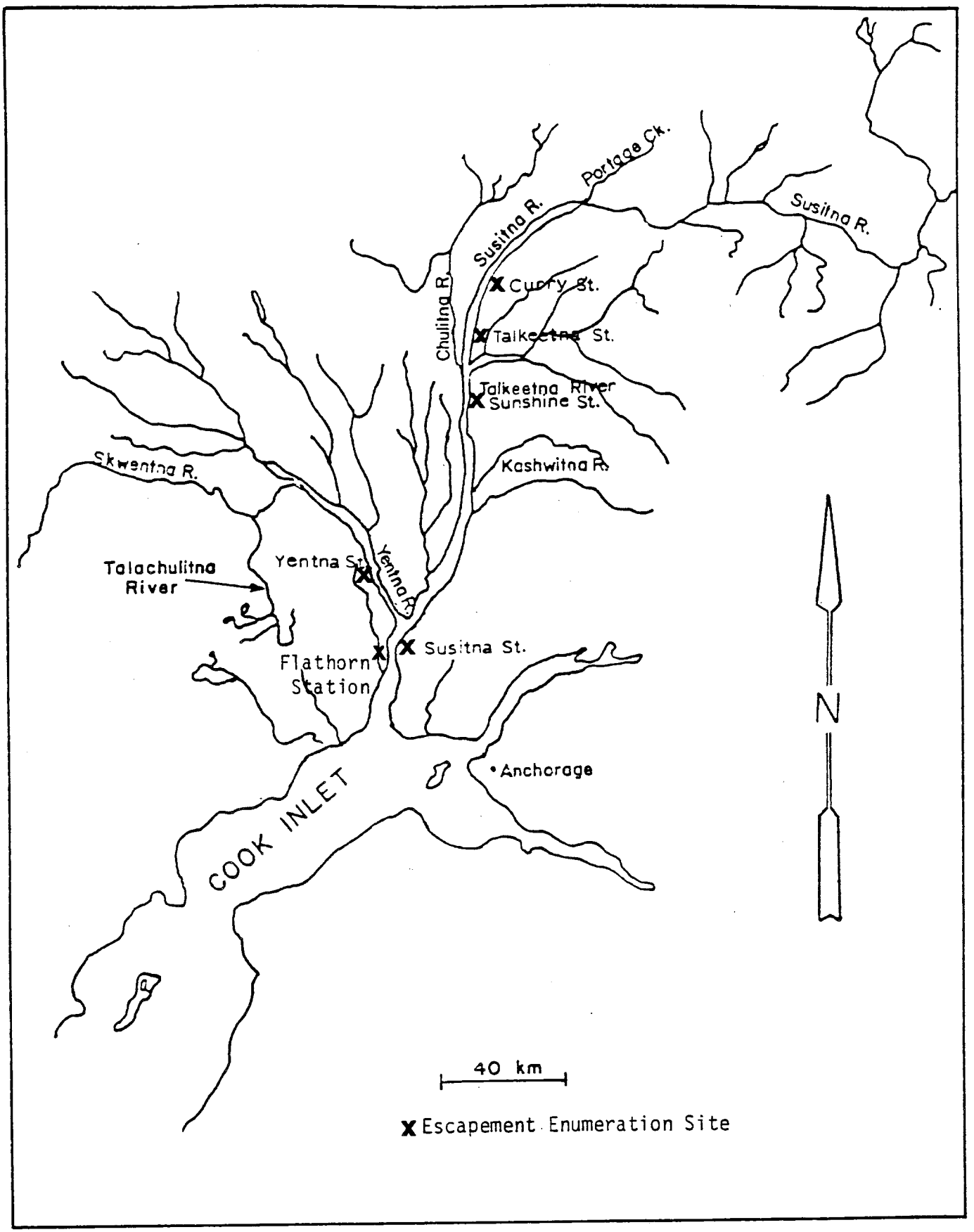

Figure 4. Susitna River drainage and major tributary rivers.

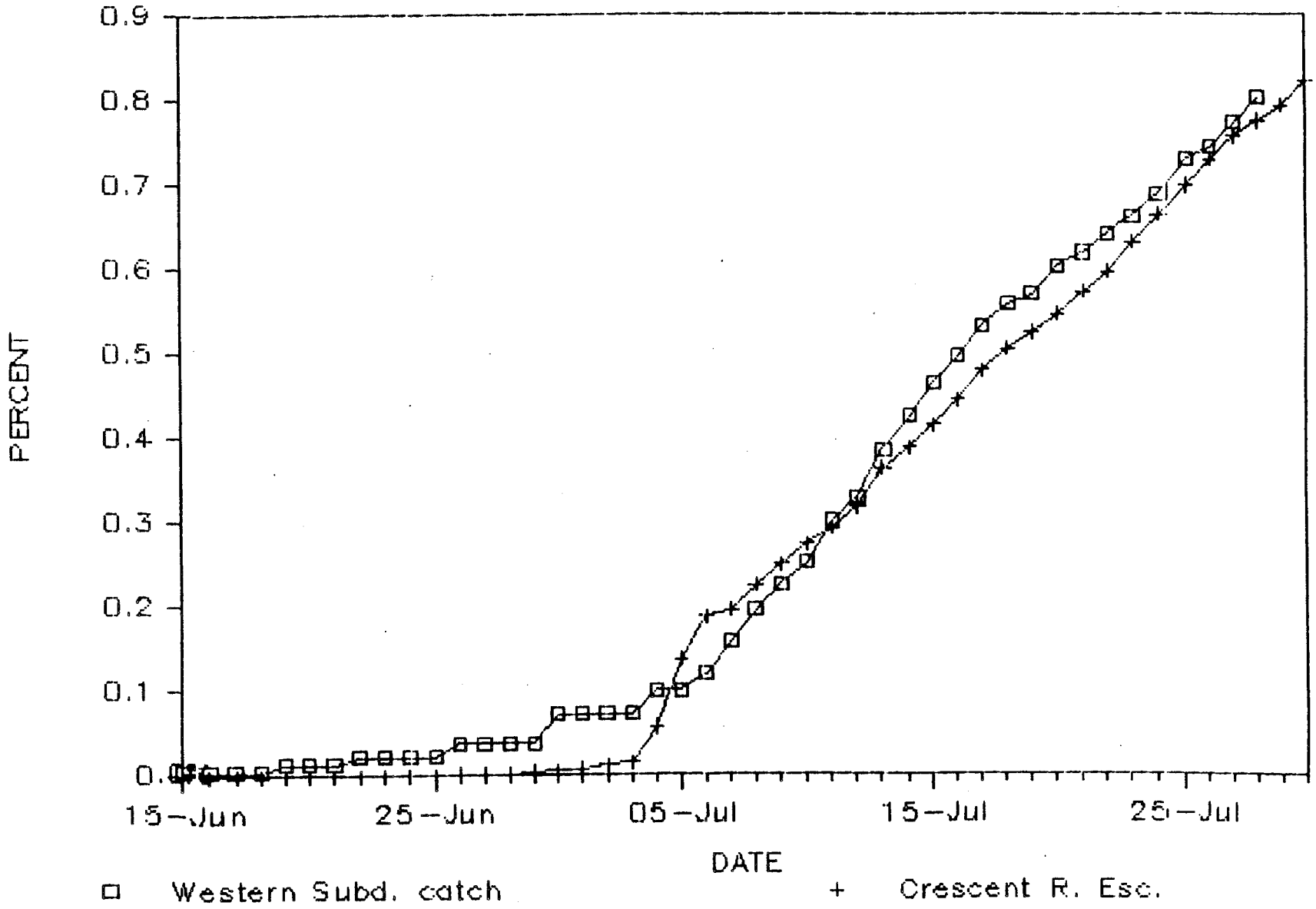

Figure 5. Comparison of Western Subdistrict commercial catch and Crescent River sockeye salmon escapement, 1985 (cumulative percent of total by day).

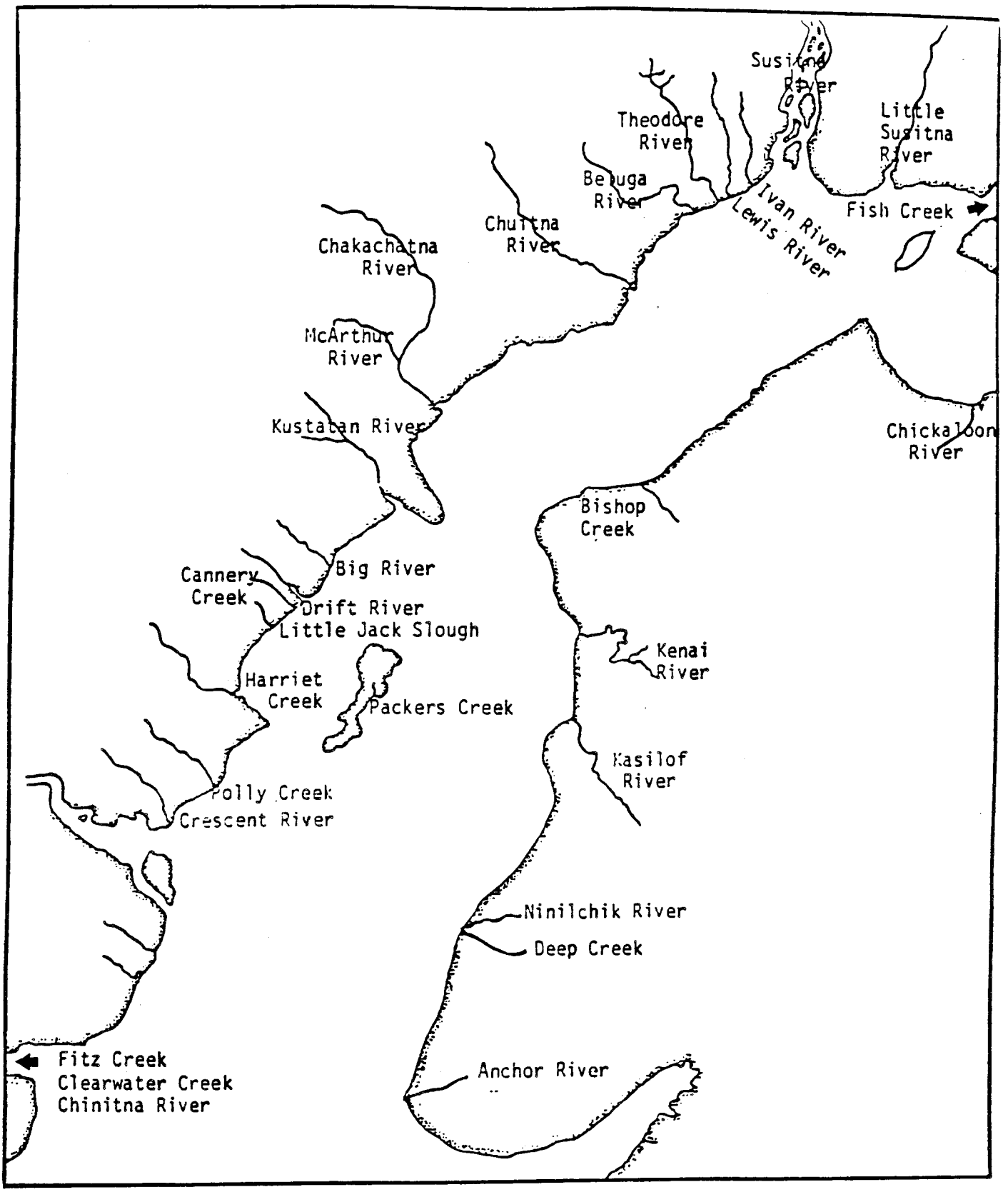

Figure 6. Anadromous streams of Upper Cook Inlet, Alaska.

APPENDICES

Appendix Table 1. Fish targets recorded in the Kenai River, north and south banks combined, 22 June through 11 August, 1985. *

	FISH TARGETS		SOCKEYE		PINK		COHO		CHINOOK	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
6/22	318	318	298	298	14	14	1	1	5	5
6/23	642	960	601	899	29	43	1	2	11	16
6/24	668	1,628	625	1,524	31	74	1	3	11	27
6/25	489	2,117	458	1,982	22	96	1	4	8	35
6/26	512	2,629	479	2,461	24	120	1	5	8	43
6/27	530	3,159	496	2,957	24	144	1	6	9	52
6/28	842	4,001	788	3,745	39	183	2	8	13	65
6/29	805	4,806	754	4,499	36	219	2	10	13	78
6/30	692	5,498	648	5,147	31	250	2	12	11	89
7/ 1	2,029	7,527	1,899	7,046	94	344	2	14	34	123
7/ 2	864	8,391	809	7,855	40	384	1	15	14	137
7/ 3	533	8,924	499	8,354	24	408	1	16	9	146
7/ 4	1,359	10,283	1,272	9,626	62	470	1	17	24	170
7/ 5	1,252	11,535	1,171	10,797	59	529	1	18	21	191
7/ 6	1,558	13,093	1,458	12,255	72	601	1	19	27	218
7/ 7	945	14,038	884	13,139	44	645	1	20	16	234
7/ 8	2,207	16,245	2,064	15,203	104	749	0	20	39	273
7/ 9	789	17,034	739	15,942	36	785	1	21	13	286
7/10	947	17,981	886	16,828	44	829	0	21	17	303
7/11	1,396	19,377	1,306	18,134	65	894	2	23	23	326
7/12	1,080	20,457	1,010	19,144	51	945	0	23	19	345
7/13	516	20,973	493	19,637	18	963	1	24	4	349
7/14	4,517	25,490	4,394	24,031	104	1,067	1	25	18	367
7/15	9,614	35,104	9,347	33,378	226	1,293	3	28	38	405
7/16	19,334	54,438	19,158	52,536	133	1,426	19	47	24	429
7/17	3,280	57,718	3,183	55,719	80	1,506	4	51	13	442
7/18	1,405	59,123	1,363	57,082	20	1,526	18	69	4	446
7/19	557	59,680	538	57,620	7	1,533	8	77	4	450
7/20	559	60,239	539	58,159	8	1,541	8	85	4	454
7/21	2,075	62,314	2,009	60,168	29	1,570	27	112	10	464

(continued)

Appendix Table 1. Fish targets recorded in the Kenai River, north and south banks combined, 22 June through 11 August, 1985 (continued). *

	FISH TARGETS		SOCKEYE		PINK		COHO		CHINOOK	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
7/22	30,313	92,627	29,268	89,436	408	1,978	420	532	217	681
7/23	59,055	151,682	56,866	146,302	702	2,680	781	1,313	706	1,387
7/24	86,924	238,606	86,723	233,025	0	2,680	201	1,514	0	1,387
7/25	55,704	294,310	55,433	288,458	0	2,680	271	1,785	0	1,387
7/26	60,325	354,635	60,097	348,555	228	2,908	0	1,785	0	1,387
7/27	30,137	384,772	29,947	378,502	0	2,908	190	1,975	0	1,387
7/28	34,658	419,430	34,658	413,160	0	2,908	0	1,975	0	1,387
7/29	21,207	440,637	21,056	434,216	0	2,908	151	2,126	0	1,387
7/30	17,078	457,715	16,633	450,849	0	2,908	445	2,571	0	1,387
7/31	7,048	464,763	7,048	457,897	0	2,908	0	2,571	0	1,387
8/ 1	4,274	469,037	4,274	462,171	0	2,908	0	2,571	0	1,387
8/ 2	1,761	470,798	1,652	463,823	37	2,945	6	2,577	66	1,453
8/ 3	1,537	472,335	1,443	465,266	32	2,977	6	2,583	56	1,509
8/ 4	1,790	474,125	1,686	466,952	43	3,020	7	2,590	54	1,563
8/ 5	1,364	475,489	1,267	468,219	17	3,037	2	2,592	78	1,641
8/ 6	2,167	477,656	2,016	470,235	29	3,066	5	2,597	117	1,758
8/ 7	1,577	479,233	1,478	471,713	31	3,097	5	2,602	63	1,821
8/ 8	2,374	481,607	2,220	473,933	42	3,139	7	2,609	105	1,926
8/ 9	2,555	484,162	2,397	476,330	52	3,191	9	2,618	97	2,023
8/10	3,278	487,440	3,069	479,399	62	3,253	11	2,629	136	2,159
8/11	3,714	491,154	3,500	482,899	91	3,344	15	2,644	108	2,267
Total	491,154		502,820		3,344		2,644		2,267	

* Sonar counts apportioned by fishwheel catch. Total for sockeye salmon includes an estimate of 19,921 fish which entered the system after 11 August, 1985.

Appendix Table 2. Kenai River north bank side-scan sonar counts by sector, 22 June through 11 August 1985.

Date	Sector 1	2	3	4	5	6	7	8	9	10	11	12	Total	Cum Total
6/22	8	0	0	0	0	0	7	25	41	56	40	21	198	198
6/23	4	0	0	0	0	0	7	28	59	71	74	66	309	507
6/24	6	1	0	0	0	0	7	8	34	46	63	78	243	750
6/25	10	0	1	1	0	0	8	16	38	53	89	41	257	1,007
6/26	21	0	0	0	0	0	0	3	31	39	90	105	289	1,296
6/27	22	0	0	0	0	0	1	7	27	35	36	67	195	1,491
6/28	29	0	0	0	0	0	0	11	24	50	53	121	288	1,779
6/29	61	3	0	0	0	0	2	8	20	35	44	76	249	2,028
6/30	39	16	23	10	7	6	14	39	31	47	43	72	347	2,375
7/01	283	156	113	41	19	10	41	132	141	105	115	175	1,331	3,706
7/02	83	89	59	19	7	4	7	18	33	33	41	46	439	4,145
7/03	46	53	24	7	3	4	5	12	33	34	57	63	341	4,486
7/04	307	395	179	14	11	6	13	35	34	32	121	68	1,215	5,701
7/05	311	397	118	6	0	0	4	10	35	78	48	80	1,087	6,788
7/06	339	461	152	40	28	28	14	35	30	72	74	66	1,339	8,127
7/07	221	306	109	4	1	0	1	6	15	16	51	47	777	8,904
7/08	534	847	277	21	0	0	9	14	32	43	96	86	1,959	10,863
7/09	105	91	38	12	4	4	8	20	34	70	52	71	509	11,372
7/10	142	45	47	11	7	1	3	31	31	94	186	219	817	12,189
7/11	256	228	92	17	5	5	13	28	41	107	147	85	1,024	13,213
7/12	381	152	118	11	4	1	3	11	27	42	47	22	819	14,032
7/13	109	65	38	1	0	0	1	2	5	11	21	18	271	14,303
7/14	871	2,306	678	43	8	1	26	39	36	76	46	43	4,173	18,476
7/15	1,134	3,594	2,109	266	120	117	174	307	226	306	196	204	8,753	27,229
7/16	9,061	6,350	1,006	105	23	19	68	134	133	186	203	331	17,619	44,848
7/17	356	813	474	29	11	4	21	49	90	138	151	181	2,317	47,165
7/18	252	231	135	9	2	1	5	13	36	103	126	232	1,145	48,310
7/19	60	53	53	5	3	0	2	9	16	34	44	43	322	48,632
7/20	97	53	13	2	0	0	4	3	10	26	27	67	302	48,934
7/21	542	632	70	12	2	2	3	12	1	10	26	139	1,451	50,385
7/22	5,598	10,352	674	30	3	2	6	10	26	24	28	84	16,837	67,222
7/23	5,965	12,013	1,349	69	14	5	20	26	50	61	111	114	19,797	87,019
7/24	7,677	26,408	6,625	433	319	301	24	46	51	142	217	326	42,569	129,588
7/25	1,672	16,389	7,439	261	39	20	47	62	146	306	533	612	27,526	157,114
7/26	1,057	15,609	12,219	408	430	215	11	26	28	68	103	80	30,254	187,368

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Appendix Table 2, continued. Kenai River north bank side-scan sonar counts by sector, 22 June through 11 August 1985.

	Sector													
Date	1	2	3	4	5	6	7	8	9	10	11	12	Total	Cum Total
7/27	1,430	8,947	5,523	317	131	124	31	41	85	202	255	202	17,288	204,656
7/28	1,330	9,649	5,622	139	25	24	14	25	68	178	215	495	17,784	222,440
7/29	1,152	7,572	2,513	135	22	11	44	53	90	330	443	1,062	13,427	235,867
7/30	216	3,889	3,589	150	53	20	37	70	88	297	499	1,664	10,572	246,439
7/31	89	811	1,489	122	31	14	32	40	163	367	394	1,193	4,745	251,184
8/01	72	42	112	19	17	12	24	37	72	163	468	1,219	2,257	253,441
8/02	42	21	62	7	3	3	3	17	55	132	211	499	1,055	254,496
8/03	7	15	11	1	4	1	0	11	25	77	177	617	946	255,442
8/04	79	34	29	10	1	1	10	21	27	90	162	805	1,269	256,711
8/05	8	10	14	2	3	3	1	7	16	25	122	263	474	257,185
8/06	18	18	18	5	0	2	12	28	50	95	242	355	843	258,028
8/07	23	38	45	15	12	4	7	18	42	70	223	395	892	258,920
8/08	25	40	57	10	10	5	16	18	33	105	227	672	1,218	260,138
8/09	26	141	341	36	17	5	9	28	45	65	202	606	1,512	261,659
8/10	84	355	464	46	13	5	9	15	30	71	76	622	1,790	263,449
8/11	40	489	651	67	15	7	7	21	31	64	182	1,048	2,622	266,071
Tot.	42300	130179	54772	2968	1427	997	835	1685	2565	4980	7497	15866	266071	

Appendix Table 3. Kenai River south bank sonar counts by sector, 1 day time periods, 22 June through 11 August, 1985.

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL
6 22	3	0	0	0	0	0	0	0	7	2	12	76	100	100
6 23	2	0	0	0	0	0	0	0	15	33	39	240	329	429
6 24	0	0	0	0	0	0	1	2	13	32	44	237	329	758
6 25	1	0	0	0	0	0	1	1	12	11	34	177	237	995
6 26	1	0	0	0	0	0	0	0	4	14	58	154	231	1226
6 27	6	0	0	0	0	0	0	0	12	24	59	231	332	1558
6 28	0	1	1	0	0	0	7	3	57	49	88	351	557	2115
6 29	9	15	3	2	0	0	9	11	70	120	100	201	540	2655
6 30	39	38	6	0	0	0	8	5	35	87	57	107	382	3037
7 1	173	132	17	1	0	0	8	2	61	84	97	122	697	3734
7 2	134	73	11	0	0	0	0	1	8	55	60	67	409	4143
7 3	66	28	4	2	0	0	1	1	11	33	26	29	201	4344
7 4	63	48	7	2	2	2	2	3	13	35	24	16	217	4561
7 5	39	18	3	0	0	0	1	7	9	52	26	21	176	4737
7 6	46	13	3	0	0	0	1	4	5	37	46	55	210	4947
7 7	29	33	5	0	0	0	1	47	10	18	12	13	168	5115
7 8	48	110	4	0	0	0	0	2	19	19	28	24	254	5369
7 9	73	105	5	0	0	0	0	0	3	21	36	46	289	5658
7 10	4	7	0	0	0	0	0	0	9	28	39	45	132	5790
7 11	18	21	1	0	0	0	0	1	6	44	118	163	372	6162
7 12	7	20	1	0	0	0	0	0	10	25	60	130	253	6415
7 13	16	23	0	0	0	0	0	0	9	35	59	103	245	6660
7 14	18	46	3	0	0	0	0	0	12	25	53	187	344	7004
7 15	15	127	8	0	0	0	0	0	82	37	186	407	863	7867
7 16	60	465	78	1	1	0	0	0	153	72	214	656	1700	9567

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Appendix Table 3. Kenai River south bank sonar counts by sector, 1 day time periods, 22 June through 11 August, 1985 (continued).

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL
7 17	140	324	13	0	0	0	0	0	32	29	132	278	948	10515
7 18	47	62	6	0	0	0	1	1	4	19	55	67	262	10777
7 19	24	19	1	1	0	0	0	2	35	20	51	81	234	11011
7 20	29	16	1	0	0	0	0	1	38	58	46	63	252	11263
7 21	174	191	3	0	0	0	0	2	24	18	86	123	621	11884
7 22	2307	8372	1664	205	200	180	16	15	74	86	139	225	13483	25367
7 23	3806	19676	13293	1409	67	3	29	21	9	41	175	733	39262	64629
7 24	4161	22400	15596	1371	344	307	13	12	22	55	35	35	44351	108980
7 25	1312	10450	14097	1250	38	1	12	16	26	57	76	184	27519	136499
7 26	2055	18042	9034	350	5	0	31	21	17	64	109	339	30067	166566
7 27	2632	5225	4541	236	8	1	11	16	35	75	124	82	13086	179652
7 28	1057	6260	8545	600	31	11	25	4	8	76	182	78	16877	196529
7 29	309	2972	3637	233	34	51	60	8	6	49	204	201	7764	204293
7 30	467	3412	2281	170	1	0	2	4	19	36	52	58	6502	210795
7 31	295	1075	439	75	1	3	12	1	16	48	159	179	2303	213098
8 1	178	1076	417	27	4	0	2	3	2	31	89	188	2017	215115
8 2	31	235	98	1	0	0	0	8	17	53	98	164	705	215820
8 3	21	76	86	1	0	0	3	2	7	40	166	204	606	216426
8 4	111	239	28	3	0	0	2	5	17	47	32	72	556	216982
8 5	110	483	89	7	0	0	0	1	7	22	71	99	889	217871
8 6	171	768	150	5	2	0	5	8	16	42	72	82	1321	219192
8 7	34	85	43	6	0	3	10	25	34	73	155	217	685	219877
8 8	230	568	108	4	0	0	6	10	14	25	92	100	1157	221034
8 9	172	602	166	12	2	0	0	2	3	14	31	32	1036	222070
8 10	219	886	196	17	1	0	3	4	11	28	45	78	1488	223558

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Appendix Table 3. Kenai River south bank sonar counts by sector, 1 day time periods, 22 June through 11 August, 1985 (continued).

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL*
8 11	93	540	205	11	0	0	0	5	6	16	78	138	1092	224650
Total	21155	105377	74898	6002	741	562	283	287	1144	2114	4129	7958	224650	

* Total count may differ from total fish targets by bank because of method used to average for debris.

Appendix Table 4. Kenai River north bank sonar counts by sector, 4 day time periods, 22 June through 11 August, 1985.

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL*
6 22-25	28	1	1	1	0	0	29	77	172	226	266	206	1007	1007
6 26-29	133	3	0	0	0	0	3	29	102	159	223	369	1021	2028
6 30- 3	451	314	219	77	36	24	67	201	238	219	256	356	2458	4486
7 4- 7	1178	1559	558	64	40	34	32	86	114	198	294	261	4418	8904
7 8-11	1037	1211	454	61	16	10	33	93	138	314	481	461	4309	13213
7 12-15	2495	6117	2943	321	132	119	204	359	294	435	310	287	14016	27229
7 16-19	9729	7447	1668	148	39	24	96	205	275	461	524	787	21403	48632
7 20-23	12202	23050	2106	113	19	9	33	51	87	121	192	404	38387	87019
7 24-27	11836	67353	31806	1419	919	660	113	175	310	718	1108	1220	117637	204656
7 28-31	2787	21921	13213	546	131	69	127	188	409	1172	1551	4414	46528	251184
8 1- 4	200	112	214	37	25	17	37	86	179	462	1018	3140	5527	256711
8 5- 8	74	106	134	32	25	14	36	71	141	295	814	1685	3427	260138
8 9-11	150	985	1456	149	45	17	25	64	106	200	460	2276	5933	266071
Total	42300	130179	54772	2968	1427	997	835	1685	2565	4980	7497	15866	266071	

* Total count may differ from total fish targets because of method used to average for debris.

Appendix Table 5. Kenai River south bank sonar counts by sector, 4 day time periods, 22 June through 11 August, 1985.

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL*
6 22-25	6	0	0	0	0	0	2	3	47	78	129	730	995	995
6 26-29	16	16	4	2	0	0	16	14	143	207	305	937	1660	2655
6 30- 3	412	271	38	3	0	0	17	9	115	259	240	325	1689	4344
7 4- 7	177	112	18	2	2	2	5	61	37	142	108	105	771	5115
7 8-11	143	243	10	0	0	0	0	3	37	112	221	278	1047	6162
7 12-15	56	216	13	0	0	0	0	0	113	122	358	827	1705	7867
7 16-19	271	870	98	2	1	0	1	3	224	140	452	1082	3144	11011
7 20-23	6316	28255	14961	1614	267	183	45	39	145	203	446	1144	53618	64629
7 24-27	10260	56117	43268	3207	395	309	67	65	100	251	344	640	115023	179652
7 28-31	2128	13719	14902	1078	67	65	99	17	49	209	597	516	33446	213098
8 1- 4	341	1626	629	32	4	0	7	18	43	171	385	628	3884	216982
8 5- 8	545	1904	390	22	2	3	21	44	71	162	390	498	4052	221034
8 9-11	484	2028	567	40	3	0	3	11	20	58	154	248	3616	224650
Total	21155	105377	74898	6002	741	562	283	287	1144	2114	4129	7958	224650	

* Total count may differ from total fish targets because of method used to average for debris.

Appendix Table 6. Kenai River north bank side scan sonar counts by hour, 22 June through 11 August 1985.

	HOUR																							
DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
6 22	0	4	4	0	28	8	5	5	41	7	1	20	7	3	7	8	28	6	1	2	1	1	1	10
6 23	0	0	3	0	23	14	18	14	10	2	13	46	12	38	6	34	11	1	3	36	5	15	5	0
6 24	6	3	7	16	20	28	29	6	8	0	3	13	12	0	2	4	16	35	19	8	2	2	2	2
6 25	2	11	3	5	5	12	22	32	16	13	33	14	11	5	5	4	0	13	19	4	5	11	9	3
6 26	21	2	13	6	0	15	12	28	2	3	6	7	8	29	1	20	1	28	28	5	16	14	2	22
6 27	7	4	10	11	20	21	13	4	20	6	2	10	8	22	6	4	4	0	6	2	3	5	5	2
6 28	7	10	7	8	8	21	22	24	10	15	4	5	9	24	8	30	10	3	11	12	10	3	7	20
6 29	3	13	23	14	18	17	9	15	2	7	6	10	7	13	5	10	10	6	15	15	8	9	5	9
6 30	36	41	13	14	9	19	21	9	14	6	14	5	8	12	1	9	4	4	18	18	18	18	18	18
7 1	69	62	35	41	29	46	51	57	35	25	32	52	61	64	63	59	50	90	54	81	112	64	71	28
7 2	37	45	40	15	21	27	16	10	16	19	20	18	7	12	16	10	19	10	18	13	13	13	10	14
7 3	15	12	32	15	13	19	19	8	12	10	3	6	9	14	11	18	12	9	12	16	16	25	18	17
7 4	15	34	24	18	15	17	17	15	23	25	13	72	28	22	30	47	59	107	104	31	148	75	131	145
7 5	74	145	65	70	59	27	39	23	36	24	15	15	17	31	23	19	15	19	25	33	25	58	69	161
7 6	240	237	108	136	41	18	24	25	40	28	15	54	54	54	54	6	13	3	12	16	35	34	35	57
7 7	54	78	58	49	6	13	5	8	6	10	9	7	11	12	8	10	12	22	42	67	61	58	90	81
7 8	50	72	77	24	24	12	7	12	25	23	37	23	45	21	40	42	73	163	236	315	193	139	130	176
7 9	66	78	31	17	28	22	14	9	10	24	5	24	7	5	8	3	6	14	24	12	8	14	39	41
7 10	80	79	69	64	39	16	11	14	16	20	19	22	25	24	17	5	13	12	19	24	20	28	64	117
7 11	218	152	54	46	21	24	24	5	8	6	7	7	14	17	8	28	30	47	46	47	29	51	34	101
7 12	57	23	18	20	9	10	16	19	25	11	8	23	31	24	35	72	73	72	32	48	22	52	79	40
7 13	48	16	46	59	30	22	5	4	5	5	6	10	2	3	2	0	1	0	1	1	1	1	1	2
7 14	3	1	0	0	0	0	1	3	2	0	0	0	5	6	4	1	5	5	119	315	1226	1057	714	706
7 15	794	248	132	93	88	124	265	719	556	104	81	68	137	562	561	366	71	63	219	242	461	992	1356	451
7 16	586	209	260	308	281	412	499	848	781	261	177	582	1131	1175	399	824	1108	1218	1514	1355	1411	992	665	623
7 17	478	418	230	226	140	108	64	61	54	28	23	26	25	39	28	17	17	23	18	24	44	57	80	89
7 18	176	188	189	88	45	20	17	17	21	40	21	48	26	17	35	39	29	19	10	19	15	13	32	21
7 19	22	29	34	31	9	12	5	6	5	5	17	13	12	17	7	3	9	5	14	13	16	10	10	18
7 20	15	14	34	21	10	10	27	8	8	7	23	18	17	15	4	4	2	24	7	15	4	4	6	5
7 21	6	14	12	6	7	11	5	3	19	8	15	13	16	16	15	9	34	30	31	50	113	340	336	342
7 22	259	270	360	472	523	517	606	804	875	934	871	2141	561	410	352	481	471	685	972	1066	887	890	948	482
7 23	500	427	398	194	105	519	507	311	430	355	360	762	781	968	493	364	711	960	1345	2132	1717	2426	1882	1150
7 24	1284	1292	862	646	599	950	981	870	892	939	1341	1358	1159	1531	1474	1776	1978	2813	2539	1725	2303	4771	5356	3130
7 25	2330	2546	2138	1424	519	408	908	1713	1191	148	152	470	514	402	234	374	669	246	197	254	896	2671	5246	1876
7 26	2627	2562	2140	1095	768	265	278	674	718	155	139	394	434	336	422	360	337	213	1154	2373	3988	3510	4213	1099
7 27	1271	2300	1686	735	238	196	361	224	448	128	164	492	366	464	121	38	134	726	111	314	465	990	2355	2961
7 28	2449	2886	1581	467	533	220	266	356	1261	475	387	478	164	68	219	109	306	271	85	475	144	776	1361	2447
7 29	3164	2817	1493	1082	431	521	58	61	140	73	83	48	56	73	92	208	202	156	152	262	378	394	311	1172
7 30	2623	2202	1137	964	324	124	42	10	16	56	37	306	218	311	298	144	141	182	208	165	172	127	122	643
7 31	1295	951	287	74	19	24	67	25	43	38	52	110	88	93	154	354	196	287	174	75	48	61	116	114
8 1	87	91	67	59	31	63	69	52	40	51	40	94	80	212	298	174	142	129	98	58	73	81	80	88
8 2	57	77	28	12	18	16	11	21	15	31	22	12	32	52	49	87	94	162	57	32	32	57	56	25
8 3	32	26	16	20	11	24	59	9	8	9	15	13	48	50	34	100	109	86	65	49	68	33	39	23
8 4	46	51	29	19	15	35	35	43	60	58	27	51	67	45	90	50	81	112	73	64	65	53	50	50
8 5	20	21	22	9	10	16	30	12	8	10	3	6	18	7	22	23	16	17	34	17	29	26	39	59
8 6	70	48	28	26	21	59	51	26	10	11	15	37	26	23	28	51	31	49	37	30	30	60	37	39
8 7	48	49	48	24	37	39	21	15	8	18	6	37	25	27	68	14	49	33	54	38	26	57	94	57
8 8	38	67	36	35	16	76	58	24	48	21	59	48	51	54	56	28	57	54	57	99	54	51	61	70
8 9	194	173	112	50	17	7	30	18	39	42	46	40	44	35	47	65	111	51	36	44	51	55	99	115
8 10	221	393	110	101	43	28	28	18	25	24	8	27	39	33	66	80	68	54	56	58	96	36	67	111
8 11	298	462	303	162	22	22	98	76	41	60	136	68	39	41	57	109	77	91	140	105	84	16	72	43

Appendix Table 7. Kenai River south bank side scan sonar counts by hour, 22 June through 11 August 1985.

	HOUR																							
DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
6 22	0	10	19	9	7	6	7	0	1	1	1	0	0	0	0	2	5	3	0	2	1	3	15	8
6 23	8	21	13	14	11	16	33	21	5	9	23	6	1	5	0	0	3	14	11	15	28	35	21	16
6 24	21	23	28	34	7	23	8	11	10	3	5	0	6	1	5	6	11	12	36	11	48	11	7	2
6 25	11	1	12	11	11	9	12	9	3	7	6	4	8	5	2	3	5	4	12	30	38	24	9	1
6 26	31	24	9	8	12	6	5	9	3	9	2	1	5	6	1	21	8	5	6	4	5	28	4	18
6 27	10	31	35	13	16	3	3	30	11	6	0	4	8	1	2	3	61	5	7	11	15	12	14	31
6 28	16	13	42	32	23	47	36	47	26	20	6	26	18	15	20	10	19	37	17	29	9	18	19	12
6 29	17	29	21	16	5	25	29	15	30	13	16	22	10	2	9	8	11	31	12	77	29	50	25	38
6 30	44	50	20	14	6	16	12	11	4	9	6	1	7	21	17	5	8	15	18	15	16	23	19	25
7 1	15	31	17	17	6	7	26	13	9	10	18	16	26	21	56	106	19	25	60	45	44	43	43	24
7 2	34	23	18	10	34	13	20	4	25	12	60	40	10	4	8	8	38	4	9	11	13	2	7	2
7 3	7	16	8	6	1	2	7	7	4	4	1	14	3	4	6	4	7	5	12	21	9	11	32	10
7 4	6	6	14	4	3	2	12	12	12	0	6	3	3	9	4	19	16	12	6	0	23	15	12	18
7 5	10	11	5	9	10	3	2	24	1	1	0	0	11	17	13	8	5	5	3	2	5	12	14	5
7 6	9	14	20	10	3	18	7	4	1	27	5	4	0	7	11	0	4	20	15	1	10	3	15	2
7 7	3	10	9	0	6	0	0	1	0	6	1	0	1	25	17	14	7	4	1	13	12	11	9	18
7 8	15	23	14	9	10	6	7	3	5	4	10	10	4	3	8	5	9	19	12	4	24	20	14	16
7 9	55	61	25	12	9	9	8	3	0	5	3	5	0	0	8	4	5	6	14	6	3	15	16	17
7 10	5	0	9	5	1	3	1	2	2	1	1	0	1	4	9	5	8	9	8	6	11	10	13	18
7 11	12	18	19	5	6	0	4	0	0	3	1	0	2	6	3	11	16	14	16	179	8	10	19	20
7 12	25	11	12	10	2	1	6	1	0	4	1	7	5	1	12	52	6	11	6	18	12	12	16	22
7 13	10	9	17	9	4	0	0	1	3	5	10	19	3	5	11	7	15	14	11	15	25	24	25	3
7 14	17	14	14	4	5	12	6	4	3	2	3	0	4	26	12	11	1	6	63	7	17	25	35	53
7 15	29	57	26	19	14	18	26	12	22	26	24	18	28	16	14	169	24	40	35	17	40	49	69	70
7 16	102	125	147	107	24	26	21	64	79	48	85	68	34	48	59	87	60	70	84	61	91	47	45	118
7 17	197	134	48	21	4	30	21	26	15	34	47	39	17	6	16	18	39	20	11	20	15	12	117	41
7 18	13	44	36	16	1	1	3	6	2	6	22	1	1	5	9	12	4	8	20	17	10	10	6	9
7 19	10	8	5	9	4	5	3	19	19	2	5	14	13	13	11	7	7	20	14	13	16	5	6	6
7 20	6	15	3	1	2	3	8	21	8	17	11	23	9	22	11	3	12	17	13	10	13	11	7	6
7 21	1	3	2	2	6	1	2	16	11	2	2	3	15	6	13	6	16	22	26	14	114	134	75	129
7 22	95	89	36	28	11	25	47	137	226	564	93	533	599	546	753	846	714	1080	1413	792	2037	1020	564	1235
7 23	880	434	280	125	64	58	102	365	790	292	816	1104	906	2010	1897	4782	3258	3392	2960	2763	3340	2914	2803	2927
7 24	2343	1787	809	683	393	229	751	1106	1629	1255	1339	956	710	2385	1848	1621	1939	3445	3079	3351	2756	4648	2662	2627
7 25	2174	1525	501	426	105	197	297	402	526	258	120	596	777	366	1550	650	1975	2088	2011	1850	4024	2418	1052	1631
7 26	1825	1223	314	876	185	243	120	391	967	489	224	205	1050	1010	1330	2513	1454	1490	1919	2575	2017	2774	2430	2443
7 27	3770	1286	443	210	41	44	86	62	333	116	123	199	86	180	206	259	68	22	84	626	1638	1758	1151	295
7 28	2150	1365	481	97	19	70	125	110	491	200	53	40	10	13	10	22	33	80	2013	1629	2155	2379	1942	1389
7 29	783	460	151	17	16	44	86	47 *	35	26	89	5	76	114	55	14	7	13	30	137	143	1383	2442	1591
7 30	1598	388	1095	552	158	27	16	33	20	23	7	5	5	11	16	59	127	47	85	120	249	998	721	142
7 31	365	617	275	60	72	57	9	3	73	49	19	11	15	20	22	30	37	34	35	52	41	35	90	282
8 1	557	675	253	106	24	17	10	75	1	5	12	4	9	36	42	16	25	16	12	28	16	23	10	45
8 2	83	106	118	54	5	2	8	4	6	6	17	7	21	28	12	13	33	34	18	46	31	18	25	9
8 3	36	28	26	48	12	4	4	4	5	5	3	3	8	11	10	2	4	25	16	12	58	124	81	77
8 4	100	130	61	55	15	6	3	6	9	0	10	7	10	10	19	15	13	16	18	3	12	11	6	21
8 5	129	226	157	76	14	5	5	6	3	9	7	10	11	4	5	17	4	16	10	24	27	23	1	100
8 6	164	212	338	227	114	29	9	11	9	15	6	13	4	18	5	12	18	16	13	16	19	9	17	27
8 7	70	48	28	26	21	59	51	1	7	5	2	24	6	35	30	14	10	12	21	42	39	24	32	78
8 8	238	250	123	118	84	14	3	4	4	4	15	5	6	16	4	20	7	20	11	13	52	23	17	106
8 9	190	200	147	92	40	6	7	0	10	6	3	2	7	0	0	1	8	3	11	6	12	27	54	204
8 10	574	282	158	128	33	11	2	12	0	1	10	17	33	21	18	18	6	8	7	5	13	20	15	96
8 11	327	216	78	86	25	13	6	22	1	8	6	10	4	7	10	16	20	13	13	20	42	2	43	104

Appendix Table 8. Fish targets recorded on the north bank of the Kenai river, 22 June through 11 August, 1985.

	FISH TARGETS		SOCKEYE		PINK		COHO		CHINOOK	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
6/22	217	217	203	203	10	10	0	0	4	4
6/23	313	530	293	496	14	24	0	0	6	10
6/24	339	869	317	813	16	40	0	0	6	16
6/25	252	1,121	236	1,049	11	51	0	0	5	21
6/26	284	1,405	266	1,315	13	64	0	0	5	26
6/27	198	1,603	185	1,500	9	73	0	0	4	30
6/28	285	1,888	267	1,767	13	86	0	0	5	35
6/29	265	2,153	248	2,015	12	98	0	0	5	40
6/30	310	2,463	290	2,305	14	112	0	0	6	46
7/ 1	1,332	3,795	1,246	3,551	62	174	0	0	24	70
7/ 2	455	4,250	426	3,977	21	195	0	0	8	78
7/ 3	332	4,582	311	4,288	15	210	0	0	6	84
7/ 4	1,149	5,731	1,075	5,363	53	263	0	0	21	105
7/ 5	1,076	6,807	1,006	6,369	51	314	0	0	19	124
7/ 6	1,348	8,155	1,261	7,630	63	377	0	0	24	148
7/ 7	777	8,932	727	8,357	36	413	0	0	14	162
7/ 8	1,959	10,891	1,832	10,189	92	505	0	0	35	197
7/ 9	500	11,391	468	10,657	23	528	0	0	9	206
7/10	815	12,206	762	11,419	38	566	0	0	15	221
7/11	1,024	13,230	958	12,377	48	614	0	0	18	239
7/12	827	14,057	773	13,150	39	653	0	0	15	254
7/13	271	14,328	264	13,414	6	659	0	0	1	255
7/14	4,173	18,501	4,072	17,486	88	747	0	0	13	268
7/15	8,751	27,252	8,539	26,025	186	933	0	0	26	294
7/16	17,634	44,886	17,567	43,592	54	987	13	13	0	294
7/17	2,332	47,218	2,296	45,888	36	1,023	0	13	0	294
7/18	1,143	48,361	1,113	47,001	16	1,039	14	27	0	294
7/19	323	48,684	315	47,316	4	1,043	4	31	0	294
7/20	302	48,986	294	47,610	4	1,047	4	35	0	294
7/21	1,451	50,437	1,413	49,023	21	1,068	17	52	0	294

(continued)

Appendix Table 8. Fish targets recorded on the north bank of the Kenai River, 22 June through 11 August, 1985 (continued).

	FISH TARGETS		SOCKEYE		PINK		COHO		CHINOOK	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
7/22	16,837	67,274	16,401	65,424	234	1,302	202	254	0	294
7/23	19,793	87,067	19,377	84,801	196	1,498	147	401	73	367
7/24	42,567	129,634	42,366	127,167	0	1,498	201	602	0	367
7/25	28,188	157,822	27,917	155,084	0	1,498	271	873	0	367
7/26	30,258	188,080	30,030	185,114	228	1,726	0	873	0	367
7/27	17,045	205,125	16,855	201,969	0	1,726	190	1,063	0	367
7/28	17,784	222,909	17,784	219,753	0	1,726	0	1,063	0	367
7/29	13,427	236,336	13,276	233,029	0	1,726	151	1,214	0	367
7/30	10,572	246,908	10,127	243,156	0	1,726	445	1,659	0	367
7/31	4,745	251,653	4,745	247,901	0	1,726	0	1,659	0	367
8/ 1	2,257	253,910	2,257	250,158	0	1,726	0	1,659	0	367
8/ 2	1,056	254,966	1,007	251,165	37	1,763	6	1,665	6	373
8/ 3	932	255,898	889	252,054	32	1,795	6	1,671	5	378
8/ 4	1,232	257,130	1,175	253,229	43	1,838	7	1,678	7	385
8/ 5	475	257,605	453	253,682	17	1,855	2	1,680	3	388
8/ 6	849	258,454	810	254,492	29	1,884	5	1,685	5	393
8/ 7	892	259,346	851	255,343	31	1,915	5	1,690	5	398
8/ 8	1,218	260,564	1,162	256,505	42	1,957	7	1,697	7	405
8/ 9	1,521	262,085	1,451	257,956	52	2,009	9	1,706	9	414
8/10	1,787	263,872	1,704	259,660	62	2,071	11	1,717	10	424
8/11	2,622	266,494	2,501	262,161	91	2,162	15	1,732	15	439

Appendix Table 9. Fish targets recorded on the south bank of the Kenai River, 22 June through 11 August, 1985.

	FISH TARGETS		SOCKEYE		PINK		COHO		CHINOOK	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
6/22	101	101	95	95	4	4	1	1	1	1
6/23	329	430	308	403	15	19	1	2	5	6
6/24	329	759	308	711	15	34	1	3	5	11
6/25	237	996	222	933	11	45	1	4	3	14
6/26	228	1,224	213	1,146	11	56	1	5	3	17
6/27	332	1,556	311	1,457	15	71	1	6	5	22
6/28	557	2,113	521	1,978	26	97	2	8	8	30
6/29	540	2,653	506	2,484	24	121	2	10	8	38
6/30	382	3,035	358	2,842	17	138	2	12	5	43
7/ 1	697	3,732	653	3,495	32	170	2	14	10	53
7/ 2	409	4,141	383	3,878	19	189	1	15	6	59
7/ 3	201	4,342	188	4,066	9	198	1	16	3	62
7/ 4	210	4,552	197	4,263	9	207	1	17	3	65
7/ 5	176	4,728	165	4,428	8	215	1	18	2	67
7/ 6	210	4,938	197	4,625	9	224	1	19	3	70
7/ 7	168	5,106	157	4,782	8	232	1	20	2	72
7/ 8	248	5,354	232	5,014	12	244	0	20	4	76
7/ 9	289	5,643	271	5,285	13	257	1	21	4	80
7/10	132	5,775	124	5,409	6	263	0	21	2	82
7/11	372	6,147	348	5,757	17	280	2	23	5	87
7/12	253	6,400	237	5,994	12	292	0	23	4	91
7/13	245	6,645	229	6,223	12	304	1	24	3	94
7/14	344	6,989	322	6,545	16	320	1	25	5	99
7/15	863	7,852	808	7,353	40	360	3	28	12	111
7/16	1,700	9,552	1,591	8,944	79	439	6	34	24	135
7/17	948	10,500	887	9,831	44	483	4	38	13	148
7/18	262	10,762	250	10,081	4	487	4	42	4	152
7/19	234	10,996	223	10,304	3	490	4	46	4	156
7/20	257	11,253	245	10,549	4	494	4	50	4	160
7/21	624	11,877	596	11,145	8	502	10	60	10	170

(continued)

Appendix Table 9. Fish targets recorded on the south bank of the Kenai River, 22 June through 11 August, 1985 (continued).

	FISH TARGETS		SOCKEYE		PINK		COHO		CHINOOK	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
7/22	13,476	25,353	12,867	24,012	174	676	218	278	217	387
7/23	39,262	64,615	37,489	61,501	506	1,182	634	912	633	1,020
7/24	44,357	108,972	44,357	105,858	0	1,182	0	912	0	1,020
7/25	27,516	136,488	27,516	133,374	0	1,182	0	912	0	1,020
7/26	30,067	166,555	30,067	163,441	0	1,182	0	912	0	1,020
7/27	13,092	179,647	13,092	176,533	0	1,182	0	912	0	1,020
7/28	16,874	196,521	16,874	193,407	0	1,182	0	912	0	1,020
7/29	7,780	204,301	7,780	201,187	0	1,182	0	912	0	1,020
7/30	6,506	210,807	6,506	207,693	0	1,182	0	912	0	1,020
7/31	2,303	213,110	2,303	209,996	0	1,182	0	912	0	1,020
8/ 1	2,017	215,127	2,017	212,013	0	1,182	0	912	0	1,020
8/ 2	705	215,832	645	212,658	0	1,182	0	912	60	1,080
8/ 3	605	216,437	554	213,212	0	1,182	0	912	51	1,131
8/ 4	558	216,995	511	213,723	0	1,182	0	912	47	1,178
8/ 5	889	217,884	814	214,537	0	1,182	0	912	75	1,253
8/ 6	1,318	219,202	1,206	215,743	0	1,182	0	912	112	1,365
8/ 7	685	219,887	627	216,370	0	1,182	0	912	58	1,423
8/ 8	1,156	221,043	1,058	217,428	0	1,182	0	912	98	1,521
8/ 9	1,034	222,077	946	218,374	0	1,182	0	912	88	1,609
8/10	1,491	223,568	1,365	219,739	0	1,182	0	912	126	1,735
8/11	1,092	224,660	999	220,738	0	1,182	0	912	93	1,828

Appendix Table 10. Daily adjusted fishwheel catch by species for the north bank of the Kenai River, 10 July through 8 August, 1985. *

Date	Hours Open	Sockeye		Pink		Coho		Chinook	
		Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
7/10	21.0	71	71	2	2			5	5
7/11	26.0	75	146	6	8				5
7/12	21.5	114	260	5	13				5
7/13	26.0	20	280	2	15				5
7/14	23.0	33	313	3	18			1	6
7/15	15.0	270	583	2	20				6
7/16	17.5	1,318	1,901	4	24	1	1		6
7/17	9.0	192	2,093	3	27		1		6
7/18	8.0	27	2,120		27		1		6
7/19	10.0	12	2,132		27		1		6
7/20	21.0	11	2,143	1	28		1		6
7/21	10.5	5	2,148	2	30		1		6
7/22	2.5	1,488	3,636	19	49	19	20		6
7/23	8.5	791	4,427	8	57	6	26	3	9
7/24	1.5	3,376	7,803		57	16	42		9
7/25	2.75	1,754	9,557		57	17	59		9
7/26	3.0	1,056	10,613	8	65		59		9
7/27	11.5	889	11,502		65	10	69		9
7/28	0.5	1,824	13,326		65		69		9
7/29	3.0	704	14,030		65		69		9
7/30	5.5	205	14,235		65		69		9
7/31	5.0	120	14,355		65		69		9
8/01	6.0	64	14,419		65		69		9
8/02	5.0	14	14,433		65		69		9
8/03	21.0	33	14,466		65	1	70		9

(continued)

Appendix Table 10. Daily adjusted fishwheel catch by species for the north bank of the Kenai River, 10 July through 8 August, 1985 (Continued).

Date	Hours Open	Sockeye		Pink		Coho		Chinook	
		Daily	Cum	Daily	Cum.	Daily	Cum.	Daily	Cum.
8/04	24.0	27	14,493		65		70		9
8/05	27.5	28	14,521	2	67		70		9
8/06	28.0	13	14,534	1	68		70	1	10
8/07	21.0	21	14,555	1	69		70		10
8/08	20.0	29	14,584	2	71		70		10
Total		14,584		71			70		10

* Fishwheel catch adjusted for 24 hours: (daily catch x 24 hours)/hours open.
Actual catch by species: 3,294 sockeye salmon; 37 pink salmon; 17 coho salmon; 7 chinook salmon; 4 rainbow trout; 1 Dolly Varden trout;, and one round whitefish.

Appendix Table 11. Daily adjusted fishwheel catch by species for the south bank of the Kenai River, 10 July through 3 August, 1985. *

Date	Hours Open	Sockeye		Pink		Coho		Chinook	
		Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
7/10	23.0	9	9					1	1
7/11	28.0	12	21	1	1				1
7/12	19.0	11	32	1	2			1	2
7/13	28.5	4	36	2	4				2
7/14	22.0	13	49	5	9				2
7/15	23.0	27	76	1	10	1	1		2
7/16	31.5	63	139		10		1	2	4
7/17	7.5	125	264	3	13		1		4
7/18	8.0	18	282		13		1		4
7/19	25.5	7	289		13		1	2	6
7/20	21.0	9	298	3	16		1	1	7
7/21	27.0	1	299	1	17		1	1	8
7/22	16.0	82	381		17		1	1	9
7/23	9.0	179	560		17	5	6		9
7/24	2.25	192	752		17		6		9
7/25	2.25	352	1,104		17		6		9
7/26	4.75	283	1,387		17		6		9
7/27	15.0	106	1,493		17		6		9
7/28	5.5	92	1,585		17		6		9
7/29	9.0	75	1,660		17		6		9
7/30	5.5	35	1,695		17		6		9
7/31	6.0	24	1,719		17		6		9
8/01	7.5	58	1,777		17		6		9
8/02	5.0	19	1,796		17		6	5	14
8/03	9.0	35	1,831		17		6		14
Total		1,831		17		6		14	

* Fishwheel catch adjusted for 24 hours: (daily catch x 24 hours)/hours open.
Actual catch by species: 619 sockeye salmon; 15 pink salmon; 3 coho salmon; and 10 chinook salmon.

Appendix Table 12. Length composition of the major age classes of sockeye salmon collected in the Kenai River, 1979-1985.[1]

		Male			Female			Total			
Year	Age Class	Average Length (mm)[1]	Standard Error	Sample Size	Average Length (mm)	Standard Error	Sample Size	Average Length (mm)	Standard Error	Sample Size	Ratio Male-Female
1979	1.2	493	9.7	41	528	6.6	33	508	6.4	74	1.2:1
1980		482	3.9	168	494	3.6	100	486	---	268	1.7:1
1981		493	5.6	85	513	5.6	73	502	---	158	1.2:1
1982		483	8.9	70	505	12.6	32	490	10.0	63	2.2:1
1983		524	8.7	25	520	5.5	30	522	5.0	55	0.8:1
1984		474	2.8	280	473	3.5	196	474	2.2	476	1.4:1
1985		492	3.3	184	490	3.0	186	491	2.2	370	1.0:1
1979	1.3	605	3.2	122	587	2.4	114	596	2.1	236	1.1:1
1980		580	2.9	180	561	2.2	192	570	---	372	0.9:1
1981		590	1.8	290	569	1.3	430	577	---	720	0.7:1
1982		596	1.9	723	572	1.3	841	583	1.6	1,564	0.9:1
1983		598	2.1	215	577	1.2	269	586	1.1	484	0.8:1
1984		582	1.6	385	559	1.4	395	571	1.0	780	1.0:1
1985		575	1.5	496	552	0.9	824	560	0.8	1,320	0.6:1
1984	2.2	505	3.6	116	508	3.0	159	507	2.3	275	0.7:1
1985		513	3.5	132	513	2.6	196	513	2.1	328	0.7:1
1980	2.3	589	2.7	67	579	3.2	80	584	---	147	0.8:1
1982		598	4.9	46	580	8.4	21	592	6.0	67	2.2:1
1983		595	4.2	--	582	4.2	--	587	3.0	61	0.7:1
1984		570	2.3	210	557	1.7	192	564	1.5	402	1.1:1
1985		570	2.8	106	555	2.1	129	562	1.7	235	0.8:1

[1] Length measured mid-eye to fork of tail.

Appendix Table 13. Weight composition of the major age classes of sockeye salmon collected in the Kenai River, 1981-1985.

		Male			Female			Total		
Year	Age Class	Average Weight (kg)	Standard Error	Sample Size	Average Weight (kg)	Standard Error	Sample Size	Average Weight (kg)	Standard Error	Sample Size
1981	1.2	2.1	0.07	85	2.3	0.07	73	2.2	---	158
1982		1.9	0.15	47	2.0	0.20	16	1.9	0.17	63
1983		2.2	0.09	25	2.2	0.07	30	2.2	0.06	55
1984		1.9	0.07	66	1.9	0.07	54	1.9	0.05	120
1985		1.9	0.06	56	1.8	0.05	45	1.8	0.04	101
1981	1.3	3.8	0.04	290	3.2	0.02	430	3.4	---	720
1982		4.0	0.06	413	3.3	0.04	444	3.7	0.05	857
1983		3.7	0.04	215	3.2	0.02	269	3.4	0.02	484
1984		3.2	0.07	96	3.0	0.05	103	3.1	0.04	199
1985		3.2	0.05	127	2.7	0.02	218	2.9	0.02	345
1981	2.2	2.3	0.08	42	2.3	0.06	46	2.3	---	88
1985		2.0	0.07	33	1.8	0.05	50	1.9	0.04	83
1981	2.3	3.3	0.13	20	3.3	0.10	27	3.3	---	47
1982		3.6	0.16	26	3.3	0.26	13	3.5	0.19	39
1983		3.5	0.10	26	3.2	0.07	35	3.3	0.06	61
1984		3.2	0.10	36	2.8	0.05	62	3.0	0.05	98
1985		3.0	0.10	26	2.7	0.06	21	2.8	0.06	47

Appendix Table 14. Fish targets recorded in the Kasilof River, north and south banks combined, 13 June through 11 August, 1985. *

Date	FISH TARGETS Daily	FISH TARGETS Accum	SOCKEYE Daily	SOCKEYE Accum	PINK Daily	PINK Accum	COHO Daily	COHO Accum	CHINOOK Daily	CHINOOK Accum
6/13	93	93	89	89	3	3	0	0	1	1
6/14	275	368	261	350	12	15	0	0	2	3
6/15	245	613	233	583	11	26	0	0	1	4
6/16	287	900	274	857	12	38	0	0	1	5
6/17	315	1,215	298	1,155	15	53	0	0	2	7
6/18	247	1,462	235	1,390	11	64	0	0	1	8
6/19	273	1,735	260	1,650	12	76	0	0	1	9
6/20	452	2,187	432	2,082	18	94	0	0	2	11
6/21	315	2,502	300	2,382	13	107	0	0	2	13
6/22	473	2,975	457	2,839	14	121	0	0	2	15
6/23	694	3,669	668	3,507	23	144	0	0	3	18
6/24	1,292	4,961	1,246	4,753	41	185	0	0	5	23
6/25	1,558	6,519	1,490	6,243	60	245	0	0	8	31
6/26	1,028	7,547	990	7,233	34	279	0	0	4	35
6/27	1,125	8,672	1,078	8,311	42	321	0	0	5	40
6/28	1,659	10,331	1,590	9,901	61	382	0	0	8	48
6/29	1,648	11,979	1,580	11,481	60	442	0	0	8	56
6/30	1,994	13,973	1,922	13,403	64	506	0	0	8	64
7/ 1	3,368	17,341	3,210	16,613	140	646	0	0	18	82
7/ 2	1,814	19,155	1,724	18,337	80	726	0	0	10	92
7/ 3	2,790	21,945	2,663	21,000	112	838	0	0	15	107
7/ 4	6,331	28,276	6,090	27,090	213	1,051	0	0	28	135
7/ 5	5,325	33,601	5,080	32,170	225	1,276	0	0	20	155
7/ 6	2,417	36,018	2,323	34,493	83	1,359	0	0	11	166
7/ 7	3,955	39,973	3,776	38,269	158	1,517	0	0	21	187
7/ 8	8,671	48,644	8,429	46,698	217	1,734	0	0	25	212
7/ 9	3,901	52,545	3,876	50,574	25	1,759	0	0	0	212
7/10	6,057	58,602	5,907	56,481	119	1,878	0	0	31	243
7/11	2,330	60,932	2,237	58,718	66	1,944	0	0	27	270
7/12	3,899	64,831	3,739	62,457	113	2,057	0	0	47	317

(continued)

Appendix Table 14. Fish targets recorded in the Kasilof River, north and south banks combined, 13 June through 11 August, 1985 (Continued). *

	FISH TARGETS		SOCKEYE		PINK		COHO		CHINOOK	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
7/13	11,219	76,050	11,043	73,500	169	2,226	0	0	7	324
7/14	30,738	106,788	30,490	103,990	240	2,466	0	0	8	332
7/15	29,833	136,621	29,696	133,686	55	2,521	0	0	82	414
7/16	58,518	195,139	58,176	191,862	68	2,589	0	0	274	688
7/17	19,301	214,440	17,798	209,660	1,435	4,024	0	0	68	756
7/18	7,771	222,211	7,135	216,795	636	4,660	0	0	0	756
7/19	2,439	224,650	2,199	218,994	86	4,746	8	8	146	902
7/20	1,443	226,093	1,301	220,295	50	4,796	6	14	86	988
7/21	14,458	240,551	13,033	233,328	498	5,294	57	71	870	1,858
7/22	46,082	286,633	43,931	277,259	790	6,084	44	115	1,317	3,175
7/23	29,285	315,918	29,132	306,391	102	6,186	0	115	51	3,226
7/24	20,444	336,362	20,353	326,744	61	6,247	0	115	30	3,256
7/25	17,049	353,411	16,929	343,673	30	6,277	0	115	90	3,346
7/26	26,250	379,661	25,334	369,007	680	6,957	0	115	236	3,582
7/27	30,416	410,077	29,354	398,361	759	7,716	0	115	303	3,885
7/28	17,977	428,054	17,604	415,965	44	7,760	0	115	329	4,214
7/29	8,390	436,444	8,068	424,033	149	7,909	0	115	173	4,387
7/30	5,746	442,190	5,530	429,563	96	8,005	0	115	120	4,507
7/31	6,121	448,311	5,955	435,518	87	8,092	0	115	79	4,586
8/ 1	5,306	453,617	5,166	440,684	72	8,164	0	115	68	4,654
8/ 2	3,018	456,635	2,935	443,619	44	8,208	0	115	39	4,693
8/ 3	4,780	461,415	4,664	448,283	57	8,265	0	115	59	4,752
8/ 4	4,363	465,778	4,097	452,380	63	8,328	79	194	124	4,876
8/ 5	2,894	468,672	2,713	455,093	35	8,363	59	253	87	4,963
8/ 6	3,083	471,755	2,893	457,986	41	8,404	59	312	90	5,053
8/ 7	4,072	475,827	3,820	461,806	53	8,457	80	392	119	5,172
8/ 8	5,610	481,437	5,268	467,074	81	8,538	102	494	159	5,331
8/ 9	5,869	487,306	5,510	472,584	83	8,621	109	603	167	5,498
8/10	3,474	490,780	3,262	475,846	50	8,671	63	666	99	5,597
8/11	2,315	493,095	2,187	478,033	52	8,723	23	689	53	5,650

(continued)

Appendix Table 14. Fish targets recorded in the Kasilof River, north and south banks combined, 13 June through 11 August, 1985 (Continued). *

	FISH TARGETS		SOCKEYE		PINK		COHO		CHINOOK	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
Total	493,095		505,049		8,723		689		5,650	

* Sonar counts apportioned by fishwheel catch.
Total for sockeye salmon includes estimates of 1,237 fish which entered the system prior to 13 June and 25,779 fish which entered the system after 11 August, 1985.

Appendix Table 15. Fish targets recorded on the north bank of the Kasilof river, 13 June through 11 August, 1985.

	FISH TARGETS		SOCKEYE		PINK		COHO		CHINOOK	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
6/13	34	34	34	34	0	0	0	0	0	0
6/14	86	120	86	120	0	0	0	0	0	0
6/15	75	195	75	195	0	0	0	0	0	0
6/16	115	310	114	309	1	1	0	0	0	0
6/17	97	407	96	405	1	2	0	0	0	0
6/18	80	487	80	485	0	2	0	0	0	0
6/19	103	590	102	587	1	3	0	0	0	0
6/20	187	777	186	773	1	4	0	0	0	0
6/21	126	903	125	898	1	5	0	0	0	0
6/22	280	1,183	278	1,176	2	7	0	0	0	0
6/23	367	1,550	365	1,541	2	9	0	0	0	0
6/24	706	2,256	702	2,243	4	13	0	0	0	0
6/25	676	2,932	672	2,915	4	17	0	0	0	0
6/26	538	3,470	535	3,450	3	20	0	0	0	0
6/27	522	3,992	519	3,969	3	23	0	0	0	0
6/28	760	4,752	756	4,725	4	27	0	0	0	0
6/29	759	5,511	755	5,480	4	31	0	0	0	0
6/30	1,085	6,596	1,079	6,559	6	37	0	0	0	0
7/ 1	1,279	7,875	1,272	7,831	7	44	0	0	0	0
7/ 2	623	8,498	619	8,450	4	48	0	0	0	0
7/ 3	1,028	9,526	1,028	9,478	0	48	0	0	0	0
7/ 4	2,993	12,519	2,993	12,471	0	48	0	0	0	0
7/ 5	2,954	15,473	2,881	15,352	73	121	0	0	0	0
7/ 6	1,114	16,587	1,114	16,466	0	121	0	0	0	0
7/ 7	1,484	18,071	1,484	17,950	0	121	0	0	0	0
7/ 8	5,698	23,769	5,671	23,621	27	148	0	0	0	0
7/ 9	2,475	26,244	2,475	26,096	0	148	0	0	0	0
7/10	3,739	29,983	3,666	29,762	64	212	0	0	9	9
7/11	1,380	31,363	1,318	31,080	44	256	0	0	18	27
7/12	2,685	34,048	2,565	33,645	84	340	0	0	36	63

(continued)

Appendix Table 15. Fish targets recorded on the north bank of the Kasilof River, 13 June through 11 August, 1985 (continued).

Date	FISH TARGETS Daily	FISH TARGETS Accum	SOCKEYE Daily	SOCKEYE Accum	PINK Daily	PINK Accum	COHO Daily	COHO Accum	CHINOOK Daily	CHINOOK Accum
7/13	9,109	43,157	9,005	42,650	104	444	0	0	0	63
7/14	28,493	71,650	28,321	70,971	172	616	0	0	0	63
7/15	24,447	96,097	24,412	95,383	35	651	0	0	0	63
7/16	40,525	136,622	40,525	135,908	0	651	0	0	0	63
7/17	15,449	152,071	14,037	149,945	1,412	2,063	0	0	0	63
7/18	6,042	158,113	5,490	155,435	552	2,615	0	0	0	63
7/19	1,233	159,346	1,111	156,546	41	2,656	5	5	76	139
7/20	807	160,153	727	157,273	27	2,683	4	9	49	188
7/21	9,125	169,278	8,221	165,494	301	2,984	43	52	560	748
7/22	29,537	198,815	29,001	194,495	179	3,163	0	52	357	1,105
7/23	18,350	217,165	18,350	212,845	0	3,163	0	52	0	1,105
7/24	13,931	231,096	13,931	226,776	0	3,163	0	52	0	1,105
7/25	13,809	244,905	13,734	240,510	0	3,163	0	52	75	1,180
7/26	18,224	263,129	17,591	258,101	633	3,796	0	52	0	1,180
7/27	20,127	283,256	19,428	277,529	699	4,495	0	52	0	1,180
7/28	10,457	293,713	10,349	287,878	0	4,495	0	52	108	1,288
7/29	5,864	299,577	5,666	293,544	66	4,561	0	52	132	1,420
7/30	4,252	303,829	4,109	297,653	47	4,608	0	52	96	1,516
7/31	4,160	307,989	4,090	301,743	23	4,631	0	52	47	1,563
8/ 1	3,744	311,733	3,681	305,424	21	4,652	0	52	42	1,605
8/ 2	2,026	313,759	1,992	307,416	11	4,663	0	52	23	1,628
8/ 3	3,678	317,437	3,616	311,032	21	4,684	0	52	41	1,669
8/ 4	3,229	320,666	3,019	314,051	26	4,710	79	131	105	1,774
8/ 5	2,447	323,113	2,288	316,339	20	4,730	59	190	80	1,854
8/ 6	2,420	325,533	2,263	318,602	19	4,749	59	249	79	1,933
8/ 7	3,273	328,806	3,060	321,662	27	4,776	80	329	106	2,039
8/ 8	4,163	332,969	3,892	325,554	34	4,810	102	431	135	2,174
8/ 9	4,437	337,406	4,148	329,702	36	4,846	109	540	144	2,318
8/10	2,604	340,010	2,435	332,137	21	4,867	63	603	85	2,403
8/11	945	340,955	884	333,021	7	4,874	23	626	31	2,434

(continued)

Appendix Table 16. Fish targets recorded on the south bank of the Kasilof River, 13 June through 11 August, 1985.

	FISH TARGETS		SOCKEYE		PINK		COHO		CHINOOK	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
6/13	59	59	55	55	3	3	0	0	1	1
6/14	189	248	175	230	12	15	0	0	2	3
6/15	170	418	158	388	11	26	0	0	1	4
6/16	172	590	160	548	11	37	0	0	1	5
6/17	218	808	202	750	14	51	0	0	2	7
6/18	167	975	155	905	11	62	0	0	1	8
6/19	170	1,145	158	1,063	11	73	0	0	1	9
6/20	265	1,410	246	1,309	17	90	0	0	2	11
6/21	189	1,599	175	1,484	12	102	0	0	2	13
6/22	193	1,792	179	1,663	12	114	0	0	2	15
6/23	327	2,119	303	1,966	21	135	0	0	3	18
6/24	586	2,705	544	2,510	37	172	0	0	5	23
6/25	882	3,587	818	3,328	56	228	0	0	8	31
6/26	490	4,077	455	3,783	31	259	0	0	4	35
6/27	603	4,680	559	4,342	39	298	0	0	5	40
6/28	899	5,579	834	5,176	57	355	0	0	8	48
6/29	889	6,468	825	6,001	56	411	0	0	8	56
6/30	909	7,377	843	6,844	58	469	0	0	8	64
7/ 1	2,089	9,466	1,938	8,782	133	602	0	0	18	82
7/ 2	1,191	10,657	1,105	9,887	76	678	0	0	10	92
7/ 3	1,762	12,419	1,635	11,522	112	790	0	0	15	107
7/ 4	3,338	15,757	3,097	14,619	213	1,003	0	0	28	135
7/ 5	2,371	18,128	2,199	16,818	152	1,155	0	0	20	155
7/ 6	1,303	19,431	1,209	18,027	83	1,238	0	0	11	166
7/ 7	2,471	21,902	2,292	20,319	158	1,396	0	0	21	187
7/ 8	2,973	24,875	2,758	23,077	190	1,586	0	0	25	212
7/ 9	1,426	26,301	1,401	24,478	25	1,611	0	0	0	212
7/10	2,318	28,619	2,241	26,719	55	1,666	0	0	22	234
7/11	950	29,569	919	27,638	22	1,688	0	0	9	243
7/12	1,214	30,783	1,174	28,812	29	1,717	0	0	11	254

(continued)

Appendix Table 16. Fish targets recorded on the south bank of the Kasilof River, 13 June through 11 August, 1985, continued.

	FISH TARGETS		SOCKEYE		PINK		COHO		CHINOOK	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
7/13	2,110	32,893	2,038	30,850	65	1,782	0	0	7	261
7/14	2,245	35,138	2,169	33,019	68	1,850	0	0	8	269
7/15	5,386	40,524	5,284	38,303	20	1,870	0	0	82	351
7/16	17,993	58,517	17,651	55,954	68	1,938	0	0	274	625
7/17	3,852	62,369	3,761	59,715	23	1,961	0	0	68	693
7/18	1,729	64,098	1,645	61,360	84	2,045	0	0	0	693
7/19	1,206	65,304	1,088	62,448	45	2,090	3	3	70	763
7/20	636	65,940	574	63,022	23	2,113	2	5	37	800
7/21	5,333	71,273	4,812	67,834	197	2,310	14	19	310	1,110
7/22	16,545	87,818	14,930	82,764	611	2,921	44	63	960	2,070
7/23	10,935	98,753	10,782	93,546	102	3,023	0	63	51	2,121
7/24	6,513	105,266	6,422	99,968	61	3,084	0	63	30	2,151
7/25	3,240	108,506	3,195	103,163	30	3,114	0	63	15	2,166
7/26	8,026	116,532	7,743	110,906	47	3,161	0	63	236	2,402
7/27	10,289	126,821	9,926	120,832	60	3,221	0	63	303	2,705
7/28	7,520	134,341	7,255	128,087	44	3,265	0	63	221	2,926
7/29	2,526	136,867	2,402	130,489	83	3,348	0	63	41	2,967
7/30	1,494	138,361	1,421	131,910	49	3,397	0	63	24	2,991
7/31	1,961	140,322	1,865	133,775	64	3,461	0	63	32	3,023
8/ 1	1,562	141,884	1,485	135,260	51	3,512	0	63	26	3,049
8/ 2	992	142,876	943	136,203	33	3,545	0	63	16	3,065
8/ 3	1,102	143,978	1,048	137,251	36	3,581	0	63	18	3,083
8/ 4	1,134	145,112	1,078	138,329	37	3,618	0	63	19	3,102
8/ 5	447	145,559	425	138,754	15	3,633	0	63	7	3,109
8/ 6	663	146,222	630	139,384	22	3,655	0	63	11	3,120
8/ 7	799	147,021	760	140,144	26	3,681	0	63	13	3,133
8/ 8	1,447	148,468	1,376	141,520	47	3,728	0	63	24	3,157
8/ 9	1,432	149,900	1,362	142,882	47	3,775	0	63	23	3,180
8/10	870	150,770	827	143,709	29	3,804	0	63	14	3,194
8/11	1,370	152,140	1,303	145,012	45	3,849	0	63	22	3,216

Appendix Table 17. Kasilof River north bank sonar counts by sector, 1 day time periods, 14 June through 11 August, 1985.

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL*
6 14	17	5	4	0	0	0	8	1	10	17	8	16	86	86
6 15	20	3	2	0	0	0	7	7	2	13	6	15	75	161
6 16	21	10	5	7	0	1	7	7	7	12	9	29	115	276
6 17	18	12	8	1	0	0	6	3	7	11	18	13	97	373
6 18	17	15	3	1	0	0	3	4	5	8	7	17	80	453
6 19	20	20	9	3	1	0	2	5	4	7	9	23	103	556
6 20	48	37	14	3	2	2	3	5	6	14	12	41	187	743
6 21	30	26	8	1	1	0	5	1	7	12	4	28	123	866
6 22	52	61	13	1	0	0	2	3	9	12	21	106	280	1146
6 23	106	103	19	2	0	0	6	8	14	14	32	63	367	1513
6 24	185	204	73	30	20	16	25	12	12	27	51	56	711	2224
6 25	267	181	56	18	2	1	17	8	10	22	35	43	660	2884
6 26	193	123	51	22	10	16	21	18	11	25	13	35	538	3422
6 27	260	123	21	2	0	0	7	7	14	18	16	54	522	3944
6 28	294	168	38	16	0	0	5	14	8	30	69	118	760	4704
6 29	396	159	45	7	10	9	5	9	10	16	26	67	759	5463
6 30	513	207	90	30	25	16	6	24	36	36	30	69	1082	6545
7 1	662	292	90	40	12	0	14	33	22	30	30	55	1280	7825
7 2	156	107	67	30	53	19	12	34	32	26	27	49	612	8437
7 3	320	196	90	60	50	28	36	46	65	59	40	44	1034	9471
7 4	1822	709	165	25	4	1	22	27	53	41	58	66	2993	12464
7 5	1994	599	151	26	4	1	14	21	29	33	36	45	2953	15417
7 6	459	255	88	47	33	30	6	19	41	45	32	34	1089	16506
7 7	478	277	236	43	19	0	22	82	109	104	59	55	1484	17990
7 8	3308	1574	517	29	7	1	11	18	69	74	36	55	5699	23689

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Appendix Table 17. Kasilof River north bank sonar counts by sector, 1 day time periods, 14 June through 11 August, 1985 (continued).

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL*
7 9	1235	726	281	19	7	3	8	19	33	45	20	78	2474	26163
7 10	2451	688	285	31	6	4	5	25	60	63	50	73	3741	29904
7 11	590	335	138	25	9	1	23	37	112	57	29	24	1380	31284
7 12	298	1427	408	103	31	21	38	78	95	111	49	28	2687	33971
7 13	1686	5040	726	425	253	238	74	122	199	180	71	88	9102	43073
7 14	5587	17736	2426	1312	794	199	26	41	154	152	22	47	28496	71569
7 15	6336	15507	1712	262	180	3	29	35	187	153	29	44	24477	96046
7 16	13142	22029	2274	332	141	93	224	196	279	1555	105	155	40525	136571
7 17	5164	8034	1719	172	21	1	37	40	68	100	41	52	15449	152020
7 18	2007	3194	567	69	12	2	4	10	77	49	18	33	6042	158062
7 19	114	601	338	21	4	1	12	17	34	52	20	19	1233	159295
7 20	155	267	122	17	14	13	7	27	34	77	35	28	796	160091
7 21	3077	5280	459	15	0	1	11	12	61	137	43	29	9125	169216
7 22	18776	7593	1481	649	415	408	28	21	16	47	46	51	29531	198747
7 23	13805	3682	624	158	1	0	8	9	9	13	18	23	18350	217097
7 24	8109	4668	980	51	4	0	4	10	10	38	45	12	13931	231028
7 25	10821	2098	491	196	95	0	7	4	15	36	31	14	13808	244836
7 26	16611	1209	219	1	0	1	2	6	60	69	33	13	18224	263060
7 27	17574	1898	481	3	0	0	6	4	15	61	75	11	20128	283188
7 28	7495	2082	677	17	0	0	18	13	33	57	46	19	10457	293645
7 29	3520	1413	616	63	40	40	14	24	15	61	45	13	5864	299509
7 30	2430	1267	377	64	1	0	5	3	9	29	30	38	4253	303762
7 31	2922	914	218	7	0	0	2	6	14	19	26	33	4161	307923
8 1	2578	819	170	26	0	0	9	7	18	51	35	31	3744	311667
8 2	1239	550	96	14	0	0	6	2	19	34	36	29	2025	313692

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Appendix Table 17. Kasilof River north bank sonar counts by sector, 1 day time periods, 14 June through 11 August, 1985 (continued).

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL*
8 3	2615	803	129	2	0	1	10	10	9	12	18	13	3622	317314
8 4	2244	635	108	24	22	21	13	15	37	47	44	17	3227	320541
8 5	1692	496	60	19	20	0	3	6	12	30	95	13	2446	322987
8 6	1950	378	39	4	2	0	6	4	9	7	13	6	2418	325405
8 7	2232	419	115	85	42	84	23	23	25	57	38	35	3178	328583
8 8	3215	484	172	57	56	28	6	11	17	36	47	36	4165	332748
8 9	3706	378	140	64	31	30	5	7	14	20	19	23	4437	337185
8 10	2161	252	94	2	2	0	11	5	10	14	33	18	2602	339787
8 11	789	91	13	4	2	2	6	2	4	9	17	5	944	340731
Total	179982	118459	20618	4757	2458	1336	962	1267	2355	4184	2006	2347	340731	

* Total count may differ from total fish targets by bank because of method used to average for debris.

Appendix Table 18. Kasilof River north bank sonar counts by sector, 4 day time periods, 14 June through 11 August, 1985.

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL *
6 14-17	76	30	19	8	0	1	28	18	26	53	41	73	373	373
6 18-21	115	98	34	8	4	2	13	15	22	41	32	109	493	866
6 22-25	610	549	161	51	22	17	50	31	45	75	139	268	2018	2884
6 26-29	1143	573	155	47	20	25	38	48	43	89	124	274	2579	5463
6 30- 3	1651	802	337	160	140	63	68	137	155	151	127	217	4008	9471
7 4- 7	4753	1840	640	141	60	32	64	149	232	223	185	200	8519	17990
7 8-11	7584	3323	1221	104	29	9	47	99	274	239	135	230	13294	31284
7 12-15	13907	39710	5272	2102	1258	461	167	276	635	596	171	207	64762	96046
7 16-19	20427	33858	4898	594	178	97	277	263	458	1756	184	259	63249	159295
7 20-23	35813	16822	2686	839	430	422	54	69	120	274	142	131	57802	217097
7 24-27	53115	9873	2171	251	99	1	19	24	100	204	184	50	66091	283188
7 28-31	16367	5676	1888	151	41	40	39	46	71	166	147	103	24735	307923
8 1- 4	8676	2807	503	66	22	22	38	34	83	144	133	90	12618	320541
8 5- 8	9089	1777	386	165	120	112	38	44	63	130	193	90	12207	332748
8 9-11	6656	721	247	70	35	32	22	14	28	43	69	46	7983	340731
Total	179982	118459	20618	4757	2458	1336	962	1267	2355	4184	2006	2347	340731	

* Total count may differ from total fish targets by bank because of method used to average for debris.

Appendix Table 19. Kasilof River south bank sonar counts by sector, 1 day time periods, 14 June through 11 August, 1985.

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL *
6 14	4	5	2	5	0	0	11	20	28	27	42	45	189	189
6 15	4	1	3	0	0	0	11	13	23	35	36	36	162	351
6 16	17	2	3	0	0	1	13	9	23	41	33	29	171	522
6 17	9	4	6	3	2	1	22	24	23	45	42	36	217	739
6 18	11	7	4	2	0	2	13	24	27	19	22	36	167	906
6 19	10	16	3	1	0	2	4	36	18	41	20	19	170	1076
6 20	17	8	6	6	0	0	28	21	59	44	31	47	267	1343
6 21	14	8	11	1	1	0	16	12	26	32	30	38	189	1532
6 22	11	5	8	3	0	0	14	7	26	41	33	44	192	1724
6 23	18	18	5	2	2	0	24	26	58	70	57	48	328	2052
6 24	38	44	18	4	3	1	43	59	88	106	100	80	584	2636
6 25	70	83	31	12	0	0	67	63	121	155	118	162	882	3518
6 26	68	54	19	13	1	0	43	21	63	108	43	56	489	4007
6 27	61	61	30	9	4	7	58	47	71	107	79	65	599	4606
6 28	104	160	63	12	3	1	58	54	111	143	108	82	899	5505
6 29	41	103	58	13	2	0	60	41	116	207	127	100	868	6373
6 30	25	84	61	14	2	1	56	58	159	155	157	135	907	7280
7 1	63	348	340	93	26	6	215	141	195	217	220	224	2088	9368
7 2	34	145	153	46	23	14	136	78	111	150	162	138	1190	10558
7 3	64	284	290	111	52	7	181	147	89	181	180	176	1762	12320
7 4	138	595	507	157	52	7	300	168	204	284	385	541	3338	15658
7 5	128	446	314	62	20	3	186	164	157	209	299	384	2372	18030
7 6	77	256	105	23	5	0	71	74	94	154	190	253	1302	19332
7 7	159	556	337	94	29	10	125	147	196	275	276	266	2470	21802
7 8	513	691	389	130	33	7	148	143	202	272	206	237	2971	24773

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Appendix Table 19. Kasilof River south bank sonar counts by sector, 1 day time periods, 14 June through 11 August, 1985 (continued).

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL*
7 9	240	342	206	60	19	8	55	76	52	110	102	157	1427	26200
7 10	311	190	115	92	91	89	207	243	247	249	226	250	2310	28510
7 11	87	80	28	4	1	4	89	80	119	162	102	192	948	29458
7 12	124	96	31	13	2	3	107	203	214	193	204	124	1314	30772
7 13	179	90	36	15	6	2	243	337	276	289	328	309	2110	32882
7 14	846	110	85	30	25	18	137	194	183	207	221	195	2251	35133
7 15	2828	597	167	25	4	2	107	153	252	409	493	348	5385	40518
7 16	12298	3553	659	27	113	0	59	154	245	318	589	320	18335	58853
7 17	2215	730	140	2	0	0	36	52	94	164	230	188	3851	62704
7 18	717	309	86	30	18	20	74	80	47	94	126	128	1729	64433
7 19	136	239	69	39	10	2	46	63	61	88	176	277	1206	65639
7 20	90	95	19	4	1	1	20	33	60	98	91	124	636	66275
7 21	1704	1962	536	51	6	0	113	115	72	149	273	350	5331	71606
7 22	7540	6104	1054	375	6	0	161	166	119	235	366	419	16545	88151
7 23	3796	5093	897	173	5	0	90	95	50	159	351	226	10935	99086
7 24	2728	2072	495	100	40	38	62	84	91	250	263	335	6558	105644
7 25	1325	792	303	30	7	2	97	81	71	101	175	256	3240	108884
7 26	4552	2049	656	33	51	0	122	84	87	104	144	144	8026	116910
7 27	6973	2513	411	12	0	0	28	47	46	71	81	108	10290	127200
7 28	5683	1248	164	7	1	0	35	66	56	62	71	126	7519	134719
7 29	1364	516	121	7	0	0	34	71	66	139	95	113	2526	137245
7 30	727	345	116	16	1	0	45	55	40	45	56	48	1494	138739
7 31	894	463	133	50	12	12	34	53	48	75	82	108	1964	140703
8 1	747	404	78	20	1	1	21	43	42	37	64	103	1561	142264
8 2	453	282	27	9	0	0	19	14	57	24	37	101	1023	143287

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Appendix Table 19. Kasilof River south bank sonar counts by sector, 1 day time periods, 14 June through 11 August, 1985 (continued).

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL *
8 3	502	356	80	20	0	0	20	12	21	44	58	100	1213	144500
8 4	430	298	108	30	1	2	30	24	34	33	50	94	1134	145634
8 5	147	115	25	16	6	7	11	13	10	24	21	51	446	146080
8 6	375	192	16	2	0	0	2	1	9	20	13	33	663	146743
8 7	499	197	17	1	0	0	3	4	10	10	20	38	799	147542
8 8	1036	311	15	2	0	0	2	1	2	10	6	62	1447	148989
8 9	1047	293	11	11	0	0	1	4	3	7	7	48	1432	150421
8 10	574	199	6	2	0	0	8	6	4	0	22	49	870	151291
8 11	1067	140	11	2	0	0	4	11	10	10	4	111	1370	152661
TOTAL	65932	36359	9687	2126	687	281	4025	4315	5086	7108	8143	8912	152661	

* Total counts may differ from total fish targets by bank because of method used to average for debris.

Appendix Table 20. Kasilof River south bank sonar counts by sector, 4 day time periods, 14 June through 11 August, 1985.

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL *
6 14-17	34	12	14	8	2	2	57	66	97	148	153	146	739	739
6 18-21	52	39	24	10	1	4	61	93	130	136	103	140	793	1532
6 22-25	137	150	62	21	5	1	148	155	293	372	308	334	1986	3518
6 26-29	274	378	170	47	10	8	219	163	361	565	357	303	2855	6373
6 30- 3	186	861	844	264	103	28	588	424	554	703	719	673	5947	12320
7 4- 7	502	1853	1263	336	106	20	682	553	651	922	1150	1444	9482	21802
7 8-11	1151	1303	738	286	144	108	499	542	620	793	636	836	7656	29458
7 12-15	3977	893	319	83	37	25	594	887	925	1098	1246	976	11060	40518
7 16-19	15366	4831	954	98	141	22	215	349	447	664	1121	913	25121	65639
7 20-23	13130	13254	2506	603	18	1	384	409	301	641	1081	1119	33447	99086
7 24-27	15578	7426	1865	175	98	40	309	296	295	526	663	843	28114	127200
7 28-31	8668	2572	534	80	14	12	148	245	210	321	304	395	13503	140703
8 1- 4	2132	1340	293	79	2	3	90	93	154	138	209	398	4931	145634
8 5- 8	2057	815	73	21	6	7	18	19	31	64	60	184	3355	148989
8 9-11	2688	632	28	15	0	0	13	21	17	17	33	208	3672	152661
Total	65932	36359	9687	2126	687	281	4025	4315	5086	7108	8143	8912	152661	

* Total count may differ from fish targets because of method used to average for debris.

Appendix Table 21. Kasilof River north bank side scan sonar counts by hour, 14 June through 11 August 1985.

	HOUR																							
DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
6 14	3	12	14	2	6	4	2	0	0	0	2	1	2	2	0	0	0	1	10	1	15	1	2	6
6 15	8	4	1	2	5	3	0	2	0	1	9	0	3	0	2	2	3	3	4	4	0	12	4	3
6 16	5	23	13	17	11	9	0	0	1	0	1	1	2	2	0	2	0	1	3	2	10	1	8	3
6 17	2	7	10	3	16	2	7	2	3	0	2	0	1	0	3	0	2	1	7	3	4	10	2	10
6 18	9	19	4	0	0	2	0	2	0	0	0	12	1	0	1	6	1	2	4	7	1	3	5	1
6 19	13	10	7	1	8	3	3	15	0	0	0	0	0	3	5	3	4	1	1	10	7	5	2	2
6 20	2	13	7	21	22	4	9	6	3	4	5	5	5	5	2	4	11	3	8	2	2	26	9	9
6 21	7	0	15	4	5	1	9	11	8	7	3	0	3	2	4	1	4	3	1	4	8	2	12	9
6 22	23	28	56	18	28	10	5	10	5	1	1	3	0	12	11	1	15	2	1	6	22	8	5	9
6 23	14	41	75	31	27	7	6	15	2	6	8	8	1	1	9	4	7	10	12	15	17	18	13	20
6 24	49	45	81	57	43	20	24	3	30	13	27	22	23	21	29	12	13	18	18	28	38	43	17	37
6 25	74	70	72	50	27	18	11	12	31	17	13	22	19	23	25	14	26	14	6	21	39	20	24	12
6 26	51	67	30	67	21	44	15	5	6	11	51	7	6	22	17	8	10	9	10	9	16	17	18	21
6 27	38	100	75	62	35	22	17	30	9	4	3	7	4	4	7	6	12	9	7	21	21	13	5	11
6 28	28	33	111	49	29	31	17	12	11	12	6	5	8	14	49	27	47	60	51	48	42	18	18	34
6 29	38	94	82	53	23	30	40	22	19	6	10	17	6	7	9	10	27	41	42	27	49	29	33	45
6 30	61	69	61	153	63	30	29	35	24	31	59	43	33	25	24	6	3	37	54	56	58	46	34	48
7 1	37	86	117	153	120	35	47	51	64	71	33	22	18	11	17	24	20	72	83	57	44	31	36	31
7 2	27	42	27	20	21	9	24	24	6	7	24	24	15	24	25	12	1	47	28	47	32	27	64	35
7 3	45	81	85	46	46	45	42	57	13	38	12	42	7	17	50	46	36	24	33	120	53	36	29	31
7 4	42	45	57	53	63	41	114	96	48	34	86	104	100	91	73	76	61	118	142	139	299	157	496	458
7 5	267	211	148	159	186	109	66	65	85	64	38	75	76	110	141	80	98	77	129	85	93	215	163	213
7 6	63	166	134	101	81	42	38	42	42	42	42	11	11	42	29	10	19	7	22	32	11	24	38	40
7 7	41	69	71	50	79	35	34	36	26	72	64	32	16	26	128	122	90	57	55	34	39	69	139	100
7 8	61	88	148	198	195	201	186	352	466	531	437	176	119	27	31	272	401	372	266	174	242	325	178	253
7 9	361	165	113	54	68	169	258	143	129	51	67	57	47	50	38	53	128	68	108	80	52	92	48	75
7 10	153	72	40	65	71	38	51	33	79	154	220	151	327	390	348	151	361	395	222	146	91	93	34	56
7 11	155	142	137	113	76	30	21	21	18	26	44	44	23	23	34	35	19	24	50	55	95	62	64	69
7 12	104	114	81	95	93	59	104	92	114	80	50	126	172	237	134	202	180	108	115	50	142	81	77	77
7 13	191	146	199	139	78	72	68	81	72	51	71	51	39	29	107	340	378	378	378	378	1262	1411	1942	1241
7 14	561	1229	1492	940	1534	1380	1699	597	1438	2085	1097	765	1582	1806	1345	1139	1398	1595	1166	879	906	551	619	693
7 15	932	989	1380	1473	1449	1211	732	789	896	683	862	1205	783	1102	1207	1405	1136	1941	539	1013	526	336	1106	782
7 16	1360	1814	2303	3584	3476	2783	1871	1561	1122	1101	1164	1750	1783	1292	1884	1851	2141	435	509	2422	1201	899	1346	873
7 17	791	126	128	102	109	227	341	185	125	168	570	253	841	828	993	1263	1127	1076	1333	1071	1439	1142	610	601
7 18	345	283	101	139	82	169	352	718	713	471	293	247	364	321	120	138	130	191	217	162	191	163	65	67
7 19	52	55	24	37	43	26	57	73	94	72	33	33	39	79	33	49	78	66	47	38	70	66	41	28
7 20	22	38	17	27	16	8	14	21	42	29	52	30	30	30	27	82	33	57	28	20	39	38	43	53
7 21	60	68	53	35	44	44	61	443	429	162	109	618	776	743	344	659	708	629	591	838	1101	404	93	113
7 22	487	1117	2055	1381	1423	1078	976	803	1078	1154	489	619	1547	1949	2035	1006	1140	1118	1246	1308	1375	2164	1425	558
7 23	740	755	1038	797	764	793	699	747	792	1281	1394	826	670	828	995	465	493	577	692	505	440	643	866	550
7 24	281	304	401	551	403	397	513	472	509	411	321	1306	1552	860	282	833	768	760	484	571	331	284	521	816
7 25	758	205	179	195	412	328	354	463	453	572	613	901	1146	941	666	465	823	785	340	716	511	552	416	1014
7 26	1458	637	179	308	654	708	668	652	660	828	866	817	661	1036	979	958	691	783	883	856	723	737	782	700
7 27	806	576	421	219	403	1142	1455	1499	1139	946	893	288	1095	950	941	1511	1197	752	745	1022	891	602	517	118
7 28	226	147	144	130	134	490	974	814	866	563	494	546	213	382	575	405	553	731	633	420	340	246	204	227
7 29	209	77	61	70	101	155	402	606	476	418	276	273	365	367	237	186	143	100	212	301	225	160	251	193
7 30	182	49	49	37	26	60	108	221	262	288	326	310	307	186	182	182	118	136	281	218	164	159	166	236
7 31	183	66	28	149	39	101	263	241	292	312	182	295	215	188	239	129	92	118	170	251	113	84	181	230
8 1	212	88	64	44	56	124	285	339	259	252	359	265	210	145	95	33	121	106	103	148	188	108	44	96
8 2	103	65	34	31	44	65	99	136	127	68	74	91	115	83	98	87	107	46	51	74	164	92	97	74
8 3	108	58	52	45	29	56	101	65	222	138	125	387	371	223	168	139	133	169	142	162	285	195	88	161
8 4	172	145	115	65	46	85	132	100	263	317	105	114	150	219	226	145	112	122	97	95	84	105	128	85
8 5	48	33	54	38	60	38	52	44	81	73	137	162	130	188	242	179	158	131	95	84	71	169	106	73
8 6	47	42	23	34	34	44	42	66	72	90	230	184	107	133	192	204	130	126	117	86	115	100	104	96
8 7	82	26	28	20	27	63	89	95	134	103	179	58	137	240	180	212	247	198	185	230	163	194	133	155
8 8	113	95	60	97	107	155	193	129	118	104	119	76	112	255	228	220	299	227	188	242	233	382	267	146
8 9	125	105	59	43	32	84	23	55	48	186	67	155	198	249	336	431	455	380	295	306	267	232	197	109
8 10	32	35	39	39	35	59	81	108	142	175	168	233	138	125	189	173	183	156	120	122	98	69	34	49
8 11	31	15	9	7	13	6	6	8	7	13	12	15	27	25	37	38	63	66	73	142	104	90	90	47

Appendix Table 22. Kasilof River south bank side scan sonar counts by hour, 14 June through 11 August 1985.

	HOUR																							
DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
6 14	1	7	29	14	15	11	17	6	8	5	0	1	2	1	2	8	4	12	5	16	3	3	8	11
6 15	2	7	23	6	5	6	1	5	2	4	4	21	0	5	0	6	1	6	11	16	9	7	9	6
6 16	5	10	26	13	11	5	17	13	0	4	4	5	1	1	3	1	7	5	11	8	3	3	7	8
6 17	9	9	20	16	12	14	7	9	3	3	2	2	7	4	0	1	1	9	7	26	14	26	6	10
6 18	1	12	7	8	0	0	2	12	4	9	0	2	2	5	5	6	16	8	7	5	24	13	6	13
6 19	14	10	16	25	7	1	6	6	2	5	0	0	3	2	6	7	3	4	12	4	11	6	8	12
6 20	15	17	8	18	10	7	10	5	14	0	1	8	8	14	24	14	16	12	3	8	13	16	12	14
6 21	13	15	10	13	10	7	7	4	7	6	6	6	10	1	9	9	7	8	10	7	10	3	6	5
6 22	11	29	26	15	17	4	1	12	4	6	2	1	1	3	4	3	3	7	5	4	13	3	8	10
6 23	15	20	48	33	12	9	3	8	15	8	8	0	4	6	15	12	15	11	15	12	13	3	17	26
6 24	27	39	42	42	23	9	19	15	13	15	15	33	10	30	28	35	26	13	20	22	24	16	16	52
6 25	50	64	68	63	47	20	25	40	19	17	18	34	21	25	34	93	37	34	30	67	19	17	23	17
6 26	44	52	32	41	20	14	22	14	8	18	15	9	21	24	26	13	31	8	15	13	13	14	14	8
6 27	43	67	51	37	55	40	28	22	31	7	10	12	4	5	22	19	24	18	31	11	15	15	13	19
6 28	28	78	176	81	27	31	25	12	13	16	3	16	14	11	18	20	60	51	55	36	45	20	37	26
6 29	31	50	59	84	56	36	14	29	14	15	10	25	7	8	16	18	32	40	49	62	59	58	44	52
6 30	27	23	37	64	59	23	20	25	40	44	32	30	25	16	18	15	36	38	50	60	68	61	44	52
7 1	56	51	62	78	102	82	67	36	58	83	58	82	68	57	61	52	28	114	269	235	157	88	88	56
7 2	56	43	51	67	48	39	19	24	26	42	28	13	13	29	25	28	72	51	46	81	89	83	116	101
7 3	51	90	77	103	56	123	111	89	19	39	42	38	33	33	41	72	74	50	58	104	118	89	124	128
7 4	130	102	151	97	89	83	225	178	83	126	195	185	145	127	95	82	52	76	146	79	212	337	191	152
7 5	133	129	135	103	85	51	73	66	84	28	34	68	77	130	101	106	77	115	119	68	87	208	199	96
7 6	90	77	67	34	16	38	11	22	22	29	28	12	45	58	32	42	49	135	56	30	42	91	150	126
7 7	94	120	94	123	88	78	103	85	112	256	172	102	58	42	135	84	93	60	75	71	87	143	142	53
7 8	47	82	115	110	112	91	93	81	97	90	176	162	114	82	132	168	175	132	247	169	109	106	111	170
7 9	90	82	49	41	76	121	130	101	58	29	44	42	46	42	35	46	52	60	47	42	78	29	27	60
7 10	96	96	96	96	96	96	96	96	96	96	96	108	235	132	96	96	96	45	60	89	95	56	72	74
7 11	46	50	86	82	28	30	12	24	24	18	29	17	37	40	42	46	47	44	38	49	48	25	47	39
7 12	59	58	36	31	25	28	42	63	47	21	31	47	87	50	27	57	71	63	59	74	66	104	91	77
7 13	56	55	50	75	46	85	37	35	36	29	35	40	93	66	83	92	145	103	130	241	212	161	120	85
7 14	47	50	105	91	63	91	109	74	64	51	73	114	104	96	96	265	69	109	189	84	75	103	99	30
7 15	31	73	64	49	98	239	319	157	190	128	520	182	184	91	242	251	203	382	890	447	242	85	146	172
7 16	465	331	326	920	2097	1918	1698	556	634	419	543	649	750	843	536	791	976	1088	562	600	708	315	318	292
7 17	332	209	99	79	96	168	239	188	225	136	225	157	177	192	263	221	132	63	46	115	188	151	73	77
7 18	58	58	39	20	43	65	121	217	215	142	72	72	28	17	38	56	38	52	61	89	83	43	64	38
7 19	33	44	25	25	29	39	56	91	63	26	80	51	65	47	28	47	25	49	60	74	72	53	81	43
7 20	26	60	40	26	22	21	14	31	37	20	34	20	28	33	16	23	26	30	18	8	20	31	31	21
7 21	32	49	13	33	28	24	31	415	191	60	34	206	63	81	260	305	353	381	419	690	1053	400	100	110
7 22	313	154	563	481	502	941	1286	1768	2982	1978	661	209	284	590	452	296	247	377	260	435	557	588	491	130
7 23	111	196	221	136	266	431	654	756	513	1440	946	282	211	355	373	500	296	269	237	379	482	795	882	204
7 24	34	82	99	113	113	206	274	223	248	400	975	767	211	129	169	167	120	276	65	120	178	303	331	955
7 25	81	50	20	64	146	103	162	173	216	136	110	170	237	250	66	29	80	56	78	27	125	166	297	398
7 26	447	135	15	46	148	346	531	462	443	506	473	454	317	529	1177	650	167	136	125	187	276	184	106	166
7 27	224	297	100	75	117	615	866	882	424	378	511	746	870	376	255	234	664	494	282	311	296	407	347	519
7 28	245	100	48	62	88	239	940	851	539	452	593	535	555	399	155	189	218	284	309	101	159	220	151	87
7 29	67	55	42	46	62	91	248	166	293	153	175	183	120	74	73	59	30	79	110	161	93	57	33	56
7 30	28	23	28	26	25	55	147	106	48	51	61	28	48	31	76	32	51	16	76	75	79	85	134	165
7 31	107	48	38	38	53	79	172	145	89	165	71	27	55	30	40	33	84	95	57	99	42	68	138	191
8 1	90	94	72	70	63	91	193	229	76	41	18	63	20	26	25	23	31	31	18	29	34	59	52	113
8 2	103	91	58	78	44	85	27	82	33	35	18	31	9	23	14	26	8	9	24	15	29	32	54	95
8 3	114	119	72	43	35	38	61	40	59	42	43	47	33	23	17	17	15	32	32	34	94	47	79	77
8 4	200	156	133	79	45	55	46	45	20	34	44	40	36	28	24	9	8	17	20	15	17	17	24	22
8 5	38	37	27	21	17	18	40	14	9	19	14	13	9	6	18	20	13	10	9	17	7	18	33	19
8 6	35	77	59	30	22	20	17	17	20	16	24	46	16	29	21	21	18	14	12	12	15	9	52	61
8 7	35	34	21	32	28	23	23	29	27	13	17	32	33	17	13	16	35	36	35	26	25	32	87	130
8 8	78	77	49	57	34	76	48	36	20	47	27	28	33	43	35	40	40	70	49	98	83	95	131	153
8 9	112	53	54	22	18	6	11	20	21	14	64	60	77	62	89	94	64	89	106	80	36	89	101	90
8 10	54	60	57	43	23	35	58	82	23	24	7	9	7	11	24	15	26	10	16	30	47	64	73	72
8 11	38	39	22	35	3	13	13	6	11	7	14	22	22	18	25	46	59	90	107	152	129	220	131	148

Appendix Table 23. Daily adjusted fishwheel catch by species for the north bank of the Kasilof River, 28 June through 7 August, 1985. *

Date	Hours Open	Sockeye		Pink		Coho		Chinook	
		Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
6/28	30.5	9	9						
6/29	22.0	9	18						
6/30	17.0	24	42						
7/01	26.5	83	125	1	1				
7/02	24.5	47	172		1				
7/03	22.0	51	223		1				
7/04	22.5	156	379		1				
7/05	22.0	278	657	7	8				
7/06	11.0	172	829		8				
7/07	26.5	211	1,040		8				
7/08	14.5	621	1,661	3	11				
7/09	4.5	1,392	3,053		11				
7/10	30.0	402	3,455	7	18			1	1
7/11	12.0	74	3,529	4	22				1
7/12	19.0	140	3,669	3	25			3	4
7/13	27.0	173	3,842	2	27				4
7/14	9.5	493	4,335	3	30				4
7/15	18.5	697	5,032	1	31				4
7/16	2.5	1,075	6,107		31				4
7/17	8.5	73	6,180		31				4
7/18	5.5	96	6,276	17	48				4
7/19	19.0	75	6,351	1	49			5	9
7/20	23.5	53	6,404	4	53	1	1	4	13
7/21	24.0	63	6,467	2	55		1	4	17
7/22	25.5	487	6,954	3	58		1	6	23
7/23	**		6,954		58		1		23
7/24	2.0	1,140	8,094		58		1		23
7/25	7.0	182	8,276		58		1	1	24
7/26	11.5	121	8,397	2	60		1		24
7/27	11.0	129	8,526	7	67		1		24

(continued)

Appendix Table 23. Daily adjusted fishwheel catch by species for the south bank of the Kasilof River, 28 June through 7 August, 1985 (continued). *

Date	Hours Open	Sockeye		Pink		Coho		Chinook	
		Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
7/28	12.0	192	8,718		67		1	2	26
7/29	32.0	86	8,804		67		1	1	27
7/30	23.5	86	8,890	2	69		1	3	30
7/31	17.0	30	8,920		69		1	1	31
8/01	24.5	79	8,999	1	70		1	1	32
8/02	25.0	35	9,034		70		1		32
8/03	23.0	31	9,065		70		1		32
8/04	24.0	51	9,116	1	71	2	3		32
8/05	26.0	33	9,149		71		3	2	34
8/06	23.0	28	9,177		71	1	4	2	36
8/07	15.5	3	9,180		71		4		36
Total		9,180		71		4		36	

* Fishwheel catch adjusted for 24 hours: (daily catch x 24 hours)/hours open
Actual fishwheel catch by species: 4,996 sockeye salmon; 49 pink salmon; 4 coho salmon; 32 chinook salmon;, and 1 Dolly Varden trout.

** Fishwheel inoperative 23 July.

Appendix Table 24. Daily adjusted fishwheel catch by species for the south bank of the Kasilof River, 5 July through 1 August, 1985. *

Date	Hours Open	Sockeye		Pink		Coho		Chinook	
		Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
7/05	24.0	20	20	3	3				
7/06	20.5	19	39	4	7				
7/07	27.5	67	106	5	14			2	2
7/08	22.5	112	218	3	17				2
7/09	17.0	168	386	3	20				2
7/10	37.5	108	494	3	23			1	3
7/11	20.0	31	525	1	24				3
7/12	19.5	66	591	1	25			1	4
7/13	27.0	54	645	9	34				4
7/14	22.0	231	876		34			1	5
7/15	31.0	105	981	1	35			2	7
7/16	23.0	153	1,134		35			2	9
7/17	21.5	166	1,300	1	36			3	12
7/18	6.0	156	1,456	8	42				12
7/19	22.5	60	1,516	5	47			7	19
7/20	19.5	27	1,543	4	51			6	25
7/21	24.5	48	1,591	4	55	1	1	4	29
7/22	28.0	207	1,798	1	56		1	5	34
7/23	9.0	59	1,857		56		1		34
7/24	18.0	88	1,945		56		1		34
7/25	20.0	65	2,010	2	58		1	1	35
7/26	24.0	59	2,069		58		1	4	39
7/27	2.5	38	2,107		58		1		39
7/28	23.5	67	2,174	1	59		1	1	40
7/29	24.0	27	2,201	1	60		1		40
7/30	31.5	12	2,213	1	61		1	1	41
7/31	17.0	13	2,226		61		1		41
8/01	24.5	6	2,232		61		1		41
Total		2,232		61		1		41	

* Fishwheel catch adjusted for 24 hours: (daily catch x 24 hours)/hours open.
Actual fishwheel catch by species: 2,026 sockeye salmon; 56 pink salmon; 1 coho salmon; 40 chinook salmon; and 1 Dolly Varden trout.

Appendix Table 25. Length composition of the major age classes of sockeye salmon collected in the Kasilof River, 1976-1985.

		Male			Female			Total			
Year	Class	Average Length (mm)[1]	Standard Error	Sample Size	Average Length (mm)	Standard Error	Sample Size	Average Length (mm)	Standard Error	Sample Size	Ratio Male-Female
1979	1.2	489	2.0	175	487	2.0	139	488	1.5	314	1.3:1
1980		474	2.4	189	464	1.2	376	467	---	565	0.5:1
1981		503	2.0	241	492	2.5	146	499	---	387	1.7:1
1982		481	2.2	285	466	1.8	235	474	2.0	475	1.2:1
1983		493	1.9	113	491	2.5	78	492	1.5	191	1.4:1
1984		480	1.2	544	478	1.1	428	479	0.8	972	2.6:1
1985		474	0.8	723	472	0.6	897	473	0.5	1,620	0.8:1
1979	1.3	578	3.2	82	562	3.3	99	569	2.4	181	0.8:1
1980		531	6.8	35	516	2.4	115	520	---	150	0.3:1
1981		566	1.2	422	558	1.4	369	562	---	791	1.1:1
1982		549	1.4	377	542	1.1	428	545	1.2	805	0.9:1
1983		558	1.9	170	547	1.9	187	552	1.3	357	0.9:1
1984		539	1.4	304	533	1.3	383	535	0.9	687	0.8:1
1985		531	1.5	341	527	1.1	433	529	0.9	774	0.8:1
1976	2.2	485	6.1	12	487	3.1	34	486	---	46	0.4:1
1982		479	3.2	65	472	2.7	81	475	2.9	146	0.8:1
1984		484	1.8	202	482	1.4	223	483	1.1	425	0.9:1
1985		482	1.5	248	476	1.2	319	479	0.9	567	0.8:1
1982	2.3	548	4.3	41	543	3.8	40	546	4.1	86	1.0:1
1984		533	2.6	102	526	3.0	80	530	2.0	182	1.3:1

[1] Lengths measured from mid-eye to fork of tail.

Appendix Table 26. Weight composition of the major age classes of sockeye salmon collected in the Kasilof River, 1981-1985.

		Male			Female			Total		
Year	Age Class	Average Weight (kg)	Standard Error	Sample Size	Average Weight (kg)	Standard Error	Sample Size	Average Weight (kg)	Standard Error	Sample Size
1981	1.2	2.2	0.05	241	1.9	0.03	146	2.1	--	387
1982		1.8	0.03	235	1.5	0.02	240	1.7	0.03	475
1983		2.04	0.06	113	1.84	0.03	78	1.96	0.04	191
1984		1.86	0.03	101	1.81	0.04	39	1.85	0.02	140
1985		1.77	0.02	141	1.64	0.02	122	1.70	0.01	263
1981	1.3	3.0	0.04	422	2.9	0.03	369	3.0	--	791
1982		2.7	0.02	377	2.44	0.02	428	2.56	0.02	805
1983		2.78	0.03	168	2.47	0.02	187	2.62	0.02	355
1984		2.67	0.03	146	2.53	0.03	182	2.59	0.02	328
1985		2.51	0.04	80	2.27	0.02	113	2.38	0.02	193
1981	2.2	2.3	0.08	40	2.0	0.07	33	2.2	--	73
1982		1.7	0.05	65	1.6	0.04	81	1.7	0.04	146
1984		2.07	0.10	31	1.79	0.05	27	1.95	0.06	58
1985		1.79	0.04	46	1.63	0.03	64	1.70	0.02	110
1982	2.3	2.6	0.07	41	2.3	0.5	34	2.5	0.06	75
1984		2.72	0.10	32	2.63	0.14	31	2.68	0.09	63

Appendix Table 27. Fish targets recorded in the Crescent River, north and south banks combined, 15 June through 30 July, 1985. *

	FISH TARGETS		SOCKEYE		PINK		CHUM		COHO	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
6/15	6	6	6	6	0	0	0	0	0	0
6/16	24	30	24	30	0	0	0	0	0	0
6/17	19	49	19	49	0	0	0	0	0	0
6/18	7	56	7	56	0	0	0	0	0	0
6/19	5	61	5	61	0	0	0	0	0	0
6/20	19	80	19	80	0	0	0	0	0	0
6/21	8	88	8	88	0	0	0	0	0	0
6/22	4	92	4	92	0	0	0	0	0	0
6/23	20	112	20	112	0	0	0	0	0	0
6/24	19	131	19	131	0	0	0	0	0	0
6/25	16	147	16	147	0	0	0	0	0	0
6/26	32	179	32	179	0	0	0	0	0	0
6/27	64	243	64	243	0	0	0	0	0	0
6/28	68	311	68	311	0	0	0	0	0	0
6/29	377	688	377	688	0	0	0	0	0	0
6/30	169	857	169	857	0	0	0	0	0	0
7/ 1	210	1,067	210	1,067	0	0	0	0	0	0
7/ 2	480	1,547	480	1,547	0	0	0	0	0	0
7/ 3	490	2,037	490	2,037	0	0	0	0	0	0
7/ 4	5,300	7,337	5,300	7,337	0	0	0	0	0	0
7/ 5	10,409	17,746	10,409	17,746	0	0	0	0	0	0
7/ 6	6,480	24,226	6,480	24,226	0	0	0	0	0	0
7/ 7	1,035	25,261	1,035	25,261	0	0	0	0	0	0
7/ 8	3,833	29,094	3,764	29,025	69	69	0	0	0	0
7/ 9	3,281	32,375	3,222	32,247	59	128	0	0	0	0
7/10	3,060	35,435	3,005	35,252	55	183	0	0	0	0
7/11	2,489	37,924	2,444	37,696	45	228	0	0	0	0
7/12	3,425	41,349	3,364	41,060	61	289	0	0	0	0
7/13	5,839	47,188	5,769	46,829	0	289	36	36	34	34
7/14	3,160	50,348	3,123	49,952	0	289	18	54	19	53

(continued)

Appendix Table 27. Fish targets recorded in the Crescent River, north and south banks combined, 15 June through 30 July, 1985 (Continued). *

	FISH TARGETS		SOCKEYE		PINK		CHUM		COHO	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
7/15	3,500	53,848	3,459	53,411	0	289	20	74	21	74
7/16	3,824	57,672	3,779	57,190	0	289	22	96	23	97
7/17	4,665	62,337	4,610	61,800	0	289	27	123	28	125
7/18	3,274	65,611	3,235	65,035	0	289	20	143	19	144
7/19	2,521	68,132	2,491	67,526	0	289	15	158	15	159
7/20	2,886	71,018	2,761	70,287	50	339	25	183	50	209
7/21	3,562	74,580	3,407	73,694	62	401	31	214	62	271
7/22	3,122	77,702	2,986	76,680	54	455	28	242	54	325
7/23	4,761	82,463	4,554	81,234	82	537	42	284	83	408
7/24	4,439	86,902	4,246	85,480	78	615	38	322	77	485
7/25	4,537	91,439	4,339	89,819	80	695	40	362	78	563
7/26	4,103	95,542	3,925	93,744	71	766	36	398	71	634
7/27	3,716	99,258	3,554	97,298	65	831	32	430	65	699
7/28	2,539	101,797	2,428	99,726	45	876	22	452	44	743
7/29	2,495	104,292	2,386	102,112	44	920	21	473	44	787
7/30	3,642	107,934	3,483	105,595	64	984	32	505	63	850
Total	107,934		128,628		984		505		850	

* Sonar counts apportioned by trip seine and gill net catch.
Total for sockeye salmon includes an estimate of 23,033 fish which entered the system after 30 July, 1985.
Escapement estimate after 30 July based on catch and exploitation rate as follows: 1) catch from 30 July through 30 August = 33,145; 2) exploitation rate from 7 July through 29 July = .590; 3) Estimated escapement = (33,145 / .59) - 33,145.

Appendix Table 28. Crescent River north bank sonar counts by sector, 1 day time periods, 15 June through 30 July, 1985.

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL *
6 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 16	0	0	0	0	1	0	0	0	0	0	0	0	1	1
6 17	0	0	0	0	0	0	0	0	1	0	0	0	1	2
6 18	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6 19	0	0	0	0	0	0	0	0	0	0	0	0	0	2
6 20	0	0	0	0	1	0	0	0	0	0	0	0	1	3
6 21	0	0	0	0	0	0	0	0	1	1	0	0	2	5
6 22	0	0	0	0	0	0	0	0	0	0	0	0	0	5
6 23	0	0	1	0	0	0	0	0	0	0	0	0	1	6
6 24	0	0	0	0	0	0	0	0	0	0	0	0	0	6
6 25	1	1	1	0	0	0	0	0	0	0	0	0	3	9
6 26	6	0	1	0	0	0	0	0	0	0	1	1	9	18
6 27	15	3	8	0	2	1	0	5	2	3	1	1	41	59
6 28	17	6	6	4	0	1	0	1	0	0	1	4	40	99
6 29	101	67	33	9	1	3	2	1	7	17	2	0	243	342
6 30	47	24	13	4	1	0	0	0	0	0	0	3	92	434
7 1	16	4	2	1	0	1	0	0	0	0	3	1	28	462
7 2	72	87	41	14	2	6	2	4	0	3	0	3	234	696
7 3	97	147	39	12	3	2	0	10	0	1	0	0	311	1007
7 4	521	1494	1245	334	172	81	25	3	0	1	0	1	3877	4884
7 5	999	4505	1600	344	218	155	29	8	4	3	0	0	7865	12749
7 6	721	3436	691	50	11	4	2	0	1	0	1	0	4917	17666
7 7	305	110	23	3	7	6	0	2	1	1	0	0	458	18124
7 8	1297	1412	124	44	27	36	2	0	0	5	3	1	2951	21075
7 9	688	1782	193	55	15	2	1	1	1	4	0	0	2742	23817

-Continued-

Appendix Table 28. Crescent River north bank sonar counts by sector, 1 day time periods, 15 June through 30 July, 1985 (continued).

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL*
7 10	751	1468	226	68	44	21	2	1	0	1	1	0	2583	26400
7 11	569	965	162	71	36	18	3	5	2	1	0	1	1833	28233
7 12	324	1174	535	374	149	38	23	12	4	4	0	1	2638	30871
7 13	207	1457	1088	1256	631	116	17	4	2	1	2	0	4781	35652
7 14	308	912	424	224	146	48	32	12	18	2	1	0	2127	37779
7 15	245	1312	859	246	41	7	1	1	0	1	0	0	2713	40492
7 16	142	1216	884	205	53	12	6	1	0	0	0	0	2519	43011
7 17	382	1687	958	259	59	11	5	0	5	1	0	0	3367	46378
7 18	360	1242	503	72	24	5	4	1	0	1	1	0	2213	48591
7 19	320	774	337	75	22	6	1	1	0	1	0	0	1537	50128
7 20	434	667	264	34	8	9	4	4	3	2	0	0	1429	51557
7 21	409	1051	513	81	17	9	0	0	0	2	0	1	2083	53640
7 22	207	1083	781	128	34	6	3	1	0	1	2	0	2246	55886
7 23	122	987	1322	582	257	83	22	7	4	4	6	0	3396	59282
7 24	583	1229	727	239	140	71	30	14	1	4	1	3	3042	62324
7 25	540	1309	676	135	41	20	6	3	1	0	0	0	2731	65055
7 26	578	1229	513	117	24	15	9	5	0	1	0	0	2491	67546
7 27	402	1107	505	100	37	10	5	7	1	1	0	0	2175	69721
7 28	296	647	314	86	40	9	3	1	0	0	0	0	1396	71117
7 29	255	722	395	96	48	10	3	1	0	0	0	2	1532	72649
7 30	280	1010	805	190	72	31	12	5	0	0	1	0	2406	75055
	12617	36326	16812	5512	2384	853	254	121	59	67	27	23	75055	

* Total count may differ from total fish targets by bank because of method used to average for debris.

Appendix Table 29. Crescent River south bank sonar counts by sector, 1 day time periods, 15 June through 30 July, 1985.

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL*
6 15	3	3	0	0	0	0	0	0	0	0	0	0	6	6
6 16	18	4	1	0	0	0	0	0	0	0	0	0	23	29
6 17	15	3	0	0	0	0	0	0	0	0	0	0	18	47
6 18	4	2	1	0	0	0	0	0	0	0	0	0	7	54
6 19	5	0	0	0	0	0	0	0	0	0	0	0	5	59
6 20	16	1	0	0	0	1	0	0	0	0	0	0	18	77
6 21	6	0	0	0	0	0	0	0	0	0	0	0	6	83
6 22	4	0	0	0	0	0	0	0	0	0	0	0	4	87
6 23	15	4	1	0	0	0	0	0	0	0	0	0	20	107
6 24	9	6	0	1	0	0	0	0	0	0	0	0	16	123
6 25	7	1	2	0	0	1	0	0	1	1	0	0	13	136
6 26	5	2	10	1	1	0	0	0	0	0	0	0	19	155
6 27	9	10	0	0	0	1	0	0	0	0	0	3	23	178
6 28	14	7	2	1	0	0	0	0	0	0	0	0	24	202
6 29	67	51	11	0	0	0	0	0	0	0	5	1	135	337
6 30	38	39	8	0	0	2	1	1	1	0	0	0	90	427
7 1	76	76	9	0	0	0	0	0	0	6	1	3	171	598
7 2	161	77	6	2	0	0	1	1	1	0	0	2	251	849
7 3	119	28	2	0	0	0	0	0	0	0	0	0	149	998
7 4	976	397	46	2	0	1	0	0	0	0	0	1	1423	2421
7 5	1945	542	44	3	0	0	0	0	0	0	0	0	2534	4955
7 6	1025	453	75	7	3	0	0	0	0	0	0	0	1563	6518
7 7	359	167	28	3	0	0	0	1	2	0	0	0	560	7078
7 8	690	172	11	2	0	2	0	0	0	0	0	0	877	7955
7 9	346	170	20	3	0	0	0	0	0	0	0	0	539	8494

-Continued-

Appendix Table 29. Crescent River south bank sonar counts by sector, 1 day time periods, 15 June through 30 July, 1985 (continued).

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL*
7 10	309	139	21	9	0	0	0	0	0	0	0	0	478	8972
7 11	456	162	32	3	1	1	0	3	0	0	0	0	658	9630
7 12	484	241	48	9	2	2	0	0	0	0	0	0	786	10416
7 13	642	332	70	10	1	0	1	0	1	0	0	0	1057	11473
7 14	517	401	103	10	2	0	0	0	0	0	0	0	1033	12506
7 15	449	226	94	14	1	1	0	1	0	0	0	0	786	13292
7 16	940	288	65	4	4	1	0	1	2	0	0	0	1305	14597
7 17	895	308	68	13	8	3	1	0	0	0	0	0	1296	15893
7 18	845	164	39	8	3	0	1	1	0	0	0	0	1061	16954
7 19	769	149	50	11	3	1	1	0	0	0	0	0	984	17938
7 20	1324	77	55	0	0	0	0	0	0	0	0	0	1456	19394
7 21	1377	69	17	7	7	1	0	0	0	0	0	0	1478	20872
7 22	734	109	27	1	2	0	3	0	0	0	0	0	876	21748
7 23	980	292	77	6	5	0	1	0	0	0	0	0	1361	23109
7 24	822	390	135	24	8	10	6	0	1	0	0	0	1396	24505
7 25	1060	530	157	31	16	7	3	2	1	0	0	0	1807	26312
7 26	1065	408	96	20	9	6	3	3	0	1	0	0	1611	27923
7 27	1112	298	103	8	10	3	2	2	1	2	1	0	1542	29465
7 28	820	236	59	14	9	3	2	2	1	0	0	0	1146	30611
7 29	680	192	41	7	9	4	3	0	0	0	0	0	936	31547
7 30	642	428	129	18	12	5	2	1	0	0	0	0	1237	32784
TOTAL	22854	7654	1763	252	116	56	31	19	12	10	7	10	32784	

* Total count may differ from total fish targets by bank because of method used to average for debris.

Appendix Table 30. Crescent River north bank sonar counts by sector, 4 day time periods, 15 June through 30 July, 1985.

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL *
6 15-18	0	0	0	0	1	0	0	0	1	0	0	0	2	2
6 19-22	0	0	0	0	1	0	0	0	1	1	0	0	3	5
6 23-26	7	1	3	0	0	0	0	0	0	0	1	1	13	18
6 27-30	180	100	60	17	4	5	2	7	9	20	4	8	416	434
7 1- 4	706	1732	1327	361	177	90	27	17	0	5	3	5	4450	4884
7 5- 8	3322	9463	2438	441	263	201	33	10	6	9	4	1	16191	21075
7 9-12	2332	5389	1116	568	244	79	29	19	7	10	1	2	9796	30871
7 13-16	902	4897	3255	1931	871	183	56	18	20	4	3	0	12140	43011
7 17-20	1496	4370	2062	440	113	31	14	6	8	5	1	0	8546	51557
7 21-24	1321	4350	3343	1030	448	169	55	22	5	11	9	4	10767	62324
7 25-28	1816	4292	2008	438	142	54	23	16	2	2	0	0	8793	71117
7 29-30	535	1732	1200	286	120	41	15	6	0	0	1	2	3938	75055
Total	12617	36326	16812	5512	2384	853	254	121	59	67	27	23	75055	

* Total count may differ from fish targets because of method used to average for debris.

Appendix Table 31. Crescent River south bank sonar counts by sector, 4 day time periods, 15 June through 30 July, 1985.

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL *
6 15-18	40	12	2	0	0	0	0	0	0	0	0	0	54	54
6 19-22	31	1	0	0	0	1	0	0	0	0	0	0	33	87
6 23-26	36	13	13	2	1	1	0	0	1	1	0	0	68	155
6 27-30	128	107	21	1	0	3	1	1	1	0	5	4	272	427
7 1- 4	1332	578	63	4	0	1	1	1	1	6	1	6	1994	2421
7 5- 8	4019	1334	158	15	3	2	0	1	2	0	0	0	5534	7955
7 9-12	1595	712	121	24	3	3	0	3	0	0	0	0	2461	10416
7 13-16	2548	1247	332	38	8	2	1	2	3	0	0	0	4181	14597
7 17-20	3833	698	212	32	14	4	3	1	0	0	0	0	4797	19394
7 21-24	3913	860	256	38	22	11	10	0	1	0	0	0	5111	24505
7 25-28	4057	1472	415	73	44	19	10	9	3	3	1	0	6106	30611
7 29-30	1322	620	170	25	21	9	5	1	0	0	0	0	2173	32784
Total	22854	7654	1763	252	116	56	31	19	12	10	7	10	32784	

* Total count may differ from fish targets because of method used to average for debris.

Appendix Table 32. Crescent River north bank side scan sonar counts by hour, 15 June through 30 July 1985.

	HOUR																							
DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
6 15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 16	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 17	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 20	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
6 21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
6 22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 23	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 25	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
6 26	0	0	0	0	0	1	0	1	0	5	0	0	0	0	0	0	0	0	0	0	1	1	0	0
6 27	0	0	1	5	0	4	2	0	1	0	3	1	0	0	1	3	2	0	1	2	8	4	3	0
6 28	3	2	1	0	0	2	2	0	2	2	2	2	1	1	3	4	2	2	2	2	1	1	1	2
6 29	5	26	2	1	0	0	0	0	0	0	0	9	5	4	8	6	19	39	42	19	31	23	2	2
6 30	2	2	8	8	1	0	0	1	5	2	0	0	0	4	5	14	7	8	11	3	1	1	5	4
7 1	1	1	1	1	0	1	0	1	1	0	3	0	0	0	0	0	1	0	4	0	3	6	0	4
7 2	2	5	3	9	2	12	7	4	0	1	1	11	13	13	11	22	14	12	20	12	28	20	10	2
7 3	8	4	2	1	4	6	4	0	2	5	9	4	19	41	41	27	34	39	13	18	13	7	8	2
7 4	3	5	0	0	1	5	3	6	2	30	43	65	36	47	71	103	120	144	206	203	724	1252	650	158
7 5	25	26	6	22	30	25	324	324	64	187	173	141	745	423	675	748	689	465	278	308	760	941	389	97
7 6	11	13	9	2	2	18	12	25	26	160	271	347	511	451	582	572	495	438	320	216	131	170	106	29
7 7	3	14	7	2	3	36	23	10	31	6	9	15	21	16	18	27	17	26	32	24	20	41	39	18
7 8	47	57	48	65	15	120	32	32	32	19	21	125	95	174	273	343	384	340	292	174	137	56	38	32
7 9	33	10	7	3	6	23	26	57	36	52	145	237	275	298	337	296	275	191	168	105	68	25	9	60
7 10	47	10	14	2	6	11	5	27	27	37	159	192	108	288	353	294	317	296	141	119	38	23	10	59
7 11	54	33	12	7	19	22	28	42	74	93	69	163	129	128	127	162	182	141	150	80	33	22	17	46
7 12	38	35	11	13	1	23	13	40	45	27	55	119	141	213	73	210	344	408	352	184	135	111	27	20
7 13	36	50	24	18	16	19	20	11	10	15	69	157	201	383	473	447	537	859	645	339	208	165	64	15
7 14	2	27	60	176	92	86	109	333	165	154	133	32	68	40	46	33	56	186	118	84	61	45	15	6
7 15	3	20	0	2	7	32	10	44	67	36	55	72	52	59	24	51	152	363	420	430	407	254	132	21
7 16	7	4	1	16	9	8	12	10	30	41	87	26	52	250	262	206	152	232	396	284	270	107	37	20
7 17	13	23	22	19	12	20	26	51	86	188	182	179	122	166	159	83	101	85	523	752	380	110	41	24
7 18	26	14	1	8	8	32	44	18	41	137	132	162	108	120	112	69	61	66	160	387	264	132	67	44
7 19	6	9	8	22	8	15	10	37	32	82	53	47	52	45	68	47	51	30	64	278	261	205	80	27
7 20	23	7	8	11	17	48	47	29	27	17	20	38	43	51	84	66	47	71	41	70	128	322	142	72
7 21	32	3	2	8	4	6	9	7	21	26	109	145	151	128	129	145	178	148	108	97	60	235	256	76
7 22	53	38	12	22	14	27	32	20	15	43	152	103	154	166	194	160	159	100	75	98	70	128	278	133
7 23	65	69	90	31	22	41	54	58	67	53	163	385	299	364	294	128	150	81	92	83	55	166	426	160
7 24	127	90	53	43	26	37	37	25	53	100	24	238	215	518	277	100	95	111	85	126	63	54	363	182
7 25	48	49	2	5	12	33	30	32	16	41	49	90	245	615	40	483	220	122	103	59	61	25	63	288
7 26	98	36	42	20	2	25	56	35	26	43	102	101	169	181	399	435	285	166	113	21	39	36	13	48
7 27	163	102	27	26	20	17	21	21	25	35	19	92	98	186	129	168	299	257	228	109	67	39	14	13
7 28	26	18	21	24	18	11	10	14	17	33	28	65	61	65	84	41	125	293	134	118	90	56	29	15
7 29	21	16	24	10	24	22	34	14	17	14	25	38	47	69	93	75	73	163	251	234	118	88	36	26
7 30	24	27	11	21	41	23	18	13	50	63	57	86	145	85	134	116	91	390	529	253	120	62	38	9

Appendix Table 33. Crescent River south bank side scan sonar counts by hour, 15 June through 30 July 1985.

	HOUR																							
DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
6 15	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1
6 16	1	2	3	0	3	1	1	1	1	1	0	0	0	0	1	1	3	1	1	0	1	0	1	0
6 17	0	0	0	0	0	0	2	0	1	1	0	1	3	5	0	0	1	2	0	1	0	1	0	0
6 18	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 19	0	0	0	0	0	0	0	0	2	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0
6 20	0	1	1	0	0	0	0	0	0	1	1	3	1	0	4	1	1	2	0	0	2	0	0	0
6 21	0	0	0	0	0	0	0	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0	2	0
6 22	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
6 23	0	0	0	0	0	1	4	0	2	3	0	0	0	1	1	1	0	1	1	0	1	2	2	0
6 24	2	1	0	2	0	0	3	1	0	0	0	1	2	0	1	0	0	0	0	0	2	0	1	0
6 25	2	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	1	0	1	0	1
6 26	1	0	1	0	1	0	1	1	0	0	0	5	0	0	0	1	0	0	0	2	6	0	0	0
6 27	2	1	3	2	1	0	1	2	0	0	0	0	0	0	1	0	0	0	5	0	2	0	2	1
6 28	0	2	0	4	1	3	1	3	0	0	0	0	0	0	0	0	1	2	0	4	0	2	0	1
6 29	3	3	2	2	7	2	5	4	2	4	1	2	4	2	7	6	13	17	18	8	8	5	2	8
6 30	6	3	7	4	5	2	1	2	3	2	0	0	2	3	2	9	5	4	1	1	5	5	11	7
7 1	11	11	9	11	3	2	7	3	3	4	8	12	10	5	4	2	8	3	9	2	9	8	12	15
7 2	12	8	18	3	19	3	8	7	6	0	0	4	4	3	8	17	16	40	11	31	28	4	1	0
7 3	0	0	1	1	4	3	3	2	5	6	2	5	6	5	8	8	16	4	2	14	17	19	9	9
7 4	21	19	5	9	20	5	24	37	22	27	19	41	44	29	38	57	24	49	54	28	256	341	215	39
7 5	9	2	1	3	4	7	14	46	13	43	52	172	229	149	214	207	76	60	46	65	325	507	215	75
7 6	11	17	18	18	22	40	29	11	35	11	70	178	133	98	110	62	47	29	24	23	61	240	233	43
7 7	20	24	16	8	12	21	19	7	3	7	13	14	30	11	49	46	47	69	69	25	7	12	19	12
7 8	2	6	5	4	5	8	15	7	11	16	31	67	77	62	60	110	74	102	66	68	30	12	9	30
7 9	28	11	9	3	4	7	6	15	23	23	27	37	46	54	32	58	35	18	19	17	4	5	4	54
7 10	70	5	23	7	7	4	11	9	6	13	26	23	31	24	37	49	40	33	25	7	6	2	4	16
7 11	50	48	10	14	16	32	25	31	38	39	48	50	62	49	19	31	18	14	26	12	16	2	0	8
7 12	30	78	34	20	6	27	7	11	13	13	36	27	20	19	23	61	82	88	70	64	27	15	7	8
7 13	38	95	99	32	18	15	12	0	10	13	53	53	58	80	50	80	56	114	82	20	39	22	12	6
7 14	6	17	84	96	70	47	35	56	36	65	35	45	24	14	39	26	36	94	79	58	28	22	12	9
7 15	1	5	5	4	2	6	24	59	30	63	34	50	58	27	18	32	31	79	80	62	50	28	21	17
7 16	11	21	10	3	6	26	4	5	11	10	41	20	54	80	107	46	58	87	281	210	106	63	36	9
7 17	8	21	2	2	4	40	13	26	64	107	102	162	57	43	23	29	37	11	139	180	112	65	33	16
7 18	26	17	17	4	8	17	25	11	39	65	62	92	65	42	50	36	31	27	55	169	80	66	35	22
7 19	23	18	10	11	6	6	17	14	16	15	44	38	55	46	49	44	19	24	30	143	146	135	54	21
7 20	17	13	17	23	28	33	52	32	3	5	30	66	67	120	74	98	69	60	47	56	182	236	86	42
7 21	12	0	2	0	0	3	4	4	13	44	72	163	155	120	97	137	106	63	75	33	58	248	60	9
7 22	11	12	15	16	8	5	25	16	16	29	80	79	47	77	101	44	31	32	35	21	27	58	53	38
7 23	57	60	7	15	11	26	44	55	31	50	77	173	153	97	94	55	39	51	64	31	31	31	83	26
7 24	43	43	44	34	13	38	3	9	17	33	117	132	91	144	110	126	88	56	25	50	10	18	109	43
7 25	24	25	20	14	23	43	28	14	13	29	49	43	119	299	363	227	82	79	60	19	37	30	31	136
7 26	104	33	31	10	0	30	12	30	25	30	41	100	161	127	344	236	102	69	57	33	16	12	2	6
7 27	70	45	46	28	6	19	13	17	22	39	47	45	80	119	173	137	213	173	115	63	48	2	20	2
7 28	11	25	21	10	26	12	22	24	23	16	17	38	56	42	55	51	120	155	168	87	70	60	22	15
7 29	21	10	13	14	24	18	47	5	7	20	36	51	58	50	58	108	49	47	71	119	45	33	26	6
7 30	21	26	6	22	34	20	3	9	12	23	37	47	90	91	68	100	88	148	187	101	52	27	21	4

Appendix Table 34. Fish targets recorded on the north bank of the Crescent River, 15 June through 30 July, 1985.

	FISH TARGETS		SOCKEYE		PINK		CHUM		COHO	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
6/15	0	0	0	0	0	0	0	0	0	0
6/16	1	1	1	1	0	0	0	0	0	0
6/17	1	2	1	2	0	0	0	0	0	0
6/18	0	2	0	2	0	0	0	0	0	0
6/19	0	2	0	2	0	0	0	0	0	0
6/20	1	3	1	3	0	0	0	0	0	0
6/21	2	5	2	5	0	0	0	0	0	0
6/22	0	5	0	5	0	0	0	0	0	0
6/23	0	5	0	5	0	0	0	0	0	0
6/24	0	5	0	5	0	0	0	0	0	0
6/25	3	8	3	8	0	0	0	0	0	0
6/26	10	18	10	18	0	0	0	0	0	0
6/27	41	59	41	59	0	0	0	0	0	0
6/28	43	102	43	102	0	0	0	0	0	0
6/29	244	346	244	346	0	0	0	0	0	0
6/30	86	432	86	432	0	0	0	0	0	0
7/ 1	35	467	35	467	0	0	0	0	0	0
7/ 2	232	699	232	699	0	0	0	0	0	0
7/ 3	341	1,040	341	1,040	0	0	0	0	0	0
7/ 4	3,877	4,917	3,877	4,917	0	0	0	0	0	0
7/ 5	7,875	12,792	7,875	12,792	0	0	0	0	0	0
7/ 6	4,917	17,709	4,917	17,709	0	0	0	0	0	0
7/ 7	477	18,186	477	18,186	0	0	0	0	0	0
7/ 8	2,956	21,142	2,903	21,089	53	53	0	0	0	0
7/ 9	2,742	23,884	2,693	23,782	49	102	0	0	0	0

(continued)

Appendix Table 34. Fish targets recorded on the north bank of the Crescent River, 15 June through 30 July, 1985 (Continued).

	FISH TARGETS		SOCKEYE		PINK		CHUM		COHO	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
7/10	2,582	26,466	2,536	26,318	46	148	0	0	0	0
7/11	1,833	28,299	1,800	28,118	33	181	0	0	0	0
7/12	2,639	30,938	2,592	30,710	47	228	0	0	0	0
7/13	4,782	35,720	4,725	35,435	0	228	29	29	28	28
7/14	2,127	37,847	2,102	37,537	0	228	12	41	13	41
7/15	2,713	40,560	2,681	40,218	0	228	16	57	16	57
7/16	2,519	43,079	2,489	42,707	0	228	15	72	15	72
7/17	3,369	46,448	3,329	46,036	0	228	20	92	20	92
7/18	2,213	48,661	2,187	48,223	0	228	13	105	13	105
7/19	1,537	50,198	1,519	49,742	0	228	9	114	9	114
7/20	1,429	51,627	1,367	51,109	25	253	12	126	25	139
7/21	2,084	53,711	1,993	53,102	37	290	18	144	36	175
7/22	2,246	55,957	2,148	55,250	39	329	20	164	39	214
7/23	3,398	59,355	3,250	58,500	59	388	30	194	59	273
7/24	3,044	62,399	2,912	61,412	53	441	26	220	53	326
7/25	2,731	65,130	2,612	64,024	48	489	24	244	47	373
7/26	2,492	67,622	2,384	66,408	43	532	22	266	43	416
7/27	2,175	69,797	2,080	68,488	38	570	19	285	38	454
7/28	1,396	71,193	1,335	69,823	25	595	12	297	24	478
7/29	1,532	72,725	1,465	71,288	27	622	13	310	27	505
7/30	2,406	75,131	2,301	73,589	42	664	21	331	42	547

Appendix Table 35. Fish targets recorded on the south bank of the Crescent River, 15 June through 30 July, 1985.

	FISH TARGETS		SOCKEYE		PINK		CHUM		COHO	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
6/15	6	6	6	6	0	0	0	0	0	0
6/16	23	29	23	29	0	0	0	0	0	0
6/17	18	47	18	47	0	0	0	0	0	0
6/18	7	54	7	54	0	0	0	0	0	0
6/19	5	59	5	59	0	0	0	0	0	0
6/20	18	77	18	77	0	0	0	0	0	0
6/21	6	83	6	83	0	0	0	0	0	0
6/22	4	87	4	87	0	0	0	0	0	0
6/23	20	107	20	107	0	0	0	0	0	0
6/24	19	126	19	126	0	0	0	0	0	0
6/25	13	139	13	139	0	0	0	0	0	0
6/26	22	161	22	161	0	0	0	0	0	0
6/27	23	184	23	184	0	0	0	0	0	0
6/28	25	209	25	209	0	0	0	0	0	0
6/29	133	342	133	342	0	0	0	0	0	0
6/30	83	425	83	425	0	0	0	0	0	0
7/ 1	175	600	175	600	0	0	0	0	0	0
7/ 2	248	848	248	848	0	0	0	0	0	0
7/ 3	149	997	149	997	0	0	0	0	0	0
7/ 4	1,423	2,420	1,423	2,420	0	0	0	0	0	0
7/ 5	2,534	4,954	2,534	4,954	0	0	0	0	0	0
7/ 6	1,563	6,517	1,563	6,517	0	0	0	0	0	0
7/ 7	558	7,075	558	7,075	0	0	0	0	0	0
7/ 8	877	7,952	861	7,936	16	16	0	0	0	0
7/ 9	539	8,491	529	8,465	10	26	0	0	0	0

(continued)

Appendix Table 35. Fish targets recorded on the south bank of the Crescent River, 15 June through 30 July, 1985 (continued).

	FISH TARGETS		SOCKEYE		PINK		CHUM		COHO	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
7/10	478	8,969	469	8,934	9	35	0	0	0	0
7/11	656	9,625	644	9,578	12	47	0	0	0	0
7/12	786	10,411	772	10,350	14	61	0	0	0	0
7/13	1,057	11,468	1,044	11,394	0	61	7	7	6	6
7/14	1,033	12,501	1,021	12,415	0	61	6	13	6	12
7/15	787	13,288	778	13,193	0	61	4	17	5	17
7/16	1,305	14,593	1,290	14,483	0	61	7	24	8	25
7/17	1,296	15,889	1,281	15,764	0	61	7	31	8	33
7/18	1,061	16,950	1,048	16,812	0	61	7	38	6	39
7/19	984	17,934	972	17,784	0	61	6	44	6	45
7/20	1,457	19,391	1,394	19,178	25	86	13	57	25	70
7/21	1,478	20,869	1,414	20,592	25	111	13	70	26	96
7/22	876	21,745	838	21,430	15	126	8	78	15	111
7/23	1,363	23,108	1,304	22,734	23	149	12	90	24	135
7/24	1,395	24,503	1,334	24,068	25	174	12	102	24	159
7/25	1,806	26,309	1,727	25,795	32	206	16	118	31	190
7/26	1,611	27,920	1,541	27,336	28	234	14	132	28	218
7/27	1,541	29,461	1,474	28,810	27	261	13	145	27	245
7/28	1,143	30,604	1,093	29,903	20	281	10	155	20	265
7/29	963	31,567	921	30,824	17	298	8	163	17	282
7/30	1,236	32,803	1,182	32,006	22	320	11	174	21	303

Appendix Table 36. Daily catch by species for Crescent River, 6 July through 29 July, 1985.

Date	Gear Type	Hours Fished	Sockeye		Pink		Chum		Coho		Other *	
			Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
7/05	Trip Seine	4.0	30	30								
7/06	Trip Seine	8.5	50	80								
7/07	Trip Seine	5.6	100	180								
7/08	Trip Seine	6.5	14	194								
7/09	Trip Seine	2.8	31	225								
7/10	Trip Seine	5.6	36	261	1	1						
7/11	Trip Seine	7.4	28	289	2	3						
7/11	Drift Gillnet	1.8	8	297		3						
7/12	Trip Seine	6.6	19	316		3						
7/12	Set Gillnet	2.5	29	345		3						
7/13	Trip Seine	2.4	20	365		3						
7/14	Trip Seine	8.0	0	365		3						
7/15	Trip Seine	5.1	3	368		3						
7/16	Drift Gillnet	2.0	61	429		3			1	1		
7/17	Drift Gillnet	1.0	40	469		3				1		
7/18	Drift Gillnet	1.5	23	492		3				1		
7/19	Drift Gillnet	1.0	20	512		3	1	1		1		
7/20	**			512		3		1		1		
7/21	Drift Gillnet	0.5	8	520		3		1		1		
7/22	Trip Seine	7.5	19	539		3	1	2		1		
7/23	Trip Seine	6.2	2	541		3		2		1		
7/24	Drift Gillnet	2.0	27	568	1	4		2		1	1	1
7/25	Drift Gillnet	1.1	14	582		4		2		1		1
7/26	**			582		4		2		1		1
7/27	**			582		4		2		1		1
7/28	Drift Gillnet	0.5	20	602		4		2		1		1
7/29	Drift Gillnet	***	20	622	1	5		2	1	2		1
Total			622		5		2		2		1	

* Dolly Varden trout.
** No sampling was conducted on 7/20, 7/26, or 7/27.
***Time fished not documented for 7/29.

Appendix Table 37. Length composition of the major age classes of sockeye salmon collected in the Crescent River, 1979-1985.

		Male			Female			Total			
Year	Age Class	Average Length (mm)[1]	Standard Error	Sample Size	Average Length (mm)	Standard Error	Sample Size	Average Length (mm)	Standard Error	Sample Size	Ratio Male-Female
1979	1.2	509	6.2	92	523	4.5	86	516	3.9	178	1.1:1
1981		472	6.3	47	471	7.2	31	472	---	78	1.5:1
1982		522	8.6	59	491	8.6	33	511	8.6	92	1.8:1
1983		467	6.1	47	487	6.5	25	474	4.6	72	1.9:1
1979	1.3	585	3.0	184	572	1.2	274	578	1.4	458	0.7:1
1980		568	2.1	167	549	1.5	223	557	---	390	0.7:1
1981		576	2.5	121	555	2.6	172	564	---	293	0.7:1
1982		586	1.4	303	556	1.4	259	572	1.4	562	1.2:1
1983		570	2.1	111	542	1.8	169	553	1.3	280	0.7:1
1984		574	4.7	60	552	2.4	72	562	2.5	132	0.8:1
1985		565	3.7	75	551	1.7	111	557	1.8	186	0.7:1
1981	2.2	487	55.0	40	519	4.5	57	506	---	97	0.7:1
1983		494	3.9	93	488	3.0	89	491	2.5	182	1.0:1
1984		499	4.2	81	507	3.7	75	503	2.8	156	1.1:1
1985		496	5.4	75	490	3.5	47	494	3.6	122	1.6:1
1981	2.3	584	2.0	158	554	1.6	237	566	---	395	0.7:1
1983		569	3.5	43	550	2.1	80	556	1.8	123	0.5:1
1984		581	1.5	261	553	1.6	202	569	1.1	463	1.3:1
1985		568	3.6	94	551	1.6	161	557	1.7	255	0.6:1

[1] Lengths measured mid-eye to fork of tail.

Appendix Table 38. Weight composition of the major age classes of sockeye salmon collected in the Crescent River, 1980-1985.

		Male			Female			Total		
Year	Age Class	Average Weight (kg)	Standard Error	Sample Size	Average Weight (kg)	Standard Error	Sample Size	Average Weight (kg)	Standard Error	Sample Size
1981	1.2	2.0	0.10	47	1.8	0.09	31	2.0	---	78
1982		2.7	0.15	59	2.0	0.11	33	2.5	0.13	92
1983		1.8	0.08	47	2.0	0.09	25	1.9	0.06	72
1980	1.3	3.1	0.07	59	2.7	0.04	91	2.9	---	150
1981		3.5	0.05	121	2.9	0.04	172	3.2	---	293
1982		3.7	0.03	303	2.9	0.02	258	3.3	0.03	561
1983		3.3	0.04	111	2.7	0.03	169	2.9	0.02	280
1984		3.5	0.09	60	2.8	0.04	72	3.1	0.04	132
1985		2.97	0.06	75	2.50	0.03	111	2.69	0.03	186
1981	2.2	2.4	0.13	40	2.5	0.07	57	2.4	---	97
1983		2.3	0.06	93	2.0	0.03	89	2.1	0.04	182
1984		2.3	0.07	81	2.2	0.06	75	2.2	0.05	156
1985		1.98	0.07	75	1.81	0.04	47	1.91	0.05	122
1981	2.3	3.7	0.04	158	2.9	0.03	237	3.2	---	395
1983		3.2	0.06	43	2.8	0.03	80	2.9	0.03	123
1984		3.7	0.03	261	2.8	0.03	202	3.3	0.02	463
1985		2.98	0.06	94	2.56	0.03	161	2.72	0.03	255

Appendix Table 39. Fish targets recorded in the Yentna River, north and south banks combined, 1 July through 8 August, 1985. *

	FISH TARGETS		SOCKEYE		PINK		CHUM		COHO		CHINOOK	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
7/ 1	165	165	32	32	124	124	2	2	3	3	4	4
7/ 2	129	294	25	57	97	221	2	4	2	5	3	7
7/ 3	108	402	20	77	83	304	1	5	2	7	2	9
7/ 4	118	520	21	98	91	395	3	8	1	8	2	11
7/ 5	197	717	37	135	150	545	4	12	2	10	4	15
7/ 6	354	1,071	65	200	273	818	6	18	4	14	6	21
7/ 7	590	1,661	107	307	455	1,273	12	30	7	21	9	30
7/ 8	251	1,912	48	355	190	1,463	5	35	3	24	5	35
7/ 9	521	2,433	96	451	400	1,863	9	44	7	31	9	44
7/10	487	2,920	93	544	369	2,232	8	52	7	38	10	54
7/11	471	3,391	88	632	359	2,591	9	61	6	44	9	63
7/12	595	3,986	112	744	453	3,044	10	71	8	52	12	75
7/13	801	4,787	151	895	610	3,654	14	85	10	62	16	91
7/14	446	5,233	58	953	375	4,029	3	88	7	69	3	94
7/15	654	5,887	91	1,044	542	4,571	6	94	11	80	4	98
7/16	567	6,454	77	1,121	472	5,043	6	100	8	88	4	102
7/17	663	7,117	89	1,210	554	5,597	6	106	10	98	4	106
7/18	600	7,717	82	1,292	499	6,096	5	111	10	108	4	110
7/19	411	8,128	72	1,364	326	6,422	5	116	6	114	2	112
7/20	476	8,604	83	1,447	377	6,799	6	122	8	122	2	114
7/21	602	9,206	106	1,553	478	7,277	6	128	10	132	2	116
7/22	642	9,848	113	1,666	509	7,786	7	135	11	143	2	118
7/23	2,157	12,005	384	2,050	1,710	9,496	19	154	39	182	5	123
7/24	21,156	33,161	13,451	15,501	6,799	16,295	597	751	292	474	17	140
7/25	36,773	69,934	22,954	38,455	11,035	27,330	1,493	2,244	1,254	1,728	37	177
7/26	30,670	100,604	15,857	54,312	12,427	39,757	1,479	3,723	876	2,604	31	208
7/27	33,771	134,375	13,815	68,127	17,759	57,516	1,284	5,007	883	3,487	30	238
7/28	38,980	173,355	15,618	83,745	19,429	76,945	2,488	7,495	1,417	4,904	28	266
7/29	30,792	204,147	12,996	96,741	15,345	92,290	1,745	9,240	645	5,549	61	327
7/30	13,872	218,019	4,148	100,889	8,508	100,798	710	9,950	462	6,011	44	371

(continued)

Appendix Table 39. Fish targets recorded in the Yentna River, north and south banks combined, 1 July through 8 August, 1985 (Continued). *

	FISH TARGETS		SOCKEYE		PINK		CHUM		COHO		CHINOOK	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
7/31	8,742	226,761	1,982	102,871	5,307	106,105	649	10,599	782	6,793	22	393
8/ 1	5,354	232,115	1,079	103,950	3,175	109,280	400	10,999	698	7,491	2	395
8/ 2	4,568	236,683	870	104,820	2,777	112,057	374	11,373	544	8,035	3	398
8/ 3	2,856	239,539	471	105,291	1,917	113,974	214	11,587	254	8,289	0	398
8/ 4	2,545	242,084	437	105,728	1,678	115,652	191	11,778	239	8,528	0	398
8/ 5	1,791	243,875	324	106,052	1,197	116,849	88	11,866	181	8,709	1	399
8/ 6	2,161	246,036	381	106,433	1,458	118,307	109	11,975	211	8,920	2	401
8/ 7	2,178	248,214	405	106,838	1,554	119,861	65	12,040	152	9,072	2	403
8/ 8	1,577	249,791	286	107,124	1,129	120,990	52	12,092	109	9,181	1	404

* Fish targets apportioned by fishwheel catch.

Appendix Table 40. Peterson populaltion (tag-recapture) estimates by species and sampling location, Adult Anadromous Investigations, Susitna Hydroelectric Studies, 1985.[1]

Location	River Mile	Estimate Type	Escapement Estimate				
			Sockeye	Pink	Chum	Coho	Chinook
Flathorn Station	22	Tag/Recap	407,600	479,500	316,800	77,350	113,860
Sunshine Station	80	Tag/Recap	120,800	42,600	373,600	36,800	185,700
Curry Station	120	Tag/Recap	2,800	14,900	24,400	1,560	9,400

[1] Source, Thompson et al. 1986.

Appendix Table 41. Fish targets recorded on the south bank of the Yentna River, 1 July through 8 August, 1985.

	FISH TARGETS		SOCKEYE		PINK		CHUM		COHO		CHINOOK	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
7/ 1	165	165	32	32	124	124	2	2	3	3	4	4
7/ 2	127	292	25	57	95	219	2	4	2	5	3	7
7/ 3	77	369	15	72	58	277	1	5	1	6	2	9
7/ 4	51	420	10	82	38	315	1	6	1	7	1	10
7/ 5	127	547	25	107	95	410	2	8	2	9	3	13
7/ 6	152	699	30	137	114	524	2	10	2	11	4	17
7/ 7	233	932	46	183	174	698	4	14	4	15	5	22
7/ 8	183	1,115	36	219	137	835	3	17	3	18	4	26
7/ 9	280	1,395	55	274	210	1,045	4	21	4	22	7	33
7/10	389	1,784	76	350	292	1,337	6	27	6	28	9	42
7/11	311	2,095	61	411	233	1,570	5	32	5	33	7	49
7/12	411	2,506	81	492	308	1,878	6	38	6	39	10	59
7/13	534	3,040	105	597	400	2,278	8	46	8	47	13	72
7/14	288	3,328	31	628	250	2,528	0	46	6	53	1	73
7/15	328	3,656	35	663	285	2,813	0	46	7	60	1	74
7/16	310	3,966	33	696	270	3,083	0	46	6	66	1	75
7/17	396	4,362	43	739	344	3,427	0	46	8	74	1	76
7/18	330	4,692	36	775	286	3,713	0	46	7	81	1	77
7/19	218	4,910	39	814	174	3,887	1	47	4	85	0	77
7/20	241	5,151	43	857	192	4,079	1	48	5	90	0	77
7/21	397	5,548	71	928	316	4,395	2	50	8	98	0	77
7/22	401	5,949	72	1,000	319	4,714	2	52	8	106	0	77
7/23	1,627	7,576	293	1,293	1,293	6,007	8	60	33	139	0	77
7/24	19,460	27,036	13,161	14,454	5,462	11,469	563	623	274	413	0	77
7/25	32,982	60,018	22,305	36,759	8,048	19,517	1,416	2,039	1,213	1,626	0	77
7/26	23,125	83,143	13,515	50,274	8,011	27,528	799	2,838	769	2,395	31	108
7/27	27,275	110,418	11,798	62,072	13,957	41,485	699	3,537	791	3,186	30	138
7/28	31,855	142,273	14,208	76,280	14,772	56,257	1,606	5,143	1,241	4,427	28	166
7/29	26,276	168,549	12,102	88,382	12,393	68,650	1,187	6,330	533	4,960	61	227
7/30	12,216	180,765	3,925	92,307	7,379	76,029	513	6,843	358	5,318	41	268

(continued)

Appendix Table 41. Fish targets recorded on the south bank of the Yentna River, 1 July through 8 August, 1985 (continued).

	FISH TARGETS		SOCKEYE		PINK		CHUM		COHO		CHINOOK	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
7/31	7,186	187,951	1,772	94,079	4,246	80,275	465	7,308	683	6,001	20	288
8/ 1	3,780	191,731	867	94,946	2,102	82,377	213	7,521	598	6,599	0	288
8/ 2	2,686	194,417	616	95,562	1,494	83,871	151	7,672	425	7,024	0	288
8/ 3	1,543	195,960	314	95,876	933	84,804	113	7,785	183	7,207	0	288
8/ 4	1,578	197,538	321	96,197	954	85,758	116	7,901	187	7,394	0	288
8/ 5	1,289	198,827	264	96,461	821	86,579	49	7,950	154	7,548	1	289
8/ 6	1,441	200,268	295	96,756	918	87,497	54	8,004	172	7,720	2	291
8/ 7	1,604	201,872	336	97,092	1,124	88,621	21	8,025	121	7,841	2	293
8/ 8	1,083	202,955	227	97,319	759	89,380	14	8,039	82	7,923	1	294

Appendix Table 42. Fish targets recorded on the north bank of the Yentna River, 1 July through 8 August, 1985.

	FISH TARGETS		SOCKEYE		PINK		CHUM		COHO		CHINOOK	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
7/ 1	0	0	0	0	0	0	0	0	0	0	0	0
7/ 2	2	2	0	0	2	2	0	0	0	0	0	0
7/ 3	31	33	5	5	25	27	0	0	1	1	0	0
7/ 4	67	100	11	16	53	80	2	2	0	1	1	1
7/ 5	70	170	12	28	55	135	2	4	0	1	1	2
7/ 6	202	372	35	63	159	294	4	8	2	3	2	4
7/ 7	357	729	61	124	281	575	8	16	3	6	4	8
7/ 8	68	797	12	136	53	628	2	18	0	6	1	9
7/ 9	241	1,038	41	177	190	818	5	23	3	9	2	11
7/10	98	1,136	17	194	77	895	2	25	1	10	1	12
7/11	160	1,296	27	221	126	1,021	4	29	1	11	2	14
7/12	184	1,480	31	252	145	1,166	4	33	2	13	2	16
7/13	267	1,747	46	298	210	1,376	6	39	2	15	3	19
7/14	158	1,905	27	325	125	1,501	3	42	1	16	2	21
7/15	326	2,231	56	381	257	1,758	6	48	4	20	3	24
7/16	257	2,488	44	425	202	1,960	6	54	2	22	3	27
7/17	267	2,755	46	471	210	2,170	6	60	2	24	3	30
7/18	270	3,025	46	517	213	2,383	5	65	3	27	3	33
7/19	193	3,218	33	550	152	2,535	4	69	2	29	2	35
7/20	235	3,453	40	590	185	2,720	5	74	3	32	2	37
7/21	205	3,658	35	625	162	2,882	4	78	2	34	2	39
7/22	241	3,899	41	666	190	3,072	5	83	3	37	2	41
7/23	530	4,429	91	757	417	3,489	11	94	6	43	5	46
7/24	1,696	6,125	290	1,047	1,337	4,826	34	128	18	61	17	63
7/25	3,791	9,916	649	1,696	2,987	7,813	77	205	41	102	37	100
7/26	7,545	17,461	2,342	4,038	4,416	12,229	680	885	107	209	0	100
7/27	6,496	23,957	2,017	6,055	3,802	16,031	585	1,470	92	301	0	100
7/28	7,125	31,082	1,410	7,465	4,657	20,688	882	2,352	176	477	0	100
7/29	4,516	35,598	894	8,359	2,952	23,640	558	2,910	112	589	0	100
7/30	1,656	37,254	223	8,582	1,129	24,769	197	3,107	104	693	3	103

(continued)

Appendix Table 42. Fish targets recorded on the north bank of the Yentna River, 1 July through 8 August, 1985 (continued).

	FISH TARGETS		SOCKEYE		PINK		CHUM		COHO		CHINOOK	
Date	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum	Daily	Accum
7/31	1,556	38,810	210	8,792	1,061	25,830	184	3,291	99	792	2	105
8/ 1	1,574	40,384	212	9,004	1,073	26,903	187	3,478	100	892	2	107
8/ 2	1,882	42,266	254	9,258	1,283	28,186	223	3,701	119	1,011	3	110
8/ 3	1,313	43,579	157	9,415	984	29,170	101	3,802	71	1,082	0	110
8/ 4	967	44,546	116	9,531	724	29,894	75	3,877	52	1,134	0	110
8/ 5	502	45,048	60	9,591	376	30,270	39	3,916	27	1,161	0	110
8/ 6	720	45,768	86	9,677	540	30,810	55	3,971	39	1,200	0	110
8/ 7	574	46,342	69	9,746	430	31,240	44	4,015	31	1,231	0	110
8/ 8	494	46,836	59	9,805	370	31,610	38	4,053	27	1,258	0	110

Appendix Table 43. Daily adjusted fishwheel catch by species for the south bank of the Yentna River, 2 July through 11 August, 1985. *

Date	Hours Open	Sockeye		Pink		Chum		Coho		Chinook	
		Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
7/02	14.0										
7/03	24.0										
7/04	24.5	1	1	1	1						
7/05	25.5	1	2		1					1	1
7/06	25.3	16	18		1					3	4
7/07	24.3	30	48	30	31	5	5			3	7
7/08	22.7	29	77	41	72	3	8			1	8
7/09	27.4	18	95	45	117		8			2	10
7/10	19.1	10	105	40	157	3	11	1	1	4	14
7/11	30.0	20	125	218	375	1	12	6	7	2	16
7/12	23.3	4	129	53	428		12		7		16
7/13	26.2	29	158	175	603		12	6	13	3	19
7/14	22.3	21	179	200	803		12	1	14		19
7/15	25.5	22	201	343	1,146		12	6	20	2	21
7/16	23.5	37	238	273	1,419		12	8	28	2	23
7/17	22.8	39	277	247	1,666		12	2	30		23
7/18	24.5	34	311	169	1,835		12	12	42		23
7/19	23.5	18	329	133	1,968		12	9	51		23
7/20	25.0	14	343	162	2,130		12	7	58		23
7/21	21.0	7	350	252	2,382		12	3	61		23
7/22	24.5	2	352	123	2,505		12	1	62		23
7/23	27.0	195	547	373	2,878	6	18	7	69		23
7/24	26.5	865	1,412	359	3,237	37	55	18	87		23
7/25	14.0	1,103	2,515	398	3,635	70	125	60	147		23
7/26	14.3	879	3,394	521	4,156	52	177	50	197	2	25
7/27	12.0	776	4,170	918	5,074	46	223	52	249	2	27
7/28	12.0	1,008	5,178	1,048	6,122	114	337	88	337	2	29
7/29	16.0	999	6,177	1,023	7,145	98	435	44	381	5	34
7/30	16.0	482	6,659	906	8,051	63	498	44	425	5	39
7/31	16.0	179	6,838	429	8,480	47	545	69	494	2	41
8/01	16.0	146	6,984	422	8,902	36	581	86	580		41
8/02	14.3	118	7,102	218	9,120	29	610	96	676		41
8/03	27.0	92	7,194	219	9,339	30	640	53	729		41

(continued)

Appendix Table 43. Daily adjusted fishwheel catch by species for the south bank of the Yentna River, 2 July through 11 August, 1985 (continued). *

Date	Hours Open	Sockeye		Pink		Chum		Coho		Chinook	
		Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
8/04	23.0	66	7,260	250	9,589	27	667	39	768		41
8/05	24.0	65	7,325	322	9,911	9	676	45	813		41
8/06	16.3	115	7,440	238	10,149	24	700	60	873	1	42
8/07	23.8	100	7,540	362	10,511	8	708	43	916		42
8/08	24.3	92	7,632	280	10,791	4	712	26	942	1	43
8/09	21.6	92	7,724	119	10,910	11	723	3	945		43
8/10	26.9	112	7,836	216	11,126	17	740	16	961		43
8/11	13.2	85	7,921	60	11,186	9	749	9	970		43
Total		7,921		11,186		749		970		43	

* Fishwheel catch adjusted for 24 hours: (daily catch x 24 hours)/hours open
Actual fishwheel catch: 5,616 sockeye salmon; 8,855 pink salmon; 521 chum salmon; 724 coho salmon; 35 chinook salmon; 11 longnosed suckers; 310 humpbacked whitefish, 2 burbot;, and 1 Bering cisco.

Appendix Table 44. Daily adjusted fishwheel catch by species for the north bank of the Yentna River, 13 July through 11 August, 1985. *

Date	Hours Open	Sockeye		Pink		Chum		Coho		Chinook	
		Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.	Daily	Cum.
7/13	21.8			18	18						
7/14	20.9	9	9	39	57					2	2
7/15	24.3	5	14	76	133			1	1		2
7/16	24.0	16	30	70	203			1	2	3	5
7/17	25.0	12	42	82	285			3	5		5
7/18	24.5	12	54	29	314			2	7	1	6
7/19	23.3	6	60	43	357				7	3	9
7/20	24.0	5	65	58	415				7	1	10
7/21	22.5	4	69	51	466				7		10
7/22	24.5	1	70	24	490			1	8	1	11
7/23	27.0	13	83	132	622	1	1		8	1	12
7/24	21.5	45	128	181	803	11	12	1	9		12
7/25	24.5	81	209	159	962	13	25	4	13		12
7/26	29.0	127	336	221	1,183	38	63	12	25		12
7/27	24.5	135	471	273	1,456	38	101	12	37		12
7/28	24.0	115	586	364	1,820	52	153	12	49		12
7/29	16.8	133	719	455	2,275	103	256	19	68		12
7/30	23.5	59	778	291	2,566	48	304	17	85		12
7/31	24.5	32	810	229	2,795	50	354	11	96	2	14
8/01	23.8	43	853	223	3,018	22	376	17	113		14
8/02	22.0	39	892	131	3,149	32	408	36	149		14
8/03	27.0	30	922	139	3,288	27	435	18	167		14
8/04	23.0	40	962	131	3,419	23	458	13	180		14
8/05	23.0	25	987	160	3,579	15	473	7	187		14
8/06	25.4	23	1,010	128	3,707	15	488	8	195		14
8/07	23.8	18	1,028	219	3,926	13	501	10	205		14
8/08	24.3	23	1,051	219	4,145	9	510	16	221		14
8/09	21.5	26	1,077	107	4,252	8	518	6	227		14
8/10	26.9	25	1,102	197	4,449	7	525	11	238		14
8/11	11.7	23	1,125	90	4,539	8	535	6	244		14
Total		1,125		4,539		533		244		14	

* Fishwheel catch adjusted for 24 hours: (daily catch x 24 hours)/hours open.
Actual fishwheel catch: 1,099 sockeye salmon; 4,415 pink salmon; 502 chum salmon; 241 coho salmon; 14 chinook salmon; 5 longnosed suckers;, and 284 humpbacked whitefish.

Appendix Table 45. Yentna River south bank sonar counts by sector, 1 day time periods, 1 July through 8 August, 1985.

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL*
7 1	24	36	34	25	14	16	4	1	1	5	1	0	161	161
7 2	24	58	33	5	0	0	0	0	0	7	0	5	132	293
7 3	24	29	26	7	0	2	0	0	0	0	0	0	88	381
7 4	0	15	5	3	0	0	11	0	0	0	9	1	44	425
7 5	0	16	6	0	0	0	2	17	52	8	20	14	135	560
7 6	73	51	24	0	0	0	0	1	2	0	0	0	151	711
7 7	54	101	37	8	1	1	0	2	18	2	7	8	239	950
7 8	25	70	51	9	1	1	0	7	6	3	3	4	180	1130
7 9	56	80	43	5	1	1	1	26	21	6	15	36	291	1421
7 10	98	117	51	1	0	1	1	48	8	5	13	48	391	1812
7 11	66	100	23	6	1	1	2	54	5	15	12	28	313	2125
7 12	160	125	34	3	10	0	2	12	27	6	15	25	419	2544
7 13	268	141	40	4	1	0	1	7	17	10	22	27	538	3082
7 14	90	102	41	2	0	0	2	3	5	31	10	20	306	3388
7 15	104	91	61	5	0	0	3	4	21	11	6	16	322	3710
7 16	97	105	46	4	1	0	2	3	7	9	12	4	290	4000
7 17	175	170	26	2	0	0	0	1	0	2	0	22	398	4398
7 18	194	121	13	0	0	0	1	0	0	0	0	1	330	4728
7 19	123	78	10	0	0	0	0	0	1	0	5	1	218	4946
7 20	99	93	4	0	4	1	0	1	2	6	0	30	240	5186
7 21	203	114	14	0	48	0	8	0	0	2	6	3	398	5584
7 22	237	112	9	0	2	0	23	2	0	13	0	1	399	5983
7 23	310	803	408	19	0	0	31	13	6	2	14	26	1632	7615
7 24	4722	7964	5419	903	209	141	21	24	3	12	22	28	19468	27083
7 25	11659	15260	4831	741	280	13	27	26	12	46	52	25	32972	60055

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Appendix Table 45. Yentna River south bank sonar counts by sector, 1 day time periods, 1 July through 8 August, 1985 (continued).

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL*
7 26	7400	11689	3607	305	38	2	17	10	4	13	29	14	23128	83183
7 27	12274	12742	2144	99	0	0	0	0	0	2	14	0	27275	110458
7 28	14773	15761	2112	72	4	0	1	0	0	0	11	0	32734	143192
7 29	11406	12654	1610	233	186	182	0	0	0	0	0	0	26271	169463
7 30	6658	4986	563	8	1	0	0	0	0	0	0	0	12216	181679
7 31	3675	3065	415	26	4	0	1	0	0	0	0	0	7186	188865
8 1	1879	1623	246	20	12	0	0	0	0	0	0	0	3780	192645
8 2	1405	1094	172	11	4	0	0	0	0	0	0	0	2686	195331
8 3	882	565	87	5	0	0	4	0	0	0	0	0	1543	196874
8 4	905	579	89	4	0	0	1	0	0	0	0	0	1578	198452
8 5	741	449	91	3	0	0	5	0	0	0	0	0	1289	199741
8 6	748	582	97	13	0	0	0	0	0	0	0	1	1441	201182
8 7	899	583	83	13	11	11	3	0	0	0	0	0	1603	202785
8 8	559	469	50	0	0	0	9	0	0	0	0	0	1087	203872
	83089	92793	22655	2564	833	373	183	262	218	216	298	388	203872	

* Total count may differ from total fish targets by bank because of method used to average for debris.

Appendix Table 46. Yentna River south bank sonar counts by sector, 3 day time periods, 1 July through 8 August, 1985.

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL *
7 1- 3	72	123	93	37	14	18	4	1	1	12	1	5	381	381
7 4- 6	73	82	35	3	0	0	13	18	54	8	29	15	330	711
7 7- 9	135	251	131	22	3	3	1	35	45	11	25	48	710	1421
7 10-12	324	342	108	10	11	2	5	114	40	26	40	101	1123	2544
7 13-15	462	334	142	11	1	0	6	14	43	52	38	63	1166	3710
7 16-18	466	396	85	6	1	0	3	4	7	11	12	27	1018	4728
7 19-21	425	285	28	0	52	1	8	1	3	8	11	34	856	5584
7 22-24	5269	8879	5836	922	211	141	75	39	9	27	36	55	21499	27083
7 25-27	31333	39691	10582	1145	318	15	44	36	16	61	95	39	83375	110458
7 28-30	32837	33401	4285	313	191	182	1	0	0	0	11	0	71221	181679
7 31- 2	6959	5782	833	57	20	0	1	0	0	0	0	0	13652	195331
8 3- 5	2528	1593	267	12	0	0	10	0	0	0	0	0	4410	199741
8 6- 8	2206	1634	230	26	11	11	12	0	0	0	0	1	4131	203872
Total	83089	92793	22655	2564	833	373	183	262	218	216	298	388	203872	

* Total count may differ from fish targets because of method used to average for debris.

Appendix Table 47. Yentna River north bank sonar counts by sector, 1 day time periods, 3 July through 8 August, 1985.

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL*
7 3	24	1	2	0	0	0	0	0	0	0	0	1	28	28
7 4	25	6	1	0	2	0	0	0	0	2	0	6	42	70
7 5	5	3	2	0	10	0	0	0	0	1	6	12	39	109
7 6	24	40	22	24	22	15	1	1	0	0	12	0	161	270
7 7	48	68	34	38	78	0	1	2	41	22	14	30	376	646
7 8	0	20	7	4	0	0	0	1	8	3	4	0	47	693
7 9	76	39	16	1	51	0	0	0	0	21	17	36	257	950
7 10	21	28	3	1	9	0	0	0	5	5	4	14	90	1040
7 11	49	29	17	1	10	0	8	3	6	2	14	18	157	1197
7 12	63	53	27	6	1	0	3	2	2	11	5	0	173	1370
7 13	92	72	36	4	4	0	7	5	3	8	13	20	264	1634
7 14	63	40	16	2	1	1	3	4	1	2	5	21	159	1793
7 15	116	78	26	8	0	0	4	2	5	11	30	39	319	2112
7 16	82	48	21	6	0	0	5	4	8	19	17	46	256	2368
7 17	125	46	16	3	0	1	5	3	5	7	24	35	270	2638
7 18	155	54	16	5	0	0	3	5	2	1	12	14	267	2905
7 19	130	30	14	3	0	0	0	0	3	6	2	4	192	3097
7 20	105	63	17	2	1	0	2	9	6	2	1	23	231	3328
7 21	103	71	24	2	2	0	0	2	0	1	0	3	208	3536
7 22	112	80	29	3	0	0	2	3	0	1	3	9	242	3778
7 23	125	190	61	11	1	0	15	13	20	14	41	39	530	4308
7 24	441	446	238	115	79	63	55	41	40	57	72	54	1701	6009
7 25	842	790	386	126	32	17	91	120	134	284	333	636	3791	9800
7 26	2481	1409	720	205	43	19	147	201	242	570	668	766	7471	17271
7 27	2544	1107	611	169	49	36	113	128	147	471	544	574	6493	23764

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Appendix Table 47. Yentna River north bank sonar counts by sector, 1 day time periods, 3 July through 8 August, 1985 (continued).

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL *
7 28	3282	1443	643	128	15	10	99	110	124	375	368	527	7124	30888
7 29	1942	1031	320	59	28	0	45	52	41	125	208	192	4043	34931
7 30	796	366	144	40	1	1	26	23	33	58	64	104	1656	36587
7 31	756	316	148	30	5	1	11	17	15	40	73	114	1526	38113
8 1	705	313	136	35	4	0	18	22	54	89	62	136	1574	39687
8 2	656	354	196	28	18	2	32	30	49	131	154	232	1882	41569
8 3	652	233	115	31	3	1	10	11	23	58	63	113	1313	42882
8 4	485	135	67	22	15	7	16	9	11	28	97	75	967	43849
8 5	262	95	51	7	0	0	2	1	6	13	20	45	502	44351
8 6	360	133	72	5	1	1	13	8	8	25	51	43	720	45071
8 7	355	96	41	3	0	0	0	7	6	16	17	33	574	45645
8 8	301	89	52	11	0	0	4	5	1	4	8	17	492	46137
	18403	9415	4347	1138	485	175	741	844	1049	2483	3026	4031	46137	

* Total count may differ from total fish targets by bank because of method used to average for debris.

Appendix Table 48. Yentna River north bank sonar counts by sector, 3 day time periods, 3 July through 8 August, 1985.

	SECTOR													
DATE	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL	CUMULATIVE TOTAL *
7 3- 5	54	10	5	0	12	0	0	0	0	3	6	19	109	109
7 6- 8	72	128	63	66	100	15	2	4	49	25	30	30	584	693
7 9-11	146	96	36	3	70	0	8	3	11	28	35	68	504	1197
7 12-14	218	165	79	12	6	1	13	11	6	21	23	41	596	1793
7 15-17	323	172	63	17	0	1	14	9	18	37	71	120	845	2638
7 18-20	390	147	47	10	1	0	5	14	11	9	15	41	690	3328
7 21-23	340	341	114	16	3	0	17	18	20	16	44	51	980	4308
7 24-26	3764	2645	1344	446	154	99	293	362	416	911	1073	1456	12963	17271
7 27-29	7768	3581	1574	356	92	46	257	290	312	971	1120	1293	17660	34931
7 30- 1	2257	995	428	105	10	2	55	62	102	187	199	354	4756	39687
8 2- 4	1793	722	378	81	36	10	58	50	83	217	314	420	4162	43849
8 5- 7	977	324	164	15	1	1	15	16	20	54	88	121	1796	45645
8 8- 8	301	89	52	11	0	0	4	5	1	4	8	17	492	46137
Total	18403	9415	4347	1138	485	175	741	844	1049	2483	3026	4031	46137	

* Total count may differ from total fish targets because of method used to average for debris.

Appendix Table 49. Yentna River south bank side scan sonar counts by hour, 1 July through 8 August 1985.

	HOUR																							
DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
7 1	6	6	6	6	6	6	6	6	6	6	6	6	6	18	17	3	7	7	5	3	9	3	8	3
7 2	3	7	5	12	2	1	1	2	9	5	8	9	2	2	3	6	7	14	7	6	4	3	8	6
7 3	5	6	2	4	4	6	3	3	1	2	3	3	5	3	7	1	3	3	5	5	5	3	1	5
7 4	1	4	3	2	0	6	2	1	0	1	1	4	0	3	0	0	2	1	0	0	3	1	3	6
7 5	2	2	18	8	2	2	8	11	10	25	7	6	3	1	8	2	1	0	3	2	3	2	5	4
7 6	5	11	21	3	17	4	1	2	3	8	8	2	9	2	3	6	8	6	4	8	12	5	2	1
7 7	16	4	7	17	9	13	20	20	10	14	4	5	6	5	8	8	10	6	7	9	4	12	4	21
7 8	4	8	10	6	9	8	9	7	4	17	6	6	4	6	15	5	10	10	5	10	0	12	7	2
7 9	17	8	12	6	16	12	13	7	23	6	8	10	15	8	5	15	17	10	10	7	13	20	20	13
7 10	15	13	9	17	10	42	43	19	17	11	22	21	10	16	29	5	15	15	12	6	12	10	11	11
7 11	9	10	10	15	11	21	16	16	11	14	20	10	12	18	12	6	9	11	11	18	23	13	7	10
7 12	7	19	14	20	32	21	9	16	22	20	26	34	10	23	11	16	17	6	17	8	15	22	23	11
7 13	11	12	22	11	47	55	67	31	43	33	38	16	13	17	20	16	9	5	12	17	10	11	15	7
7 14	7	14	8	8	13	22	11	16	10	19	13	9	11	17	22	17	10	1	9	17	5	18	21	8
7 15	15	14	9	17	9	7	9	16	18	14	14	12	17	11	16	14	14	13	18	19	8	9	10	19
7 16	22	17	18	9	11	12	13	18	14	15	20	10	13	17	5	9	10	4	7	9	4	10	10	13
7 17	14	22	23	20	26	33	28	18	22	24	15	4	16	8	17	14	11	14	15	15	3	8	13	15
7 18	20	27	26	7	30	16	34	18	19	22	10	16	10	16	8	7	3	6	8	6	5	4	6	6
7 19	10	7	17	13	10	15	22	10	11	9	12	19	8	15	2	8	2	0	8	2	5	4	3	6
7 20	9	9	3	21	7	8	11	21	2	17	6	8	15	14	10	8	8	2	7	8	8	4	20	14
7 21	21	17	27	15	23	5	21	15	19	13	11	25	12	34	9	9	7	37	25	12	16	7	6	12
7 22	10	15	17	25	27	19	3	21	30	15	15	20	20	13	5	1	25	12	27	12	22	16	12	17
7 23	15	13	18	20	15	50	36	26	44	54	68	35	53	60	93	80	96	59	47	66	152	147	193	192
7 24	223	234	219	274	345	356	389	435	569	770	479	567	1219	796	810	873	1192	1423	1371	1266	1163	1535	1351	1609
7 25	1908	1882	2049	1737	1889	1911	1757	1792	1148	1119	893	962	1218	1098	1250	1885	1016	761	1481	765	951	1236	1087	1177
7 26	1542	1345	1209	1250	1304	1467	1406	1342	796	735	497	539	789	851	810	814	909	661	571	696	930	626	950	1089
7 27	1185	1252	1305	1317	1369	1252	1450	1441	1442	1589	1093	1179	1246	1139	704	926	779	841	960	803	907	967	982	1147
7 28	1430	1617	1774	1576	1599	1523	1672	1696	1096	1731	1620	1243	1151	973	1059	980	1203	1155	1039	1333	1228	1375	1062	1599
7 29	1673	1056	1066	1903	920	854	1125	1407	1243	1376	1176	1505	1205	1162	954	986	858	1092	793	896	852	756	649	764
7 30	903	955	928	804	652	718	606	430	521	492	404	516	541	419	279	240	349	305	376	468	372	329	238	371
7 31	412	425	393	441	392	420	343	216	207	281	220	297	428	422	322	274	271	257	227	170	148	253	201	166
8 1	254	261	236	200	232	223	226	216	158	202	186	152	166	183	133	138	43	101	32	68	50	68	78	174
8 2	241	199	142	176	164	175	101	87	122	86	54	62	147	162	92	108	91	64	95	81	57	66	56	58
8 3	54	46	44	46	42	57	42	55	81	73	91	102	69	66	53	88	87	75	85	62	60	49	66	50
8 4	70	73	69	45	66	60	48	73	95	82	79	77	23	72	95	64	60	53	57	61	77	67	50	62
8 5	40	49	40	39	61	60	61	70	69	71	46	81	63	61	56	57	59	43	58	49	46	47	24	39
8 6	31	57	45	48	54	67	67	38	58	88	96	105	75	64	85	44	59	50	60	59	60	29	37	65
8 7	43	48	51	50	42	73	83	78	89	66	70	54	87	115	115	85	96	60	56	66	45	49	46	36
8 8	51	63	38	45	52	68	60	45	65	61	43	71	39	50	69	40	42	25	23	26	23	21	29	38

Appendix Table 50. Yentna River north bank side scan sonar counts by hour, 3 July through 9 August 1985.

	HOUR																							
DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
7 3	1	1	0	0	0	0	0	1	0	0	0	0	3	7	1	5	0	0	0	1	1	0	6	1
7 4	1	8	0	0	0	0	0	0	0	1	0	0	0	2	3	2	0	7	2	5	3	1	1	6
7 5	1	3	8	1	8	1	3	9	3	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
7 6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	8	3	7	11	13	4	15	5	5
7 7	6	13	6	15	16	26	23	9	5	24	10	30	19	30	11	21	14	16	8	9	17	18	19	11
7 8	3	2	2	0	0	10	1	1	0	1	4	3	3	1	0	1	3	2	0	1	2	1	4	2
7 9	6	7	7	10	12	7	5	11	4	9	11	14	30	13	11	5	5	5	15	11	16	10	22	11
7 10	5	2	10	3	3	4	3	6	8	14	10	3	4	0	0	0	0	0	0	0	1	2	5	7
7 11	7	3	4	3	12	8	9	7	8	1	2	0	0	0	0	1	2	0	11	15	17	26	15	6
7 12	6	9	4	5	10	9	10	8	13	6	14	6	2	4	3	1	9	4	2	0	14	14	9	11
7 13	5	11	14	12	13	12	10	12	19	2	6	11	10	19	14	6	14	10	20	9	6	11	10	8
7 14	2	4	8	5	1	4	4	6	5	6	6	14	2	8	4	0	7	6	9	8	23	7	10	10
7 15	13	20	9	6	15	5	17	21	12	16	16	8	16	28	13	5	17	12	9	10	13	12	11	15
7 16	10	18	11	8	18	12	18	9	9	10	7	5	7	9	14	8	7	9	6	8	12	17	13	11
7 17	20	5	10	12	5	16	6	19	9	7	8	18	11	15	7	6	11	16	16	13	10	7	16	7
7 18	12	5	8	6	10	5	16	11	7	8	15	4	6	8	19	11	7	8	28	10	14	26	10	13
7 19	5	11	7	13	8	10	14	5	11	11	5	10	3	11	2	3	11	9	7	4	9	6	9	8
7 20	4	9	3	6	3	5	9	23	2	6	5	13	11	6	18	13	20	14	14	6	9	16	13	3
7 21	3	6	4	1	4	4	11	12	12	3	9	4	11	12	15	11	4	11	9	14	10	14	16	8
7 22	8	4	16	6	8	9	4	13	10	14	6	8	7	7	6	10	11	18	6	13	12	17	13	16
7 23	11	3	10	6	14	12	3	9	13	6	14	16	24	12	21	19	31	25	38	43	66	63	37	34
7 24	39	46	18	39	25	19	16	36	31	28	72	72	72	72	72	72	106	110	95	132	151	117	137	124
7 25	140	207	183	167	199	172	100	82	63	85	61	82	48	96	101	125	47	138	252	188	289	317	244	405
7 26	292	311	267	374	358	329	270	207	177	236	262	170	232	231	196	208	375	504	208	411	475	409	412	557
7 27	546	381	323	240	119	180	104	198	149	97	102	186	267	297	381	270	243	277	302	306	392	429	251	453
7 28	594	433	321	324	249	250	207	93	150	167	142	238	251	175	291	238	286	318	439	498	349	251	354	506
7 29	321	376	255	178	157	183	127	144	127	121	109	151	125	120	188	178	229	131	164	150	118	150	136	105
7 30	88	68	64	63	42	39	66	44	31	46	47	71	43	44	47	64	78	84	128	102	88	122	77	110
7 31	90	88	74	78	69	63	57	51	56	58	90	50	43	63	48	61	72	82	76	60	56	49	52	40
8 1	72	52	28	34	14	23	35	44	29	34	37	31	49	52	64	70	53	75	118	152	131	101	70	206
8 2	116	99	83	106	47	56	52	48	45	73	44	62	75	28	46	95	64	147	156	117	53	90	106	74
8 3	61	57	59	52	27	37	47	53	42	62	30	46	53	58	43	64	25	78	115	88	77	59	50	30
8 4	57	36	25	22	16	21	21	18	31	20	33	116	23	71	33	61	72	55	41	57	30	41	40	27
8 5	23	23	21	15	24	17	20	18	11	18	17	12	20	20	16	25	28	29	32	22	12	19	14	46
8 6	19	30	28	11	30	19	29	11	11	23	30	36	40	32	19	35	35	58	37	46	35	31	28	47
8 7	23	15	21	14	21	19	13	22	22	12	18	16	25	45	28	32	26	38	39	27	16	16	21	45
8 8	32	33	23	22	21	21	21	44	37	31	40	30	14	7	15	9	12	10	9	12	12	20	10	7

Appendix Table 51. Susitna River (Flathorn Station west channel left fishwheel) sockeye salmon age, weight (kg), and length (mm) by sex, 1985.

	AGE GROUP									
	31	32	41	42	51	52	53	62	63	TOTAL
MALES										
PERCENT	2.20	1.70	1.70	23.90	.00	19.30	5.20	.70	2.00	56.70
AV LENGTH	446.92	353.70	554.50	460.27	.00	572.58	493.00	598.75	562.08	505.91
STD ERROR	5.97	7.73	14.72	2.72	.00	3.09	6.85	8.10	5.08	1.78
SAMP SIZE	13	10	10	143	0	115	31	4	12	338
AV WEIGHT	1.37	.00	1.99	2.30	.00	2.82	1.60	.00	.00	2.37
STD ERROR	.18	.00	.32	.50	.00	.28	.15	.00	.00	.31
SAMP SIZE	3	0	3	34	0	5	9	0	0	54
FEMALES										
PERCENT	.20	.30	1.70	12.10	.20	21.60	3.70	.80	2.70	43.30
AV LENGTH	410.00	433.50	542.00	473.75	596.00	542.78	481.77	541.80	543.19	517.13
STD ERROR	.00	73.50	7.45	3.29	.00	2.19	4.23	21.27	4.52	1.68
SAMP SIZE	1	2	10	72	1	129	22	5	16	258
AV WEIGHT	1.10	2.40	2.42	1.63	.00	2.38	1.83	.00	2.00	2.09
STD ERROR	.00	.00	.00	.16	.00	.25	.11	.00	.26	.11
SAMP SIZE	1	1	1	10	0	10	3	0	2	28
SEXES COMBINED										
PERCENT	2.40	2.00	3.40	36.00	.20	40.90	8.90	1.50	4.70	100.00
AV LENGTH	443.84	365.67	548.25	464.80	596.00	556.84	488.33	568.38	551.23	510.77
STD ERROR	5.54	13.84	8.25	2.12	.00	1.86	4.37	12.35	3.38	1.24
SAMP SIZE	14	12	20	215	1	244	53	9	28	596
AV WEIGHT	1.35	2.40	2.21	2.07	.00	2.59	1.70	.00	2.00	2.25
STD ERROR	.14	.00	.24	.38	.00	.19	.11	.00	.26	.21
SAMP SIZE	4	1	4	44	0	15	12	0	2	82

Appendix Table 52. Susitna River (Flathorn Station west channel right fishwheel) sockeye salmon age, weight (kg), and length (mm) by sex, 1985.

	AGE GROUP								
	31	32	41	42	52	53	62	63	TOTAL
MALES									
PERCENT	1.80	.80	1.60	18.90	25.00	4.20	.80	2.40	55.50
AV LENGTH	431.86	351.00	569.00	475.26	563.48	487.44	583.33	570.00	521.08
STD ERROR	6.96	11.15	11.52	5.15	3.23	10.07	14.24	5.71	2.46
SAMP SIZE	7	3	6	72	95	16	3	9	211
AV WEIGHT	1.42	.00	.00	2.04	2.97	2.46	.00	.00	2.52
STD ERROR	.00	.00	.00	.32	.19	.97	.00	.00	.21
SAMP SIZE	1	0	0	13	9	3	0	0	26
FEMALES									
PERCENT	.00	.00	.80	12.10	27.70	2.60	.50	.80	44.50
AV LENGTH	.00	.00	528.33	477.24	535.08	508.40	563.00	549.67	518.25
STD ERROR	.00	.00	19.65	5.15	3.12	7.43	33.00	17.70	2.51
SAMP SIZE	0	0	3	46	105	10	2	3	169
AV WEIGHT	.00	.00	.00	1.48	2.60	4.75	.00	.00	2.41
STD ERROR	.00	.00	.00	.13	.09	.00	.00	.00	.07
SAMP SIZE	0	0	0	5	7	1	0	0	13
SEXES COMBINED									
PERCENT	1.80	.80	2.40	31.00	52.70	6.80	1.30	3.20	100.00
AV LENGTH	431.86	351.00	555.44	476.03	548.55	495.45	575.51	564.92	519.82
STD ERROR	6.96	11.15	10.10	3.73	2.25	6.82	15.72	6.16	1.77
SAMP SIZE	7	3	9	118	200	26	5	12	380
AV WEIGHT	1.42	.00	.00	1.82	2.78	3.34	.00	.00	2.47
STD ERROR	.00	.00	.00	.24	.11	.73	.00	.00	.14
SAMP SIZE	1	0	0	18	16	4	0	0	39

Appendix Table 53 Susitna River (Flathorn Station east channel left fishwheel) sockeye salmon age, weight (kg), length (mm) by sex, 1985.

	AGE GROUP									
	31	32	41	42	43	51	52	53	63	TOTAL
MALES										
PERCENT	3.10	2.70	1.80	25.50	.60	.00	20.30	2.90	.60	57.50
AV LENGTH	447.25	328.64	577.89	474.50	352.00	.00	570.88	502.47	603.33	504.92
STD ERROR	8.28	6.24	8.60	3.42	11.79	.00	3.24	6.45	11.67	2.03
SAMP SIZE	16	14	9	131	3	0	104	15	3	295
AV WEIGHT	1.08	.28	3.08	1.37	.00	.00	2.93	1.67	3.22	1.95
STD ERROR	.08	.06	.00	.10	.00	.00	.09	.13	.00	.05
SAMP SIZE	5	2	1	22	0	0	10	8	1	49
FEMALES										
PERCENT	.20	.20	1.00	15.60	.00	.20	20.20	3.70	1.40	42.50
AV LENGTH	395.00	350.00	558.40	478.41	.00	555.00	544.10	483.84	540.71	513.40
STD ERROR	.00	.00	7.84	3.54	.00	.00	2.40	6.70	7.25	1.85
SAMP SIZE	1	1	5	80	0	1	104	19	7	218
AV WEIGHT	.00	.00	.00	1.39	.00	.00	2.39	1.80	2.04	1.94
STD ERROR	.00	.00	.00	.14	.00	.00	.07	.12	.00	.06
SAMP SIZE	0	0	0	7	0	0	16	4	1	28
SEXES COMBINED										
PERCENT	3.30	2.90	2.80	41.10	.60	.20	40.50	6.60	2.00	100.00
AV LENGTH	444.08	330.11	570.93	475.98	352.00	555.00	557.52	492.03	559.50	508.53
STD ERROR	7.79	5.83	6.20	2.51	11.79	.00	2.02	4.70	6.16	1.41
SAMP SIZE	17	15	14	211	3	1	208	34	10	513
AV WEIGHT	1.08	.28	3.08	1.38	.00	.00	2.66	1.74	2.39	1.95
STD ERROR	.08	.06	.00	.09	.00	.00	.06	.09	.00	.04
SAMP SIZE	5	2	1	29	0	0	26	12	2	77

Appendix Table 54 Susitna River (Flathorn Station east channel right fishwheel) sockeye salmon age, weight (kg), and length (mm) by sex, 1985.

	AGE GROUP										
	31	32	41	42	43	52	53	54	63	64	TOTAL
MALES											
PERCENT	3.00	6.70	2.70	22.10	1.00	14.90	3.00	.00	1.10	.00	54.50
AV LENGTH	454.81	336.71	535.29	463.22	364.20	557.35	486.63	.00	562.67	.00	477.99
STD ERROR	12.45	7.56	18.90	4.70	6.97	5.53	11.87	.00	12.19	.00	2.94
SAMP SIZE	16	35	14	116	5	78	16	0	6	0	286
AV WEIGHT	1.36	.00	.00	1.26	.64	2.65	2.21	.00	.00	.00	1.79
STD ERROR	.00	.00	.00	.08	.08	.22	.00	.00	.00	.00	.09
SAMP SIZE	1	0	0	6	2	7	1	0	0	0	17
FEMALES											
PERCENT	1.00	.20	1.50	19.60	.20	17.30	4.00	.20	1.30	.20	45.50
AV LENGTH	519.60	503.00	534.38	478.25	385.00	539.62	475.14	442.00	521.43	585.00	505.31
STD ERROR	11.58	.00	9.27	3.26	.00	3.12	7.54	.00	14.31	.00	2.04
SAMP SIZE	5	1	8	103	1	91	21	1	7	1	239
AV WEIGHT	.00	.00	.00	1.30	.00	2.66	.00	.00	.00	.00	1.94
STD ERROR	.00	.00	.00	.11	.00	.16	.00	.00	.00	.00	.10
SAMP SIZE	0	0	0	5	0	8	0	0	0	0	13
SEXES COMBINED											
PERCENT	4.00	6.90	4.20	41.70	1.20	32.20	7.00	.20	2.40	.20	100.00
AV LENGTH	471.01	341.53	534.97	470.28	367.67	547.82	480.06	442.00	540.33	585.00	490.42
STD ERROR	9.88	7.35	12.49	2.92	5.81	3.05	6.68	.00	9.54	.00	1.85
SAMP SIZE	21	36	22	219	6	169	37	1	13	1	525
AV WEIGHT	1.36	.00	.00	1.28	.64	2.66	2.21	.00	.00	.00	1.86
STD ERROR	.00	.00	.00	.07	.08	.13	.00	.00	.00	.00	.07
SAMP SIZE	1	0	0	11	2	15	1	0	0	0	30

Appendix Table 55. Length composition of the major age classes of sockeye salmon collected in the Susitna River, 1979-1985.

		Male			Female			Total			
Year	Age Class	Average Length (mm)[1]	Standard Error	Sample Size	Average Length (mm)	Standard Error	Sample Size	Average Length (mm)	Standard Error	Sample Size	Ratio Male-Female
1979	1.2	464	2.3	312	496	2.8	170	475	1.9	482	1.8:1
1980		509	4.2	104	508	3.3	96	508	---	200	1.1:1
1981		466	5.2	81	482	10.8	51	472	---	132	1.6:1
1982		449	3.8	163	469	7.0	80	456	4.9	249	2.0:1
1983		482	2.9	214	481	2.6	184	482	2.0	398	1.2:1
1984		478	5.2	93	499	4.5	73	487	3.5	166	1.3:1
1985		457	2.8	157	464	3.2	118	460	2.1	275	1.3:1
1979	1.3	574	5.8	78	567	2.1	170	569	2.3	248	0.5:1
1980		577	2.9	131	554	2.3	164	564	---	295	0.8:1
1981		579	2.1	654	562	1.5	711	570	---	1,365	0.9:1
1982		584	2.8	314	562	2.2	389	572	2.5	703	0.8:1
1983		573	3.2	85	556	2.0	93	564	1.9	178	0.9:1
1984		564	6.3	60	549	3.3	74	556	3.4	134	0.8:1
1985		565	4.5	85	545	2.2	154	552	2.1	239	0.6:1
1983	2.2	481	7.0	26	473	6.1	34	477	4.6	60	0.8:1
1984		481	9.3	21	483	7.8	25	482	6.0	46	0.8:1
1982	2.3	571	8.6	47	542	5.4	60	559	6.8	107	0.8:1
1984		581	9.2	13	541	7.6	16	559	5.9	29	0.8:1

[1] Lengths measured mid-eye to fork of tail.

Appendix Table 56. Weight composition of the major age classes of sockeye salmon collected in the Susitna River, 1979-1985.

		Male			Female			Total		
Year	Age Class	Average Weight (kg)	Standard Error	Sample Size	Average Weight (kg)	Standard Error	Sample Size	Average Weight (kg)	Standard Error	Sample Size
1979	1.2	1.7	0.03	311	2.0	0.05	169	1.8	0.03	480
1980		2.2	0.06	152	2.1	0.06	159	2.1	--	311
1981		1.7	0.08	81	2.0	0.08	51	1.8	--	132
1982		1.5	0.05	153	1.6	0.08	80	1.5	0.06	233
1983		1.9	0.04	211	1.7	0.03	182	1.8	0.02	393
1984		1.8	0.06	92	1.9	0.06	73	1.9	0.04	165
1985		1.8	0.12	156	1.5	0.05	116	1.7	0.07	272
1979	1.3	3.4	0.11	78	3.1	0.05	170	3.2	0.05	248
1980		3.3	0.09	82	2.7	0.05	145	2.9	--	227
1981		3.6	0.02	654	3.0	0.02	711	3.3	--	1,365
1982		3.7	0.06	291	3.0	0.04	362	3.3	0.05	653
1983		3.3	0.05	84	2.7	0.04	92	3.0	0.03	176
1984		3.0	0.10	60	2.6	0.05	74	2.8	0.05	134
1985		2.9	0.07	82	2.7	0.07	152	2.7	0.05	234
1983	2.2	1.8	0.09	24	1.7	0.06	34	1.8	0.05	58
1984		1.7	0.09	21	1.8	0.11	24	1.7	0.07	45
1982	2.3	3.5	0.14	44	2.7	0.10	58	3.0	0.11	102
1984		3.2	0.23	13	2.4	0.13	16	2.8	0.12	29

Appendix Table 57. Length composition from pink salmon collected in the Susitna River, 1979-1985.

	Male			Female			Total			
Year	Average Length (mm)[1]	Standard Error	Sample Size	Average Length (mm)	Standard Error	Sample Size	Average Length (mm)	Standard Error	Sample Size	Ratio Male-Female
1979	442	2.22	208	435	1.43	283	438	--	491	0.7:1
1980	445	2.53	160	434	2.13	161	439	--	321	1.0:1
1981	444	3.77	72	433	1.75	172	436	--	244	0.4:1
1982	432	3.38	145	413	3.45	163	422	3.42	308	0.9:1
1983	420	2.23	143	417	2.05	172	418	1.51	315	0.8:1
1984	464	3.15	138	436	2.58	136	450	2.04	274	1.0:1
1985	432	2.01	296	423	1.72	322	427	1.32	618	0.9:1

[1] Lengths measured mid-eye to fork of tail.

Appendix Table 58. Weight composition from pink salmon collected in the Susitna River, 1979-1985.

	Male			Female			Total		
Year	Average Weight (kg)	Standard Error	Sample Size	Average Weight (kg)	Standard Error	Sample Size	Average Weight (kg)	Standard Error	Sample Size
1979	1.4	0.03	208	1.2	0.01	283	1.3	--	491
1980	1.3	0.02	160	1.2	0.02	161	1.2	--	321
1981	1.4	0.05	72	1.2	0.02	172	1.3	--	244
1982	1.2	0.03	145	1.0	0.02	163	1.1	0.03	308
1983	1.1	0.02	143	1.0	0.02	172	1.1	0.01	315
1984	1.5	0.04	137	1.2	0.03	136	1.4	0.03	273
1985	1.18	0.02	250	1.07	0.01	278	1.12	0.01	528

Appendix Table 59. Length composition from the major age classes of chum salmon collected in the Susitna River, 1979-1985.

		Male			Female			Total			
Year	Age Class	Average Length (mm)[1]	Standard Error	Sample Size	Average Length (mm)	Standard Error	Sample Size	Average Length (mm)	Standard Error	Sample Size	Ratio Male-Female
1979	0.3	578	4.2	104	578	2.1	252	578	---	359	0.4:1
1980		577	12.4	11	574	6.3	24	575	---	35	0.5:1
1981		579	12.1	52	579	3.7	88	579	---	140	0.6:1
1982		604	3.1	116	593	2.1	167	597	2.5	283	0.7:1
1983		591	6.7	22	568	11.4	43	576	7.9	65	0.4:1
1984		597	3.8	60	594	3.1	101	595	2.4	161	0.6:1
1985		599	2.3	186	584	1.9	268	590	1.5	454	0.7:1
1982	0.4	629	8.3	14	612	4.5	25	618	5.8	39	0.6:1
1983		619	9.3	14	598	4.7	39	604	4.2	53	0.4:1
1984		626	8.2	14	612	6.7	14	619	5.5	28	1.0:1
1985		615	3.6	78	594	4.2	68	605	2.8	146	1.1:1

[1] Lengths measured mid-eye to fork of tail.

Appendix Table 60. Weight composition from the major age classes of chum salmon collected in the Susitna River, 1980-1985.

		Male			Female			Total		
Year	Age Class	Average Weight (kg)	Standard Error	Sample Size	Average Weight (kg)	Standard Error	Sample Size	Average Weight (kg)	Standard Error	Sample Size
1980	0.3	3.1	0.21	11	3.0	0.14	24	3.0	--	35
1981		3.6	0.08	52	3.3	0.07	88	3.4	--	140
1982		3.9	0.07	99	3.6	0.04	160	3.7	0.05	259
1983		3.6	0.15	18	3.1	0.10	42	3.3	0.08	60
1984		3.4	0.08	59	3.2	0.06	101	3.3	0.05	160
1985		3.81	0.20	173	3.17	0.04	250	3.43	0.08	423
1980	0.4	3.8	0.36	5	3.8	0.35	4	3.8	--	9
1982		4.6	0.21	13	3.7	0.12	25	4.0	0.15	38
1983		4.3	0.20	14	3.5	0.10	37	3.7	0.09	51
1984		3.9	0.20	14	3.5	0.23	14	3.7	0.15	28
1985		3.98	0.09	75	3.39	0.08	68	3.71	0.06	143

Appendix Table 61. Length composition from the major age classes of coho salmon collected in the Susitna River, 1979-1985.

		Male			Female			Total			
Year	Age Class	Average Length (mm)[1]	Standard Error	Sample Size	Average Length (mm)	Standard Error	Sample Size	Average Length (mm)	Standard Error	Sample Size	Ratio Male-Female
1979	1.1	449	13.0	38	494	11.1	23	458	---	62	1.7:1
1980		452	10.8	23	476	7.7	36	467	---	59	0.6:1
1981		450	12.6	10	489	11.5	19	476	---	29	0.5:1
1982		553	10.2	25	519	7.5	42	531	8.5	67	0.6:1
1983		499	12.6	16	486	9.0	32	490	7.3	48	0.5:1
1984		540	33.6	9	509	18.0	14	521	17.1	23	0.6:1
1985		517	4.6	142	514	5.9	73	516	3.7	240	1.9:1
1979	2.1	502	7.7	96	528	6.9	121	516	---	217	0.8:1
1980		515	7.0	72	515	3.1	173	515	---	245	0.4:1
1981		524	8.4	81	529	5.0	99	527	---	180	0.8:1
1982		556	5.3	87	542	4.5	137	547	4.8	227	0.6:1
1983		534	6.2	47	523	5.1	74	527	3.9	121	0.6:1
1984		567	12.4	16	546	10.8	35	553	8.4	51	0.5:1
1985		530	4.9	174	520	4.3	185	525	3.3	359	1.0:1

[1] Length measured from mid-eye to fork of tail.

Appendix Table 62. Weight composition from the major age classes of coho salmon collected in the Susitna River, 1979-1985.

		Male			Female			Total		
Year	Age Class	Average Weight (kg)	Standard Error	Sample Size	Average Weight (kg)	Standard Error	Sample Size	Average Weight (kg)	Standard Error	Sample Size
1979	1.1	1.5	0.11	38	1.8	0.10	23	1.6	--	62
1980		1.5	0.10	23	1.8	0.10	36	1.7	--	59
1981		1.5	0.16	10	2.0	0.18	19	1.8	--	29
1982		2.9	0.17	25	2.3	0.11	42	2.5	0.13	67
1983		2.2	0.20	16	2.1	0.14	31	2.1	0.12	47
1984		3.0	0.34	9	2.3	0.28	14	2.6	0.22	23
1985		2.74	0.24	94	3.03	0.43	73	2.86	0.23	167
1979	2.1	2.4	0.08	96	2.5	0.01	121	2.5	--	217
1980		2.3	0.09	72	2.2	0.05	173	2.2	--	245
1981		2.7	0.11	81	2.7	0.08	99	2.7	--	180
1982		3.0	0.09	87	2.7	0.07	137	2.8	0.08	224
1983		2.7	0.11	44	2.5	0.07	71	2.5	0.06	115
1984		3.1	0.23	16	2.5	0.12	35	2.7	0.11	51
1985		2.74	0.09	121	3.21	0.33	146	2.98	0.18	267

Appendix Table 63. Length composition of sockeye salmon collected in Wolverine Creek (Big River drainage), 1985.

	Age Class						
	1.2	2.1	1.3	2.2	3.1	2.3	3.2
Female							
Mean Length	487.0	.0	526.6	478.0	.0	525.3	474.0
Std. Error	9.30	.00	4.58	1.30	.00	2.24	.00
Range	442 - 541	0 - 0	516 - 550	422 - 552	0 - 0	476 - 562	474 - 474
Sample Size	12	0	7	262	0	75	1
Male							
Mean Length	499.6	470.7	561.4	489.8	387.0	530.2	488.0
Std. Error	8.12	3.93	8.66	1.69	.00	3.43	.00
Range	437 - 566	463 - 476	523 - 592	432 - 594	387 - 387	445 - 570	488 - 488
Sample Size	19	3	7	242	1	54	1
Total							
Mean Length	494.7	470.7	544.0	483.7	387.0	527.3	481.0
Std. Error	6.15	3.93	6.75	1.09	.00	1.94	7.00
Range	437 - 566	463 - 476	516 - 592	422 - 594	387 - 387	445 - 570	474 - 488
Sample Size	31	3	14	504	1	129	2

Appendix Table 64. Length composition of sockeye salmon collected in McArthur River tributaries, 1985.

	Age Class				
	0.2	1.1	0.3	1.2	1.3
Female					
Mean Length	416.0	.0	489.8	431.3	490.9
Std. Error	9.00	.00	4.70	2.86	1.87
Range	398 - 425	0 - 0	470 - 553	390 - 521	437 - 543
Sample Size	3	0	19	54	138
Male					
Mean Length	400.0	321.8	517.7	414.8	522.4
Std. Error	2.38	20.38	11.35	1.89	4.64
Range	360 - 466	285 - 379	503 - 540	355 - 488	400 - 582
Sample Size	79	4	3	138	545
Total					
Mean Length	400.6	321.8	493.6	419.4	499.8
Std. Error	2.33	20.38	4.73	1.67	2.13
Range	360 - 466	285 - 379	470 - 553	355 - 521	400 - 582
Sample Size	82	4	22	192	192

Appendix Table 65. Length composition of sockeye salmon collected in the Chilligan River (Chakachatna River drainage), 1985.

	Age Class				
	1.2	2.1	1.3	2.2	2.3
Female					
Mean Length	.0	.0	522.7	485.9	532.6
Std. Error	.00	.00	2.77	6.63	1.40
Range	0 - 0	0 - 0	488 - 560	445 - 563	475 - 595
Sample Size	0	0	44	21	219
Male					
Mean Length	448.8	315.0	564.9	451.6	557.0
Std. Error	15.91	13.23	4.17	3.65	2.43
Range	415 - 518	295 - 340	500 - 600	385 - 545	432 - 610
Sample Size	6	3	26	80	138
Total					
Mean Length	448.8	315.0	538.4	458.8	542.0
Std. Error	15.91	13.23	3.37	3.48	1.42
Range	415 - 518	295 - 340	488 - 600	385 - 563	432 - 610
Sample Size	6	3	70	101	357

Appendix Table 66. Age and length composition of sockeye salmon collected in Fish Creek (Big Lake), 1985.

	Age Class					
	1.1	1.2	2.1	1.3	2.2	2.3
Female						
Mean Length	389.3	504.6	.0	542.4	527.7	540.0
Std. Error	2.77	1.37	.00	2.13	4.94	.00
Range	375 - 395	400 - 535	0 - 0	375 - 613	490 - 581	540 - 540
Sample Size	7	192	0	140	19	1
Male						
Mean Length	379.6	491.2	391.0	571.2	558.0	610.0
Std. Error	2.85	2.54	.00	5.31	5.39	18.71
Range	345 - 425	410 - 540	391 - 391	440 - 750	545 - 575	560 - 650
Sample Size	35	127	1	56	5	4
Total						
Mean Length	380.9	499.4	391.0	551.0	531.0	596.0
Std. Error	2.43	1.27	.00	2.16	4.99	20.15
Range	345 - 425	400 - 555	391 - 391	375 - 750	475 - 581	540 - 650
Sample Size	43	361	1	217	26	5
Percent	6.6	55.3	0.2	33.2	4.0	0.8

Appendix Table 67. Age, length and sex composition of sockeye salmon captured in Packers Creek (Kalgin Island), 1985.

	Age Class						
	1.1	1.2	2.1	1.3	2.2	2.3	3.2
Female							
Mean Length	.0	473.8	494.7	530.3	475.0	526.0	496.3
Std. Error	.00	7.64	15.38	3.67	1.14	1.81	15.97
Range	0 - 0	441 - 547	472 - 524	499 - 579	87 - 540	453 - 569	460 - 526
Sample Size	0	13	3	27	511	130	4
Male							
Mean Length	353.1	445.7	356.9	542.3	462.1	535.8	.0
Std. Error	12.99	7.13	1.46	7.86	2.05	3.31	.00
Range	320 - 463	367 - 518	320 - 558	456 - 604	45 - 561	326 - 592	0 - 0
Sample Size	10	24	215	16	338	109	0
Total							
Mean Length	351.2	453.4	358.7	535.3	469.8	530.6	491.2
Std. Error	11.90	5.68	1.71	3.72	1.06	1.74	13.36
Range	320 - 463	367 - 547	320 - 558	456 - 604	45 - 561	326 - 592	460 - 526
Sample Size	11	39	232	44	888	256	5
Percent	0.7	2.6	15.7	3.0	60.2	17.4	0.3

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