ADULT ANADROMOUS FISH INVESTIGATIONS
MAY - OCTOBER 1984

by

Bruce M Barrett
Frederick M. Thompson
Susan N. Wick

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ALASKA DEPARTMENT OF FISH AND GAME
SUSITNA HYDRO AQUATIC STUDIES
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2207 Spenard Road
Anchorage, Alaska 99503

for

Alaska Power Authority
334 W 5th Avenue, Second Floor
Anchorage, Alaska 99501

DRAFT

PREFACE

The Susitna River is the largest watershed in the Cook Inlet basin encompassing about 19,400 square miles from its origin in the Alaska Mountain Range to its discharge into Upper Cook Inlet (Figure A).

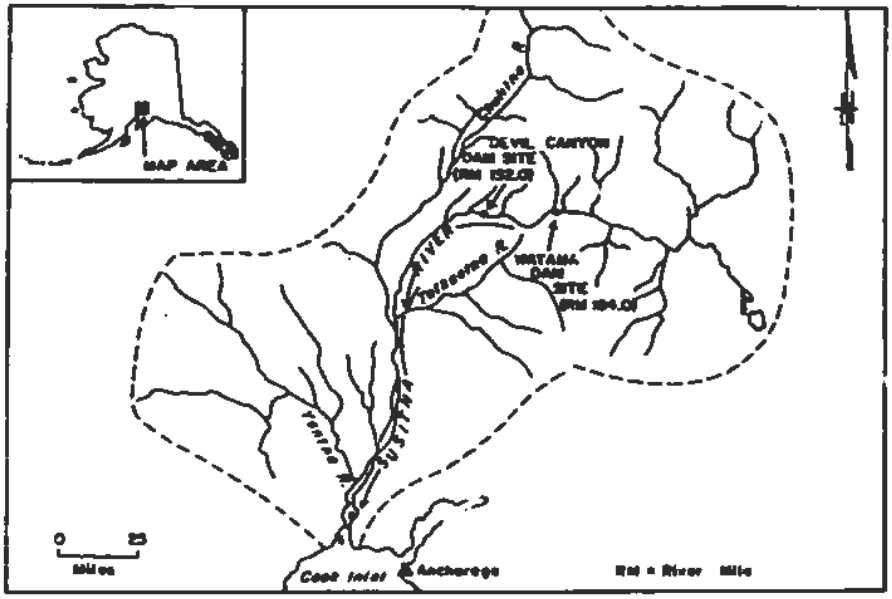

Figure A. Susitna River drainage, 1984.

The Alaska Power Authority (APA) proposes construction of two hydroelectric dams at Watana and Devil Canyons on the upper Susitna River (Figure A). The Alaska Department of Fish and Game (AOF&G) has been contracted by APA to access the fishery resources that might be empacted by the proposed hydroelectric project. The APA-ADF&G contract, initiated in November 1980, is still in effect.

This is one of a series of ADF&G reports in 1985 that will be submitted to APA. This document only addresses the adult anadromous fish

investigations contracted for the open water period of May through October, 1984 and it covers the following Pacific salmon species:

Pacific Salmon	*Oncorhynchus sp.*
Chinook Salmon	*O. tshawytscha*
Sockeye Salmon	*O. nerka*
Pink Salmon	*O. gorbuscha*
Chum Salmon	*O. keta*
Coho Salmon	*O. kisutch*

Questions pertaining to this report should be directed to:

Alaska Power Authority
334 West 5th Avenue
Anchorage, Alaska 99501
Telephone (907) 279-6611.

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1.0 OBJECTIVES

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This (1984) ends the fourth consecutive year of study of the Susitna River adult anadromous fish populations by the ADF&G associated with APA proposed hydroelectric development at Watana and Devil canyons. The emphasis of the 1984 program was quantifying Susitna River salmon escapements and salmon spawning activity in the Susitna River main channel and directly associated streams, sloughs and side channels. More definitively, the objectives of the 1984 program separated by lower and middle Susitna River reach were:

A. Lower River [(Intertidal RM 0.0 to Chulitna River confluence (RM 98.6)]

1. Define the abundance, seasonal timing and stock characteristics of the sockeye, pink, chum and coho salmon escapements to the Susitna River at Flathorn (RM 22) and Sunshine (RM 80) stations and into the Yentna River (RM 28) at Yentna Station (TRM 04). In addition evaluate the same parameters for chinook salmon at Sunshine Station.

2. Define where, when and extent of the salmon spawning in the sloughs, main channel, side channels and stream confluence areas of the Susitna River between RM 28 and 98.6.

B. Middle River [(Chulitna River confluence (RM 98.6) to upper Devil Canyon (RM 161.0)]

1. Define the abundance, seasonal timing and stock characteristics of the chinook, sockeye, pink, chum and coho salmon escapements to the Susitna River at Talkeetna (RM 103) and Curry (RM 120) stations.

2. Define where, when and extent of salmon spawning in the Susitna River main channel, side channels and associated streams and sloughs between RM 98.6 and 161.0. In conjunction, determine the average resident time (observation life) of sockeye and chum salmon as required to quantify the total escapements of these species to the middle river reach sloughs.

2.0 METHODS

2.1 Main Channel Escapement Monitoring

In 1984 salmon escapements were monitored at five main channel locations on the Susitna and Yentna rivers (Figure 1). In the lower Susitna River reach [Intertidal (RM 0.0) to Chulitna River (RM 98.6)] a tagging site was operated at RM 22 (Flathorn Station), a sonar site at TRM 04 (Yentna Station) on the Yentna River (RM 28) and a second tagging site at RM 80 (Sunshine Station) between Montana Creek and the George Parks Highway bridge. On the middle Susitna River reach [Chulitna River to upper Devil Canyon (RM 161.0)] a tagging station was operated at RM 103 (Talkeetna Station) and another at RM 120 (Curry Station). With the exception of Flathorn Station, a new tagging site this year, the other four monitoring stations were at the same river mile locations in 1984 as in 1981 and 1983.

The five lower and middle river escapement monitoring stations in 1984 were operational according to the schedule in Table 1. At Flathorn (RM 22) and Sunshine (RM 80) stations four fishwheels were operated at each. At Yentna Station (TRM 04), two side scan sonars (SSS) and two fishwheels were run concurrently. In the Susitna River middle reach, four fishwheels at Talkeetna Station (RM 103) and two fishwheels at Curry Station (RM 120) were operated. The specific placement sites of the 16 fishwheels and two sonars at the five sampling stations can be found in Appendix 1.

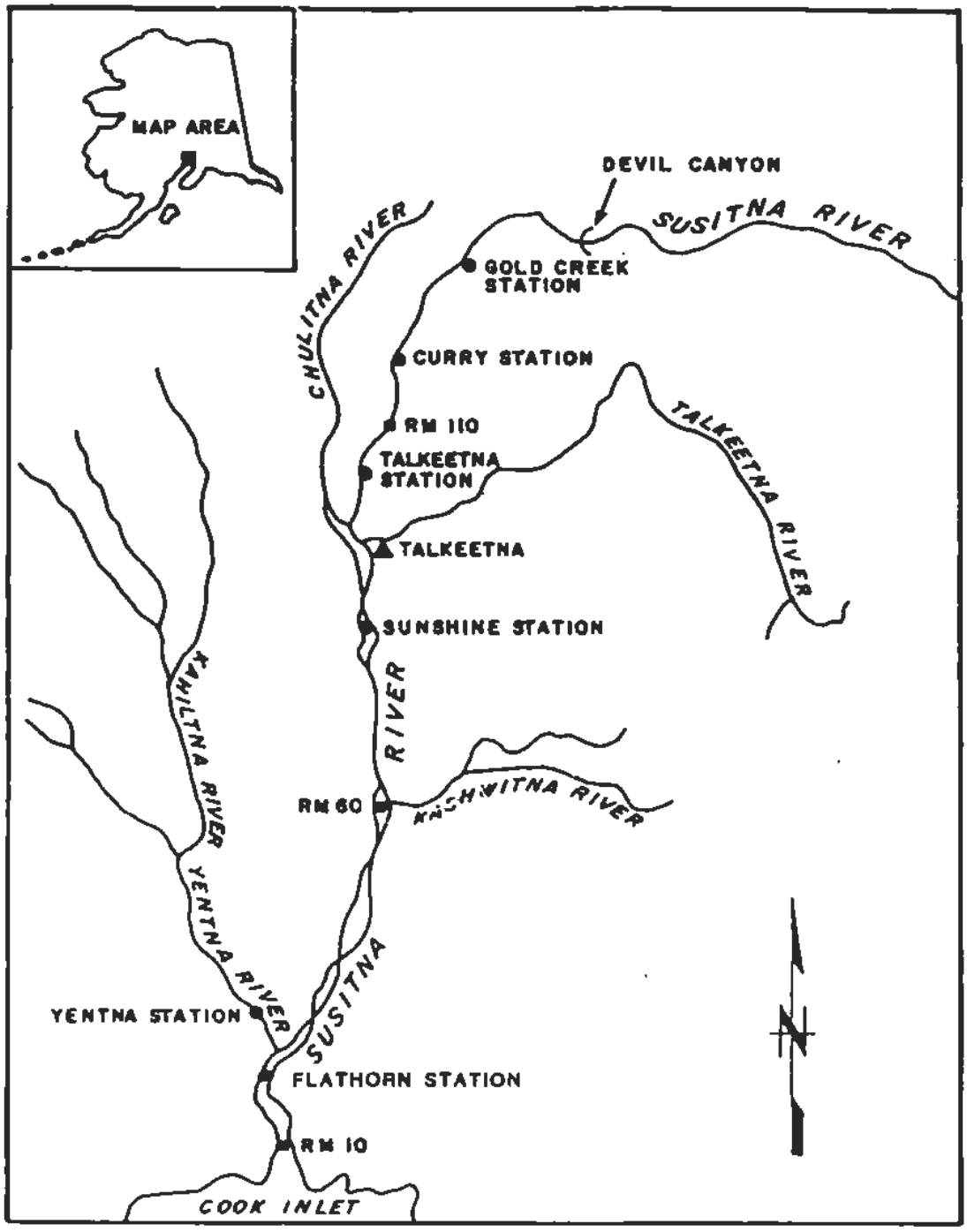

Figure 1. Susitna River basin map showing field stations and major glacial streams, 1984.

Table 1. Operation schedules at main channel Susitna and Yentna rivers escapement monitoring stations, 1984.

Station	Location		Period	
	River	River Mile	Begin	End
Flathorn	Susitna	20	6/29	9/3
Yentna	Yentna	04	7/1	9/5
Sunshine	Susitna	80	6/4	9/10
Talkeetna	Susitna	103	6/3	9/11
Curry	Susitna	120	6/9	9/14

The two sonars operated in 1984 at Yentna Station (TRM 04) were the 1980 Model Side Scan Sonar Counters developed by the California based Bendix Corporation. The sonar installation and operating procedures followed were in accordance with the manufacturer's operational manual (Bendix Corporation, 1980). Except for occasional, heavy debris flows associated with extreme high water the two sonar counters at Yentna Station were run continuously, 24 hours per day, through the 1984 season. The two fishwheels, one near each sonar off the north and south Yentna River banks were operated a minimum of 12 hours daily during the season for apportioning the sonar counts by species and for tag recovery data from Flathorn Station sited 10 miles downstream. The sonar monitoring and apportioning methodology followed this season can be found in Barrett et al, 1984.

The 14 fishwheels used at the four tagging locations on tne Susitna River main channel and the two operated at Yentna Station sonar site (TRM 04) in 1984 were of a 1981 design by ADF&G/Su Hydro staff. The

construction and operating specifications of these wheels can be found in thc Phase I and II ADF&G/Su Hydro Adult Anadromous reports (ADF&G, 1981 and 1982). The tagging station fishwheels were run 24 hours per day this season except for occasional down time for maintenance, debris problems and high catches that exceeded manpower capabilities. Each of these fishwheels was sampled for catch four or more times daily.

All fishwheel caught salmon at Flathorn (RM 22), Sunshine (RM 80), Talkeetna (RM 103) and Curry (RM 120) stations were tagged and released except for fish which fell into one or more of the following categories:

1. fish that visually appeared lethargic or stressed.
2. post-spawning condition fish.
3. fish previously tagged.
4. 90% of the pink salmon at Flathorn and Sunshine stations, and 50% of the pink salmon caught at Talkeetna and Curry stations.
5. chinook salmon at Flathorn Station, and chinook salmon less than 351 mm in fork length (FL) at the other three stations.

These fish were released without being tagged. However, the fish which were recaptured from other tagging stations were first checked for species identification and tag type, color and number before being released.

In 1984 two tag types were used at the tagging stations: Petersen disc and Floy FT-4 spaghetti tags. The chinook salmon were tagged with Petersen disc tags, and the sockeye, pink, chum and coho salmon were

tagged with the spaghetti tags. The exception was at Curry Station (RM 120) where Petersen disc tags were used exclusively. In addition a number of Petersen disc tags used at Curry Station were labeled with full size sequential numbers. These were used in marking sockeye and chum salmon for observation life (Section 2.2.2). A percentage of the tags used at all the stations were numbered to provide migrational travel time. The methodology used to implant the Petersen and spaghetti tags can be found in the Phase I, ADF&G/Su Hydro Adult Anadromous report, (ADF&G, 1981).

At each sampling station on the Susitna and Yentna rivers in 1984 a representative age, length and sex composition sample was collected daily for each salmon species as follows:

Chinook salmon: An age, length and sex sample collected daily from 30 consecutively (regardless of size) caught fish. Except at Sunshine Station where the sample was 30 consecutively caught fish from the east and west bank fishwheels.

Sockeye salmon: An age, length and sex sample collected daily from 30 consecutively (regardless of size) caught fish. Except at Flathorn Station where the sample was 30 consecutively caught east channel fish and 30 consecutively caught west channel fish.

Pink salmon: A length and sex sample collected daily from 30 consecutively (regardless of size) caught fish.

Chum salmon: An age, length and sex sample collected daily from 20 consecutively (regardless of size) caught fish.

Coho salmon: An age, length and sex sample collected daily from 20 consecutively (regardless of size) caught fish.

The procedures followed in 1984 for salmon age, length and sex composition sampling can be found in Barrett et al, 1984.

In 1984 at Sunshine Station (RM 80) 25 coho salmon were sampled for fecundity. The sample was taken from the length (FL) ranges of female coho salmon available from the east and west bank fishwheels on August 22. The collection procedures for sampling the age, length and weight, and determining the fecundity of each female fish sampled can be found in Barrett et al, 1984.

2.2 Spawning Ground and Tag Recovery Surveys

In 1984, the salmon spawning ground and tag recovery survey work was divided by lower and middle Susitna river reach. An exception was a chinook salmon escapement index survey program conducted drainage wide of pre-selected spawning areas which has been ongoing annually since 1976 by ADF&G, Region II, Sport Fish Division staff (AOF&G, 1981). In 1984, they performed the selected chinook salmon surveys below RM 98.6

between mid July and mid August with some assistance by ADF&G, Su Hydro staff. The surveys upstream of RM 98.6 were performed exclusively by Su Hydro staff between July 21 and August 18. The index surveys below RM 98.6 were conducted by helicopter, foot, fixwing aircraft and inflatable raft depending on access while the surveys performed above RM 98.6 were performed by helicopter and foot (Section 2.2.2).

The following subsections outline the other 1984 salmon spawning ground and tag recovery survey work by Su Hydro Adult Anadromous staff in the lower and middle Susitna River reaches.

2.2.1 Lower Reach

The lower reach streams listed in Table 2 were surveyed weekly for salmon presence by foot and occasionally by helicopter from July 21 to October 7, 1984. The survey reach for each stream was the one-third mile area from the mouth.

Table 2. Lower reach Susitna River streams surveyed weekly from July 21 to October 7, 1984.

Stream	River Mile	Stream	River Mile
Unnamed Creek	31.7	Fish Creek	31.2
Whitsol Creek	35.2	Rolly Creek	39.0
Willow Creek	49.1	Little Willow Cr.	50.5
Grays Creek	59.5	Kashwitna Creek	61.0
Caswell Creek	64.0	Sheep Creek	66.1
Goose Creek	72.0	Montana Creek	77.0
Rabideux Creek	83.1	Sunshine Creek	85.1
Birch Creek	89.2	Trapper Creek	91.5
Cache Creek	95.5		

Surveys were also conducted by helicopter between RM 28 and 98.6 for salmon spawning in the Susitna River main channel, side channels and associated sloughs near weekly from August 21 to October 17. Areas suspected of supporting salmon spawning were ground checked by foot and boat between scheduled surveys. The suspected areas were considered spawning sites when one or more of the following criteria was noted:

1. Visual identification of one or more actively mating fish pairs.
2. One or more distinct redds.
3. One or more suspected redd locations producing live eggs through mechanical excavation with a shovel or a backpack mounted, Homelite two cycle, single stage water pump and attendant circular standing screen cod end net.

The one-third mile reach of the streams listed in Table 2, and spawning area(s) in lower river reach sloughs, and main channel and side channel habitats were mapped at least once in the 1984 season relative to general habitat characteristics. Parameters recorded included upwelling presence, surface flow and depth. Substrate descriptions were also recorded at the streams using the following classification:

silt——very fine	rubble——3"-5"
sand——fines	cobble——5"-10"
small gravel—— 1/2"-1"	boulder——10" or larger
large gravel—— 1"-3"	

More precise evaluation of substrates in stream mouths were performed as time permitted using a McNeil sampler and sieves.

Tag recovery surveys were performed by the crews also a. time permitted and when visibility in the streams, sloughs and main channel allowed accurate distinction of tagged and untagged fish. Routinely on the streams, the crew extended their survey beyond the one-third mile reach to a point three-quarters of a mile from the stream mouth for tag to untagged data and determining general habitat characteristics.

2.2.2 Middle Reach

In 1984 salmon spawning surveys were conducted between July 21 and October 14 in the middle Susitna River reach. Specific chinook salmon surveys were made between July 21 and August 18 of all known and suspected spawning streams in the reach. Each stream was generally surveyed twice in this period by helicopter or on foot, where feasible, to the upper limit of fish migration.

From August 6 to October 11, sloughs and streams of known and suspected adult salmon use above RM 98.6 were surveyed near weekly. The sloughs were surveyed on foot over their entire distance, and the streams were surveyed to standard index markers on foot. The exceptions were Indian River (RM 138.6) and Portage Creek (RM 148.9) which were surveyed beyond the index markers to the upper salmon mitigation limit. The three streams Cheechako Creek (RM 152.4), Chinook Creek (RM 157.0) and Devil Creek (RM 161.0), all located in Devil Canyon, were surveyed by helicopter to their upper spawning limit.

Sloughs Moose (RM 123.5), A' (RM 124.6), 8A (RM 125.1) and 11 (RM 135.3) were more intensely surveyed than the other sloughs above RM 98.6 between August 16 and October 4. The surveys of these sloughs were routinely conducted at three day intervals to additionally determine the observation life of sockeye and chum salmon. They were performed on foot, and the observers used polarized glasses and polarized 7x35 Bushnell binoculars for identification of individually marked sockeye and chum salmon from Curry Station (RM 120) (Section 2.1). During these surveys the sighting date, tag number, species location in the slough, and behavior of each tagged fish was recorded. Behavior was defined in terms of milling and spawning (Barrett et al, 1984).

The Susitna River main channel and side channels in the middle reach were surveyed for salmon spawning by helicopter from August 27 to October 13 near weekly. The criteria previously presented in Section 2.2.1 was used in determining whether a main channel or side channel site was used for spawning.

In the middle Susitna River reach, tag recovery surveys were conducted in conjunction with the routine slough and stream spawning ground surveys with the numbers by species of live tagged and untagged fish being recorded. These surveys along with the others addressed in this section were performed by trained observers wearing polarized glasses and using hand-held tally counters.

Egg retention sampling of sockeye and chum salmon carcasses was conducted in most sloughs in the middle Susitna River reach concurrent with the 1984 escapement surveys. The sample size was based on

available fish and time. The abdomen of each fish samples was incisioned and the retained eggs, if any, were counted by hand.

2.3 Data Analysis

2.3.1 Salmon Escapement Monitoring by SSS Counter

The SSS counters operated at Yentna Station (TRM 04) in 1984 each had a design counting range of 60 feet which was divided into 12 equal sectors. The sonar electronics registered individual sector counts hourly on a printer. The printer tapes were edited in the field and rechecked in the office for debris counts. This editing procedure and the methodology for interpolating for lost sector counts can be found in Barrett et al, (1984).

The daily fish registered echoes by each SSS counter at Yentna Station (TRM 04) were apportioned based on the percent species catch by the fishwheel operating on the same day off the same bank. In instances when the daily fishwheel catch was less than 150 fish the SSS counts were apportioned according to the cumulative fishwheel catch for the succeeding number of days required to reach a 150 fish threshold catch sample.

2.3.2 Salmon Tag and Recapture Estimates

The 1984 salmon escapements to Flathorn (RM 22), Sunshine (RM 80), Talkeetna (RM 103) and Curry (RM 120) stations were quantified in this

report using a modified Petersen model by Ricker (1975). The exception was for chinook salmon measuring less than 351 mm FL (jacks). The procedure for calculating the jack chinook salmon escapements along with a discussion of the assumptions and suitability of the Petersen model, and method used to determine the associated confidence limits can be found in Barrett et al, (1984).

2.3.3 Escapement Timing

The 1984 salmon escapement timings have been calculated in this report for each species by station based on fishwheel catches. A species migration at a sampling station was defined to have 'started', ' reached a midpoint' and 'ended' on the date when 5 percent, 50 percent and 95 percent respectively, of the season cumulative, mean hourly, station fishwheel catch by species was reached.

Escapement timings by salmon species have also been graphically presented in this report using fishwheel catch per unit effort curves. These curves were smoothed by the von Hann linear filter method (BMDP, 1981).

2.3.4 Aging Escapement Samples

Standard scale analysis techniques were followed in determining the ages of the 1984 salmon escapements (Clutter and Whitesel, 1956). all salmon ages have been described in this report using the Gilber-Rich notation (Barrett et al, 1984).

2.3.5 Slough Escapements

Respective 1984 sockeye and chum salmon escapements to individual sloughs above RM 98.6 have been calculated by developing a spawner abundance curve from a series of live fish counts throughout the spawning season and then determining escapement from the area under the curve on the basis of average fish observation life (Cousens et al, 1982). There were two exceptions to this method which were: 1) when a peak escapement count for a slough was less than 15 live and dead fish and 2) when only one spawning ground survey was made. Total slough escapements in these cases have been determined by adjusting the peak or single escapement count by a factor derived by dividing the sum of the estimated individual slough escapements above RM 98.6 having peak counts of 50 or more fish by the sum of tne peak counts from these sloughs (Barrett et al, 1984).

Pink salmon escapements to sloughs above RM 98.6 in 1984 have been determined by adjusting the peak live and dead survey counts by a factor of 1.15. This was derived from the average of an expected 80 to 90 percent of the spawning population being present at the peak escapement count (Cousens et at, 1982).

2.3.6 Estimating Total Susitna River Chinook Salmon Escapements

Annual chinook salmon escapements to the Susitna River drainage for 1982 through 1984 were calculated by the following formula:

$$\hat{N}_T = \left[\frac{\hat{N}_{RM80}(1-m)}{S_2}\right] \cdot S_1 + \left[\hat{N}_{RM80}(1-m)\right]$$

where:

$\hat{N}_T$ = Total Susitna River chinook salmon escapement.

S_1 = Number of chinook salmon counted in index streams below RM 80.

S_2 = Number of chinook salmon counted in index streams above RM 80.

$\hat{N}_{RM80}$ = Chinook salmon escapement estimate for RM 80 by the Petersen method.

m = Estimated percent of the RM 80 chinook salmon escapement estimate that reached RM 80 but spawned below RM 80.

Several assumptions were made in computing the 1982, 1983 and 1984 chinook salmon escapements to the Susitna River system. They were:

1. The ratios of the number of chinook salmon not counted to the number of chinook salmon counted above and below RM 80 were nearly identical within each year (1982-84).

2. Survey effort, conditions and timing (of index streams) were similar above and below RM 80 within each year (1982-84).

3. Twenty percent of the estimated escapements to RM 80(Sunshine Station) in 1982, 1983 and 1984 were milling fish.

3.0 RESULTS AND DISCUSSION

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3.1 Pacific Salmon

The Susitna River is the single largest producer of Pacific salmon in Cook Inlet (ADF&G, 1982). Annually five species return to the system through Cook Inlet where except for chinook salmon, they are subject to an intensive, commercial fishery by set and drift net fishermen. In the Susitna River the five species are subject to harvest by sport fishermen (Mills, 1983). However, the main emphasis is on chinook and coho salmon.

Minimum Susitna River salmon escapements not including chinook salmon have been reported for the last three years at: 678,000 fish (1981), 1,693,800 fish (1982) and 577,800 fish (1983) (Barrett et al, 1984). These estimates only reflect the escapements of sockeye, pink, chum and coho salmon to the Yentna River (RM 28) and RM 80. In 1984 the Susitna River supported a minimum escapement of around 5.5 million Pacific salmon based on Petersen population estimates of sockeye, pink, chum and coho salmon escapements for RM 22 and an estimate of the total Susitna River chinook salmon escapement through a Petersen population estimate for RM 80 (Table 3) and selected spawning ground surveys. The composition of this estimate is: 4.6 percent chinook salmon, 11.0 percent sockeye salmon, 66.1 percent pink salmon, 14.8 percent chum salmon and 3.5 percent coho salmon.

The following subsections of this report will focus on the 1984 salmon migrations at five locations on the Susitna and Yentna rivers mainstems (Figure 1), and define where spawning occurred emphasizing the Susitna

Table 3. Minimum 1984 Susitna River escapements of chinook, sockeye, pink, chum and coho salmon.

Year	Escapement Estimates 1/					
	Chinook	Sockeye 2/	Pink	Chum	Coho	TOTAL
1984	250,000	605,800	3,629,900	812,700	190,100	5,238,50

1/ Sockeye, pink, chum and coho salmon escapements are based on Petersen estimate escapements to Flathorn Station (RM 22). Chinook salmon escapement based on the Petersen population estimate for RM 80 and selected spawning ground surveys.

2/ Sockeye salmon escapement estimates do not include first run sockeye salmon.

River from the Yentna River (RM 28) to upper Devil Canyon (RM 161.0). The reader will find the subsections formatted by species order and Susitna River reach. The species order is: chinook, sockeye, pink, chum and coho salmon. The river reach division is: lower reach [Intertidal (RM 0.0) to Chulitna River confluence (RM 98.6)] and middle reach [Chulitna River confluence to upper Devil Canyon (RM 161.0)].

3.1.1 Chinook Salmon

In the last 10 years chinook salmon returning to the Susitna River have not been a target species in the commercial fishery of Upper Cook Inlet. This is due to the early nature of the migrational timing of this species relative to the annual opening date of the fishery (AOF&G, 1982). However, there is a freshwater sport fishery on Susitna River chinook salmon. The annual harvest for 1981-1983 has averaged 7,800 fish (pers. comm, K. Delaney). The sport take is principally from

tributary spawning stocks in the lower river reach. In the Susitna River drainage there are about 60 chinook salmon spawning populations (ADF&G, 1982). The most important spawning areas are Alexander Creek (RM 9.8), Deshka River (RM 40.5), Lake Creek (RM 28) and Prairie Creek (RM 97.1) (Barrett et al, 1984).

The Sport Fish Division of ADF&G has estimated the last two years of Susitna River chinook salmon escapements to be 82,800 fish (1982) and 91,800 fish (1983). These estimates were determined by expanding survey counts of selected spawning grounds (pers. comm, K. Delaney). The 1982 and 1983 escapements to the mainstem Susitna River for RM 80 only were an estimated 52,900 fish (1982) and 90,100 fish (1983) by the Petersen method (Barrett et al, 1984).

This year (1984) chinook salmon escapements into the Susitna River were monitored by ADF&G, Su Hydro staff at Sunshine Station (RM 80) in the lower reach and at Talkeetna (RM 103) and Curry (RM 120) stations in the middle reach. The respective escapements determined by the Petersen method are provided in Figure 2 and Table 4. The total escapement into the Susitna River basin for 1984 was in the range of 250,000 fish. This estimate is based on selected spawning ground surveys and the Petersen escapement estimate for Sunshine Station (Section 2.3.6).

The following subsections address chinook salmon escapement monitoring in the Susitna River drainage for 1984 by river reach. An exception is the section covering the chinook salmon index surveys which were conducted drainage wide to measure relative escapement.

Table 4. Petersen population estimates with associated 95% confidence intervals for 1984 chinook salmon escapements to Sunshine, Talkeetna and Curry stations.

Parameter [1/]	Population Estimate Location [2/]		
	Sunshine Station	Talkeetna Station	Curry Station
m	7,172	2,464	1,242
c	10,648	2,026	475
r	652	203	34
$\hat{N}$	117,128	24,591	17,351
95% C.I.	109,020-126,539	21,753-28,282	13,106-25,663

1/ m = Number of fish marked.

c = Total number of fish examined for marks during sampling census.

r = Total number of marked fish observed during sampling census.

$\hat{N}$ = Population estimate.

C.I. = Confidence Interval around $\hat{N}$.

2/ Chinook salmon escapements do not include fish 350 mm and less in length (FL).

3.1.1.1 Lower Reach

3.1.1.1.1 Main Channel Escapement Monitoring

In 1984, chinook salmon were intercepted late in the migration at Flathorn (RM 22) and Yentna (TRM 04) stations. The start up of monitoring operations at these locations were June 29 and July 1, respectively. Traditionally most of the chinook salmon escapement has already moved through the Susitna River lower reach by these dates (ADF&G, 1982). Chinook salmon daily fishwheel catches at Flathorn and

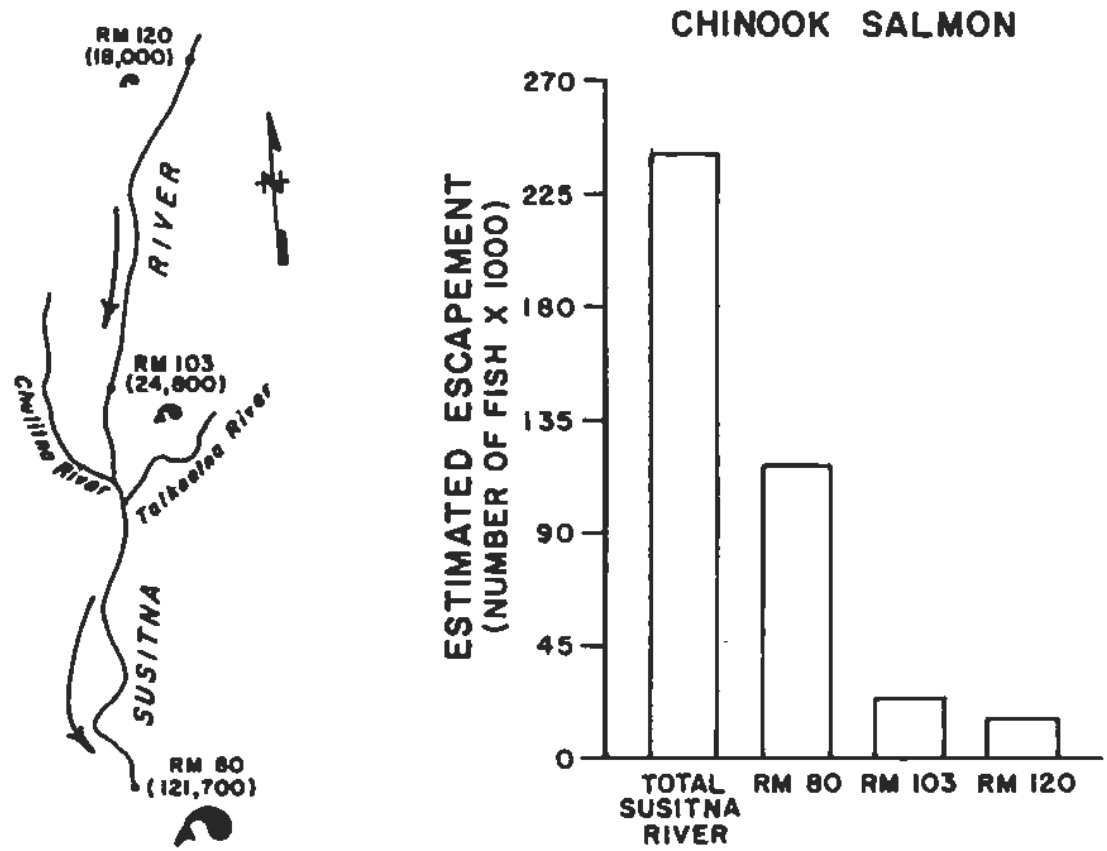


Figure 2. A comparison of the total estimated chinook salmon escapement for the Susitna River drainage to the estimated RM 80, 103 and 120 escapements, 1984.

Yentna stations are listed in Appendix Tables 2-3 and 2-6. Chinook salmon apportioned SSS counts for Yentna Station are in Appendix Tables 3-1 and 3-2.

An estimated 121,700 chinook salmon reached Sunshine Station (RM 80) in 1984 (Tables 4 and 5). Less than four percent of these fish were jack salmon measuring 350 mm or smaller FL (Table 5) and the remainder (96.2%) were chinook salmon over 350 mm FL. The estimate of 117,100 fish larger than 350 mm FL was calculated by the Petersen method

(Section 2.2.1). The jack salmon portion of the estimate was calculated based on the ratio of jacks to adults (> 350 mm FL) determined by a length sample from the fishwheels.

Table 5. Escapement of chinook salmon 350 mm or less in length in 1984 at Sunshine, Talkeetna and Curry stations.

Chinook Salmon Escapement ≤ 350 mm		
Sunshine Station	Talkeetna Station	Curry Station
4,596	253	639

At Sunshine Station (RM 80) the fishwheels intercepted 7,550 chinook salmon in 1984 (Table 6). Based on these catches, chinook salmon were abundant in the Susitna River mainstem at RM 80 for 27 days in 1984. The migration began on June 9, reached a midpoint on June 21 and ended on July 6 (Appendix Table 2-11). The chinook salmon migration at RM 80 began and ended about four days earlier on the west side than the east side based on east and west bank fishwheel catches.

At Sunshine Station (RM 80) the two east bank wheels caught approximately 73 percent (5,520 fish) of the 7,550 fish intercepted at RM 80 and the two west bank wheels caught the remaining 27 percent (2,030 fish). Tag recovery surveys above RM 80 indicated the east bank fishwheels at RM 80 were slightly less efficient than the west bank wheels (Appendix Table 6-4). Assuming the null hypotheses of no difference in east and west bank fishwheel efficiencies it would have

Table 6. Fishwheel catch by species and station in 1984.

Station	Catch					
	Chinook	Sockeye	Pink	Chum	Coho	Total
Flathorn	92	8,300	35,136	7,519	2,746	53,793
Yentna	21	6,825	20,842	1,431	970	30,089
Sunshine	7,550	18,791	93,919	56,681	9,787	186,728
Talkeetna	3,407	1,731	29,236	12,749	1,526	48,649
Curry	1,589	379	17,39	4,228	350	23,940

been expected that the ratio of east bank tag released fish at RM 80 to east bank recaptured fish upstream of RM 80 would be nearly the same ratio for corresponding west bank tagged fish. The respective ratios were 9.7:1 and 7.9:1 which indicate efficiency differences (Figure 3).

Tag recovery work conducted above RM 80 point to segregation of the chinook salmon stocks at RM 80 (Figure 3). The data indicate that the west side tributary stocks, including those of the Chulitna River drainage favored the west side of the Susitna River at RM 80 for migration. The east side tributary stocks, mainly of the Talkeetna River drainage favored the east side more than the west side of the Susitna River at RM 80 for migration. The chinook stocks in the middle reach of the Susitna River were about equally split between the east and west banks at RM 80. These stock differences were determined by analytical comparison of the ratios of the east and west bank marked fish at RM 80 to the respective ratios of east and west bank tagged fish found in

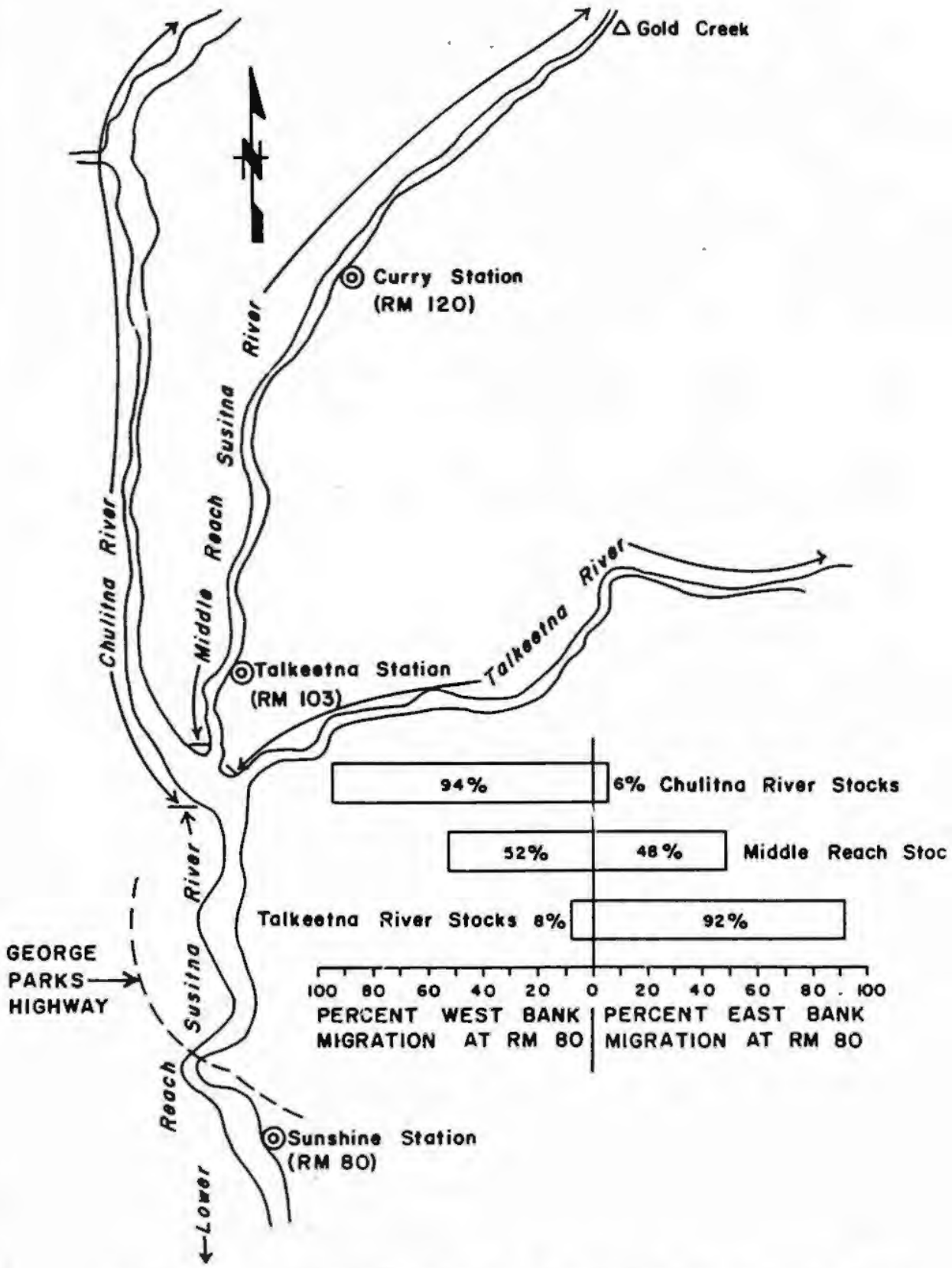


Figure 3. Migration preference of Chulitna River, Talkeetna River and middle reach Susitna River chinook salmon stocks to the east and west banks of the Susitna River at RM 80, 1984.

selected spawning areas of the Chulitna River drainage, middle Susitna River reach and Talkeetna River drainage (Appendix 6).

A plot of the east and west bank, daily fishwheel chinook salmon catches at Sunshine Station (RM 80) is provided in Figure 4. The data indicate the chinook salmon migration was near normal between early June and early July except for about a six day period between June 13 and 19 when river discharge levels changed dramatically from 54,000 cfs (June 13) to 93,000 cfs (June 17) and then fell to 71,000 cfs (June 19) (Figure 5). The fishwheel catches of chinook salmon during this six day period reached an inseason low. Because of no major commercial fishery,

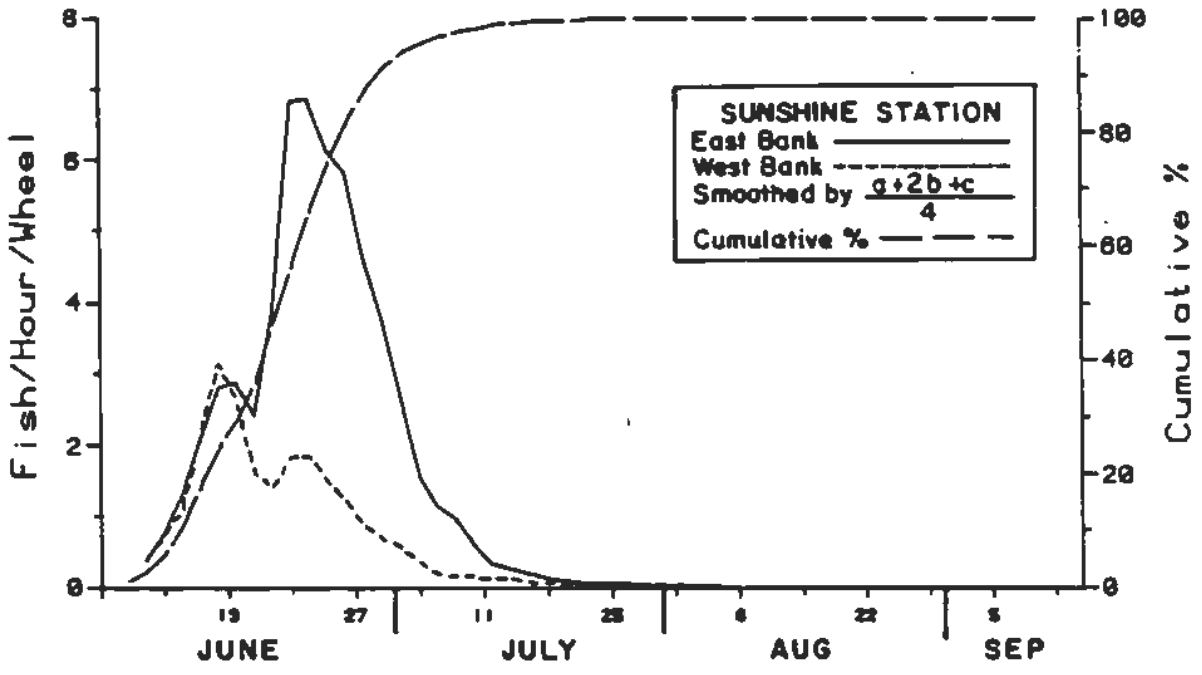


Figure 4. Mean hourly and cumulative percent fishwheel catch of chinook salmon by two day periods at Sunshine Station, 1984.

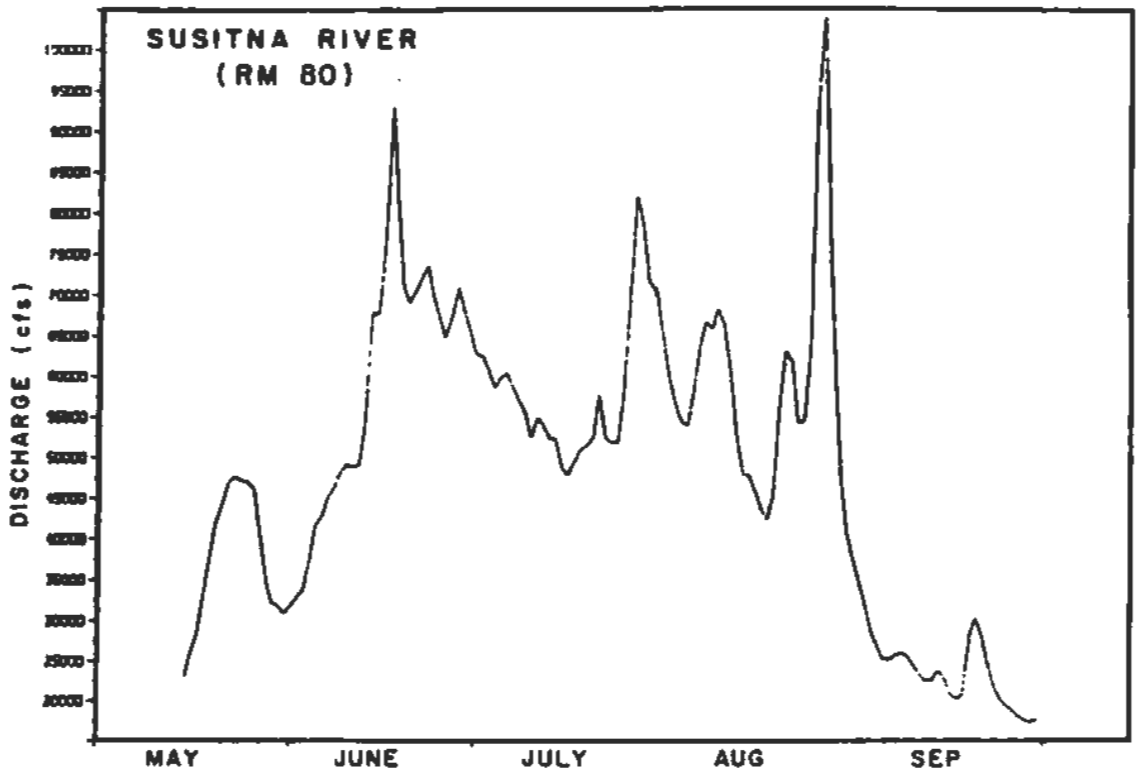


Figure 5. Provisional USGS discharge data for station No. 15292780 from May 15 through September, 1984.

mainstem sport fishery or other influencing factor which could account for an inseason drop in chinook salmon catches at Sunshine Station, the reduced catch was probably due to the reported flow change. In other studies, it has also been observed that salmon respond to high water events by reducing their migration speed (ADF&G, 1981 and Barrett et al, 1984).

Length, age and sex information collected from a sample of the chinook salmon escapement at Sunshine Station (RM 80) are summarized in Tables 7, 8 and 9 and Figure 6. Based on scale analysis, the 1984 escapement at Sunshine Station was comprised of three to seven year old fish. The

Table 7. Analysis of chinook salmon lengths, in millimeters, by age class from weighted 1984 escapement samples collected at Flathorn, Yentna, Sunshine, Talkeetna and Curry stations.

Collection Site	Age Class	n		Range Limits		Mean		95% Conf. Interval 1/		Median	
		M	F	M	F	M	F	M	F	M	F
Flathorn Station	3_2	17	-	300-385	-	326	-	-	-	330	-
	4_2	5	-	330-520	-	454	-	-	-	450	-
	5_2	2	3	620-870	730-760	790	755	-	-	870	760
	6_2	1	2	1,015	745-835	1,015	790	-	-	1,015	835
	All 2/	37	5	300-1,015	730-835	391	763	-	-	340	760
Yentna Station	3_2	1	-	300	-	300	-	-	-	300	-
	4_2	3	2	435-540	500-555	503	527	-	-	520	500
	5_2	-	1	-	697	-	697	-	-	-	697
	6_2	3	3	825-970	810-940	888	875	-	-	850	875
	All 2/	9	8	300-970	500-940	633	730	-	-	540	810
Sunshine Station	3_1	6	-	340-370	-	355	-	-	-	360	-
	3_2	82	-	240-410	-	347	-	339-354	-	350	-
	4_1	3	-	540-645	-	553	-	-	-	540	-
	4_2	47	14	360-685	500-650	506	579	483-529	-	505	570
	4_3	1	-	370	-	370	-	-	-	370	-
	5_1	-	2	-	640-760	-	692	-	-	-	640
	5_2	169	55	460-890	500-880	609	653	598-619	631-675	600	630
	6_1	4	2	750-910	820-875	832	827	-	-	880	820
	6_2	213	339	515-1,070	550-1,000	815	817	802-829	810-823	820	820
	7_1	-	1	-	850	-	850	-	-	-	850
	7_2	96	211	800-1,140	780-1,150	955	927	941-969	919-936	950	920
	All 2/	854	774	240-1,140	500-1,150	693	840	-	-	710	850

Table 7 (cont). Analysis of chinook salmon lengths, in millimeters, by age class from weighted 1984 escapement samples collected at Flathorn, Yentna, Sunshine, Talkeetna and Curry stations.

Collection Site	Age Class	n		Range Limits		Mean		95% Conf. Interval 1/		Median	
		M	F	M	F	M	F	M	F	M	F
Talkeetna Station	3_1	1	-	310	-	310	-	-	-	310	-
	3_2	6	-	310-350	-	324	-	-	-	310	-
	4_1	2	2	490-500	540-640	496	590	-	-	500	640
	4_2	23	5	410-710	570-630	559	579	527-592	-	560	570
	5_1	2	-	700-830	-	727	-	-	-	700	-
	5_2	97	17	500-880	510-850	639	758	621-657	-	620	840
	6_1	-	4	-	720-1,000	-	874	-	-	-	900
	6_2	145	162	520-1,020	690-1,000	830	832	815-846	824-840	850	820
	7_2	57	129	780-1,150	800-1,100	973	913	951-996	902-923	990	910
	All 2/	419	412	300-1,150	510-1,100	775	863	-	-	800	870
Curry Station	3_1	4	-	330-360	-	348	-	-	-	350	-
	3_2	46	-	300-410	-	355	-	347-362	-	350	-
	4_2	28	-	410-670	-	571	-	552-590	-	570	-
	5_2	57	5	520-900	620-840	644	707	623-644	-	630	670
	6_2	97	93	600-1,010	710-1,000	850	836	833-866	824-847	850	830
	7_1	-	1	-	950	-	950	-	-	-	950
	7_2	38	99	750-1,090	840-1,000	975	931	952-998	924-939	980	930
	All 2/	331	265	300-1,090	620-1,000	737	881	-	-	770	880

1/ Confidence Interval of the Mean

Table 8. Age composition of the chinook salmon escapements to Flathorn Yentna, Sunshine, Talkeetna and Curry stations in percent base on catch samples weighted by fishwheel CPUE, 1984.

Collection Site	n	Age Class [1]										
		3_1	3_2	4_1	4_2	4_3	5_1	5_2	6_1	6_2	7_1	7_2
Flathorn Station	30	-	56.7	-	16.7	-	-	16.7	-	10.0	-	-
Yentna Station	13	-	7.7	-	38.5	-	-	7.7	-	46.2	-	-
Sunshine Station	1,245	0.5	6.6	0.2	4.9	0.1	0.2	18.0	0.5	44.3	0.1	24.7
Talkeetna Station	652	0.2	0.9	0.6	4.3	-	0.3	17.5	0.6	47.1	-	28.5
Curry Station	468	0.9	9.8	-	6.0	-	-	13.3	-	40.6	0.2	29.3

1/ Gilbert-Rich Notation.

Table 9. Sex ratios of male and female chinook salmon by age from weighted 1984 escapement samples collected at Sunshine, Talkeetna and Curry stations.

Collection Site	Age	Sample Size	Number		Sex Ratio (M:F)
			Males	Females	
Sunshine Station	3	88	88	0	-
	4	65	55	10	5.5:1
	5	226	173	53	3.3:1
	6	559	226	333	0.7:1
	7	308	97	211	0.5:1
	All 1/	1,629	828	801	1.0:1
Talkeetna Station	3	7	7	0	-
	4	32	28	4	7:1
	5	116	108	8	13.5:1
	6	311	153	158	1.0:1
	7	186	62	124	0.5:1
	All 1/	831	441	390	1.1:1
Curry Station	3	50	50	0	-
	4	28	28	0	-
	5	62	59	3	19.7:1
	6	190	98	92	1.1:1
	7	138	44	94	0.5:1
	All 1/	596	330	266	1.2:1

1/ Includes all aged and non-aged samples.

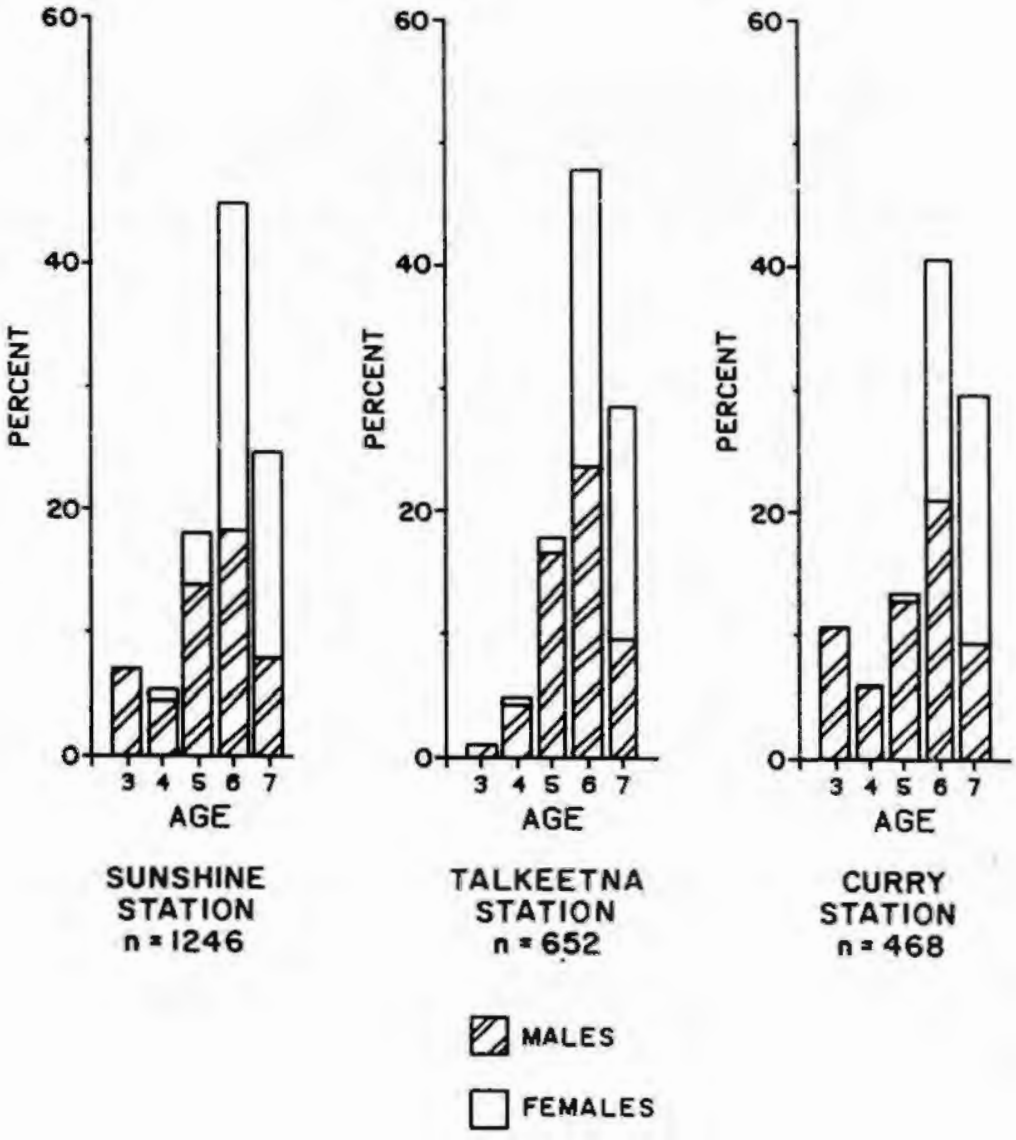


Figure 6. Age composition of fishwheel intercepted chinook salmon weighted by catch per unit effort at Sunshine, Talkeetna and Curry stations, 1984.

largest component was six year old fish (44.8%) from the 1978 parent year escapement followed by seven year old fish (24.7%) of the 1977 parent year. The average chinook salmon length (FL) at Sunshine Station in 1984 was 763 mm (Appendix Figure 5-1). Male fish averaged about 15 cm smaller length than the females due to a higher percentage of males in the younger age classes (3, 4 and 5 year olds). Overall males were slightly more abundant in the escapement sample than females at a ratio

of 1.1:1. Males were more abundant than females among the three, four and five year old age classes by a ratio of 4.3:1. Females were more numerous than males in the six and seven year old age classes by a male to female ratio of 0.6:1.

3.1.1.1.2 Spawning Ground Surveys

3.1.1.1.2.1 Mainstem

In 1984 field crews surveyed the Susitna River mainstem from RM 28 to 98.6 by helicopter and waterbourne craft about weekly and found no evidence that the lower Susitna River mainstem served as chinook salmon spawning habitat (Appendix 7). These surveys were performed from August 21 through October 17, 1984 which is well after the peak spawning occurred in local streams. Fish tagging crews in the course of their duties at Flathorn (RM 22), Yentna (TRM 04) and Sunshine (RM 80) stations in June, July and early August also looked for visual evidence of chinook salmon spawning such as repeated surfacing of ripe fish and carcasses on gravel bars and shoals not related to washouts from known spawning streams. They also found no evidence of chinook salmon spawning in the mainstem.

3.1.1.1.2.2 Streams and Sloughs

Associated stream confluences and sloughs were surveyed for chinook salmon presence between July 21 and October 21, 1934. The results are presented in Appendix 7.

3.1.1.2 Middle Reach

3.1.1.2.1. Mainstem Escapement Monitoring

In 1984 the chinook salmon escapement to the middle Susitna River reach was an estimated 24,800 fish at Talkeetna Station (RM 103) and 18,000 fish at Curry Station (RM 120) (Tables 4 and 5). About 45 percent and 24 percent respectively of the escapements reaching these stations were milling fish that dropped back downstream and spawned. These percentages were determined by spawning ground counts conducted above the two stations (Section 3.1.1.2.2.2). Most of the chinook salmon that strayed to Talkeetna and Curry stations were destined to spawn in the Talkeetna and Chulitna river systems (Appendix Table 6-4).

About one percent of the chinook salmon escapement reaching Talkeetna Station (RM 103) was jacks (≤ 350 mm) (Table 5). At Curry Station (RM 120) 3.6 percent of the escapement was jacks. Due to higher inshore water velocities at Curry Station than at Talkeetna Station and preference of adult chinook salmon for high water velocities it would have been expected that more jack salmon would have been caught at Talkeetna Station and consequently, would have represented a higher fraction of the estimated escapement. This was not the case. One possibility for the variation is the difference in stocks migrating to Talkeetna and Curry stations. As previously reported higher numbers of milling fish from Chulitna and Talkeetna rivers reached Talkeetna Station than at Curry Station. A lower jack salmon concentration in these stocks would account for the reported variability between Talkeetna and Curry stations.

The migration timings of the 1984 chinook escapements to Talkeetna (RM 103) and Curry (RM 120) stations have been determined by analysis of the fishwheel catches at these stations (Appendix Tables 2-14 and 2-17). At Talkeetna Station chinook salmon were abundant in the mainstem for 26 days and at Curry Station for 24 days. At Talkeetna Station the migration began on June 16 and ended on July 12. The midpoint occurred on June 26. Chinook salmon traveling along the east and west banks of the Susitna River at Talkeetna Station had approximately the same migration timing. The chinook salmon migration at Curry Station began on June 19, reached a midpoint on June 25 and ended on July 13. Also based on fishwheel catches there was no differential timing between chinook salmon traveling off the east and west banks at Curry Station.

A plot of daily fishwheel catches at Talkeetna (RM 103) and Curry (RM 120) stations as provided in Figure 7 indicate there was a surge in chinook salmon numbers at these stations around June 19, 1984. The increase in fish numbers can be attributed to a flow change in the Susitna River. On June 16, river flow at the USGS station at Gold Creek increased 9,400 cfs over the previous day to 40,600 cfs and continued to rise. On June 17, the flow peaked at 52,000 cfs and by June 19 the flow was down around 33,600 cfs (Figure 8). Fishwheel catches at Talkeetna and Curry stations were relatively weak during the high flow event in the order of 0.4 fish per wheel hour whereas when the flow returned to a near pre-flood level, catches excellerated to an average 1.6 fish per wheel hour. Other than the mentioned flow change there were no other known events that could explain the dramatic change in catch levels such as an alteration in commercial or sport fishing effort.

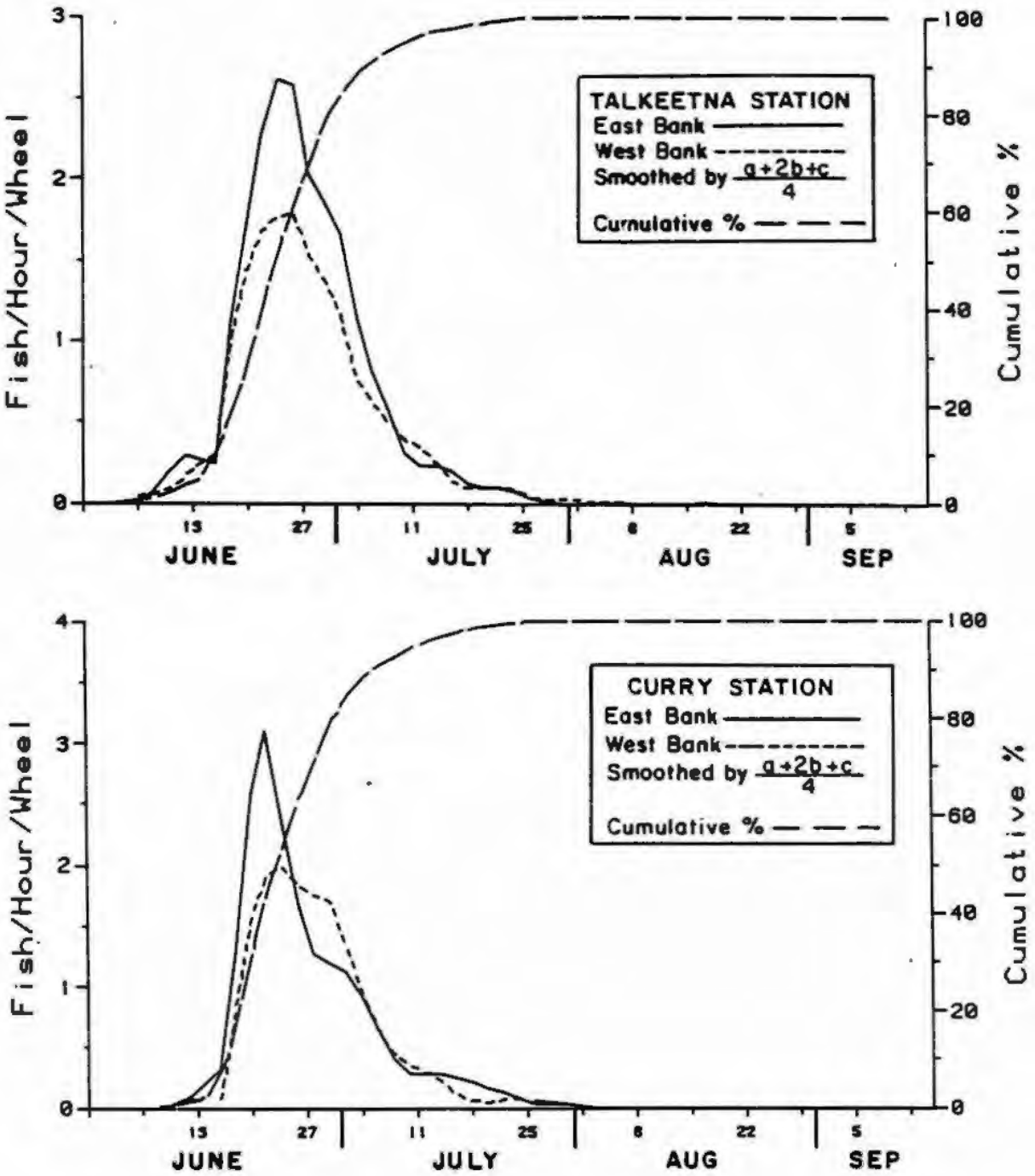


Figure 7. Mean hourly and cumulative percent fishwheel catch of chinook salmon by two day periods at Talkeetna and Curry stations, 1984.

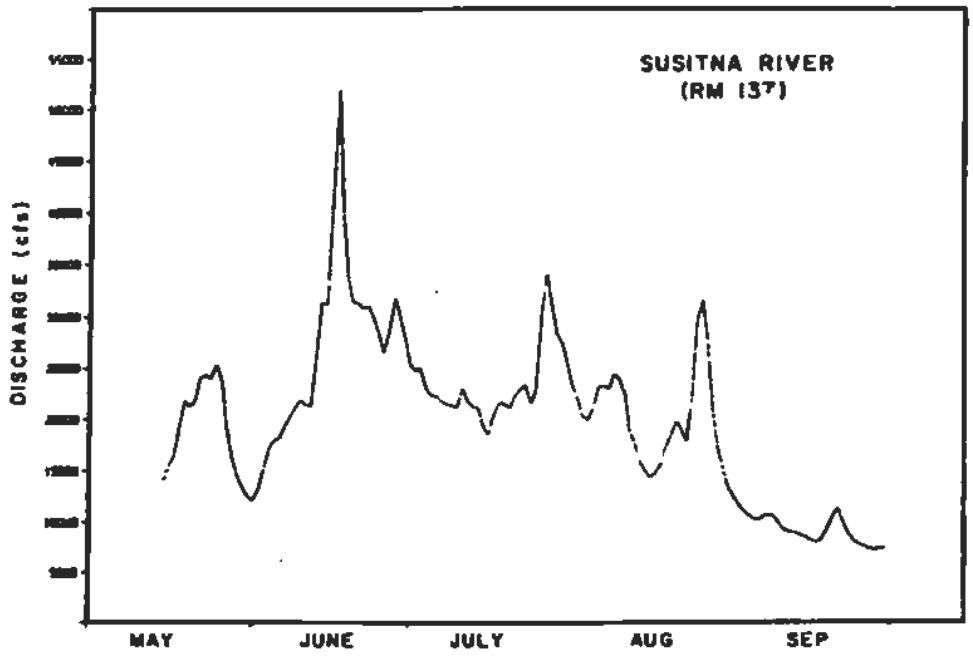


Figure 8. Provisional USGS discharge data for station No. 15292000 from May 15 through September, 1984.

In 1984 at Talkeetna Station (RM 103) chinook salmon were about 14 percent more abundant along the east side of the Susitna River than along the west side at RM 103 based on fishwheel data (Appendix Tables 2-12 and 2-14). The total station catch was 3,407 chinook salmon (Table 6). About 57 percent of the catch was taken off the east bank and the remaining 43 percent was taken along the west bank. Upstream at Curry Station (RM 120) approximately ten percent more chinook salmon migrated off the east bank than off the west bank. The east bank wheel accounted for 56 percent and the west bank wheel caught the remaining 46 percent of the total station catch of 1,589 chinook salmon (Appendix Tables 2-15 and 2-16).

The 1984 migrational rates of tagged chinook salmon in the Susitna River mainstem between Sunshine (RM 80), Talkeetna (RM 103) and Curry (RM 120) stations are presented in Appendix 2 and summarized in Figure 9. Generally, chinook salmon covered the 23 miles from Sunshine to Talkeetna stations in seven to nine days, the 40 miles from Sunshine to Curry stations in 11 to 13 days and the 17 miles between Talkeetna and Curry stations in four to six days. The respective migration speeds were 3.3 mpd, 3.6 mpd and 4.3 mpd derived from the median travel numbers given in Figure 9. Based on these migration speeds, chinook salmon migrated slower and/or milled more in the river reach between Sunshine and Talkeetna stations than between Talkeetna and Curry stations.

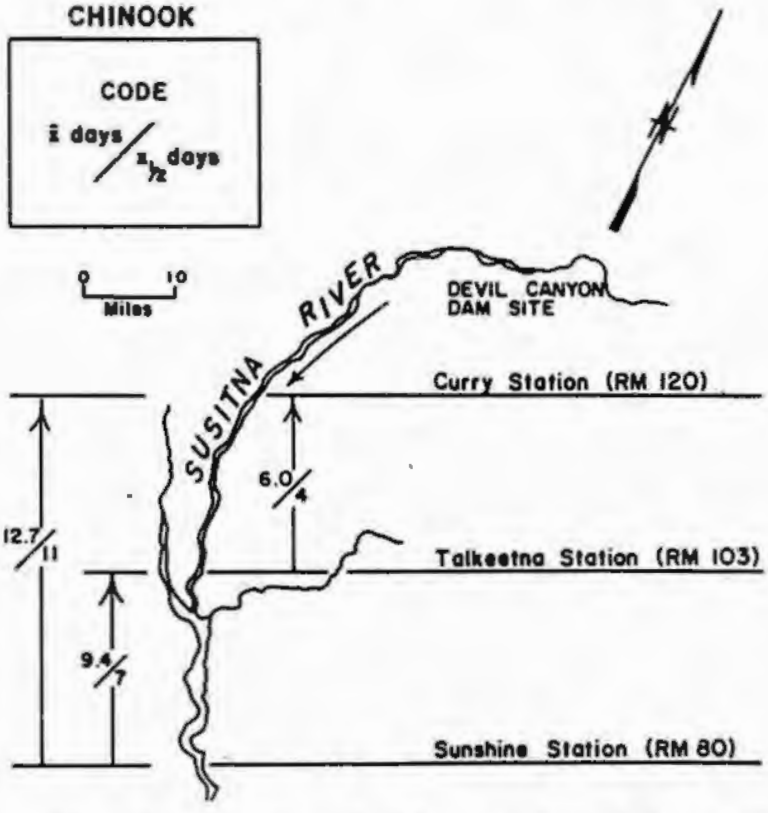


Figure 9. Migrational rates of chinook salmon between three lower and middle Susitna River reach sampling stations, 1984.

In 1984, representative age, length (FL) and sex information were collected from chinook salmon caught in the fishwheels at Talkeetna (RM 103) and Curry (RM 120) stations. The 1984 escapement at Talkeetna Station was comprised of three to seven year old fish (Table 8). The six year old fish from the 1978 parent year were dominate (47.7%) followed by the seven year old fish (28.5%) from the 1977 parent year escapement. Least abundant were three year old fish (1.1%) produced from the 1981 spawning year. The average chinook salmon length (FL) at Talkeetna Station in 1984 was 816 mm (Appendix Figure 5-2). The average male was about 90 mm smaller than the average female. Overall, male and female chinook salmon were equally abundant (1.0:1) at Talkeetna Station (Table 9). However, males were more abundant than females among the younger age group (3-5 year olds) by a ratio of 5.5:1 and females were more abundant in the older age group (6-7 year olds) by a male to female ratio of 0.7:1.

At Curry Station (RM 120) in 1984, the chinook salmon escapement was comprised of three to seven year old fish (Table 8). Six year old fish from the 1978 parent year were dominate (40.6%) followed by seven year old fish (29.5%) from the 1977 broad year. Least abundant were four year olds (6.0%) from the 1980 spawning year. The average chinook salmon length (FL) at Curry Station in 1984 was 801 mm (Appendix Figure 5-3). The average female length was about 140 mm longer than the average male length (Appendix Figure 5-30). In the younger age groups (3-5 year olds) there were more males than females by a ratio of 27.0:1 In the older age groups (6-7 year olds) there were more females than males by a male to female ratio of 0.7:1. For all age samples the overall male to female ratio was 1.2:1 (Table 9).

3.1.1.2.2 Spawning Ground Surveys

3.1.1.2.2.1 Mainstem

In 1984, field crews visually surveyed the Susitna River middle reach and found no evidence of chinook salmon spawning in the mainstem. A number of chinook salmon carcasses were found on gravel bars in the mainstem in early August but all were considered to be fish that washed out from nearby spawning streams.

3.1.1.2.2.2 Sloughs and Streams

Thirty six sloughs and 25 streams in the middle reach were repeatedly surveyed for salmon spawning between late July and mid October, 1984. Also, seven streams above RM 161.0 were surveyed between late July and mid August for chinook salmon.

Survey results indicate that chinook salmon did not use middle Susitna River reach sloughs for spawning or milling in 1984 (Appendix 6). Chinook salmon were however, found in 12 streams above RM 98.6 (Table 10). The peak recorded counts totalled 7,180 chinook salmon. The major concentration (96.2%) was found in Indian River (RM 138.6) and Portage Creek (RM 148.9) (Figure 10). Fourth of July Creek (RM 131.1) and Whiskers Creek (RM 101.4) accounted for 1.3 percent and 0.9 percent respectively of the total peak count. The eight other streams together contributed 1.6 percent.

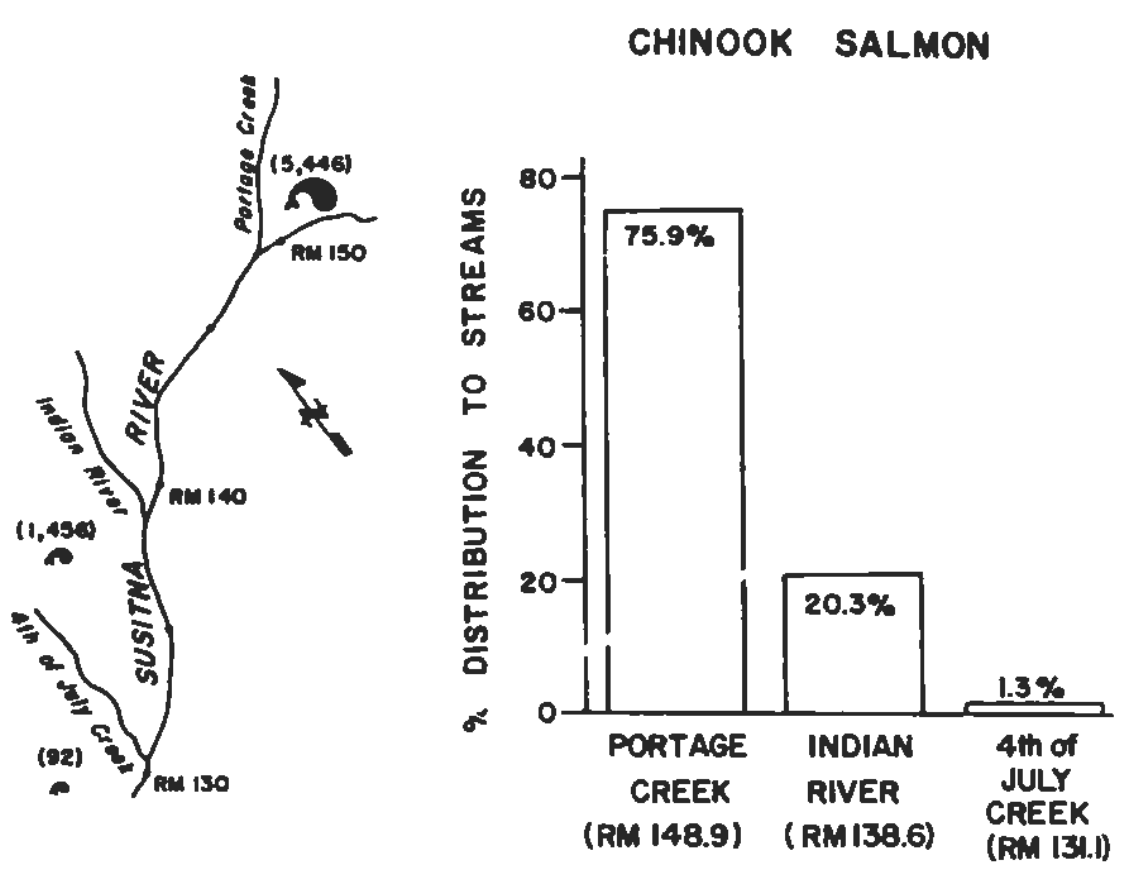


Figure 10. Percent distribution of chinook salmon to the three primary spawning streams above RM 98.6, 1984.

Chinook salmon spawned in the interface of Indian River (RM 138.6), Portage Creek (RM 148.9), Fourth of July Creek (RM 131.1) and Whiskers Creek (RM 101.4) in 1984 (Appendix Figures 6-40, 6-36 and 6-24). Except for Whiskers Creek the major spawning areas were upstream of stream mouths. In Portage and Fourth of July creeks, chinook salmon spawning was about evenly distributed to the upper limit of migration. At Indian River the majority of the spawning occurred in the first two miles.

Spawning ground counts of chinook salmon in Indian River (RM 138.6) and Portage Creek (RM 148.9) were made by helicopter and on the ground in 1984 and are illustrated in Figures 11 and 12, respectively. The

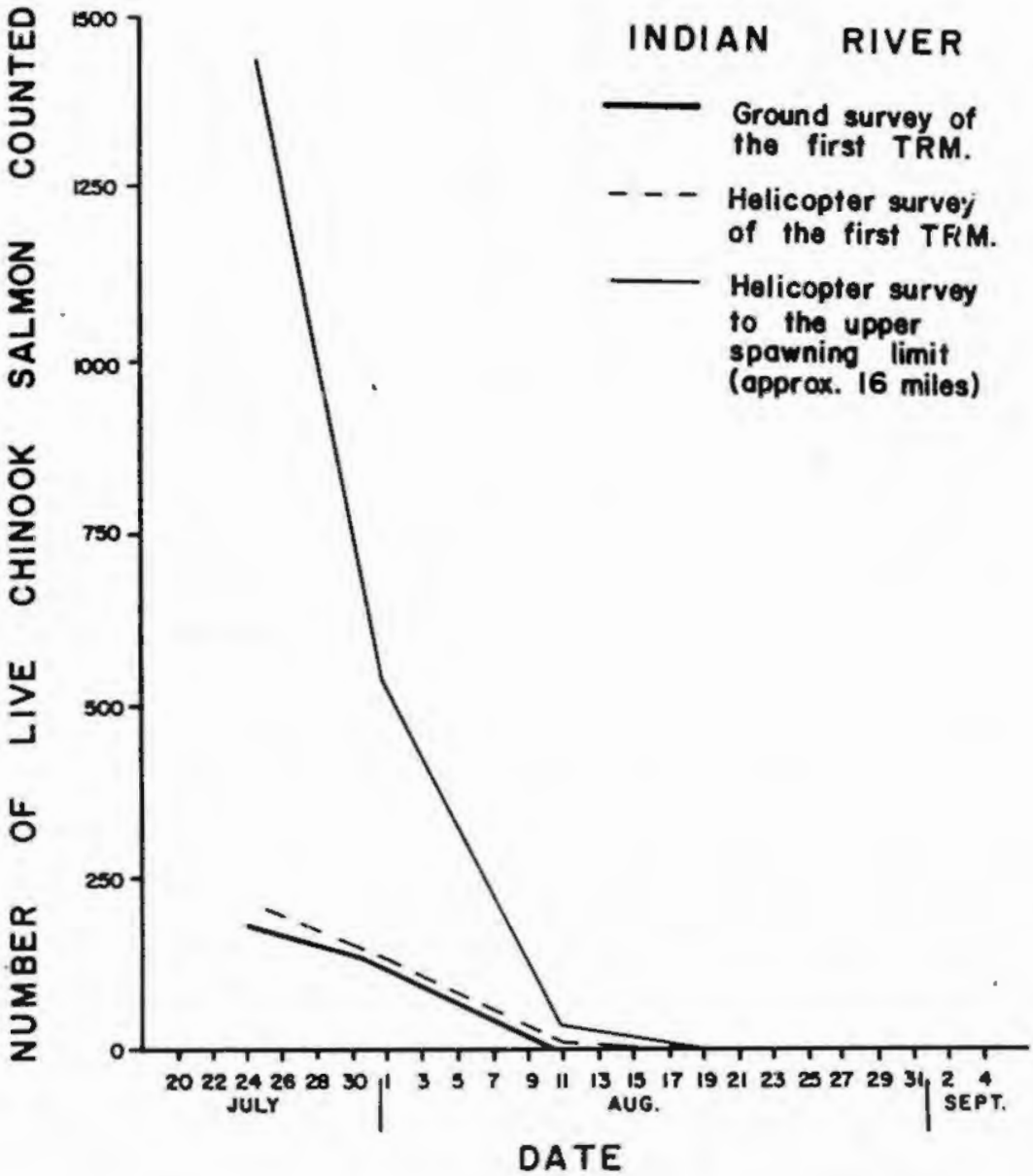


Figure 11. Peak chinook salmon ground and helicopter survey counts of Indian River in 1984.

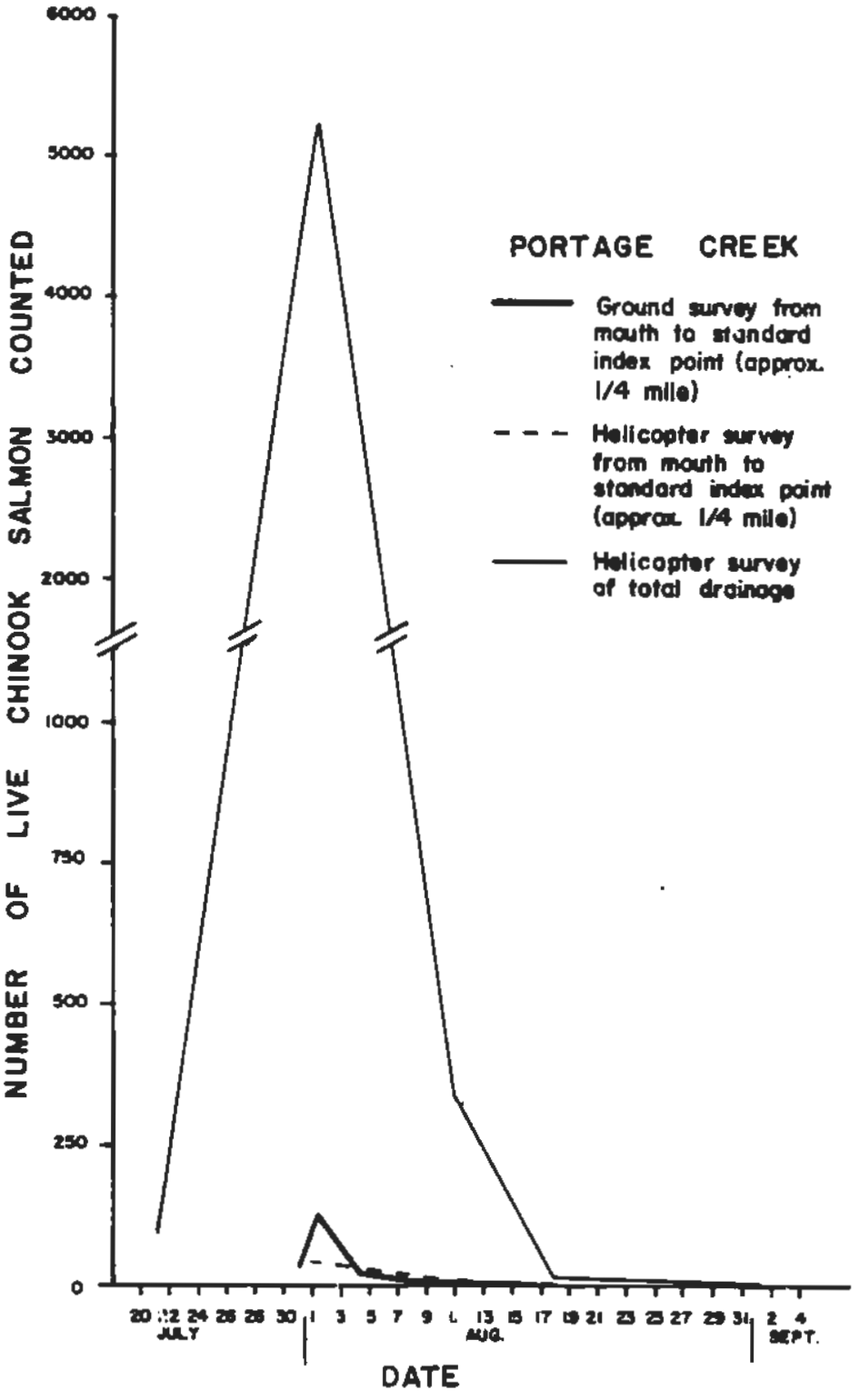


Figure 12. Peak chinook salmon ground and helicopter survey counts of Portage Creek in 1984.

Table 10. Streams spawning chinook salmon occupied above RM 98.6 in order of contribution based upon peak escapement counts, 1984.

Stream	River Mile	Date Surveyed	Peak Number Counted			Percent Contribution
			Live	Dead	Total	
Portage Creek	148.9	8/1	5,236	210	5,446	75.9
Indian River	138.6	7/25	1,440	16	1,456	20.3
4th of July Cr.	131.1	7/22	90	2	92	1.3
Whiskers Creek	101.4	7/21	67	0	67	0.9
Cheechako Cr.	152.5	8/1	28	1	29	0.4
Gold Creek	136.7	8/1	20	3	23	0.3
Lane Creek	113.6	7/22	23	0	23	0.3
5th of July Cr.	123.7	7/23	17	0	17	0.2
Chinook Creek	156.8	8/1	15	0	15	0.2
Jack Long	144.5	7/21	7	0	7	0.1
Chase Creek	106.9	8/16	0	3	3	0.1
Fog Creek	175.7	7/21	2	0	2	< 0.1
		TOTALS	6,945	235	7,180	100.0

comparisons indicate that the first quarter mile reach of Portage Creek is mainly a migrational corridor for chinook salmon and that the majority of the spawning occurred above this reach. At Indian River the first mile reach is important not only as a migrational corridor for chinook salmon but as a spawning area. It can also be determined from the information presented in Figures 11 and 12 that helicopter and foot surveys of these streams provide similar results.

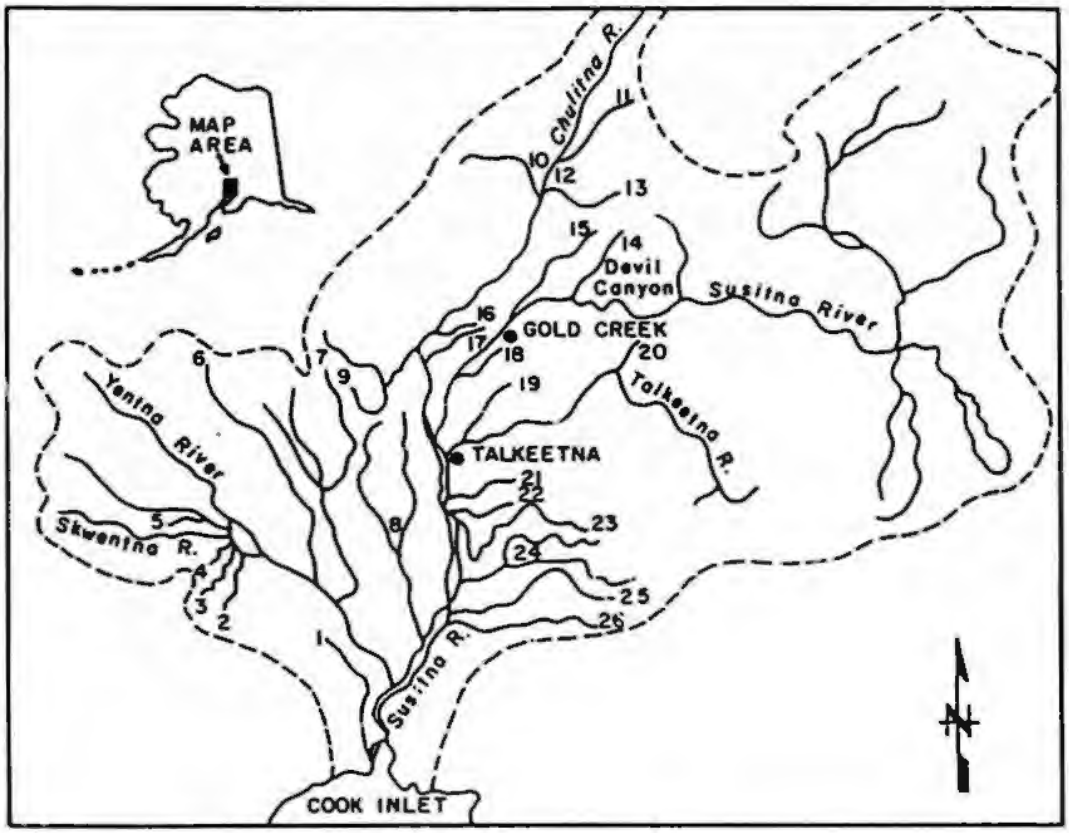
Chinook salmon spawning in streams above RM 98.6 extended from mid July to mid August (Appendix 6). The peak spawning occurred in the last week of July.

The minimum number of chinook salmon that spawned in the middle Susitna River reach was 13,800 fish. This estimate was determined by increasing the total, peak stream escapement count of 7,180 by a factor of 1.92 based on work by Neilsen and Green (1981) that indicated a peak spawning count represents less than 52 percent of a spawning population. By the same method, the spawning escapements above Talkeetna Station (RM 103) was at least 13,660 fish and above Curry Station (RM 120), 13,610 fish.

Based on these estimates 45 and 24 percents respectively of the chinook salmon that reached Talkeetna and Curry stations in 1984 were milling fish that spawned below these stations. Conversely about 55 percent of the escapement that reached Talkeetna Station in 1984 migrated above RM 103 to spawn and about 76 percent of the escapement reaching Curry Station in 1984 spawned above RM 120.

3.1.1.3 Escapement Index Surveys

Based on a survey of 16 index streams, the 1984 chinook salmon escapement to the Susitna River basin was about 25 percent higher than the previous eight year average and 20 percent higher than the 1983 escapement (Figure 13 and Tables 11 and 12). Most of the streams surveyed (10 out of 16) in 1984 supported higher chinook salmon escapements than in any previous year between 1976 and 1983. All major subreaches of the Susitna River basin with exception of the west reach side below Talkeetna (RM 97.1) which includes the Yentna River system (RM 28) experienced above average escapements in 1984. The east side



1. ALEXANDER CREEK
2. TALACHULITNA RIVER
3. QUARTZ CREEK
4. CANYON CREEK
5. RED CREEK
6. LAKE CREEK
7. PETERS CREEK
8. DESHKA RIVER
9. BUNCO CREEK
10. CHULITNA MIDDLE FORK
11. CHULITNA EAST FORK
12. CHULITNA RIVER
13. HONOLULU CREEK
14. PORTAGE CREEK
15. INDIAN RIVER
16. BYERS CREEK
17. TROUBLESOME CREEK
18. LANE CREEK
19. CLEAR CREEK
20. PRAIRIE CREEK
21. MONTANA CREEK
22. GOOSE CREEK
23. SHEEP CREEK
24. KASHWITNA RIVER NORTH FORK
25. LITTLE WILLOW CREEK
26. WILLOW CREEK

Figure 13. Susitna River basin with chinook salmon index streams defined, 1984.

Table 11. 1984 chinook salmon escapement counts of index streams in the Susitna River drainage.

Stream	Survey			No. Chinook Salmon Observed		
	Date	Method	Conditions	Live	Dead	Total
Alexander Creek	7/20	Hel.	good	4,610	10	4,620
Bunco Creek	8/10	Hel.	good	18	33	51
Chulitna River	7/24	Raft	excellent	4,110	81	4,191
	8/4	Raft	good	839	197	1,036
Clear Creek	7/25	Hel.	poor	1,453	67	1,520
Deshka River	8/4	Hel.	good	16,852	40	16,892
Goose Creek	7/31	Hel.	fair	200	58	258
Indian River	7/21	Hel.	poor	0	0	0
	7/25	Hel.	good	1,440	16	1,456
	8/1	Hel.	good	525	90	615
	8/11	Hel.	excellent	41	0	41
	8/18	Hel.	good	6	0	6
Kashwitna River (North Fork)	7/31	Hel.	poor	111	0	111
Lane Creek	7/22	Hel.	excellent	22	0	22
	7/23	Hel.	excellent	5	0	5
	7/30	Foot	good	6	0	6
Montana Creek	7/24	Foot	fair	2,268	41	2,309
Portage Creek	7/21	Hel.	poor	0	0	0
	7/25	Hel.	fair	2,310	31	2,341
	8/1	Hel.	excellent	5,236	210	5,446
	8/18	Hel.	good	11	0	11
	8/11	Hel.	excellent	347	242	589
Prairie Creek	7/24	185 Cess.	good	9,000	--	9,000
Sheep Creek	7/31	Hel.	fair	778	250	1,028
Talachulitna River	7/31	Hel.	poor	6,038	100	6,138

Table 12. Chinook salmon peak survey escapement counts of Susitna River basin streams from 1976 to 1984.

Stream	Year								
	1976	1977	1978	1979	1980	1981	1982	1983	1984
Alexander Creek	5,412	9,246	5,854	6,215	a/	a/	2,546	3,755	4,620
Deshka River	21,693	39,642	24,639	27,385	a/	a/	16,000 e/	19,237	16,892
Willow Creek	1,660	1,065	1,661	1,086	a/	1,357	592 d/	777	2,789
Little Willow Creek	833	598	436	324 c/	a/	459	316 d/	1,042	b/
Kashwitna River (North Fork)	203	336	362	457	a/	557	156 d/	297	111 c/
Sheep Creek	455	630	1,209	778	a/	1,013	527 d/	945	1,028
Goose Creek	160	133	283	b/	a/	262	140 d/	477	258
Montana Creek	1,445	1,443	881	1,094 c/	a/	814	887 d/	1,641	2,309
Lane Creek	b/	b/	b/	b/	b/	40	47	12	22
Indian River	537	393	174	285	a/	422	1,053	1,193	1,456
Portage Creek	702	374	140	190	a/	659	1,253	3,140	2,341
Prairie Creek	6,513	5,790	5,154	a/	a/	1,900	3,844	3,200 e/	9,000
Clear Creek	1,237	769	997	864 c/	a/	a/	982	806	1,520 c/
Chulitna River (East Fork)	112	168	59	a/	a/	a/	119 d/	b/	b/
Chulitna River (MF)	1,870	1,782	900	a/	a/	a/	644 d/	3,846	4,191
Chulitna River	124	229	62	a/	a/	a/	100 d/	b/	b/
Honolulu Creek	24	36	13	37	a/	a/	27 d/	b/	b/
Byers Creek	53	69	a/	28	a/	a/	7 d/	b/	39
Troublesome Creek	92	95	a/	a/	a/	a/	36 d/	b/	b/
Bunco Creek	112	136	a/	58	a/	a/	198	523	51 d/
Peters Creek	2,280	4,102	1,335	a/	a/	a/	a/	2,272	a/
Lake Creek	3,735	7,391	8,931	4,196	a/	a/	3,577	7,075	a/
Talachulitna River	1,319	1,856	1,375	1,648	a/	2,129	3,101	10,014	6,138 c/
Canyon Creek	44	135	b/	b/	b/	84	b/	575	b/
Quartz Creek	b/	8	b/	b/	b/	8	b/	b/	b/
Red Creek	b/	1,511	385	b/	b/	749	b/	b/	b/
TOTAL	50,615	77,937	54,790	44,645	-	10,453	36,152	60,827	52,765

a/ No total count due to high turbid water
b/ Not counted
c/ Poor counting conditions
d/ Counts conducted after peak spawning
e/ Estimated peak spawning count

streams below Talkeetna averaged a 140 percent higher escapement count than the previous eight year average and a 60 percent higher escapement count than in 1983. West side streams below Talkeetna in 1984 had a 15 percent lower escapement count than the average for 1976 to 1983 and a 15 percent lower escapement count than in 1983. Index streams of the Chulitna River subdrainage (RM 98.6) had a 95 percent higher fish count in 1984 than the previous eight year average and a 10 percent higher count than in 1983. In the Talkeetna River subdrainage (RM 97.1) the 1984 escapement count was 95 percent higher than the 1976 to 1983 average and 160 percent higher than in 1983. The middle Susitna River reach above Talkeetna had a 350 percent higher escapement count than the previous eight year average and a 60 percent higher escapement count than in 1983.

Annually performed chinook salmon escapement counts of index streams do not provide an absolute measure of between year escapement differences. In general the index stream counts are a 'hit or miss' proposition attributable in part to factors of weather, inadequate funding and personal restraints. Commonly, poor weather and temporary high discharges occur in the Susitna River basin between mid July and early August. Such conditions often cause survey delays of a week or more resulting in the peak spawning period to be missed or the surveys being performed under poor observation conditions. In recent years nearly one-third of the index streams have not been surveyed mainly because of inadequate allocation of funding for air charter. Another program deficiency is observer time. Most of the surveys are conducted by staff responsible for other duties coinciding with the timing of chinook salmon spawning. Schedule conflicts often occur which result in missed

surveys, surveys being conducted at less than desirable weather conditions and repetitive counts not being made to document between year variation of spawning duration and timing. It is best to consider the 1984 chinook salmon index survey program and previous year programs a general, non-quantitative perspective of between year escapement variability. From this perspective it can be determined that the 1984 chinook salmon escapement for the Susitna River basin, based on index stream surveys, fell well within or slightly above the escapement average for the last eight years.

3.1.2 Sockeye Salmon

The Susitna River supports two runs of sockeye salmon. The first run is smaller than the second run and unlike the second run is not subject to a commercial fishery. The first run probably is in the range of 5 to 10 thousand fish based on three years of escapement monitoring at Sunshine Station (RM 80) (Barrett et al, 1984) and an unpublished sighting of suspected first run sockeye in Fish Lake Creek off the Yentna River (RM 28) by Barrett in 1973. The second run of sockeye salmon is substantially larger being comprised of over 40 separate populations. Second run stocks are harvested by drift and set net fishermen in Upper Cook Inlet. The commercial contribution of Susitna River stocks is in the range of 10 to 30 percent (Barrett et al, 1984). Susitna River, second run sockeye salmon escapements have never been completely quantified. However minimum annual escapements of 175,900 to 272,900 second run fish have been reported for years 1981 to 1983. These estimates were determined by escapement monitoring to the Yentna River and at RM 80 (Barrett et al, 1984). In 1984 the minimum escapement was an estimated 605,800 fish based on a first year, tag and recapture operation at RM 22 (Section 3.1.2.2).

Presented in the following subsections are the results of sampling 1984 first and second run sockeye salmon escapements in the lower and middle river reaches of the Susitna River drainage.

3.1.2.1 First Run

In the Susitna River drainage one confirmed and another suspected stock

of first run sockeye salmon passes through the lower river reach annually between late May and mid June. The confirmed stock migrates past Sunshine Station (RM 80) and spawns in the Talkeetna River drainage in the Papa Bear lake system (Figure 14). The suspected, second stock utilizes the Fish Lake Creek system off the Yentna River (unpublished report, Barrett 1973) (Figure 15). With exception of a few milling fish, first run sockeye salmon do not penetrate or spawn in the middle reach of the Susitna River (Barrett et al, 1984).

3.1.2.1.1 Lower Reach

3.1.2.1.1.1 Main Channel Escapement Monitoring

In 1984, Yentna Station (TRM 04) on the Yentna River was not operational early enough to monitor first run escapement. Sunshine Station (RM 80) was operational on June 4 in time to monitor the escapement into the Talkeetna River system. Based on the Petersen method the 1984 escapement at Sunshine Station as about 4,800 fish (Table 13).

Table 13. Petersen population estimate for 1984 first run sockeye salmon to Sunshine Station.

Location	River Mile	Tagged (m)	Examined for tags (c)	Recaptures (r)	Population Estimate (N̂)	95% Confidence Interval
Sunshine	80	492	1,977	204	4,768	4,220-5,480

1/ Migration period of first run sockeye salmon extended from June 4 through June 22, 1984.

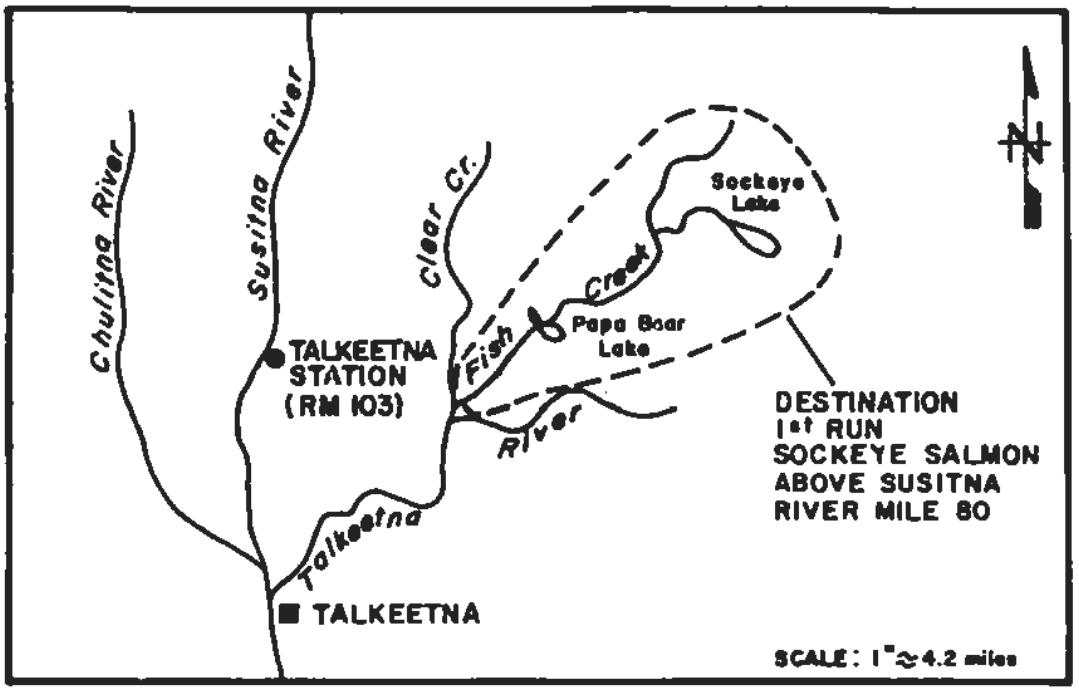


Figure 14. Destination of first run sockeye salmon tagged at Sunshine Station (RM 80) in 1984.

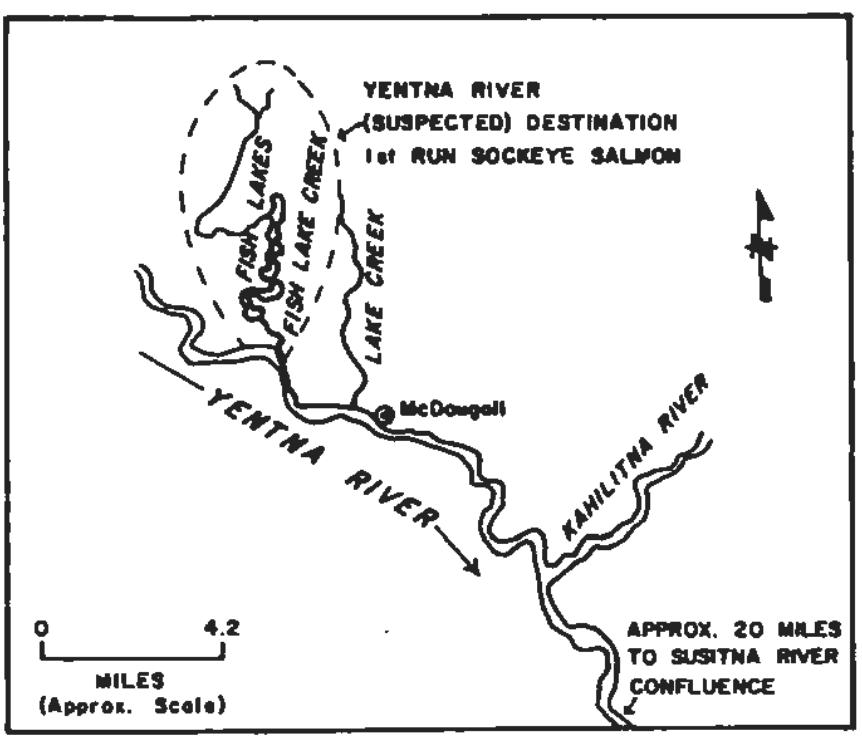


Figure 15. Suspected destination of first run sockeye salmon into the Yentna River drainage, 1984.

The four fishwheels at Sunshine Station (RM 80) caught 500 first run sockeye salmon in 1984 (Table 13). Based on an analysis of the catch the migration began on June 4, reached a midpoint on June 10 and was over by June 22 (Appendix Table 2-11). The peak migration occurred on June 9 with an average catch per fishwheel hour on this date of 0.6 fish.

The two east bank fishwheels at Sunshine Station (RM 80) caught 98.8 percent of the station catch of first run sockeye salmon in 1984. The west bank wheels intercepted the remaining 1.2 percent. From this it is apparent that first run fish near exclusively used the east side of the Susitna River at RM 80 for migration in 1984.

First run sockeye salmon were sampled at the fishwheels at Sunshine Station (RM 80) to determine representative escapement age, length (FL) and sex composition (Table 14). Nearly the entire 1984 escapement (96.5%) was five year old fish from the 1979 brood year (Table 15). The remainder of the escapement (3.6%) included four and six year old fish. Nearly all the returning first run sockeye salmon in 1984 had spent one winter in freshwater before entering the marine environment. The average length (FL) of a first run sockeye salmon in 1984 was 532 mm (Appendix Figure 5-6). The males averaged about 36 mm longer than the females. The male to female ratio in the escapement was 0.5:1 (Table 16). Female fish were more abundant than males in all age classes (4-6 year olds).

Table 14. Analysis of sockeye salmon lengths, in millimeters, by age class from weighted 1984 escapement samples collected at Flathorn, Yentna, Sunshine, Talkeetna and Curry stations.

Collection Site	Age Class	n		Range Limits		Mean		95% Conf. Interval 1/		Median	
		M	F	M	F	M	F	M	F	M	F
Flathorn	3_1	17	1	320-465	420	410	420	-	-	410	420
Station	3_2	103	-	230-430	-	330	-	322-338	-	330	-
	4_1	22	5	445-620	465-585	547	486	525-568	-	560	465
	4_2	458	314	345-630	390-590	481	486	477-486	482-490	480	485
	4_3	16	3	300-530	375-495	378	454	340-416	-	385	470
	5_1	11	6	540-660	520-615	599	541	-	-	585	525
	5_2	430	288	420-690	400-645	564	542	560-567	539-546	570	540
	5_3	38	41	405-615	420-585	499	506	485-514	491-521	505	510
	6_2	1	1	545	545	545	545	-	-	545	545
	6_3	13	12	480-620	470-575	539	529	-	-	550	535
	All 2/	1,314	768	230-690	375-645	520	517	-	-	535	520
Yentna	3_1	4	1	390-425	455	413	455	-	-	423	455
Station	3_2	29	-	310-403	-	347	-	338-356	-	338	-
	4_1	16	19	487-610	515-620	572	571	-	-	587	568
	4_2	290	245	340-601	411-650	472	488	467-477	484-493	459	489
	4_3	6	-	335-387	-	351	-	-	-	350	-
	5_2	624	720	458-640	425-611	575	550	573-577	548-551	577	550
	5_3	60	87	375-570	403-557	498	484	487-509	478-490	509	489
	6_2	-	2	-	490-530	-	527	-	-	-	530
	6_3	58	92	530-620	465-612	580	552	574-585	547-556	585	550
	All 2/	1,324	1,415	310-640	403-650	538	532	-	-	558	540
Sunshine	4_1	-	1	-	575	-	575	-	-	-	575
Station	4_2	7	4	390-545	410-480	488	434	-	-	530	420
Run 1	5_1	-	1	-	550	-	550	-	-	-	550
	5_2	121	230	375-685	410-605	559	519	552-556	515-523	560	520
	6_2	-	1	-	535	-	535	-	-	-	535
	All 2/	139	261	375-685	410-605	554	520	-	-	560	520

Table 14 (cont). Analysis of sockeye salmon lengths, in millimeters, by age class from weighted 1984 escapement samples at Flathorn, Yentna, Sunshine, Talkeetna and Curry stations.

Collection Site	Age Class	n		Range Limits		Mean		95% Conf. Interval 1/		Median	
		M	F	M	F	M	F	M	F	M	F
Sunshine	3_1	7	1	370-425	380	402	380	-	-	410	380
Station	3_2	31	1	275-420	375	370	375	352-388	-	340	375
Run 2	3_3	1	-	365	-	365	-	-	-	-	-
	4_1	8	13	445-600	405-585	574	526	-	-	600	520
	4_2	258	317	355-620	375-585	512	484	506-517	479-488	515	490
	4_3	9	1	335-450	475	380	475	-	-	375	475
	5_2	119	165	380-640	450-620	568	536	561-575	531-541	570	540
	5_3	12	20	420-575	420-540	505	491	-	483-499	530	490
	6_3	-	7	-	495-535	-	511	-	-	-	500
	All 2/	523	608	275-640	370-620	530	500	-	-	535	500
Talkeetna	3_1	2	1	440-450	420	445	420	-	-	450	420
Station	3_2	2	-	320-430	-	409	-	-	-	430	-
	4_1	5	15	515-585	450-580	564	529	-	-	580	540
	4_2	157	201	390-680	400-590	522	495	514-529	490-500	525	500
	4_3	2	-	330-485	-	356	-	-	-	330	-
	5_1	-	2	-	565-575	-	570	-	-	-	575
	5_2	29	28	520-640	500-645	588	553	578-598	540-566	590	555
	5_3	1	6	540	510-555	540	534	-	-	540	520
	6_3	1	1	600	585	600	585	-	-	600	585
	All 2/	262	326	320-680	400-645	525	503	-	-	530	500
Curry	3_1	4	-	410-430	-	421	-	-	-	420	-
Station	3_2	4	-	335-375	-	359	-	-	-	350	-
	4_1	2	6	555-570	540-585	562	567	-	-	555	560
	4_2	92	46	330-600	425-560	475	491	464-485	482-501	465	490
	4_3	8	-	335-460	-	393	-	-	-	380	-
	5_1	1	-	600	-	600	-	-	-	600	-
	5_2	10	25	510-610	495-600	592	550	-	539-561	590	550
	5_3	2	10	515-530	470-530	523	509	-	-	530	505
	6_2	-	1	-	540	-	540	-	-	-	540
	6_3	-	1	-	570	-	570	-	-	-	570
	All 2/	139	107	330-640	415-600	479	519	-	-	465	520

1/ Confidence Interval of the Mean.

2/ Composite of all aged and non-aged samples.

Table 15. Age composition of the sockeye salmon escapements to Flathorn, Yentna, Sunshine, Talkeetna and Curry stations based on catch samples weighted by fishwheel CPUE, 1984.

Collection Site	n	Age Class 1/										
		3_1	3_2	3_3	4_1	4_2	4_3	5_1	5_2	5_3	6_2	6_3
Flathorn Station	1,780	1.0	5.8	-	1.5	43.3	1.1	1.0	40.3	4.4	0.1	1.4
Yentna Station	2,253	0.2	1.3	-	1.6	23.7	0.3	-	59.7	6.5	0.1	6.7
Sunshine Station												
Run 1	365	-	-	-	0.3	3.0	-	0.3	96.2	-	0.3	-
Run 2	970	0.8	3.3	0.1	2.2	59.3	1.0	-	29.3	3.3	-	0.7
Talkeetna Station	453	0.7	0.4	-	4.4	79.0	0.4	0.4	12.6	1.5	-	0.4
Curry Station	212	1.9	1.9	-	3.8	65.1	3.8	0.5	16.5	5.7	0.5	0.5

1/ Gilbert-Rich Notation.

3.1.2.1.1.2 Spawning Ground Surveys

Th first run sockeye salmon that migrated past Sunshine Station (RM 80) in early June 1984 spawned in the inlet stream of Papa Bear Lake located in the Talkeetna River drainage. The spawning extended from the creek mouth upstream about 1.5 miles and took place mainly over a three week period from the second to the last weeks of July. The peak of spawning occurred around July 20. These findings are based on two escapement surveys conducted on July 14 and 26 (Table 17). On the first survey there were about 1,500 sockeye in Papa Bear Inlet stream that were just beginning to spawn and another 500 to 1,000 fish holding off the creek mouth in Papa Bear Lake. There were no sockeye carcasses in the creek other than about 50 fresh, bear killed fish. On the second survey on

Table 16. Sex ratios of male and female sockeye salmon by age from weighted 1984 escapement samples collected at Flathorn, Yentna, Sunshine, Talkeetna and Curry stations.

Collection Site	Age	Sample Size	Number		Sex Ratio (M:F)
			Males	Females	
Flathorn Station	3	121	121	0	-
	4	818	482	336	1.4:1
	5	814	476	338	1.4:1
	6	27	14	13	1.1:1
	All 1/	2,082	1,249	833	1.5:1
Yentna Station	3	34	33	1	33:1
	4	577	325	252	1.3:1
	5	1,495	652	843	0.8:1
	6	152	57	95	0.6:1
	All 1/	2,746	1,279	1,467	0.9:1
Sunshine Station 1st Run	4	12	10	2	5:1
	5	352	116	236	0.5:1
	6	1	0	1	0:1
	All 1/	400	133	267	0.5:1
Sunshine Station 2nd Run	3	41	29	12	2.4:1
	4	606	245	361	0.7:1
	5	318	131	187	0.7:1
	6	7	0	7	0:1
	All 1/	1,133	464	669	0.7:1
Talkeetna Station	3	5	5	0	-
	4	380	154	226	0.7:1
	5	66	31	35	0.9:1
	6	2	1	1	1:1
	All 1/	588	250	338	0.7:1
Curry Station	3	8	8	0	-
	4	154	105	49	2.1:1
	5	48	14	34	0.4:1
	6	2	0	2	0:1
	All 1/	246	143	103	1.4:1

1/ Includes all aged and non-aged samples.

Table 17. Escapement survey counts of tagged and untagged first run sockeye salmon tagged at Sunshine Station in 1984.

Area Surveyed	River Mile 1/	Date	Survey Conditions	Sunshine Tags			
				Tagged (r)	Untagged	Total (c)	Ratio (c/r)
Papa Bear Lake	97.1	7/14	Poor 2/				
Papa Bear Lake Inlet Stream	97.1	7/14	Excellent	131	1,405	1,536	11.7
Papa Bear Lake Inlet Stream	97.1	7/26	Good	72	360	432	6.0

1/ Confluence of stream or receiving system with Susitna River mainstem.

2/ Fish not surveyed for tag recovery data. Approximately 500-1,000 sockeye salmon milling at the lake inlet.

July 26, most of the fish in the creek were in post-spawning condition, and there were no sockeye salmon observed off the stream, mouth.

The results of 1984 tag recovery surveys covering first run sockeye salmon are listed in Table 17. About 8.5 percent of the 1,536 fish observed on the July 14 survey of Papa Bear Lake inlet stream were tagged compared to 16.7 percent of the 432 fish counted on the last survey (July 26). These figures indicate that the first run migration at RM 80 began a few days before tagging operations started or that the fishwheels at Sunshine Station (RM 80) were more efficient at the end of the migration than at the beginning. Review of the daily fishwheel catches at Sunshine Station supports the conclusion that some first run sockeye salmon passed Sunshine Station prior to the beginning of site operations on June 4. Inasmuch as the first run escapement spawned over a relatively short time period (three weeks) and the two escapement surveys were random, the Petersen method is still appropriate for

calculating the escapement even though some early migrating fish were not intercepted.

3.1.2.2 Second Run

3.1.2.2.1 Lower Reach

3.1.2.2.1.1 Main Channel Escapement Monitoring

In 1984, second run sockeye salmon escapements were monitored at three locations in the lower river reach. At the lowest downstream sampling

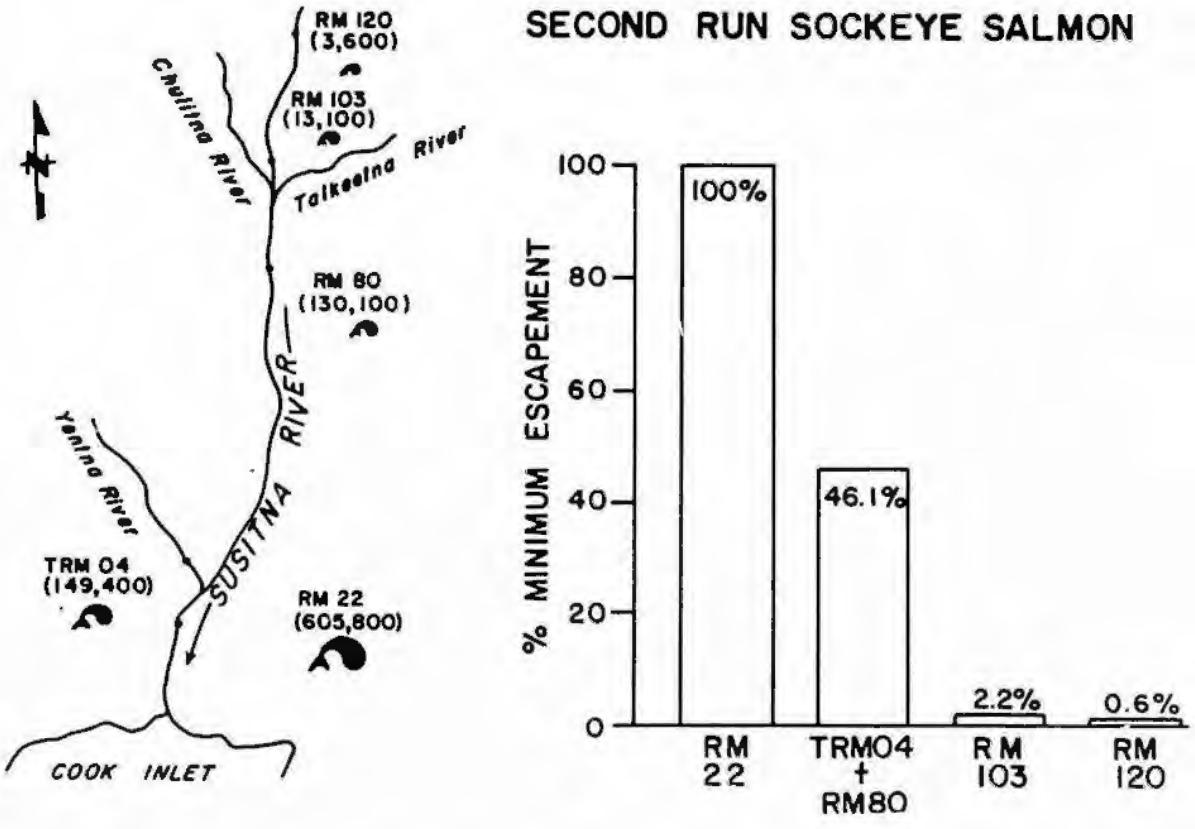


Figure 16. A comparison of the total estimated sockeye salmon escapement for the Susitna River drainage to the estimated TRM 04, RM 80, 103 and 20 escapements, 1984.

site, Flathorn Station (RM 22), the escapement was about 605,800 fish (Table 18 and Figure 16). Not all of these fish spawned above RM 22 based on reported milling behavior of sockeye at other locations. Stocks destined to Alexander Lake (RM 9.8) and the Flathorn Lake (RM

Table 18. Petersen population estimates with associated 95% confidence intervals for 1984 sockeye salmon migration to Flathorn, Sunshine, Talkeetna and Curry stations.

Parameter [1]	Population Estimate Location			
	Flathorn Station	Sunshine Station [2]	Talkeetna Station	Curry Station
m	8,226	17,794	1,494	274
c	47,356	24,315	3,293	2,911
r	643	3,306	377	222
$\hat{N}$	605,833	130,071	13,050	3,593
95% C.I.	562,640-656,209	126,852-135,154	11,918-14,419	3,190-4,113

1/ m = Number of fish marked.

c = Total number of fish examined for marks during sampling census.

r = Total number of marked fish observed during sampling census.

$\hat{N}$ = Population estimate.

C.I. = Confidence Interval around $\hat{N}$.

2/ Sockeye salmon escapement estimate for Sunshine Station does not inclu the population estimate for first run sockeye.

13.5) drainages probably milled in the lower river reach up to and beyond the fishwheels operated at RM 22. However, no spawning surveys were performed below RM 22, and therefore it is not possible to quantify the level of milling. The estimated escapement of 605,800 fish for Flathorn Station should be considered the number of fish that reached this location and not the number of fish which necessarily spawned upstream of this location.

In the Yentna River (RM 28) at Yentna Station (TRM 04) the 1984 escapement was approximately 149,400 fish determined by SSS counters (Table 19). This represents about 25 percent of the estimated escapement to Flathorn Station (RM 22). At Sunshine Station (RM 80) farther upstream in the lower river reach an estimated 130,100 second run sockeye salmon reached this location as calculated by the Petersen method (Table 18). This escapement estimate represents about 21 percent of the reported escapement to Flathorn Station. Based on the estimated escapement of Flathorn, Yentna and Sunshine stations about 300,000 sockeye salmon spawned in areas of the Susitna River basin other than in the Yentna River drainage and above RM 80. The four known sockeye salmon spawning systems below RM 80 excluding the Yentna River are defined in Figure 17. Of these the Fish Creek drainage (RM 8) is probably the most productive based on historic surveys (ADF&G, 1982). The Alexander (RM 10) and Deshka (RM 40) rivers and Whitsol Lake drainages are minor sockeye salmon systems (per. comm, K. Delaney).

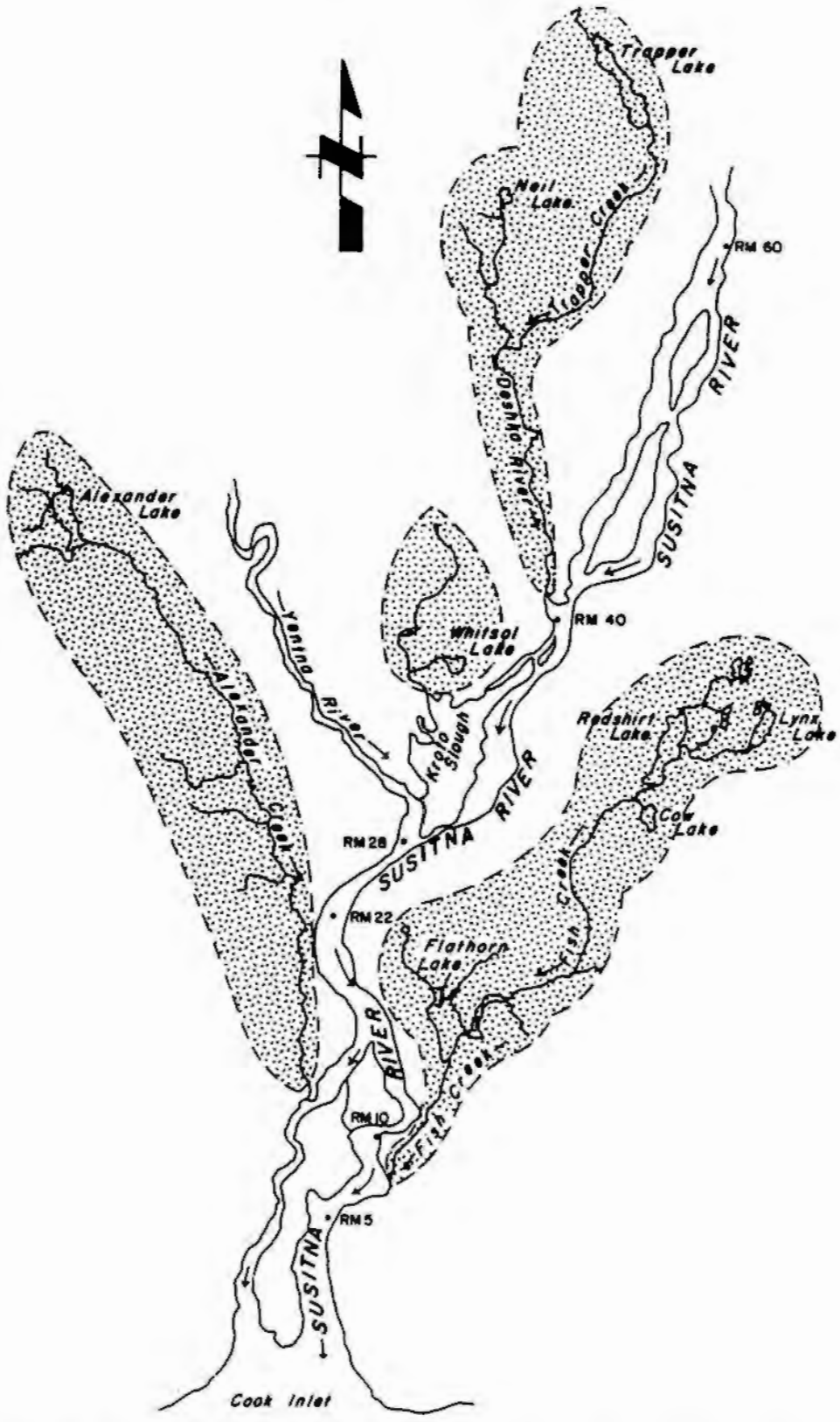


Figure 17. Known sockeye salmon spawning systems below RM 80, excluding the Yentna River, 1984.

Table 19. Apportioned 1984 sonar counts of sockeye, pink, chum and coho salmon at Yentna Station.

Sampling Location	Operational Period	Apportioned Sonar Counts			
		Sockeye	Pink	Chum	Coho
Yentna Station	7/1 to 9/5	149,375	369,299	26,508	18, 172

The migrational timing of the 1984 second run escapements in the lower Susitna River reach can be determined by station fishwheel catches (Figure 18 and Appendix Table 2-3). At Flathorn Station (RM 22) the migration covered approximately a three week period from July 16 to August 9. The midpoint of the migration in the east channel occurred on July 22 and one day earlier in the west channel on July 21. Overall, there was no appreciable difference in the escapement timing between east and west channel migrating stocks at RM 22. About 10 miles upstream at Yentna Station (TRM 04) the second run escapement migration began on July 17, reached a midpoint on July 22 and ended on August 8. These dates are one day later than the comparable dates for fish migrating in the west channel past Flathorn Station (Figure 18). At Sunshine Station (RM 80) the sockeye migration covered 16 days from July 20 through August 5. The migration midpoint occurred on July 24 just four days after the start (Figure 19).

In 1984, sockeye salmon tagged at Flathorn Station (RM 22) were recaptured at upriver sampling stations on the mainstems of the Yentna and Susitna rivers. The results are presented in Appendix 4 and summarized in Figure 20. The data indicate that tagged, sockeye salmon migrated the 10 miles between Flathorn and Yentna (TRM 04) stations

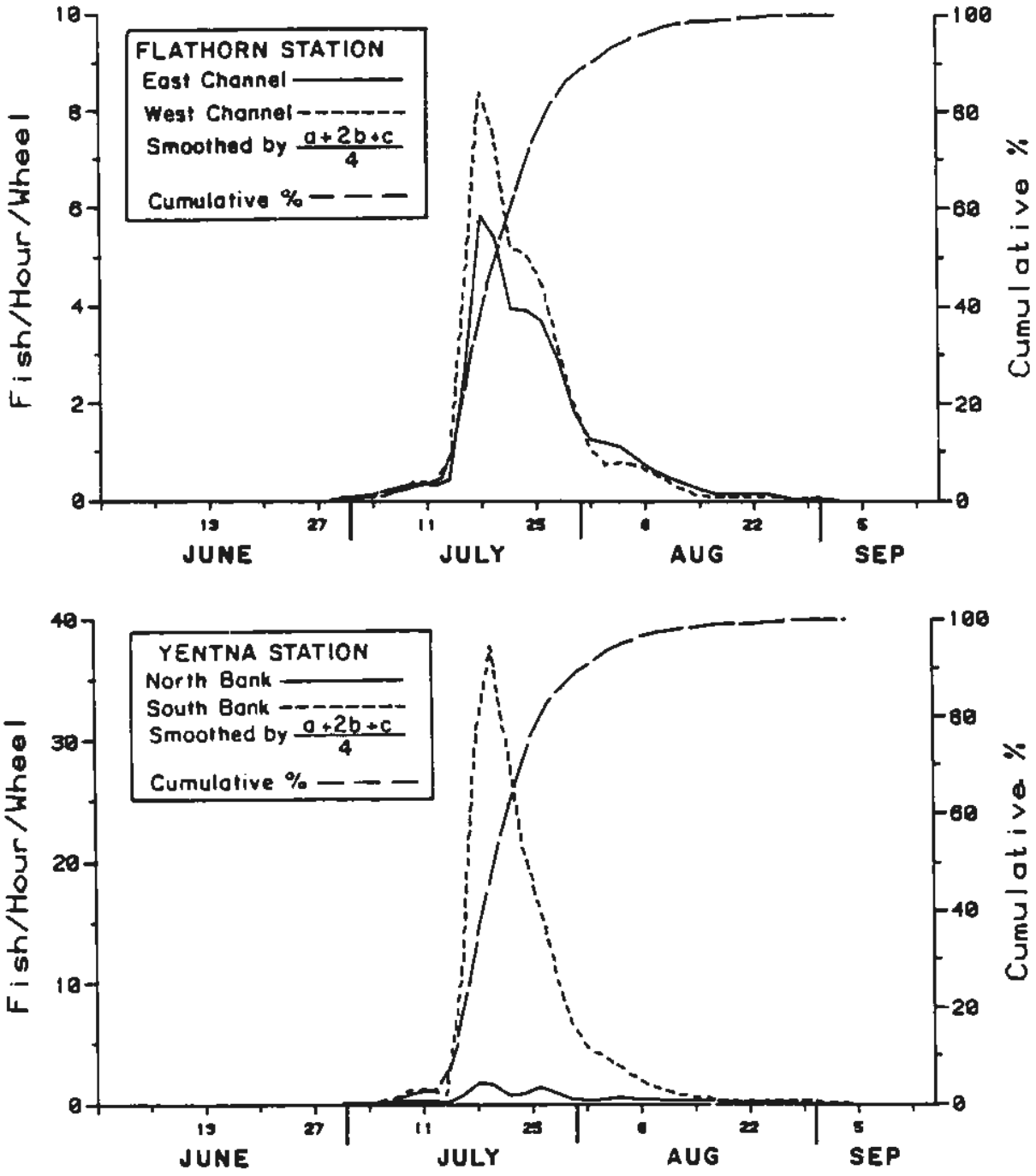


Figure 18. Mean hourly and cumulative percent fishwheel catch of sockeye salmon by two day periods at Flathorn and Yentna stations, 1984.

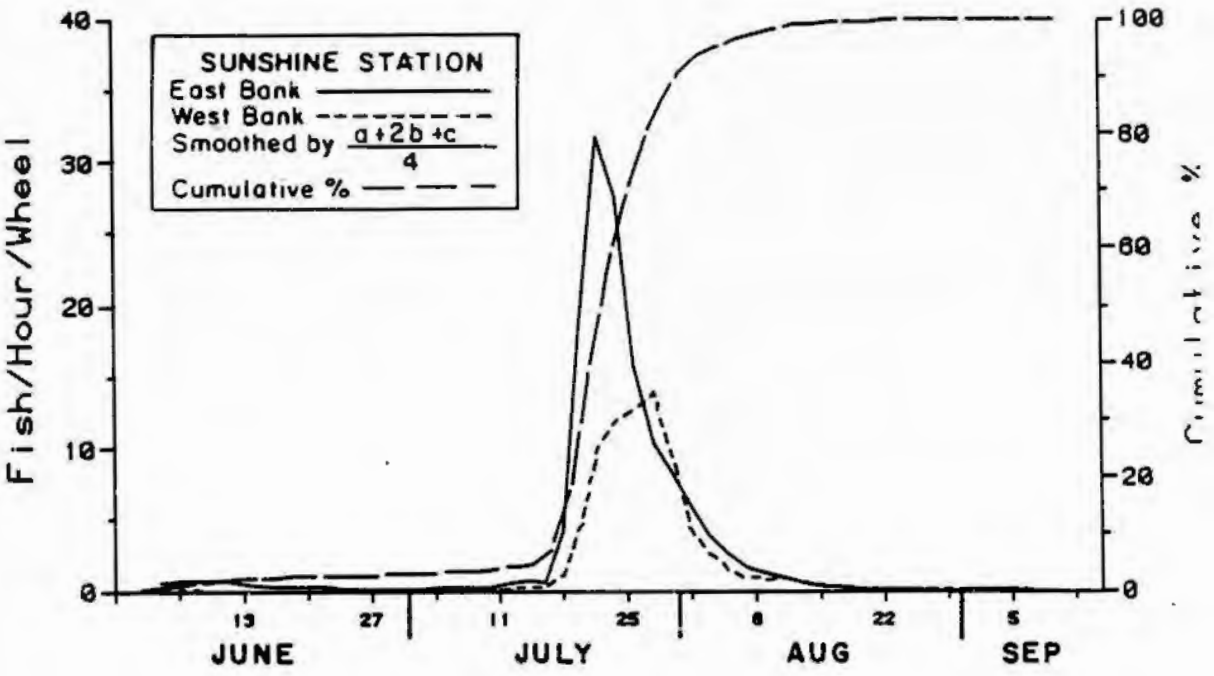


Figure 19. Mean hourly and cumulative percent fishwheel catch of sockeye salmon by two day periods at Sunshine Station, 1984.

generally in three to four days and the 58 miles from Flathorn to Sunshine stations in eight to nine days. The difference in these migration rates may have been related to temporary tagging stress and/or more milling activity by sockeye salmon in the reach between Flathorn and Yentna stations than in the overall reach between Flathorn and Sunshine stations. The latter seems likely based on the comparable migration rates between mainstem tagging stations in the upper river reach as identified in Figure 20.

The fishwheel catches of second run sockeye salmon for Flathorn (RM 22), Yentna (TRM 04) and Sunshine (RM 80) stations are listed in Table 6. These catches are not directly comparable between stations because the

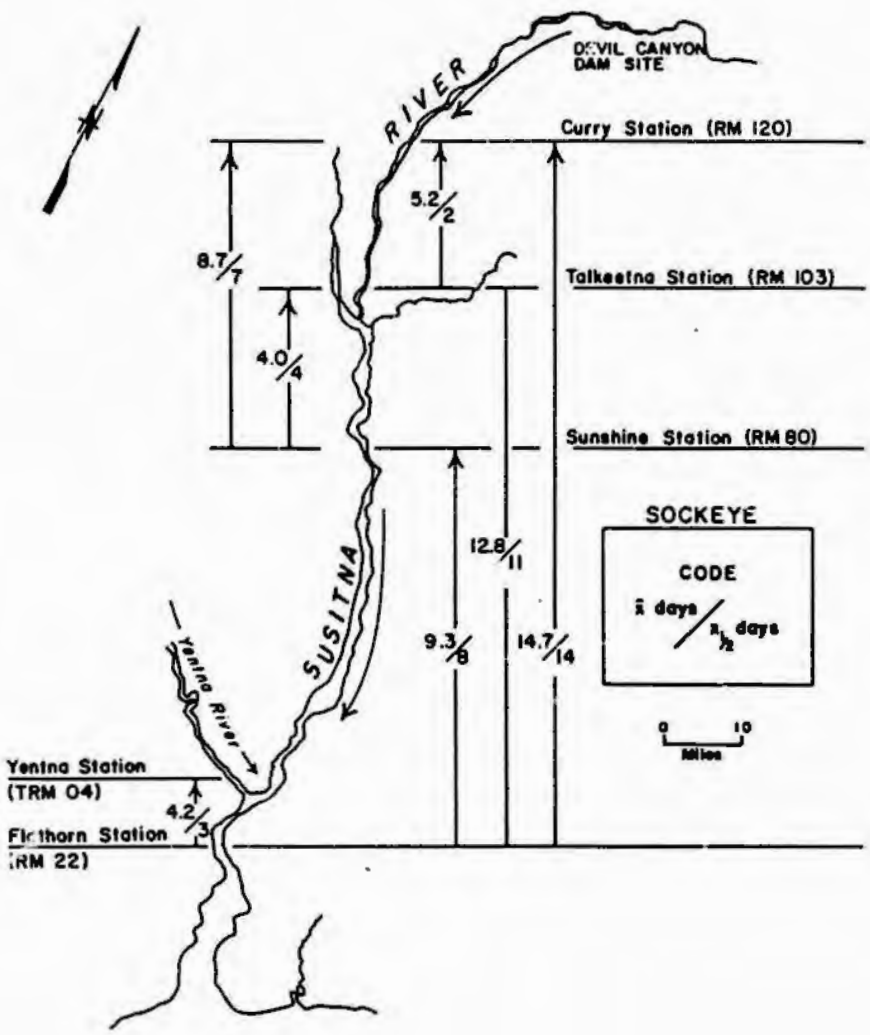


Figure 20. Migrational rates of sockeye salmon between five lower and middle Susitna River reach sampling stations, 1984.

catch efficiency between station fishwheels were different due to site variability and because two more wheels were operated at Flathorn and Sunshine stations than at Yentna Station. Density independent factors effecting fishwheel catches include nearshore velocities, channel configuration, bank slope and bed material.

Catch difference between station fishwheels can indicate fish migration preferences. At Flathorn Station (RM 22) sockeye salmon slightly

favored the west channel over the east channel for migration based on 54.8 percent of the station catch made by west channel fishwheels and 45.2 percent by the east channel fishwheels (Appendix Tables 2-1 and 2-2). In the west channel, sockeye salmon were more abundant along the left bank than the right bank. The left and right bank wheels caught 59.9 percent and 40.1 percent of the catch respectively. In the east channel at Flathorn Station, most of the fish passed along the left bank. The left bank fishwheel caught 69.9 percent and the right bank fishwheel caught the remaining 30.1 percent.

On the Yentna River (RM 28) at Yentna Station (TRM 04) sockeye salmon favored the south bank over the north bank for migration. The south bank fishwheel caught 91.5 percent of the station catch and the north bank fishwheel made 8.5 percent of the catch. The same migration trend was observed with the SSS counters at Yentna Station. About 95 percent of the apportioned sockeye salmon counts were logged by the south bank counter. At Sunshine Station (RM 80) most of the sockeye migrated along the east bank. The two east bank fishwheels caught 76.5 percent of the station catch and the remaining 23.5 percent were taken in the two west bank fishwheels.

In 1984, tag numbered sockeye salmon released in the east and west channels of Flathorn Station (RM 22) were recaptured at Yentna Station (TRM 04), and Sunshine (RM 80), Talkeetna (RM 103) and Curry (RM 120) stations (Figure 21 and Table 20). The recapture information indicate that most (73%) of the sockeye salmon entering the Yentna River migrated past Flathorn Station in the east channel. The balance (27%) passed

Table 20. Comparison of numbers of sockeye salmon tagged by east and west channel fishwheels at RM 22 to the number of tag numbered recaptures by bank at Yentna Station and at RM 80, 103 and 120 combined, 1984.

River Channel at RM 22	Number of Sockeye Tagged at RM 22	Number of RM22 Tag Numbered Recaptures At Yentna Station	Number of RM 22 Tag Numbered Recaptures Combined for RM 80, 103 and 120
East	3,701	69	179
West	4,525	25	7
TOTALS	8,226	94	186

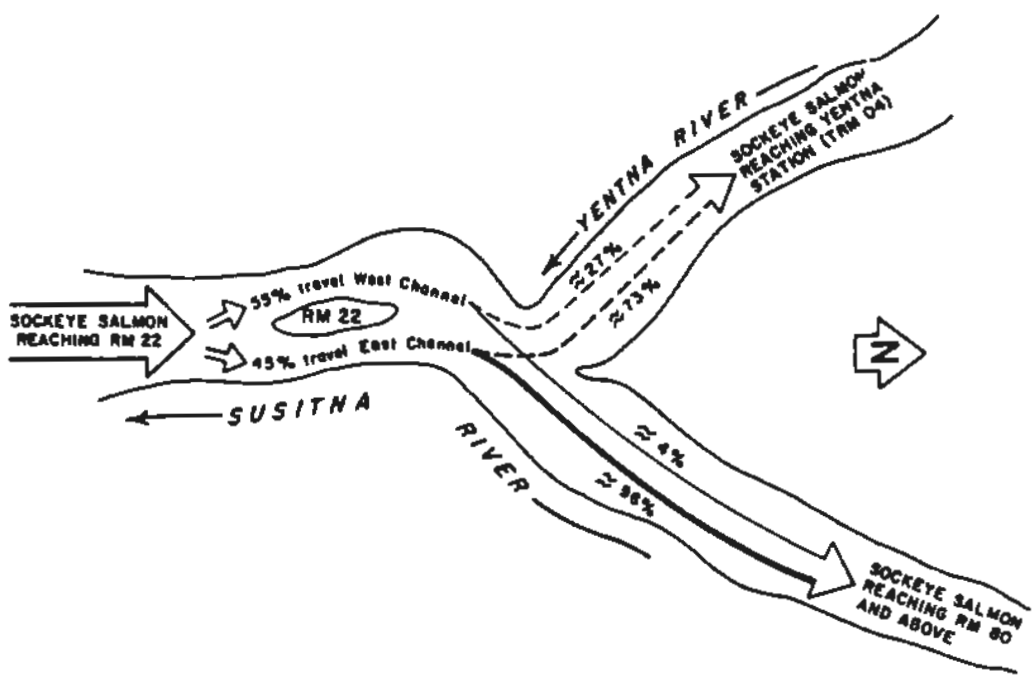


Figure 21. Migrational preference of sockeye salmon, reaching RM 22 entering, the Yentna River and extending to RM 80 and above, to the east and west channels at RM 22, 1984.

Flathorn Station in the west channel. Sockeye salmon extending to RM 80 and above also preferred the east channel at Flathorn Station. About 96 percent of the tag numbered recaptures were releases form the east channel fishwheels compared to about four percent from the west channel wheels. Around 90 percent of the sockeye salmon which did not either enter the Yentna River or migrate to RM 80 reached Flathorn Station via the west channel. Most of these fish may have been destined to the Flathorn Lake drainage as previously discussed.

Representative age, length and sex samples were collected from the 1984 sockeye salmon escapements to Flathorn (RM 22), Yentna (TRM 04) and Sunshine (RM 80) stations. Most of the 1984 escapement in the lower river there were four and five year old fish from the 1980 and 1979 parent years, respectively (Figure 22). The escapement at Flathorn Station and about the same level of four year old fish as five year olds. At Yentna Station, five year old fish were more abundant than the four year olds, but at Sunshine Station four year old fish were nearly twice as numerous as five year olds. At all the stations, most of the escapement were returning fish that left freshwater to commence ocean rearing in their second year of life. The average length (FL) of a second run sockeye salmon at Flathorn Station as 519 mm, at Yentna Station 535 mm and at Sunshine Station 514 mm (Appendix Figures 5-4, 5-5 and 5-7). The larger fish length at Yentna Station was due to the higher return of five year olds to the Yentna River than elsewhere. At all three stations the second run sockeye salmon males averaged a longer length than the females. Except at Flathorn Station were females were

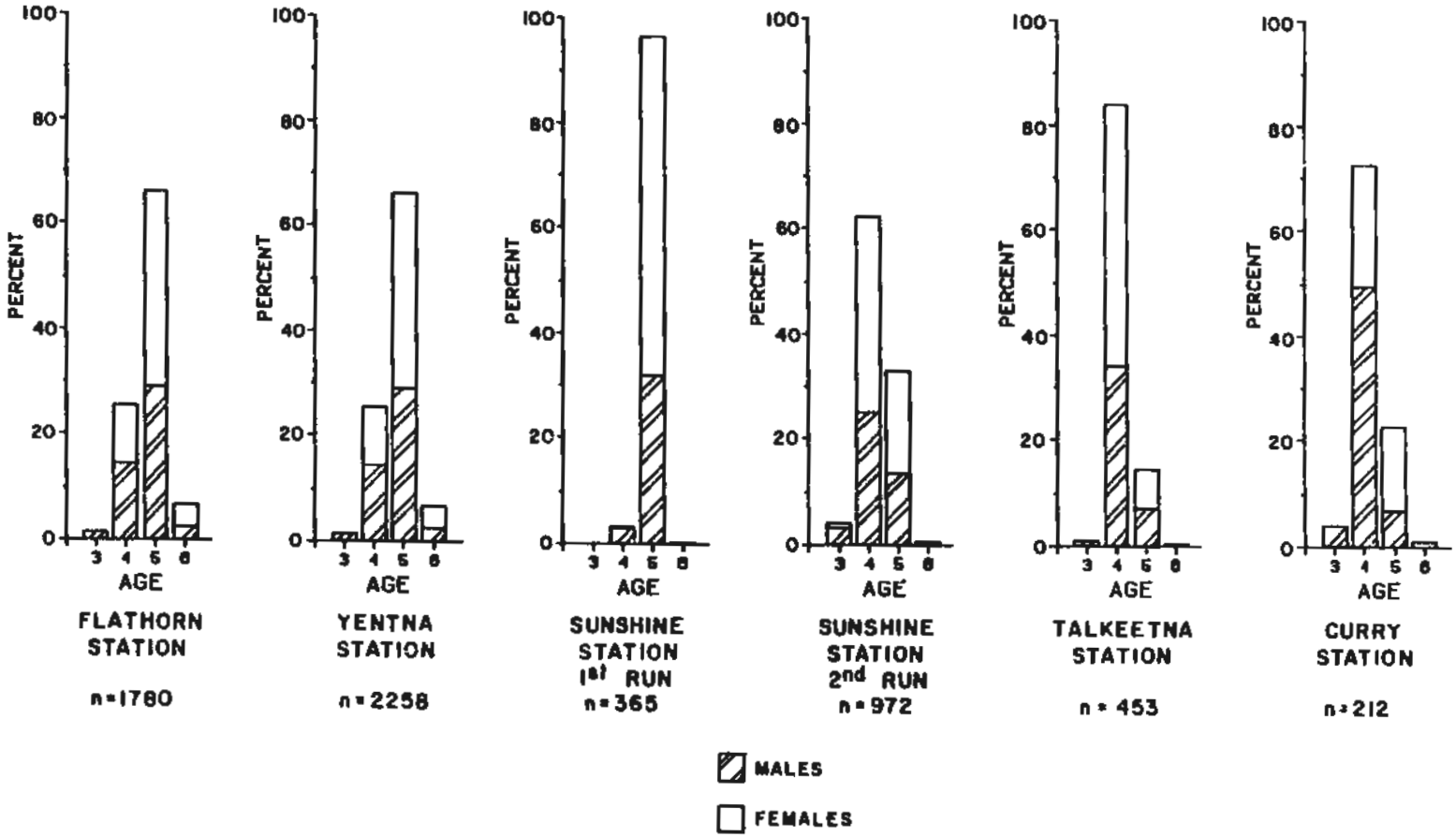


Figure 22. Age composition of fishwheel intercepted sockeye salmon weighted by catch per unit effort at selected locations on the Susitna River, 1984.

more numerous than males (Table 17). The respective male to female ratios were 1.7:1, 0.9:1 and 0.9:1 at Flathorn, Yentna and Sunshine stations.

3.1.2.2.1.2 Spawning Ground Surveys

Between July 21 and October 17, 1984 surveys of the Susitna River mainstem, associated slough and stream mouths were conducted by helicopter, foot and river boat from RM 28 to 98.6 to document salmon spawning. Specific results are presented in Appendix 7.

3.1.2.2.2 Middle Reach

3.1.2.2.2.1 Main Channel Escapement Monitoring

Second run sockeye salmon escapements were monitored in the middle river reach at Talkeetna (RM 103) and Curry (RM 120) stations in 1984. The estimated escapements to these locations were 13,100 fish and 3,600 fish, respectively (Table 18). The confidence limits associated with these estimates are in Table 18.

Most (83%) of the sockeye salmon escapement reaching Talkeetna Station (RM 103) were milling fish that spawned in the lower Susitna River reach. About 17 percent of the escapement reaching Talkeetna Station spawned in the middle river reach. At Curry Station (RM 120) around 38 percent of the escapement were milling fish and 62 percent were fish which spawned in the middle river reach. The bases for these estimates are in report section 3.1.2.2.2.2.

In 1984, second run sockeye salmon migrated in the middle mainstem reach of the Susitna River over a three to five week period as determined by fishwheel catches at Talkeetna (RM 103) and Curry (RM 120) stations (Appendix Tables 2-14 and 2-17). At RM 103, the migration began on July 22, reached a midpoint on July 28 and ended on August 12. Seventeen miles upstream at RM 120, the sockeye salmon migration lasted about 13 days longer. The onset began on July 22, midpoint was on August 1 and the end occurred on August 25.

The 1984 migrational rates of tagged sockeye salmon recovered in the lower and middle Susitna River reaches are presented in Appendix 4 and summarized in Figure 20. The data indicate that tagged fish generally traveled between Sunshine (RM 80) and Talkeetna (RM 103) stations in about four days and two to five days between Talkeetna and Curry (RM 120) stations. Overall, the migration between Sunshine and Curry stations generally took six to nine days. From the lowest site in the lower Susitna River, Flathorn Station (RM 22) to the furthest upper middle river site, Curry Station, the 98 miles were normally covered in 14 days for an average net migration speed of 7 mpd.

In 1984 the majority of the sockeye salmon passed along the west bank at Talkeetna Station (RM 103) and the east bank at Curry Station (RM 120) based on reported fishwheel catches (Figure 23). The east and west bank fishwheels at Talkeetna Station respectively caught 44 percent and 56 percent of the station catch (Appendix Tables 2-12 and 2-13). At Curry Station, the east and west bank wheels caught 80 percent and 20 percent of the station catch respectively.

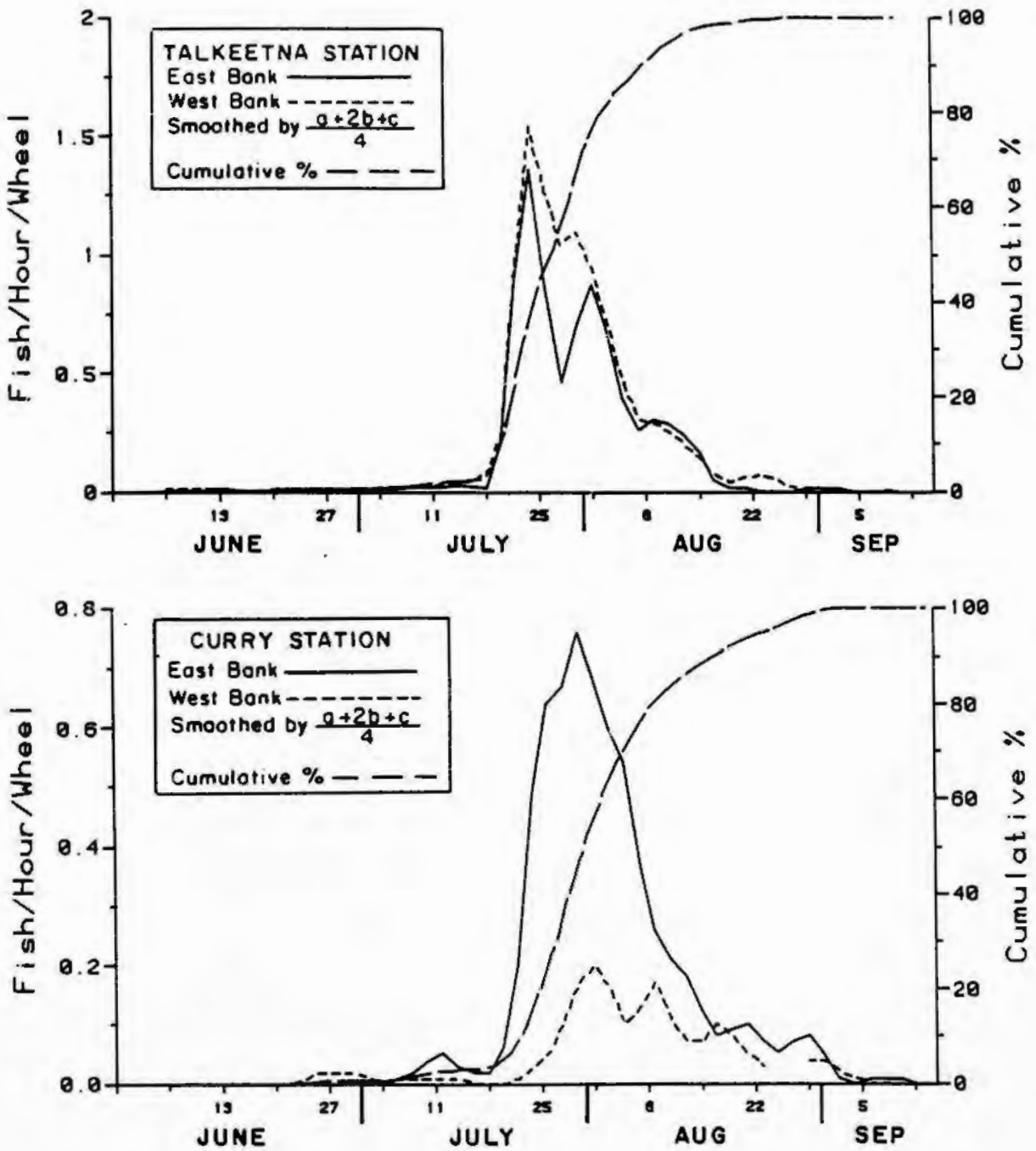


Figure 23. Mean hourly and cumulative percent fishwheel catch of sockeye salmon by two day periods at Talkeetna and Curry stations, 1984.

Sockeye salmon fishwheel catches at Talkeetna (RM 103) and Curry (RM 120) stations were generally, normally distributed through the migration period (Figure 23). There were two major exceptions and both occurred about the same time at the two stations. They appear to be related to a flow change in the Susitna River. At Talkeetna Station between July 26 and 27 sockeye salmon catches dropped from a high of 1.2 fish per fishwheel hour (CPUE) to 0.2 CPUE and then climbed again to 0.9 CPUE on July 28. This coincided with a high water event where flows as measured at Gold Creek rose about 11,400 cfs from 22,800 cfs on July 25 to 34,200 cfs on July 27 and then declined and remained stable around 24,000 cfs for the next two weeks. The fishwheel catches also changed at Curry Station about the same time but less dramatically. On July 26, the CPUE was 0.6 and for the next two days catches dropped 50 percent to 0.3 CPUE and then rose again to 0.6 CPUE on July 29 as high flows subsided.

In 1984, 28 second run sockeye salmon marked with numbered tags at Talkeetna Station (RM 103) were recaptured at Curry Station (RM 120). From the information listed in Table 21 it can be determined if sockeye salmon tagged off the different banks at Talkeetna Station exercised differential milling behavior and/or crossover. The data indicated that a high percentage (89%) of the milling fish that reached Talkeetna Station traveled along the west side of the Susitna River at this location. Most of the escapement (86%) that continued on to Curry Station were fish that migrated along the east bank of the river at Talkeetna Station. There was more crossover among west bank migrant fish than east bank fish based on recaptures at Curry Station. About 50 percent of the sockeye salmon that migrated past Talkeetna Station on

the west side of the river and continued on to Curry Station remained along the east bank of the Susitna River at Curry Station. By comparison, around 83 percent of the fish migrating along the east side of the Susitna River at Talkeetna Station and continuing on to Curry Station were along the same bank of the Susitna River at Curry Station.

Table 21. Comparison of the number of sockeye salmon deployed by bank at RM 103 to the number of tag numbered recaptures by bank at RM 120, 1984.

River Bank	Number of Fish Tagged at RM 103	Tag Numbered Recaptures at RM 120 Deployed from RM 103	
		East Bank	West Bank
East	641	22	2
West	853	2	2
TOTALS	1,494	24	4

The 1984 migrational rates of second run sockeye salmon between Sunshine (RM 80), Talkeetna (RM 103) and Curry (RM 120) stations have been determined through tag recaptures (Figure 20). The average migrational speed between Sunshine and Talkeetna stations was 5.8 mpd and between Talkeetna and Curry stations 8.5 mpd. The differences in migrational speed may be related to differential milling behavior. As previously reported, sockeye salmon milled less in the area of Curry Station than at Talkeetna Station. As one would expect, the higher the milling activity the slower the net migration speed. This would explain why fish averaged a slower travel speed between Sunshine and Talkeetna stations than between Talkeetna and Curry stations.

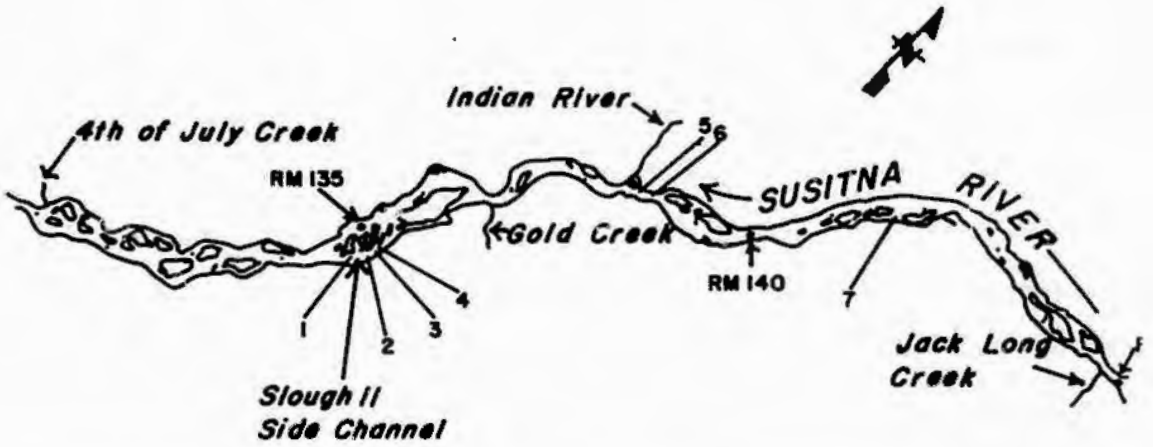
In 1984 a representative age, length and sex composition sample was collected from second run sockeye salmon intercepted by fishwheels at Talkeetna (RM 103) and Curry (RM 120) stations. The data indicate the Talkeetna Station escapement was predominantly four (83.8%) and five (14.5%) year old fish (Table 16). About 91.6 percent of four and five year old fish had smolted in their second year of life following completion of one winter in freshwater as fry. The same trend was apparent at Curry Station. Four year old fish represented 72.7 percent and five year old fish 22.7 percent of the escapement population. About 81.6 percent of the four and five year old fish reaching Curry Station had smolted in their second year. Three and six year old sockeye salmon represented less than five percent of the escapement populations to Talkeetna and Curry stations. The average length (FL) of second run sockeye salmon at Talkeetna Station was 513 mm and 17 mm smaller at Curry Station at 496 mm (Appendix Figures 5-9 and 5-10). Generally among all age classes sampled at Talkeetna Station males averaged about 20 mm longer length than the females. At Curry Station, the males averaged about 40 mm shorter length. Sex composition data collected indicate males were less numerous at Talkeetna Station than females but more numerous than females at Curry Station (Table 17). The respective male to female ratios were 0.7:1 and 1.4:1.

3.1.2.2.2.2 Spawning Ground Surveys

3.1.2.2.2.2.1 Mainstem

In 1984 the Susitna River mainstem middle reach was surveyed from late July through mid October using helicopter and waterbourne craft for the

purpose of identifying salmon spawning areas. Seven sockeye salmon spawning areas were located (Figure 24). All were found in a 10.6 mile reach upstream of Curry Station (RM 120) between RM 131.0 and 141.6. Individual maps of these locations are provided in Appendix Figures 6-6 through 6-23.



Map Identification Number	Location		Highest Fish Count	Spawning Observation Dates
	River mile	Bank		
1	134.6	L	2	9/29/84
2	135.0	R	B	9/29/84
3	135.1	R	2	9/15 84
4	135.2	R	5	9/15/84
5	138.7	L	4	9/15/84
6	139.0	L	3	9/8-22/84
7	141.6	R	9	9/15/84

Figure 24. Sockeye salmon spawning areas in the Susitna River mainstem middle reach, 1984.

Sockeye salmon spawning in the Susitna River mainstem, middle reach occurred in September, 1984. The peak of spawning was around September 15 (Appendix Table 6-1).

Four of the seven mainstem sockeye salmon spawning area located in 1984 were in Side Channel 11 (RM 134.5-135.3). The relatively high sockeye salmon return to Slough 11 (RM 135.3) probably influenced the use of these sites. The highest count of the seven mainstem spawning areas was 33 fish. Side Channel 11 accounted for 52 percent. If assumed that the highest count (33 fish) reflects about one-third of the spawning population the mainstem spawning population in the Susitna River middle reach was probably around 100 fish. In perspective with the estimated escapements of 13,200 fish to Talkeetna Station (RM 103) and 3,200 fish to Curry Station (RM 120) this would be about one percent of the escapement migrating to Talkeetna Station and three percent of the escapement reaching Curry Station.

3.1.2.2.2.2.2 Streams

Thirty-seven sloughs and 25 streams in the middle river reach were periodically surveyed for salmon spawning form late July to mid October, 1984. The results are listed in Appendix Tables 6-2 and 6-3.

Sockeye salmon were observed in only two streams in the middle river reach in 1984. These were Indian River (RM 138.6) and Portage Creek (RM 148.9). The respective peak counts were 1 and 12 fish. Spawning was only observed in Portage Creek at its junction with the Susitna River.

The sighting was limited to a pair of sockeye salmon occupying a redd at the mouth of Portage Creek on September 2.

In the range of 25 sockeye salmon occupied stream habitats in the middle Susitna River reach in 1984. This is based on an assumption that the total peak count represents about 50 percent of the actual escapement. Based on the number of spawning ground surveys conducted and the relatively minimal number of fish counted, it can be concluded that streams in the Susitna River middle reach are not important for sockeye salmon production.

3.1.2.2.2.3 Sloughs

3.1.2.2.2.3.1 Observation Life

In 1984, 167 sockeye salmon were released at Curry Station (RM 120) with large numbered Petersen disc tags. About 35 percent of these fish entered sloughs 8A (RM 125.1) and 11 (RM 135.3) after an average 38 days from being tagged (Figure 25). The majority of the 38 days was probably spent ripening in the Susitna River main channel based on sockeye salmon being capable of sustaining relatively fast travel speeds over long distances. For example, sockeye salmon averaged 7 mpd between Flathorn (RM 22) and Curry stations in 1984 (Section 3.1.2.2.2.1). The distance between Curry Station and sloughs 8A and 11 is 5.1 and 15.3 miles respectively which could have easily been traveled in two days if direct migration was intended.

There are several possible advantages of sockeye salmon ripening in the

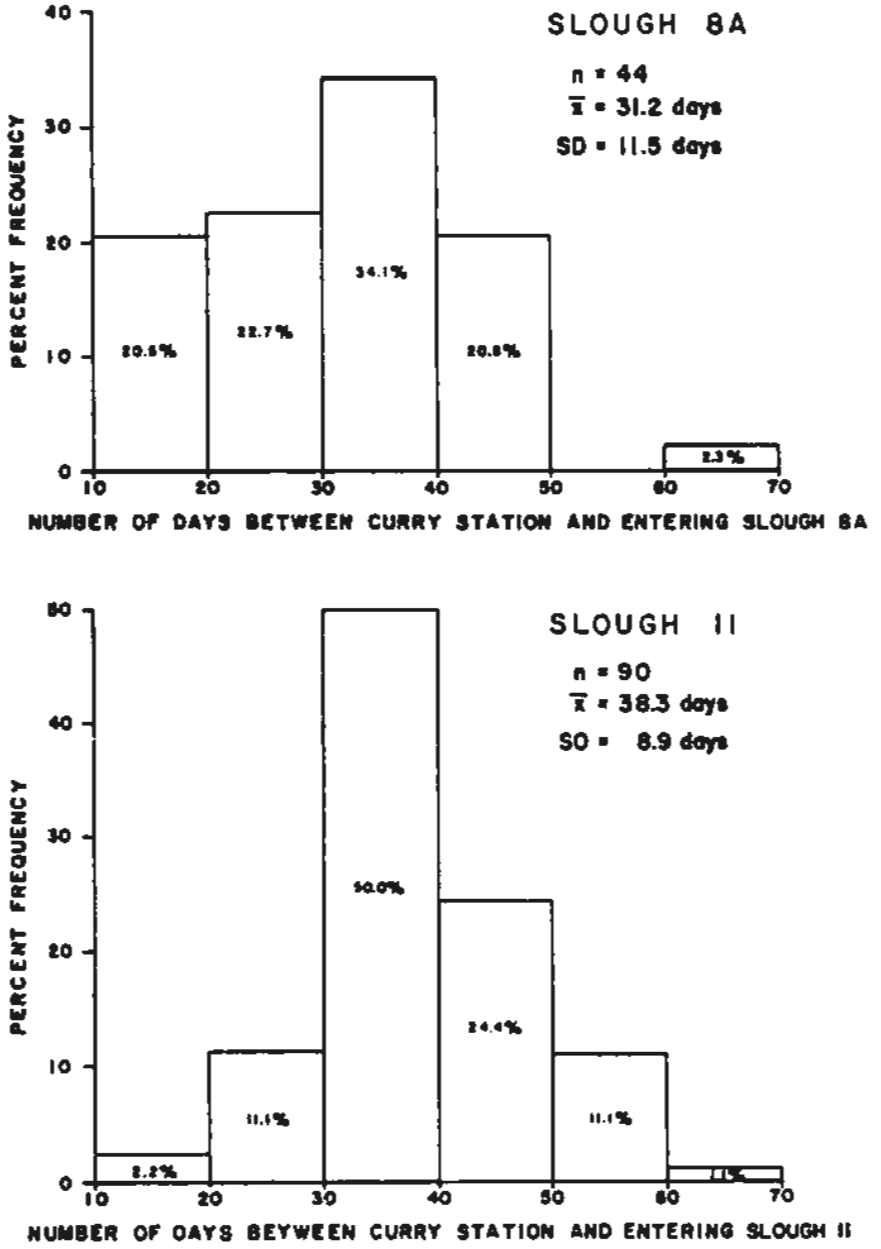


Figure 25. Percent frequency of the number of days sockeye salmon spent between the time of being tagged at Curry Station and entering sloughs 8A and 11, 1984.

Susitna River mainstem rather than in an associated slough. For example, the middle reach sloughs are relatively shallow and non-turbid making predation a greater factor than in the mainstem. Also the sloughs are relatively small in size and may serve as a spawning area for more than one species. Expectedly crowding and associated disease problems would be less in the mainstem than in the sloughs. In drainages where there is a lake associated with a spawning stream or slough, sockeye salmon commonly ripen in the lake before initiating spawning. For example, in the Kasilof River drainage, sockeye salmon spend between three and four weeks ripening in Tustumena Lake rather than in inlet spawning streams and sloughs, which are characteristically similar to middle reach Susitna River sloughs which are shallow, non-turbid, frequented by bears and commonly crowded with spawning fish (ADF&G, 1972). In comparison, Tustumena Lake provides good escape cover and dispersion area for tens of thousands of adult salmon as does the Susitna River.

The mean average observation life of sockeye salmon entering sloughs 8A (RM 125.1) and 11 (RM 135.3) in 1984 was 8.4 days (Figure 26). The average fish observation life between the two sloughs varied by 1.1 days. Variations in observation life time between individual fish in both sloughs were evident by the relatively large standard deviations. The main cause for the variability was probably milling. Approximately 42 percent of the 131 fish monitored at the two sloughs did not initiate spawning (Table 22). Assumedly many left to other systems although some may have been removed by predators.

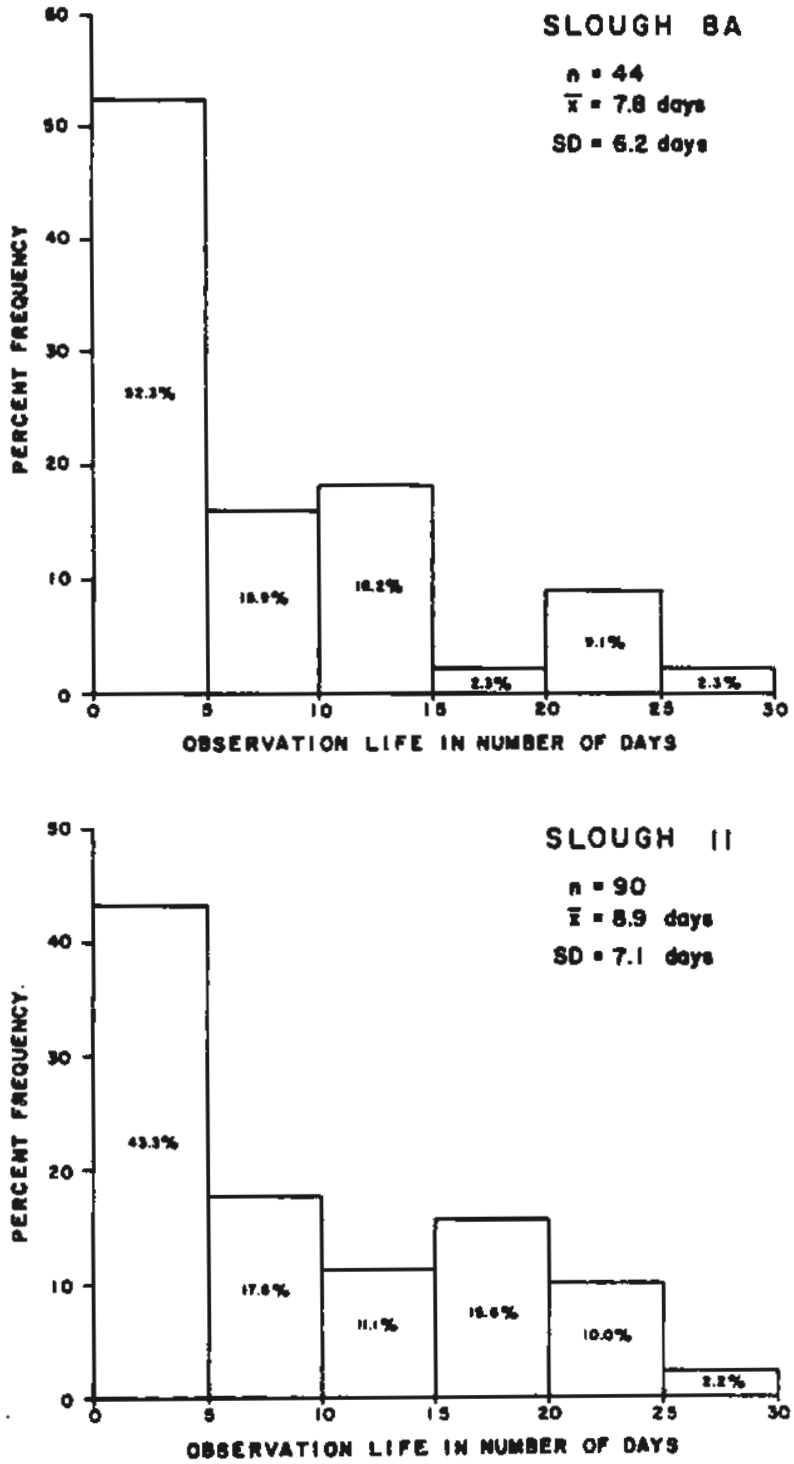


Figure 26. Percent frequency of observation life time for sockeye salmon at sloughs 8A and 11, 1984.

Table 22. Percentages of sockeye salmon monitored for observation life that initiated spawning by habitat zone at sloughs 8A and 11, 1984.

Slough with RM 1/	n 2/	Percent Spawning	Spawning Location 3/ by Habitat Zone							Percent Not spawning 4/
			1	2	3	4	5	6	7	
8A RM 125.1	44	61.4	14.8	11.1	74.1	-	-	-	-	38.6
11 RM 135.3	90	55.6	4.0	8.0	22.0	10.0	10.0	18.0	28.0	44.4

1/ RM = River Mile

2/ Total sample for sloughs 8A and 11 equals 134 fish; 131 individual fish were actually monitored as three individuals spent time in both sloughs.

3/ Habitat zones defined in Appendix Figures 6-4 and 6-5.

4/ Includes milling fish and bear killed and other pre-spawning mortalities.

In 1984, a record was kept of where individual sockeye salmon monitored for observation life spawned in sloughs 8A (RM 125.1) and 11 (RM 135.3). The data is summarized in Table 22 and indicates that the upper reaches of both sloughs were preferred spawning areas.

3.1.2.2.2.2.3.2. Escapement Surveys

In 1984, relatively high numbers of spawning sockeye salmon were recorded at sloughs in the Susitna River middle reach (Table 23). Eighteen of the 36 sloughs surveyed (50%) harbored adult sockeye salmon.

Sockeye salmon spawned in 13 of the 18 sloughs. The three major spawning sloughs were: 11 (RM 135.3), 8A (RM 125.4) and 21 (RM 141.1) in that order of importance (Figure 27). Sloughs 5 (RM 107.6), 8 (RM 113.7), 8B (RM 122.2), 9 (RM 128.3) and 15 (RM 137.2) were not considered spawning areas. Relatively few fish occupied these sloughs and none were observed on redds. The peak survey counts of live and dead sockeye salmon for the 18 occupied sloughs totaled 926 fish. Sloughs 8A, 11 and 21 supported about 88 percent of the peak counts. Spawning occurred in these sloughs from the first week of August through the first week of October. The peak of spawning was between the last week of August and the second week of September (Figure 28).

Table 23. Sockeye salmon peak survey counts of sloughs above RM 98.6 in 1984.

Slough	River Mile	Date	Number Counted		
			Live	Dead	Total
1	99.6	9/6	8	2	10
2	100.2	9/6	7	0	7
3B	101.4	9/6	18	2	20
3A	101.9	8/17	11	0	11
5	107.6	9/28	0	1	1
8	113.7	9/5	2	0	2
8B	122.2	8/17	1	0	1
Moose	123.5	8/19	8	0	8
8A	125.4	9/3	123	5	128
B	126.3	9/4	8	1	9
9	128.3	9/4	6	0	6
9B	129.2	8/26	7	0	7
11	135.3	9/9	546	18	564
15	137.2	8/8	1	0	1
17	138.9	8/8	16	0	16
19	139.7	9/10	11	0	11
21	141.1	9/10	116	6	122
22	144.5	9/2	2	0	2
		TOTALS	891	35	926

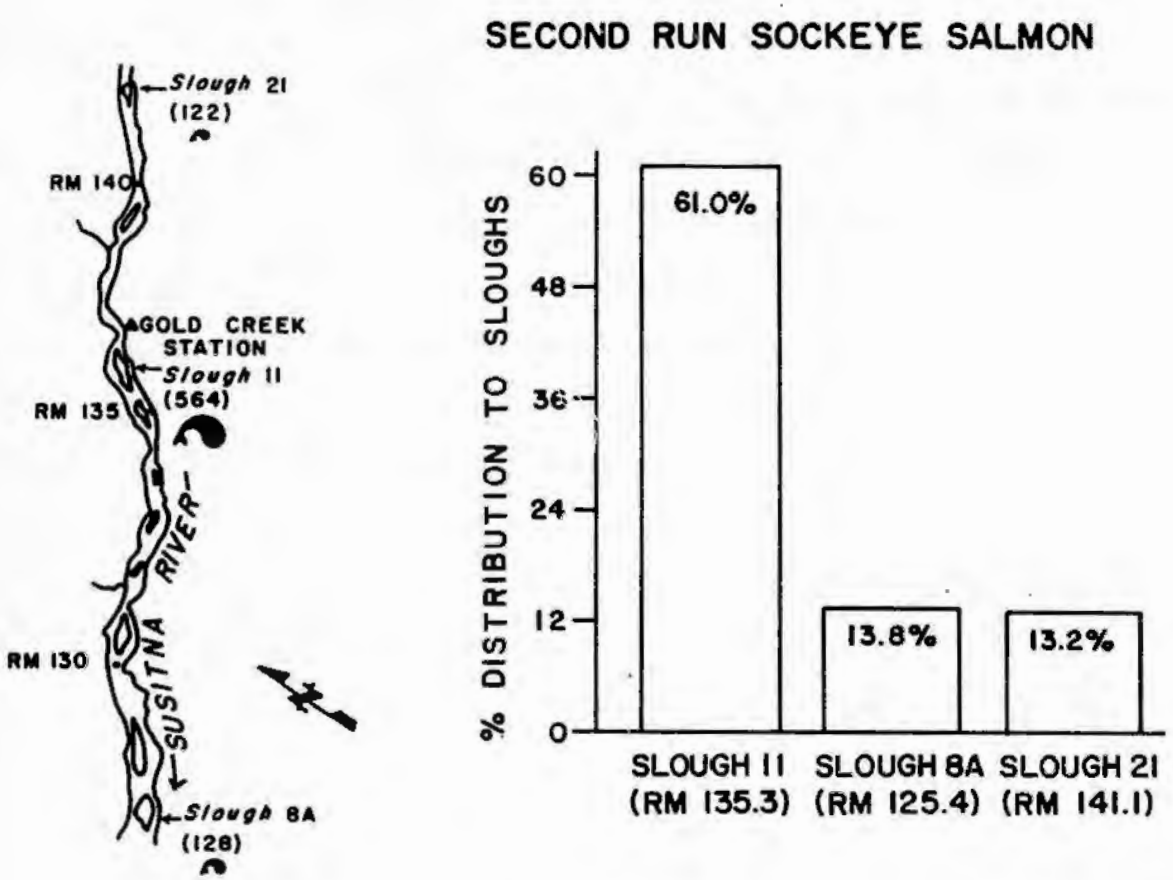


Figure 27. Percent distribution of sockeye salmon to the three primary spawning sloughs above RM 98.6, 1984.

The total second run sockeye salmon escapement to sloughs in the middle river reach was approximately 2,200 fish based on results of spawning ground counts and observation life surveys (Table 24). This represents about 61 percent of the estimated escapement (3,600 fish) to Curry Station (RM 120) and 95 percent of the total estimated sockeye salmon spawning in the middle river reach. From a combined estimate of 2,328 fish spawning in middle reach streams (1%), sloughs (95%) and mainstem (4%) habitats it can be determined that about 83 percent of the sockeye salmon escapement to Talkeetna Station (RM 103) were milling fish that spawned below RM 98.6. At Curry Station about 38 percent of the escapement migrating to this location were milling fish.

Table 24. Total 1984 sockeye salmon slough escapements between RM 98.6 and 161.0.

Slough	River Mile	Total Fish Days [1/]	Peak Live-Dead Survey Count	Mean Observation Life in Days	Slough Escapement	% of Total Slough Escapement	% of Curry Station Escapement [2/]
1	99.6		10		26 [3/]	1.2	0.8
2	100.2		7		18 [3/]	0.8	0.6
3B	101.4	300.3	20	8.4	36	1.6	1.1
3A	101.9		11		29 [3/]	1.3	0.9
5	107.6		1		3 [3/]	0.1	0.1
8	113.7		2		5 [3/]	0.2	0.2
8A	125.1	4,149.7	128	7.8	532	24.2	16.6
8	126.3		9		23 [3/]	1.0	0.7
9	128.3		6		16 [3/]	0.7	0.5
9B	129.2		7		18 [3/]	0.8	0.6
11	135.3	11,395.8	554	8.9	1,280	58.1	40.0
15	137.2		1		3 [3/]	0.1	0.1
17	138.9	221	16	8.4	26	1.2	0.8
19	139.7		11		29 [3/]	1.3	0.9
21	141.1	1,293.5	122	8.4	154	7.0	4.8
22	144.5		2		5 [3/]	0.2	0.2
	TOTALS	17,360.3	917	-	2,203	99.8 [4/]	61.3

1/ Number of fish days were calculated for sloughs that had peak survey counts > 15 fish. Refer to Section for detailed data analysis procedures.

2/ 1984 Curry Station sockeye salmon escapement was approximately 3,200 fish.

3/ Total slough escapement into sloughs having peak live-dead survey counts of ≤ 15 fish were computed by multiplying the peak live-dead survey count by 2.6. This value represents the summation of the estimated slough escapement divided by the summation of the peak live-dead survey counts for all sloughs with peak survey counts ≥ 50 fish.

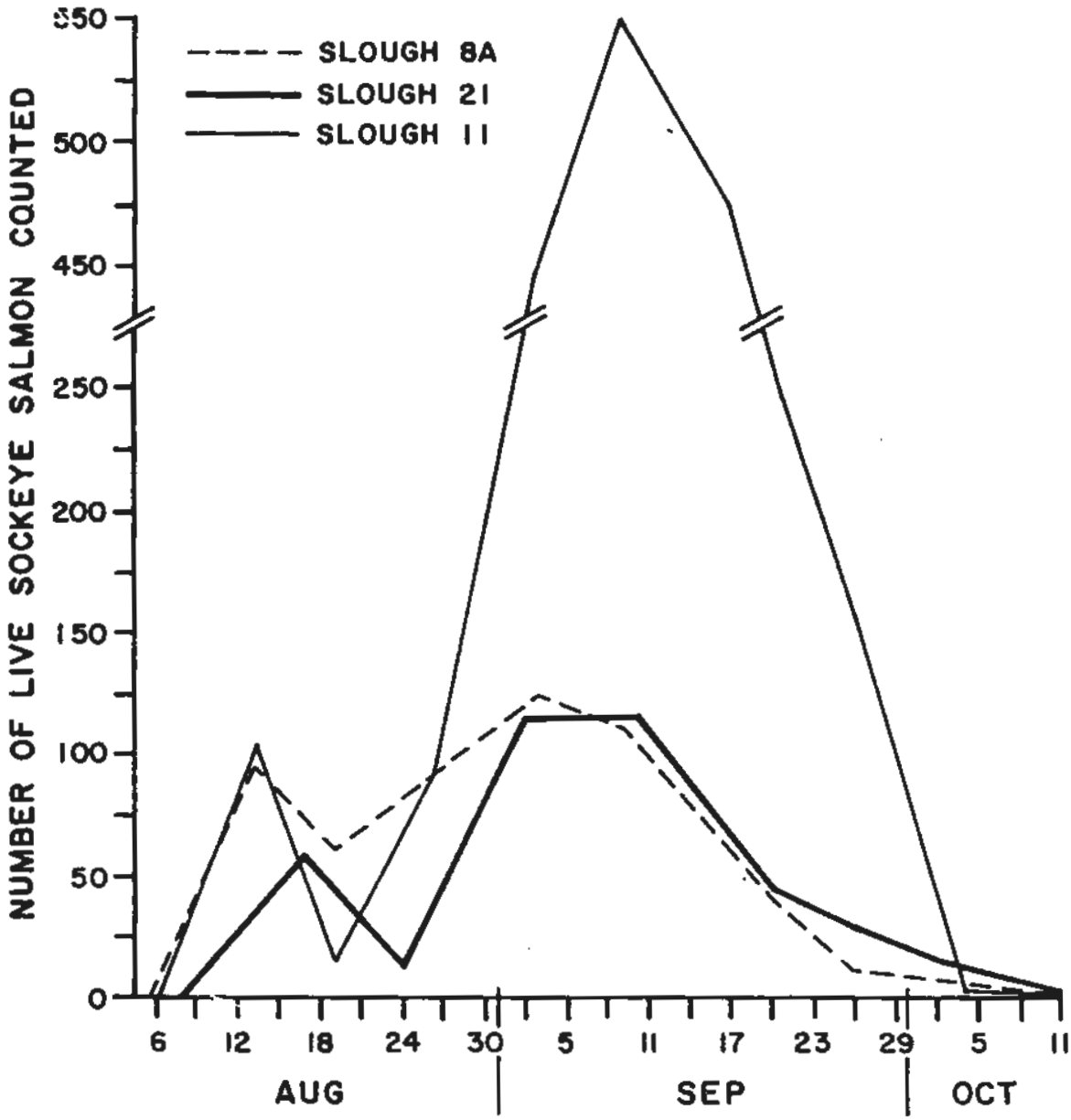


Figure 28. Sockeye salmon live counts by date in sloughs 8A, 11 and 21, 1984.

3.1.2.2.2.2.3.3 Egg Retention

In 1984, 76 female sockeye salmon were examined for egg retention at sloughs 8A (RM 125.1), 11 (RM 135.3) and 21 (RM 141.1) (Table 25). Egg

retention was highest at Slough 11 and lowest at Slough 8A. The respective averages were 126 and 17 eggs. Most, 88.2 percent, of the females sampled at the three sloughs had completely spawned (Figure 29). The average and medium egg retention for the three sloughs was 64 and 0 eggs respectively.

Table 25. Egg retention of sockeye salmon at selected sloughs in the middle Susitna River reach, 1894.

Spawning Sloughs with RM 1/	Sample Size	Egg Retention		
		Mean	Median	Range
Slough 8A RM 125.1	16	17	0	0-243
Slough11 RM 135.3	57	126	0	0-3,043
Slough 21 RM 141.1	3	50	0	0-150
Composite	76	64	0	0-3,043

1/ RM = River Mile

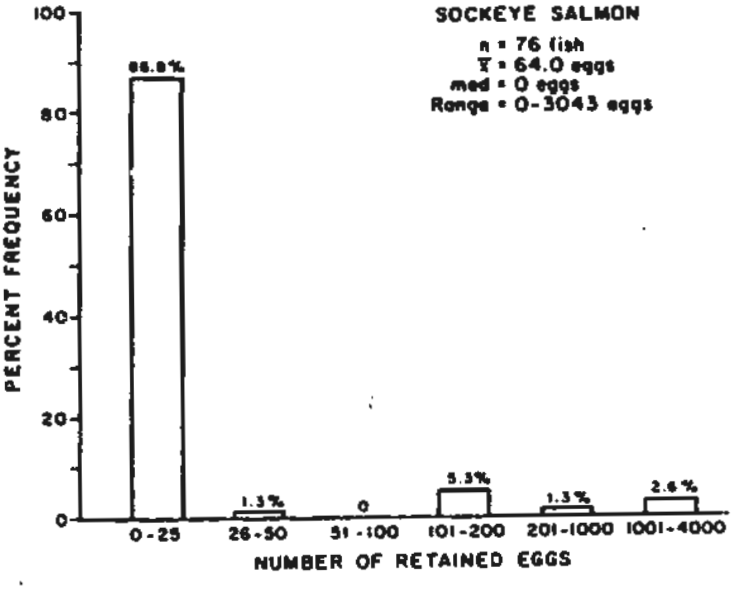


Figure 29. Percent frequency of number of retained eggs by female sockeye salmon at sloughs 8A, 11 and 21 combined, 1984.

3.1.3 Pink Salmon

Pink salmon are fished commercially in Upper Cook Inlet and recreationally in associated freshwater systems. In both fisheries, the majority of the fish harvested are Susitna River stocks (ADF&G, 1982 and Mills, 1983). Within the Susitna River there are a minimum of 40 tributaries providing pink salmon spawning habitat. The majority of these are in the lower river reach below RM 80 (ADF&G, 1982).

The minimum Susitna River pink salmon escapements for the last three years have been: 86,000 fish (1981), 891,000 fish (1982) and 101,000 fish (1983) (Barrett et al, 1984). These minimum escapement numbers do not include fish spawning below RM 80 with the exception of the Yentna River (RM 28). In 1984, the minimum escapement was 3,629,900 fish as determined by a first year tagging program at RM 22 (Section 3.1.3.1.1).

The following subsections of this report present specific results of sampling the 1984 pink salmon escapements in the lower and middle river reaches of the Susitna River.

3.1.3.1 Lower Reach

3.1.3.1.1 Main Channel Escapement Monitoring

The escapements of pink salmon in the Susitna River to Flathorn (RM 22) and Sunshine (RM 80) stations were determined by the Petersen tag and recapture method. The Yentna River (RM 28) pink salmon escapement at Yentna Station (TRM 04) was quantified using side scan sonar. Estimated

1984 pink salmon escapements were 3,629,900 fish to Flathorn Station, 369,300 fish to Yentna Station and 1,017,000 fish to Sunshine Station (Tables 26 and 19).

Table 26. Petersen population estimates with associated 95% confidence intervals for 1984 pink salmon migration to Flathorn, Sunshine, Talkeetna and Curry stations.

Parameter[1/]	Population Estimate Location			
	Flathorn Station	Sunshine Station	Talkeetna Station	Curry Station
m	3,506	10,395	14,688	6,528
c	164,617	84,336	34,600	13,032
r	159	862	2,857	728
$\hat{N}$	3,629,857	1,017,022	177,881	116,858
95% C.I.	3,141,746-4,297,535	953,682-1,089,373	171,845-184,356	109,154-125,733

1/ m = Number of fish marked.

c = Total number of fish examined for marks during sampling census.

r = Total number of marked fish observed during sampling census.

$\hat{N}$ = Population estimate.

C.I. = Confidence Interval around $\hat{N}$.

The minimum 1984 Susitna River pink salmon escapement, based on the estimate at RM 22, was 3,629,900 fish. The Yentna River (RM 28) and RM 80 escapements comprised about 38 percent of this estimate (Figure 30). The spawning population below RM 80 excluding the Yentna River comprised the remaining 62 percent. Based on previous Susitna River escapement monitoring and tag recovery surveys, an unknown number of pink salmon migrating to RM 22 were milling fish that spawned below RM 22 (AOF&G, 1983).

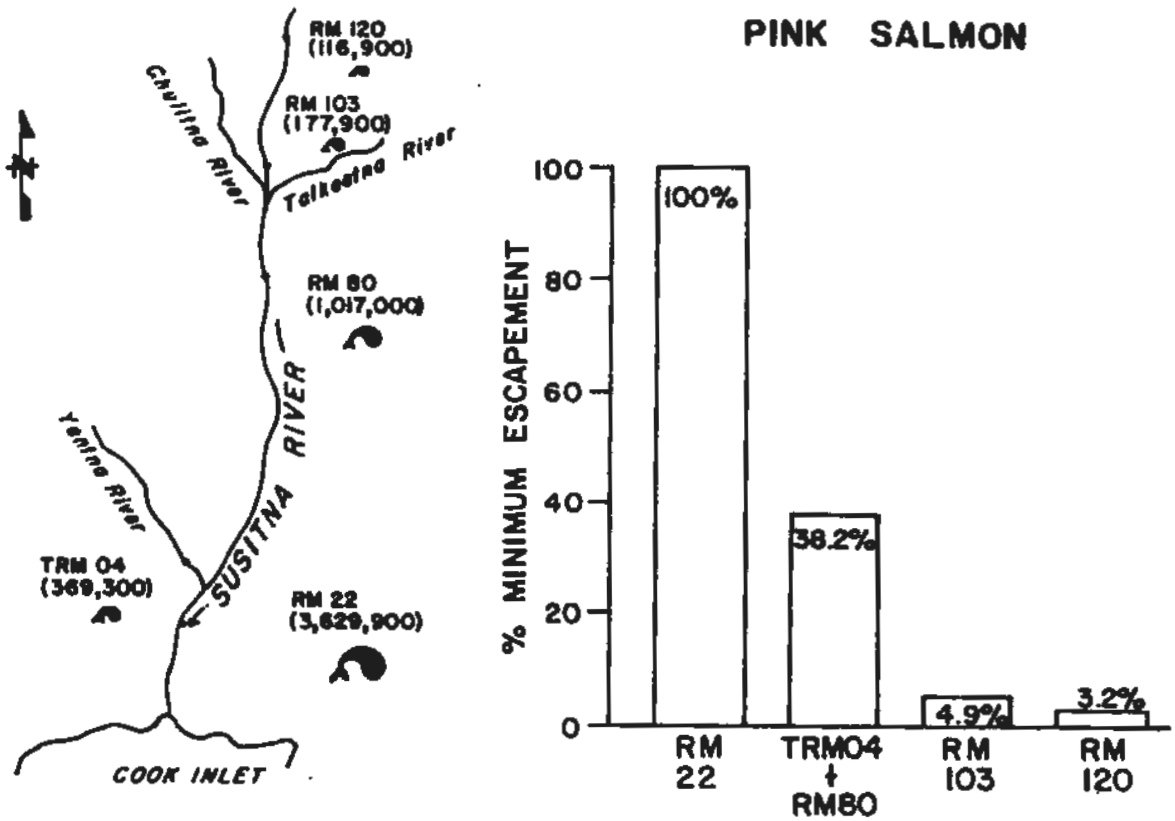


Figure 30. A comparison of the total estimated pink salmon escapement for the Susitna River drainage to the estimated TRM 04, RM 80, 103 and 120 escapements, 1984.

The migrational timing of the 1984 pink salmon escapements to Flathorn (RM 22), Yentna (TRM 04) and Sunshine (RM 80) stations were calculated from fishwheel catch per unit effort data (Figures 31 and 32 and Appendix 2). In the lower river reach at RM 22 pink salmon were generally abundant for about three weeks from July 21 to August 7. The migration reached a midpoint on July 28 in both the east and west channels (Appendix Table 2-3). Overall, there was little difference in the pink salmon migration timing between east and west channels. Fifty-eight miles upriver at Sunshine Station pink salmon were also abundant in the Susitna River for the two weeks from July 25 to August 8. The migration here reached

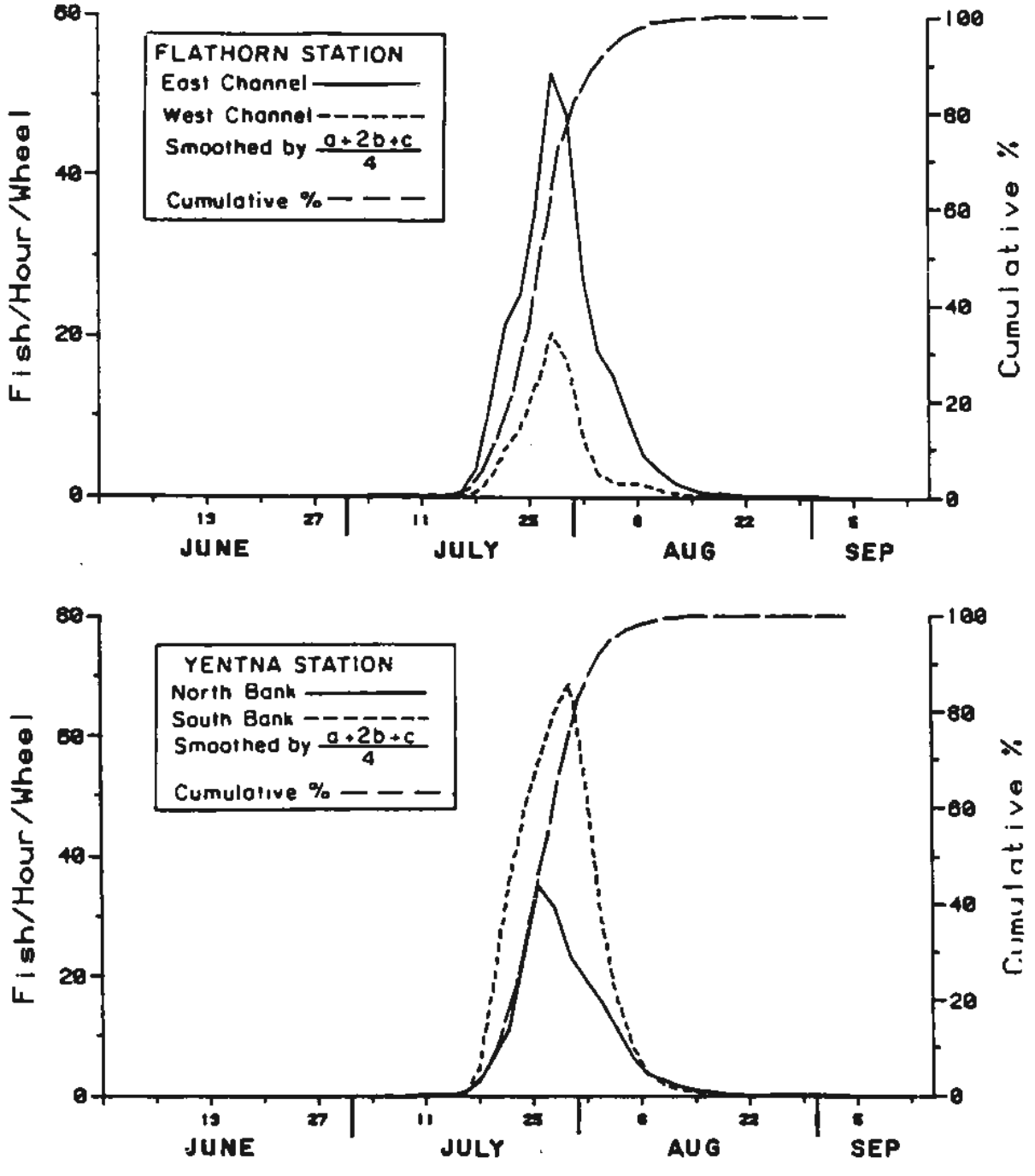


Figure 31. Mean hourly and cumulative percent fishwheel catch of pink salmon by two day periods at Flathorn and Yentna stations, 1984.

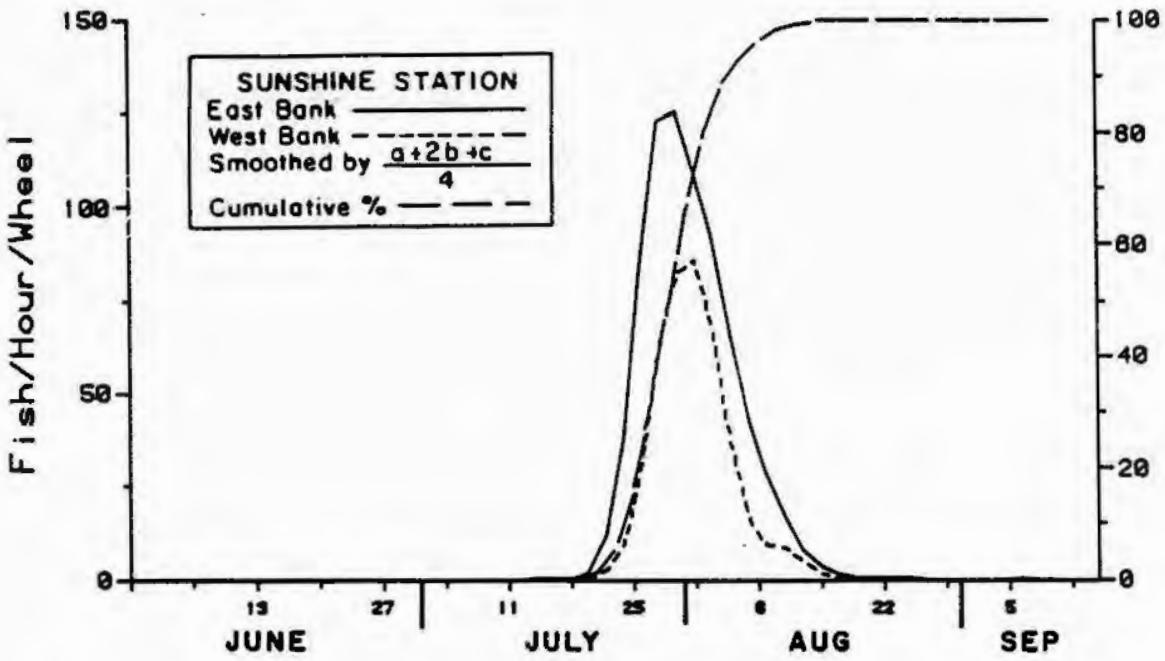


Figure 32. Mean hourly and cumulative percent fishwheel catch of pink salmon by two day periods at Sunshine Station, 1984.

a median on July 31. In the Yentna River (RM 28) at Yentna Station pink salmon were abundant for about three weeks from July 21 to August 5. The pink salmon migration at TRM 04 reached a midpoint on July 28. The peak one day fishwheel catch of pink salmon at Flathorn, Yentna and Sunshine stations occurred on July 28, July 25 and July 30, respectively (Figures 31 and 32).

Pink salmon migrational characteristics were determined from 1984 fishwheel catches at Flathorn (RM 22), Yentna (TRM 04) and Sunshine (RM 80) stations (Figures 31 and 32 and Appendix 2). At Flathorn Station the river was comprised of two channels, east and west. The channels were formed by a large island complex and fishwheels were located on the east and west mainland banks and the east and west banks of the largest island (Appendix Figure 1-1). Fishwheel catches of pink salmon, adjusted by catch

per unit effort, were distributed among the four fishwheels as follows: 48.1 percent left east channel (island fishwheel), 28.0 percent right east channel, 17.2 percent right west channel (island fishwheel) and 6.7 percent left west channel. From these values it is apparent that, given no fishwheel selectivity or stock differentiation, pink salmon migrate predominately in the east channel at RM 22. In the Yentna River at Yentna Station, pink salmon migrated predominantly along the south bank where 64.1 percent of the fishwheel catch at this station occurred. The majority (63.5 percent) of the 93,919 pink salmon intercepted at Sunshine Station were captured in east bank fishwheels.

A review of 1984 tag recovery data collected at Yentna (TRM 04) and Sunshine (RM 80) stations indicated that at RM 22, six miles below the Yentna (RM 28) and Susitna rivers confluence, pink salmon stocks are not segregated by river channel (Table 27). Yentna Station fishwheels intercepted 24 pink salmon originally tagged at Flathorn Station (RM 22). Fourteen of the 24 were numbered tags and of those fourteen, 50 percent were tagged on the west channel and 50 percent on the east channel at RM 22. At RM 80, 103 and 120, a total of 62 pink salmon marked with Flathorn Station numbered tags were recovered. Twelve and 87 percent, respectively, were originally tagged on the west and east channels at RM 22. These data indicate that Yentna River stocks were evenly distributed between the east and west channels passing RM 22, while the majority (87%) of the pink salmon reaching Sunshine Station favored the east channel at RM 22 (Figure 33). These observations were derived from relatively small samples.

Table 27. Comparison of numbers of pink salmon tagged by east and west channel fishwheels at RM 22 to the number of tag numbered recaptures by bank at Yentna Station and at RM 80, 103 and 120 combined, 1984.

River Channel at RM 22	Number of Pink Salmon Tagged at RM 22	Number of RM 22 Tag Numbered Recaptures at Yentna Station	Number of RM 22 Tag Numbered Recaptures Combined for RM 80, 103 and 120
East	2,694	7	54
West	812	7	8
TOTALS	3,506	14	62

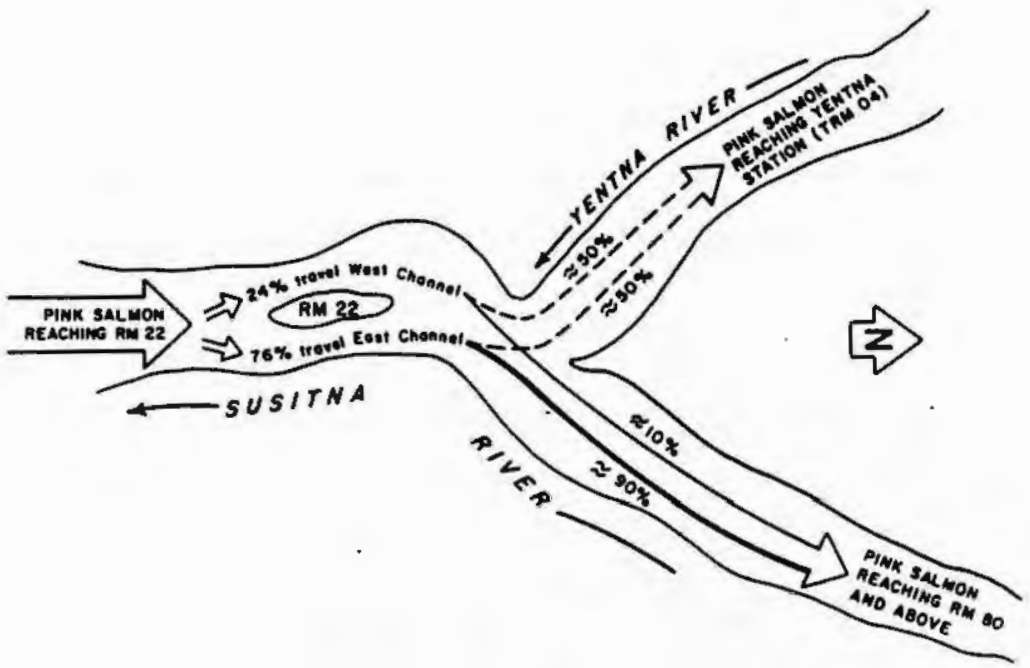


Figure 33. Migrational preference of pink salmon, reaching RM 22, entering the Yentna River and extending to RM 80 and above, to the east and west channels at RM 22, 1984.

The 1984 migrational rates of pink salmon were determined from recovery of tagged pink salmon at mainstem stations on the Yentna and Susitna rivers. These data are presented in Appendix 2 and summarized in Figure 34. Pink salmon required about 3 days to travel the 10 mile distance between Flathorn (RM 22) and Yentna (TRM 04) stations. This represents a migrational rate of 3.5 mpd. Pink salmon needed an average of about 7 days to travel the 58 miles between Flathorn and Sunshine (RM 80) stations for a migrational rate of 8.2 mpd. The slower average travel rate between Flathorn and Yentna stations may be due to or a combination of: 1) tagging related stress experienced at RM 22 or 2) milling at the confluence of the Yentna (RM 28) and Susitna rivers.

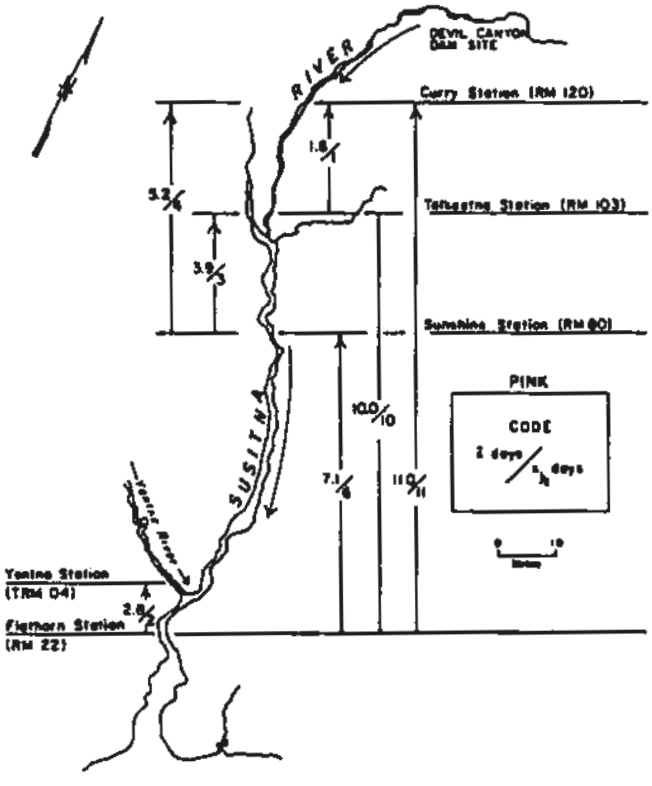


Figure 34. Migrational rates of pink salmon between five lower and middle Susitna River reach sampling stations, 1984.

Length (FL) and sex data collected from a representative sample of the 1984 pink salmon escapements to Flathorn (RM 22), Yentna (TRM 04) and Sunshine (RM 80) stations are summarized in Table 28 and Appendix 5. At Flathorn Station the mean pink salmon length was 444 mm. The males averaged 450 mm in length, 15 mm more than the females sampled at this station. The average lengths of males and females combined at Yentna and Sunshine stations were 444 mm and 441 mm, respectively. The males averaged 15 and 16 mm, respectively, longer lengths than the females at these stations. There were more males than females at Flathorn, Yentna and Sunshine stations as indicated by respective male to female ratios of 1.3:1, 1.2:1 and 1.1:1 (Table 28).

3.1.3.1.2 Spawning Ground Surveys

Surveys of the lower Susitna River main channel, side channels, slough and stream mouths for adult salmon spawning activity were conducted from July 21 to October 17 in 1984. The specific results of these surveys are documented in Appendix 7.

3.1.3.2 Middle Reach

3.1.3.2.1 Main Channel Escapement Monitoring

The 1984 pink salmon escapements to Talkeetna (RM 103) and Curry (RM 120) stations were determined using the Petersen tag and recapture method. By this method, the pink salmon escapement to Talkeetna Station was 177,900 fish with an estimated 95 percent confidence interval of 171,800 to 184,500 fish. The escapement to Curry Station in 1984 was

Table 28. Analysis of pink salmon lengths, in millimeters, by age class from weighted and unweighted 1984 escapement samples collected at Flathorn, Yentna, Sunshine, Talkeetna and Curry stations.

Collection Site		n		Ratio (M:F)	Range Limits		Mean		95% Conf. Interval 1/		Median	
		M	F		M	F	M	F	M	F	M	F
Flathorn Station	U 2/	1,055	789	1.3:1	295-600	335-560	451	438	449-454	436-440	450	440
	W 2/	1,055	789	1.3:1	295-600	335-560	450	435	448-452	433-437	445	435
Yentna Station	U	334	314	1.1:1	370-580	365-545	454	439	450-458	436-442	455	440
	W	334	314	1.2:1	370-580	365-545	452	436	449-456	434-439	454	440
Sunshine Sunshine	U	601	506	1.2:1	300-585	325-565	449	433	445-452	430-436	445	435
	W	601	506	1.1:1	300-585	325-565	448	433	445-451	431-436	445	430
Talkeetna Station	U	454	390	1.2:1	330-575	360-520	454	440	451-458	438-443	450	440
	W	454	390	1.1:1	330-575	360-520	453	440	449-456	438-443	450	440
Curry Station	U	503	337	1.5:1	325-610	340-490	439	438	435-442	435-440	440	440
	W	503	337	1.6:1	325-610	340-490	443	439	441-446	436-441	445	440

1/ Confidence Interval of the Mean.

2/ Unweighted
Weighted

116,900 pink salmon with a 95 percent confidence interval of 109,200 to 125,700 fish (Table 26).

Pink salmon escapements to Talkeetna (RM 103) and Curry (RM 120) stations respectively represent 4.9 percent and 3.2 percent of the minimum 1984 Susitna River escapement (Figure 30). Based on the estimated number of pink salmon spawning in stream and slough habitats above RM 103 approximately 85 and 80 percent of the escapement to Talkeetna and Curry stations, respectively, were milling fish (Section 3.1.3.2.2.2).

Fishwheel catches of pink salmon were used to evaluate migrational timing at Talkeetna (RM 103) and Curry (RM 120) stations in 1984 (Figure 35 and Appendix 2). Pink salmon were generally abundant at Talkeetna Station for about two weeks from July 25 through August 10. The migration reached a median on August 3. At Curry Station pink salmon were generally abundant for two weeks from July 29 to August 13. The midpoint of the pink salmon migration at this station was August 4. Peak fishwheel catches occurred on August 3 at Talkeetna Station and on August 5 at Curry Station.

Fishwheel catches at Talkeetna (RM 103) and Curry (RM 120) stations indicate that the 1984 pink salmon escapements to these stations migrated primarily along the west bank assuming that stocks were mixed and no differential fishwheel selectivity occurred (Figure 35). A total of 29,236 pink salmon were intercepted by Talkeetna Station fishwheels, 74.8 percent of which were captured in west bank fishwheels (Appendix Tables 2-12 and 2-13). At Curry Station the total pink salmon fishwheel

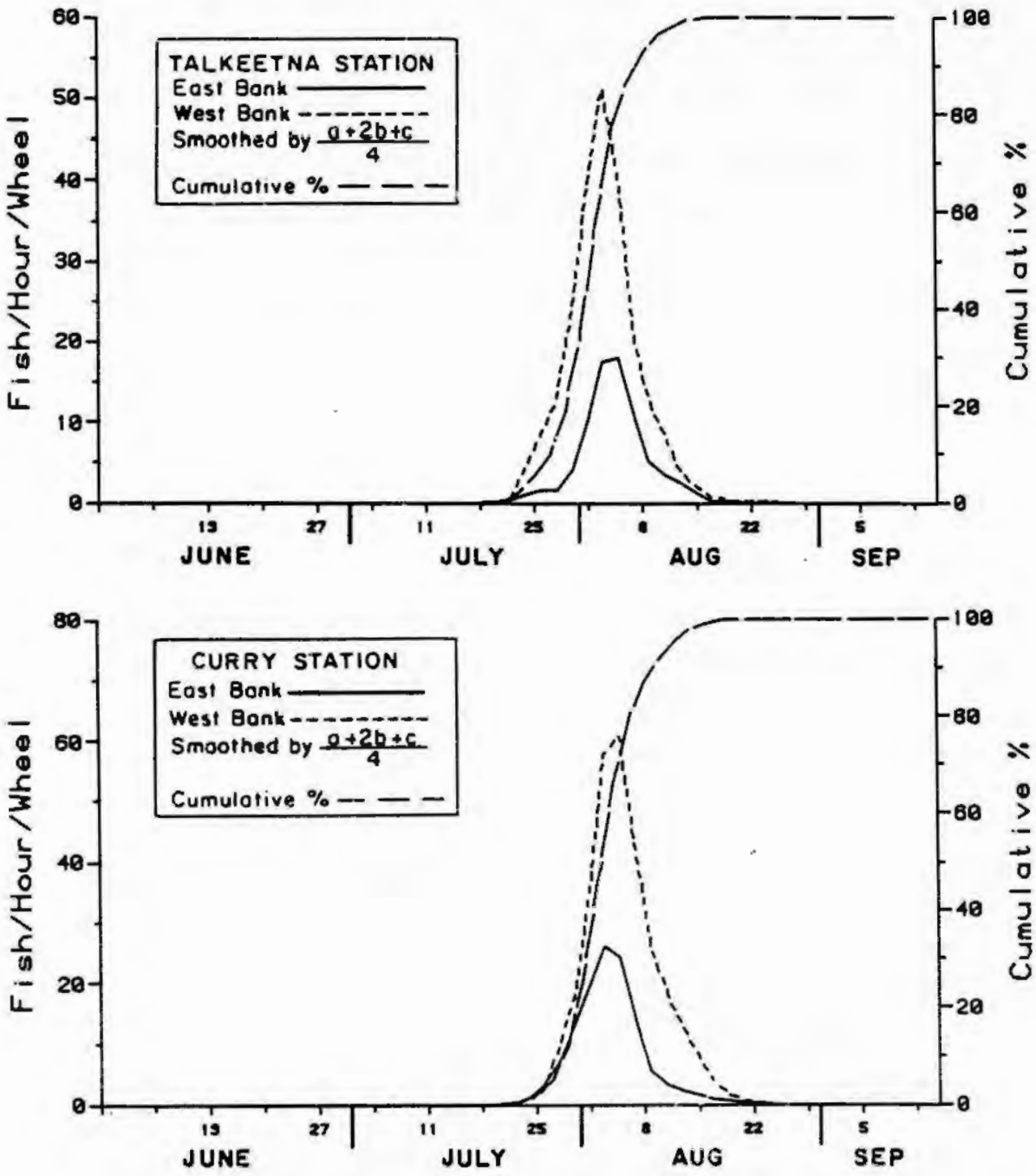


Figure 35. Mean hourly and cumulative percent fishwheel catch of pink salmon by two day periods at Talkeetna and Curry stations, 1984.

catch was 17,394 with 69.6 percent of these fish intercepted by the west bank fishwheel (Appendix Tables 2-15 and 2-16).

Tag recovery data from pink salmon originally marked at Talkeetna Station (RM 103) are summarized in Tables 29 and 30. A total of 14,688 tags were deployed at Talkeetna Station, 77.4 percent on the west bank and 22.6 percent on the east bank. At Curry Station (RM 120), 17 miles upstream, 420 pink salmon bearing numbered Talkeetna Station tags were

Table 29. Comparison of the number of pink salmon tags deployed by bank at RM 103 to the number of tag numbered recaptures by bank at RM 120, 1984.

River Bank	Number of Fish Tagged at RM 103	Tag Numbered Recaptures at RM 120 from RM 103	
		East Bank Wheel	West Bank Wheel
East	3,320	36	57
West	11,368	133	194
TOTALS	14,688	169	251

Table 30. Summary of numbered Talkeetna Station tag recoveries by deployment bank, at select pink salmon spawning grounds above RM 103, 1984.

Location	River Mile	Recovered Tags				
		West Bank	% Sample	East Bank	% Sample	TOTAL
Lane Creek	113.6	7	87.5	1	12.5	8
4th of July Creek	131.1	22	68.8	10	31.2	32
Indian River	138.6	30	73.2	11	26.8	41
	TOTALS	59	72.8	22	27.2	81

recaptured, 59.8 percent originally tagged on the west bank at RM 103 and 40.2 percent on the east bank. These data indicate little differential milling between east and west bank pink salmon stocks at RM 103. This is further substantiated by tag recoveries in Lane Creek (RM 113.6), 4th of July Creek (RM 131.1) and Indian River (RM 138.6) where a combined 72.8 percent of the numbered Talkeetna Station tags recovered from pink salmon carcasses were from fish tagged on the west bank at RM 103 (Table 30). The pink salmon tag recovery ratios from Curry Station and the spawning grounds are similar to expected values given mixed stocks and no differential milling at RM 103.

The 1984 migrational rates of tagged pink salmon recaptured in the lower and middle Susitna River reaches are presented in Appendix 2 and Figure 34. Based on these data, pink salmon required an average of about four days to travel between Sunshine (RM 80) and Talkeetna (RM 103) stations and about 2 days between Talkeetna and Curry (RM 120) stations for respective migrational rates of 5.9 mpd and 9.4 mpd. Between Sunshine and Curry stations, pink salmon traveled in about five days which translates into a travel rate of 7.7 mpd. Pink salmon traveled between Flathorn (RM 22) and Talkeetna stations and Flathorn and Curry stations in about 10 (8.1 mpd) and 11 (8.9 mpd) days, respectively.

Length (FL) data obtained from a subsample of the Talkeetna (RM 103) and Curry (RM 120) stations escapements are presented in Table 28 and Appendix 5. Sample lengths indicate that the average length of both sexes combined was 447 mm at Talkeetna Station and 441 mm at Curry

Station. Male pink salmon averaged 13 mm longer than females at Talkeetna Station and 4 mm longer than females at Curry Station (Table 28). Male pink salmon were more numerous than females at both Talkeetna and Curry stations. The respective male to female ratios were 1.1:1 and 1.6:1 (Table 28).

3.1.3.2.2 Spawning Ground Surveys

3.1.3.2.2.1 Mainstem

The Susitna River main channel between RM 98.6 and 161.0 was surveyed on a regular basis for adult salmon spawning activity in 1984. Surveys were conducted by boat and helicopter from July 21 through October 14. The survey results are presented in Appendix 6. ADF&G field personnel observed no pink salmon spawners in the Susitna River main channel, however, an employee of E. Woody Trihey and Associates reported an unquantified number of pink salmon spawning near the east bank at RM 119.1 (Trihey, 1984).

3.1.3.2.2.2 Sloughs and Streams

Thirty seven sloughs and 25 streams between RM 98.6 and 161.0 were surveyed in 1984 to determine the pink salmon distribution in this river reach. Surveys were performed near weekly from July 21 until October 14. A summarization of the results can be found in Appendix Table 6-2 and 6-3. Pink salmon were observed in 17 of the 37 sloughs surveyed. Spawning, however, occurred in only sloughs: 3B (RM 101.4), 3A (RM 101.9), 5 (RM 107.6), Bushrod (RM 117.8), 8B (RM 122.2), A' (RM 124.6),

8A (RM 125.4), 11 (RM 135.3), 20 (RM 140.0) and 21 (RM 141.1). Of the 10 sloughs in which pink salmon spawned, five had peak live and dead survey counts greater than 50 fish (Table 31). Sixty three percent of the pink salmon, based on peak survey counts, spawned in sloughs 8A, 11 and 20 (Figure 36).

Table 31. Peak pink salmon index counts of sloughs above RM 98.6 in order of contribution, 1984.

Slough	River Mile	Date	Number Counted			Percent Contribution
			Live	Dead	Total	
15	137.2	8/8	500	0	500	46.8
8A	125.4	8/19	118	16	134	12.5
11	135.3	8/19	83	38	121	11.3
20	140.0	8/17	74	11	85	8.0
8B	122.2	8/17	57	11	68	6.4
3A	101.9	9/6	46	10	56	5.2
3B	101.4	9/24	11	17	28	2.6
Moose	123.5	8/6	25	0	25	2.3
A'	124.6	8/6	24	0	24	2.2
Bushrod	117.8	8/13	8	2	10	0.9
21	141.1	8/17	1	7	8	0.7
5	107.6	?/9	4	0	4	0.4
2	100.2	?/17	2	0	2	0.2
8	113.7	8/14	0	1	1	0.1
8C	121.9	8/13	0	1	1	0.1
9	128.3	8/13	0	1	1	0.1
17	138.9	8/8	1	0	1	0.1
		TOTALS	954	115	1,069	99.9

Based on the surveys of sloughs 3A (RM 101.9), 8B (RM 122.2) and 8A (RM 125.4), pink salmon spawning in slough habitats ranged between the second week of August and the first week of September in 1984. Peak pink salmon spawning occurred during the second and third weeks of August.

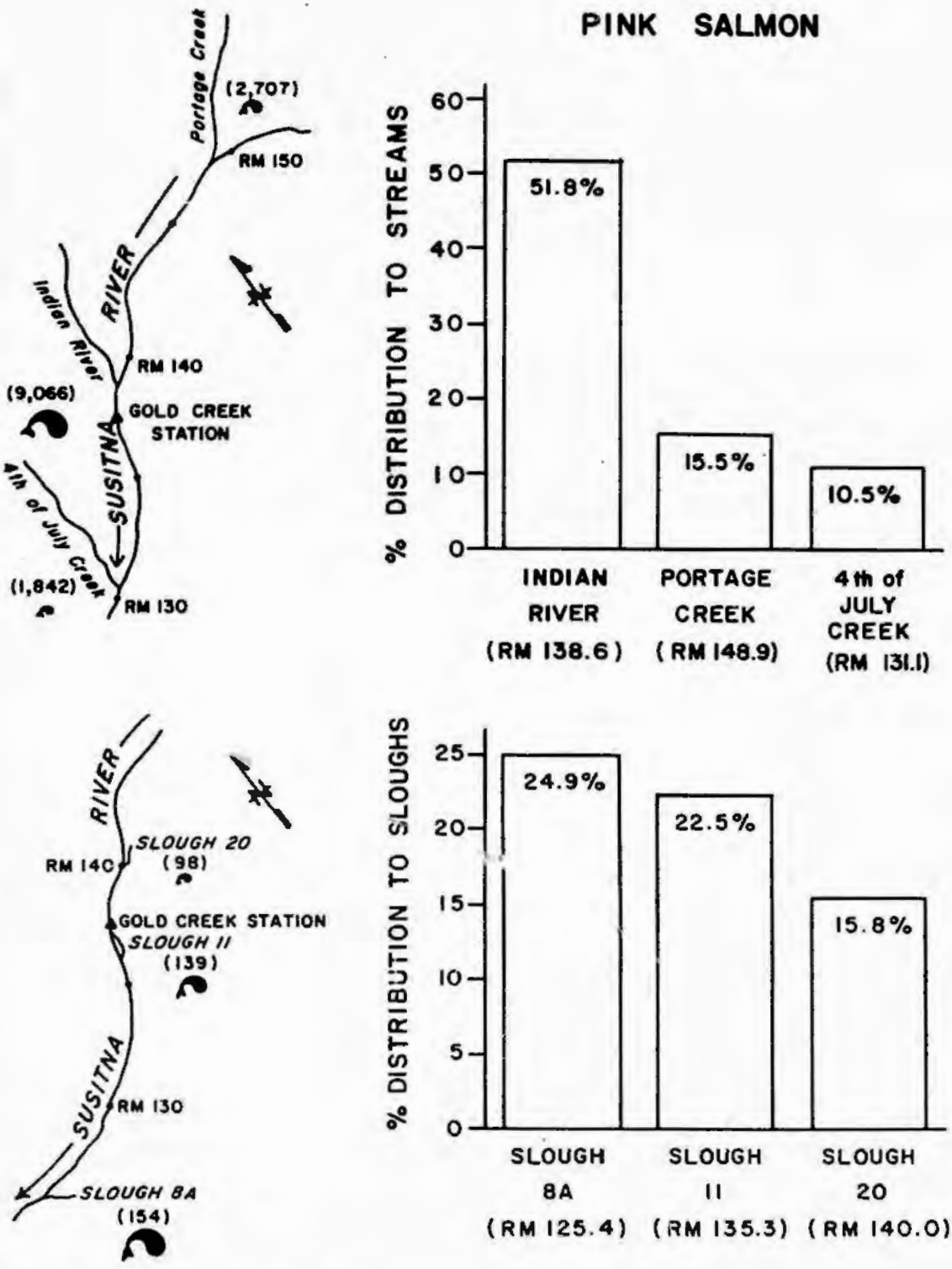


Figure 36. The three major streams and sloughs above RM 98.6 used by pink salmon for spawning and the respective percent spawner distribution, 1984.

The estimated pink salmon escapement to sloughs in 1984 was 619 fish (Table 32). Pink salmon which spawn in sloughs represent about one-half of a percent of the escapement reaching Curry Station (RM 120), re-enforcing the premise that pink salmon are distributed primarily in stream habitats in this river reach.

In 1984, pink salmon were observed in 22 streams in the middle Susitna River reach (Appendix 6). The peak live and dead survey count of all streams totaled 17,505 pink salmon (Table 33). Three streams contributed 77.8 percent to the total; they were: Indian River (RM 138.6) (51.8 percent), Portage Creek (RM 148.9) (15.5 percent), and 4th of July Creek (RM 131.1) (10.5 percent). Stream surveys conducted in the middle Susitna River reach consisted of two types, foot and helicopter surveys. Foot surveys were generally conducted over a predetermined reach of a stream, referred to as the index reach. These surveys were not intended to enumerate total stream escapements, rather provide a relative index of abundance for each stream. Helicopter surveys usually encompassed the entire salmon spawning reach of each stream surveyed. Helicopter surveys, with adjustments to account for salmon observation life and efficiency of helicopter counts, may be used to estimate the total escapement to a particular stream.

Pink salmon distribution within select streams between RM 98.6 and 161.0 was determined by repetitive helicopter surveys in 1984 (Appendix 6). Based on these surveys, the upper limit of migration in the three most productive pink salmon streams, Indian River (RM 138.6), Portage Creek (RM 148.9) and 4th of July Creek (RM 131.1), was about 8.7, 6.8 and 1.9

Table 32. Estimated 1984 pink salmon slough escapements between RM 98.6 and 161.0.

Slough	River Mile	Peak Live-Dead Survey Count [1]	Slough Escapement [2]	% of Total Slough Escapement	% of Curry Station Escapement [3]
38	101.4	28	34	5.3	0.1
3A	101.9	56	67	10.4	0.1
5	107.6	4	5	0.8	0.1
Bushrod	117.8	10	12	1.9	0.1
88	122.2	68	82	12.7	0.1
A'	124.6	24	29	4.5	0.1
8A	125.4	134	161	24.9	0.1
11	135.3	121	145	22.4	0.1
20	140.0	85	102	15.8	0.1
21	141.1	8	10	1.6	0.1
	TOTALS	538	647	100.3 [4]	0.5

1/ Peak live-dead survey counts represent counts of spawning fish only. Milling fish were not considered in the analysis.

2/ Slough escapement was calculated by multiplying peak live-dead counts by 1.2.

3/ Curry Station pink salmon escapement for 1984 was 116,900 fish.

4/ Rounding error.

Table 33. Peak pink salmon survey counts of streams surveyed above RM 98.6 in order of contribution, 1984.

Stream	River Mile	Date	Number Counted			Percent Contribution
			Live	Dead	Total	
Indian River	138.6	8/18	7,561	1,505	9,066	51.8
Portage Creek	148.9	8/11	2,703	4	2,707	15.5
4th of July Cr.	131.1	8/13	1,459	383	1,842	10.5
Lane Creek	113.6	8/14	1,147	37	1,184	6.8
L. McKenzie Cr.	116.2	7/30	585	0	585	3.3
Chase Creek	106.9	8/16	246	192	438	2.5
5th of July Cr.	123.7	8/13	391	20	411	2.4
Deadhorse Cr.	120.8	8/13	327	10	337	1.9
Whiskers Creek	101.4	8/15	266	27	293	1.7
Lt. Portage Cr.	117.7	8/20	148	14	162	0.9
Skull Creek	124.7	8/13	117	4	121	0.7
Maggot Creek	115.6	8/7	107	0	107	0.6
Gold Creek	136.7	8/8	82	0	82	0.5
Sherman Creek	130.8	8/13	43	5	48	0.3
Fromunda Cr.	119.3	8/13	38	2	40	0.2
Clyde Creek	113.8	8/21	34	0	34	0.2
Jack Long Cr.	144.5	8/8	14	0	14	0.1
McKenzie Cr.	116.7	8/7	11	0	11	0.1
Tulip Creek	120.9	8/7	8	0	8	0.1
Downunda Cr.	119.4	8/7	6	0	6	0.1
Gash Creek	111.6	8/21	5	1	6	0.1
Slash Creek	111.2	8/27	2	1	3	0.1
	TOTALS		15,300	2,205	17,505	100.1

miles, respectively. Pink salmon spawned in the Susitna River interface of all three streams. In Indian River and 4th of July Creek most pink salmon spawning occurred within the first two miles. In Portage Creek, major pink salmon spawning areas were located between approximately two and five miles from the mouth. The relative utilization by pink salmon of the index reach in Indian River (one mile) and Portage Creek (one-quarter mile) is further exemplified by helicopter and foot survey counts of these reaches (Figures 37 and 38). These figures show 43.3 percent of the peak helicopter pink salmon count occurred in the index area in Indian River as compared to only 4.6

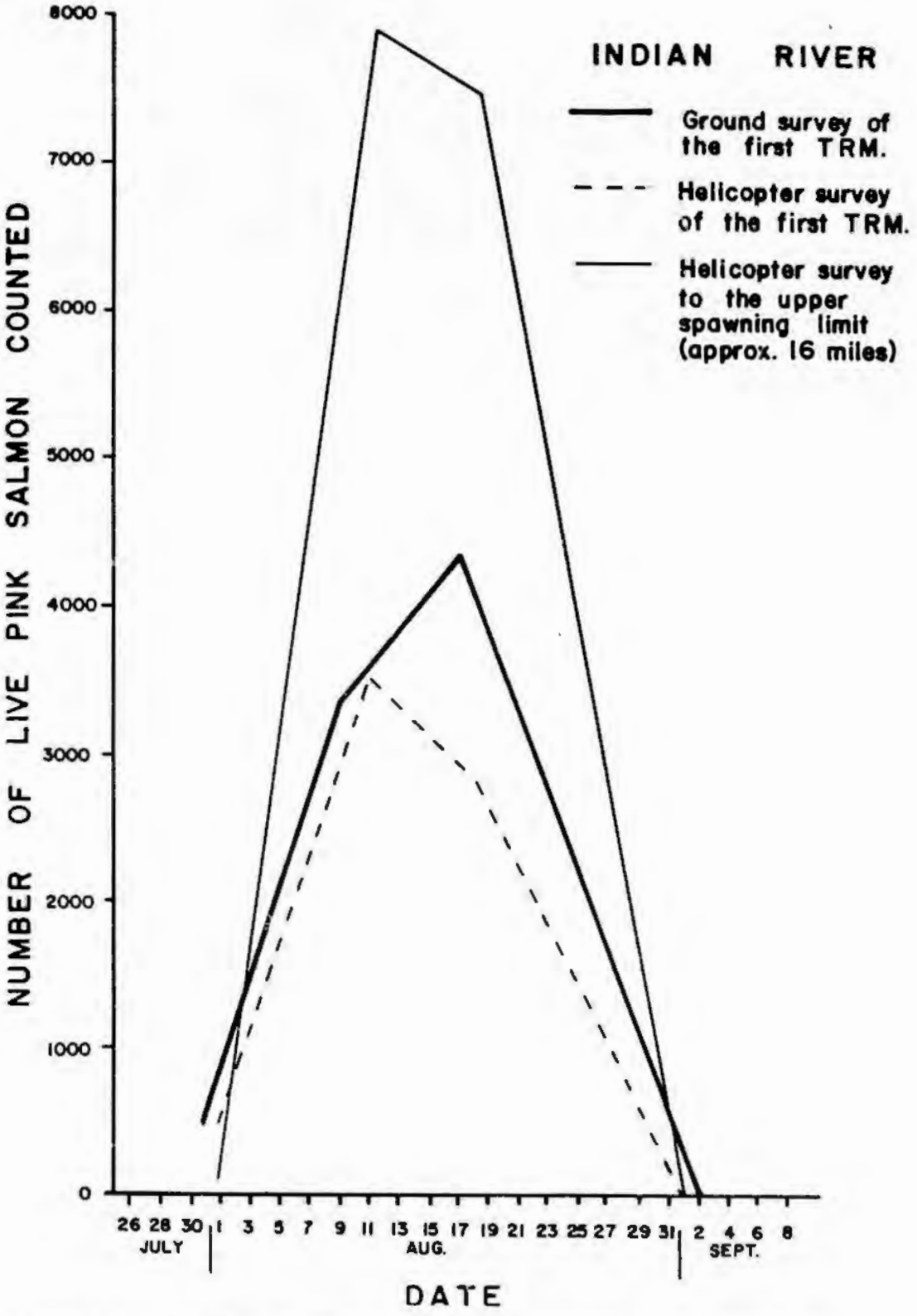


Figure 37. Peak pink salmon ground and helicopter survey counts of Indian River in 1984.

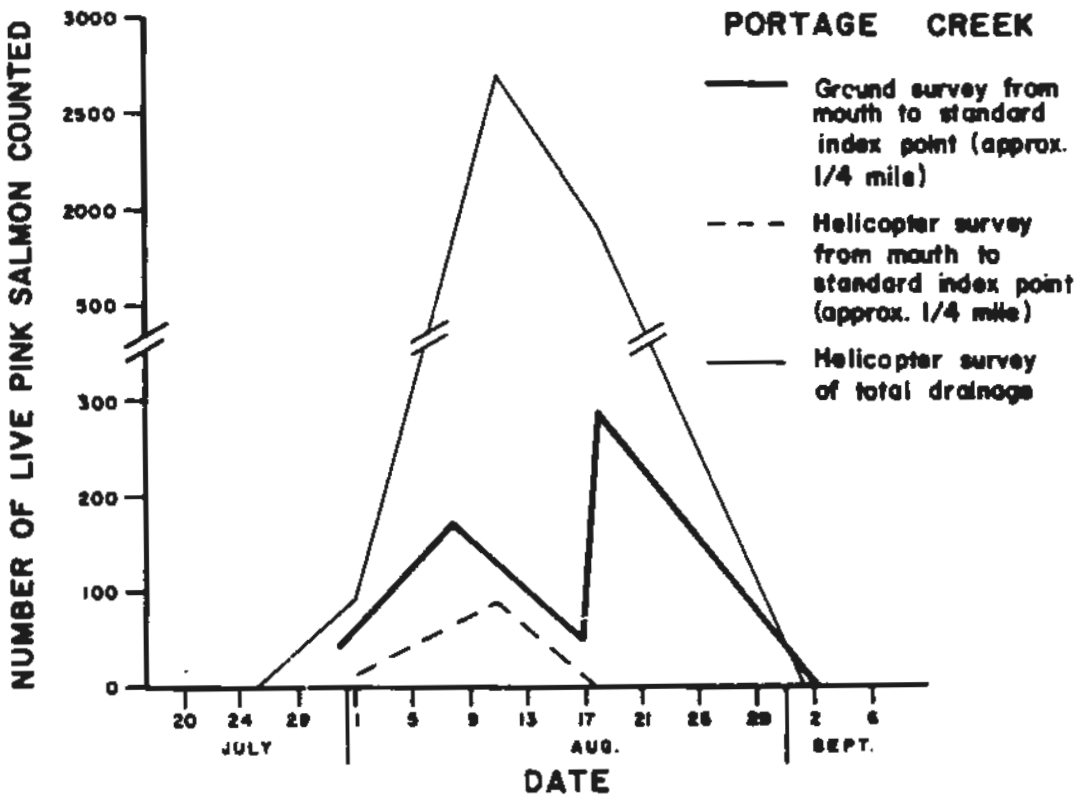


Figure 38. Peak pink salmon ground and helicopter survey counts of Portage Creek in 1984.

percent in Portage Creek. From this it is reasonable to assume that the survey index reach of Indian River provides a major portion of the spawning habitat in this stream whereas the index area of Portage Creek is utilized primarily as a migratory corridor.

The 1984 pink salmon escapements to Indian River (RM 138.6) and Portage Creek (RM 148.9) can be estimated because the peak survey counts were of each streams entire spawning range. Cousens et al (1982) summarize several works indicating that peak live plus dead survey counts of salmon species with a short spawning duration, such as pink salmon,

represent 80-90 percent of the spawning population. Therefore, a factor of 1.2 was used to adjust peak live and dead survey counts of Indian River and Portage Creek. The peak survey count from Indian River was further adjusted by the ratio of helicopter to foot surveys of the index reach. This adjustment increased the peak survey count by 47.7 percent. This adjustment was not considered a reasonable procedure for Portage Creek where peak surveys of the index reach were four days apart and the fact that this reach is used primarily as a migratory corridor and not for spawning as in Indian River. Subject to the above adjustments the estimated escapement to Indian River was about 16,100 fish and to Portage Creek 3,100 fish. The escapement to Indian River is based on a "fair" survey count which was hampered by rain and poor light conditions. Because of the fair survey conditions it is likely the actual escapement to Indian River was larger than calculated.

In 1984 the minimum escapement to all streams and sloughs above RM 120 was 23,000 fish. This value is reported as minimum because peak surveys in all streams except Indian River (RM 138.6) and Portage Creek (RM 148.9) were foot surveys and cannot be expanded to represent the escapement of the entire stream. Based on these data, approximately 80 percent of the pink salmon reaching Curry Station (RM 120) are milling fish. By extention of this method approximately 85 percent of the pink salmon reaching Talkeetna Station (RM 103) were milling fish.

Pink salmon spawning in streams ranged from the first and third weeks of August in 1984 based on live and dead survey counts of 4th of July Creek (RM 131.1), Indian River (RM 138.6) and Portage Creek (RM 148.9) (Appendix 6). Based on the same data, the peak of spawning occurred during the second and third weeks of August.

3.1.4 Chum Salmon

Chum salmon are a major target species in the combined Upper Cook Inlet drift and set gill net fishery. Most of the commercial harvest is Susitna River fish (ADF&G, 1982). The suspected contribution is in the range of 50 percent (Barrett et al, 1984). Within the Susitna River system there are a minimum 45 chum salmon spawning populations (ADF&G, 1982). The principle spawning areas are in the Talkeetna River subdrainage (Barrett et al, 1984).

The minimum chum salmon escapements to the Susitna River have been reported for the last three years at 282,700 fish (1981), 458,200 fish (1982) and 276,600 fish (1983) (Barrett et al, 1984). These estimates only reflect the escapements to the Yentna River (RM 28) and RM 80 near the George Parks Highway bridge. In 1984, the minimum chum salmon escapement was about 812,700 fish based on a Petersen estimate derived from a first year tagging operation at RM 22 (Section 3.1.4.1.1).

The following subsections of this report present the results of 1984, chum salmon studies by lower and middle Susitna River reaches.

3.1.4.1 Lower Reach

3.1.4.1.1 Main Channel Escapement Monitoring

In 1984, chum salmon escapements were monitored in the lower Susitna River reach at Flathorn (RM 22), Yentna (TRM 04) and Sunshine (RM 80) stations. The estimated 1984 escapements were: 812,700 fish (Flathorn Station), 26,500 fish (Yentna Station) and 765,000 fish (Sunshine

Station) (Tables 34 and 19 and Figure 39). These estimates were calculated by the Petersen method with exception that the Yentna Station escapement was determined by SSS counters. The confidence limits associated with the Petersen estimates are in Table 34.

Table 34. Petersen population estimates with associated 95% confidence intervals for 1984 chum salmon migration to Flathorn, Sunshine, Talkeetna and Curry stations.

Parameter[1/]	Population Estimate Location			
	Flathorn Station	Sunshine Station	Talkeetna Station	Curry Station
m	7,299	55,162	11,332	3,132
c	75,268	35,057	18,430	13,877
r	676	2,528	2,126	882
N	812,694	764,958	98,236	49,278
95% C.I.	755,963-878,631	737,273-794,803	94,459-102,327	46,319-52,639

1/ m = Number of fish marked.

c = Total number of fish examined for marks during sampling census.

r = Total number of marked fish observed during sampling census.

N = Population estimate.

C.I. = Confidence Interval around N.

The minimum, 1984 chum salmon escapement into the Susitna River drainage was about 812,700 fish based on the estimated 1984 escapement to Flathorn Station (RM 22). The only spawning area not covered by this estimate is Alexander Creek located at RM 9.8. The highest recorded

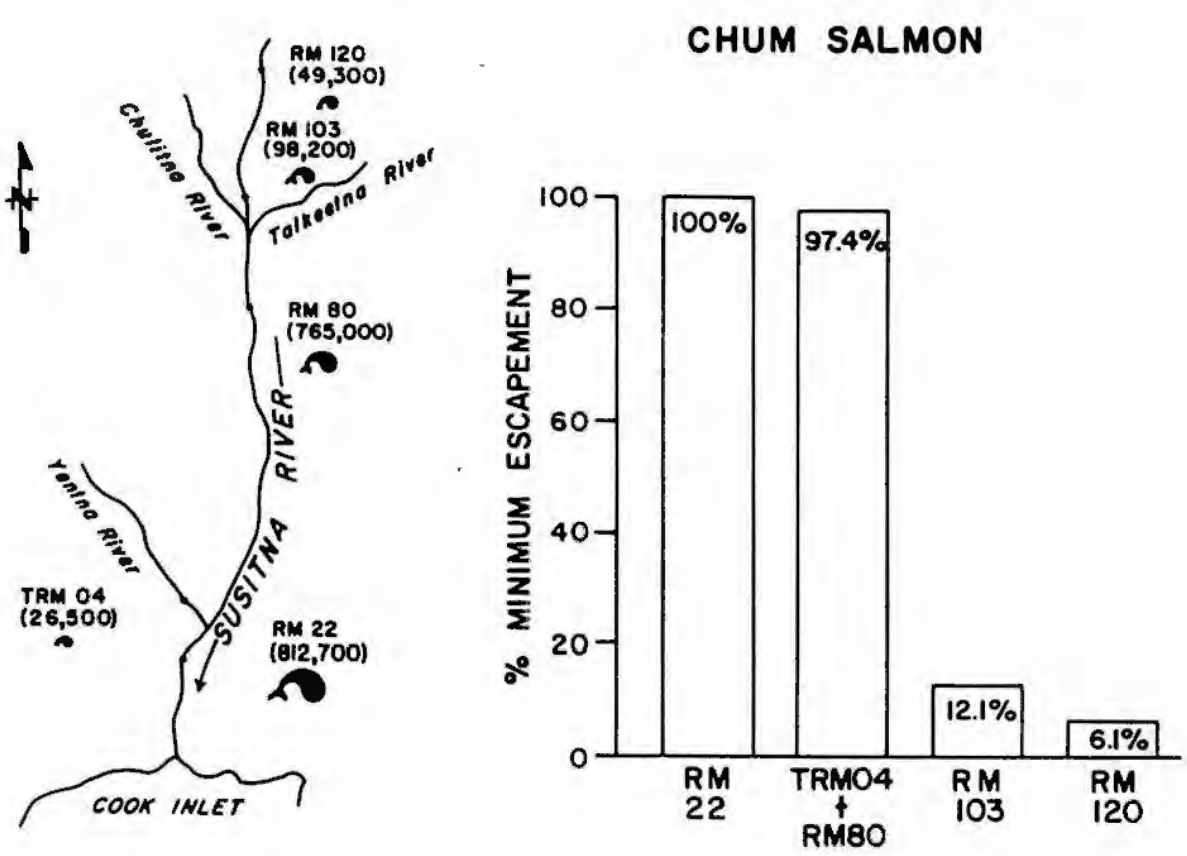


Figure 39. A comparison of the total estimated chum salmon escapement for the Susitna River drainage to the estimated TRM 04, RM 80, 103 and 120 escapements, 1984.

escapement to this creek was 500 fish in 1963 (ADF&G, 1982). For practical purposes the chum salmon escapement estimate to Flathorn Station can be considered an estimate of the entire Susitna River escapement considering the minimal spawning below RM 22.

The comparison of the chum salmon escapements for the three lower river monitoring stations in Figure 39 illustrates the distribution of the Susitna River escapement. About 97 percent of the total escapement was to the Yentna River (RM 28) and RM 80. The Yentna River portion was 2.6

percent and for RM 80, 94.1 percent. Around three percent of the Susitna River chum escapement was destine to spawning habitats in the lower reach mainstem and tributaries below RM 80 excluding the Yentna River.

Chum salmon catches in the fishwheels operated at Flathorn (RM 22), Yentna (TRM 04) and Sunshine (RM 80) stations totaled 7,519 fish, 1,431 fish and 56,681 fish respectively or about 1 percent, 5 percent and 7 percent of the respective estimated 1984 escapements to these stations. These fishwheel catches provide the basis for determining escapement timing (Appendix 2 and Figures 40 and 41). At Flathorn Station chum salmon were abundant in the mainstem for 41 days. The migration began in the east channel at Flathorn Station on July 18, reached a midpoint on July 25 and ended on August 25. The respective dates for the west channel were July 18, July 29 and August 28. Upstream 10 miles at Yentna Station in the Yentna River (RM 28) the chum salmon migration occurred over 42 days. The onset began on July 18, midpoint on August 1 and the end was on August 29. At Sunshine Station, 58 miles above Flathorn Station, the migration was shorter in duration lasting 27 days. The migration there began on July 23, reached a midpoint on August 4 and ended on August 19.

The 1984 migrational rates of chum salmon in the lower river reach are presented in Appendix 2 and summarized in Figure 42. The data are based on tagged fish recoveries between mainstem Yentna and Susitna rivers stations. Chum salmon tagged at Flathorn Station (RM 22) generally reached Yentna Station (TRM 04) in four to seven days and Sunshine

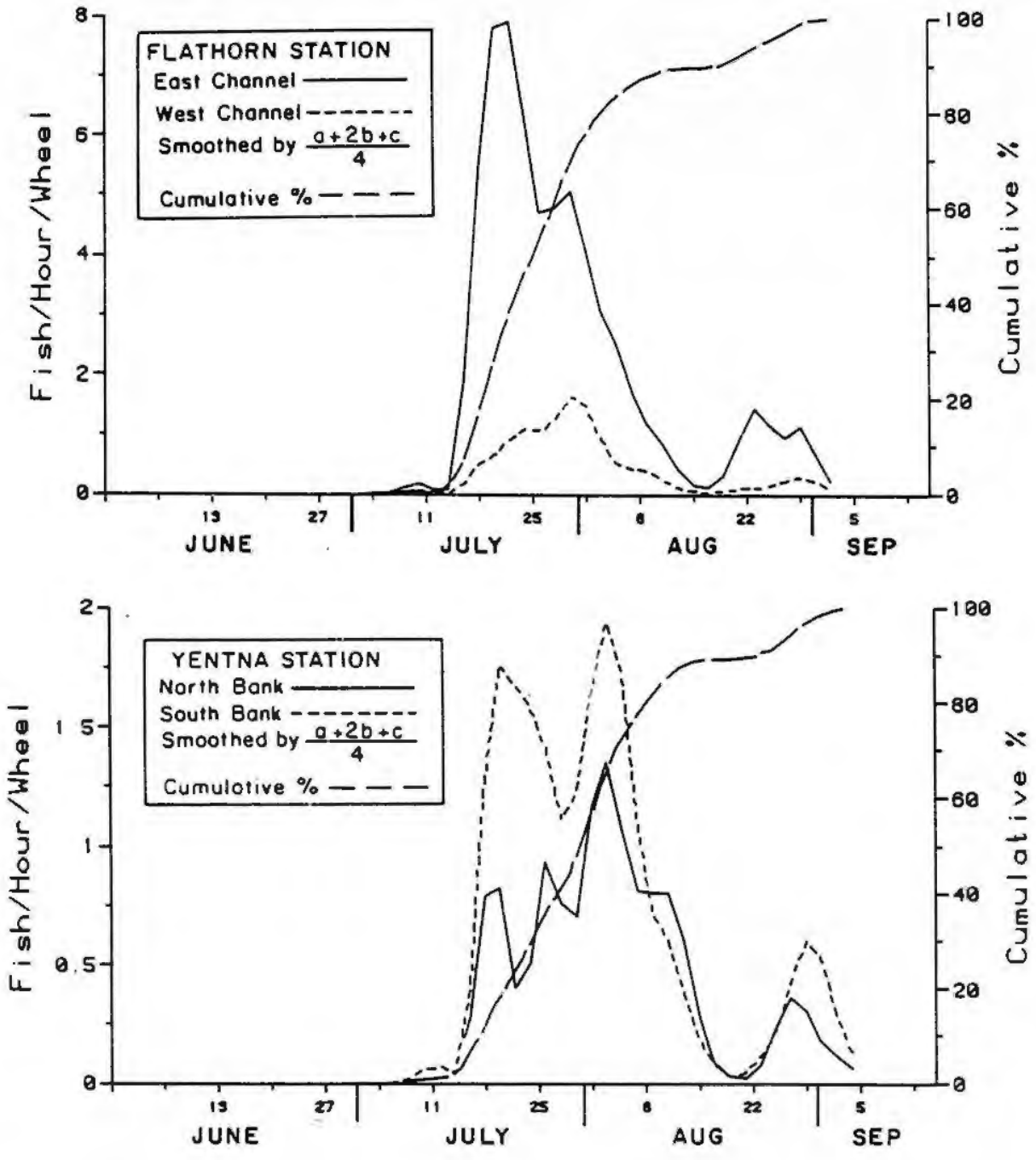


Figure 40. Mean hourly and cumulative percent fishwheel catch of chum salmon by two day periods at Flathorn and Yentna stations, 1984.

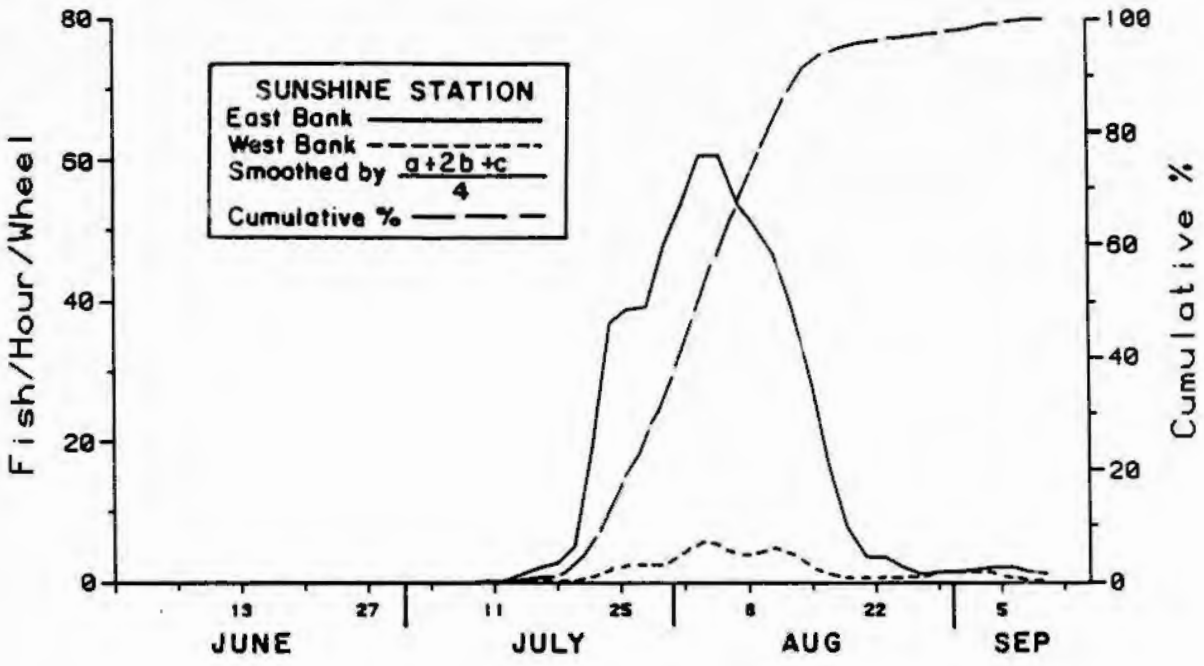


Figure 41. Mean hourly and cumulative percent fishwheel catch of chum salmon by two day periods at Sunshine Station, 1984.

Station (RM 80) in 13 to 14 days. Chum salmon migrated slower or milled more in the lower sub-river reach between Flathorn Station and the Yentna River (RM 28) than in the sub reach between the Yentna River and Sunshine Station. Migration speeds between stations based on median days traveled computed at 2.5 mpd (Flathorn to Yentna stations) and 4.5 mpd (Flathorn to Sunshine stations).

In 1984 chum salmon migrations in the lower river reach fluctuated at least twice in season probably due to high flows (Figures 40 and 41). For example the highest river flows from mid July to mid August in the Yentna and Susitna rivers occurred on July 27 and 28 (USGS, provisional data). On these same dates, there was a sharp drop in chum salmon catches in the fishwheels operated at Flathorn (RM 22), Yentna (TRM 04)

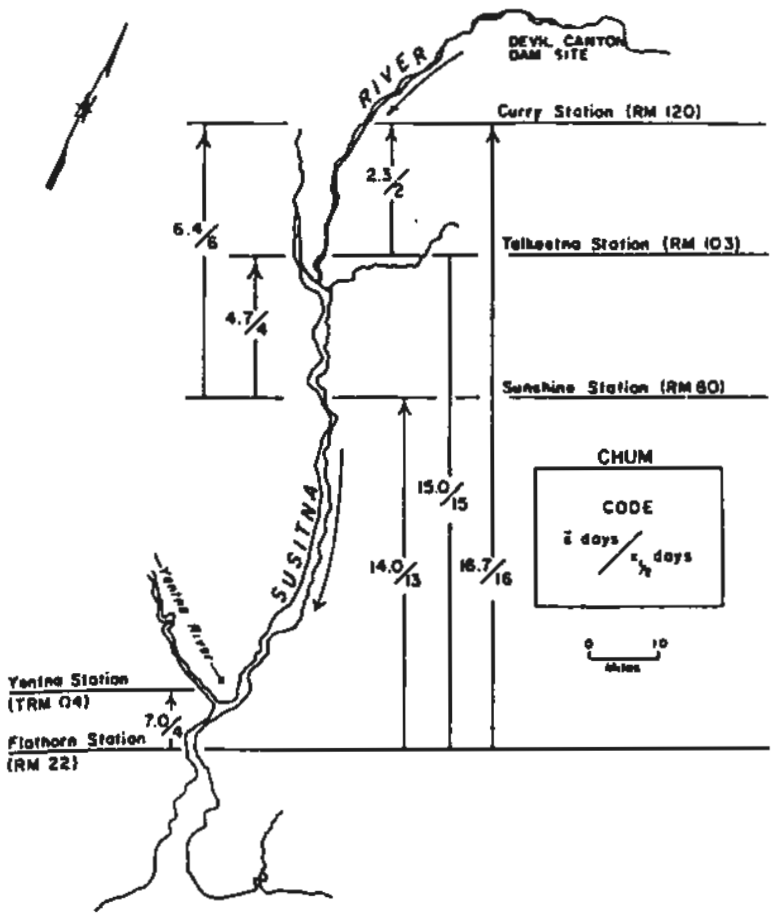


Figure 42. Migrational rates of chum salmon between five lower and middle Susitna River reach sampling stations, 1984.

and Sunshine (RM 80) stations (Appendix 2). A second migrational response to flow changes probably occurred toward the end of the chum salmon migration. Flows between August 20 and 21, in the order of 133,000 cfs to 146,000 cfs at Susitna Station (RM 26), coincided with a major reduction in chum salmon fishwheel catches at these stations (Figure 43).

Catch difference between opposite riverbank fishwheels at a sampling station can indicate fish migrational patterns (Appendix 2). In 1984 about 83 percent of the chum salmon escapement that reached Flathorn

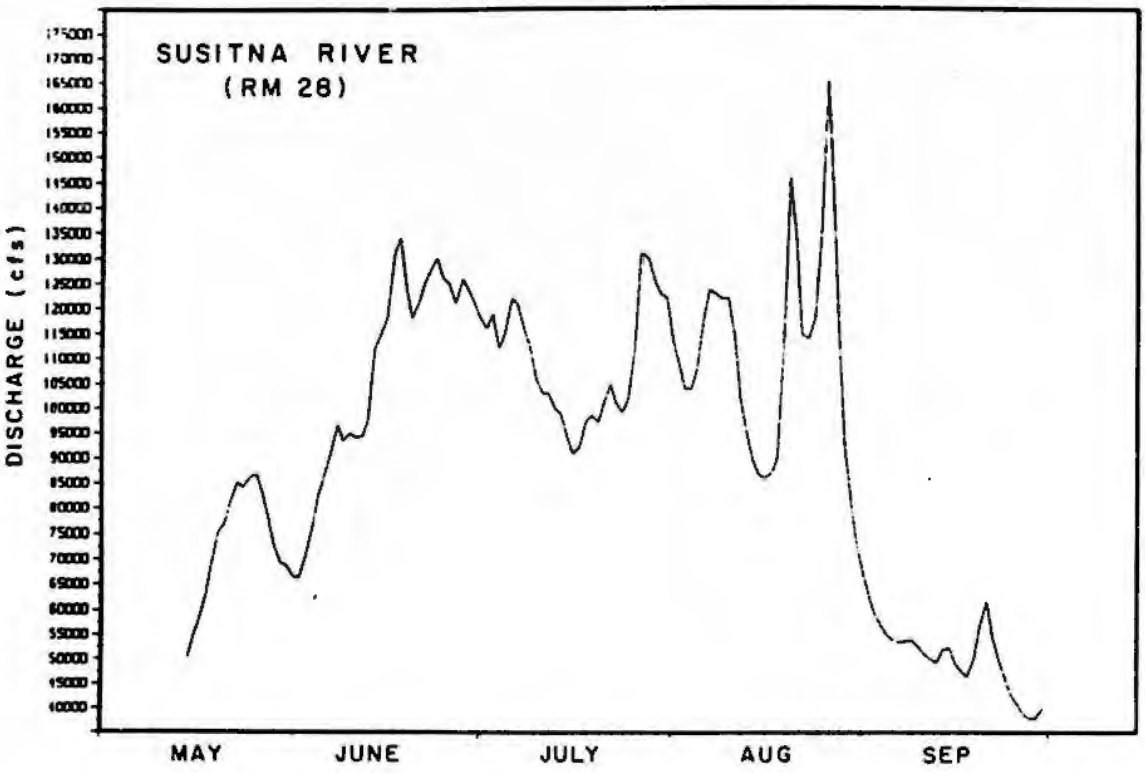


Figure 43. Provisional USGS discharge data for station No. 15294345 from May 15 through September, 1984.

Station (RM 22) migrated in the east channel and within that channel most (69%) of the fish passed along the left bank (looking upstream) based on fishwheel catches. The west channel at Flathorn Station passed about 17 percent of the escapement. Most (87%) of the fish in the west channel migrated along the right bank. In the Yentna River about 57 percent of the chum salmon passed Yentna Station (TRM 04) along the south bank as indicated by fishwheel catches. The same trend was also observed with the SSS counters. About 60 percent of the chum salmon counts at Yentna Station were registered by the south bank sonar (Appendix 3). At Sunshine Station (RM 80) chum salmon were mainly along the east bank as the east bank wheels caught 92 percent of the station catch and the west bank wheels caught the remaining eight percent.

Chum salmon released at Flathorn Station (RM 22) with numbered tags were recaptured in the Yentna River (RM 28) at Yentna Station (TRM 04) and at Sunshine Station (RM 80) and above at RM 103 and 120 (Table 35 and Figure 44). Based on the recapture information about 95 percent of the chum salmon that entered the Yentna River migrated in the east channel at Flathorn Station. The remaining five percent, passed Flathorn Station in the west channel. The east channel at Flathorn Station was also favored by chum salmon reaching RM 80 and above. The east channel passed about 83 percent of these fish and the west channel, 17 percent.

Chum salmon escapements were sampled for age, length (FL) and sex composition at Flathorn (RM 22), Yentna (TRM 04) and Sunshine (RM 80) stations in 1984. The results indicate that nearly all (99.2-99.9%) the chum salmon returning to these stations were three, four and five year old fish (Figure 45 and Table 36). Most prevalent were four year olds, accounting for 73.9 percent, 69.2 percent and 75.7 percent of the respective escapements to Flathorn, Yentna and Sunshine stations. All adult chum salmon returning to these stations in 1984 had migrated to sea as juveniles in their first year of life based on scale analysis. The average chum salmon lengths at Flathorn, Yentna and Sunshine stations in 1984 was 585 mm, 584 mm and 594 mm, respectively (Table 37 and Appendix 5). At all stations male chum salmon averaged between 11 and 20 mm longer than the females. Expectedly, the larger length fish were generally in the older age classes (Table 37). In 1984 there were more female than male chum salmon in the lower river reach except at Yentna Station (Table 38). The male to female escapement ratios were 1.1:1 (Flathorn Station), 0.7:1 (Yentna Station) and 1.1:1 (Sunshine Station).

Table 35. Comparison of numbers of chum salmon tagged by east and west channel fishwheels at RM 22 to the number of tag numbered recaptures by bank at Yentna Station and at RM 80, 103 and 120 combined, 1984.

River Channel at RM 22	Number of Chum Tagged at RM 22	Number of RM 22 Tag Numbered Recaptures at Yentna Station	Number of RM 22 Tag Numbered Recaptures Combined for RM 80, 103 and 120
East	6,107	18	378
West	1,192	1	28
TOTALS	7,299	19	406

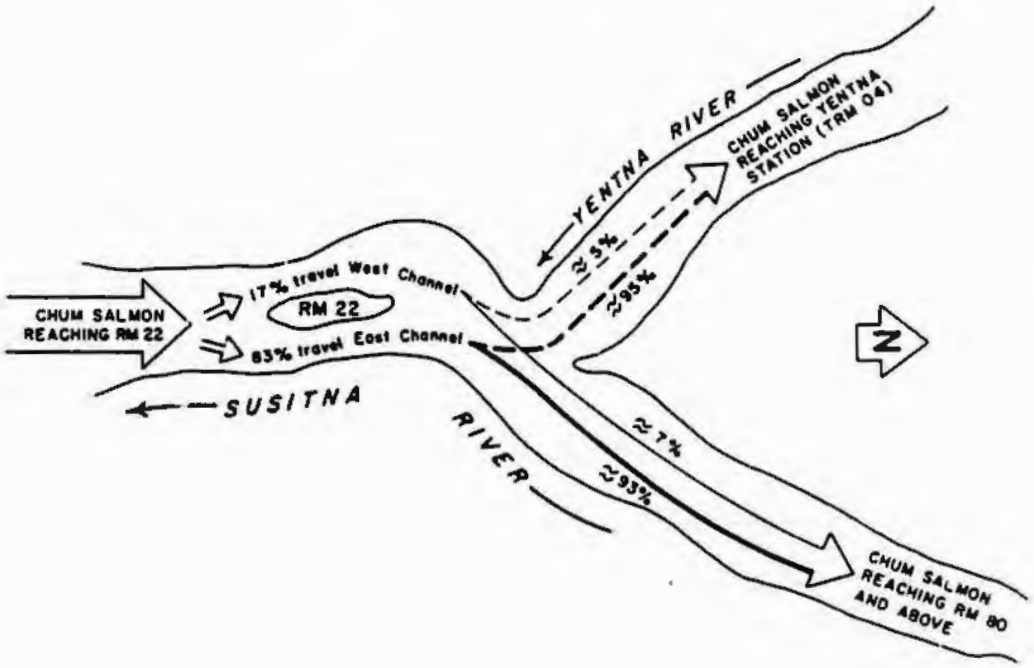


Figure 44. Migrational preference of chum salmon, reaching RM 22, entering the Yentna River and extending to RM 80 and above, to the east and west channels at RM 22, 1984.

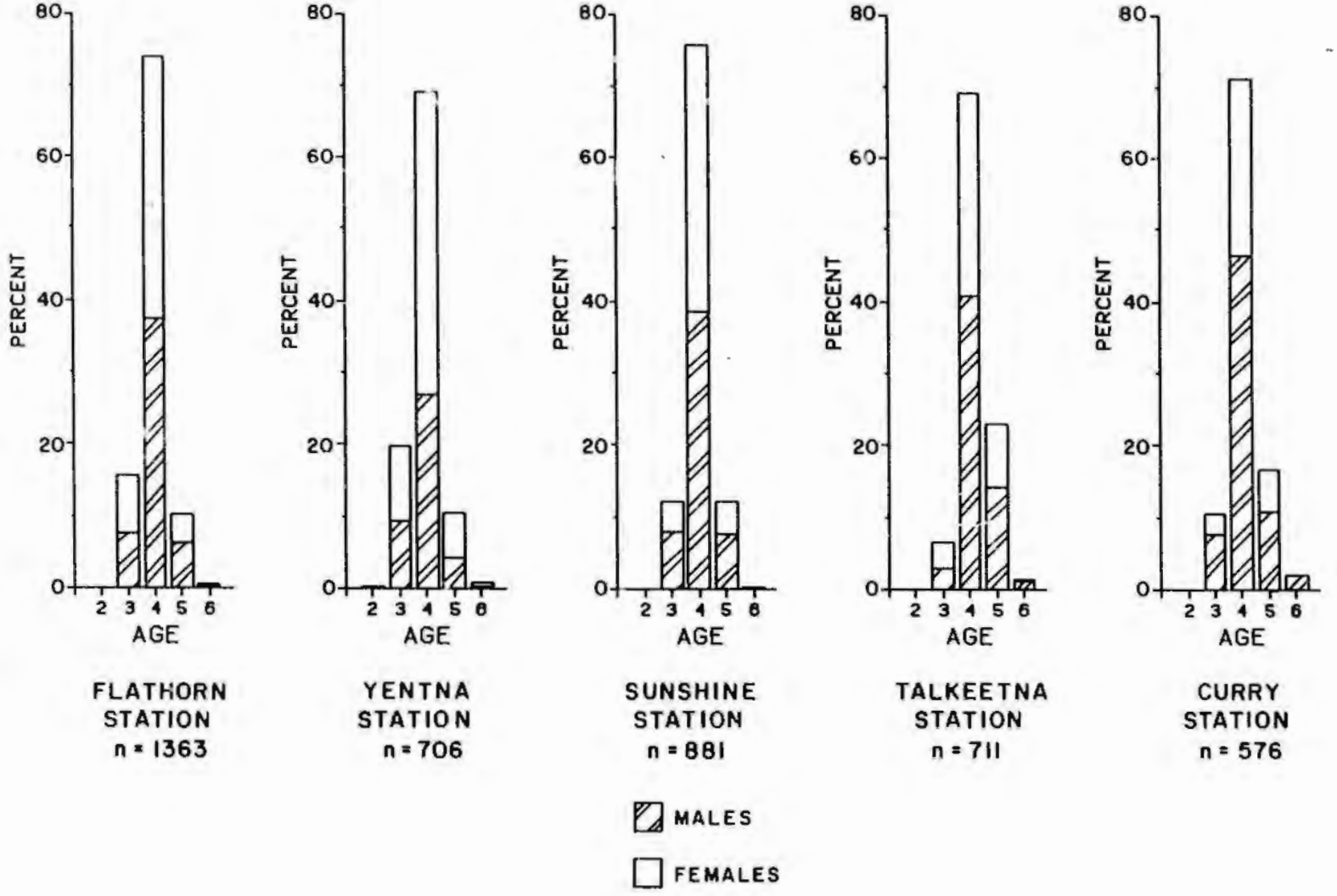


Figure 45. Age composition of fishwheel intercepted chum salmon weighted by catch per unit effort at

Table 36. Age composition of the chum salmon escapements to Flathorn Yentna, Sunshine, Talkeetna and Curry stations in percent base on catch samples weighted by fishwheel CPUE, 1984.

Collection Site	n	Age Class 1/ 2_1	3_1	4_1	5_1	6_1
Flathorn Station	1,363	-	15.5	73.9	10.2	0.4
Yentna Station	702	0.1	19.7	69.2	10.2	0.7
Sunshine Station	880	-	12.0	75.7	12.2	0.1
Talkeetna Station	711	-	6.5	69.2	22.9	1.4
Curry Station	576	-	10.4	71.0	16.7	1.9

1/ Gilbert-Rich Notation.

3.1.4.1.2 Spawning Ground Surveys

In 1984, the lower reach Susitna River mainstem and associated sloughs and stream confluences were surveyed for salmon presence. The results are presented in Appendix 7.

3.1.4.2 Middle Reach

3.1.4.2.1 Main Channel Escapement Monitoring

In 1984 chum salmon escapements were monitored in the mainstem of the Susitna River middle reach at Talkeetna (RM 103) and Curry (RM 120) stations. The estimated escapement reaching Talkeetna Station was 98,200 fish and for Curry Station, 49,300 fish (Table 34). Both estimates were derived by the Petersen method. The 95 percent confidence limits of these estimates are 94,500 through 102,300 fish and 46,400 through 52,600 fish respectively.

Appendix Table 37. Analysis of chum salmon lengths, in millimeters, by age class from 1984 escapement samples collected at Flathorn, Yentna, Sunshine, Talkeetna and Curry stations.

Collection Site	Age Class	n		Range Limits		Mean		95% Conf. Interval 1/		Median	
		M	F	M	F	M	F	M	F	M	F
Flathorn	3[1]	87	124	350-635	470-605	550	539	542-558	535-543	555	540
Station	4[1]	497	510	455-690	465-800	594	577	591-597	574-580	595	578
	5[1]	78	61	545-700	515-710	623	599	615-631	590-608	620	595
	6[1]	2	4	630-655	605-670	643	636	-	-	643	635
	All[2/]	720	750	350-700	465-800	592	573	-	-	595	570
Yentna	2[1]	1	-	423	-	423	-	-	-	423	-
Station	3[1]	58	80	510-625	485-600	558	544	552-565	539-550	560	545
	4[1]	189	297	501-675	505-668	597	582	592-601	579-585	600	580
	5[1]	29	43	580-670	532-682	623	614	614-633	606-623	630	615
	6[1]	3	2	615-675	550-625	638	588	-	-	625	588
	All[2/]	308	455	423-684	485-682	591	578	-	-	590	578
Sunshine	3[1]	58	48	425-630	490-585	547	544	537-557	536-552	550	545
Station	4[1]	356	310	480-775	490-670	603	582	599-606	579-586	605	585
	5[1]	70	37	515-745	540-670	629	600	621-637	590-610	625	600
	6[1]	1	-	645	-	645	-	-	-	645	-
	All[2/]	548	459	425-775	490-680	599	579	-	-	600	580
Talkeetna	3[1]	23	23	490-585	510-580	552	549	542-562	541-557	550	550
Station	4[1]	302	190	500-690	500-700	604	593	600-608	589-598	605	595
	5[1]	109	54	550-710	580-720	648	631	642-654	621-640	650	623
	6[1]	9	1	610-725	630	664	630	-	-	670	630
	All[2/]	509	310	490-730	465-720	614	597	-	-	610	600
Curry	3[1]	42	18	505-620	505-585	557	551	550-563	-	555	548
Station	4[1]	257	152	470-685	530-660	600	590	596-604	586-594	600	590
	5[1]	64	32	530-700	545-650	628	607	619-637	597-617	630	610
	6[1]	10	1	595-700	625	664	625	-	-	665	625
	All[2/]	443	240	470-705	505-660	601	590	-	-	600	590

Table 38. Sex ratios of male and female chum salmon by age from weighted 1984 escapement samples collected at Flathorn, Yentna, Sunshine, Talkeetna and Curry stations.

Collection Site	Age	Sample Size	Number		Sex Ratio (M:F)
			Males	Females	
Flathorn Station	3	211	104	107	1.0:1
	4	1,007	510	497	1.0:1
	5	139	86	53	1.6:1
	6	6	3	3	1:1
	All 1/	1,470	764	706	1.1:1
Yentna Station	2	1	1	0	-
	3	139	66	73	0.9:1
	4	488	190	298	0.6:1
	5	73	29	44	0.7:1
	6	5	2	3	0.7:1
	All 1/	767	314	453	0.7:1
Sunshine Station	3	106	70	36	1.9:1
	4	667	339	328	1.0:1
	5	107	67	40	1.7:1
	6	1	1	0	-
	All 1/	1,008	533	475	1.1:1
Talkeetna Station	3	46	19	27	0.7:1
	4	492	289	203	1.4:1
	5	163	100	63	1.6:1
	6	10	8	2	4:1
	All 1/	819	475	344	1.4:1
Curry Station	3	60	43	17	2.5:1
	4	409	267	142	1.9:1
	5	96	62	34	1.8:1
	6	11	11	0	-
	All 1/	683	455	228	2.0:1

1/ Includes all aged and non-aged samples.

The majority of the 1984, Susitna River chum salmon escapement was produced in the lower river reach and most of the escapement that entered the middle reach were milling fish that spawned in the lower reach. As indicated in Figure 39 about 12 percent of the escapement migrating past Flathorn Station (RM 22) reached Talkeetna Station (RM 103) and 13 percent of the escapement passing Sunshine Station (RM 80) were Talkeetna Station bound fish. Comparatively around six percent of the escapement migrating past Flathorn and Sunshine stations reached Curry Station (RM 120) in 1984. In the middle river reach an estimated 26,060 chum salmon spawned in sloughs (14,634 fish), streams (7,628 fish) and mainstem (3,798 fish) habitats (Section 3.1.4.2.2). Based on these figures about 75 percent of the chum salmon escapement to Talkeetna Station and 45 percent of the Curry Station escapement were milling fish that spawned below these stations mainly in the lower river reach.

Chum salmon catches in the fishwheels at Talkeetna Station (RM 103) totaled 12,749 fish and at Curry Station (RM 120), 4,228 fish (Table 6). These catches represent about 13 and 9 percents of the respective, stations escapements.

In 1984 chum salmon migrated in the Susitna River mainstem over a five to six week period based on fishwheel catches at Talkeetna (RM 103) and Curry (RM 120) stations (Appendix 2). At Talkeetna Station, the migration began on July 25, reached a midpoint on August 5 and ended on August 15. Seventeen miles upstream at Curry Station the respective dates were July 28, August 5 and August 21.

Chum salmon migrational rates based on tag recoveries in the lower and middle river reaches in 1984 are presented in Appendix 2 and summarized in Figure 42. Chum salmon tagged at Sunshine Station (RM 80) in the lower river reached Talkeetna Station (RM 103) generally in four to five days and Curry Station (RM 120) in six days. Travel time between Talkeetna and Curry stations usually took two days. Comparing the migration rates between stations using the median number of days traveled, chum salmon averaged speeds of 5.8 mpd (Sunshine to Talkeetna stations), 6.7 mpd (Sunshine to Curry stations) and 8.5 mpd (Talkeetna to Curry stations). Chum salmon migrated faster or milled less the further they migrated upstream evident by the travel speeds above.

In 1984, chum salmon were about equally distributed between the east and west banks at Talkeetna Station (RM 103) as determined from fishwheel catches (Appendix 2). The east and west bank fishwheels respectively caught 46 and 54 percent of the station catch. At Curry Station (RM 120) chum salmon were more plentiful along the west bank than the east bank at that location (Appendix 2). The east bank fishwheel caught 75 percent of the station catch and the west bank fishwheel caught the remaining 25 percent.

Overall, chum salmon fishwheel catches at Talkeetna (RM 103) and Curry (RM 120) stations were normally distributed through the 1984 migration period (Figure 46). The exception occurred late in the first week and early in the second week of August at both stations. At Talkeetna and Curry stations fishwheel catch rates generally rose sharply between the third week of July and the midpoint of the first week of August and then

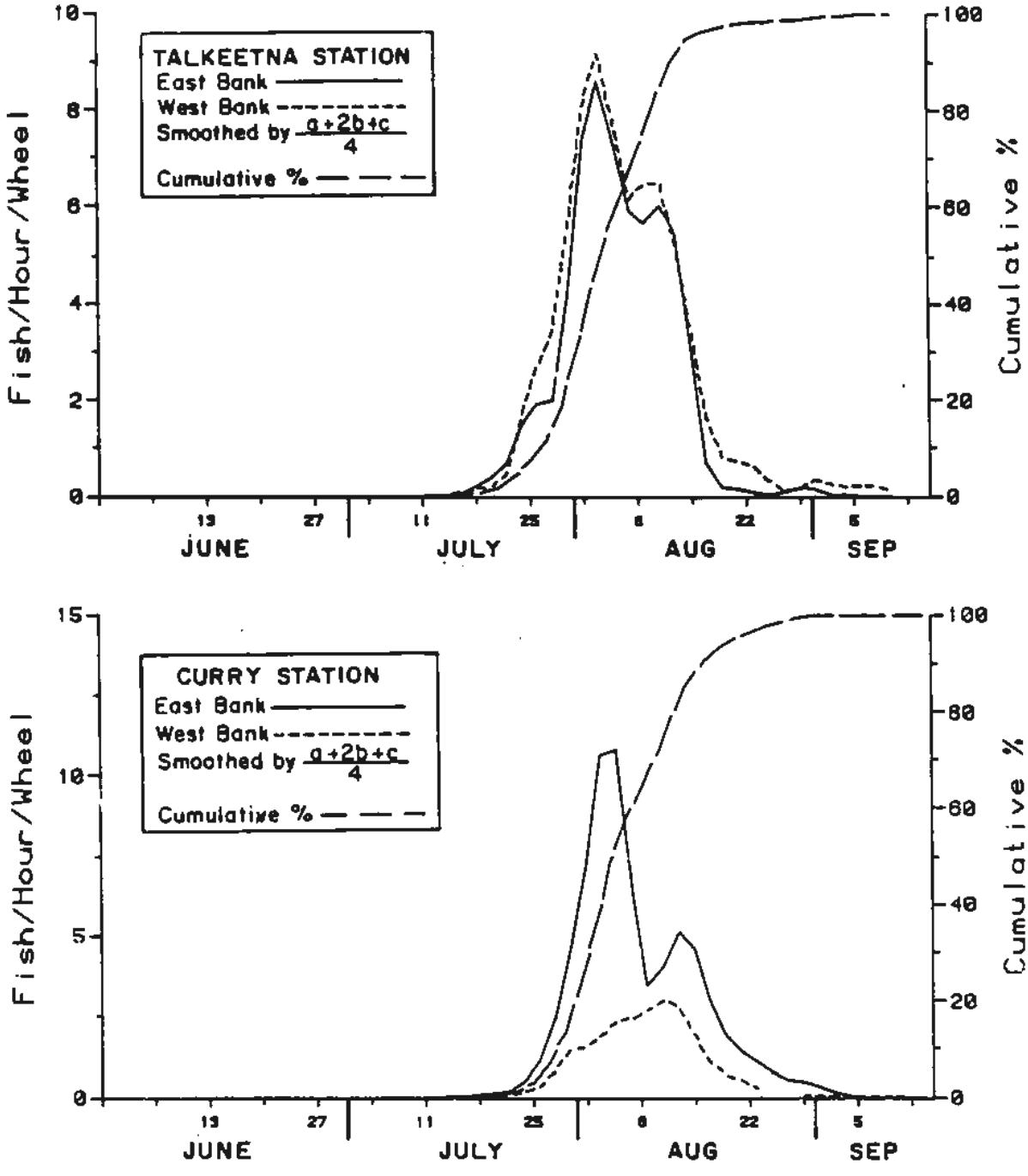


Figure 46. Mean hourly and cumulative percent fishwheel catch of chum salmon by two day periods at Talkeetna and Curry stations, 1984.

declined through the balance of the migration period except for about two days of strong catches late in the second week of August. Comparatively, river flows at Gold Creek (RM 137) during the chum salmon migration generally decreased an average of 900 cfs daily during the first half of the migration (7/25-8/5) and then rose about 3,000 cfs over the next four days (8/6-8/10) and then declined about 340 cfs daily through the second half of the migration period (8/10-21) (Figure 8). The small surge in fishwheel catches recorded late in the second week of August at Talkeetna and Curry stations may be related to the rise in river flow that occurred a few days earlier. Chum salmon migrating to Talkeetna and Curry stations likely slowed their travel speed at the initial rise in river discharge and then excellerated their travel speed after the peak rise. Other studies support this conclusion. For example radio telemetry work in 1981 and 1982 in the same river reach indicate chum salmon typically respond to high water flows by reducing their migration speeds (ADF&G, 1981 and ADF&G, 1982).

Chum salmon migrating off the east and west banks at Talkeetna Station (RM 103) displayed differential behavior in respect to destination and crossover as determined from 243 tagged numbered, chum salmon released at Talkeetna Station and recaptured at Curry Station (RM 120) (Table 39). The majority, 76 percent, of the Curry Station chum salmon escapement were fish that passed Talkeetna Station along the east side of the river (Table 39). The remainder, 24 percent, were west bank migrating fish at RM 103. With respect to crossover, a higher percentage of the east bank than west bank migrating fish at Talkeetna

Table 39. Comparison of the number of pink salmon tags deployed by bank at RM 103 to the number of tag numbered recaptures by bank at RM 120, 1984.

River Bank	Number of Fish Tagged at RM 103	Tag Numbered Recaptures at RM 1[illegible] from RM 103	
		East Bank Wheel	West Bank Wheel
East	5,144	141	44
West	6,188	49	9
TOTALS	11,332	190	53

Station that reached Curry Station had switched banks (Table 39). The respective levels were 24 and 16 percents.

A representative age, length (FL) and sex sample was collected from middle river chum salmon escapements to Talkeetna (RM 103) and Curry (RM 120) stations in 1984. The escapements to both stations were comprised of three to six year old fish (Table 36 and Figure 45). The majority (69-71%) of the fish were four year olds followed by five year olds (17-23%). All the chum salmon reaching Talkeetna and Curry stations in 1984 had migrated to sea as juveniles in their first year of life. Chum salmon lengths at Talkeetna Station in 1984 averaged 8 mm longer than at Curry Station (Appendix Figures 5-19 and 5-20). The respective length averages were 605 mm and 597 mm. As expected, the longest lengths were represented in the older age classes. Overall males averaged 12 mm more length than the females at both stations. Also male chum salmon were more abundant than females (Table 38). The male to female ratio at Talkeetna Station was 1.4:1 and at Curry Station 2.0:1.

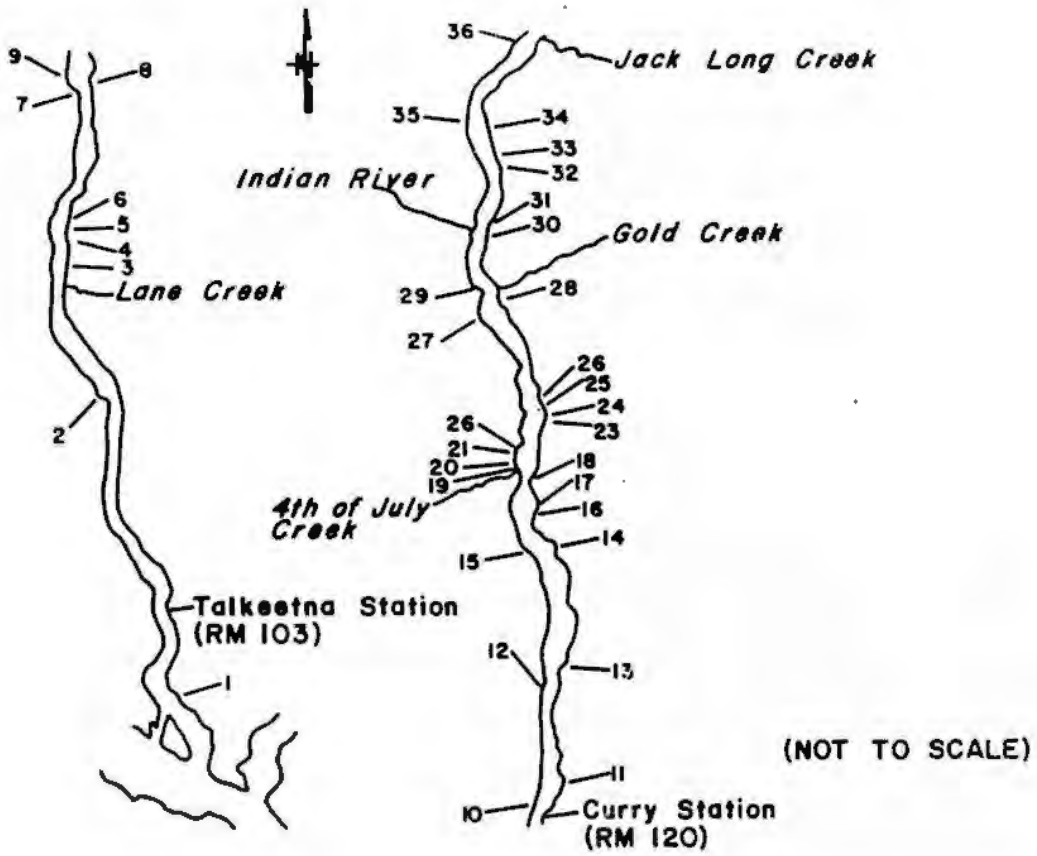
3.1.4.2.2 Spawning Ground Surveys

3.1.4.2.2.1 Mainstem

In 1984, 36 mainstem chum salmon spawning areas were identified in the Susitna River middle reach (Figure 47). Nine sites were found downstream of Curry Station (RM 120) and 27 upstream.

The earliest date chum salmon were observed spawning in the mainstem was on September 1 and the latest on September 29, 1984 (Appendix 6). The peak spawning likely occurred in the first and second weeks of August based on peak, live fish counts. However, spawning may have peaked as much as a week earlier. Due to the turbid, mainstem conditions through the month of August in 1984, survey visibility was 'poor'. This essentially prevented documentation of earlier spawning, if present.

The peak count of live chum salmon in the 36 mainstem spawning areas in 1984 totaled 1,266 fish. Assuming this count represents about a third of the total population, approximately 3,800 fish spawned in the middle mainstem Susitna River reach in 1984. The basis for expanding the peak count by a factor of 3.0 is based on information in report section 3.1.4.2.2.3 and Barrett et al, (1984) that indicate a peak live and dead count of chum salmon represents about 50 percent of an actual escapement under ideal survey conditions. Considering that there were 'poor', mainstem survey conditions in late August near the peak spawning period and dead fish were not counted due to the uncertainty of their origin, an expansion factor of 3.0 was considered reasonable.



Map Id Number	Location RM	Bank	Highest Fish Count	Spawning Observation Dates	Map Id Number	Location RM	Bank	Highest Fish Count	Spawning Observation Dates
1	100.9	R	89	9/15-29/84	19	131.1	L	81	9/1-8/84
2	110.1	L	4	9/1-8/84	20	131.3	L	57	9/8-29/84
3	114.0	C	46	9/15/84	21	131.5	L	102	9/8-24/84
4	114.6	R	69	9/1-22/84	22	131.7	L	20	9/8-22/84
5	115.0	R	15	9/1-29/84	23	131.8	L	18	9/15/84
6	115.1	R	50	9/8/84	24	134.6	L	2	9/29/84
7	118.9	L	21	9/1-15/84	25	135.1	R	8	9/15/84
8	119.1	L	15	9/1-15/84	26	135.2	R	40	9/15/84
9	119.4	L	2	9/8/84	27	136.1	R	131	9/1-8/84
10	120.9	L	5+redds	10/13/84	28	136.3	R	31	9/8/84
11	121.6	R	2	9/15/84	29	136.8	R	6	9/15/84
12	124.0	L	18	9/22/84	30	138.7	L	36	9/8-15/84
13	124.9	C	8	9/8-29/84	31	139.0	L	87	9/1-22/84
14	128.3	R	73	9/8-15/84	32	140.5	R	6	9/15/84
15	128.6	R	77	9/1-29/84	33	140.8	R	2	9/15/84
16	129.8	R	18	9/1-15/84	34	141.4	R	45	9/1/84
17	130.0	R	5	9/8/84	35	141.6	R	1	9/15/84
18	130.5	R	36	9/1-15/84	36	143.3	L	45	9/1/84

Figure 47. Chum salmon spawning areas in Susitna River mainstem middle reach, 1984.

Of the estimated 3,800 chum salmon spawning in the mainstem about 265 fish spawned below Talkeetna Station (RM 103) and 930 fish below Curry Station (RM 120) in 1984. In relation to the total estimated escapements to these stations, about 3.6 percent of the Talkeetna Station escapement spawned in the mainstem above RM 103 and 5.8 percent of the Curry Station escapement spawned above RM 120 in the mainstem.

3.1.4.2.2.2 Streams

In 1984, 11 streams were occupied by chum salmon in the middle river reach (Appendix Table 6-2). Peak spawning ground counts of these streams totaled 3,814 fish (Table 40). The majority, 98 percent, of the fish counted were in Indian River (RM 138.6), Portage Creek (RM 148.9) and Fourth of July Creek (RM 131.1) (Figure 48). Spawning in these streams extended from about the last week of July through the first week of October. Peak spawning occurred in the second and third weeks of August (Appendix Table 6-2).

The chum salmon spawning areas and upper limits of migration for the occupied streams in 1984 are illustrated in Appendix 6. Spawning occurred in the Susitna River interface of most of these streams. In Indian River (RM 138.6) chum salmon spawned in the first nine miles with major spawning occurring in the first two miles. At Portage Creek (RM 148.9) chum salmon extended about 7.5 miles upstream to Thorofare Creek (TRM 7.5). Spawning was discontinous in this reach. Chum salmon entering Fourth of July Creek (RM 131.1) spawned from the Susitna River interface to a point about 1.5 miles upstream. The major spawning was in the Susitna River interface.

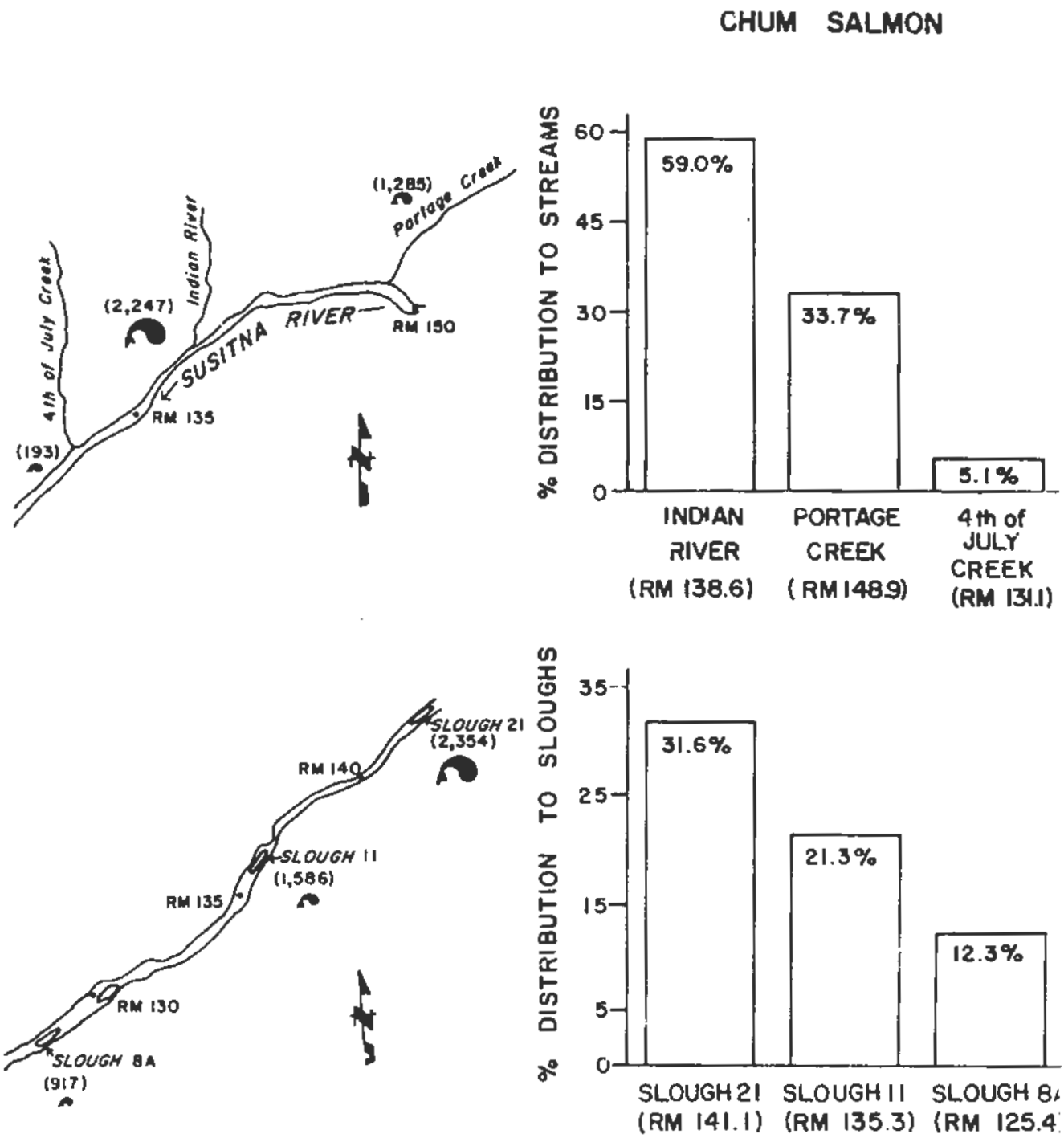


Figure 48. The three major streams and sloughs above RM 98.6 used by chum salmon and the respective percent spawner distribution, 1984.

The general importance of the chum salmon spawning habitat in the lower reach, including the mouth, of Indian River (RM 138.6) and Portage Creek (RM 148.9) can be determined by comparing escapement counts within sub reaches (Appendix Table 6-2). As illustrated in Figures 49 and 50 relatively high counts of live chum were recorded by ground and helicopter surveys in the index reach of these streams through the entire spawning period. About 45 percent of the peak helicopter chum salmon count was recorded in the first one mile reach of Indian River, and 21 percent of the peak count of Portage Creek was logged in the first one-quarter mile. These percentages indicate that both lower reaches or specifically the first one mile of Indian River and the first one-quarter mile of Portage Creek were major chum salmon spawning areas in 1984.

The 1984 chum salmon escapement to middle reach Susitna River streams was approximately 7,628 fish. This estimate was determined by expanding the total peak count by a 2.0 factor which assumes a peak count represents 50 percent of the actual escapement (Table 40) (Cousens et al, 1982).

All the chum salmon spawning in middle reach streams occurred above Talkeetna Station (RM 103) and 98 percent occurred above Curry Station (RM 120) in 1984 (Table 40). Comparing the estimated chum salmon escapement for middle reach streams to the estimated mainstem escapement at Talkeetna and Curry stations it can be determined that about 8 percent (7,628) of the escapement reaching Talkeetna Station and 15 percent (7,482 fish) of the Curry Station escapement were stream spawning fish.

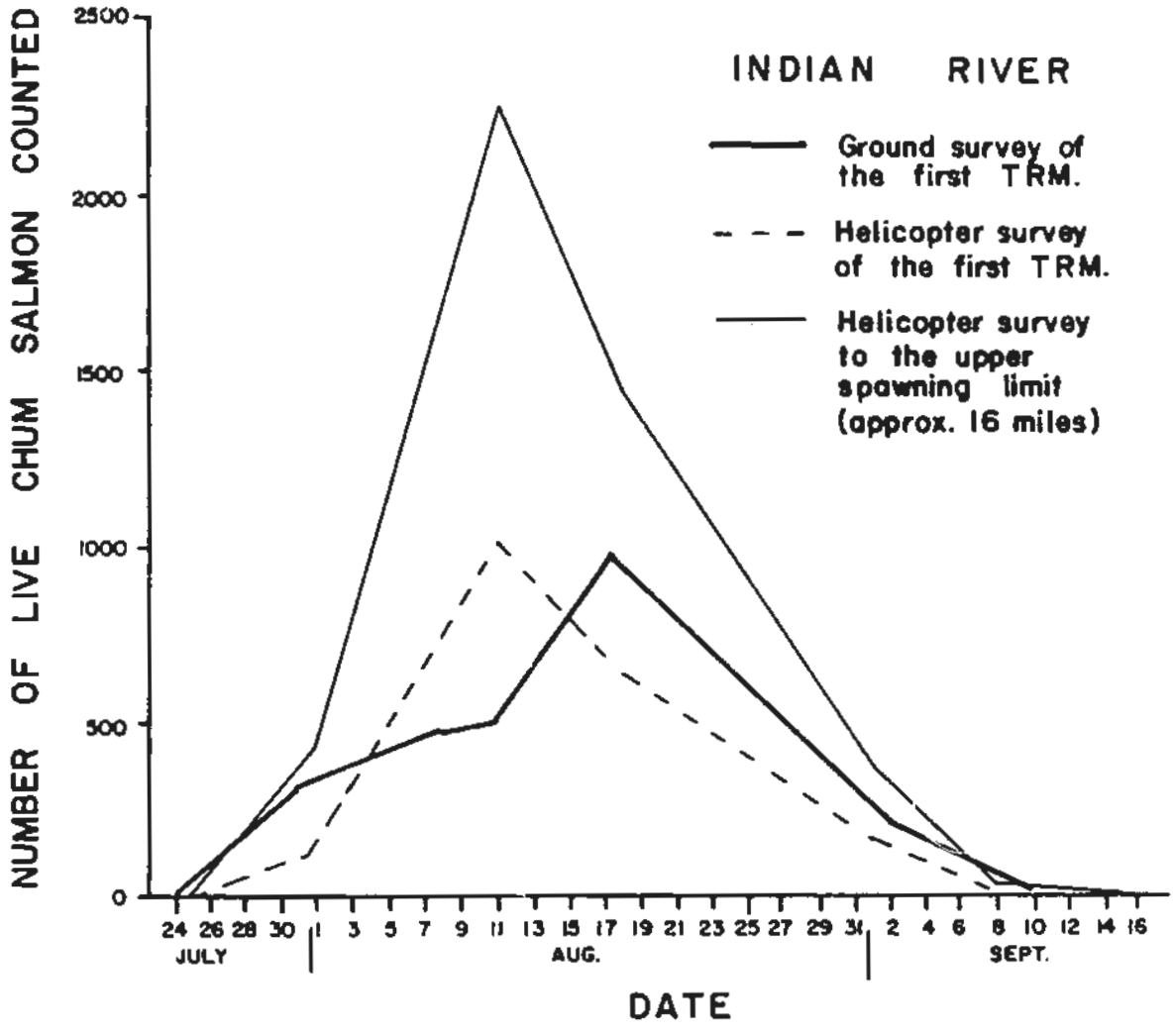


Figure 49. Peak chum salmon ground and helicopter survey counts at Indian River in 1984.

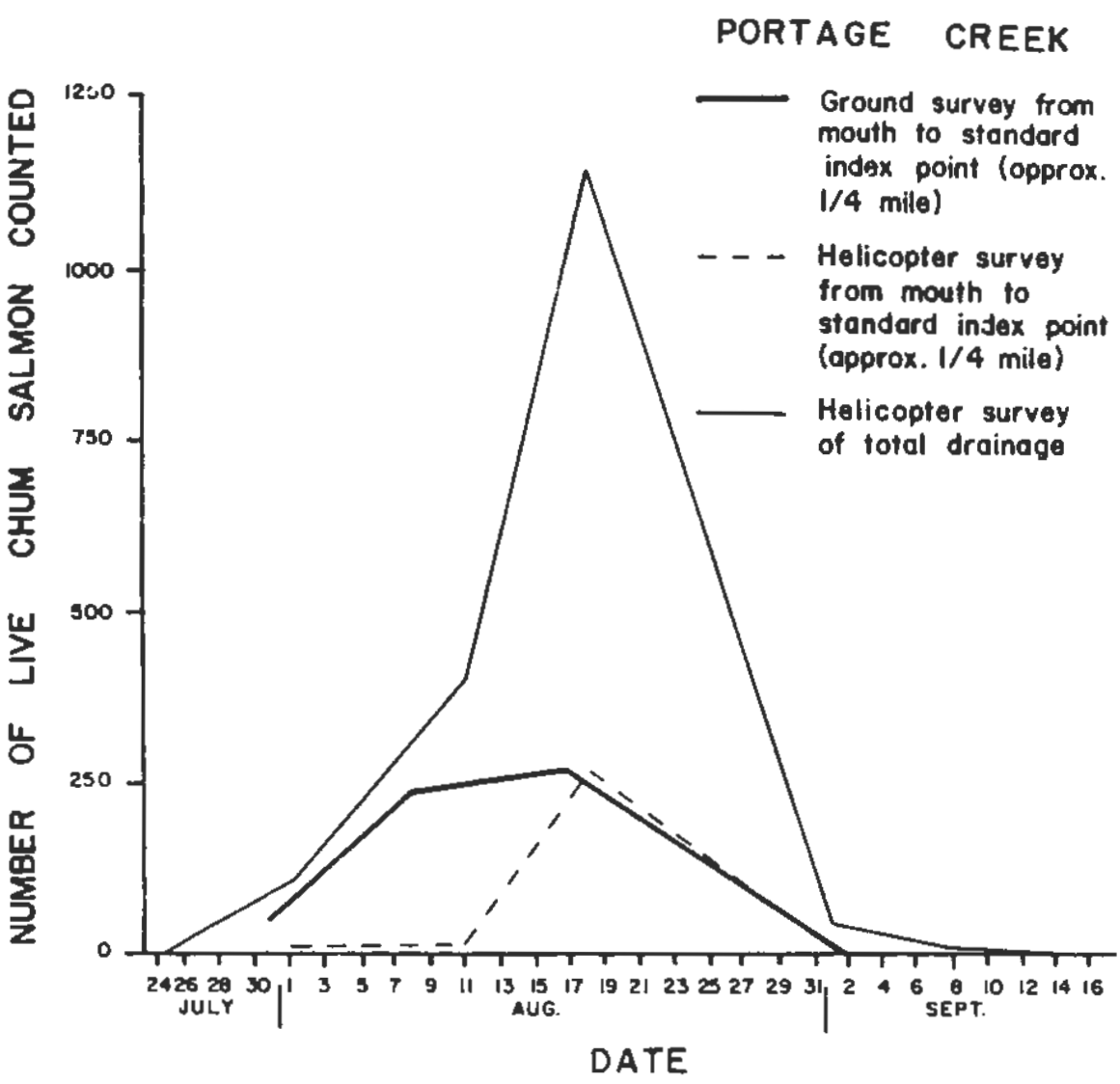


Figure 50. Peak chum salmon ground and helicopter survey counts of Portage Creek in 1984.

Table 40. Chum salmon peak 1984 escapement counts for streams above RM 98.6.

Stream	River Mile	Date	Number Counted		
			Live	Dead	Total
Chase Creek	106.9	8/16	0	1	1
Lane Creek	113.6	8/21	17	14	31
L. McKenzie Creek	116.2	8/27	23	0	23
Little Portage Cr.	117.7	8/20	17	1	18
5th of July Creek	123.7	8/6	2	0	2
Skull Creek	124.7	8/20	2	2	4
Sherman Creek	130.8	8/13	6	0	6
4th of July Creek	131.1	8/13	172	21	193
Indian River	138.6	8/11	2,247	0	2,247
Jack Long Creek	144.5	8/8	4	0	4
Portage Creek	148.9	8/18	1,151	134	1,285
		TOTALS	3,641	173	3,814

3.1.4.2.2.3 Sloughs

3.1.4.2.2.3.1 Observation Life

In 1984, 1,019 chum salmon were released with large numbered Petersen disc tags at Curry Station (RM 120) to determine the observation life of fish entering sloughs A' (RM 124.6), 8A (RM 125.1) and 11 (RM 135.3) and secondarily, the length of time chum salmon spent between being tagged at Curry Station and slough entrance. A total of 128 of these marked chum salmon entered the three sloughs (Figure 51). The mean average time spent by these fish from being tagged and slough entrance was 19 days (Figure 51). The averages ranged from 14.1 days for Slough A' fish to 20.4 days for Slough 11 fish.

Chum salmon in 1984 ascended the Susitna River middle reach between

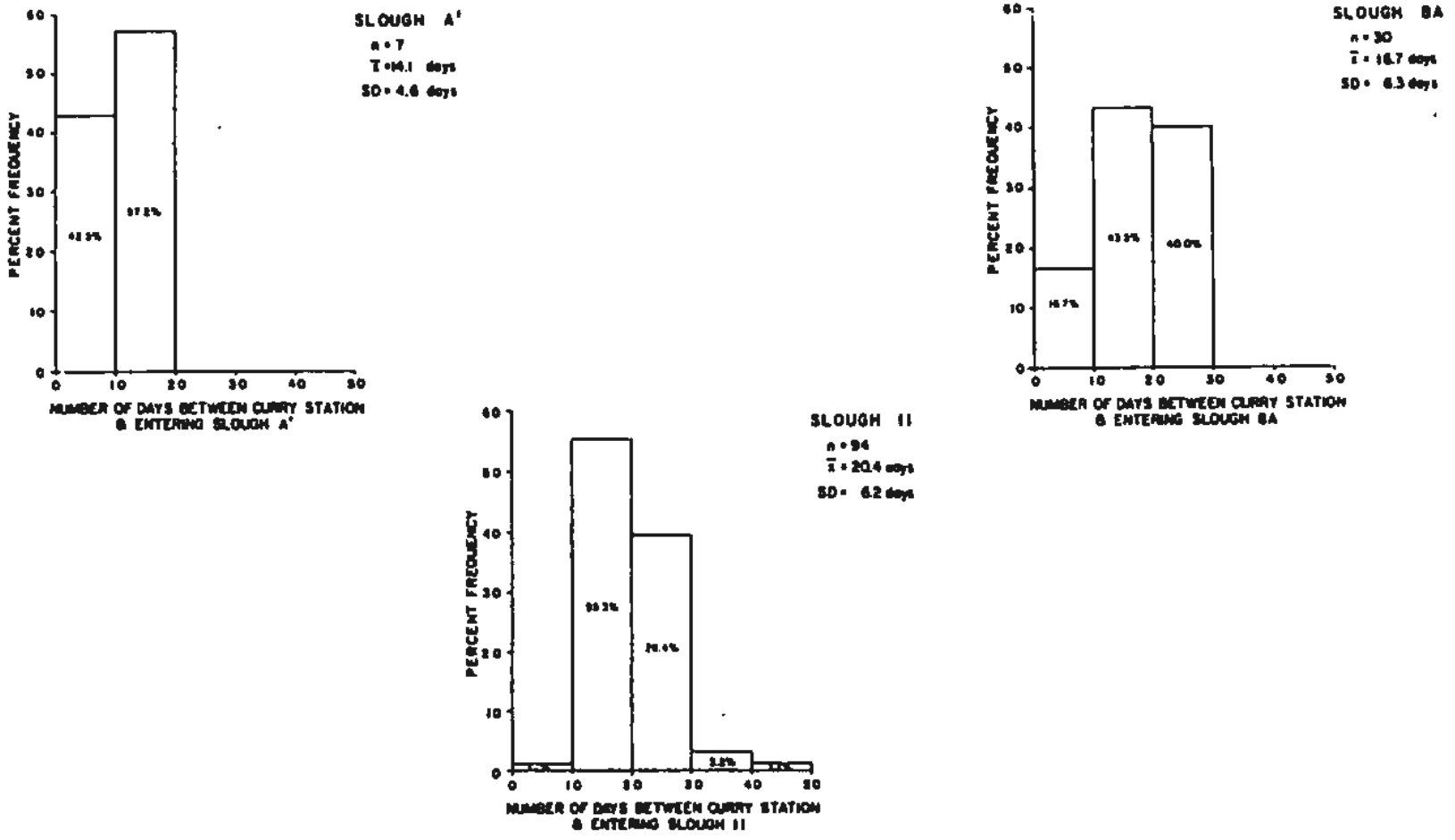


Figure 51. Percent frequency of the number of days tagged chum salmon spent between the time of being tagged at Curry Station and entering sloughs A, 8A and 11, 1984.

Talkeetna (RM 103) and Curry (RM 120) stations at a average speed of 8.5 mpd (Section 3.1.4.2.1). Considering this travel speed it is probable that the majority of the average 19 days chum salmon spent between Curry Station and entering sloughs A' (RM 124.6), 8A (RM 125.1) and 11 (RM 135.3) was time ripening in the Susitna River mainstem. Further evidence of a several week ripening period can be found by comparing the peak chum salmon fishwheel catches at Talkeetna and Curry stations with peak chum salmon live counts in sloughs upstream (Figure 46 and Appendix Table 6-3). A several week lag occurred between the time chum salmon passed these tagging stations and fish entered sloughs 8A, 11 and 21 (Section 3.1.4.2.1). Also in 1984, numerous chum salmon were observed spawning in habitats miles downstream of where they were tagged which provides direct evidence that not all chum salmon migrate directly to their spawning area (Appendix Table 6-1). Milling or straying upstream of a spawning area is probably a secondary response to fish using the mainstem for ripening more than a by-product of fish seeking out a new spawning habitat or not initially recognizing a natal area.

Chum salmon occupying sloughs A' (RM 124.6), 8A (RM 125.1) and 11 (RM 135.3) in 1984 had an average observation life of 6.8 days (Figure 52). The lowest average observation life was at Slough 11 (6.1 days) and the highest at Slough 8A (7.9 days).

The observation life estimates identified above reflect the average number of days individual chum salmon occupied three sloughs of the middle Susitna River reach in 1984. These estimates do not, however, represent the spawning life of chum salmon in these sloughs because not

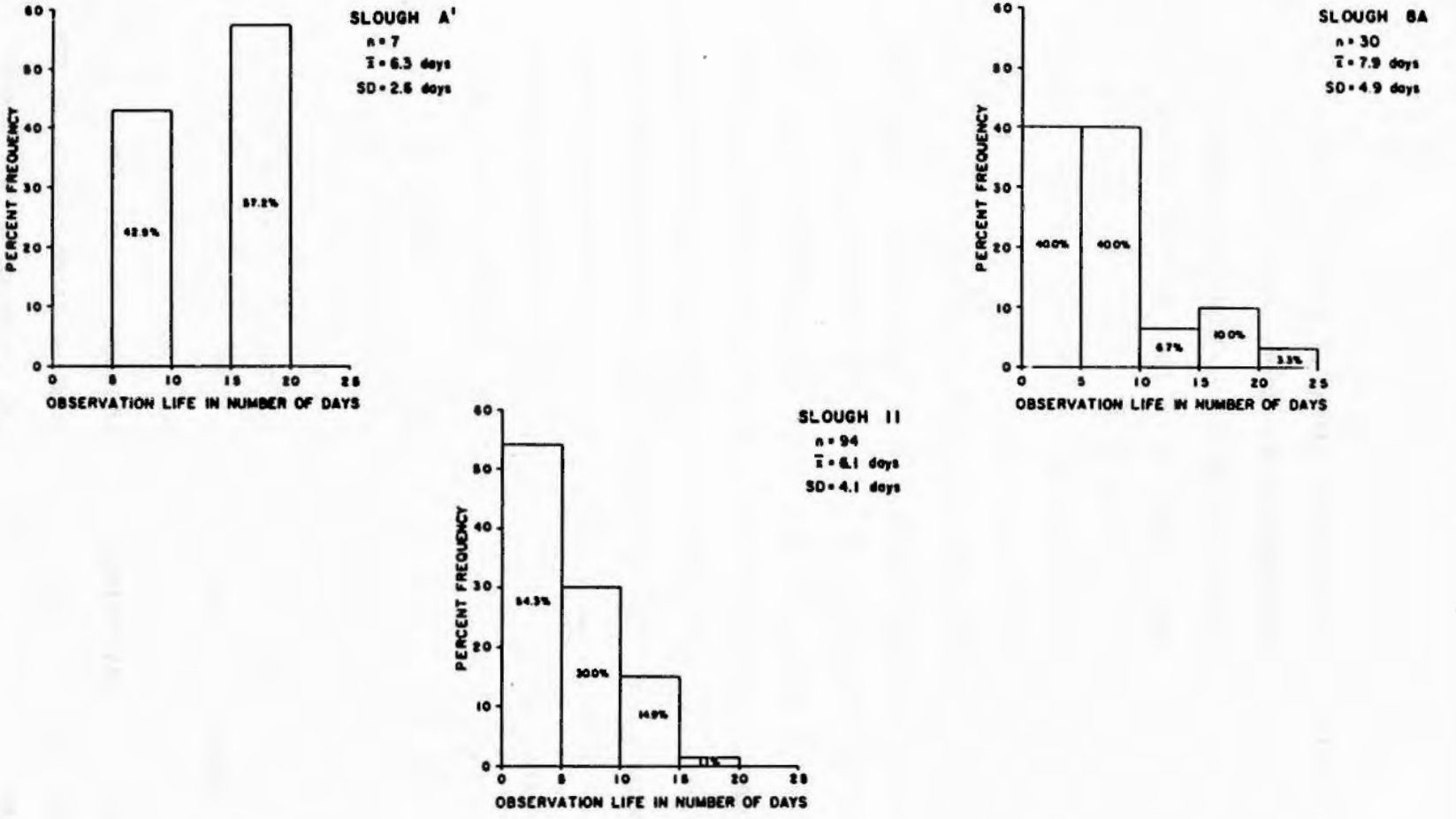


Figure 52. Percent frequency of observation life for chum salmon at sloughs A', 8A and 11, 1984.

all monitored fish initiated spawning. Some of the chum salmon which entered these sloughs spawned elsewhere. At least three of the 131 chum salmon monitored at sloughs A' (RM 124.6), 8A (RM 125.1) and 11 (RM 135.3) entered more than one slough. For example, one chum salmon entered Slough 8A, remained there for about a week and then left and four days later entered Slough 11 where it spawned over a period of 11 days. About 18 percent of the chum salmon monitored for observation life were only located once in the three study sloughs and because these fish were never relocated or observed spawning, many were probably using these sloughs for milling or ripening purposes only. An unknown percentage of the fish observed but once, however, may have been removed by predation, namely by bears which commonly fed at these sloughs. Overall, 18.8 percent (mean average) of the monitored fish at sloughs A', 8A, and 11 did not initiate spawning in the slough of first recorded entry. The lowest percentage (14.3%) occurred at Slough A and the highest (25.3%) was recorded at slough 11 (Table 41).

The spawning distribution of chum salmon monitored for observation life in sloughs 8A (RM 125.1) and 11 (RM 135.3) is outlined in Table 41. The distribution figures indicate that for these sloughs chum salmon spawning in 1984 was relatively light at the confluence. The lower slough reaches were used more for spawning than the upper slough reaches. In comparison, sockeye salmon spawned more in the upper areas of these sloughs than in the lower areas (Section 3.1.2.2.2.2.3).

Table 41 . Percentages of chum salmon monitored for observation life that initiated spawning by habitat zone at sloughs A', 8A, and 11, 1984.

Slough with RM 1/	n 2/	Percent Spawning	Spawning Locations 3/ by Habitat Zone							Percent Not Spawning 4/
			1	2	3	4	5	6	7	
A' RM 124.6	7	85.7	-	-	-	-	-	-	-	14.3
8A RM 125.1	30	83.3	3.3	33.3	46.7	-	-	-	-	16.7
11 RM 135.3	94	74.7	2.1	16.0	16.0	23.4	4.3	11.7	1.1	25.3

1/ RM = River Mile

2/ Total sample for sloughs A', 8A and 11 equals 131; 128 individual fish were actually monitored as three individuals spend time in both sloughs.

3/ Habitat zones defined in Appendix Figures 6-4 and 6-5.

4/ Includes milling fish and bear killed and other pre-spawning mortalities.

3.1.4.2.2.3.2 Escapement Surveys

In 1984, 29 sloughs in the middle river reach contained adult chum salmon (Appendix Table 6-3). Twenty seven of these were spawning areas. Sloughs 14 (RM 135.9) and 15 (RM 137.2) were considered milling areas due to the absence of observed spawning activity. The 100 chum salmon that milled in Slough 15 were probably Indian River (RM 138.6) destine fish due to the early date (8/8/84) of the observation and the proximity of Slough 15 and Indian River. The single chum salmon recorded in Slough 14 was probably a stray from a nearby stream, mainstem or slough spawning area.

The highest concentrations of chum salmon were observed in sloughs 21 (RM 141.1), 11 (RM 135.3) and 8A (RM 125.4) in 1984 (Figure 48). Peak counts of these sloughs totaled 4,857 fish or 64 percent of the total peak count of all middle reach sloughs (Table 42).

Table 42. Chum salmon peak 1984 escapement counts for sloughs above RM 98.6.

Slough	River Mile	Date	Number Counted		
			Live	Dead	Total
1	99.6	9/6	11	1	12
2	100.2	9/6	118	11	129
3B	101.4	9/6	46	10	56
3A	101.9	9/17	1	16	17
8	113.7	9/5	51	14	65
Bushrod	117.8	8/20	86	4	90
8D	121.8	9/6	8	41	49
8C	121.9	9/13	49	72	121
8B	122.2	8/31	379	21	400
Moose	123.5	9/3	38	38	76
A'	124.6	8/13	109	2	111
A	124.7	8/26	1	1	2
8A	125.4	9/3	646	271	917
B	126.3	9/4	76	32	108
9	128.3	9/4	221	129	350
9B	129.2	8/26	71	2	73
9A	133.8	9/4	261	42	303
10	133.8	8/26	36	0	36
11	135.3	9/17	44	1,542	1,586
13	135.9	8/27	19	3	22
14	135.9	8/27	1	0	1
15	137.2	8/8	100	0	100
16	137.3	9/1	15	0	15
17	138.9	9/2	47	19	66
18	139.1	9/2	10	1	11
19	139.7	9/2	30	15	45
20	140.0	9/2	117	163	280
21	141.1	9/2	1,643	711	2,354
22	144.5	9/2	109	42	151
21A	145.3	8/17	0	10	10
		TOTALS	4,343	3,213	7,556

Chum salmon spawned in the three major sloughs identified above between the first week of August and the last week of September, 1984 (Figure

53). The peak of spawning was in the last week of August and first week of September.

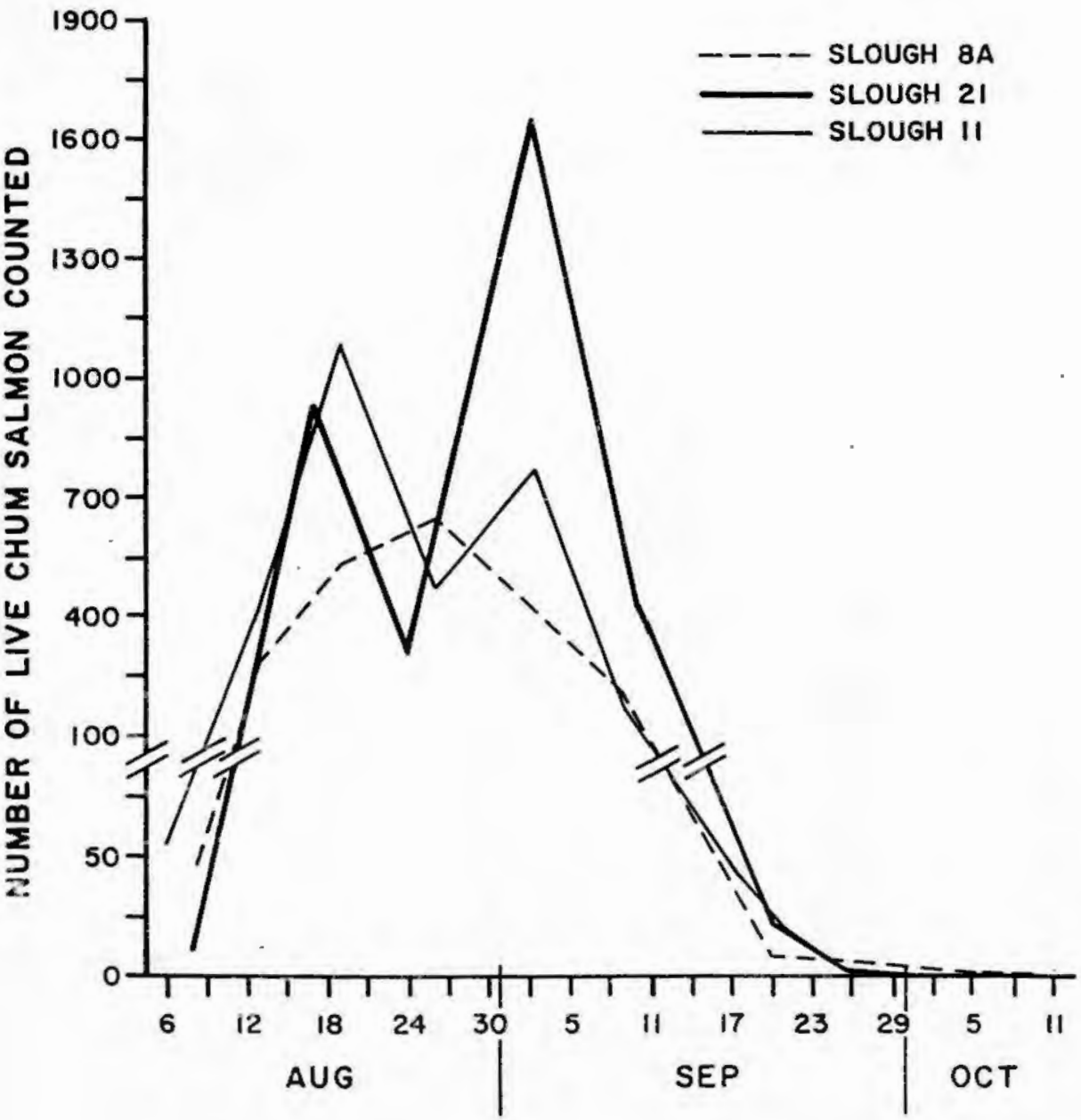


Figure 53. Chum live counts by date in sloughs 8A, 11 and 21, 1984.

The total peak spawning count of 7,556 chum salmon to middle reach sloughs in 1984 represents only an escapement index (Table 42) (Cousens et al, 1984). The total escapement to sloughs for the middle river reach in 1984 is estimated 14,634 fish based on observation life and survey data in Table 43 and Appendix 6. Comparatively, this estimate is about 15 and 30 percents respectively of the estimated escapements to Talkeetna (RM 103) and Curry (RM 120) stations.

3.1.4.2.2.3.3 Egg Retention

In 1984, 315 female chum salmon were examined for egg retention at 11 sloughs in the middle Susitna River reach (Table 44). The highest retentions were found in sloughs 11 (RM 135.3) and 21 (RM 141.1). These same sloughs also supported the highest escapements (Table 43). Most (76.8%) of the female chum salmon had completely spawned in the 11 sloughs sampled (Figure 54). The average and median egg retention was 463 and 1 eggs respectively.

Table 43. Total 1984 chum salmon slough escapements between RM 98.6 and 161.0.

Slough	River Mile	Total Fish Days [1]	Peak Live-Dead Survey Count	Mean Observation Life in Days	Slough Escapement	% of Total Slough Escapement	% of Curry [2] Station Escapement
1	99.6		12[3]	-	46	0.3	0.1
2	100.2	1,261.8	129	6.7	188	1.3	0.4
3B	101.4	729.5	56	6.7	109	0.7	0.2
8	113.7	1,451.8	65	6.7	217	1.5	0.4
Bushrod	117.8	1,077.5	90	6.7	161	1.1	0.3
8D	121.8	402.0	49	6.7	60	0.4	0.1
8C	121.9	1,387.4	121	6.7	207	1.4	0.4
8B	122.2	5,764.5	400	6.7	860	5.9	1.7
Moose	123.5	1,900.5	150	6.7	284	1.9	0.6
A'	124.6	1,367.3	111[3]	6.3	217	1.5	0.4
A	124.7		2[3]	-	8	0.1	0.1
8A	125.4	18,826.2	917	7.9	2,383	16.3	4.8
B	126.3	1,126.1	108	6.7	168	1.2	0.3
9	128.3	2,036.5	350	6.7	304	2.1	0.6
9B	129.2	882.1	73	6.7	132	0.9	0.3
10	133.8	602.2	36	6.7	90	0.6	0.2
9A	133.8	3,535.4	303	6.7	528	3.6	1.1
11	135.3	20,851.2	1,586	6.1	3,418	23.4	6.9
13	135.9	86.5	22[3]	6.7	16	0.1	0.1
14	135.9		1[3]	-	4	0.1	0.1
15	137.2	450.9	100	6.7	67	0.5	0.1
16	137.3	136.1	15	6.7	20	0.1	0.1
17	138.9	1,365.4	70[3]	6.7	204	1.4	0.4
18	139.1		11[3]	-	42	0.3	0.1
19	139.7	681.4	45	6.7	102	0.7	0.2
20	140.0	2,204.5	280	6.7	329	2.3	0.7
21	141.1	28,443.0	2,354	6.7	4,245	29.0	8.6
22	144.5	1,253.4	151[3]	6.7	187	1.3	0.4
21A	145.3		10[3]	-	38	0.3	0.1
	TOTALS	97,823.21	7,617	-	14,634	100.2[4]	29.3

1/ Number of fish days were calculated for sloughs that had peak survey counts 15 fish. Refer to Section 2.3.5 for detailed data analysis procedures.

2/ 1984 Curry Station chum salmon escapement was approximately 49,300 fish.

3/ Total slough escapement into sloughs having peak live-dead survey counts of 15 fish were computed by multiplying the peak live-dead survey count by 3.8. This value represents the summation of the estimated slough escapement divided by the summation of the peak live-dead survey counts for all sloughs with peak survey counts 50 fish.

4/ Rounding error.

Table 44. Egg retention of chum salmon at eleven selected sloughs in the Susitna River middle reach, 1984.

Spawning Slough with RM [1/]	Sample Size	Egg Retention		
		Mean	Median	Range
Slough 8D RM 121.8	8	48	9	0-300
Slough 8C RM 121.9	7	227	1	0-1,498
Slough 8B RM 122.2	16	43	1	0-500
Moose Slough RM 123.5	6	0	-	-
Slough A' RM 124.6	44	159	1	0-2,936
Slough 8A RM 125.4	92	210	1	0-2,936
Slough 9B RM 129.2	1	2,936	-	-
Slough 11 RM 135.3	97	835	2	0-2,936
Slough 20 RM 140.0	4	113	98	5-251
Slough 21 RM 141.1	31	485	5	0-2,936
Slough 22 RM 144.5	9	39	0	0-350
TOTALS	315	463	1	0-2,936

[1/] RM = River Mile

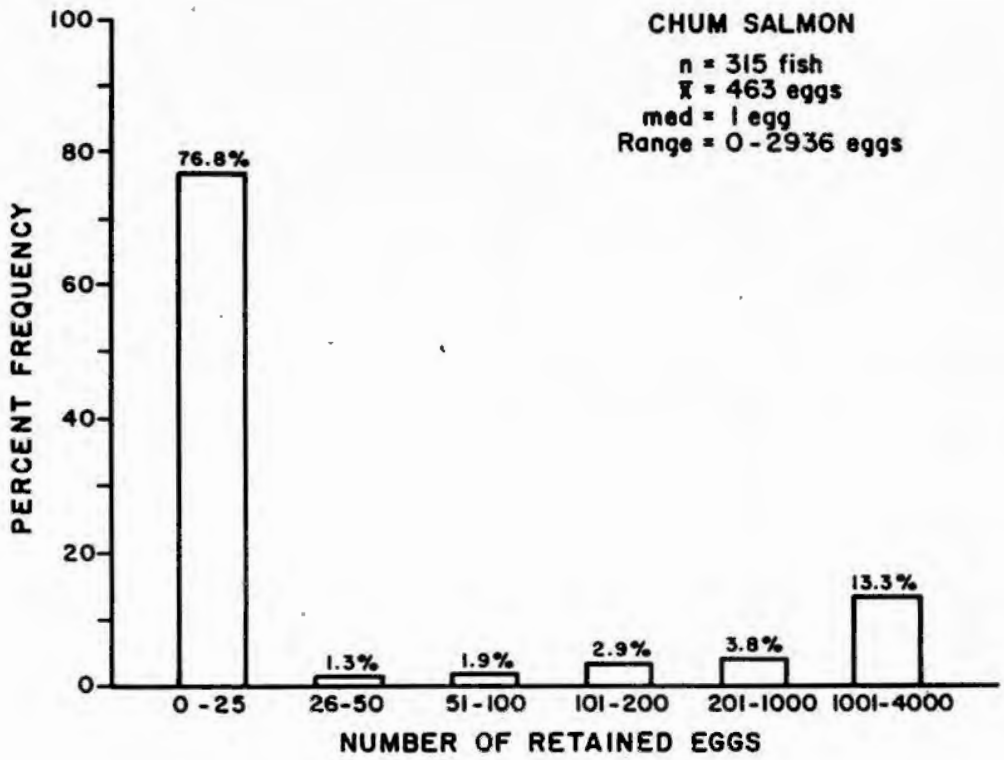


Figure 54. Percent frequency of the number of retained eggs at eleven sloughs in the middle Susitna River reach, 1984.

3.1.5 Coho Salmon

The Susitna River is the largest single coho salmon producing system in Upper Cook Inlet, contributing annually about 50 percent of the commercial harvest in this district (ADF&G, 1982 and Barrett, 1983). Susitna River coho salmon also contribute to a growing recreational fishery (Mills, 1983). Within the Susitna River drainage there are a minimum, 25 spawning populations (ADF&G, 1982 and ADF&G, 1983). The majority spawn in the lower Susitna River reach below RM 80 (ADF&G, 1982).

The minimum Susitna River escapements for the three previous years have been 37,000 fish (1981), 80,000 fish (1982) and 24,100 fish (1983) (Barrett et al, 1984). These minimum estimates do not include escapements to systems below RM 80 except the Yentna River (RM 28). The minimum 1984 coho salmon escapement based on a Petersen tag and recapture estimate at RM 22 was 190,100 fish (Section 3.1.5.1.1).

The following report subsection presents the results of sampling the 1984 coho salmon escapements in the Susitna River lower and middle reaches.

3.1.5.1 Lower River

3.1.5.1.1 Main Channel Escapement Monitoring

The 1984 coho salmon escapements were estimated for the Susitna River

lower reach at Flathorn (RM 22), Yentna (TRM 04) and Sunshine (RM 80) stations. The estimated escapements to these stations were 190,100 fish (Flathorn Station), 18,200 fish (Yentna Station) and 94,700 fish (Sunshine Station) (Tables 45 and 19, and Figure 55). Estimated escapements were derived by the Petersen tag and recapture method at Flathorn and Sunshine stations and by SSS at Yentna Station. The 95 percent confidence intervals associated with the Petersen estimates are presented in Table 45.

Table 45. Petersen population estimates with associated 95% confidence intervals for 1984 coho salmon migration to Flathorn, Sunshine, Talkeetna and Curry stations.

Parameter 1/	Population Estimate Location			
	Flathorn Station	Sunshine Station	Talkeetna Station	Curry Station
m	2,703	9,448	1,304	262
c	12,727	3,839	1,817	165
r	181	383	200	20
$\hat{N}$	190,061	94,702	11,847	2,162
95% C.I.	166,044-222,202	86,484-104,646	10,477-13,629	1,532-3,669

1/ m = Number of fish marked.

c = Total number of fish examined for marks during sampling census.

r = Total number of marked fish observed during sampling census.

$\hat{N}$ = Population estimate.

C.I. = Confidence Interval around $\hat{N}$.

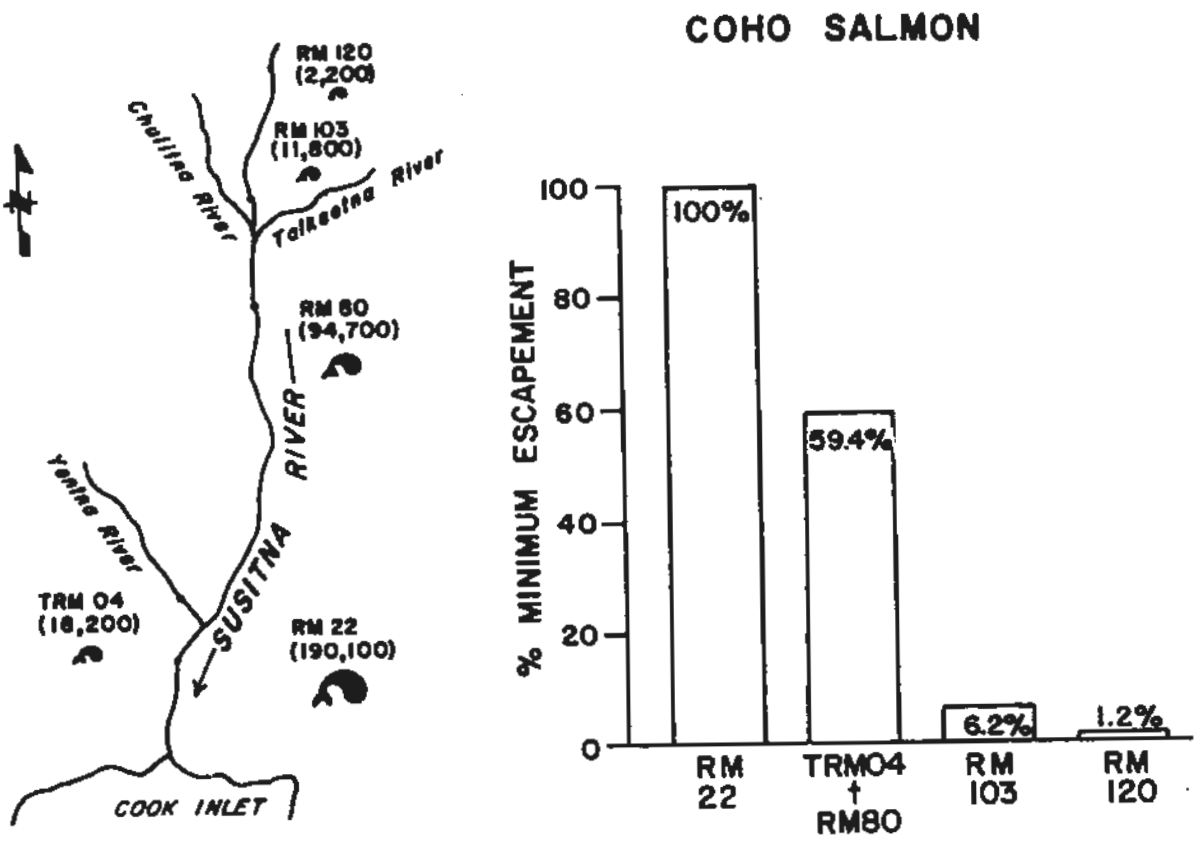


Figure 55. A comparison of the total estimated coho salmon escapement for the Susitna River drainage to the estimated TRM 04, RM 80, 103 and 120 escapements, 1984.

The minimum coho salmon escapement into the Susitna River drainage was 190,100 fish in 1984 as defined by the estimated escapement to RM 22. Below RM 22, only Fish (RM 7.0) and Alexander (RM 9.8) creeks drainages are known to support coho salmon spawning populations (ADF&G, 1982). The coho salmon escapements to these drainages are not included in the minimum Susitna River escapement. The historic peak survey counts were 380 fish in Red Shirt Creek (1952) (Fish Creek drainage) and 2,000 fish in Alexander Creek (1964) (ADF&G, 1982).

The geographic distribution of coho salmon in the lower Susitna River

reach above RM 22, based on 1984 escapement monitoring at Flathorn (RM 22), Yentna (TRM 04) and Sunshine (RM 80) stations, is illustrated in Figure 55. As shown, escapements to Yentna and Sunshine stations account for about 60 percent of the escapement to RM 22. The remaining 40 percent of the escapement which reached RM 22 spawned in the Susitna River reach below RM 80 excluding the Yentna River.

The coho salmon migrational timing at Flathorn (RM 22), Yentna (TRM 04) and Sunshine (RM 80) stations was determined from 1984 station fishwheel catches (Figures 56 and 57, and Appendix 2). The migration at Flathorn Station extended for approximately five weeks, from July 18 to August 21. The migration midpoint occurred on July 29 in the east channel and on July 25 in the west channel. There is little difference between east channel and west channel coho salmon passage timing at RM 22, based on fishwheel catches. In the Yentna River (RM 28) at Yentna Station the coho salmon migration covered approximately a one month period, from July 21 to August 22. The migration midpoint was on August 3. At Sunshine Station coho salmon were generally present 30 days, from July 29 to August 29. The migration midpoint was August 11 (Figure 57).

Coho salmon migratory distributions at Flathorn (RM 22), Yentna (TRM 04) and Sunshine (RM 80) stations were based on 1984 station fishwheel catches (Table 6 and Appendix 2). At RM 22 the Susitna River is divided into two channels by a large island complex. Fishwheels were deployed off both mainland banks and off each side of the largest island. Each wheel was individually identified by channel (east or west) and bank (right or left) (Appendix Figure 1-1). Individual fishwheel catches,

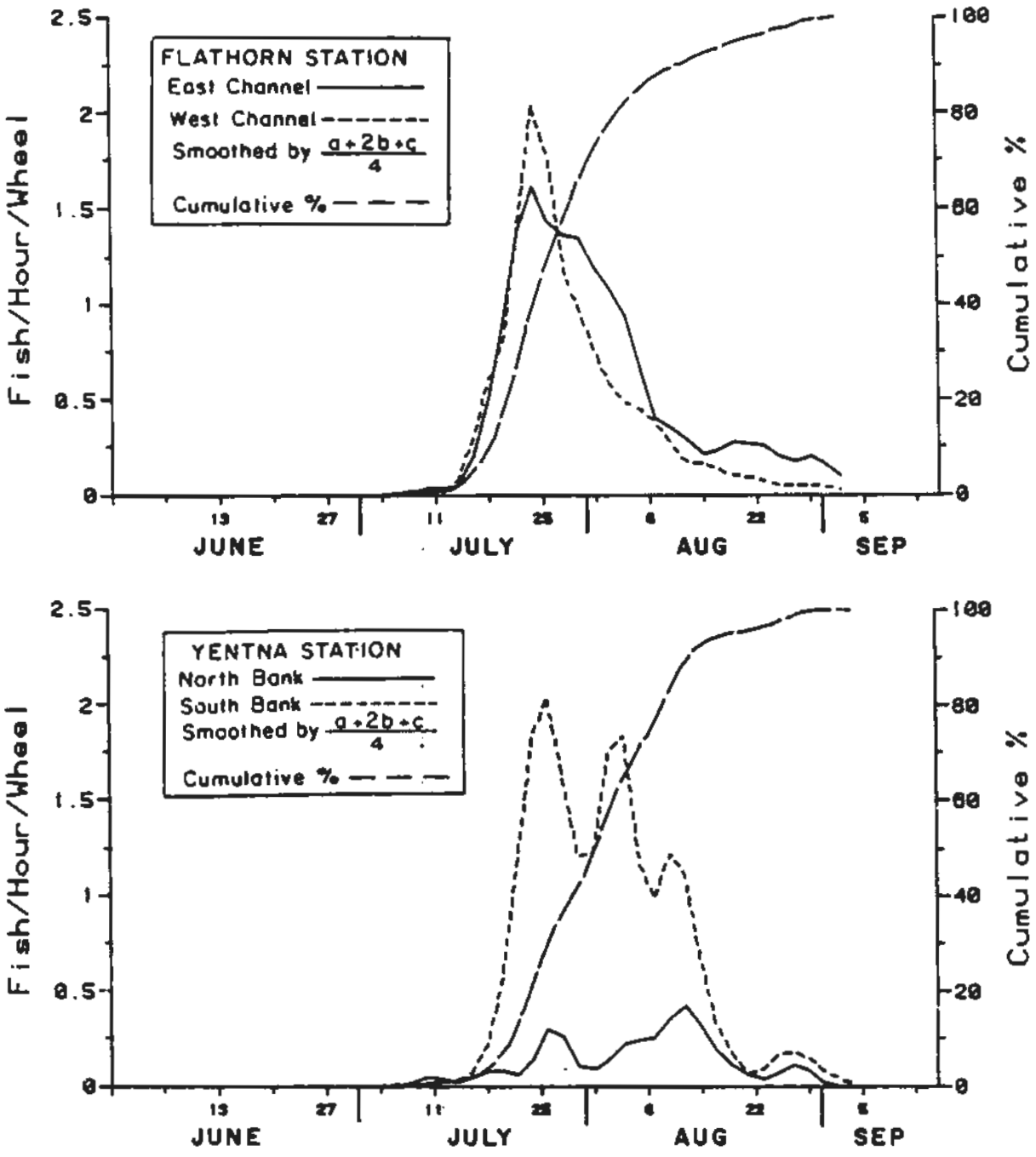


Figure 56. Mean hourly and cumulative percent fishwheel catch of coho salmon by two day periods at Flathorn and Yentna stations, 1984.

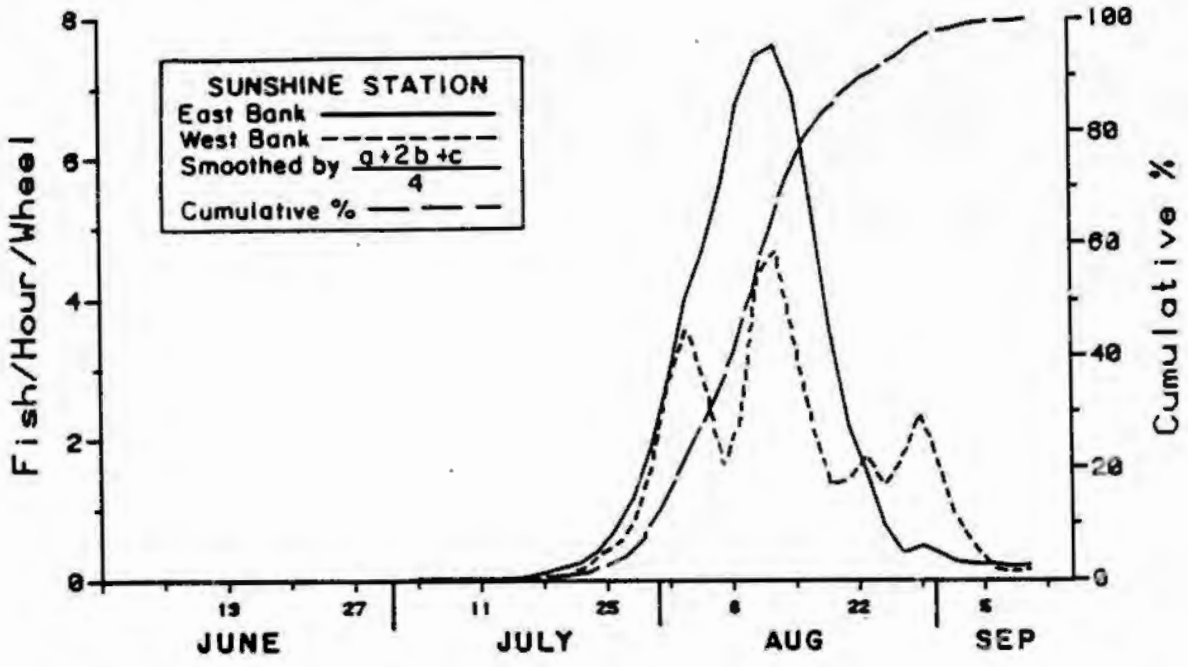


Figure 57. Mean hourly and cumulative percent fishwheel catch of coho salmon by two day periods at Sunshine Station, 1984.

adjusted by fishwheel catch per unit effort, were as follows: 17.6 percent right east channel, 37.5 percent left east channel, 34.8 percent right east channel and 10.1 percent left west channel. The majority of the coho salmon (55.1 percent) migrated in the east channel at RM 22. These data also indicate a strong preference by coho salmon to migrate midriver at this site. The two midriver fishwheels intercepted a combined 72.3 percent of the total catch. In the Yentna River (RM 28) at Yentna Station coho salmon migrated primarily (81.4 percent) along the south bank, based on fishwheel catches. At Sunshine Station a total of 57.9 percent of the fishwheel catch were intercepted in the two east bank wheels and 42.1 percent in the two west bank wheels. These percentages indicate coho salmon were migrating primarily along the east bank at RM 80.

The Susitna River channel at Flathorn Station (RM 22), most utilized by coho salmon reaching Yentna (TRM 04) station and RM 80 and above in 1984 was determined from tag recoveries of Flathorn Station tagged fish (Table 46 and Figure 58). Based on the tag recovery data about 67 percent of the coho salmon reaching Yentna Station migrated in the east channel at RM 22. The remaining 33 percent migrated in the west channel. Coho salmon reaching RM 80 and above also passed RM 22 predominately (90 percent) in the east channel.

Table 46. Comparison of numbers of coho salmon tagged by east and west channel fishwheels at RM 22 to the number of tag numbered recaptures by bank at Yentna Station and at RM 80, 103 and 120 combined, 1984.

River Channel at RM 22	Number of Sockeye Tagged at RM 22	Number of RM22 Tag Numbered Recaptures At Yentna Station	Number of RM 22 Tag Numbered Recaptures Combined for RM 80, 103 and 120
East	3,701	69	179
West	4,525	25	7
TOTALS	8,226	94	186

The 1984 migrational rates of coho salmon tagged at Flathorn Station (RM 22) and recovered at upstream stations are presented in Appendix 2 and Figure 59. Coho salmon tagged at Flathorn Station required about 10 to 13 days to reach Yentna Station (TRM 04) and 25 to 26 days to reach Sunshine Station (RM 80). Coho salmon migrational rates between Flathorn and Yentna stations and Flathorn and Sunshine stations, based

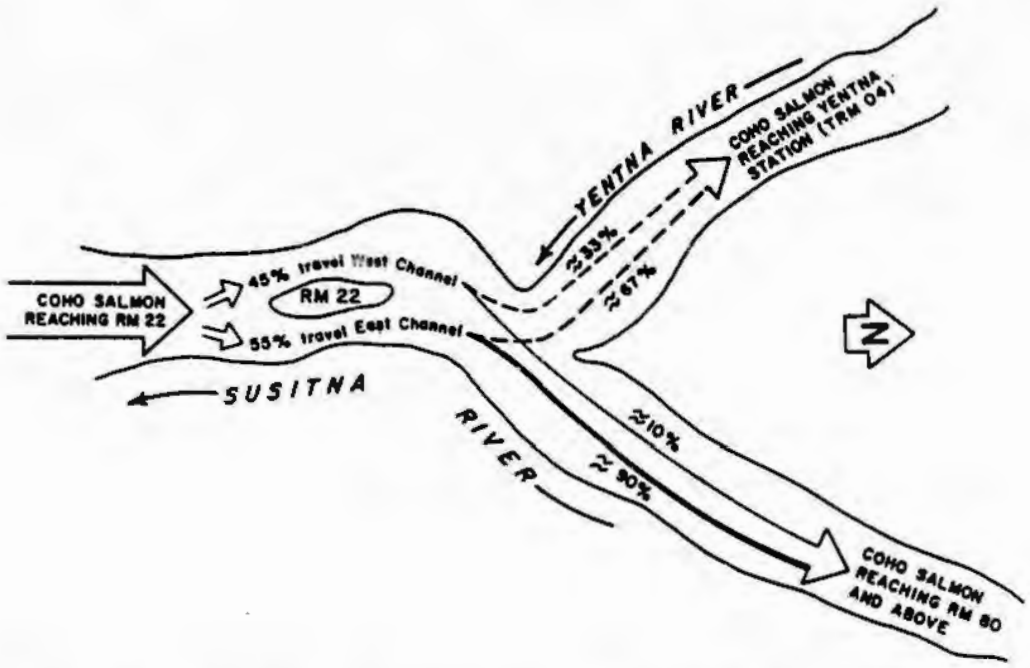


Figure 58. Migrational preference of coho salmon, reaching RM 22 entering the Yentna River and extending to RM 80 and above, to the east and west channels at RM 22, 1984.

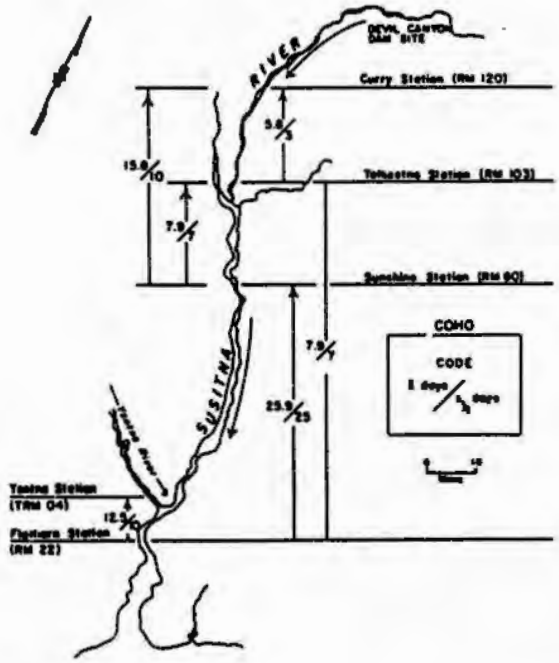


Figure 59. Migrational rates of coho salmon between three lower and middle Susitna River reach sampling stations, 1984.

on the median days traveled, were 1.0 mpd and 2-3 mpd, respectively. The slower coho salmon travel rate between Flathorn and Yentna stations was probably due to milling activity in the vicinity of the Susitna and Yentna (RM 28) rivers confluence.

Age, length (FL) and sex composition information was collected from the coho salmon escapements reaching Flathorn (RM 22), Yentna (TRM 04) and Sunshine (RM 80) stations in 1984. The majority of the coho salmon reaching all three stations were four year old fish representing 64.4, 70.0 and 64.4 percents of the escapements, respectively (Table 47 and Figure 60). Three year old fish were the second most abundant at all three sites. A total of 34.3, 27.9 and 34.2 percents of the coho salmon returning to Flathorn, Yentna and Sunshine stations, respectively, had previously migrated to the ocean (smolted) in their third year of life. The mean length of the coho salmon escapement to Flathorn, Yentna and Sunshine stations was 543 mm, 557 mm and 546 mm, respectively (Table 48). The slightly longer average length recorded at Yentna Station was due to a higher percentage of four year old fish returning there than at other stations. At Flathorn and Yentna stations males were generally larger than females. At Sunshine Station the male and female average lengths were the same. The coho salmon escapement male to female sex ratios at Flathorn, Yentna and Sunshine stations were 1.4:1, 0.8:1 and 1.2:1, respectively (Table 49). Generally, males were more abundant than females at Flathorn and Sunshine stations and fewer in number at Yentna Station.

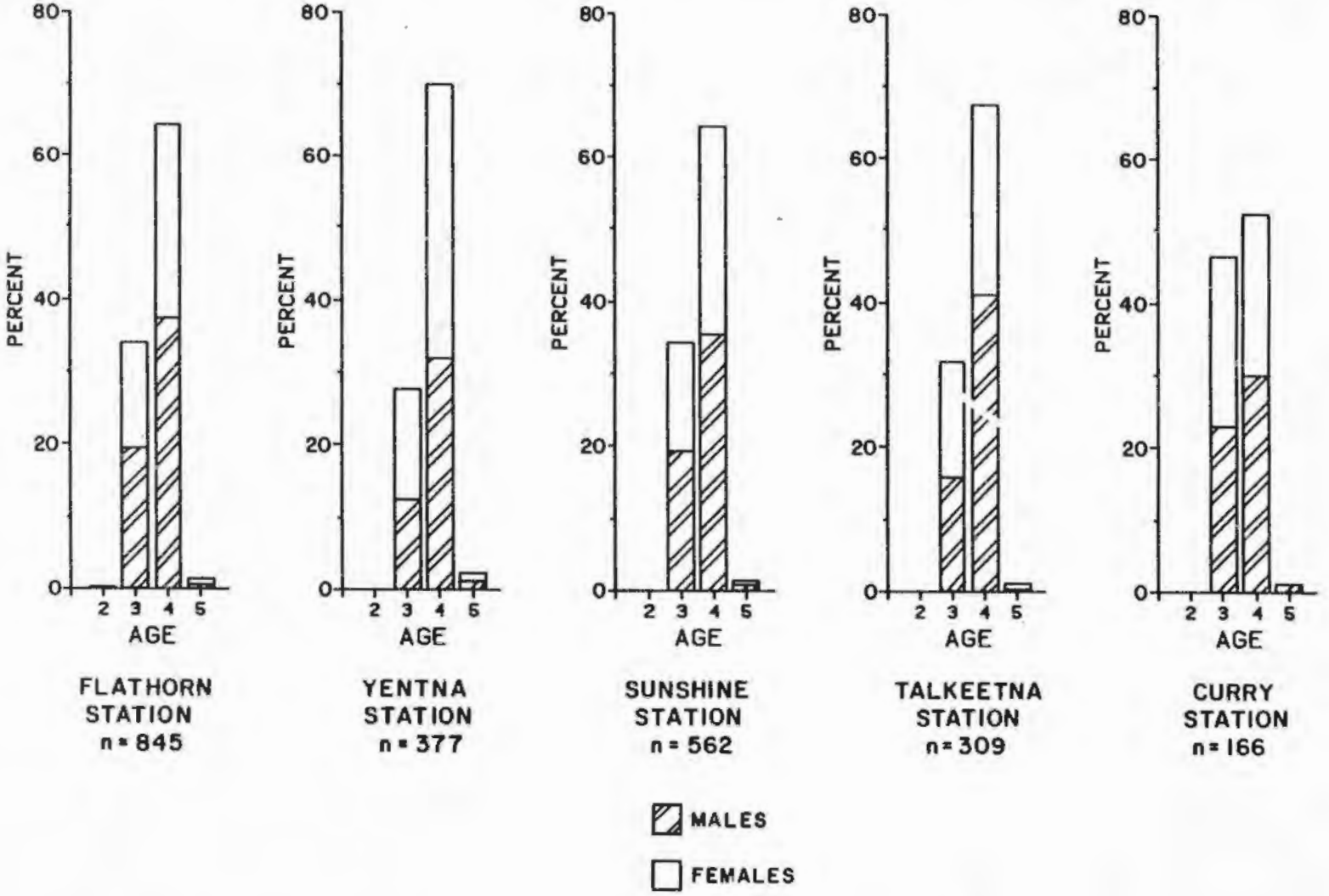


Figure 60. Age composition of fishwheel intercepted coho salmon weighted by catch per unit effort at Flathorn, Yentna, Sunshine, Talkeetna and Curry stations, 1984.

Table 48. Analysis of coho salmon lengths, in millimeters, by age class from weighted 1984 escapement samples collected at Flathorn, Yentna, Sunshine, Talkeetna and Curry stations.

Collection Site	Age Class	n		Range Limits		Mean		95% Conf. Interval 1/		Median	
		M	F	M	F	M	F	M	F	M	F
Flathorn	2^1	-	3	-	400-440	-	437	-	-	-	440
Station	3^2	15	111	320-635	390-600	534	521	526-543	511-530	540	530
	3^3	21	-	240-370	-	289	-	274-304	-	285	-
	4^2	-	1	-	565	-	565	-	-	-	565
	4^3	326	197	325-660	405-650	562	555	558-567	545-556	565	555
	4^4	20	-	270-435	-	321	-	303-339	-	320	-
	5^4	3	6	600-635	430-650	615	512	-	-	600	540
	5^5	3	-	300-360	-	331	-	-	-	345	-
	All 2/	845	475	240-660	390-650	545	538	-	-	560	545
Yentna	3^2	46	59	387-635	442-610	544	528	528-561	517-538	560	535
Station	4^3	126	136	475-640	425-640	573	558	567-579	551-565	580	565
	4^4	1	1	315	285	315	285	-	-	315	285
	5^4	4	4	485-645	540-600	578	565	-	-	602	552
	All 2/	280	321	290-660	285-655	564	550	-	-	574	555
Sunshine	3^2	97	95	380-610	400-600	512	528	501-523	520-536	515	530
Station	4^2	1	-	625	-	625	-	-	-	625	-
	4^3	203	158	415-665	420-670	561	554	554-567	548-560	565	560
	5^4	4	4	585-645	520-600	623	576	-	-	630	590
	All 2/	485	442	380-665	370-670	546	546	-	-	560	550
Talkeetna	3^2	53	45	400-620	440-610	525	530	511-538	516-544	540	535
Station	4^3	125	83	410-690	450-685	573	566	564-582	558-575	585	570
	5^4	1	2	550	580-600	555	590	-	-	550	600
	All 2/	300	249	400-690	410-695	563	555	-	-	565	560
Curry	3^2	39	38	405-595	430-600	495	528	479-511	516-541	505	535
Station	4^3	50	36	430-630	440-610	532	553	515-551	539-568	545	560
	4^4	1	-	190	-	190	-	-	-	190	-
	5^4	2	-	540-555	-	547	-	-	-	540	-
	All 2/	138	126	190-635	420-610	520	542	-	-	525	550

Table 49. Sex ratios of male and female coho salmon by age from weighted 1984 escapement samples collected at Flathorn, Yentna, Sunshine, Talkeetna and Curry stations.

Collection Site	Age	Sample Size	Number		Sex Ratio (M:F
			Males	Females	
Flathorn Station	2	3	0	3	0:
	3	286	165	121	1.4:
	4	544	316	228	1.4:
	5	12	4	8	0.5:
	All 1/	1,319	773	546	1.4:
Yentna Station	3	105	47	58	0.8:
	4	264	121	143	0.9:
	5	8	4	4	1:
	All 1/	601	275	326	0.8:
Sunshine Station	3	192	108	84	1.3:
	4	362	199	163	1.2:
	5	8	4	4	1:
	All 1/	927	502	425	1.2:
Talkeetna Station	3	98	49	49	1:
	4	208	127	81	1.6:
	5	3	1	2	0.5:
	All 1/	549	291	258	1.1:
Curry Station	3	77	38	39	1.0:
	4	87	50	37	1.4:
	5	2	2	0	-
	All 1/	264	138	126	1.1:

1/ Includes all aged and non-aged samples.

Table 47. Age composition of the coho salmon escapements to Flathorn, Yentna, Sunshine, Talkeetna and Curry stations in percent based on catch samples weighted by fishwheel CPUE, 1984..

Collection Site	n	Age Class 1/							
		2_1	3_2	3_3	4_2	4_3	4_4	5_4	5_5
Flathorn Station	845	0.4	31.4	2.5	0.1	61.9	2.4	1.1	0.4
Yentna Station	377	-	27.9	-	-	69.5	0.5	2.1	-
Sunshine Station	562	-	34.2	-	0.2	64.2	-	1.4	-
Talkeetna Station	309	-	31.7	-	-	67.3	-	1.0	-
Curry Station	166	-	46.4	-	-	51.8	0.6	1.2	-

1/ Gilbert-Rich Notation.

3.1.5.1.2 Spawning Ground Surveys

In 19[illegible] the lower Susitna River reach main channel, side channels, slough and stream mouth habitats were surveyed for adult salmon from July 21 to October 17. The results of these surveys are presented in Appendix 7 as a separate document.

3.1.5.1.3 Fecundity

Coho salmon fecundities were determined from 22 samples collected at Sunshine Station (RM 80) in 1984. All samples were collected on August 22. The average fecundity of the 22 samples was 2,964 eggs per female and ranged from 1,394 to 3,984 eggs (Table 50). The fecundity samples

were collected prior to the eggs reaching full maturation and they became fragile and difficult to count after freezing and thawing. These difficulties introduced an unknown error component in the analysis.

Table 50. Number of eggs, length, weight and associated statistics for coho salmon sampled for fecundity at Sunshine Station in 1984.

Variables	Statistic			
	Sample Size	Mean	Standard Deviation	Range
Number of eggs	22	2,964	741	1,394--3,984
Length (mm)	22	558	26	510--600
Weight (g)	22	2,307	471	1,400--3,100

The 1984 Susitna River coho salmon mean fecundity predicted from a mean length of 546 mm recorded for 485 females measured at Sunshine Station (RM 80) was 2,800 eggs. This estimate assumes that coho salmon stocks sampled on August 22 were mixed and representative of the entire escapement.

Susitna River coho salmon fecundities may be greater than reported for other Alaskan and Canadian stocks. Hart (1973) reports the mean fecundity of 550 mm coho salmon at 2,500 eggs. The fecundity of similar sized Susitna River coho salmon, based on regression analysis, would be 2,860 eggs or 360 more than reported by Hart. These data were derived from regressions of length and weight to fecundity which had respective correlation coefficients (r^2) of 0.4 and 0.5 indicating only a 'fair' relationship between the variables (Figure 61).

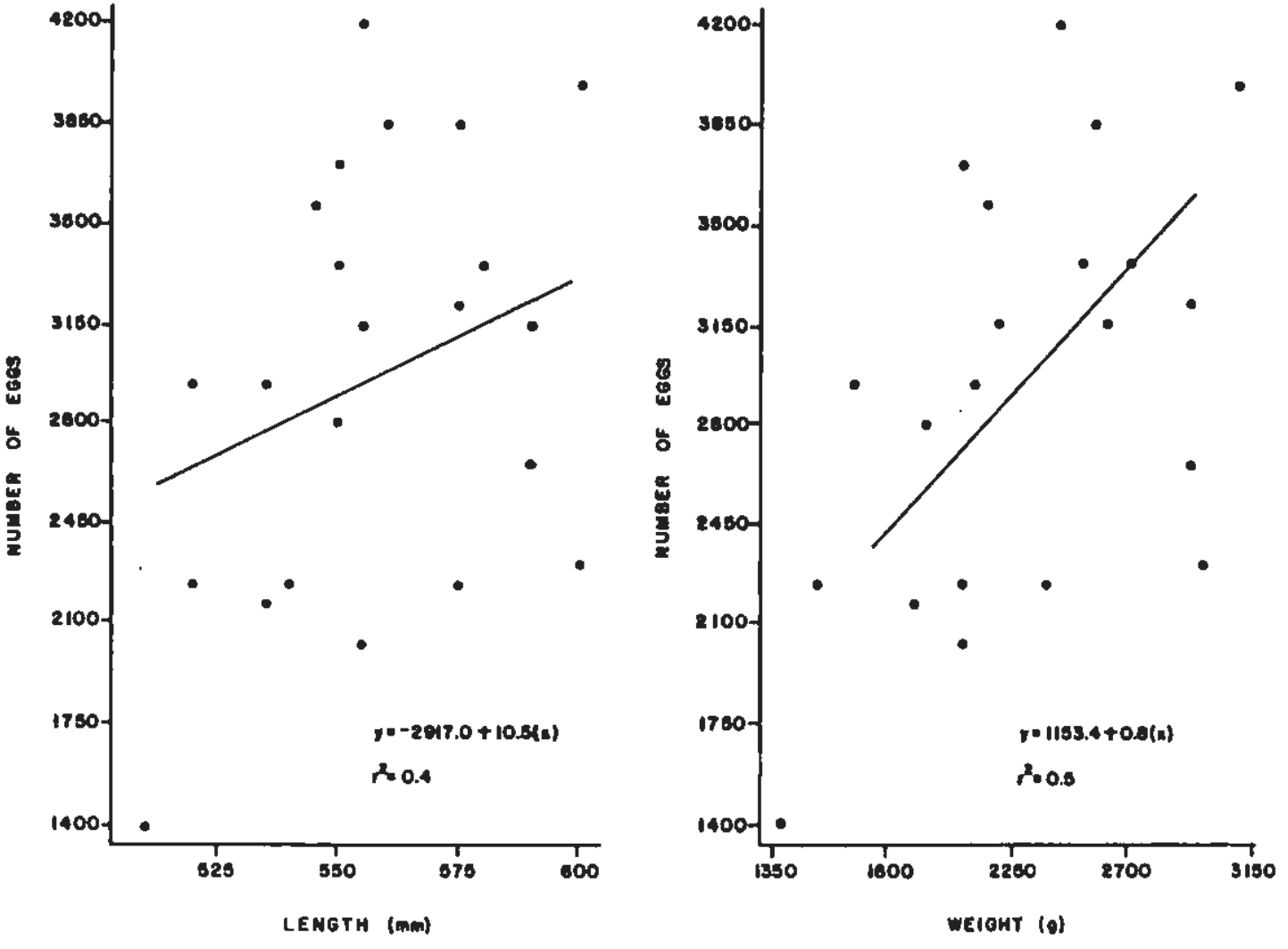


Figure 61. Number of eggs for coho salmon sampled at Sunshine Station in 1984 as a function of length and weight.

3.1.5.2 Middle Reach

3.1.5.2.1 Main Channel Escapement Monitoring

The 1984 coho salmon escapements to Talkeetna (RM 103) and Curry (RM 120) stations were quantified using the Petersen tag and recapture method. About 11,800 coho salmon migrated to Talkeetna Station by this method. The 95 percent confidence interval associated with this estimate is 10,500 to 13,600 fish. Seventeen miles upriver, the estimated escapement to Curry Station was 2,200 fish. This estimate had a 95 percent confidence interval of 1,500 to 3,700 fish (Table 45).

The 1984 coho salmon migrations reaching Talkeetna (RM 103) and Curry (RM 120) stations comprised 6.2 and 1.2 percents, respectively, of the minimum Susitna River escapement as recorded at RM 22 (Figure 55). Based on the estimated number of coho salmon spawning above RM 103 and RM 120 about 75 and 45 percents of the Talkeetna and Curry stations coho salmon escapement returned downstream to spawn below the respective sites (Section 3.1.5.2.2.2).

Based on fishwheel catches coho salmon were generally abundant at Talkeetna Station (RM 103) in 1984 about four weeks, from July 31 to August 29 (Appendix Table 2-14). The migration reached a midpoint on August 12. At Curry Station (RM 120) coho salmon were present also about four weeks, from August 1 to August 28. The migration median was August 11.

Fishwheel interceptions at Talkeetna (RM 103) and Curry (RM 120) stations were used to determine the 1984 coho salmon migrational characteristics at these sites (Figure 62). A total of 1,526 coho salmon were captured by fishwheels at Talkeetna Station. The west bank fishwheels accounted for 79.8 percent of the catch indicating a strong preference by coho salmon to migrate along this bank at RM 103. At Curry Station a total of 350 coho salmon were intercepted. The west and east bank fishwheels intercepted 53.3 and 46.7 percents of the station catch indicating a slight preference by coho salmon to west bank migration at RM 120.

A total of 1,034 coho salmon were marked with Floy FT-4 spaghetti tags at Talkeetna Station (RM 103) in 1984 (Table 6). At Curry Station (RM 120), only six Talkeetna tagged fish were recovered, an insufficient number to evaluate differential milling or bank crossover of coho salmon stocks migrating between RM 103 and RM 120.

Coho salmon migrational rates were based on tag recoveries in the lower and middle Susitna River reaches in 1984 (Appendix Table 2 and Figure 59). Coho salmon traveled about eight days between Sunshine (RM 80) and Talkeetna (RM 103) stations and about six days between Talkeetna and Curry (RM 120) stations. The respective migrational speeds were 2.9 mpd and 2.8 mpd. The 40 mile distance between Sunshine and Curry stations was traveled by coho salmon in an average 16 days which calculates to a travel speed of 2.5 mpd.

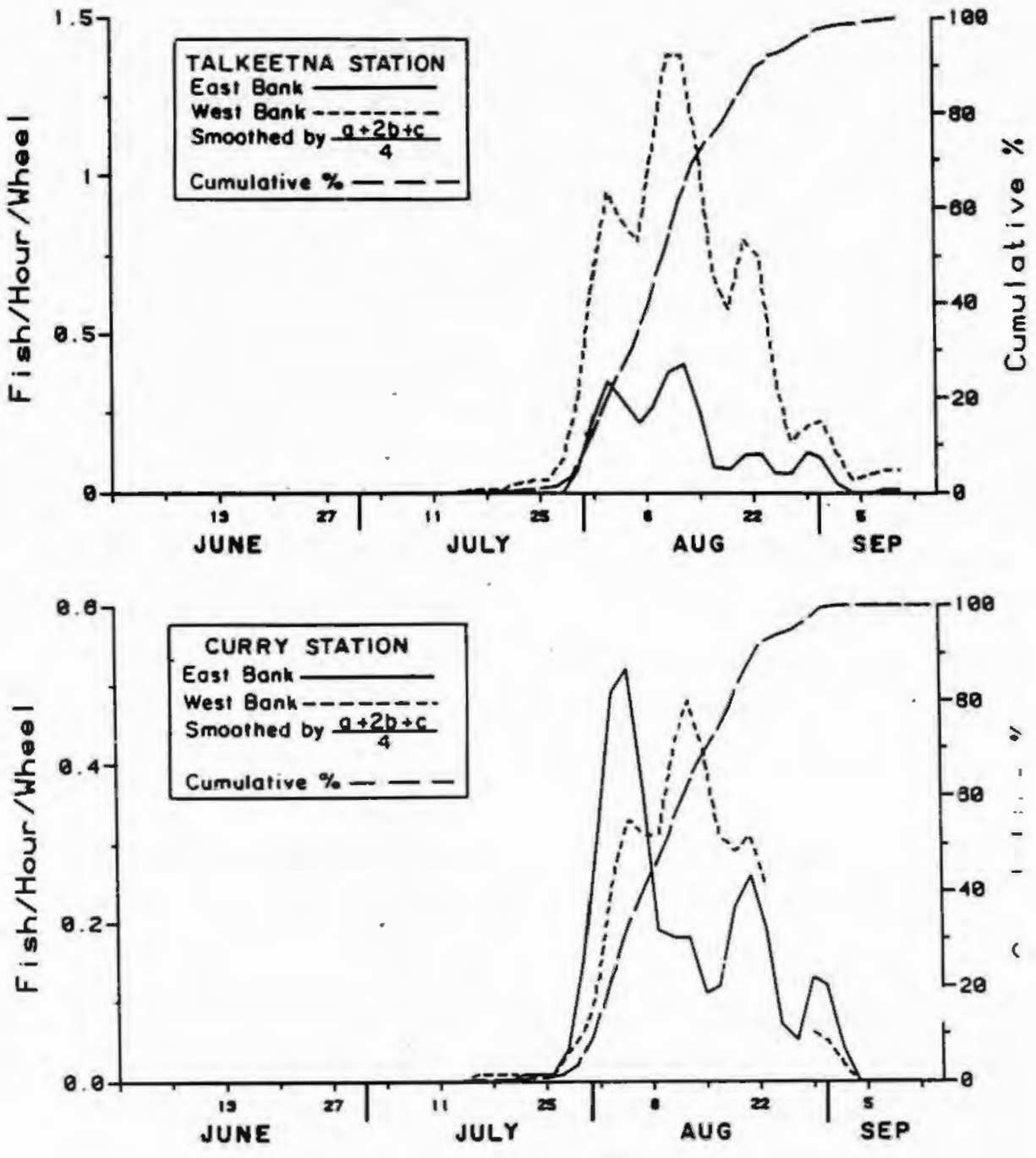


Figure 62. Mean hourly and cumulative percent fishwheel catch of coho salmon by two day periods at Talkeetna and Curry stations.

Age, length (FL) and sex data were collected from a sample of the coho salmon escapements reaching Talkeetna (RM 103) and Curry (RM 120) stations in 1984. Based on this information, the escapements to both Talkeetna and Curry stations were primarily four year old fish, 67.3 and 52.4 percents, respectively (Table 47). The relatively low percentage of four year old fish recorded at Curry Station as compared to Talkeetna Station was probably due to milling activity among coho salmon stocks at RM 103. A total of 67.3 percent and 51.8 percents of the coho salmon escapement at Talkeetna and Curry stations, respectively, migrated to the ocean (smolted) in their third year of life. The average coho salmon lengths recorded at Talkeetna and Curry stations were 559 mm and 531 mm (Table 48). The smaller average coho salmon length at Curry Station is due to a larger percentage of three year old fish at this station. The coho salmon male to female sex ratios at Talkeetna and Curry stations were both 1.1:1. Generally, males were more abundant than females at both stations (Table 49).

3.1.5.2.2 Spawning Ground Surveys

3.1.5.2.2.1 Mainstem

In 1984 the Susitna River mainstem middle reach was repetitively surveyed between July 21 and October 14 for salmon spawning using helicopter and waterbourne craft (Appendix Table 6-1). On August 24, two coho salmon were observed spawning off the Susitna River west bank at RM 131.5 (Appendix Figure 6-16). This was the only coho salmon spawning location identified in the mainstem middle reach.

3.1.5.2.2.2 Sloughs and Streams

A total of 37 sloughs and 25 streams between RM 98.6 and 161.0 were surveyed in 1984 to determine the distribution of coho salmon in this river reach (Appendix Tables 6-2 and 6-3). These surveys were conducted from July 21 to October 14. Coho salmon were observed in three of the 37 sloughs surveyed. The fish observed in sloughs Moose (RM 123.5), 11 (RM 135.3) and 15 (RM 137.2) were considered milling not spawning fish based on single sightings, no observed carcasses and no observations of spawning activity.

Coho salmon were observed in 10 of 25 middle Susitna River reach streams surveyed in 1984 (Appendix Table 6-2). These surveys, like the slough surveys, were conducted from July 21 to October 14. The peak live and dead coho salmon survey count of the 10 streams was 1,434 fish. Based on peak survey counts, the majority (70.1 percent) of the coho salmon in this river reach were in Indian River (RM 138.6), Whiskers Creek (RM 101.4) and Chase Creek (RM 106.9) (Table 51 and Figure 63). Stream surveys were one of two types, foot or helicopter surveys. Foot surveys were conducted for a pre-determined reach of each stream. The counts from these surveys were used as an index of relative abundance and do not reflect the actual escapement to each stream. Stream helicopter surveys were conducted for the entire distance known to support salmon spawning. These counts may be adjusted for the stream life of a particular species and the helicopter survey efficiency. Once these adjustments have been performed an estimate of the total escapement to a particular stream is possible.

Table 51. Peak coho salmon index counts of streams above RM 98.6 in order of contribution, 1984.

Stream	River Mile	Date	Number Counted			Percent Contribution
			Live	Dead	Total	
Indian River	138.6	9/15	465	0	465	32.4
Whiskers Cr.	101.4	9/8	301	0	301	21.0
Chase Creek	106.9	8/28	239	0	239	16.7
Gash Creek	111.6	9/24	232	2	234	16.3
Portage Creek	148.9	9/15	128	0	128	8.9
Lane Creek	113.6	9/29	24	0	24	1.7
L. McKenzie Cr.	116.2	8/27	24	0	24	1.7
4th of July Cr.	131.1	9/29	8	0	8	0.6
Jack Long Cr.	144.5	9/29	5	1	6	0.4
Slash Creek	111.2	9/30	5	0	5	0.4
	TOTALS		1,431	3	1,434	100.1

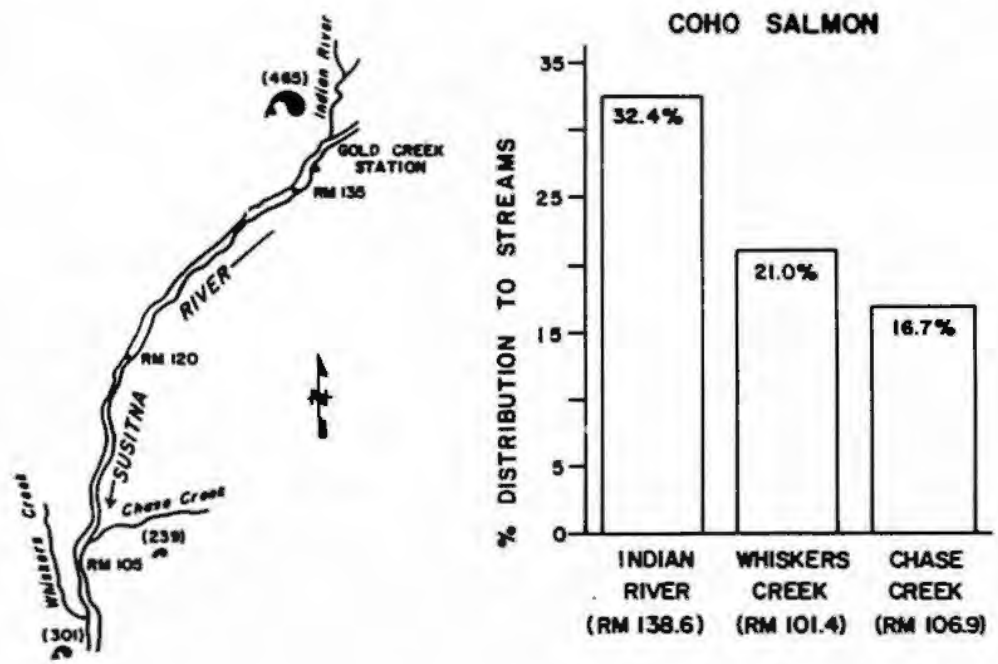


Figure 63. Percent distribution of coho salmon to the three primary spawning streams above RM 98.6.

In 1984 the coho salmon distribution within select streams between RM 98.6 and 161.0 was determined from helicopter surveys of a streams known salmon spawning reach (Appendix 6). Based on these helicopter surveys the upper limit of migration in Whiskers Creek (RM 101.4), Chase Creek (RM 106.9) and Indian River (RM 138.6) was 0.9 miles, 1.1 miles and 8.7 miles, respectively. Coho salmon in Whiskers Creek spawned intermittently to the upper limit of their migration (0.9 miles). The most important spawning area observed in Whiskers Creek was the interface with the Susitna River. In Chase Creek coho salmon spawning occurred discountinuosly to the upper migration limit (1.1 miles). Coho salmon spawned throughout the Indian River from the Susitna River interface to 8.1 miles upstream. Two major coho salmon spawning reaches were located in Indian River from TRM 2.7 to 5.3 and from TRM 7.6 to 8.1. Major coho salmon spawning was also observed in a small tributary that feeds into Indian River at approximately TRM 8.1.

The relative importance to coho salmon spawning in the lower reaches of Indian River (RM 138.6) and Portage Creek (RM 148.9) can be determined by helicopter surveys (Figures 64 and 65). The peak helicopter survey after September 1 of the lower reach of Indian River (1.0 mile) and Portage Creek (0.25 mile) compared to the peak survey of the entire drainages after September 1 indicate about 14 and 1 percents of the respective streams escapement spawn in the lower reaches. Prior to September 1 (August 19) a large movement of coho salmon into the Portage Creek index area was recorded. This movement coincides with an increase in Susitna River discharges from about 14,000 cfs on August 15 to 32,000 cfs on August 28 (Figure 8). These milling fish had apparently returned

to the Susitna River--Portage Creek confluence area by September 1 when the Susitna River discharge had dropped to about 13,000 cfs.

The minimum escapements of coho salmon which spawned in the middle Susitna River reach above RM 120 was 1,200 fish in 1984. This estimate was derived assuming that peak survey counts of coho salmon represent approximately 50 percent of the escapement to each stream (Cousens et al, 1984). The estimate is reported as minimum because not all streams

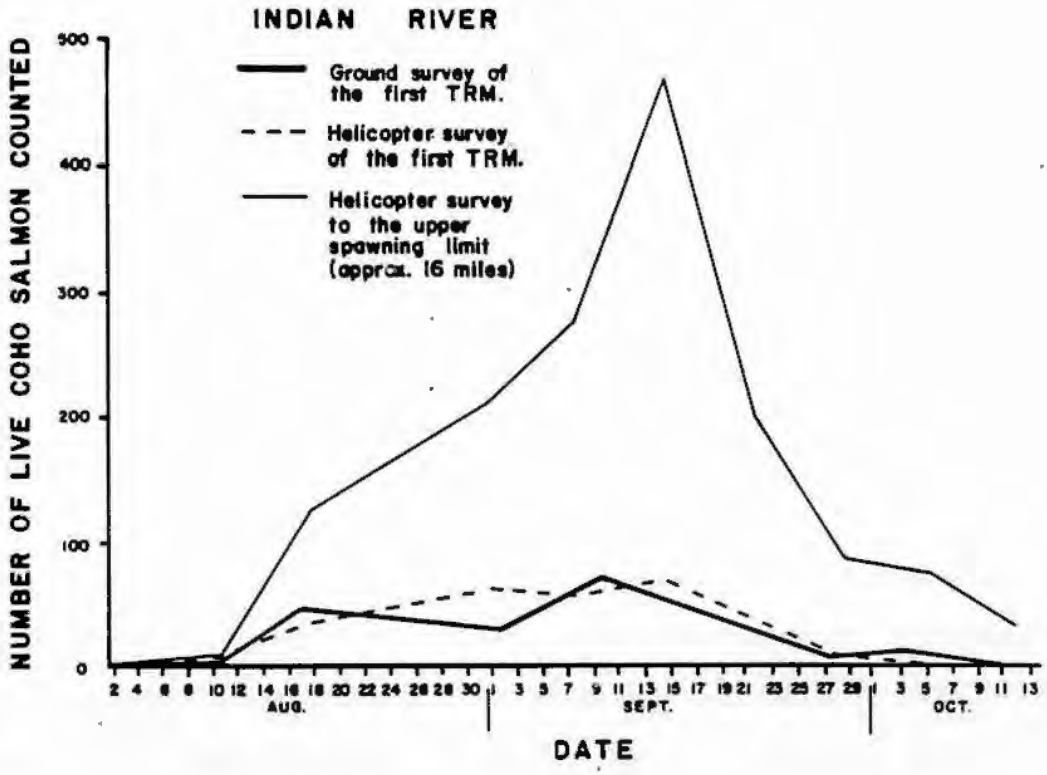


Figure 64. Peak coho salmon ground and helicopter survey counts of Indian River in 1984.

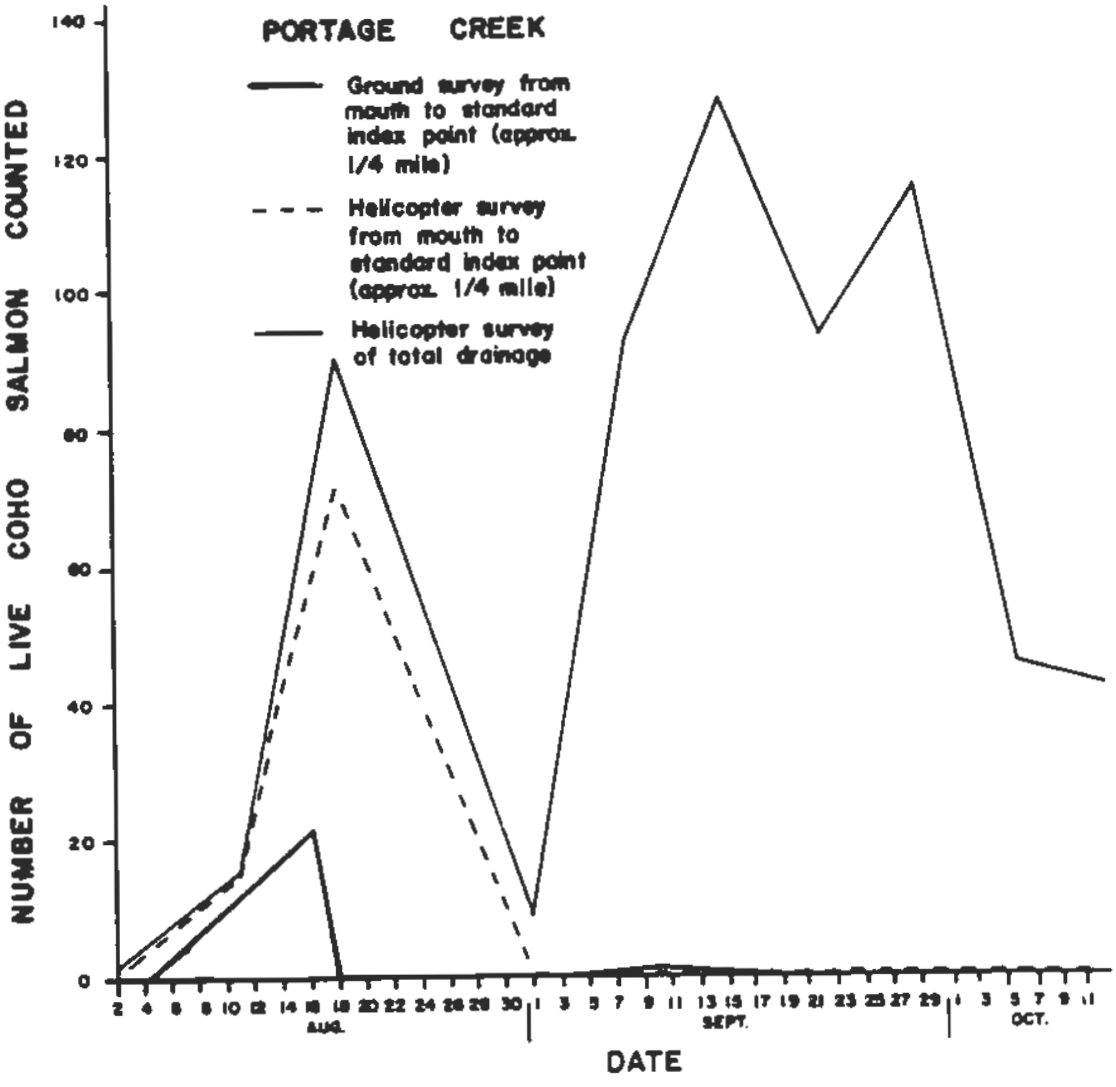


Figure 65. Peak coho salmon ground and helicopter survey counts of Portage Creek in 1984.

were surveyed in their entirety. based on this estimate approximately 45 percent of the coho salmon escapement reaching Curry Station (RM 120) (2,200 fish) did not spawn above RM 120. By extension of this method, the minimum escapement of coho salmon which spawned above RM 103 was 2,900 fish. Therefore, approximately 75 percent of the coho salmon reaching RM 103 returned to spawn below Talkeetna Station (RM 103).

Based on the 1984 surveys of Whiskers Creek (RM 101.4), Chase Creek (RM 106.9) and Indian River (RM 138.6) coho salmon in streams occurred from the third week of September to the second week of October (Appendix Table 6-2). The peak coho salmon spawning in streams based on these surveys occurred during the last week of September.

4.0 SUMMARY

Draft to be submitted on February 12, 1985.

REFERENCES

Alaska Department of Fish and Game. 1972. 1972 Tustumena Sockeye Salmon Research Report. Alaska Department of Fish and Game, Division of Commercial Fisheries, Soldotna, Alaska, USA.

_____. 1981. Phase 1 final draft report. Subtask 7.10. Adult anadromous fisheries project (June-September 1981). Alaska Department of Fish and Game Susitna Hydro Aquatic Studies. Anchorage, Alaska, USA.

_____. 1983. Susitna Hydro aquatic studies phase II final report. Volume 2 (1 of 2). Adult anadromous fish studies, 1982. Alaska Department of Fish and Game Susitna Hydro Aquatic Studies. Anchorage, Alaska, USA.

_____. 1983. Susitna Hydro aquaticstudies phase II final report. Volume 2 (2 of 2: Appendices A-H). Adult anadromous fish studies, 1982. Alaska Department of Fish and Game Susitna Hydro Aquatic Studies. Anchorage, Alaska, USA.

_____. 1984. Susitna Hydro aquatic studies (May 1983 - June 1984) procedures manual (1 of 2). Alaska Department of Fish and Game Susitna Hydro Aquatic Studies. Anchorage, Alaska, USA.

_____. 1984. Susitna Hydro aquatic studies (May 1983 - June 1984) procedures manual (2 of 2: Appendices). Alaska Department of Fish and Game Susitna Hydro Aquatic Studies. Anchorage, Alaska, USA.

_____. 1984. Alaska Department of Fish and Game Susitna Hydro Aquatic Studies report series. Series begins in 1984 with Report No. 1. Alaska Department of Fish and Game Su Hydro. Anchorage, Alaska, USA.

Bakkala, R. G. 197D. Synopsis of biological data on the Chum Salmon, Oncorhychus keta (Walbaum) 1972. FAO Species Synopsis No. 41, U.S. Fish and Wildlife Service Circular 315, Washington, D.C., USA.

Barrett, B. M. 1974. An assessment of the anadromous fish populations in the upper Susitna River watershed between Devil Canyon and the Chulitna River. Alaska Department of Fish and Game, Division of Commercial Fisheries, Anchorage, Alaska, USA.

Barrett, B.M., F.M. Thompson, and S.N. Wick, editors. 1984. Adult anadromous fish investigations: May-October 1983. Alaska Department of Fish and Game Susitna Hydro Aquatic Studies. Report No. 1. Prepared for Alaska Power Authority. Anchorage, Alaska, USA.

REFERENCES (cont)

Bendix Corporation. 1980. Installation and operation manual side scan sonar counter (1980 Model). Report No. SP-78-017, North Hollywood, California, USA.

BMDP. 1981. BMDP statistical software. University of California Press, Berkley, California, USA.

Clutter, R. I. and L. E. Whitesel. 1956. Collection and interpretation of sockeye salmon scales. Bull. Int. Pac. Salmon Fish. Com., No. 9, Canada.

Cousens, N. B. F., G. A. Thomas, C. G. Swann, and M. C. Healey. 1982. A review of salmon escapement estimation techniques. Canadian Technical Report of Fisheries and Aquatic Sciences, No. 1108, Nanaimo, British Columbia, Canada.

Delaney, K. 1984. Personal Communication. Alaska Department of Fish and Game, Division of Sport Fish, Anchorage, Alaska, USA.

Hart, J. L. 1973. Pacific fishes of Canada. Fisheries Research Board of Canada, Bulletin 180, Ottawa, Canada.

Lagler, K. F., J. E. Bardach and R. R. Miller. 1962. Ichthyology. John Wiley and Sons, Inc., New York, New York, USA.

McPhail, J.D. and C. C. Lindsey. 1970. Freshwater fishes of northwestern Canada and Alaska. fisheries Research Board of Canada, Bulletin 173, Ottawa, Canada.

Meehan, W. R. 1961. Use of a fishwheel in salmon research management. Transactions of the American Fisheries Society Vol. 90: 490-494.

Morrow, J. E. 1980. The freshwater fishes of Alaska. Alaska Northwest Publishing Company, Anchorage, Alaska, USA.

Neilson, J. D., and G.H. Geen. 1981. Enumeration of spawning salmon from spawner residence time and aerial counts. Transactions of the American Fisheries Society 110: 554-556.

Schaefer, M. B. 1951. A study of the spawning populations of sockeye salmon in the Harrison River system, with special reference to the problem of enumeration by means of marked members. International Pacific Salmon Fisheries Commission, Bulletin IV, New Westminster, British Columbia, Canada.

Seber, G. A. and R. Felton. 1981. Tag loss and the Petersen mark-recapture experiment. Biometrika 68 (1): 211-219.

Thompson, F.M. and B. M. Barrett. 1983. Analysis of the species selectivity of fishwheels for the capture of adult salmon in the Susitna River In Synopsis of the 1982 aquatic studies and analysis of fish and habitat relationships. Alaska Department of Fish and Game, Su Hydro Aquatic Studies Program, Anchorage, Alaska, USA.

REFERENCES (cont)

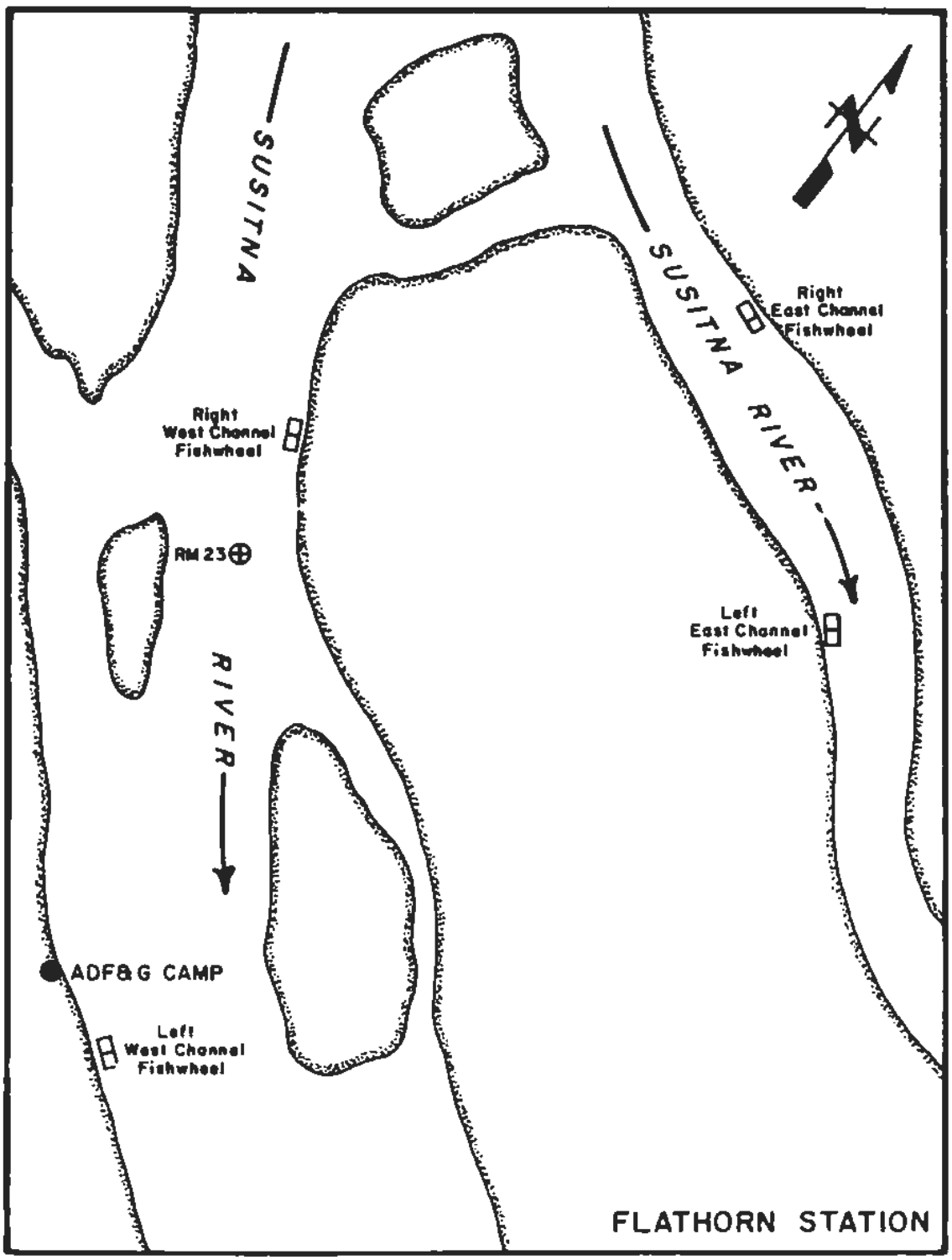
Trihey, E. W. Memorandum to Andrew Hoffmann, 10 August 1984.

U.S. Geological Survey (USGS). 1984. Provisional summary of 1984 water resources data for Alaska.

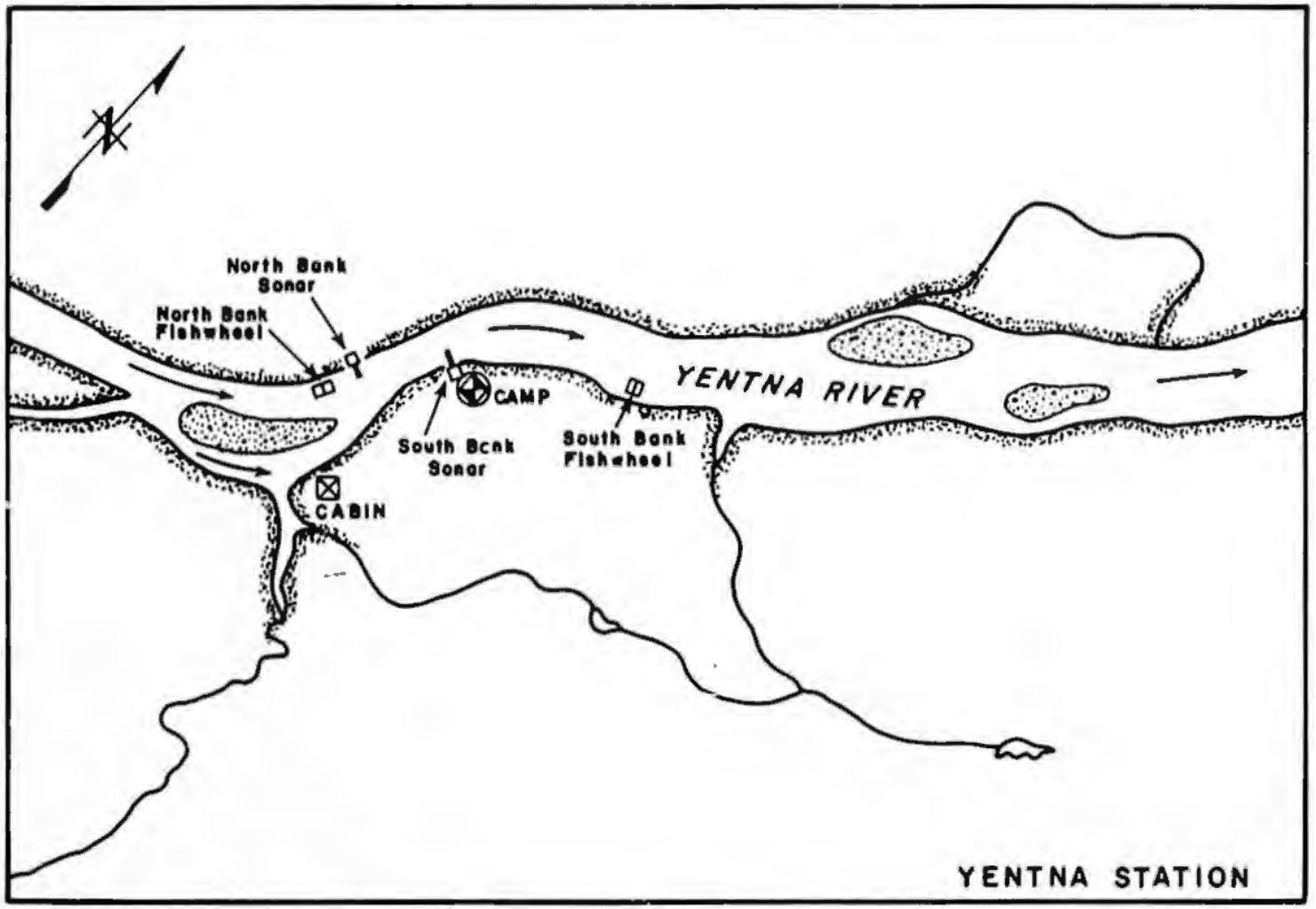
APPENDIX 1

SUSITNA AND YENTNA RIVERS

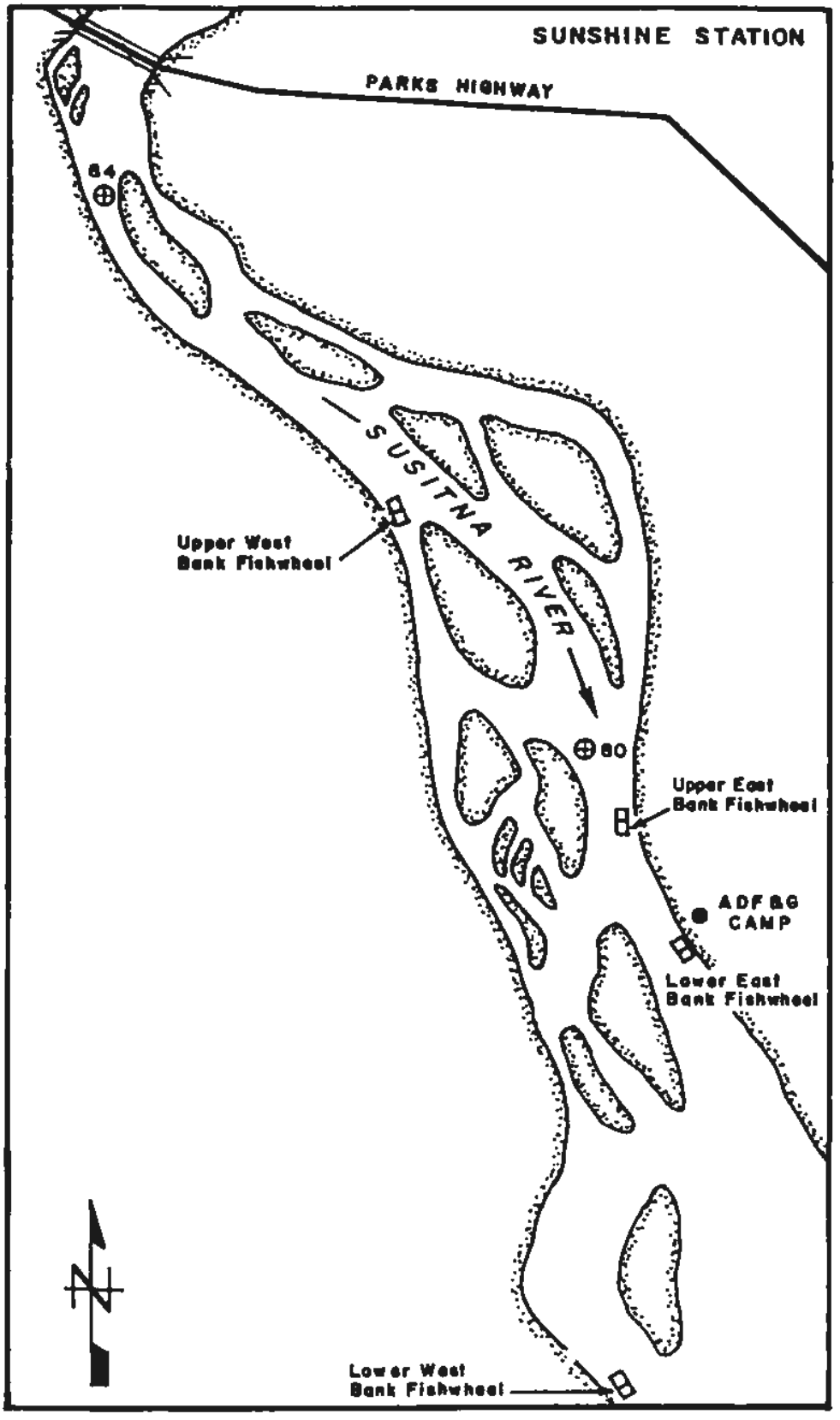
SAMPLING LOCATIONS



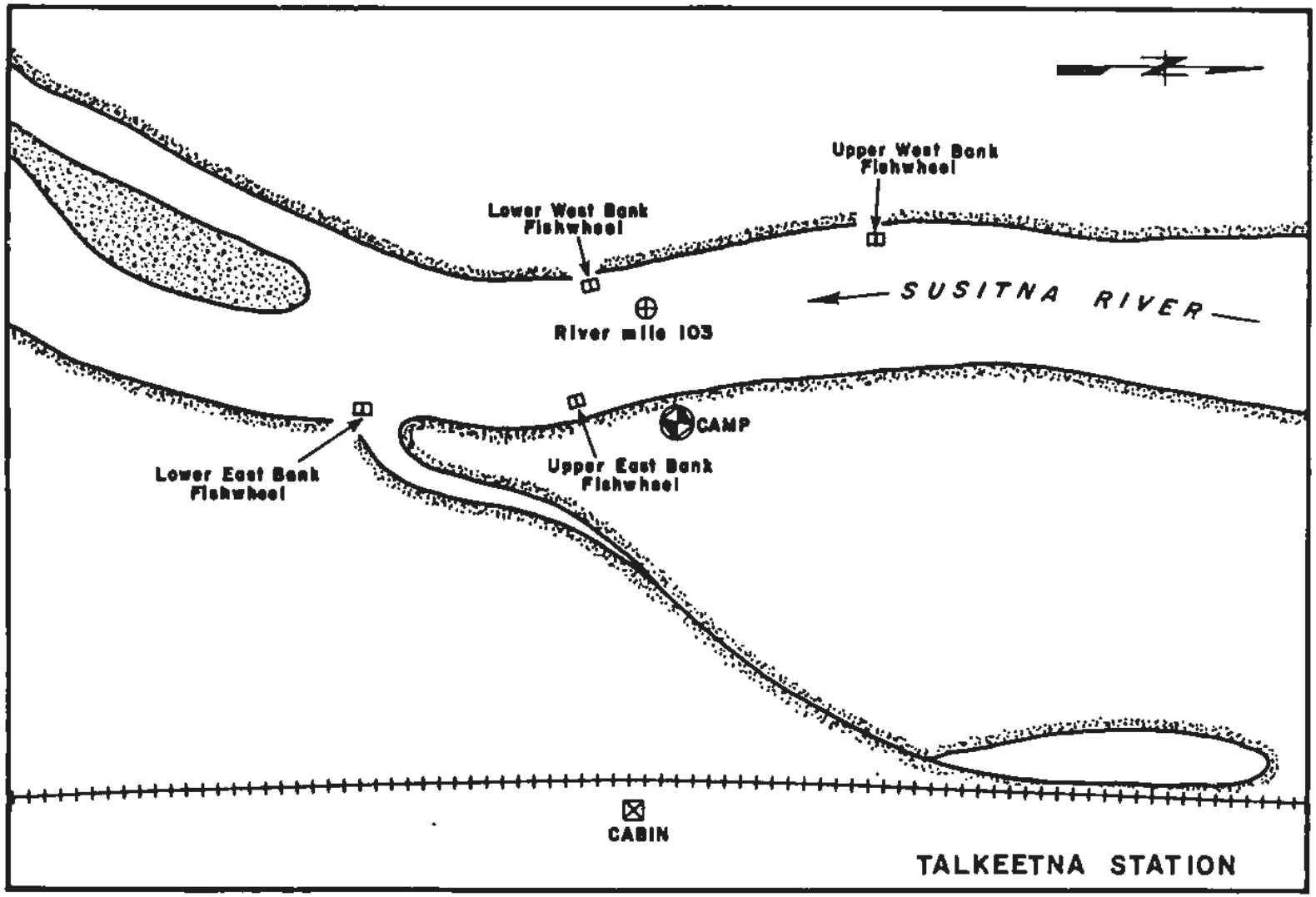
Appendix Figure 1-1. Flathorn Station with fishwheel sites defined, 1984.



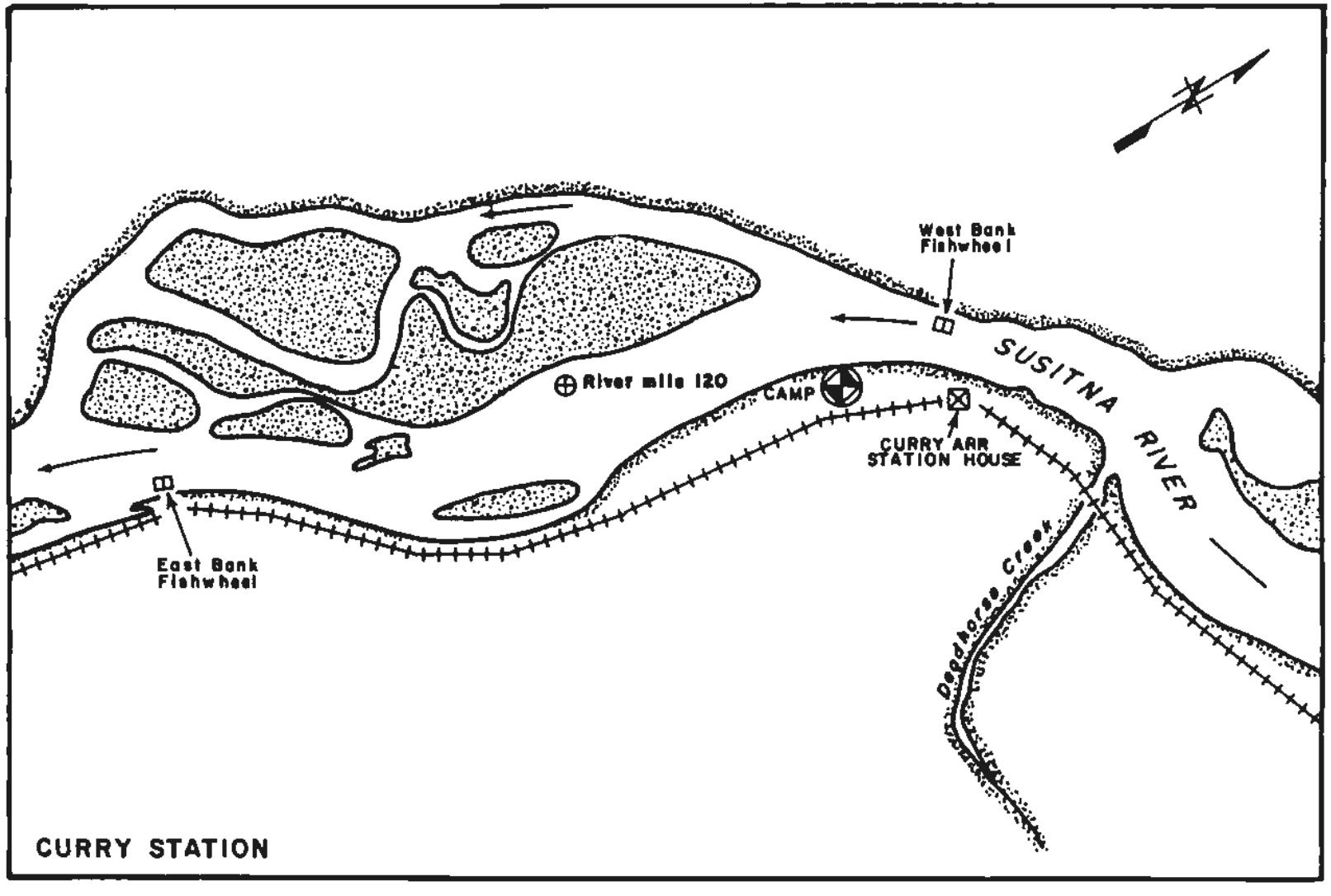
Appendix Figure 1-2. Yentna Station with sonar and fishwheel sites defined, 1984.



Appendix Figure 1-3. Sunshine Station with fishwheel sites defined, 1984.



Appendix Figure 1-4. Talkeetna Station with fishwheel sites defined, 1984.



Appendix Figure 1-5. Curry Station with fishwheel sites defined, 1984

APPENDIX 2

DAILY FISHWHEEL CATCH DATA

AND

MIGRATIONAL RATE HISTOGRAMS

Appendix Table 2-1. Flathorn Station east channel fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
062984	1	7.0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1
063084	1	24.0	6	6	3	4	1	1	0	0	0	0	0	3	3	13	14
070184	2	47.0	4	10	4	8	0	1	0	0	0	0	0	3	6	11	25
070284	2	48.0	5	15	4	12	1	2	0	0	0	0	0	9	15	19	44
070384	2	48.0	3	18	4	16	1	3	0	0	0	0	0	2	17	10	54
070484	2	48.0	3	21	8	24	3	6	0	0	0	0	0	3	20	17	71
070584	2	48.0	3	24	10	34	2	8	1	1	0	0	0	12	32	28	99
070684	2	48.0	5	29	15	49	2	10	1	2	1	1	0	0	32	24	123
070784	2	48.0	0	29	11	60	2	12	0	2	1	2	0	1	33	15	138
070884	2	47.7	2	31	10	70	0	12	4	6	1	3	0	1	34	18	156
070984	2	45.0	2	33	26	96	0	12	16	22	2	5	0	3	37	49	205
071084	2	48.0	1	34	23	119	5	17	16	38	2	7	0	1	38	48	253
071184	2	45.0	2	36	8	127	1	18	1	39	3	10	0	7	45	22	275
071284	2	48.0	2	38	12	139	5	23	0	39	0	10	1	9	55	29	304
071384	2	47.2	0	38	17	156	0	23	0	39	4	14	0	5	60	26	330
071484	2	48.0	0	38	9	165	5	28	1	40	0	14	0	10	70	25	355
071584	2	48.0	0	38	8	173	1	29	0	40	1	15	0	9	79	19	374
071684	2	48.0	1	39	82	255	8	37	35	75	7	22	0	20	99	153	527
071784	2	48.0	1	40	367	622	37	74	222	297	14	36	0	9	108	650	1177
071884	2	48.0	0	40	489	1111	128	202	455	752	41	77	0	3	111	1116	2293
071984	2	48.0	0	40	250	1361	311	513	373	1125	33	110	0	5	116	972	3265
072084	2	48.0	1	41	196	1557	664	1177	370	1495	41	151	0	1	117	1273	4538
072184	2	47.5	5	46	158	1715	1091	2268	364	1859	36	187	0	1	118	1655	6193
072284	2	48.0	1	47	173	1888	1192	3460	477	2336	98	285	0	1	119	1942	8135
072384	2	48.0	0	47	187	2075	1518	4978	385	2721	125	410	1	8	128	2224	10359
072484	2	48.0	2	49	216	2291	1138	6116	220	2941	63	473	0	5	133	1644	12003
072584	2	48.0	1	50	244	2535	1295	7411	230	3171	70	543	0	14	147	1854	13857
072684	2	48.0	0	50	121	2656	833	8244	141	3312	37	580	0	1	148	1133	14990
072784	2	48.0	4	54	193	2849	2250	10494	187	3499	70	650	0	2	150	2706	17696

Appendix Table 2-1 (cont.). Flathorn Station east channel fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
072884	2	48.0	1	55	99	2948	4423	14917	275	3774	76	726	1	2	153	4877	22573
072984	2	48.0	1	56	79	3027	2639	17556	259	4033	65	791	0	2	155	3045	25618
073084	2	48.0	1	57	70	3097	2177	19733	300	4333	60	851	0	6	161	2614	28232
073184	2	48.0	1	58	52	3149	983	20716	186	4519	48	899	2	3	166	1275	29507
080184	2	48.0	2	60	55	3204	1010	21726	188	4707	69	968	0	5	171	1329	30836
080284	2	48.0	0	60	62	3266	814	22540	121	4828	40	1008	3	10	184	1050	31886
080384	2	48.0	0	60	57	3323	857	23397	134	4962	55	1063	1	8	193	1112	32998
080484	2	48.0	0	60	64	3387	1044	24441	149	5111	62	1125	2	9	204	1330	34328
080584	2	48.0	0	60	43	3430	663	25104	141	5252	45	1170	0	4	208	896	35224
080684	2	48.0	0	60	45	3475	437	25541	51	5303	27	1197	0	2	210	562	35786
080784	2	48.0	0	60	35	3510	236	25777	71	5374	26	1223	3	2	215	373	36159
080884	2	48.0	0	60	19	3529	261	26038	77	5451	19	1242	3	3	221	382	36541
080984	2	48.0	1	61	43	3572	227	26265	50	5501	12	1254	5	2	228	340	36881
081084	2	48.0	0	61	32	3604	188	26453	53	5554	25	1279	4	2	234	304	37185
081184	2	48.0	1	62	12	3616	127	26580	33	5587	13	1292	1	10	245	197	37382
081284	2	47.5	0	62	16	3632	85	26665	15	5602	15	1307	3	4	252	138	37520
081384	2	48.0	0	62	20	3652	45	26710	14	5616	13	1320	6	16	274	114	37634
081484	2	48.0	0	62	13	3665	38	26748	10	5626	11	1331	12	9	295	93	37727
081584	2	48.0	0	62	11	3676	28	26776	4	5630	5	1336	11	14	320	73	37800
081684	2	48.0	1	63	7	3683	19	26795	2	5632	9	1345	7	14	341	59	37859
081784	2	43.0	0	63	6	3689	17	26812	2	5634	9	1354	3	9	353	46	37905
081884	2	48.0	0	63	11	3700	19	26831	9	5643	14	1368	4	15	372	72	37977
081984	2	48.0	0	63	3	3703	8	26839	14	5657	19	1387	4	1	377	49	38026
082084	2	48.0	0	63	3	3706	10	26849	34	5691	11	1398	10	1	388	69	38095
082184	2	47.0	0	63	7	3713	7	26856	42	5733	8	1406	6	1	395	71	38166
082284	2	48.0	1	64	14	3727	14	26870	83	5816	19	1425	4	3	402	138	38304
082384	2	48.0	0	64	9	3736	13	26883	93	5909	11	1436	6	12	420	144	38448
082484	2	48.0	1	65	6	3742	11	26894	68	5977	9	1445	9	5	434	109	38557
082584	2	48.0	1	66	2	3744	7	26901	56	6033	9	1454	21	4	459	100	38657

Appendix Table 2-1 (cont.). Flathorn Station east channel fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
082684	2	44.0	0	66	0	3744	2	26903	6	6039	0	1454	4	0	463	12	38669
082784	2	48.0	0	66	0	3744	7	26910	26	6065	10	1464	24	2	489	69	38738
082884	2	43.0	0	66	1	3745	9	26919	70	6135	8	1472	16	3	508	107	38845
082984	2	48.0	0	66	4	3749	12	26931	102	6237	18	1490	39	20	567	195	39040
083084	2	48.0	0	66	0	3749	0	26931	32	6269	6	1496	16	5	588	59	39099
083184	2	44.0	0	66	0	3749	0	26931	12	6281	7	1503	15	3	606	37	39136
090184	2	44.0	0	66	0	3749	0	26931	3	6284	2	1505	18	1	625	24	39160
090284	2	43.0	0	66	0	3749	0	26931	7	6291	5	1510	28	7	660	47	39207
090384	2	24.5	0	66	0	3749	0	26931	0	6291	0	1510	3	1	664	4	39211

Appendix Table 2-2. Flathorn Station west channel fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
062984	2	47.0	0	0	2	2	0	0	0	0	0	0	0	0	0	2	2
063084	2	48.0	0	0	8	10	0	0	0	0	0	0	0	2	2	10	12
070184	2	47.0	1	1	3	13	0	0	0	0	0	0	0	0	2	4	16
070284	2	48.0	1	2	3	16	0	0	0	0	0	0	0	1	3	5	21
070384	2	48.0	1	3	1	17	0	0	0	0	0	0	0	2	5	4	25
070484	2	46.0	1	4	3	20	0	0	0	0	0	0	0	3	8	7	32
070584	2	46.0	1	5	3	23	0	0	0	0	0	0	0	2	10	6	38
070684	2	48.0	2	7	15	38	0	0	0	0	1	1	0	2	12	20	58
070784	2	48.0	0	7	7	45	1	1	0	0	1	2	0	3	15	12	70
070884	2	48.0	0	7	8	53	0	1	0	0	1	3	0	3	18	12	82
070984	2	47.5	0	7	36	89	0	1	6	6	0	3	0	3	21	45	127
071084	2	48.0	1	8	31	120	0	1	2	8	3	6	0	3	24	40	167
071184	2	48.0	0	8	7	127	1	2	0	8	0	6	0	1	25	9	176
071284	2	48.0	2	10	3	130	0	2	0	8	0	6	0	0	25	5	181
071384	2	47.0	0	10	15	145	1	3	0	8	0	6	0	4	29	20	201
071484	2	48.0	0	10	19	164	0	3	0	8	4	10	0	3	32	26	227
071584	2	46.5	0	10	1	165	0	3	0	8	1	11	0	2	34	4	231
071684	2	48.0	1	11	274	439	2	5	4	12	23	34	0	3	37	307	538
071784	2	48.0	0	11	643	1082	5	10	29	41	25	59	0	1	38	703	1241
071884	2	48.0	0	11	524	1606	17	27	40	81	38	97	0	0	38	619	1860
071984	2	48.0	1	12	337	1943	42	69	21	102	29	126	0	0	38	430	2290
072084	2	48.0	1	13	279	2222	114	183	32	134	43	169	0	0	38	469	2759
072184	2	48.0	0	13	202	2424	173	356	26	160	40	209	0	0	38	441	3200
072284	2	48.0	0	13	232	2656	413	769	61	221	63	272	0	0	38	769	3969
072384	2	48.0	3	16	271	2927	566	1335	64	285	144	416	0	1	39	1049	5018
072484	2	48.0	0	16	246	3173	452	1787	63	348	114	530	0	0	39	875	5893
072584	2	48.0	1	17	299	3472	364	2151	58	406	107	637	0	0	39	829	6722
072684	2	47.0	1	18	160	3632	460	2611	25	431	55	692	0	0	39	701	7423
072784	2	46.5	1	19	121	3753	889	3500	39	470	38	730	0	0	39	1088	8511

Appendix Table 2-2 (cont.). Flathorn Station west channel fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
072884	2	48.0	1	20	140	3893	1753	5253	73	543	56	786	0	2	41	2025	10536
072984	2	46.0	1	21	113	4006	847	6100	76	619	46	832	0	1	42	1084	11620
073084	2	48.0	0	21	86	4092	784	6884	106	725	53	885	0	2	44	1031	12651
073184	2	48.0	1	22	52	4144	323	7207	83	808	33	918	0	0	44	492	13143
080184	2	48.0	1	23	28	4172	199	7406	68	876	33	951	0	0	44	329	13472
080284	2	48.0	0	23	25	4197	110	7516	60	936	28	979	0	0	44	223	13695
080384	2	48.0	C	23	30	4227	82	7598	21	957	28	1007	0	0	44	161	13856
080484	2	48.0	1	24	59	4286	86	7684	27	984	20	1027	0	1	45	194	14050
080584	2	48.0	0	24	37	4323	82	7766	10	994	22	1049	0	0	45	151	14201
080684	2	47.0	0	24	31	4354	80	7846	12	1006	24	1073	0	0	45	147	14348
080784	2	43.5	0	24	28	4382	66	7912	25	1031	17	1090	2	0	47	138	14486
080884	2	48.0	1	25	29	4411	102	8014	34	1065	15	1105	1	0	48	182	14668
080984	2	47.7	0	25	28	4439	75	8089	13	1078	24	1129	2	0	50	142	14810
081084	2	48.0	0	25	26	4465	45	8134	13	1091	14	1143	1	0	51	99	14909
081184	2	47.0	0	25	15	4480	11	8145	3	1094	5	1148	1	1	53	36	14945
081284	2	45.2	0	25	9	4489	14	8159	5	1099	2	1150	2	0	55	32	14977
081384	2	48.0	0	25	8	4497	12	8171	7	1106	15	1165	0	1	56	43	15020
081484	2	48.0	0	25	4	4501	9	8180	2	1108	7	1172	0	0	56	22	15042
081584	2	46.5	0	25	3	4504	5	8185	1	1109	6	1178	0	1	57	16	15058
081684	2	47.5	0	25	5	4509	4	8189	0	1109	10	1188	0	0	57	19	15077
081784	2	48.0	0	25	2	4511	3	8192	1	1110	7	1195	0	0	57	13	15090
081884	2	43.5	0	25	1	4512	0	8192	3	1113	2	1197	0	0	57	6	15096
081984	2	48.0	0	25	6	4518	4	8196	1	1114	2	1199	1	0	58	14	15110
082084	2	48.0	0	25	4	4522	2	8198	8	1122	6	1205	6	1	65	27	15137
082184	2	46.7	0	25	2	4524	2	8200	6	1128	7	1212	6	0	71	23	15160
082284	2	46.0	0	25	9	4533	2	8202	9	1137	1	1213	1	2	74	24	15184
082384	2	48.0	0	25	0	4533	0	8202	0	1137	2	1215	0	0	74	2	15186
082484	2	48.0	0	25	1	4534	1	8203	0	1137	4	1219	1	0	75	7	15193
082584	2	48.0	0	25	2	4536	0	8203	14	1151	2	1221	3	1	79	22	15215

Appendix Table 2-2 (cont.). Flathorn Station west channel fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
082684	2	43.0	1	26	2	4538	0	8203	3	1154	4	1225	4	0	83	14	15229
082784	2	48.0	0	26	1	4539	0	8203	12	1166	1	1226	10	3	96	27	15256
082884	2	41.0	0	26	2	4541	1	8204	6	1172	3	1229	5	?	103	19	15275
082984	2	48.0	0	26	3	4544	0	8204	31	1203	0	1229	10	0	113	44	15319
083084	2	48.0	0	26	3	4547	1	8205	14	1217	3	1232	2	3	118	26	15345
083184	2	48.0	0	26	4	4551	0	8205	8	1225	3	1235	1	2	121	18	15363
090184	2	48.0	0	26	0	4551	0	8205	0	1225	0	1235	1	1	123	2	15365
090284	2	48.0	0	26	0	4551	0	8205	3	1228	1	1236	2	0	125	6	15371
090384	2	24.2	0	26	0	4551	0	8205	0	1228	0	1236	0	0	125	0	15371

Appendix Table 2-3. Flathorn Station fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
062984	3	54.0	0	0	3	3	0	0	0	0	0	0	0	0	0	3	3
063084	3	72.0	6	6	11	14	1	1	0	0	0	0	0	5	5	23	26
070184	4	94.0	5	11	7	21	0	1	0	0	0	0	0	3	8	15	41
070284	4	96.0	6	17	7	28	1	2	0	0	0	0	0	10	18	24	65
070384	4	96.0	4	21	5	33	1	3	0	0	0	0	0	4	22	14	79
070484	4	94.0	4	25	11	44	3	6	0	0	0	0	0	6	28	24	103
070584	4	94.0	4	29	13	57	2	8	1	1	0	0	0	14	42	34	137
070684	4	96.0	7	36	30	87	2	10	1	2	2	2	0	2	44	44	181
070784	4	96.0	0	36	18	105	3	13	0	2	2	4	0	4	48	27	208
070884	4	95.8	2	38	18	123	0	13	4	6	2	6	0	4	52	30	238
070984	4	92.5	2	40	62	185	0	13	22	28	2	8	0	6	58	94	332
071084	4	96.0	2	42	54	239	5	18	18	46	5	13	0	4	62	88	420
071184	4	93.0	2	44	15	254	2	20	1	47	3	16	0	8	70	31	451
071284	4	96.0	4	48	15	269	5	25	0	47	0	16	1	9	80	34	485
071384	4	94.3	0	48	32	301	1	26	0	47	4	20	0	9	89	46	531
071484	4	96.0	0	48	28	329	5	31	1	48	4	24	0	13	102	51	582
071584	4	94.5	0	48	9	338	1	32	0	48	2	26	0	11	113	23	605
071684	4	96.0	2	50	356	694	10	42	39	87	30	56	0	23	136	460	1065
071784	4	96.0	1	51	1010	1704	42	84	251	338	39	95	0	10	146	1353	2418
071884	4	96.0	0	51	1013	2717	145	229	495	833	79	174	0	3	149	1735	4153
071984	4	96.0	1	52	587	3304	353	582	394	1227	62	236	0	5	154	1402	5555
072084	4	96.0	2	54	475	3779	778	1360	402	1629	84	320	0	1	155	1742	7297
072184	4	95.5	5	59	360	4139	1264	2624	390	2019	76	396	0	1	156	2096	9393
072284	4	96.0	1	60	405	4544	1605	4229	538	2557	161	557	0	1	157	2711	12104
072384	4	96.0	3	63	458	5002	2084	6313	449	3006	269	826	1	9	167	3273	15377
072484	4	96.0	2	65	462	5464	1590	7903	283	3289	177	1003	0	5	172	2519	17896
072584	4	96.0	2	67	543	6007	1659	9562	288	3577	177	1180	0	14	186	2683	20579
072684	4	95.0	1	68	281	6288	1293	10855	166	3743	92	1272	0	1	187	1834	22413
072784	4	94.5	5	73	314	6602	3139	13994	226	3969	108	1380	0	2	189	3794	26207

Appendix Table 2-3. (cont.). Flathorn Station fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
072884	4	96.0	2	75	239	6841	6176	20170	348	4317	132	1512	1	4	194	6902	33109
072984	4	94.0	2	77	192	7033	3486	23656	335	4652	111	1623	0	3	197	4129	37238
073084	4	96.0	1	78	156	7189	2961	26617	406	5058	113	1736	0	8	205	3645	40883
073184	4	96.0	2	80	104	7293	1306	27923	269	5327	81	1817	2	3	210	1767	42650
080184	4	96.0	3	83	83	7376	1209	29132	256	5583	102	1919	0	5	215	1658	44308
080284	4	96.0	0	83	87	7463	924	30056	181	5764	68	1987	3	10	228	1273	45581
080384	4	96.0	0	83	87	7550	939	30995	155	5919	83	2070	1	8	237	1273	46854
080484	4	96.0	1	84	123	7673	1130	32125	176	6095	82	2152	2	10	249	1524	48378
080584	4	96.0	0	84	80	7753	745	32870	151	6246	67	2219	0	4	253	1047	49425
080684	4	95.0	0	84	76	7829	517	33387	63	6309	51	2270	0	2	255	709	50134
080784	4	91.5	0	84	63	7892	302	33689	96	6405	43	2313	5	2	262	511	50645
080884	4	96.0	1	85	48	7940	363	34052	111	6516	34	2347	4	3	269	564	51209
080984	4	95.8	1	86	71	8011	302	34354	63	6579	36	2383	7	2	278	482	51691
081084	4	96.0	0	86	58	8069	233	34587	66	6645	39	2422	5	2	285	403	52094
081184	4	95.0	1	87	27	8096	138	34725	36	6681	18	2440	2	11	298	233	52327
081284	4	92.8	0	87	25	8121	99	34824	20	6701	17	2457	5	4	307	170	52497
081384	4	96.0	0	87	28	8149	57	34881	21	6722	28	2485	6	17	330	157	52654
081484	4	96.0	0	87	17	8166	47	34928	12	6734	18	2503	12	9	351	115	52769
081584	4	94.5	0	87	14	8180	33	34961	5	6739	11	2514	11	15	377	89	52858
081684	4	95.5	1	88	12	8192	23	34984	2	6741	19	2533	7	14	398	78	52936
081784	4	91.0	0	88	8	8200	20	35004	3	6744	16	2549	3	9	410	59	52995
081884	4	91.5	0	88	12	8212	19	35023	12	6756	16	2565	4	15	429	78	53073
081984	4	96.0	0	88	9	8221	12	35035	15	6771	21	2586	5	1	435	63	53136
082084	4	96.0	0	88	7	8228	12	35047	42	6813	17	2603	16	2	453	96	53232
082184	4	93.8	0	88	9	8237	9	35056	48	6861	15	2618	12	1	466	94	53326
082284	4	94.0	1	89	23	8260	16	35072	92	6953	20	2638	5	5	476	162	53488
082384	4	96.0	0	89	9	8269	13	35085	93	7046	13	2651	6	12	494	146	53634
082484	4	96.0	1	90	7	8276	12	35097	68	7114	13	2664	10	5	509	116	53750
082584	4	96.0	1	91	4	8280	7	35104	70	7184	11	2675	24	5	538	122	53872

Appendix Table 2-3 (cont.). Flathorn Station fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
082684	4	87.0	1	92	2	8282	2	35106	9	7193	4	2679	8	0	546	26	53898
082784	4	96.0	0	92	1	8283	7	35113	38	7231	11	2690	34	5	585	96	53994
082884	4	84.0	0	92	3	8286	10	35123	76	7307	11	2701	21	5	611	126	54120
082984	4	96.0	0	92	7	8293	12	35135	133	7440	18	2719	49	20	680	239	54359
083084	4	96.0	0	92	3	8296	1	35136	46	7486	9	2728	18	8	706	85	54444
083184	4	92.0	0	92	4	8300	0	35136	20	7506	10	2738	16	5	727	55	54499
090184	4	92.0	0	92	0	8300	0	35136	3	7509	2	2740	19	2	748	26	54525
090284	4	91.0	0	92	0	8300	0	35136	10	7519	6	2746	30	7	785	53	54578
090384	4	48.7	0	92	0	8300	0	35136	0	7519	0	2746	3	1	789	4	54582

Appendix Table 2-4. Yentna Station north bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of Wheels	Wheel Hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
070184	1	9.0	0	0	1	1	0	0	0	0	0	0	0	1	1	2	2
070284	1	23.5	0	0	4	5	0	0	0	0	0	0	0	0	1	4	6
070384	1	24.0	0	0	0	5	0	0	0	0	0	0	0	0	1	0	6
070484	1	24.0	1	1	1	6	1	1	0	0	0	0	0	1	2	4	10
070584	1	9.0	0	1	2	8	0	1	0	0	0	0	0	0	2	2	12
070684	1	24.0	0	1	4	12	1	2	0	0	0	0	0	0	2	5	17
070784	1	24.0	1	2	6	18	0	2	0	0	0	0	0	0	2	7	24
070884	1	23.5	0	2	4	22	0	2	0	0	0	0	0	0	2	4	28
070984	1	23.0	0	2	6	28	1	3	3	3	2	2	0	1	3	13	41
071084	1	22.0	1	3	8	36	3	6	7	10	2	4	0	1	4	22	63
071184	1	23.0	0	3	4	40	1	7	1	11	1	5	0	6	10	13	76
071284	1	22.5	1	4	5	45	1	8	2	13	0	5	0	5	15	14	90
071384	1	24.0	1	5	2	47	2	10	0	13	0	5	0	7	22	12	102
071484	1	24.0	0	5	5	52	2	12	2	15	1	6	0	1	23	11	113
071584	1	24.0	0	5	3	55	2	14	0	15	1	7	0	9	32	15	128
071684	1	22.0	1	6	1	56	1	15	0	15	0	7	0	6	38	9	137
071784	1	24.0	0	6	75	131	25	40	34	49	3	10	0	1	39	138	275
071884	1	24.0	1	7	43	174	47	87	18	67	3	13	0	0	39	112	387
071984	1	24.0	0	7	55	229	139	226	27	94	3	16	0	1	40	225	612
072084	1	24.0	0	7	28	257	223	449	20	114	0	16	0	0	40	271	883
072184	1	24.0	0	7	15	272	310	759	12	126	2	18	0	0	40	339	1222
072284	1	24.0	1	8	8	280	159	918	0	126	2	20	0	0	40	170	1392
072384	1	21.0	0	8	3	283	203	1121	1	127	0	20	0	0	40	207	1599
072484	1	14.0	1	9	15	298	369	1490	3	130	0	20	0	0	40	388	1987
072584	1	22.0	0	9	76	374	1283	2773	49	179	18	38	0	0	40	1426	3413
072684	1	14.0	0	9	14	388	515	3288	12	191	2	40	0	0	40	543	3956
072784	1	15.0	0	9	8	396	238	3526	8	199	1	41	0	4	44	259	4215
072884	1	15.0	0	9	12	408	546	4072	7	206	6	47	0	2	46	573	4788
072984	1	15.0	0	9	8	416	387	4459	8	214	0	47	0	0	46	403	5191

Appendix Table 2-4 (cont.). Yentna Station north bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of Wheels	Wheel Hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
073084	1	14.0	0	9	2	418	330	4789	7	221	1	48	0	0	46	340	5531
073184	1	16.0	0	9	7	425	300	5089	19	240	1	49	0	0	46	327	5858
080184	1	24.0	0	9	6	431	365	5454	33	273	4	53	0	0	46	408	6266
080284	1	24.0	0	9	10	441	397	5851	31	304	0	53	0	0	46	438	6704
080384	1	24.0	0	9	8	449	433	6284	45	349	5	58	0	0	46	491	7195
080484	1	24.0	0	9	19	468	356	6640	27	376	6	64	0	1	47	409	7604
080584	1	23.5	0	9	10	478	194	6834	18	394	6	70	0	1	48	229	7833
080684	1	23.5	0	9	10	488	129	6963	16	410	8	78	0	0	48	163	7996
080784	1	24.0	0	9	15	503	77	7040	20	430	5	83	0	0	48	117	8113
080884	1	24.0	0	9	5	508	98	7138	18	448	7	90	0	0	48	128	8241
080984	1	24.0	0	9	10	518	84	7222	19	467	1	91	0	0	48	114	8355
081084	1	24.0	0	9	8	526	53	7275	27	494	12	103	0	0	48	100	8455
081184	1	23.0	0	9	8	534	46	7321	15	509	6	109	0	0	48	75	8530
081284	1	22.5	0	9	6	540	29	7350	13	522	7	116	0	0	48	55	8585
081384	1	24.0	0	9	6	546	47	7397	17	539	18	134	0	2	50	90	8675
081484	1	24.0	0	9	7	553	23	7420	5	544	7	141	0	2	52	44	8719
081584	1	24.0	0	9	6	559	21	7441	5	549	5	146	0	2	54	39	8758
081684	1	24.0	0	9	6	565	10	7451	2	551	5	151	0	0	54	23	8781
081784	1	24.0	0	9	6	571	6	7457	1	552	5	156	0	1	55	19	8800
081884	1	24.0	0	9	0	571	5	7462	1	553	4	160	0	0	55	10	8810
081984	1	24.0	0	9	2	573	1	7463	0	553	1	161	0	0	55	4	8814
082084	1	24.0	0	9	2	575	0	7463	0	553	0	161	0	0	55	2	8816
082184	1	24.0	0	9	0	575	0	7463	0	553	2	163	0	0	55	2	8818
082284	1	24.0	0	9	3	578	0	7463	3	556	2	165	0	0	55	8	8826
082384	1	24.0	0	9	0	578	0	7463	0	556	0	165	1	0	56	1	8827
082484	1	24.0	0	9	2	580	2	7465	7	563	1	166	0	2	58	14	8841
082584	1	24.0	0	9	1	581	1	7466	2	565	1	167	0	1	59	6	8847
082684	1	24.0	0	9	0	581	1	7467	9	574	5	172	0	2	61	17	8864
082784	1	24.0	0	9	0	581	4	7471	14	588	3	175	0	4	65	25	8889

Appendix Table 2-4 (cont.). Yentna Station north bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of Wheels	Wheel Hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
082884	1	20.0	0	9	0	581	0	7471	5	593	3	178	0	5	70	13	8902
082984	1	20.0	0	9	1	582	0	7471	6	599	0	178	0	1	71	8	8910
083084	1	24.0	0	9	0	582	4	7475	4	603	0	178	1	0	72	9	8919
083184	1	24.0	0	9	0	582	0	7475	4	607	0	178	1	5	78	10	8929
090184	1	24.0	0	9	0	582	0	7475	5	612	0	178	0	1	79	6	8935
090284	1	24.0	0	9	0	582	1	7476	1	613	0	178	0	7	86	9	8944
090384	1	24.0	0	9	0	582	0	7476	1	614	0	178	1	4	91	6	8950
090484	1	24.0	0	9	0	582	0	7476	0	614	0	178	0	5	96	5	8955
090584	1	12.0	0	9	0	582	1	7477	2	616	2	180	0	0	96	5	8960

Appendix Table 2-5. Yentna Station south bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of Wheels	Wheel Hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
070184	1	9.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
070284	1	23.5	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1
070384	1	24.0	0	0	2	3	0	0	0	0	0	0	0	0	0	2	3
070484	1	24.0	3	3	2	5	0	0	0	0	0	0	0	0	0	5	8
070584	1	24.0	0	3	7	12	0	0	0	0	0	0	0	0	0	7	15
070684	1	24.0	0	3	5	17	0	0	0	0	0	0	0	0	0	5	20
070784	1	24.0	1	4	11	28	0	0	0	0	0	0	0	0	0	12	32
070884	1	23.5	0	4	7	35	0	0	0	0	1	1	0	0	0	8	40
070984	1	24.0	0	4	29	64	0	0	1	1	0	1	0	0	0	30	70
071084	1	24.0	1	5	75	139	3	3	3	4	0	1	0	0	0	82	152
071184	1	23.0	2	7	21	160	2	5	4	8	1	2	0	0	0	30	182
071284	1	23.0	0	7	14	174	2	7	0	8	0	2	0	0	0	16	198
071384	1	24.0	0	7	15	189	0	7	1	9	1	3	0	1	1	18	216
071484	1	24.0	0	7	27	216	1	8	1	0	1	4	0	1	2	31	247
071584	1	24.0	0	7	8	224	0	8	0	10	0	4	0	1	3	9	256
071684	1	23.0	1	8	15	239	0	8	0	10	1	5	0	2	5	19	275
071784	1	23.0	0	8	687	926	3	11	8	18	1	6	0	0	5	699	974
071884	1	15.0	1	9	735	1661	15	26	42	60	5	11	0	0	5	798	1772
071984	1	15.5	0	9	629	2290	125	151	31	91	5	16	0	0	5	790	2562
072084	1	12.5	0	9	531	2821	333	484	22	113	7	23	0	0	5	893	3455
072184	1	15.5	0	9	507	3328	588	1072	28	141	16	39	0	0	5	1139	4594
072284	1	15.3	2	11	377	3705	671	1743	24	165	19	58	0	0	5	1093	5687
072384	1	15.5	0	11	282	3987	746	2489	26	191	29	87	0	2	7	1085	6772
072484	1	15.5	0	11	310	4297	537	3026	19	210	28	115	0	2	9	896	7668
072584	1	15.0	0	11	294	4591	998	4024	26	236	43	158	0	2	11	1363	9031
072684	1	14.0	0	11	237	4828	862	4886	24	260	28	186	0	0	11	1151	10182
072784	1	15.0	1	12	190	5018	568	5454	9	269	16	202	0	1	12	785	10967
072884	1	15.0	0	12	144	5162	1004	6458	13	282	28	230	0	1	13	1190	12157
072984	1	15.0	0	12	84	5246	1544	8002	13	295	23	253	0	0	13	1664	13821

Appendix Table 2-5 (cont.). Yentna Station south bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of Wheels	Wheel Hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
073084	1	14.0	0	12	75	5321	968	8970	23	318	10	263	0	0	13	1076	14897
073184	1	14.0	0	12	95	5416	866	9836	18	336	13	276	0	0	13	992	15889
080184	1	24.0	0	12	83	5499	958	10794	47	383	29	305	0	3	16	1120	17009
080284	1	24.0	0	12	81	5580	665	11459	45	428	29	334	0	2	18	822	17831
080384	1	24.0	0	12	81	5661	495	11954	55	483	51	385	0	0	18	682	18513
080484	1	24.0	0	12	107	5768	431	12385	47	530	52	437	0	0	18	637	19150
080584	1	24.0	0	12	76	5844	374	12759	48	578	73	510	0	0	18	571	19721
080684	1	23.5	0	12	52	5896	175	12934	21	599	12	522	0	0	18	260	19981
080784	1	24.0	0	12	38	5934	105	13039	20	619	11	533	0	0	18	174	20155
080884	1	24.0	0	12	46	5980	76	13115	16	635	35	568	0	0	18	173	20328
080984	1	24.0	0	12	27	6007	81	13196	14	649	19	587	0	0	18	141	20469
081084	1	24.0	0	12	30	6037	48	13244	19	668	31	618	0	0	18	128	20597
081184	1	24.0	0	12	32	6069	41	13285	16	684	26	644	0	0	18	115	20712
081284	1	24.0	0	12	15	6084	18	13303	6	690	26	670	0	0	18	65	20777
081384	1	24.0	0	12	13	6097	24	13327	8	698	40	710	1	1	20	87	20864
081484	1	24.0	0	12	14	6111	13	13340	6	704	15	725	0	3	23	51	20915
081584	1	24.0	0	12	22	6133	5	13345	3	707	7	732	0	2	25	39	20954
081684	1	24.0	0	12	17	6150	4	13349	2	709	6	738	0	3	28	32	20986
081784	1	24.0	0	12	9	6159	3	13352	1	710	9	747	0	1	29	23	21009
081884	1	24.0	0	12	9	6168	3	13355	1	711	9	756	0	0	29	22	21031
081984	1	24.0	0	12	1	6169	1	13356	0	711	0	756	0	0	29	2	21033
082084	1	24.0	0	12	1	6170	0	13356	0	711	0	756	0	0	29	1	21034
082184	1	24.0	0	12	0	6170	1	13357	0	711	0	756	0	0	29	1	21035
082284	1	24.0	0	12	2	6172	2	13359	3	714	2	758	0	0	29	9	21044
082384	1	24.0	0	12	14	6186	0	13359	5	719	3	761	0	0	29	22	21066
082484	1	24.0	0	12	7	6193	1	13360	5	724	3	764	0	0	29	16	21082
082584	1	24.0	0	12	11	6204	0	13360	1	725	5	769	0	2	31	19	21101
082684	1	24.0	0	12	6	6210	1	13361	3	728	1	770	0	1	32	12	21113
082784	1	24.0	0	12	10	6220	0	13361	20	748	9	779	0	3	35	42	21155

Appendix Table 2-5 (cont.). Yentna Station south bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of Wheels	Wheel Hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
082884	1	20.0	0	12	6	6226	1	13362	15	763	5	784	2	3	40	32	21187
082984	1	20.0	0	12	8	6234	0	13362	11	774	1	785	0	0	40	20	21207
083084	1	22.0	0	12	6	6240	2	13364	21	795	3	788	1	3	44	36	21243
083184	1	21.0	0	12	2	6242	0	13364	6	801	0	788	3	5	52	16	21259
090184	1	24.0	0	12	1	6243	1	13365	11	812	1	789	2	2	56	18	21277
090284	1	24.0	0	12	0	6243	0	13365	0	812	1	790	0	2	58	3	21280
090384	1	18.0	0	12	0	6243	0	13365	3	815	0	790	0	2	60	5	21285
090484	1	12.0	0	12	0	6243	0	13365	0	815	0	790	0	0	60	0	21285
090584	1	2.0	0	12	0	6243	0	13365	0	815	0	790	0	0	60	0	21285

Appendix Table 2-6. Yentna Station fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
070184	2	18.0	0	0	1	1	0	0	0	0	0	0	0	1	1	2	2
070284	2	47.0	0	0	5	6	0	0	0	0	0	0	0	0	1	5	7
070384	2	48.0	0	0	2	8	0	0	0	0	0	0	0	0	1	2	9
070484	2	48.0	4	4	3	11	1	1	0	0	0	0	0	1	2	9	18
070584	2	33.0	0	4	9	20	0	1	0	0	0	0	0	0	2	9	27
070684	2	48.0	0	4	9	29	1	2	0	0	0	0	0	0	2	10	37
070784	2	48.0	2	6	17	46	0	2	0	0	0	0	0	0	2	19	56
070884	2	47.0	0	6	11	57	0	2	0	0	1	1	0	0	2	12	68
070984	2	47.0	0	6	35	92	1	3	4	4	2	3	0	1	3	43	111
071084	2	46.0	2	8	83	175	6	9	10	14	2	5	0	1	4	104	215
071184	2	46.0	2	10	25	200	3	12	5	19	2	7	0	6	10	43	258
071284	2	45.5	1	11	19	219	3	15	2	21	0	7	0	5	15	30	288
071384	2	48.0	1	12	17	236	2	17	1	22	1	8	0	8	23	30	318
071484	2	48.0	0	12	32	268	3	20	3	25	2	10	0	2	25	42	360
071584	2	48.0	0	12	11	279	2	22	0	25	1	11	0	10	35	24	384
071684	2	45.0	2	14	16	295	1	23	0	25	1	12	0	8	43	28	412
071784	2	47.0	0	14	762	1057	28	51	42	67	4	16	0	1	44	837	1249
071884	2	39.0	2	16	778	1835	62	113	60	127	8	24	0	0	44	910	2159
071984	2	39.5	0	16	684	2519	264	377	58	185	8	32	0	1	45	1015	3174
072084	2	36.5	0	16	559	3078	556	933	42	227	7	39	0	0	45	1164	4338
072184	2	39.5	0	16	522	3600	898	1831	40	267	18	57	0	0	45	1478	5816
072284	2	39.3	3	19	385	3985	830	2661	24	291	21	78	0	0	45	1263	7079
072384	2	36.5	0	19	285	4270	949	3610	27	318	29	107	0	2	47	1292	8371
072484	2	29.5	1	20	325	4595	906	4516	22	340	28	135	0	2	49	1284	9655
072584	2	37.0	0	20	370	4965	2281	6797	75	415	61	196	0	2	51	2789	12444
072684	2	28.0	0	20	251	5216	1377	8174	36	451	30	226	0	0	51	1694	14138
072784	2	30.0	1	21	198	5414	806	8980	17	468	17	243	0	5	56	1044	15182
072884	2	30.0	0	21	156	5570	1550	10530	20	488	34	277	0	3	59	1763	16945
072984	2	30.0	0	21	92	5662	1931	12461	21	509	23	300	0	0	59	2067	19012

Appendix Table 2-6 (cont.). Yentna Station fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total Catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
073084	2	28.0	0	21	77	5739	1298	13759	30	539	11	311	0	0	59	1416	20428
073184	2	30.0	0	21	102	5841	1166	14925	37	576	14	325	0	0	59	1319	21747
080184	2	48.0	0	21	89	5930	1323	16248	80	656	33	358	0	3	62	1528	23275
080284	2	48.0	0	21	91	6021	1062	17310	76	732	29	387	0	2	64	1260	24535
080384	2	48.0	0	21	89	6110	928	18238	100	832	56	443	0	0	64	1173	25708
080484	2	48.0	0	21	126	6236	787	19025	74	906	58	501	0	1	65	1046	26754
080584	2	47.5	0	21	86	6322	568	19593	66	972	79	580	0	1	66	800	27554
080684	2	47.0	0	21	62	6384	304	19897	37	1009	20	600	0	0	66	423	27977
080784	2	48.0	0	21	53	6437	182	20079	40	1049	16	616	0	0	66	291	28268
080884	2	48.0	0	21	51	6488	174	20253	34	1083	42	658	0	0	66	301	28569
080984	2	48.0	0	21	37	6525	165	20418	33	1116	20	678	0	0	66	255	28824
081084	2	48.0	0	21	38	6563	101	20519	46	1162	43	721	0	0	66	228	29052
081184	2	47.0	0	21	40	6603	87	20606	31	1193	32	753	0	0	66	190	29242
081284	2	46.5	0	21	21	6624	47	20653	19	1212	33	786	0	0	66	120	29362
081384	2	48.0	0	21	19	6643	71	20724	25	1237	58	844	1	3	70	177	29539
081484	2	48.0	0	21	21	6664	36	20760	11	1248	22	866	0	5	75	95	29634
081584	2	48.0	0	21	28	6692	26	20786	8	1256	12	878	0	4	79	78	29712
081684	2	48.0	0	21	23	6715	14	20800	4	1260	11	889	0	3	82	55	29767
081784	2	48.0	0	21	15	6730	9	20809	2	1262	14	903	0	2	84	42	29809
081884	2	48.0	0	21	9	6739	8	20817	2	1264	13	916	0	0	84	32	29841
081984	2	48.0	0	21	3	6742	2	20819	0	1264	1	917	0	0	84	6	29847
082084	2	48.0	0	21	3	6745	0	20819	0	1264	0	917	0	0	84	3	29850
082184	2	48.0	0	21	0	6745	1	20820	0	1264	2	919	0	0	84	3	29853
082284	2	48.0	0	21	5	6750	2	20822	6	1270	4	923	0	0	84	17	29870
082384	2	48.0	0	21	14	6764	0	20822	5	1275	3	926	1	0	85	23	29893
082484	2	48.0	0	21	9	6773	3	20825	12	1287	4	930	0	2	87	30	29923
082584	2	48.0	0	21	12	6785	1	20826	3	1290	6	936	0	3	90	25	29948
082684	2	48.0	0	21	6	6791	2	20828	12	1302	6	942	0	3	93	29	29977
082784	2	48.0	0	21	10	6801	4	20832	34	1336	12	954	0	7	100	67	30044

Appendix Table 2-6 (cont.). Yentna Station fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
082884	2	40.0	0	21	6	6807	1	20833	20	1356	8	962	2	8	110	45	30089
082984	2	40.0	0	21	9	6816	0	20833	17	1373	1	963	0	1	111	28	30117
083084	2	46.0	0	21	6	6822	6	20839	25	1398	3	966	2	3	116	45	30162
083184	2	45.0	0	21	2	6824	0	20839	10	1408	0	966	4	10	130	26	30188
090184	2	48.0	0	21	1	6825	1	20840	16	1424	1	967	2	3	135	24	30212
090284	2	48.0	0	21	0	6825	1	20841	1	1425	1	968	0	9	144	12	30224
090384	2	42.0	0	21	0	6825	0	20841	4	1429	0	968	1	6	151	11	30235
090484	2	36.0	0	21	0	6825	0	20841	0	1429	0	968	0	5	156	5	30240
090584	2	14.0	0	21	0	6825	1	20842	2	1431	2	970	0	0	156	5	30245

Appendix Table 2-7. Sunshine Station east bank fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
060484	2	28.0	2	2	14	14	0	0	0	0	0	0	0	0	0	16	16
060584	2	48.0	23	25	36	50	0	0	0	0	0	0	0	9	0	59	75
060684	2	48.0	79	104	32	82	0	0	0	0	0	0	0	1	1	112	187
060784	2	48.0	37	141	50	132	0	0	0	0	0	0	0	0	1	87	274
060884	2	48.0	57	198	35	167	0	0	0	0	0	0	0	0	1	92	366
060984	2	46.0	134	332	50	217	0	0	0	0	0	0	0	0	1	184	550
061084	2	46.0	63	395	30	247	0	0	0	0	0	0	0	0	1	93	643
061184	2	48.0	134	529	32	279	0	0	0	0	0	0	0	0	1	166	809
061284	2	48.0	173	702	21	300	0	0	1	1	0	0	0	0	1	195	1004
061384	2	48.0	146	848	27	327	0	0	0	1	0	0	0	0	1	173	1177
061484	2	48.0	107	955	29	356	0	0	0	1	0	0	0	0	1	136	1313
061584	2	48.0	180	1135	24	380	0	0	0	1	0	0	0	0	1	204	1517
061684	2	48.0	105	1240	8	388	0	0	0	1	0	0	0	0	1	113	1630
061784	2	48.0	11	1251	0	388	0	0	0	1	0	0	0	0	1	11	1641
061884	2	48.0	93	1344	13	401	0	0	0	1	0	0	0	0	1	106	1747
061984	2	48.0	475	1819	27	428	0	0	0	1	0	0	0	1	2	503	2250
062084	2	44.0	485	2304	12	440	0	0	0	1	0	0	0	0	2	497	2747
062184	2	48.0	251	2555	19	459	0	0	0	1	0	0	0	0	2	270	3017
062284	2	48.0	258	2813	11	470	0	0	0	1	0	0	0	1	3	270	3287
062384	2	48.0	355	3168	3	473	0	0	0	1	0	0	0	0	3	358	3645
062484	2	48.0	258	3426	5	478	0	0	0	1	0	0	0	0	3	263	3908
062584	2	42.5	250	3676	2	480	0	0	0	1	0	0	0	0	3	252	4160
062684	2	48.0	338	4014	10	490	0	0	0	1	0	0	0	0	3	348	4508
062784	2	47.0	218	4232	2	492	0	0	0	1	0	0	0	0	3	220	4728
062884	2	48.0	155	4387	2	494	0	0	0	1	0	0	0	0	3	157	4885
062984	2	48.0	205	4592	8	502	0	0	0	1	0	0	0	0	3	213	5098
063084	2	46.5	198	4790	4	506	1	1	0	1	0	0	0	0	3	203	5301
070184	2	48.0	133	4923	7	513	1	2	0	1	0	0	0	0	3	141	5442
070284	2	46.0	109	5032	5	518	0	2	1	2	0	0	0	0	3	115	5557

Appendix Table 2-7 (cont.). Sunshine Station east bank fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
070384	2	48.0	65	5097	12	530	1	3	0	2	0	0	0	0	3	78	5635
070484	2	48.0	54	5149	7	537	0	3	0	2	1	1	0	2	5	62	5697
070584	2	48.0	58	5207	14	551	1	4	1	3	1	2	0	2	7	77	5774
070684	2	48.0	57	5264	15	566	0	4	0	3	1	3	0	0	7	73	5847
070784	2	48.0	44	5308	7	573	3	7	1	4	1	4	0	0	7	56	5903
070884	2	46.5	49	5357	7	580	0	7	0	4	0	4	0	0	7	56	5959
070984	2	48.0	34	5391	18	598	1	8	2	6	1	5	0	0	7	56	6015
071084	2	48.0	21	5412	13	611	2	10	1	7	2	7	0	0	7	39	6054
071184	2	48.0	10	5422	8	619	1	11	3	10	0	7	0	0	7	22	6076
071284	2	48.0	9	5431	37	656	2	13	6	16	0	7	0	0	7	54	6130
071384	2	43.5	10	5441	45	701	3	16	32	48	0	7	0	0	7	90	6220
071484	2	48.0	19	5460	35	736	6	22	63	111	3	10	0	0	7	126	6346
071584	2	48.0	9	5469	19	755	8	30	70	181	1	11	0	0	7	107	6453
071684	2	48.0	11	5480	38	793	7	37	186	367	2	13	0	0	7	244	6697
071784	2	48.0	4	5484	18	811	9	46	137	504	5	18	0	0	7	173	6870
071884	2	48.0	3	5487	27	838	8	54	76	580	6	24	0	1	8	121	6991
071984	2	47.0	4	5491	422	1260	59	113	117	697	11	35	0	0	8	613	7604
072084	2	48.0	5	5496	1072	2332	99	212	245	942	13	48	0	0	8	1434	9038
072184	2	47.0	5	5501	2054	4386	176	388	336	1278	5	53	0	0	8	2576	11614
072284	2	48.0	1	5502	1955	6341	447	835	731	2009	9	62	0	0	8	3143	14757
072384	2	48.0	6	5508	1690	8031	1006	1841	2072	4081	17	79	0	0	8	4791	19548
072484	2	36.5	1	5509	724	8755	1663	3504	2054	6135	24	103	0	0	8	4466	24014
072584	2	40.5	2	5511	715	9470	3306	6810	2229	8364	29	132	0	0	8	6281	30295
072684	2	46.0	2	5513	377	9847	3525	10335	830	9194	20	152	0	0	8	4754	35049
072784	2	41.5	1	5514	437	10284	6389	16724	888	10082	31	183	0	0	8	7746	42795
072884	2	40.0	0	5514	346	10630	5260	21984	1736	11818	65	248	0	0	8	7407	50202
072984	2	35.0	0	5514	332	10962	4717	26701	1910	13728	65	313	0	0	8	7024	57226
073084	2	43.5	0	5514	372	11334	5311	32012	2480	16208	78	391	0	0	8	8241	65467
073184	2	42.5	1	5515	257	11591	4319	36331	2104	18312	87	478	0	0	8	6768	72235

Appendix Table 2-7 (cont.). Sunshine Station east bank fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
080184	2	34.0	2	5517	153	11744	3564	39895	1614	19926	124	602	0	0	8	5457	77692
080284	2	33.0	2	5519	194	11938	4088	43983	2268	22194	160	762	0	0	8	6712	84404
080384	2	38.0	0	5519	92	12030	2966	46949	2201	24395	138	900	0	0	8	5397	89801
080484	2	34.5	1	5520	84	12114	2822	49771	2619	27014	180	1080	0	1	9	5707	95508
080584	2	37.0	0	5520	74	12188	1776	51547	2185	29199	160	1240	0	0	9	4195	99703
080684	2	46.0	0	5520	71	12259	1687	53234	1724	30923	197	1437	0	0	9	3679	103382
080784	2	43.0	0	5520	61	12320	1516	54750	2283	33206	256	1693	0	0	9	4116	107498
080884	2	45.5	0	5520	75	12395	1709	56459	2697	35903	412	2105	0	0	9	4893	112391
080984	2	23.0	0	5520	24	12419	616	57075	1284	37187	144	2249	0	0	9	2068	114459
081084	2	48.0	0	5520	56	12475	656	57731	1313	38500	218	2467	0	0	9	2243	116702
081184	2	45.5	0	5520	44	12519	711	58442	2623	41123	412	2879	0	0	9	3790	120492
081284	2	45.5	0	5520	24	12543	389	58831	2261	43384	461	3340	0	0	9	3135	123627
081384	2	48.0	0	5520	20	12563	241	59072	1849	45233	343	3683	0	1	10	2454	126081
081484	2	48.0	0	5520	22	12585	156	59228	1368	46601	330	4013	0	0	10	1876	127957
081584	2	48.0	0	5520	12	12597	89	59317	925	47526	293	4306	0	0	10	1319	129276
081684	2	48.0	0	5520	15	12612	77	59394	1120	48646	292	4598	0	0	10	1504	130780
081784	2	46.0	0	5520	7	12619	60	59454	788	49434	268	4866	0	0	10	1123	131903
081884	2	48.0	0	5520	12	12631	33	59487	305	49739	208	5074	0	0	10	558	132461
081984	2	48.0	0	5520	0	12631	12	59499	129	49868	117	5191	0	0	10	258	132719
082084	2	48.0	0	5520	2	12633	19	59518	84	49952	63	5254	0	0	10	168	132887
082184	2	48.0	0	5520	1	12634	10	59528	129	50081	100	5354	0	2	12	242	133129
082284	2	48.0	0	5520	4	12638	9	59537	264	50345	105	5459	0	0	12	382	133511
082384	2	48.0	0	5520	3	12641	17	59554	232	50577	86	5545	0	0	12	338	133849
082484	2	48.0	0	5520	2	12643	10	59564	151	50728	34	5579	1	1	14	199	134048
082584	2	40.0	0	5520	1	12644	3	59567	10	50738	4	5583	0	0	14	18	134066
082684	2	30.0	0	5520	0	12644	0	59567	6	50744	0	5583	0	0	14	6	134072
082784	2	46.5	0	5520	0	12644	3	59570	52	50796	26	5609	0	1	15	82	134154
082884	2	48.0	0	5520	0	12644	1	59571	82	50878	36	5645	0	1	16	120	134274
082984	2	48.0	0	5520	0	12644	6	59577	89	50967	21	5666	0	6	22	122	134396

Appendix Table 2-7 (cont.). Sunshine Station east bank fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
083084	2	48.0	0	5520	1	12645	2	59579	76	51043	18	5684	0	6	28	103	134499
083184	2	48.0	0	5520	2	12647	3	59582	74	51117	22	5706	1	14	43	116	134615
090184	2	46.0	0	5520	1	12648	1	59583	42	51159	4	5710	1	1	45	50	134665
090284	2	44.5	0	5520	0	12648	2	59585	77	51236	12	5722	0	2	47	93	134758
090384	2	48.0	0	5520	0	12648	1	59586	121	51357	14	5736	0	5	52	141	134899
090484	2	48.0	0	5520	3	12651	2	59588	141	51498	8	5744	0	4	56	158	135057
090584	2	48.0	0	5520	0	12651	8	59596	110	51608	13	5757	0	5	61	136	135193
090684	2	48.0	0	5520	0	12651	5	59601	112	51720	15	5772	1	10	72	143	135336
090784	2	48.0	0	5520	0	12651	0	59601	87	51807	4	5776	6	3	81	100	135436
090884	2	48.0	0	5520	0	12651	0	59601	34	51841	7	5783	6	6	93	53	135489
090984	2	48.0	0	5520	0	12651	0	59601	42	51883	12	5795	6	5	104	65	135554
091084	2	29.2	0	5520	0	12651	1	59602	31	51914	9	5804	1	4	109	46	135600

Appendix Table 2-8. Sunshine Station lower east bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total Catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
060484	1	24.0	2	2	14	14	0	0	0	0	0	0	0	0	0	16	16
060584	1	24.0	8	10	22	36	0	0	0	0	0	0	0	0	0	30	46
060684	1	24.0	35	45	16	52	0	0	0	0	0	0	0	1	1	52	98
060784	1	24.0	20	65	25	77	0	0	0	0	0	0	0	0	1	45	143
060884	1	24.0	31	96	21	98	0	0	0	0	0	0	0	0	1	52	195
060984	1	24.0	45	141	15	113	0	0	0	0	0	0	0	0	1	60	255
061084	1	24.0	34	175	13	126	0	0	0	0	0	0	0	0	1	47	302
061184	1	24.0	57	232	9	135	0	0	0	0	0	0	0	0	1	66	368
061284	1	24.0	94	326	10	145	0	0	1	1	0	0	0	0	1	105	473
061384	1	24.0	70	396	14	159	0	0	0	1	0	0	0	0	1	84	557
061484	1	24.0	40	436	14	173	0	0	0	1	0	0	0	0	1	54	611
061584	1	24.0	80	516	7	180	0	0	0	1	0	0	0	0	1	87	698
061684	1	24.0	43	559	2	182	0	0	0	1	0	0	0	0	1	45	743
061784	1	24.0	4	563	0	182	0	0	0	1	0	0	0	0	1	4	747
061884	1	24.0	36	599	5	187	0	0	0	1	0	0	0	0	1	41	788
061984	1	24.0	191	790	13	200	0	0	0	1	0	0	0	1	2	205	993
062084	1	21.5	247	1037	8	208	0	0	0	1	0	0	0	0	2	255	1248
062184	1	24.0	119	1156	8	216	0	0	0	1	0	0	0	0	2	127	1375
062284	1	24.0	116	1272	4	220	0	0	0	1	0	0	0	0	2	120	1495
062384	1	24.0	134	1406	2	222	0	0	0	1	0	0	0	0	2	136	1631
062484	1	24.0	116	1522	3	225	0	0	0	1	0	0	0	0	2	119	1750
062584	1	19.5	102	1624	0	225	0	0	0	1	0	0	0	0	2	102	1852
062684	1	24.0	154	1778	4	229	0	0	0	1	0	0	0	0	2	158	2010
062784	1	23.0	101	1879	0	229	0	0	0	1	0	0	0	0	2	101	2111
062884	1	24.0	47	1926	1	230	0	0	0	1	0	0	0	0	2	48	2159
062984	1	24.0	87	2013	6	236	0	0	0	1	0	0	0	0	2	93	2252
063084	1	22.5	95	2108	1	237	1	1	0	1	0	0	0	0	2	97	2349
070184	1	24.0	64	2172	5	242	0	1	0	1	0	0	0	0	2	69	2418
070284	1	24.0	75	2247	3	245	0	1	0	1	0	0	0	0	2	78	2496

Appendix Table 2-8 (cont.). Sunshine Station lower east bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
070384	1	24.0	48	2295	7	252	0	1	0	1	0	0	0	0	2	55	2551
070484	1	24.0	37	2332	4	256	0	1	0	1	1	1	0	2	4	44	2595
070584	1	24.0	37	2369	5	261	1	2	1	2	0	1	0	1	5	45	2640
070684	1	24.0	37	2406	9	270	0	2	0	2	1	2	0	0	5	47	2687
070784	1	24.0	33	2439	4	274	3	5	0	2	0	2	0	0	5	40	2727
070884	1	24.0	33	2472	6	280	0	5	0	2	0	2	0	0	5	39	2766
070984	1	24.0	24	2496	11	291	1	6	0	2	1	3	0	0	5	37	2803
071084	1	24.0	18	2514	10	301	2	8	1	3	2	5	0	0	5	33	2836
071184	1	24.0	8	2522	7	308	0	8	2	5	0	5	0	0	5	17	2853
071284	1	24.0	8	2530	15	323	1	9	2	7	0	5	0	0	5	26	2879
071384	1	24.0	8	2538	35	358	3	12	25	32	0	5	0	0	5	71	2950
071484	1	24.0	14	2552	15	373	2	14	44	76	2	7	0	0	5	77	3027
071584	1	24.0	7	2559	12	385	7	21	56	132	1	8	0	0	5	83	3110
071684	1	24.0	10	2569	26	411	4	25	147	279	2	10	0	0	5	189	3299
071784	1	24.0	3	2572	10	421	6	31	110	389	4	14	0	0	5	133	3432
071884	1	24.0	3	2575	19	440	6	37	55	444	5	19	0	1	6	89	3521
071984	1	23.0	3	2578	285	725	50	87	90	534	9	28	0	0	6	437	3958
072084	1	24.0	4	2582	511	1236	54	141	163	697	10	38	0	0	6	742	4700
072184	1	24.0	4	2586	927	2163	89	230	212	909	1	39	0	0	6	1233	5933
072284	1	24.0	1	2587	849	3012	210	440	433	1342	4	43	0	0	6	1497	7430
072384	1	24.0	3	2590	733	3745	442	882	1167	2509	11	54	0	0	6	2356	9786
072484	1	18.0	0	2590	267	4012	702	1584	1077	3586	11	65	0	0	6	2057	11843
072584	1	20.0	2	2592	342	4354	1603	3187	1268	4854	11	76	0	0	6	3226	15069
072684	1	24.0	2	2594	179	4533	1587	4774	541	5395	11	87	0	0	6	2320	17389
072784	1	20.0	1	2595	205	4738	3410	8184	524	5919	12	99	0	0	6	4152	21541
072884	1	19.0	0	2595	112	4850	1982	10166	700	6619	17	116	0	0	6	2811	24352
072984	1	15.5	0	2595	128	4978	1848	12014	967	7586	17	133	0	0	6	2960	27312
073084	1	20.0	0	2595	159	5137	2240	14254	1348	8934	36	169	0	0	6	3783	31095
073184	1	20.0	0	2595	115	5252	2485	16739	998	9932	43	212	0	0	6	3641	34736

Appendix Table 2-8 (cont.). Sunshine Station lower east bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
080184	1	18.0	2	2597	44	5296	1904	18643	815	10747	66	278	0	0	6	2831	37567
080284	1	13.0	2	2599	61	5357	1063	19706	951	11698	72	350	0	0	6	2149	39716
080384	1	19.0	0	2599	30	5387	894	20600	1048	12746	69	419	0	0	6	2041	41757
080484	1	14.5	0	2599	24	5411	966	21566	1281	14027	87	506	0	0	6	2358	44115
080584	1	16.0	0	2599	33	5444	788	22354	1239	15266	97	603	0	0	6	2157	46272
080684	1	23.0	0	2599	39	5483	494	22848	900	16166	101	704	0	0	6	1534	47806
080784	1	22.0	0	2599	45	5528	627	23475	1233	17399	138	842	0	0	6	2043	49849
080884	1	21.5	0	2599	32	5560	791	24266	1596	18995	248	1090	0	0	6	2667	52516
080984	1	12.0	0	2599	14	5574	215	24481	736	19731	74	1164	0	0	6	1039	53555
081084	1	24.0	0	2599	45	5619	321	24802	906	20637	137	1301	0	0	6	1409	54964
081184	1	22.0	0	2599	24	5643	324	25126	1244	21881	174	1475	0	0	6	1766	56730
081284	1	22.5	0	2599	11	5654	198	25324	1449	23330	303	1778	0	0	6	1961	58691
081384	1	24.0	0	2599	9	5663	84	25408	1183	24513	202	1980	0	0	6	1478	60169
081484	1	24.0	0	2599	13	5676	61	25469	846	25359	197	2177	0	0	6	1117	61286
081584	1	24.0	0	2599	10	5686	58	25527	667	26026	208	2385	0	0	6	943	62229
081684	1	24.0	0	2599	5	5691	51	25578	905	26931	216	2601	0	0	6	1177	63406
081784	1	24.0	0	2599	4	5695	41	25619	673	27604	217	2818	0	0	6	935	64341
081884	1	24.0	0	2599	7	5702	21	25640	227	27831	152	2970	0	0	6	407	64748
081984	1	24.0	0	2599	0	5702	6	25646	108	27939	91	3061	0	0	6	205	64953
082084	1	24.0	0	2599	2	5704	17	25663	75	28014	52	3113	0	0	6	146	65099
082184	1	24.0	0	2599	0	5704	8	25671	103	28117	72	3185	0	2	8	185	65284
082284	1	24.0	0	2599	2	5706	7	25678	184	28301	71	3256	0	0	8	264	65548
082384	1	24.0	0	2599	1	5707	7	25685	146	28447	51	3307	0	0	8	205	65753
082484	1	24.0	0	2599	0	5707	7	25692	106	28553	18	3325	1	1	10	133	65886
082584	1	16.0	0	2599	0	5707	2	25694	7	28560	2	3327	0	0	10	11	65897
082684	1	6.0	0	2599	0	5707	0	25694	0	28560	0	3327	0	0	10	0	65897
082784	1	22.5	0	2599	0	5707	1	25695	35	28595	13	3340	0	1	11	50	65947
082884	1	24.0	0	2599	0	5707	1	25696	51	28646	15	3355	0	0	11	67	66014
082984	1	24.0	0	2599	0	5707	0	25696	35	28681	7	3362	0	0	11	42	66056

Appendix Table 2-8 (cont.). Sunshine Station lower east bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
083084	1	24.0	0	2599	0	5707	0	25696	29	28710	5	3367	0	1	12	35	66091
083184	1	24.0	0	2599	1	5708	2	25698	56	28766	11	3378	0	7	19	77	66168
090184	1	24.0	0	2599	0	5708	0	25698	22	28788	1	3379	1	1	21	25	66193
090284	1	24.0	0	2599	0	5708	2	25700	68	28856	11	3390	0	1	22	82	66275
090384	1	24.0	0	2599	0	5708	0	25700	91	28947	10	3400	0	1	23	102	66377
090484	1	24.0	0	2599	1	5709	1	25701	99	29046	5	3405	0	4	27	110	66487
090584	1	24.0	0	2599	0	5709	7	25708	80	29126	11	3416	0	4	31	102	66589
090684	1	24.0	0	2599	0	5709	4	25712	84	29210	11	3427	1	6	38	106	66695
090784	1	24.0	0	2599	0	5709	0	25712	76	29286	4	3431	3	2	43	85	66780
090884	1	24.0	0	2599	0	5709	0	25712	30	29316	5	3436	3	4	50	42	66822
090984	1	24.0	0	2599	0	5709	0	25712	37	29353	7	3443	4	5	59	53	66875
091084	1	16.0	0	2599	0	5709	1	25713	26	29379	7	3450	1	2	62	37	66912

Appendix Table 2-9.. Sunshine Station upper east bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
060484	1	4.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
060584	1	24.0	15	15	14	14	0	0	0	0	0	0	0	0	0	29	29
060684	1	24.0	44	59	16	30	0	0	0	0	0	0	0	0	0	60	89
060784	1	24.0	17	76	25	55	0	0	0	0	0	0	0	0	0	42	131
060884	1	24.0	26	102	14	69	0	0	0	0	0	0	0	0	0	40	171
060984	1	22.0	89	191	35	104	0	0	0	0	0	0	0	0	0	124	295
061084	1	22.0	29	220	17	121	0	0	0	0	0	0	0	0	0	46	341
061184	1	24.0	77	297	23	144	0	0	0	0	0	0	0	0	0	100	441
061284	1	24.0	79	376	11	155	0	0	0	0	0	0	0	0	0	90	531
061384	1	24.0	76	452	13	168	0	0	0	0	0	0	0	0	0	89	620
061484	1	24.0	67	519	15	183	0	0	0	0	0	0	0	0	0	82	702
061584	1	24.0	100	619	17	200	0	0	0	0	0	0	0	0	0	117	819
061684	1	24.0	62	681	6	206	0	0	0	0	0	0	0	0	0	68	887
061784	1	24.0	7	688	0	206	0	0	0	0	0	0	0	0	0	7	894
061884	1	24.0	57	745	8	214	0	0	0	0	0	0	0	0	0	65	959
061984	1	24.0	284	1029	14	228	0	0	0	0	0	0	0	0	0	298	1257
062084	1	22.5	238	1267	4	232	0	0	0	0	0	0	0	0	0	242	1499
062184	1	24.0	132	1399	11	243	0	0	0	0	0	0	0	0	0	143	1642
062284	1	24.0	142	1541	7	250	0	0	0	0	0	0	0	1	1	150	1792
062384	1	24.0	221	1762	1	251	0	0	0	0	0	0	0	0	1	222	2014
062484	1	24.0	142	1904	2	253	0	0	0	0	0	0	0	0	1	144	2158
062584	1	23.0	148	2052	2	255	0	0	0	0	0	0	0	0	1	150	2308
062684	1	24.0	184	2236	6	261	0	0	0	0	0	0	0	0	1	190	2498
062784	1	24.0	117	2353	2	263	0	0	0	0	0	0	0	0	1	119	2617
062884	1	24.0	108	2461	1	264	0	0	0	0	0	0	0	0	1	109	2726
062984	1	24.0	118	2579	2	266	0	0	0	0	0	0	0	0	1	120	2846
063084	1	24.0	103	2682	3	269	0	0	0	0	0	0	0	0	1	106	2952
070184	1	24.0	69	2751	2	271	1	1	0	0	0	0	0	0	1	72	3024
070284	1	22.0	34	2785	2	273	0	1	1	1	0	0	0	0	1	37	3061

Appendix Table 2-9 (cont.). Sunshine Station upper east bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
070384	1	24.0	17	2802	5	278	1	2	0	1	0	0	0	0	1	23	3084
070484	1	24.0	15	2817	3	281	0	2	0	1	0	0	0	0	1	18	3102
070584	1	24.0	21	2838	9	290	0	2	0	1	1	1	0	1	2	32	3134
070684	1	24.0	20	2858	6	296	0	2	0	1	0	1	0	0	2	26	3160
070784	1	24.0	11	2869	3	299	0	2	1	2	1	2	0	0	2	16	3176
070884	1	22.5	16	2885	1	300	0	2	0	2	0	2	0	0	2	17	3193
070984	1	24.0	10	2895	7	307	0	2	2	4	0	2	0	0	2	19	3212
071084	1	24.0	3	2898	3	310	0	2	0	4	0	2	0	0	2	6	3218
071184	1	24.0	2	2900	1	311	1	3	1	5	0	2	0	0	2	5	3223
071284	1	24.0	1	2901	22	333	1	4	4	9	0	2	0	0	2	28	3251
071384	1	19.5	2	2903	10	343	0	4	7	16	0	2	0	0	2	19	3270
071484	1	24.0	5	2908	20	363	4	8	19	35	1	3	0	0	2	49	3319
071584	1	24.0	2	2910	7	370	1	9	14	49	0	3	0	0	2	24	3343
071684	1	24.0	1	2911	12	382	3	12	39	88	0	3	0	0	2	55	3398
071784	1	24.0	1	2912	8	390	3	15	27	115	1	4	0	0	2	40	3438
071884	1	24.0	0	2912	8	398	2	17	21	136	1	5	0	0	2	32	3470
071984	1	24.0	1	2913	137	535	9	26	27	163	2	7	0	0	2	176	3646
072084	1	24.0	1	2914	561	1096	45	71	82	245	3	10	0	0	2	692	4338
072184	1	23.0	1	2915	1127	2223	87	158	124	369	4	14	0	0	2	1343	5681
072284	1	24.0	0	2915	1106	3329	237	395	298	667	5	19	0	0	2	1646	7327
072384	1	24.0	3	2918	957	4286	564	959	905	1572	6	25	0	0	2	2435	9762
072484	1	18.5	1	2919	457	4743	961	1920	977	2549	13	38	0	0	2	2409	12171
072584	1	20.5	0	2919	373	5116	1703	3623	961	3510	18	56	0	0	2	3055	15226
072684	1	22.0	0	2919	198	5314	1938	5561	289	3799	9	65	0	0	2	2434	17660
072784	1	21.5	0	2919	232	5546	2979	8540	364	4163	19	84	0	0	2	3594	21254
072884	1	21.0	0	2919	234	5780	3278	11818	1036	5199	48	132	0	0	2	4596	25850
072984	1	19.5	0	2919	204	5984	2869	14687	943	6142	48	180	0	0	2	4064	29914
073084	1	23.5	0	2919	213	6197	3071	17758	1132	7274	42	222	0	0	2	4458	34372
073184	1	22.5	1	2920	142	6339	1834	19592	1106	8380	44	266	0	0	2	3127	37499

Appendix Table 2-9 (cont.). Sunshine Station upper east bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
080184	1	16.0	0	2920	109	6448	1660	21352	799	9179	58	324	0	0	2	2626	40125
080284	1	20.0	0	2920	133	6581	3025	24277	1317	10496	88	412	0	0	2	4563	44688
080384	1	19.0	0	2920	62	6643	2072	26349	1153	11649	69	481	0	0	2	3356	48044
080484	1	20.0	1	2921	60	6703	1856	28205	1338	12987	93	574	0	1	3	3349	51393
080584	1	21.0	0	2921	41	6744	988	29193	946	13933	63	637	0	0	3	2038	53431
080684	1	23.0	0	2921	32	6776	1193	30386	824	14757	96	733	0	0	3	2145	55576
080784	1	21.0	0	2921	16	6792	889	31275	1050	15807	118	851	0	0	3	2073	57649
080884	1	24.0	0	2921	43	6835	918	32193	1101	16908	164	1015	0	0	3	2226	59875
080984	1	11.0	0	2921	10	6845	401	32594	548	17456	70	1085	0	0	3	1029	60904
081084	1	24.0	0	2921	11	6856	335	32929	407	17863	81	1166	0	0	3	834	61738
081184	1	23.5	0	2921	20	6876	387	33316	1379	19242	238	1404	0	0	3	2024	63762
081284	1	23.0	0	2921	13	6889	191	33507	812	20054	158	1562	0	0	3	1174	64936
081384	1	24.0	0	2921	11	6900	157	33664	666	20720	141	1703	0	1	4	976	65912
081484	1	24.0	0	2921	9	6909	95	33759	522	21242	133	1836	0	0	4	759	66671
081584	1	24.0	0	2921	2	6911	31	33790	258	21500	85	1921	0	0	4	376	67047
081684	1	24.0	0	2921	10	6921	26	33816	215	21715	76	1997	0	0	4	327	67374
081784	1	22.0	0	2921	3	6924	19	33835	115	21830	51	2048	0	0	4	188	67562
081884	1	24.0	0	2921	5	6929	12	33847	78	21908	56	2104	0	0	4	151	67713
081984	1	24.0	0	2921	0	6929	6	33853	21	21929	26	2130	0	0	4	53	67766
082084	1	24.0	0	2921	0	6929	2	33855	9	21938	11	2141	0	0	4	22	67788
082184	1	24.0	0	2921	1	6930	2	33857	26	21964	28	2169	0	0	4	57	67845
082284	1	24.0	0	2921	2	6932	2	33859	80	22044	34	2203	0	0	4	118	67963
082384	1	24.0	0	2921	2	6934	10	33869	86	22130	35	2238	0	0	4	133	68096
082484	1	24.0	0	2921	2	6936	3	33872	45	22175	16	2254	0	0	4	66	68162
082584	1	24.0	0	2921	1	6937	1	33873	3	22178	2	2256	0	0	4	7	68169
082684	1	24.0	0	2921	0	6937	0	33873	6	22184	0	2256	0	0	4	6	68175
082784	1	24.0	0	2921	0	6937	2	33875	17	22201	13	2269	0	0	4	32	68207
082884	1	24.0	0	2921	0	6937	0	33875	31	22232	21	2290	0	1	5	53	68260
082984	1	24.0	0	2921	0	6937	6	33881	54	22286	14	2304	0	6	11	80	68340

Appendix Table 2-9 (cont.). Sunshine Station upper east bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel houre	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
083084	1	24.0	0	2921	1	6938	2	33883	47	22333	13	2317	0	5	16	68	68408
083184	1	24.0	0	2921	1	6939	1	33884	18	22351	11	2328	1	7	24	39	68447
090184	1	22.0	0	2921	1	6940	1	33885	20	22371	3	2331	0	0	24	25	68472
090284	1	20.5	0	2921	0	6940	0	33885	9	22380	1	2332	0	1	25	11	68483
090384	1	24.0	0	2921	0	6940	1	33886	30	22410	4	2336	0	4	29	39	68522
090484	1	24.0	0	2921	2	6942	1	33887	42	22452	3	2339	0	0	29	48	68570
090584	1	24.0	0	2921	0	6942	1	33888	30	22482	2	2341	0	1	30	34	68604
090684	1	24.0	0	2921	0	6942	1	33889	28	22510	4	2345	0	4	34	37	68641
090784	1	24.0	0	2921	0	6942	0	33889	11	22521	0	2345	3	1	38	15	68656
090884	1	24.0	0	2921	0	6942	0	33889	4	22525	2	2347	3	2	43	11	68667
090984	1	24.0	0	2921	0	6942	0	33889	5	22530	5	2352	2	0	45	12	68679
091084	1	13.3	0	2921	0	6942	0	33889	5	22535	2	2354	0	2	47	9	68688

Appendix Table 2-10. Sunshine Station west bank fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
060484	1	3.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
060584	2	28.0	30	30	1	1	0	0	0	0	0	0	0	0	0	31	31
060684	2	46.0	59	89	1	2	0	0	0	0	0	0	0	4	4	64	95
060784	2	42.0	19	108	0	2	0	0	0	0	0	0	0	5	9	24	119
060884	2	45.0	34	142	1	3	0	0	0	0	0	0	0	3	12	38	157
060984	2	45.0	68	210	1	4	0	0	0	0	0	0	0	6	18	75	232
061084	2	47.0	109	319	0	4	0	0	0	0	0	0	0	2	20	111	343
061184	2	48.0	198	517	1	5	0	0	0	0	0	0	0	1	21	200	543
061284	2	48.0	204	721	0	5	0	0	0	0	0	0	0	1	22	205	748
061384	2	40.0	103	824	0	5	0	0	0	0	0	0	0	1	23	104	852
061484	2	31.5	60	884	0	5	0	0	0	0	0	0	0	0	23	60	912
061584	2	43.0	81	965	0	5	0	0	0	0	0	0	0	0	23	81	993
061684	2	32.0	51	1016	0	5	0	0	0	0	0	0	0	0	23	51	1044
061784	1	24.0	13	1029	0	5	0	0	0	0	0	0	0	0	23	13	1057
061884	2	37.0	29	1058	0	5	0	0	0	0	0	0	0	0	23	29	1086
061984	2	46.5	96	1154	0	5	0	0	0	0	0	0	0	0	23	96	1182
062084	2	48.0	138	1292	0	5	0	0	0	0	0	0	0	0	23	138	1320
062184	2	48.0	85	1377	1	6	0	0	0	0	0	0	0	1	24	87	1407
062284	2	48.0	87	1464	0	6	0	0	0	0	0	0	0	2	26	89	1496
062384	2	48.0	95	1559	0	6	0	0	0	0	0	0	0	1	27	96	1592
062484	2	48.0	33	1592	0	6	0	0	0	0	0	0	0	0	27	33	1625
062584	2	48.0	84	1676	0	6	0	0	0	0	0	0	0	2	29	86	1711
062684	2	48.0	55	1731	0	6	0	0	0	0	0	0	0	0	29	55	1766
062784	2	48.0	39	1770	0	6	0	0	0	0	0	0	0	0	29	39	1805
062884	2	48.0	19	1789	0	6	0	0	0	0	0	0	0	0	29	19	1824
062984	2	48.0	35	1824	1	7	0	0	0	0	0	0	0	0	29	36	1860
063084	2	48.0	36	1860	3	10	0	0	0	0	0	0	0	0	29	39	1899
070184	2	48.0	29	1889	1	11	0	0	0	0	0	0	0	1	30	31	1930
070284	2	48.0	27	1916	2	13	0	0	0	0	0	0	0	0	30	29	1959

Appendix Table 2-10 (cont.). Sunshine Station west bank fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
070384	2	48.0	21	1937	4	17	0	0	0	0	0	0	0	1	31	26	1985
070484	2	48.0	11	1948	8	25	0	0	0	0	0	0	0	1	32	20	2005
070584	2	46.5	6	1954	7	32	0	0	0	0	1	1	0	0	32	14	2019
070684	2	48.0	6	1960	0	32	0	0	0	0	0	1	0	1	33	7	2026
070784	2	47.0	9	1969	4	36	0	0	0	0	0	1	0	1	34	14	2040
070884	2	45.5	6	1975	0	36	0	0	0	0	0	1	0	0	34	6	2046
070984	2	44.0	5	1980	1	37	0	0	0	0	0	1	0	0	34	6	2052
071084	2	48.0	7	1987	3	40	0	0	0	0	0	1	0	0	34	10	2062
071184	2	48.0	8	1995	2	42	0	0	0	0	1	2	0	0	34	11	2073
071284	2	48.0	4	1999	13	55	0	0	1	1	0	2	0	0	34	18	2091
071384	2	48.0	7	2006	14	69	1	1	0	1	0	2	0	2	36	24	2115
071484	2	46.0	4	2010	16	85	0	1	1	2	1	3	0	0	36	22	2137
071584	2	48.0	4	2014	20	105	1	2	5	7	2	5	0	0	36	32	2169
071684	2	48.0	3	2017	22	127	5	7	11	18	0	5	0	0	36	41	2210
071784	2	48.0	1	2018	3	130	0	7	2	20	2	7	0	0	36	8	2218
071884	2	48.0	1	2019	11	141	0	7	0	20	1	8	0	0	36	13	2231
071984	2	45.5	2	2021	77	218	2	9	6	26	4	12	0	0	36	91	2322
072084	2	46.0	2	2023	245	463	4	13	13	39	3	15	0	0	36	267	2589
072184	2	46.5	0	2023	443	906	15	28	15	54	3	18	0	0	36	476	3065
072284	2	47.0	1	2024	607	1513	33	61	22	76	3	21	0	1	37	667	3732
072384	2	48.0	2	2026	785	2298	244	305	74	150	12	33	0	0	37	1117	4849
072484	2	44.5	0	2026	567	2865	760	1065	153	303	27	60	0	0	37	1507	6356
072584	2	48.0	1	2027	342	3207	885	1950	198	501	27	87	0	0	37	1453	7809
072684	2	28.0	1	2028	223	3430	361	2311	31	532	5	92	0	0	37	621	8430
072784	1	22.0	1	2029	595	4025	1753	4064	36	568	4	96	0	0	37	2389	10819
072884	2	28.5	0	2029	435	4460	2190	6254	92	660	38	134	0	0	37	2755	13574
072984	2	46.5	0	2029	341	4801	3084	9338	101	761	60	194	0	0	37	3586	17160
073084	2	46.5	0	2029	213	5014	3881	13219	96	857	63	257	0	0	37	4253	21413
073184	2	46.0	1	2030	180	5194	4119	17338	208	1065	97	354	0	0	37	4605	26018

Appendix Table 2-10 (cont.). Sunshine Station west bank fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
080184	2	41.5	0	2030	196	5390	4664	22002	163	1228	159	513	0	0	37	5182	31200
080284	2	43.0	0	2030	134	5524	3830	25832	163	1391	219	732	0	0	37	4346	35546
080384	2	46.0	0	2030	73	5597	2126	27958	429	1820	151	883	0	0	37	2779	38325
080484	2	44.5	0	2030	68	5665	1988	29946	297	2117	156	1039	0	0	37	2509	40834
080584	2	48.0	0	2030	67	5732	1252	31198	208	2325	112	1151	0	0	37	1639	42473
080684	2	48.0	0	2030	24	5756	320	31518	83	2408	39	1190	0	0	37	466	42939
080784	2	46.5	0	2030	40	5796	626	32144	162	2570	74	1264	0	0	37	902	43841
080884	2	48.0	0	2030	40	5836	530	32674	200	2770	50	1314	0	0	37	820	44661
080984	2	24.0	0	2030	16	5852	113	32787	98	2868	34	1348	0	0	37	261	44922
081084	2	48.0	0	2030	57	5909	490	33277	182	3050	147	1495	0	0	37	876	45798
081184	2	45.0	0	2030	51	5960	549	33826	356	3406	357	1852	0	0	37	1313	47111
081284	2	47.5	0	2030	25	5985	238	34064	154	3560	236	2088	0	0	37	653	47764
081384	2	48.0	0	2030	18	6003	109	34173	189	3749	264	2352	0	0	37	580	48344
081484	2	48.0	0	2030	29	6032	62	34235	134	3883	144	2496	0	0	37	369	48713
081584	2	46.0	0	2030	11	6043	28	34263	58	3941	118	2614	0	0	37	215	48928
081684	2	48.0	0	2030	12	6055	16	34279	53	3994	161	2775	0	0	37	242	49170
081784	2	48.0	0	2030	13	6068	10	34289	41	4035	106	2881	0	1	38	171	49341
081884	2	48.0	0	2030	8	6076	7	34296	12	4047	40	2921	0	0	38	67	49408
081984	2	48.0	0	2030	4	6080	1	34297	10	4057	26	2947	0	0	38	41	49449
082084	2	48.0	0	2030	5	6085	3	34300	11	4068	36	2983	0	0	38	55	49504
082184	2	47.0	0	2030	4	6089	1	34301	26	4094	86	3069	0	0	38	117	49621
082284	2	48.0	0	2030	6	6095	3	34304	36	4130	132	3201	0	0	38	177	49798
082384	2	48.0	0	2030	5	6100	5	34309	58	4188	110	3311	0	3	41	181	49979
082484	2	48.0	0	2030	10	6110	2	34311	42	4230	67	3378	0	1	42	122	50101
082584	2	24.0	0	2030	1	6111	0	34311	2	4232	2	3380	0	0	42	5	50106
082684	1	6.0	0	2030	1	6112	0	34311	2	4234	3	3383	0	0	42	6	50112
082784	2	37.0	0	2030	4	6116	1	34312	21	4255	85	3468	0	0	42	111	50223
082884	2	46.0	0	2030	9	6125	3	34315	84	4339	174	3642	1	4	47	275	50498
082984	2	48.0	0	2030	3	6128	0	34315	112	4451	147	3789	0	2	49	264	50762

Appendix Table 2-10 (cont.). Sunshine Station west bank fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
083084	2	47.0	0	2030	4	6132	1	34316	70	4521	75	3864	0	0	49	150	50912
083184	2	45.0	0	2030	1	6133	0	34316	56	4577	40	3904	0	1	50	98	51010
090184	1	24.0	0	2030	2	6135	0	34316	40	4617	33	3937	0	3	53	78	51088
090284	1	21.5	0	2030	0	6135	1	34317	27	4644	9	3946	0	0	53	37	51125
090384	1	24.0	0	2030	2	6137	0	34317	71	4715	19	3965	2	3	58	97	51222
090484	1	24.0	0	2030	3	6140	0	34317	33	4748	7	3972	0	3	61	46	51268
090584	1	24.0	0	2030	0	6140	0	34317	5	4753	1	3973	7	0	68	13	51281
090684	1	16.0	0	2030	0	6140	0	34317	0	4753	0	3973	0	0	68	0	51281
090784	1	24.0	0	2030	0	6140	0	34317	1	4754	1	3974	4	0	72	6	51287
090884	1	24.0	0	2030	0	6140	0	34317	6	4760	3	3977	5	2	79	16	51303
090984	1	24.0	0	2030	0	6140	0	34317	3	4763	3	3980	4	3	86	13	51316
091084	1	10.5	0	2030	0	6140	0	34317	4	4767	3	3983	0	2	88	9	51325

Appendix Table 2-11. Sunshine Station fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
060484	3	31.0	2	2	14	14	0	0	0	0	0	0	0	0	0	16	16
060584	4	76.0	53	55	37	51	0	0	0	0	0	0	0	0	0	90	106
060684	4	94.0	138	193	33	84	0	0	0	0	0	0	0	5	5	176	282
060784	4	90.0	56	249	50	134	0	0	0	0	0	0	0	5	10	111	393
060884	4	93.0	91	340	36	170	0	0	0	0	0	0	0	3	13	130	523
060984	4	91.0	202	542	51	221	0	0	0	0	0	0	0	6	19	259	782
061084	4	93.0	172	714	30	251	0	0	0	0	0	0	0	2	21	204	986
061184	4	96.0	332	1046	33	284	0	0	0	0	0	0	0	1	22	366	1352
061284	4	96.0	377	1423	21	305	0	0	1	1	0	0	0	1	23	400	1752
061384	4	88.0	249	1672	27	332	0	0	0	1	0	0	0	1	24	277	2029
061484	4	79.5	167	1839	29	361	0	0	0	1	0	0	0	0	24	196	2225
061584	4	91.0	261	2100	24	385	0	0	0	1	0	0	0	0	24	285	2510
061684	4	80.0	156	2256	8	393	0	0	0	1	0	0	0	0	24	164	2674
061784	3	72.0	24	2280	0	393	0	0	0	1	0	0	0	0	24	24	2698
061884	4	85.0	122	2402	13	406	0	0	0	1	0	0	0	0	24	135	2833
061984	4	94.5	571	2973	27	433	0	0	0	1	0	0	0	1	25	599	3432
062084	4	92.0	623	3596	12	445	0	0	0	1	0	0	0	0	25	635	4067
062184	4	96.0	336	3932	20	465	0	0	0	1	0	0	0	1	26	357	4424
062284	4	96.0	345	4277	11	476	0	0	0	1	0	0	0	3	29	359	4783
062384	4	96.0	450	4727	3	479	0	0	0	1	0	0	0	1	30	454	5237
062484	4	96.0	291	5018	5	484	0	0	0	1	0	0	0	0	30	296	5533
062584	4	90.5	334	5352	2	486	0	0	0	1	0	0	0	2	32	338	5871
062684	4	96.0	393	5745	10	496	0	0	0	1	0	0	0	0	32	403	6274
062784	4	95.0	257	6002	2	498	0	0	0	1	0	0	0	0	32	259	6533
062884	4	96.0	174	6176	2	500	0	0	0	1	0	0	0	0	32	176	6709
062984	4	96.0	240	6416	9	509	0	0	0	1	0	0	0	0	32	249	6958
063084	4	94.5	234	6650	7	516	1	1	0	1	0	0	0	0	32	242	7200
070184	4	96.0	162	6812	8	524	1	2	0	1	0	0	0	1	33	172	7372
070284	4	94.0	136	6948	7	531	0	2	1	2	0	0	0	0	33	144	7516

Appendix Table 2-11 (cont.). Sunshine Station fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
070384	4	96.0	86	7034	16	547	1	3	0	2	0	0	0	1	34	104	7620
070484	4	96.0	63	7097	15	562	0	3	0	2	1	1	0	3	37	82	7702
070584	4	94.5	64	7161	21	583	1	4	1	3	2	3	0	2	39	91	7793
070684	4	96.0	63	7224	15	598	0	4	0	3	1	4	0	1	40	80	7873
070784	4	95.0	53	7277	11	609	3	7	1	4	1	5	0	1	41	70	7943
070884	4	92.0	55	7332	7	616	0	7	0	4	0	5	0	0	41	62	8005
070984	4	92.0	39	7371	19	635	1	8	2	6	1	6	0	0	41	62	8067
071084	4	96.0	28	7399	16	651	2	10	1	7	2	8	0	0	41	49	8116
071184	4	96.0	18	7417	10	661	1	11	3	10	1	9	0	0	41	33	8149
071284	4	96.0	13	7430	50	711	2	13	7	17	0	9	0	0	41	72	8221
071384	4	91.5	17	7447	59	770	4	17	32	49	0	9	0	2	43	114	8335
071484	4	94.0	23	7470	51	821	6	23	64	113	4	13	0	0	43	148	8483
071584	4	96.0	13	7483	39	860	9	32	75	188	3	16	0	0	43	139	8622
071684	4	96.0	14	7497	60	920	12	44	197	385	2	18	0	0	43	285	8907
071784	4	96.0	5	7502	21	941	9	53	139	524	7	25	0	0	43	181	9088
071884	4	96.0	4	7506	38	979	8	61	76	600	7	32	0	1	44	134	9222
071984	4	92.5	6	7512	499	1478	61	122	123	723	15	47	0	0	44	704	9926
072084	4	94.0	7	7519	1317	2795	103	225	258	981	16	63	0	0	44	1701	11627
072184	4	93.5	5	7524	2497	5292	191	416	351	1332	8	71	0	0	44	3052	14679
072284	4	95.0	2	7526	2562	7854	480	896	753	2085	12	83	0	1	45	3810	18489
072384	4	96.0	8	7534	2475	10329	1250	2146	2146	4231	29	112	0	0	45	5908	24397
072484	4	81.0	1	7535	1291	11620	2423	4569	2207	6438	51	163	0	0	45	5973	30370
072584	4	88.5	3	7538	1057	12677	4191	8760	2427	8865	56	219	0	0	45	7734	38104
072684	4	74.0	3	7541	600	13277	3886	12646	861	9726	25	244	0	0	45	5375	43479
072784	3	63.5	2	7543	1032	14309	8142	20788	924	10650	35	279	0	0	45	10135	53614
072884	4	68.5	0	7543	781	15090	7450	28238	1828	12478	103	382	0	0	45	10162	63776
072984	4	81.5	0	7543	673	15763	7801	36039	2011	14489	125	507	0	0	45	10610	74386
073084	4	90.0	0	7543	585	16348	9192	45231	2576	17065	141	648	0	0	45	12494	86880
073184	4	88.5	2	7545	437	16785	8438	53669	2312	19377	184	832	0	0	45	11373	98253

Appendix Table 2-11 (cont.). Sunshine Station fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
080184	4	75.5	2	7547	349	17134	8228	61897	1777	21154	283	1115	0	0	45	10639	108892
080284	4	76.0	2	7549	328	17462	7918	69815	2431	23585	379	1494	0	0	45	11058	119950
080384	4	84.0	0	7549	165	17627	5092	74907	2630	26215	289	1783	0	0	45	8176	128126
080484	4	79.0	1	7550	152	17779	4810	79717	2916	29131	336	2119	0	1	46	8216	136342
080584	4	85.0	0	7550	141	17920	3028	82745	2393	31524	272	2391	0	0	46	5834	142176
080684	4	94.0	0	7550	95	18015	2007	84752	1807	33331	236	2627	0	0	46	4145	146321
080784	4	89.5	0	7550	101	18116	2142	86894	2445	35776	330	2957	0	0	46	5018	151339
080884	4	93.5	0	7550	115	18231	2239	89133	2897	38673	462	3419	0	0	46	5713	157052
080984	4	47 0	0	7550	40	18271	729	89862	1382	40055	178	3597	0	0	46	2329	159381
081084	4	96.0	0	7550	113	18384	1146	91008	1495	41550	365	3962	0	0	46	3119	162500
081184	4	90.5	0	7550	95	18479	1260	92268	2979	44529	769	4731	0	0	46	5103	167603
081284	4	93.0	0	7550	49	18528	627	92895	2415	46944	697	5428	0	0	46	3788	171391
081384	4	96.0	0	7550	38	18566	350	93245	2038	48982	607	6035	0	1	47	3034	174425
081484	4	96.0	0	7550	51	18617	218	93463	1502	50484	474	6509	0	0	47	2245	176670
081584	4	94.0	0	7550	23	18640	117	93580	983	51467	411	6920	0	0	47	1534	178204
081684	4	96.0	0	7550	27	18667	93	93673	1173	52640	453	7373	0	0	47	1746	179950
081784	4	94.0	0	7550	20	18687	70	93743	829	53469	374	7747	0	1	48	1294	181244
081884	4	96.0	0	7550	20	18707	40	93783	317	53786	248	7995	0	0	48	625	181869
081984	4	96.0	0	7550	4	18711	13	93796	139	53925	143	8138	0	0	48	299	182168
082084	4	96.0	0	7550	7	18718	22	93818	95	54020	99	8237	0	0	48	223	182391
082184	4	95.0	0	7550	5	18723	11	93829	155	54175	186	8423	0	2	50	359	182750
082284	4	96.0	0	7550	10	18733	12	93841	300	54475	237	8660	0	0	50	559	183309
082384	4	96.0	0	7550	8	18741	22	93863	290	54765	196	8856	0	3	53	519	183828
082484	4	96.0	0	7550	12	18753	12	93875	193	54958	101	8957	1	2	56	321	184149
082584	4	64.0	0	7550	2	18755	3	93878	12	54970	6	8963	0	0	56	23	184172
082684	3	36.0	0	7550	1	18756	0	93878	8	54978	3	8966	0	0	56	12	184184
082784	4	83.5	0	7550	4	18760	4	93882	73	55051	111	9077	0	1	57	193	184377
082884	4	94.0	0	7550	9	18769	4	93886	166	55217	210	9287	1	5	63	395	184772
082984	4	96.0	0	7550	3	18772	6	93892	201	55418	168	9455	0	8	71	386	185158

Appendix Table 2-11 (cont.). Sunshine Station fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
083084	4	95.0	0	7550	5	18777	3	93895	146	55564	93	9548	0	6	77	253	185411
083184	4	93.0	0	7550	3	18780	3	93898	130	55694	62	9610	1	15	93	214	185625
090184	3	70.0	0	7550	3	18783	1	93899	82	55776	37	9647	1	4	98	128	185753
090284	3	66.0	0	7550	0	18783	3	93902	104	55880	21	9668	0	2	100	130	185883
090384	3	72.0	0	7550	2	18785	1	93903	192	56072	33	9701	2	8	110	238	186121
090484	3	72.0	0	7550	6	18791	2	93905	174	56246	15	9716	0	7	117	204	186325
090584	3	72.0	0	7550	0	18791	8	93913	115	56361	14	9730	7	5	129	149	186474
090684	3	64.0	0	7550	0	18791	5	93918	112	56473	15	9745	1	10	140	143	186617
090784	3	72.0	0	7550	0	18791	0	93918	88	56561	5	9750	10	3	153	106	186723
090884	3	72.0	0	7550	0	18791	0	93918	40	56601	10	9760	11	8	172	69	186792
090984	3	72.0	0	7550	0	18791	0	93918	45	56646	15	9775	10	8	190	78	186870
091084	3	39.7	0	7550	0	18791	1	93919	35	56681	12	9787	1	6	197	55	186925

Appendix Table 2-12. Talkeetna Station east bank fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
060384	1	4.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
060484	1	24.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
060584	1	24.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
060684	2	30.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
060784	2	48.0	2	2	0	0	0	0	0	0	0	0	0	0	0	2	2
060884	2	48.0	3	5	0	0	0	0	0	0	0	0	0	0	0	3	5
060984	2	48.0	6	11	0	0	0	0	0	0	0	0	0	0	0	6	11
061084	2	48.0	9	20	0	0	0	0	0	0	0	0	0	0	0	9	20
061184	2	48.0	15	35	1	1	0	0	0	0	0	0	0	0	0	16	36
061284	2	48.0	23	58	0	1	0	0	0	0	0	0	0	0	0	23	59
061384	2	48.0	14	72	0	1	0	0	0	0	0	0	0	0	0	14	73
061484	2	47.0	6	78	1	2	0	0	0	0	0	0	0	0	0	7	80
061584	2	48.0	15	93	0	2	0	0	0	0	0	0	0	0	0	15	95
061684	2	35.5	7	100	0	2	0	0	0	0	0	0	0	0	0	7	102
061884	2	20.7	13	113	0	2	0	0	0	0	0	0	0	0	0	13	115
061984	2	48.0	75	188	0	2	0	0	0	0	0	0	0	0	0	75	190
062084	2	48.0	127	315	1	3	0	0	0	0	0	0	0	0	0	128	318
062184	2	48.0	113	428	0	3	0	0	0	0	0	0	0	0	0	113	431
062284	2	48.0	96	524	1	4	0	0	0	0	0	0	0	0	0	97	528
062384	2	48.0	163	687	0	4	0	0	0	0	0	0	0	0	0	163	691
062484	2	48.0	86	773	0	4	0	0	0	0	0	0	0	0	0	86	777
062584	2	48.0	178	951	1	5	0	0	0	0	0	0	0	1	1	180	957
062684	2	48.0	119	1070	0	5	0	0	0	0	0	0	0	0	1	119	1076
062784	2	48.0	92	1162	1	6	0	0	0	0	0	0	0	1	2	94	1170
062884	2	48.0	54	1216	0	6	0	0	0	0	0	0	0	0	2	54	1224
062984	2	48.0	72	1288	0	6	0	0	0	0	0	0	0	0	2	72	1296
063084	2	48.0	117	1405	0	6	0	0	0	0	0	0	0	0	2	117	1413
070184	2	48.0	101	1506	1	7	0	0	0	0	0	0	0	0	2	102	1515
070284	2	48.0	85	1591	1	8	0	0	0	0	0	0	0	0	2	86	1601

Appendix Table 2-12 (cont.). Talkeetna Station east bank fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
070384	2	48.0	59	1650	0	8	0	0	0	0	0	0	0	0	2	59	1660
070484	2	46.0	15	1665	0	8	0	0	0	0	0	0	0	0	2	15	1675
070584	2	46.0	55	1720	1	9	0	0	0	0	0	0	0	0	2	56	1731
070684	2	48.0	40	1760	0	9	0	0	0	0	0	0	0	0	2	40	1771
070784	2	48.0	29	1789	0	9	0	0	0	0	0	0	0	0	2	29	1800
070884	2	48.0	14	1803	2	11	0	0	0	0	0	0	0	0	2	16	1816
070984	2	48.0	16	1819	0	11	0	0	0	0	0	0	0	0	2	16	1832
071084	2	48.0	14	1833	3	14	0	0	0	0	0	0	0	0	2	17	1849
071184	2	48.0	7	1840	0	14	0	0	0	0	0	0	0	0	2	7	1856
071284	2	48.0	9	1849	0	14	0	0	1	1	0	0	0	0	2	10	1866
071384	2	48.0	14	1863	2	16	0	0	2	3	0	0	0	0	2	18	1884
071484	2	48.0	14	1877	3	19	0	0	0	3	0	0	0	0	2	17	1901
071584	2	48.0	12	1889	0	19	1	1	0	3	0	0	0	0	2	13	1914
071684	2	48.0	5	1894	0	19	1	2	7	10	0	0	0	0	2	13	1927
071784	2	48.0	7	1901	0	19	0	2	12	22	0	0	0	0	2	19	1946
071884	2	46.0	2	1903	1	20	0	2	3	25	0	0	0	0	2	6	1952
071984	2	48.0	7	1910	0	20	0	2	27	52	0	0	0	0	2	34	1986
072084	2	48.0	4	1914	1	21	1	3	19	71	0	0	0	0	2	25	2011
072184	2	48.0	5	1919	4	25	4	7	19	90	0	0	0	0	2	32	2043
072284	2	48.0	4	1923	74	99	14	21	19	109	0	0	0	0	2	111	2154
072384	2	48.0	1	1924	67	166	4	25	31	140	0	0	0	0	2	103	2257
072484	2	48.0	7	1931	124	290	74	99	113	253	0	0	0	0	2	318	2575
072584	2	48.0	0	1931	51	341	139	238	175	428	0	0	0	0	2	365	2940
072684	2	48.0	1	1932	13	354	119	357	85	513	0	0	0	0	2	218	3158
072784	2	48.0	0	1932	1	355	2	359	9	522	0	0	0	0	2	12	3170
072884	2	48.0	1	1933	18	373	19	378	60	582	0	0	0	0	2	98	3268
072984	2	47.5	0	1933	56	429	188	566	202	784	0	0	0	0	2	446	3714
073084	2	48.0	0	1933	19	448	149	715	167	951	1	1	0	0	2	336	4050
073184	2	48.0	0	1933	66	514	345	1060	401	1352	9	10	0	0	2	821	4871

Appendix Table 2-12 (cont.). Talkeetna Station east bank fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
080184	2	46.0	0	1933	30	544	536	1596	385	1737	17	27	0	0	2	968	5839
080284	2	48.0	0	1933	24	568	531	2127	380	2117	14	41	0	0	2	949	6788
080384	2	47.0	0	1933	40	608	1227	3354	476	2593	25	66	0	0	2	1768	8556
080484	2	48.0	0	1933	22	630	1327	4681	337	2930	16	82	0	0	2	1702	10258
080584	2	48.0	0	1933	14	644	939	5620	420	3350	12	94	0	0	2	1385	11643
080684	2	48.0	0	1933	5	649	159	5779	123	3473	6	100	0	0	2	293	11936
080784	2	45.5	0	1933	7	656	391	6170	304	3777	10	110	0	0	2	712	12648
080884	2	48.0	0	1933	23	679	448	6618	424	4201	19	129	0	0	2	914	13562
080984	2	48.0	0	1933	17	696	164	6782	191	4392	6	135	0	0	2	378	13940
081084	2	48.0	0	1933	12	708	108	6890	228	4620	10	145	0	0	2	358	14298
081184	2	45.5	0	1933	10	718	87	6977	253	4873	24	169	0	0	2	374	14672
081284	2	47.0	0	1933	19	737	230	7207	567	5440	40	209	0	0	2	856	15528
081384	2	46.0	0	1933	7	744	68	7275	121	5561	9	218	0	0	2	205	15733
081484	2	48.0	0	1933	8	752	51	7326	125	5686	11	229	0	0	2	195	15928
081584	2	48.0	0	1933	9	761	30	7356	58	5744	9	238	0	0	2	106	16034
081684	2	48.0	0	1933	1	762	5	7361	18	5762	1	239	0	0	2	25	16059
081784	2	48.0	1	1934	0	762	4	7365	15	5777	3	242	0	0	2	23	16082
081884	2	48.0	0	1934	1	763	3	7368	8	5785	1	243	0	0	2	13	16095
081984	2	48.0	0	1934	0	763	1	7369	2	5787	3	246	0	0	2	6	16101
082084	2	46.0	0	1934	1	764	0	7369	15	5802	8	254	0	0	2	24	16125
082184	2	48.0	0	1934	0	764	0	7369	3	5805	6	260	0	0	2	9	16134
082284	2	48.0	0	1934	0	764	0	7369	1	5806	2	262	0	0	2	3	16137
082384	2	46.0	0	1934	0	764	0	7369	3	5809	12	274	0	0	2	15	16152
082484	2	48.0	0	1934	0	764	0	7369	2	5811	2	276	0	0	2	4	16156
082584	2	48.0	0	1934	0	764	0	7369	1	5812	1	277	0	0	2	2	16158
082684	2	46.0	0	1934	0	764	0	7369	2	5814	0	277	0	0	2	2	16160
082784	2	47.0	0	1934	0	764	0	7369	0	5814	1	278	0	0	2	1	16161
082884	2	44.0	0	1934	0	764	0	7369	17	5831	13	291	0	1	3	31	16192
082984	2	44.0	0	1934	1	765	0	7369	12	5843	4	295	0	1	4	18	16210

Appendix Table 2-12 (cont.). Talkeetna Station east bank fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
083084	2	46.0	0	1934	1	766	0	7369	3	5846	5	300	0	1	5	10	16220
083184	2	48.0	0	1934	0	766	1	7370	6	5852	6	306	0	2	7	15	16235
090184	2	48.0	0	1934	1	767	0	7370	0	5852	0	306	0	2	9	3	16238
090284	2	48.0	0	1934	0	767	0	7370	1	5853	0	306	0	2	11	3	16241
090384	2	48.0	0	1934	0	767	0	7370	1	5854	0	306	0	0	11	1	16242
090484	2	46.0	0	1934	0	767	0	7370	0	5854	0	306	0	0	11	0	16242
090584	2	48.0	0	1934	0	767	0	7370	0	5854	0	306	0	0	11	0	16242
090684	2	48.0	0	1934	0	767	0	7370	0	5854	0	306	0	0	11	0	16242
090784	2	48.0	0	1934	0	767	0	7370	0	5854	0	306	0	1	12	1	16243
090884	2	48.0	0	1934	0	767	0	7370	0	5854	1	307	0	0	12	1	16244
090984	2	48.0	0	1934	0	767	0	7370	0	5854	0	307	1	0	13	1	16245
091084	2	48.0	0	1934	0	767	0	7370	0	5854	1	308	0	0	13	1	16246
091184	2	48.0	0	1934	0	767	0	7370	0	5854	1	309	0	1	14	2	16248

Appendix Table 2-13. Talkeetna Station west bank fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
060584	1	5.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
060684	1	24.0	2	2	0	0	0	0	0	0	0	0	0	0	0	2	2
060784	1	24.0	0	2	1	1	0	0	0	0	0	0	0	0	0	1	3
060884	2	32.0	5	7	0	1	0	0	0	0	0	0	0	0	0	5	8
060984	2	46.0	1	8	1	2	0	0	0	0	0	0	0	1	1	3	11
061084	2	48.0	2	10	0	2	0	0	0	0	0	0	0	0	1	2	13
061184	2	48.0	11	21	0	2	0	0	0	0	0	0	0	0	1	11	24
061284	2	48.0	11	32	0	2	0	0	0	0	0	0	0	0	1	11	35
061384	2	48.0	4	36	0	2	0	0	0	0	0	0	0	1	2	5	40
061484	2	48.0	12	48	1	3	0	0	0	0	0	0	0	0	2	13	53
061584	2	48.0	14	62	0	3	0	0	0	0	0	0	0	0	2	14	67
061684	2	25.5	12	74	0	3	0	0	0	0	0	0	0	0	2	12	79
061884	2	19.7	13	87	0	3	0	0	0	0	0	0	0	0	2	13	92
061984	2	48.0	76	163	0	3	0	0	0	0	0	0	0	0	2	76	168
062084	2	48.0	86	249	0	3	0	0	0	0	0	0	0	0	2	86	254
062184	2	48.0	92	341	0	3	0	0	0	0	0	0	0	0	2	92	346
062284	2	48.0	73	414	0	3	0	0	0	0	0	0	0	0	2	73	419
062384	2	48.0	94	508	0	3	0	0	0	0	0	0	0	0	2	94	513
062484	2	48.0	61	569	0	3	0	0	0	0	0	0	0	1	3	62	575
062584	2	48.0	123	692	0	3	0	0	0	0	0	0	0	0	3	123	698
062684	2	48.0	80	772	0	3	0	0	0	0	0	0	0	0	3	80	778
062784	2	48.0	71	843	0	3	0	0	0	0	0	0	0	0	3	71	849
062884	2	48.0	50	893	0	3	0	0	0	0	0	0	0	0	3	50	899
062984	2	48.0	65	958	0	3	0	0	0	0	0	0	0	0	3	65	964
063084	2	48.0	74	1032	0	3	0	0	0	0	0	0	0	0	3	74	1038
070184	2	48.0	73	1105	0	3	0	0	0	0	0	0	0	1	4	74	1112
070284	2	48.0	54	1159	2	5	0	0	0	0	0	0	0	0	4	56	1168
070384	2	48.0	38	1197	0	5	0	0	0	0	0	0	0	0	4	38	1206
070484	2	44.0	8	1205	0	5	0	0	0	0	0	0	0	0	4	8	1214

Appendix Table 2-13 (cont.). Talkeetna Station west bank fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
070584	2	48.0	51	1256	0	5	0	0	0	0	0	0	0	0	4	51	1265
070684	2	48.0	22	1278	2	7	0	0	0	0	0	0	0	2	6	26	1291
070784	2	48.0	25	1303	2	9	0	0	0	0	0	0	0	0	6	27	1318
070884	2	48.0	15	1318	0	9	0	0	0	0	0	0	0	0	6	15	1333
070984	2	48.0	21	1339	2	11	0	0	0	0	0	0	0	0	6	23	1356
071084	2	48.0	18	1357	1	12	0	0	0	0	0	0	0	0	6	19	1375
071184	2	48.0	13	1370	3	15	0	0	0	0	0	0	0	0	6	16	1391
071284	2	48.0	19	1389	0	15	1	1	0	0	0	0	0	1	7	21	1412
071384	2	48.0	15	1404	2	17	0	1	0	0	0	0	0	0	7	17	1429
071484	2	48.0	11	1415	2	19	0	1	3	3	0	0	0	0	7	16	1445
071584	2	48.0	3	1418	2	21	2	3	2	5	1	1	0	0	7	10	1455
071684	2	48.0	8	1426	2	23	1	4	3	8	0	1	0	0	7	14	1469
071784	2	45.0	1	1427	5	28	0	4	10	18	0	1	0	0	7	16	1485
071884	2	48.0	5	1432	0	28	1	5	14	32	1	2	0	0	7	21	1506
071984	2	48.0	9	1441	3	31	2	7	7	39	1	3	0	0	7	22	1528
072084	2	48.0	3	1444	6	37	1	8	6	45	0	3	0	0	7	16	1544
072184	2	48.0	6	1450	5	42	4	12	5	50	0	3	0	0	7	20	1564
072284	2	48.0	3	1453	67	109	20	32	20	70	2	5	0	0	7	112	1676
072384	2	48.0	6	1459	40	149	26	58	21	91	1	6	0	0	7	94	1770
072484	2	48.0	4	1463	174	323	199	257	108	199	4	10	0	0	7	489	2259
072584	2	48.0	2	1465	65	388	533	790	176	375	1	11	0	0	7	777	3036
072684	2	48.0	1	1466	28	416	780	1570	189	564	2	13	0	0	7	1000	4036
072784	2	47.0	0	1466	16	432	93	1663	31	595	0	13	0	0	7	140	4176
072884	2	48.0	0	1466	71	503	307	1970	140	735	5	18	0	0	7	523	4699
072984	2	47.5	4	1470	79	582	1207	3177	279	1014	12	30	0	0	7	1581	6280
073084	2	47.5	1	1471	50	632	1711	4888	328	1342	12	42	0	0	7	2102	8382
073184	2	44.5	0	1471	53	685	1841	6729	510	1852	33	75	0	0	7	2437	10819
080184	2	46.0	0	1471	18	703	822	7551	177	2029	21	96	0	0	7	1038	11857
080284	2	48.0	1	1472	44	747	2977	10528	635	2664	57	153	0	0	7	3714	15571

Appendix Table 2-13 (cont.). Talkeetna Station west bank fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
080384	2	48.0	1	1473	39	786	3306	13834	383	3047	58	211	0	0	7	3787	19358
080484	2	48.0	0	1473	19	805	2689	16523	367	3414	43	254	0	0	7	3118	22476
080584	2	48.0	0	1473	17	822	1543	18066	382	3796	36	290	0	0	7	1978	24454
080684	2	48.0	0	1473	11	833	229	18295	103	3899	13	303	0	0	7	356	24810
080784	2	47.5	0	1473	13	846	754	19049	349	4248	45	348	0	0	7	1161	25971
080884	2	48.0	0	1473	23	869	1063	20112	495	4743	64	412	0	0	7	1645	27616
080984	2	48.0	0	1473	10	879	509	20621	206	4949	43	455	0	0	7	768	28384
081084	2	48.0	0	1473	16	895	320	20941	298	5247	57	512	0	0	7	691	29075
081184	2	46.0	0	1473	5	900	331	21272	320	5567	80	592	0	0	7	736	29811
081284	2	47.0	0	1473	14	914	192	21464	329	5896	86	678	0	0	7	621	30432
081384	2	46.0	0	1473	7	921	105	21569	184	6080	52	730	0	0	7	348	30780
081484	2	48.0	0	1473	7	928	118	21687	195	6275	47	777	0	0	7	367	31147
081584	2	48.0	0	1473	6	934	76	21763	123	6398	60	837	0	0	7	265	31412
081684	2	46.0	0	1473	2	936	17	21780	56	6454	21	858	0	0	7	96	31508
081784	2	48.0	0	1473	4	940	20	21800	70	6524	37	895	0	3	10	134	31642
081884	2	48.0	0	1473	1	941	10	21810	25	6549	23	918	0	0	10	59	31701
081984	2	48.0	0	1473	0	941	6	21816	16	6565	13	931	0	0	10	35	31736
082084	2	47.0	0	1473	6	947	21	21837	52	6617	48	979	0	2	12	129	31865
082184	2	48.0	0	1473	1	948	12	21849	39	6656	44	1023	0	0	12	96	31961
082284	2	48.0	0	1473	4	952	12	21861	20	6676	39	1062	0	1	13	76	32037
082384	2	48.0	0	1473	4	956	5	21866	36	6712	47	1109	0	0	13	92	32129
082484	2	48.0	0	1473	5	961	0	21866	27	6739	19	1128	0	3	16	54	32183
082584	2	29.0	0	1473	0	961	0	21866	2	6741	1	1129	0	0	16	3	32186
082684	2	28.0	0	1473	0	961	0	21866	1	6742	1	1130	0	0	16	2	32188
082784	2	45.5	0	1473	1	962	0	21866	1	6743	10	1140	0	0	16	12	32200
082884	2	45.0	0	1473	0	962	0	21866	3	6746	9	1149	0	0	16	12	32212
082984	2	46.0	0	1473	0	962	0	21866	7	6753	7	1156	0	0	16	14	32226
083084	2	47.0	0	1473	1	963	0	21866	10	6763	11	1167	0	2	18	24	32250
083184	2	48.0	0	1473	0	963	0	21866	37	6800	22	1189	0	0	18	59	32309

Appendix Table 2-13 (cont.). Talkeetna Station west bank fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
090184	2	48.0	0	1473	0	963	0	21866	2	6802	1	1190	0	0	18	3	32312
090284	2	45.0	0	1473	0	963	0	21866	21	6823	5	1195	0	1	19	27	32339
090384	2	48.0	0	1473	0	963	0	21866	0	6823	0	1195	0	0	19	0	32339
090484	2	48.0	0	1473	0	963	0	21866	4	6827	0	1195	0	1	20	5	32344
090584	2	48.0	0	1473	0	963	0	21866	10	6837	5	1200	0	0	20	15	32359
090684	2	48.0	0	1473	0	963	0	21866	29	6866	3	1203	0	1	21	33	32392
090784	2	48.0	0	1473	0	963	0	21866	10	6876	1	1204	0	0	21	11	32403
090884	2	48.0	0	1473	0	963	0	21866	7	6883	5	1209	2	0	23	14	32417
090984	2	48.0	0	1473	1	964	0	21866	4	6887	3	1212	0	1	24	9	32426
091084	2	48.0	0	1473	0	964	0	21866	5	6892	4	1216	0	1	25	10	32436
091184	2	48.0	0	1473	0	964	0	21866	3	6895	1	1217	0	0	25	4	32440

Appendix Table 2-14. Talkeetna Station fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
060384	1	4.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
060484	1	24.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
060584	2	29.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
060684	3	54.0	2	2	0	0	0	0	0	0	0	0	0	0	0	2	2
060784	3	72.0	2	4	1	1	0	0	0	0	0	0	0	0	0	3	5
060884	4	80.0	8	12	0	1	0	0	0	0	0	0	0	0	0	8	13
060984	4	94.0	7	19	1	2	0	0	0	0	0	0	0	1	1	9	22
061084	4	96.0	11	30	0	2	0	0	0	0	0	0	0	0	1	11	33
061184	4	96.0	26	56	1	3	0	0	0	0	0	0	0	0	1	27	60
061284	4	96.0	34	90	0	3	0	0	0	0	0	0	0	0	1	34	94
061384	4	96.0	18	108	0	3	0	0	0	0	0	0	0	1	2	19	113
061484	4	95.0	18	126	2	5	0	0	0	0	0	0	0	0	2	20	133
061584	4	96.0	29	155	0	5	0	0	0	0	0	0	0	0	2	29	162
061684	4	61.0	19	174	0	5	0	0	0	0	0	0	0	0	2	19	181
061884	4	40.5	26	200	0	5	0	0	0	0	0	0	0	0	2	26	207
061984	4	96.0	151	351	0	5	0	0	0	0	0	0	0	0	2	151	358
062084	4	96.0	213	564	1	6	0	0	0	0	0	0	0	0	2	214	572
062184	4	96.0	205	769	0	6	0	0	0	0	0	0	0	0	2	205	777
062284	4	96.0	169	938	1	7	0	0	0	0	0	0	0	0	2	170	947
062384	4	96.0	257	1195	0	7	0	0	0	0	0	0	0	0	2	257	1204
062484	4	96.0	147	1342	0	7	0	0	0	0	0	0	0	1	3	148	1352
062584	4	96.0	301	1643	1	8	0	0	0	0	0	0	0	1	4	303	1655
062684	4	96.0	199	1842	0	8	0	0	0	0	0	0	0	0	4	199	1854
062784	4	96.0	163	2005	1	9	0	0	0	0	0	0	0	1	5	165	2019
062884	4	96.0	104	2109	0	9	0	0	0	0	0	0	0	0	5	104	2123
062984	4	96.0	137	2246	0	9	0	0	0	0	0	0	0	0	5	137	2260
063084	4	96.0	191	2437	0	9	0	0	0	0	0	0	0	0	5	191	2451
070184	4	96.0	174	2611	1	10	0	0	0	0	0	0	0	1	6	176	2627
070284	4	96.0	139	2750	3	13	0	0	0	0	0	0	0	0	6	142	2769

Appendix Table 2-14 (cont.). Talkeetna Station fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
070384	4	96.0	97	2847	0	13	0	0	0	0	0	0	0	0	6	97	2866
070484	4	90.0	23	2870	0	13	0	0	0	0	0	0	0	0	6	23	2889
070584	4	94.0	106	2976	1	14	0	0	0	0	0	0	0	0	6	107	2996
070684	4	96.0	62	3038	2	16	0	0	0	0	0	0	0	2	8	66	3062
070784	4	96.0	54	3092	2	18	0	0	0	0	0	0	0	0	8	56	3118
070884	4	96.0	29	3121	2	20	0	0	0	0	0	0	0	0	8	31	3149
070984	4	96.0	37	3158	2	22	0	0	0	0	0	0	0	0	8	39	3188
071084	4	96.0	32	3190	4	26	0	0	0	0	0	0	0	0	8	36	3224
071184	4	96.0	20	3210	3	29	0	0	0	0	0	0	0	0	8	23	3247
071284	4	96.0	28	3238	0	29	1	1	1	1	0	0	0	1	9	31	3278
071384	4	96.0	29	3267	4	33	0	1	2	3	0	0	0	0	9	35	3313
071484	4	96.0	25	3292	5	38	0	1	3	6	0	0	0	0	9	33	3346
071584	4	96.0	15	3307	2	40	3	4	2	8	1	1	0	0	9	23	3369
071684	4	96.0	13	3320	2	42	2	6	10	18	0	1	0	0	9	27	3396
071784	4	93.0	8	3328	5	47	0	6	22	40	0	1	0	0	9	35	3431
071884	4	94.0	7	3335	1	48	1	7	17	57	1	2	0	0	9	27	3458
071984	4	96.0	16	3351	3	51	2	9	34	91	1	3	0	0	9	56	3514
072084	4	96.0	7	3358	7	58	2	11	25	116	0	3	0	0	9	41	3555
072184	4	96.0	11	3369	9	67	8	19	24	140	0	3	0	0	9	52	3607
072284	4	96.0	7	3376	141	208	34	53	39	179	2	5	0	0	9	223	3830
072384	4	96.0	7	3383	107	315	30	83	52	231	1	6	0	0	9	197	4027
072484	4	96.0	11	3394	298	613	273	356	221	452	4	10	0	0	9	807	4834
072584	4	96.0	2	3396	116	729	672	1028	351	803	1	11	0	0	9	1142	5976
072684	4	96.0	2	3398	41	770	899	1927	274	1077	2	13	0	0	9	1218	7194
072784	4	95.0	0	3398	17	787	95	2022	40	1117	0	13	0	0	9	152	7346
072884	4	96.0	1	3399	89	876	326	2348	200	1317	5	18	0	0	9	621	7967
072984	4	95.0	4	3403	135	1011	1395	3743	481	1798	12	30	0	0	9	2027	9994
073084	4	95.5	1	3404	69	1080	1860	5603	495	2293	13	43	0	0	9	2438	12432
073184	4	92.5	0	3404	119	1199	2186	7789	911	3204	42	85	0	0	9	3258	15690

Appendix Table 2-14 (cont.). Talkeetna Station fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
080184	4	92.0	0	3404	48	1247	1358	9147	562	3766	38	123	0	0	9	2006	17696
080284	4	96.0	1	3405	68	1315	3508	12655	1015	4781	71	194	0	0	9	4663	22359
080384	4	95.0	1	3406	79	1394	4533	17188	859	5640	83	277	0	0	9	5555	27914
080484	4	96.0	0	3406	41	1435	4016	21204	704	6344	59	336	0	0	9	4820	32734
080584	4	96.0	0	3406	31	1466	2482	23686	802	7146	48	384	0	0	9	3363	36097
080684	4	96.0	0	3406	16	1482	388	24074	226	7372	19	403	0	0	9	649	36746
080784	4	93.0	0	3406	20	1502	1145	25219	653	8025	55	458	0	0	9	1873	38619
080884	4	96.0	0	3406	46	1548	1511	26730	919	8944	83	541	0	0	9	2559	41178
080984	4	96.0	0	3406	27	1575	673	27403	397	9341	49	590	0	0	9	1146	42324
081084	4	96.0	0	3406	28	1603	428	27831	526	9867	67	657	0	0	9	1049	43373
081184	4	91.5	0	3406	15	1618	418	28249	573	10440	104	761	0	0	9	1110	44483
081284	4	94.0	0	3406	33	1651	422	28671	896	11336	126	887	0	0	9	1477	45960
081384	4	92.0	0	3406	14	1665	173	28844	305	11641	61	948	0	0	9	553	46513
081484	4	>6.0	0	3406	15	1680	169	29013	320	11961	58	1006	0	0	9	562	47075
081584	4	96.0	0	3406	15	1695	106	29119	181	12142	69	1075	0	0	9	371	47446
081684	4	94.0	0	3406	3	1698	22	29141	74	12216	22	1097	0	0	9	121	47567
081784	4	96.0	1	3407	4	1702	24	29165	85	12301	40	1137	0	3	12	157	47724
081884	4	96.0	0	3407	2	1704	13	29178	33	12334	24	1161	0	0	12	72	47796
081984	4	96.0	0	3407	0	1704	7	29185	18	12352	16	1177	0	0	12	41	47837
082084	4	93.0	0	3407	7	1711	21	29206	67	12419	56	1233	0	2	14	153	47990
082184	4	96.0	0	3407	1	1712	12	29218	42	12461	50	1283	0	0	14	105	48095
082284	4	96.0	0	3407	4	1716	12	29230	21	12482	41	1324	0	1	15	79	48174
082384	4	94.0	0	3407	4	1720	5	29235	39	12521	59	1383	0	0	15	107	48281
082484	4	96.0	0	3407	5	1725	0	29235	29	12550	21	1404	0	3	18	58	48339
082584	4	77.0	0	3407	0	1725	0	29235	3	12553	2	1406	0	0	18	5	48344
082684	4	74.0	0	3407	0	1725	0	29235	3	12556	1	1407	0	0	18	4	48348
082784	4	92.5	0	3407	1	1726	0	29235	1	12557	11	1418	0	0	18	13	48361
082884	4	89.0	0	3407	0	1726	0	29235	20	12577	22	1440	0	1	19	43	48404
082984	4	90.0	0	3407	1	1727	0	29235	19	12596	11	1451	0	1	20	32	48436

Appendix Table 2-14 (cont.). Talkeetna Station fishwheels daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
083084	4	93.0	0	3407	2	1729	0	29235	13	12609	16	1467	0	3	23	34	48470
083184	4	96.0	0	3407	0	1729	1	29236	43	12652	28	1495	0	2	25	74	48544
090184	4	96.0	0	3407	1	1730	0	29236	2	12654	1	1496	0	2	27	6	48550
090284	4	93.0	0	3407	0	1730	0	29236	22	12676	5	1501	0	3	30	30	48580
090384	4	96.0	0	3407	0	1730	0	29236	1	12677	0	1501	0	0	30	1	48581
090484	4	94.0	0	3407	0	1730	0	29236	4	12681	0	1501	0	1	31	5	48586
090584	4	96.0	0	3407	0	1730	0	29236	10	12691	5	1506	0	0	31	15	48601
090684	4	96.0	0	3407	0	1730	0	29236	29	12720	3	1509	0	1	32	33	48634
090784	4	96.0	0	3407	0	1730	0	29236	10	12730	1	1510	0	1	33	12	48646
090884	4	96.0	0	3407	0	1730	0	29236	7	12737	6	1516	2	0	35	15	48661
090984	4	96.0	0	3407	1	1731	0	29236	4	12741	3	1519	1	1	37	10	48671
091084	4	96.0	0	3407	0	1731	0	29236	5	12746	5	1524	0	1	38	11	48682
091184	4	96.0	0	3407	0	1731	0	29236	3	12749	2	1526	0	1	39	6	48688

Appendix Table 2-15. Curry Station east bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
060984	1	5.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
061084	1	24.0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1
061184	1	24.0	2	3	0	0	0	0	0	0	0	0	0	1	1	3	4
061284	1	24.0	3	6	0	0	0	0	0	0	0	0	0	2	3	5	9
061384	1	18.5	2	8	0	0	0	0	0	0	0	0	0	1	4	3	12
061484	1	18.5	3	11	0	0	0	0	0	0	0	0	0	1	5	4	16
061584	1	24.0	2	13	0	0	0	0	0	0	0	0	0	0	5	2	18
061684	1	9.5	7	20	0	0	0	0	0	0	0	0	0	0	5	7	25
061884	1	12.5	4	24	0	0	0	0	0	0	0	0	0	0	5	4	29
061984	1	24.0	51	75	0	0	0	0	0	0	0	0	0	1	6	52	81
062084	1	23.0	98	173	0	0	0	0	0	0	0	0	0	0	6	98	179
062184	1	24.0	66	239	0	0	0	0	0	0	0	0	0	0	6	66	245
062284	1	24.0	110	349	0	0	0	0	0	0	0	0	0	0	6	110	355
062384	1	24.0	45	394	0	0	0	0	0	0	0	0	0	0	6	45	400
062484	1	24.0	44	438	0	0	0	0	0	0	0	0	0	1	7	45	445
062584	1	24.0	49	487	0	0	0	0	0	0	0	0	0	1	8	50	495
062684	1	23.0	45	532	0	0	0	0	0	0	0	0	0	0	8	45	540
062784	1	24.0	25	557	0	0	0	0	0	0	0	0	0	0	8	25	565
062884	1	24.0	14	571	0	0	0	0	0	0	0	0	0	0	8	14	579
062984	1	24.0	42	613	0	0	0	0	0	0	0	0	0	0	8	42	621
063084	1	24.0	27	640	0	0	0	0	0	0	0	0	0	0	8	27	648
070184	1	24.0	26	666	0	0	0	0	0	0	0	0	0	0	8	26	674
070284	1	24.0	25	691	0	0	0	0	0	0	0	0	0	0	8	25	699
070384	1	24.0	22	713	0	0	0	0	0	0	0	0	0	1	9	23	722
070484	1	24.0	22	735	0	0	0	0	0	0	0	0	0	0	9	22	744
070584	1	24.0	15	750	0	0	0	0	0	0	0	0	0	0	9	15	759
070684	1	24.0	18	768	0	0	0	0	0	0	0	0	0	0	9	18	777
070784	1	24.0	8	776	1	1	1	1	0	0	0	0	0	0	9	10	787
070884	1	24.0	10	786	0	1	1	2	0	0	0	0	0	0	9	11	798

Appendix Table 2-15 (cont.). Curry Station east bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
070984	1	24.0	5	791	1	2	0	2	0	0	0	0	0	0	9	6	804
071084	1	24.0	3	794	1	3	0	2	0	0	0	0	0	1	10	5	809
071184	1	24.0	8	802	3	6	1	3	0	0	0	0	0	1	11	13	822
071284	1	24.0	9	811	0	6	1	4	0	0	0	0	0	1	12	11	833
071384	1	24.0	5	816	0	6	0	4	0	0	0	0	0	0	12	5	838
071484	1	24.0	7	823	1	7	1	5	0	0	0	0	0	3	15	12	850
071584	1	24.0	7	830	0	7	0	5	1	1	0	0	0	0	15	8	858
071684	1	24.0	4	834	1	8	0	5	0	1	0	0	0	0	15	5	863
071784	1	24.0	3	837	0	8	0	5	3	4	0	0	0	0	15	6	869
071884	1	24.0	10	847	0	8	0	5	2	6	0	0	0	0	15	12	881
071984	1	24.0	2	849	2	10	1	6	7	13	0	0	0	0	15	12	893
072084	1	24.0	2	851	1	11	0	6	3	16	0	0	0	0	15	6	899
072184	1	24.0	7	858	1	12	2	8	5	21	0	0	0	0	15	15	914
072284	1	24.0	2	860	4	16	2	10	5	26	0	0	0	0	15	13	927
072384	1	24.0	1	861	11	27	2	12	3	29	1	1	0	0	15	18	945
072484	1	24.0	1	862	14	41	5	17	11	40	0	1	0	0	15	31	976
072584	1	24.0	0	862	13	54	48	65	44	84	0	1	0	1	16	106	1082
072684	1	24.0	0	862	27	81	152	217	26	110	0	1	0	0	16	205	1287
072784	1	24.0	1	863	11	92	48	265	4	114	0	1	0	0	16	64	1351
072884	1	24.0	1	864	7	99	173	438	62	176	0	1	0	1	17	244	1595
072984	1	24.0	1	865	22	121	339	777	130	306	1	2	0	1	18	494	2089
073084	1	24.0	0	865	31	152	415	1192	153	459	6	8	0	0	18	605	2694
073184	1	24.0	0	865	11	163	417	1609	132	591	2	10	0	1	19	563	3257
080184	1	24.0	0	865	11	174	387	1996	142	733	12	22	0	0	19	552	3809
080284	1	24.0	0	865	16	190	573	2569	260	993	4	26	0	1	20	854	4663
080384	1	13.0	0	865	9	199	462	3031	162	1155	12	38	0	0	20	645	5308
080484	1	17.7	0	865	12	211	479	3510	269	1424	14	52	0	0	20	774	6082
080584	1	24.0	0	865	12	223	686	4196	289	1713	8	60	0	0	20	995	7077
080684	1	24.0	0	865	11	234	349	4545	139	1852	12	72	0	0	20	511	7588

Appendix Table 2-15 (cont.). Curry Station east bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
080784	1	24.0	0	865	3	237	152	4697	77	1929	8	80	0	0	20	240	7828
080884	1	24.0	0	865	10	247	122	4819	92	2021	2	82	0	0	20	226	8054
080984	1	24.0	0	865	4	251	78	4897	44	2065	1	83	0	0	20.	127	8181
081084	1	24.0	0	865	6	257	83	4980	99	2164	5	88	0	0	20	193	8374
081184	1	22.0	0	865	1	258	56	5036	70	2234	5	93	0	0	20	132	8506
081284	1	24.0	0	865	8	266	82	5118	176	2410	9	102	0	1	21	276	8782
081384	1	18.0	0	865	3	269	22	5140	88	2498	1	103	0	0	21	114	8896
081484	1	24.0	0	865	2	271	48	5188	114	2612	3	106	0	0	21	167	9063
081584	1	21.0	0	865	1	272	20	5208	94	2706	1	107	0	0	21	116	9179
081684	1	24.0	0	865	1	273	17	5225	79	2785	2	109	0	0	21	99	9278
081784	1	24.0	0	865	3	276	17	5242	64	2849	1	110	0	0	21	85	9363
081884	1	24.0	0	865	0	276	9	5251	43	2892	6	116	0	0	21	58	9421
081984	1	24.0	0	865	4	280	12	5263	43	2935	7	123	0	0	21	66	9487
082084	1	24.0	0	865	4	284	11	5274	37	2972	9	132	0	2	23	63	9550
082184	1	24.0	0	865	2	286	3	5277	25	2997	4	136	0	0	23	34	9584
082284	1	24.0	0	865	3	289	1	5278	34	3031	9	145	0	0	23	47	9631
082384	1	20.0	0	865	0	289	0	5278	18	3049	2	147	0	1	24	21	9652
082484	1	24.0	0	865	1	290	1	5279	24	3073	1	148	0	0	24	27	9679
082584	1	24.0	0	865	1	291	0	5279	10	3083	0	148	0	0	24	11	9690
082684	1	24.0	0	865	1	292	0	5279	4	3087	0	148	0	0	24	5	9695
082784	1	24.0	0	865	2	294	1	5280	19	3106	0	148	0	0	24	22	9717
082884	1	24.0	0	865	3	297	0	5280	12	3118	5	153	0	0	24	20	9737
082984	1	24.0	0	865	2	299	0	5280	14	3132	4	157	0	0	24	20	9757
083084	1	24.0	0	865	1	300	0	5280	12	3145	6	163	0	0	24	20	9777
083184	1	18.0	0	865	1	301	0	5280	4	3149	1	164	0	0	24	6	9783
090184	1	24.0	0	865	0	301	0	5280	3	3152	0	164	0	0	24	3	9786
090284	1	24.0	0	865	0	301	0	5280	3	3155	0	164	0	0	24	3	9789
090384	1	24.0	0	865	0	301	0	5280	0	3155	0	164	0	0	24	0	9789
090484	1	20.0	0	865	0	301	0	5280	0	3155	0	164	0	0	24	0	9789

Appendix Table 2-15 (cont.). Curry Station east bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
090584	1	18.0	0	865	0	301	0	5280	0	3155	0	164	0	0	24	0	9789
090684	1	12.0	0	865	0	301	0	5280	0	3155	0	164	0	0	24	0	9789
090784	1	24.0	0	865	0	301	0	5280	0	3155	0	164	0	0	24	0	9789
090884	1	24.0	0	865	1	302	0	5280	0	3155	0	164	0	0	24	1	9790
090984	1	18.0	0	865	0	302	0	5280	0	3155	0	164	0	0	24	0	9790
091084	1	8.0	0	865	0	302	0	5280	0	3155	0	164	0	0	24	0	9790
091184	1	10.0	0	865	0	302	0	5280	0	3155	0	164	0	0	24	0	9790
091284	1	24.0	0	865	0	302	0	5280	0	3155	0	164	0	0	24	0	9790
091384	1	24.0	0	865	0	302	0	5280	0	3155	0	164	0	0	24	0	9790

Appendix Table 2-16. Curry Station west bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
060984	1	11.0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1
061084	1	24.0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
061184	1	24.0	3	4	0	0	0	0	0	0	0	0	0	0	0	3	4
061284	1	24.0	0	4	0	0	0	0	0	0	0	0	0	1	1	1	5
061384	1	24.0	1	5	0	0	0	0	0	0	0	0	0	0	1	1	6
061484	1	24.0	5	10	0	0	0	0	0	0	0	0	0	0	1	5	11
061584	1	24.0	2	12	0	0	0	0	0	0	0	0	0	0	1	2	13
061684	1	14.5	0	12	0	0	0	0	0	0	0	0	0	0	1	0	13
061984	1	8.5	6	18	0	0	0	0	0	0	0	0	0	1	2	7	20
062084	1	23.0	37	55	0	0	0	0	0	0	0	0	0	0	2	37	57
062184	1	24.0	59	114	0	0	0	0	0	0	0	0	0	1	3	60	117
062284	1	24.0	55	169	0	0	0	0	0	0	0	0	0	0	3	55	172
062384	1	24.0	41	210	0	0	0	0	0	0	0	0	0	0	3	41	213
062484	1	24.0	42	252	0	0	0	0	0	0	0	0	0	0	3	42	255
062584	1	24.0	65	317	0	0	0	0	0	0	0	0	0	0	3	65	320
062684	1	24.0	36	353	1	1	0	0	0	0	0	0	0	0	3	37	357
062784	1	18.0	29	382	0	1	0	0	0	0	0	0	0	1	4	30	387
062884	1	24.0	25	407	1	2	0	0	0	0	0	0	0	0	4	26	413
062984	1	24.0	58	465	0	2	0	0	0	0	0	0	0	1	5	59	472
063084	1	24.0	48	513	1	3	0	0	0	0	0	0	0	1	6	50	522
070184	1	24.0	29	542	0	3	0	0	0	0	0	0	0	1	7	30	552
070284	1	24.0	21	563	0	3	0	0	0	0	0	0	0	0	7	21	573
070384	1	24.0	24	587	0	3	0	0	0	0	0	0	0	0	7	24	597
070484	1	24.0	28	615	0	3	0	0	0	0	0	0	0	1	8	29	626
070584	1	24.0	16	631	0	3	0	0	0	0	0	0	0	0	8	16	642
070684	1	24.0	10	641	0	3	0	0	0	0	0	0	0	0	8	10	652
070784	1	24.0	6	647	0	3	0	0	0	0	0	0	0	0	8	6	658
070884	1	24.0	16	663	1	4	0	0	0	0	0	0	0	1	9	18	676
070984	1	24.0	10	673	0	4	0	0	0	0	0	0	0	0	9	10	686

Appendix Table 2-16 (cont.). Curry Station west bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
071084	1	24.0	4	677	0	4	0	0	0	0	0	0	0	0	9	4	690
071184	1	24.0	8	685	1	5	0	0	0	0	0	0	0	1	10	10	700
071284	1	24.0	9	694	0	5	1	1	0	0	0	0	0	1	11	11	711
071384	1	24.0	5	699	0	5	0	1	0	0	0	0	0	0	11	5	716
071484	1	24.0	5	704	0	5	0	1	0	0	0	0	0	0	11	5	721
071584	1	24.0	1	705	0	5	0	1	0	0	0	0	0	0	11	1	722
071684	1	24.0	4	709	0	5	0	1	0	0	0	0	0	0	11	4	726
071784	1	24.0	2	711	0	5	0	1	0	0	0	0	0	0	11	2	728
071884	1	24.0	0	711	0	5	0	1	0	0	1	1	0	0	11	1	729
071984	1	24.0	3	714	0	5	0	1	3	3	0	1	0	1	12	7	736
072084	1	24.0	0	714	0	5	0	1	1	4	0	1	0	0	12	1	737
072184	1	24.0	1	715	0	5	1	2	0	4	0	1	0	0	12	2	739
072284	1	24.0	1	716	0	5	1	3	0	4	0	1	0	0	12	2	741
072384	1	24.0	6	722	1	6	3	6	3	7	0	1	0	0	12	13	754
072484	1	24.0	0	722	0	6	15	21	3	10	1	2	0	0	12	19	773
072584	1	24.0	1	723	2	8	70	91	10	20	0	2	0	0	12	83	856
072684	1	24.0	0	723	1	9	98	189	12	32	0	2	0	0	12	111	967
072784	1	9.0	0	723	0	9	6	195	1	33	0	2	0	0	12	7	974
072984	1	15.0	1	724	2	11	84	279	24	57	0	2	0	0	12	111	1085
073084	1	24.0	0	724	3	14	412	691	31	88	1	3	0	0	12	447	1532
073184	1	24.0	0	724	3	17	654	1345	41	129	1	4	0	0	12	699	2231
080184	1	24.0	0	724	9	26	771	2116	33	162	5	9	0	1	13	819	3050
080284	1	23.5	0	724	2	28	1136	3252	37	199	5	14	0	0	13	1180	4230
080384	1	13.0	0	724	3	31	1076	4328	25	224	4	18	0	2	15	1110	5340
080484	1	17.7	0	724	2	33	1490	5818	46	270	7	25	0	2	17	1547	6887
080584	1	24.0	0	724	0	33	1366	7184	77	347	9	34	0	0	17	1452	8339
080684	1	24.0	0	724	0	33	1092	8276	57	404	7	41	0	0	17	1156	9495
080784	1	24.0	0	724	6	39	668	8944	42	446	7	48	0	0	17	723	10218
080884	1	24.0	0	724	4	43	606	9550	76	522	5	53	0	0	17	691	10909

Appendix Table 2-16 (cont.). Curry Station west bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
080984	1	24.0	0	724	7	50	548	10098	60	582	8	61	0	0	17	623	11532
081084	1	24.0	0	724	1	51	502	10600	67	649	12	73	0	0	17	582	12114
081184	1	24.0	0	724	3	54	376	10976	83	732	8	81	0	0	17	470	12584
081284	1	24.0	0	724	1	55	270	11246	73	805	8	89	0	0	17	352	12936
081384	1	24.0	0	724	2	57	296	11542	74	879	19	108	0	0	17	391	13327
081484	1	24.0	0	724	1	58	226	11768	46	925	9	117	0	0	17	282	13609
081584	1	16.0	0	724	1	59	113	11881	25	950	6	123	0	1	18	146	13755
081684	1	23.0	0	724	2	61	110	11991	35	985	12	135	0	0	18	159	13914
081784	1	24.0	0	724	4	65	30	12021	11	996	3	138	0	1	19	49	13963
081884	1	24.0	0	724	3	68	51	12072	17	1013	9	147	0	0	19	80	14043
081984	1	24.0	0	724	1	69	14	12086	12	1025	2	149	0	1	20	30	14073
082084	1	24.0	0	724	1	70	17	12103	9	1034	10	159	0	0	20	37	14110
082184	1	24.0	0	724	1	71	4	12107	21	1055	8	167	0	0	20	34	14144
082284	1	24.0	0	724	1	72	2	12109	3	1058	9	176	0	0	20	15	14159
082384	1	24.0	0	724	1	73	3	12112	8	1066	4	180	0	0	20	16	14175
082484	1	15.5	0	724	0	73	1	12113	1	1067	1	181	0	0	20	3	14178
082584	1	13.0	0	724	1	74	0	12113	0	1067	1	182	0	0	20	2	14180
082984	1	24.0	0	724	0	74	1	12114	2	1069	1	183	0	0	20	4	14184
083084	1	24.0	0	724	1	75	0	12114	2	1071	1	184	0	0	20	4	14188
083184	1	24.0	0	724	1	76	0	12114	1	1072	2	186	0	0	20	4	14192
090184	1	24.0	0	724	0	76	0	12114	0	1072	0	186	0	0	20	0	14192
090284	1	24.0	0	724	1	77	0	12114	0	1072	0	186	0	0	20	1	14193
090384	1	24.0	0	724	0	77	0	12114	0	1072	0	186	0	0	20	0	14193
090484	1	24.0	0	724	0	77	0	12114	0	1072	0	186	0	0	20	0	14193
090584	1	24.0	0	724	0	77	0	12114	0	1072	0	186	0	0	20	0	14193
090684	1	24.0	0	724	0	77	0	12114	0	1072	0	186	0	0	20	0	14193
090784	1	24.0	0	724	0	77	0	12114	1	1073	0	186	0	0	20	1	14194
090884	1	24.0	0	724	0	77	0	12114	0	1073	0	186	0	0	20	0	14194
090984	1	24.0	0	724	0	77	0	12114	0	1073	0	186	0	0	20	0	14194

Appendix Table 2-16 (cont.). Curry Station west bank fishwheel daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel houre	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
091084	1	24.0	0	724	0	77	0	12114	0	1073	0	186	0	0	20	0	14194
091184	1	24.0	0	724	0	77	0	12114	0	1073	0	186	0	1	21	1	14195
091284	1	22.0	0	724	0	77	0	12114	0	1073	0	186	0	0	21	0	14195
091384	1	24.0	0	724	0	77	0	12114	0	1073	0	186	0	0	21	0	14195
091484	1	8.0	0	724	0	77	0	12114	0	1073	0	186	0	0	21	0	14195

Appendix Table 2-17. Curry Station fishwheel daily and cumulative catch by species, 1984.

Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
060984	2	16.0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1
061084	2	48.0	1	2	0	0	0	0	0	0	0	0	0	0	0	1	2
061184	2	48.0	5	7	0	0	0	0	0	0	0	0	0	1	1	6	8
061284	2	48.0	3	10	0	0	0	0	0	0	0	0	0	3	4	6	14
061384	2	42.5	3	13	0	0	0	0	0	0	0	0	0	1	5	4	18
061484	2	42.5	8	21	0	0	0	0	0	0	0	0	0	1	6	9	27
061584	2	48.0	4	25	0	0	0	0	0	0	0	0	0	0	6	4	31
061684	2	24.0	7	32	0	0	0	0	0	0	0	0	0	0	6	7	38
061884	1	12.5	4	36	0	0	0	0	0	0	0	0	0	0	6	4	42
061984	2	32.5	57	93	0	0	0	0	0	0	0	0	0	2	8	59	101
062084	2	46.0	135	228	0	0	0	0	0	0	0	0	0	0	8	135	236
062184	2	48.0	125	353	0	0	0	0	0	0	0	0	0	1	9	126	362
062284	2	48.0	165	518	0	0	0	0	0	0	0	0	0	0	9	165	527
062384	2	48.0	86	604	0	0	0	0	0	0	0	0	0	0	9	86	613
062484	2	48.0	86	690	0	0	0	0	0	0	0	0	0	1	10	87	700
062584	2	48.0	114	804	0	0	0	0	0	0	0	0	0	1	11	115	815
062684	2	47.0	81	885	1	1	0	0	0	0	0	0	0	0	11	82	897
062784	2	42.0	54	939	0	1	0	0	0	0	0	0	0	1	12	55	952
062884	2	48.0	39	978	1	2	0	0	0	0	0	0	0	0	12	40	992
062984	2	48.0	100	1078	0	2	0	0	0	0	0	0	0	1	13	101	1093
063084	2	48.0	75	1153	1	3	0	0	0	0	0	0	0	1	14	77	1170
070184	2	48.0	55	1208	0	3	0	0	0	0	0	0	0	1	15	56	1226
070284	2	48.0	46	1254	0	3	0	0	0	0	0	0	0	0	15	46	1272
070384	2	48.0	46	1300	0	3	0	0	0	0	0	0	0	1	16	47	1319
070484	2	48.0	50	1350	0	3	0	0	0	0	0	0	0	1	17	51	1370
070584	2	48.0	31	1381	0	3	0	0	0	0	0	0	0	0	17	31	1401
070684	2	48.0	28	1409	0	3	0	0	0	0	0	0	0	0	17	28	1429
070784	2	48.0	14	1423	1	4	1	1	0	0	0	0	0	0	17	16	1445
070884	2	48.0	26	1449	1	5	1	2	0	0	0	0	0	1	18	29	1474

Appendix Table 2-17 (cont.). Curry Station fishwheels daily and cumulative catch by species, 1984.

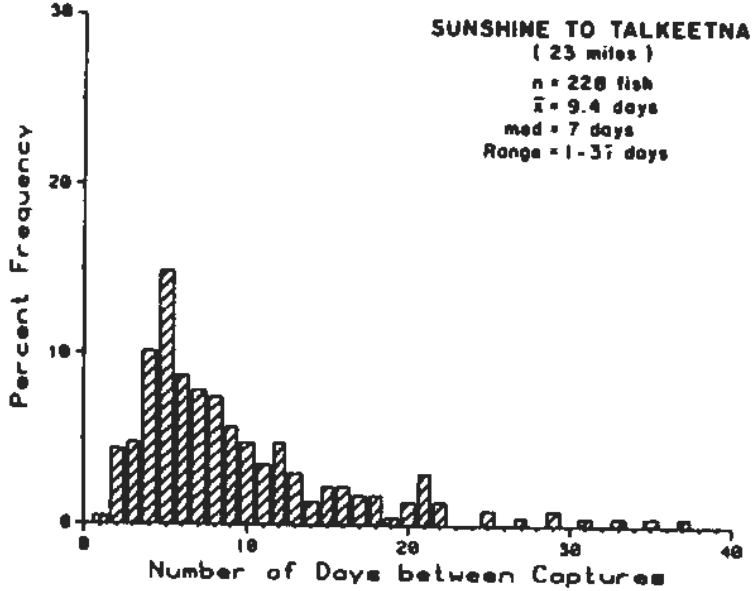
Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
070984	2	48.0	15	1464	1	6	0	2	0	0	0	0	0	0	18	16	1490
071084	2	48.0	7	1471	1	7	0	2	0	0	0	0	0	1	19	9	1499
071184	2	48.0	16	1487	4	11	1	3	0	0	0	0	0	2	21	23	1522
071284	2	48.0	18	1505	0	11	2	5	0	0	0	0	0	2	23	22	1544
071384	2	48.0	10	1515	0	11	0	5	0	0	0	0	0	0	23	10	1554
071484	2	48.0	12	1527	1	12	1	6	0	0	0	0	0	3	26	17	1571
071584	2	48.0	8	1535	0	12	0	6	1	1	0	0	0	0	26	9	1580
071684	2	48.0	8	1543	1	13	0	6	0	1	0	0	0	0	26	9	1589
071784	2	48.0	5	1548	0	13	0	6	3	4	0	0	0	0	26	8	1597
071884	2	48.0	10	1558	0	13	0	6	2	6	1	1	0	0	26	13	1610
071984	2	48.0	5	1563	2	15	1	7	10	16	0	1	0	1	27	19	1629
072084	2	48.0	2	1565	1	16	0	7	4	20	0	1	0	0	27	7	1636
072184	2	48.0	8	1573	1	17	3	10	5	25	0	1	0	0	27	17	1653
072284	2	48.0	3	1576	4	21	3	13	5	30	0	1	0	0	27	15	1668
072384	2	48.0	7	1583	12	33	5	18	6	36	1	2	0	0	27	31	1699
072484	2	48.0	1	1584	14	47	20	38	14	50	1	3	0	0	27	50	1749
072584	2	48.0	1	1585	15	62	118	156	54	104	0	3	0	1	28	189	1938
072684	2	48.0	0	1585	28	90	250	406	38	142	0	3	0	0	28	316	2254
072784	2	33.0	1	1586	11	101	54	460	5	147	0	3	0	0	28	71	2325
072884	1	24.0	1	1587	7	108	173	633	62	209	0	3	0	1	29	244	2569
072984	2	39.0	2	1589	24	132	423	1056	154	363	1	4	0	1	30	605	3174
073084	2	48.0	0	1589	34	166	827	1883	184	547	7	11	0	0	30	1052	4226
073184	2	48.0	0	1589	14	180	1071	2954	173	720	3	14	0	1	31	1262	5488
080184	2	48.0	0	1589	20	200	1158	4112	175	895	17	31	0	1	32	1371	6859
080284	2	47.5	0	1589	18	218	1709	5821	297	1192	9	40	0	1	33	2034	8893
080384	2	26.0	0	1589	12	230	1538	7359	187	1379	16	56	0	2	35	1755	10648
080484	2	35.5	0	1589	14	244	1969	9328	315	1694	21	77	0	2	37	2321	12969
080584	2	48.0	0	1589	12	256	2052	11380	366	2060	17	94	0	0	37	2447	15416
080684	2	48.0	0	1589	11	267	1441	12821	196	2256	19	113	0	0	37	1667	17083

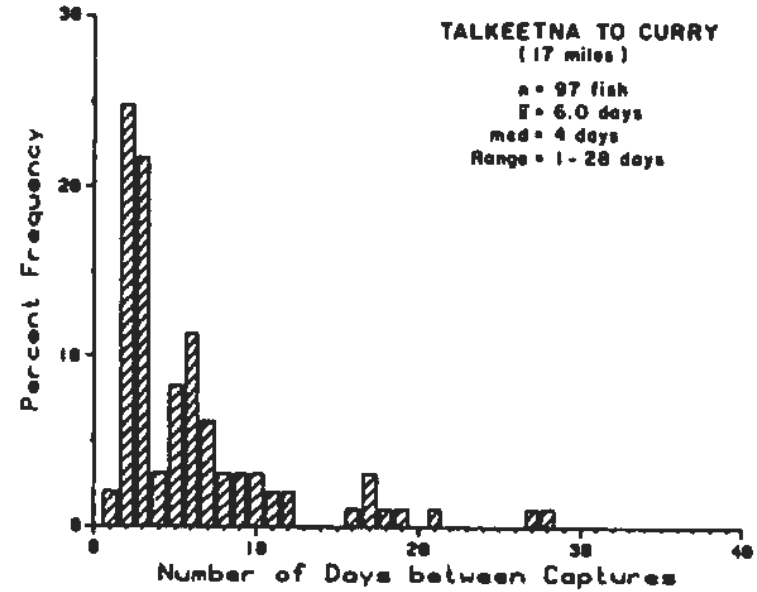
Appendix Table 2-17 (cont.). Curry Station fishwheels daily and cumulative catch by species, 1984.

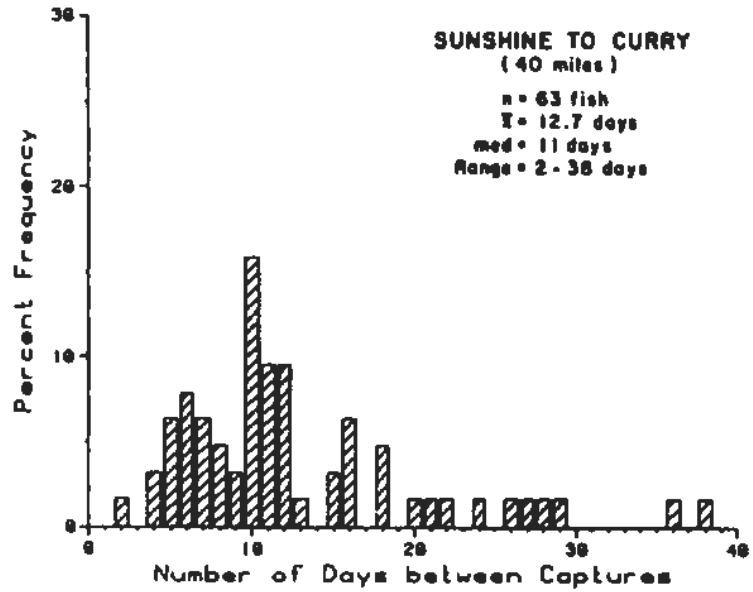
Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
090584	2	42.0	0	1589	0	378	0	17394	0	4227	0	350	0	0	44	0	23982
090684	2	36.0	0	1589	0	378	0	17394	0	4227	0	350	0	0	44	0	23982
090784	2	48.0	0	1589	0	378	0	17394	1	4228	0	350	0	0	44	1	23983
090884	2	48.0	0	1589	1	379	0	17394	0	4228	0	350	0	0	44	1	23984
090984	2	42.0	0	1589	0	379	0	17394	0	4228	0	350	0	0	44	0	23984
091084	2	32.0	0	1589	0	379	0	17394	0	4228	0	350	0	0	44	0	23984
091184	2	34.0	0	1589	0	379	0	17394	0	4228	0	350	0	1	45	1	23985
091284	2	46.0	0	1589	0	379	0	17394	0	4228	0	350	0	0	45	0	23985
091384	2	48.0	0	1589	0	379	0	17394	0	4228	0	350	0	0	45	0	23985
091484	1	8.0	0	1589	0	379	0	17394	0	4228	0	350	0	0	45	0	23985

Appendix Table 2-17 (cont.). Curry Station fishwheels daily and cumulative catch by species, 1984.

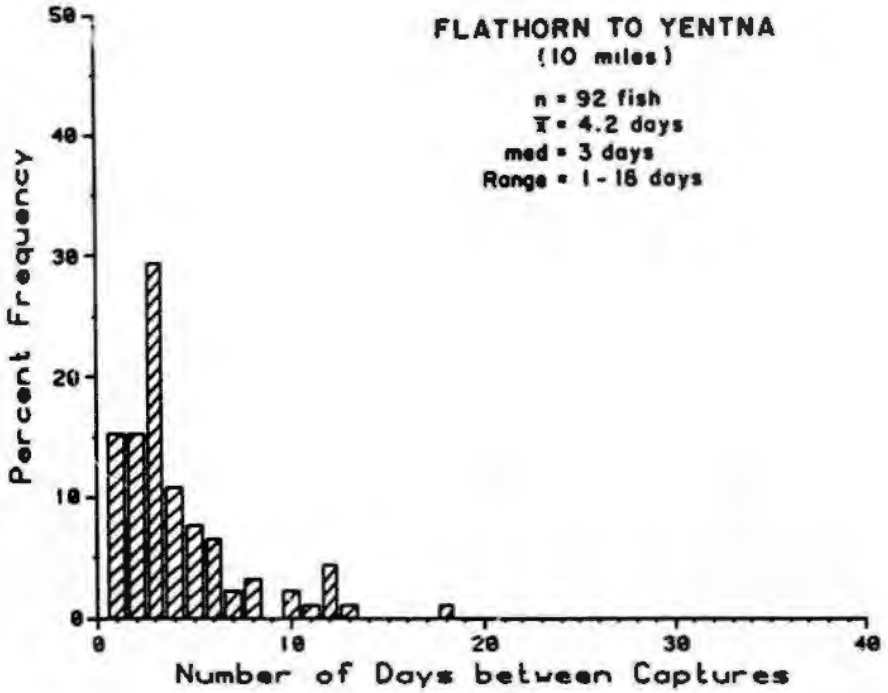
Date	No. of wheels	Wheel hours	Chinook		Sockeye		Pink		Chum		Coho		Miscellaneous			Total catch all species	
			Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Bering Cisco	Other	Cum	Daily	Cum
080784	2	48.0	0	1589	9	276	820	13641	119	2375	15	128	0	0	37	963	18046
080884	2	48.0	0	1589	14	290	728	14369	168	2543	7	135	0	0	37	917	18963
080984	2	48.0	0	1589	11	301	626	14995	104	2647	9	144	0	0	37	750	19713
081084	2	48.0	0	1589	7	308	585	15580	166	2813	17	161	0	0	37	775	20488
081184	2	46.0	0	1589	4	312	432	16012	153	2966	13	174	0	0	37	602	21090
081284	2	48.0	0	1589	9	321	352	16364	249	3215	17	191	0	1	38	628	21718
081384	2	42.0	0	1589	5	326	318	16682	162	3377	20	211	0	0	38	505	22223
081484	2	48.0	0	1589	3	329	274	16956	160	3537	12	223	0	0	38	449	22672
081584	2	37.0	0	1589	2	331	133	17089	119	3656	7	230	0	1	39	262	22934
081684	2	47.0	0	1589	3	334	127	17216	114	3770	14	244	0	0	39	258	23192
081784	2	48.0	0	1589	7	341	47	17263	75	3845	4	248	0	1	40	134	23326
081884	2	48.0	0	1589	3	344	60	17323	60	3905	15	263	0	0	40	138	23464
081984	2	48.0	0	1589	5	349	26	17349	55	3960	9	272	0	1	41	96	23560
082084	2	48.0	0	1589	5	354	28	17377	46	4006	19	291	0	2	43	100	23660
082184	2	48.0	0	1589	3	357	7	17384	46	4052	12	303	0	0	43	68	23728
082284	2	48.0	0	1589	4	361	3	17387	37	4089	18	321	0	0	43	62	23790
082384	2	44.0	0	1589	1	362	3	17390	26	4115	6	327	0	1	44	37	23827
082484	2	39.5	0	1589	1	363	2	17392	25	4140	2	329	0	0	44	30	23857
082584	1	24.0	0	1589	1	364	0	17392	10	4150	0	329	0	0	44	11	23868
082684	1	24.0	0	1589	1	365	0	17392	4	4154	0	329	0	0	44	5	23873
082784	1	24.0	0	1589	2	367	1	17393	19	4173	0	329	0	0	44	22	23895
082884	2	37.0	0	1589	4	371	0	17393	12	4185	6	335	0	0	44	22	23917
082984	2	48.0	0	1589	2	373	1	17394	16	4201	5	340	0	0	44	24	23941
083084	2	48.0	0	1589	2	375	0	17394	15	4216	7	347	0	0	44	24	23965
083184	2	42.0	0	1589	2	377	0	17394	5	4221	3	350	0	0	44	10	23975
090184	2	48.0	0	1589	0	377	0	17394	3	4224	0	350	0	0	44	3	23978
090284	2	48.0	0	1589	1	378	0	17394	3	4227	0	350	0	0	44	4	23982
090384	2	48.0	0	1589	0	378	0	17394	0	4227	0	350	0	0	44	0	23982
090484	2	44.0	0	1589	0	378	0	17394	0	4227	0	350	0	0	44	0	23982

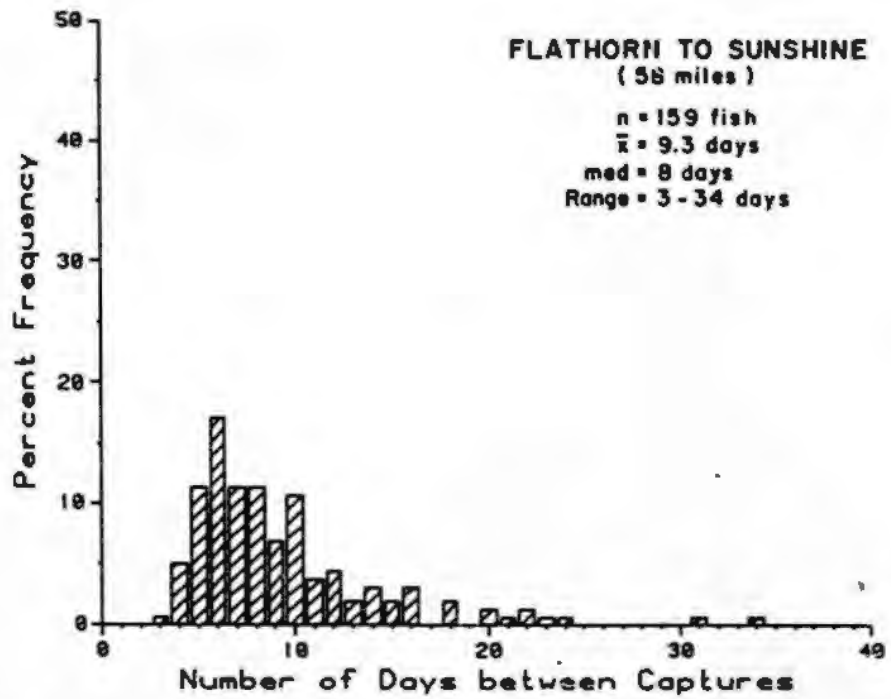




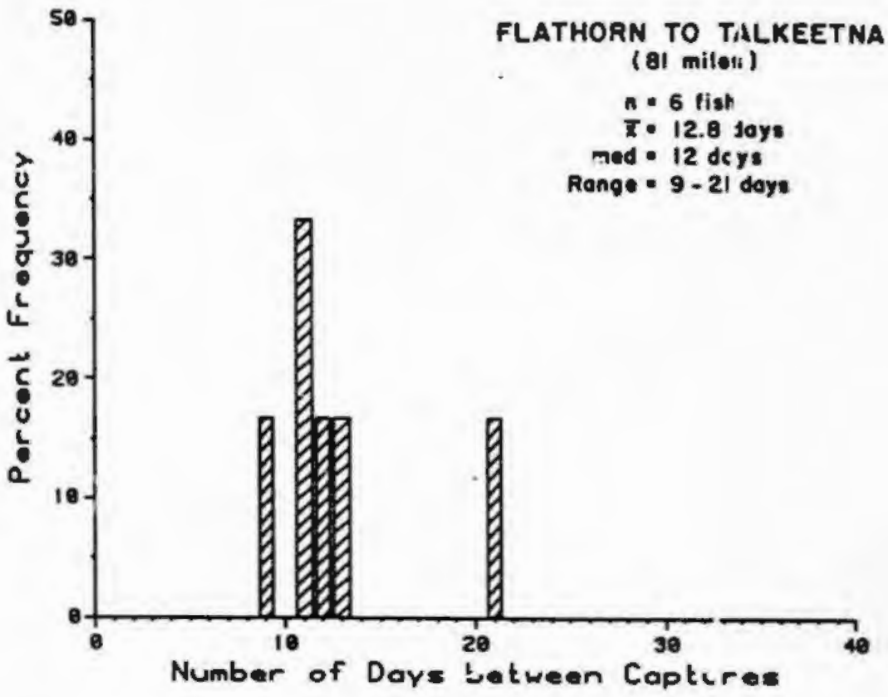


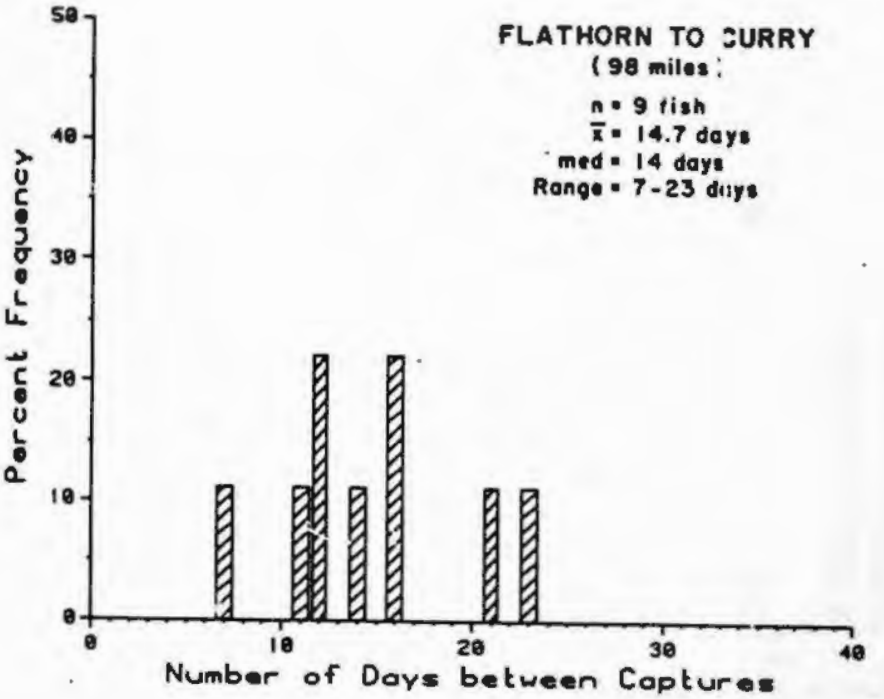
Appendix Figure 2-1. Migrational rates of tagged chinook salmon between mainstem Susitna River



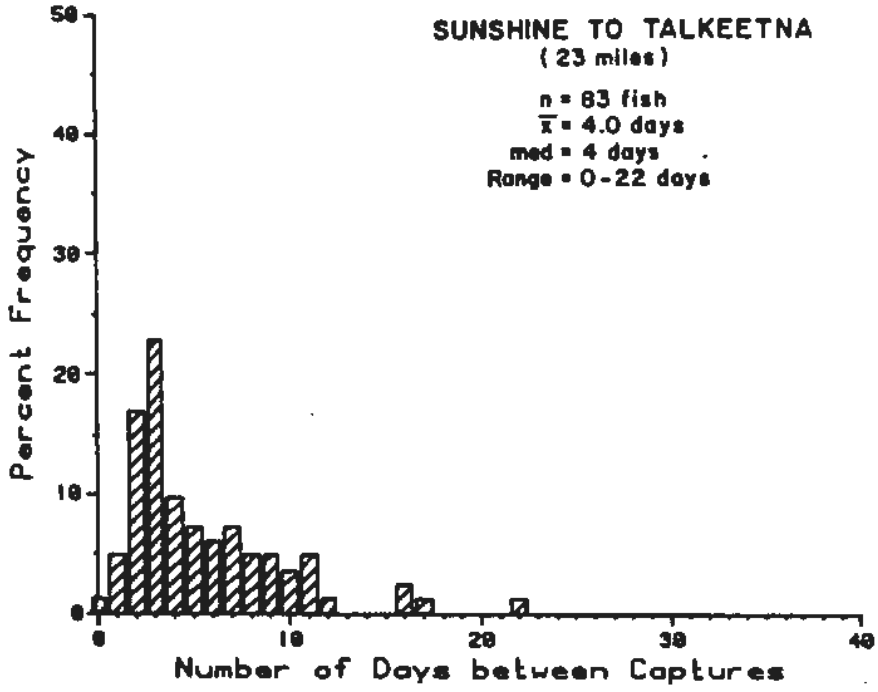


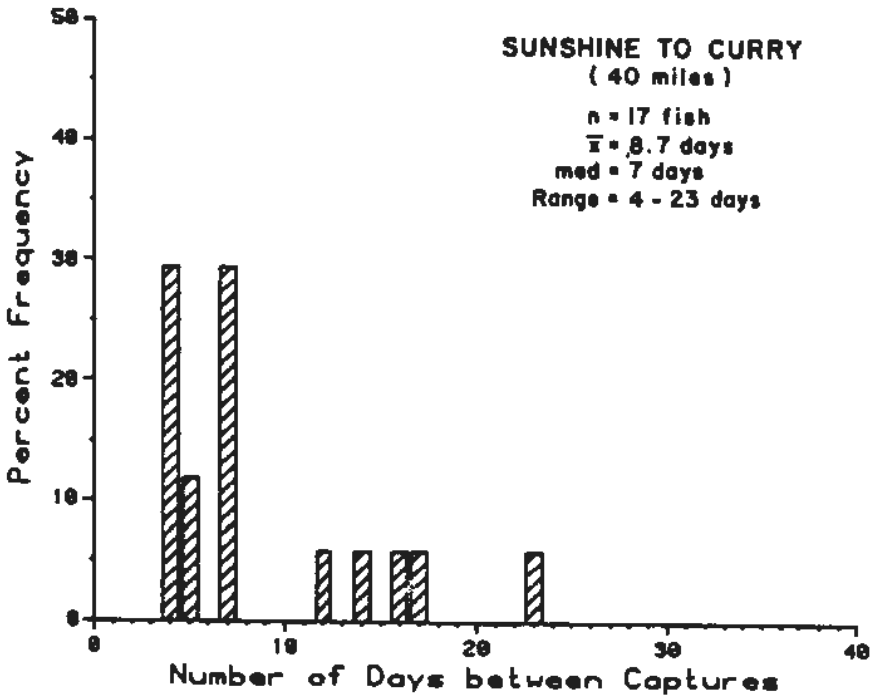
Appendix Figure 2-2. Migrational rates of tagged sockeye salmon between Flathorn and Yentna stations, and Flathorn and Sunshine stations, 1984.



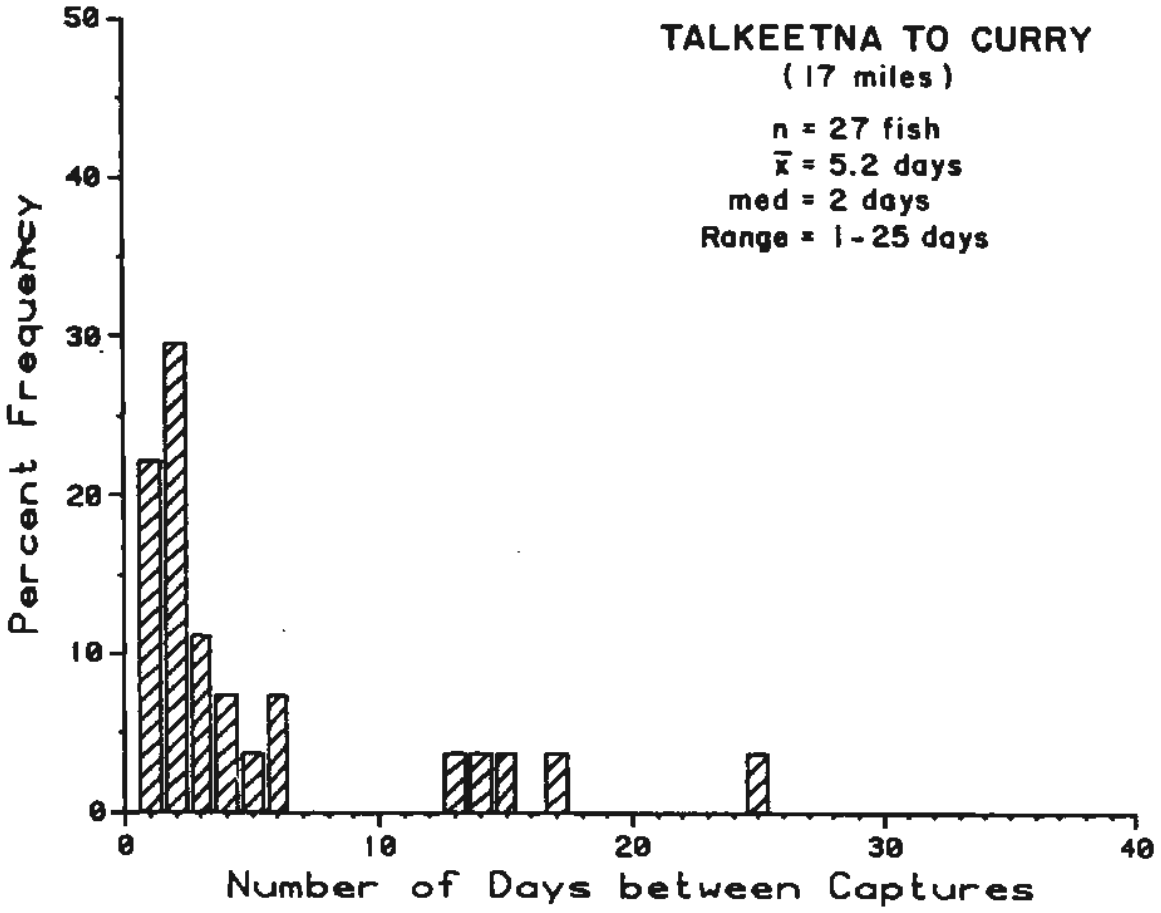


Appendix Figure 2-3. Migrational rates of tagged sockeye salmon between Flathorn and Talkeetna stations, and Flathorn and Curry stations, 1984.

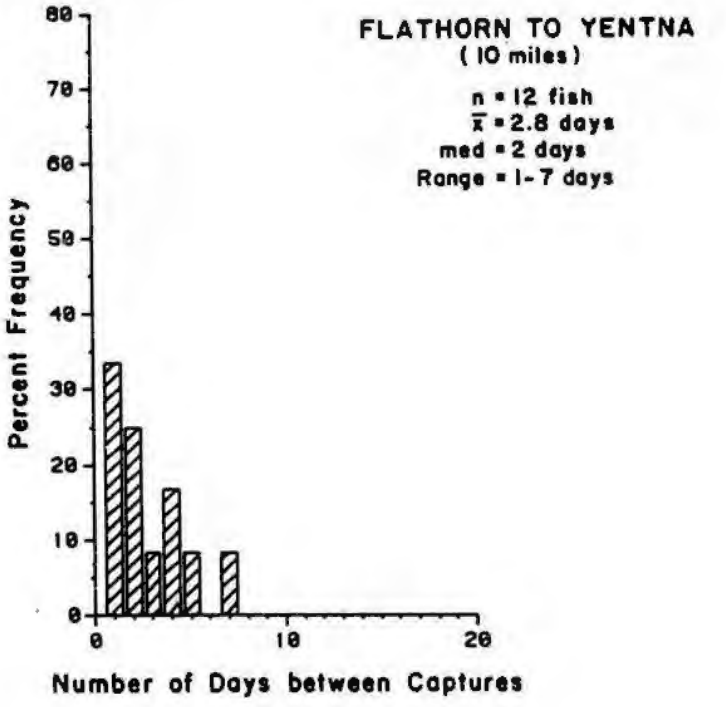


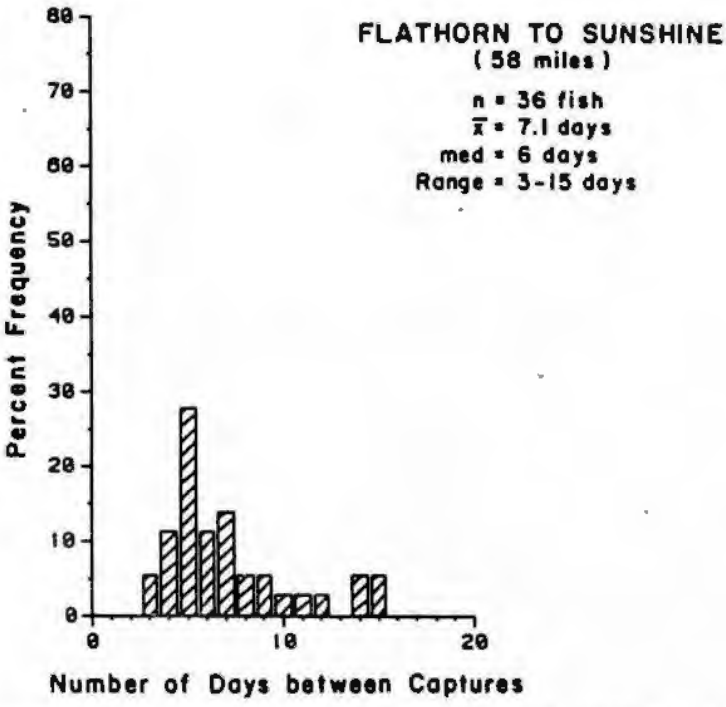


Appendix Figure 2-4. Migrational rates of tagged sockeye salmon between Sunshine and Talkeetna stations, and Sunshine and Curry stations, 1984.

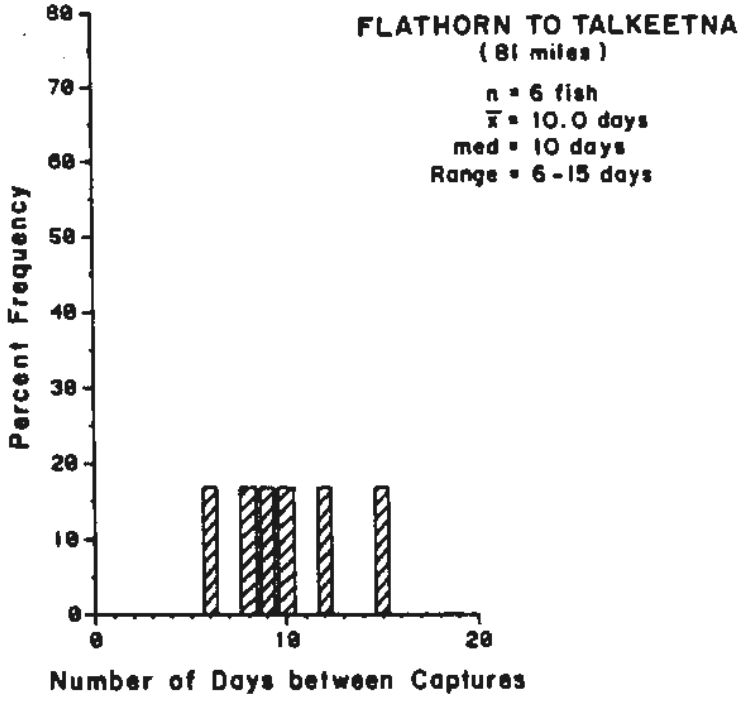


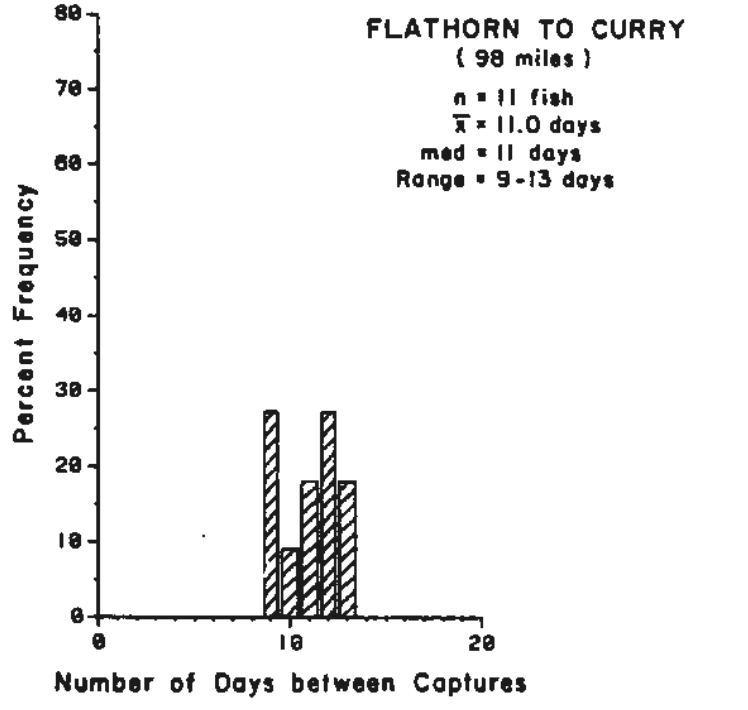
Appendix Figure 2-5. Migrational rates of tagged sockeye salmon between Talkeetna and Curry stations, 1984.



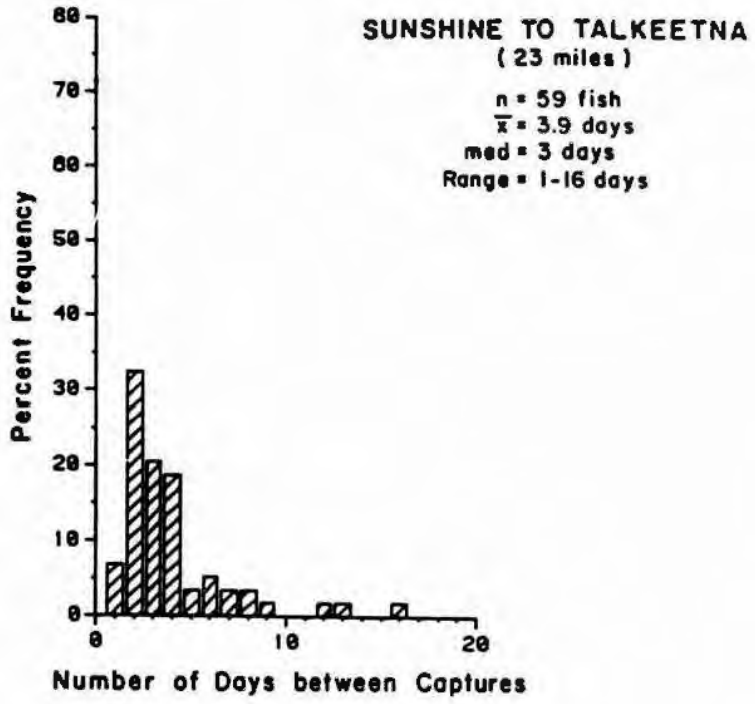


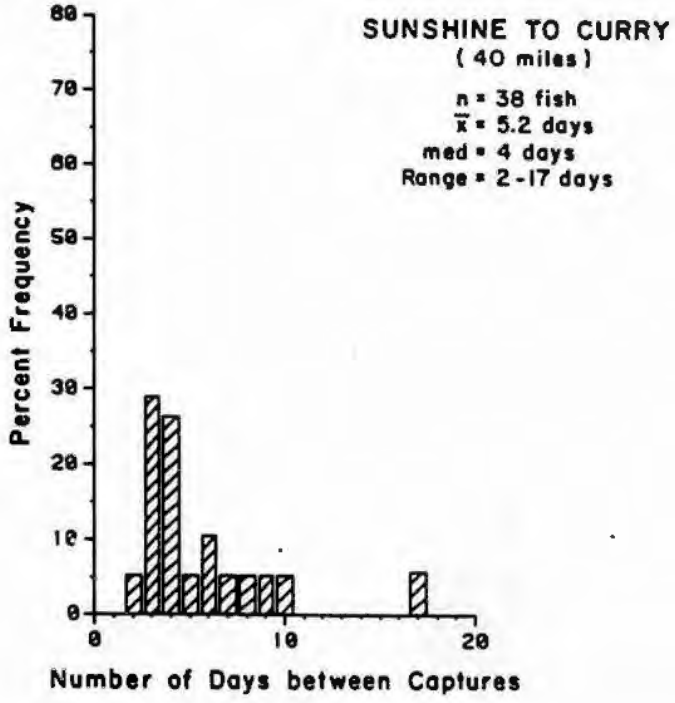
Appendix Figure 2-6. Migrational rates of tagged pink salmon between Flathorn and Yentna stations, and Flathorn and Sunshine stations, 1984.



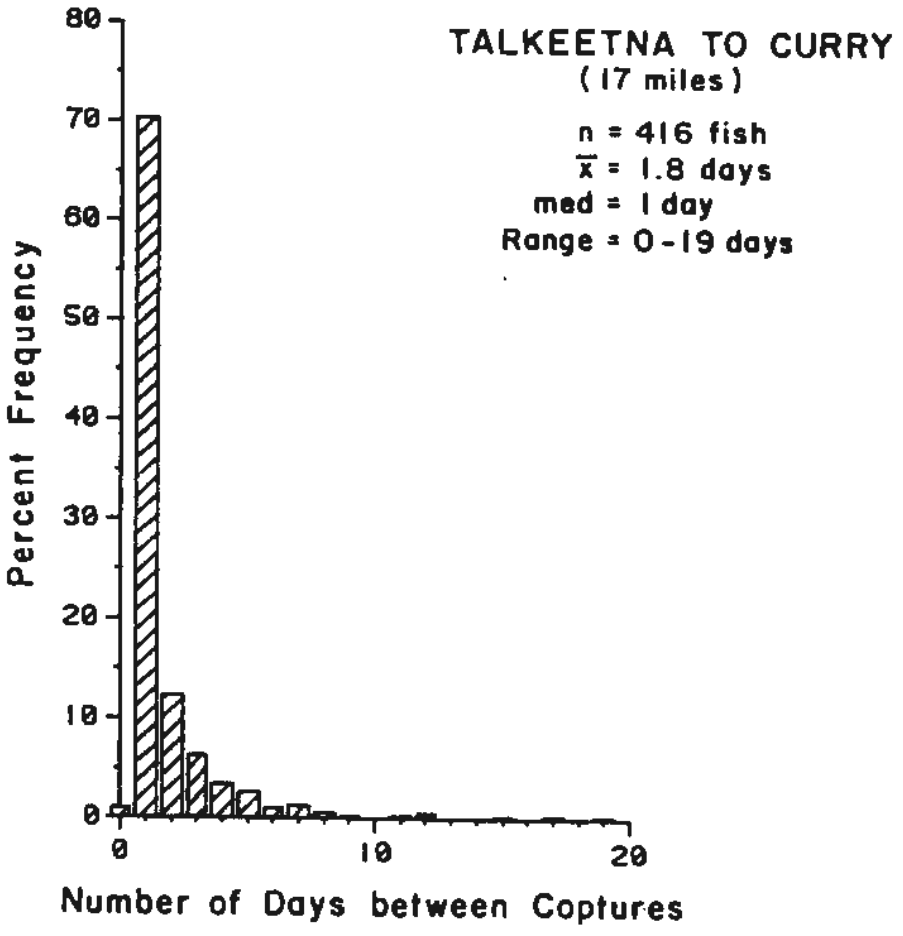


Appendix Figure 2-7. Migrational rates of tagged pink salmon between Flathorn and Talkeetna stations, and Flathorn and Curry stations, 1984.

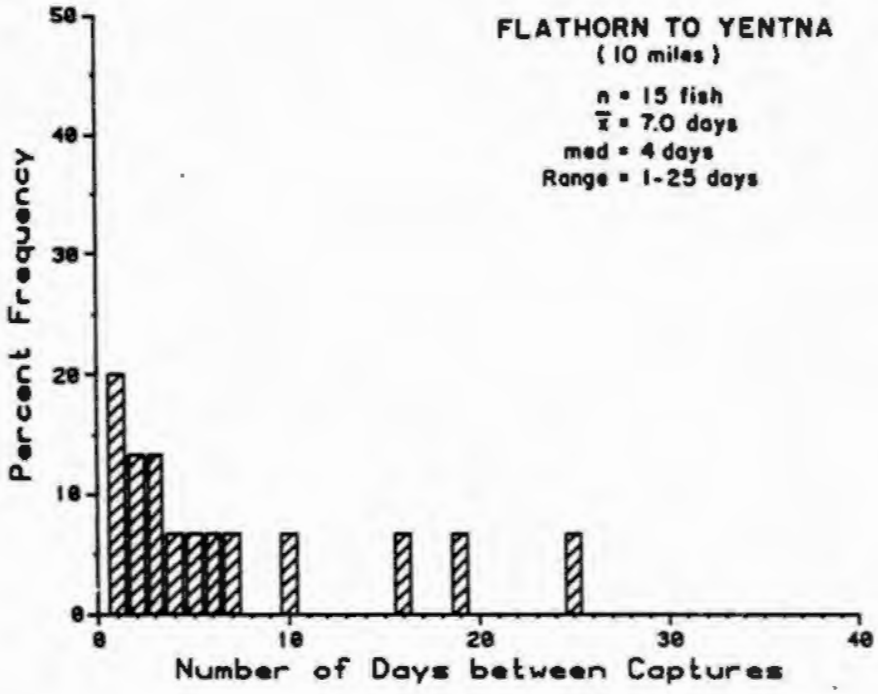


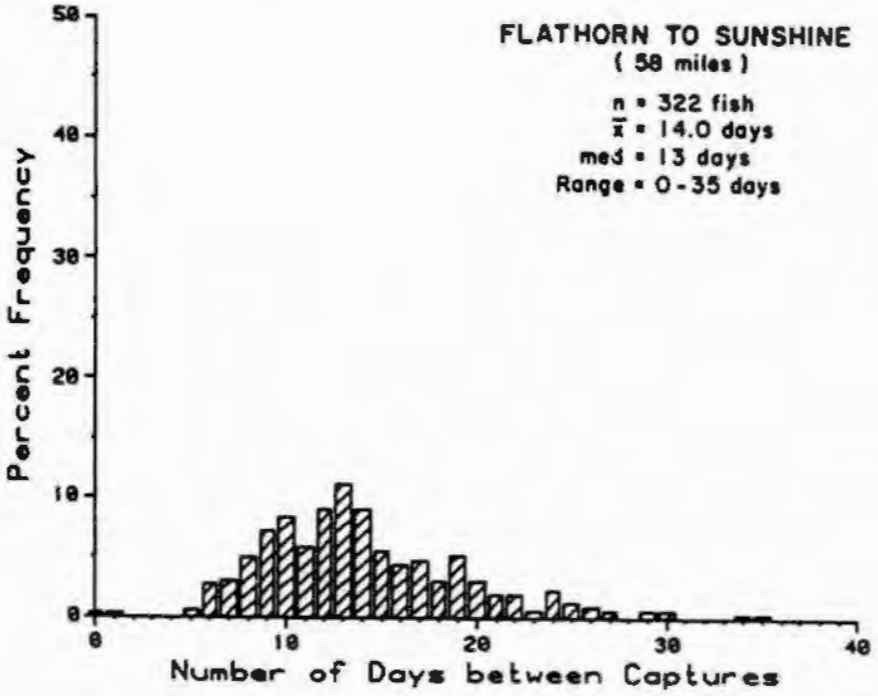


Appendix Figure 2-8. Migrational rates of tagged pink salmon between Sunshine and Talkeetna stations, and Sunshine and Curry stations, 1984.

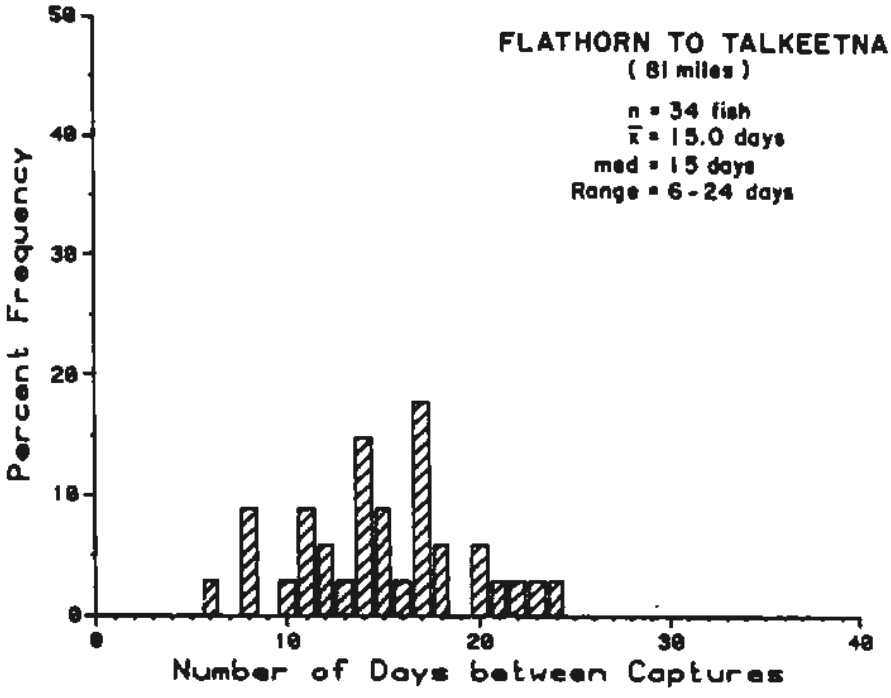


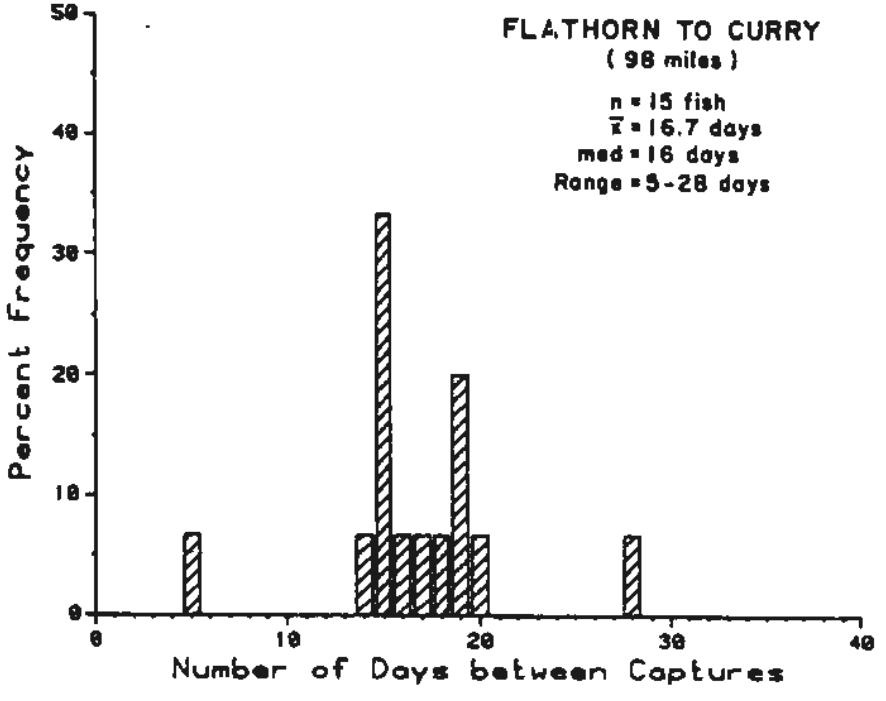
Appendix Figure 2-9. Migrational rates of tagged pink salmon between Talkeetna and Curry stations, 1984.



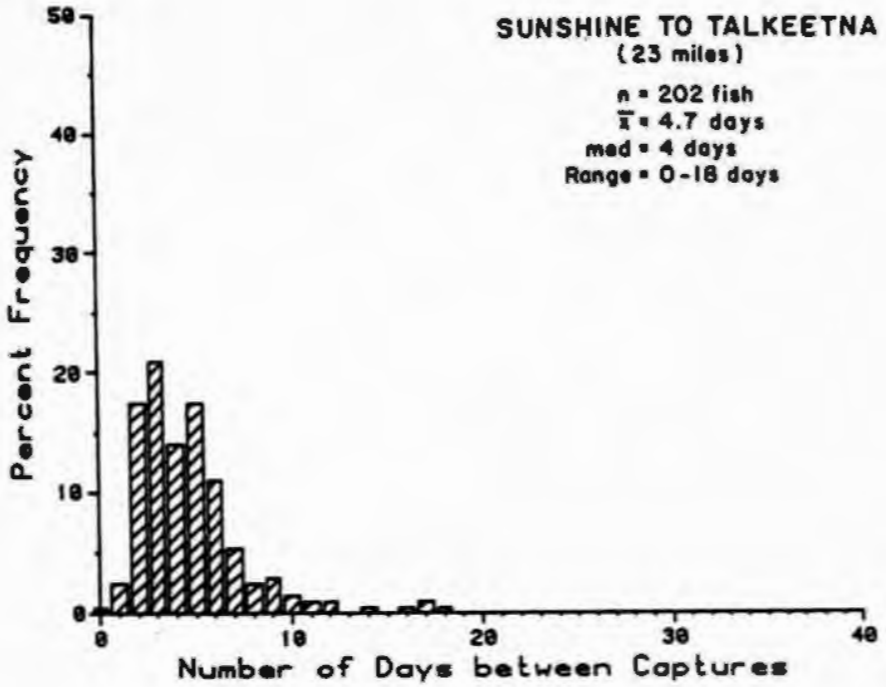


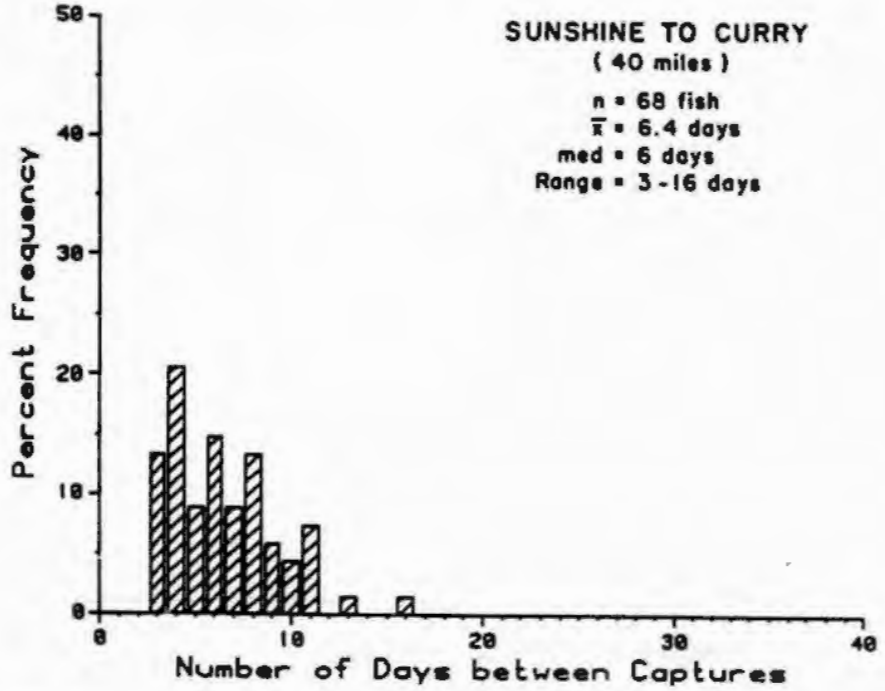
Appendix Figure 2-10. Migrational rates of tagged chum salmon between Flathorn and Yentna stations, and Flathorn and Sunshine stations, 1984.



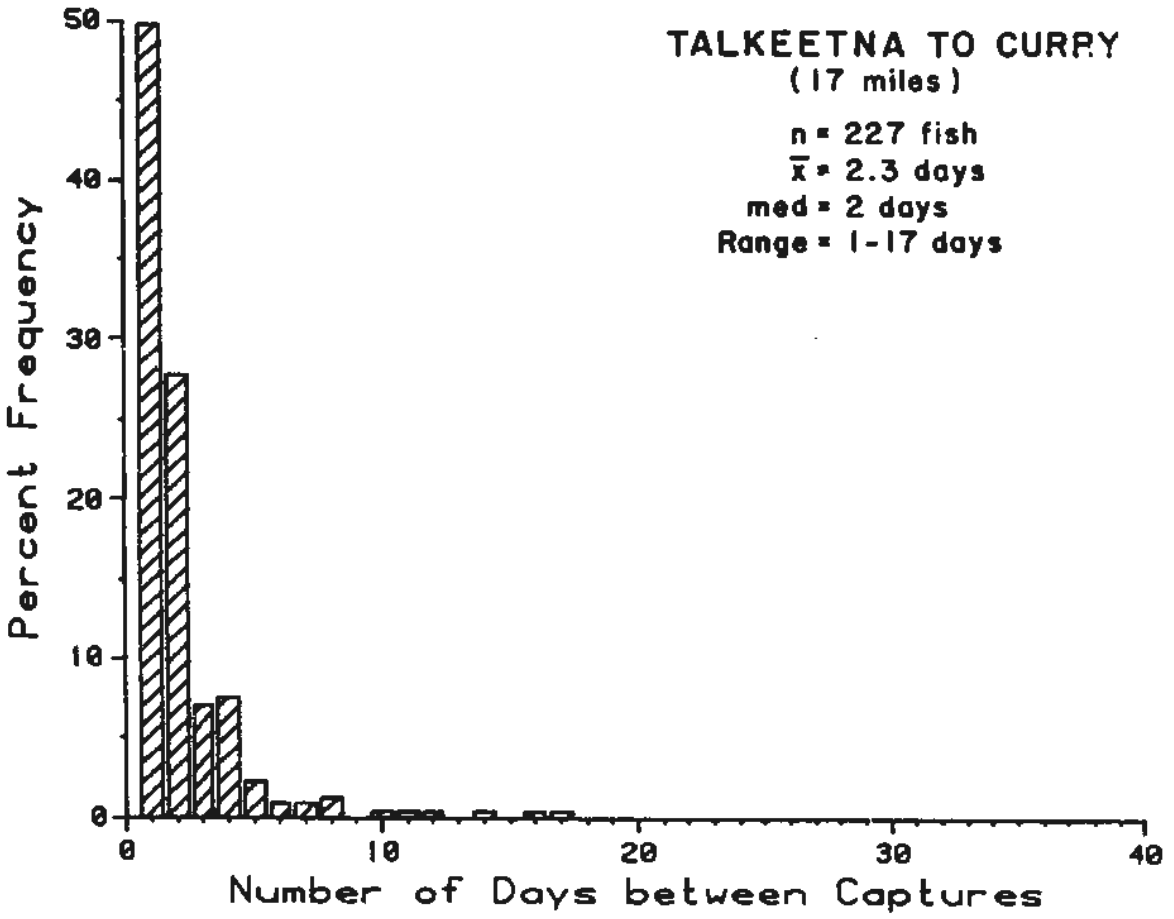


Appendix Figure 2-11. Migrational rates of tagged chum salmon between Flathorn and Talkeetna stations, and Flathorn and Curry stations, 1984.

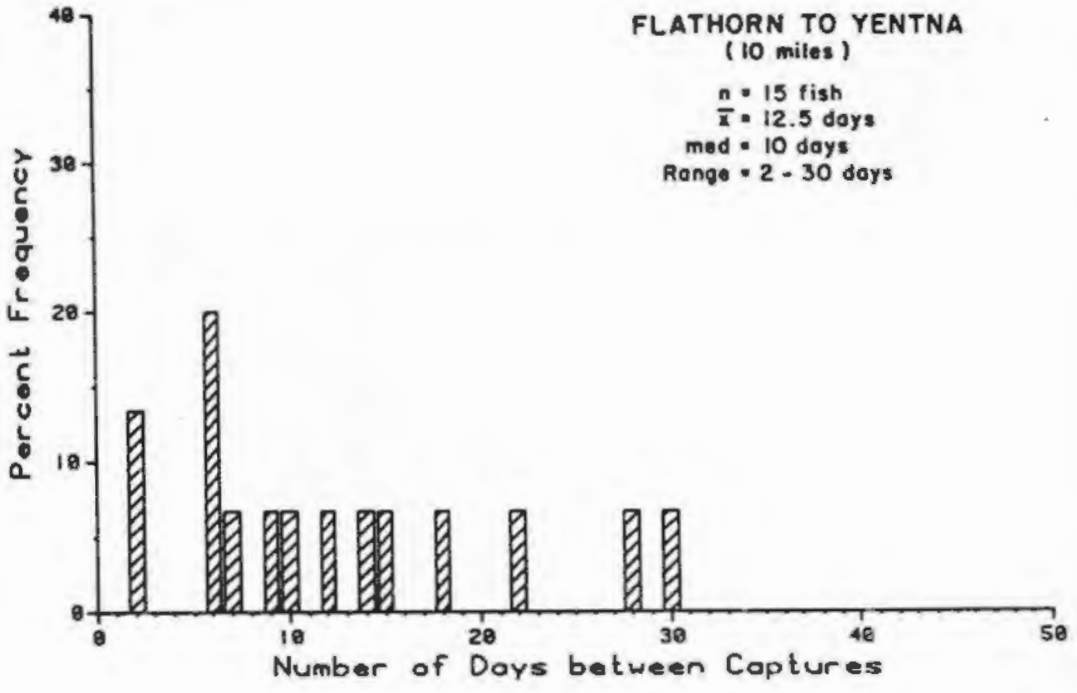


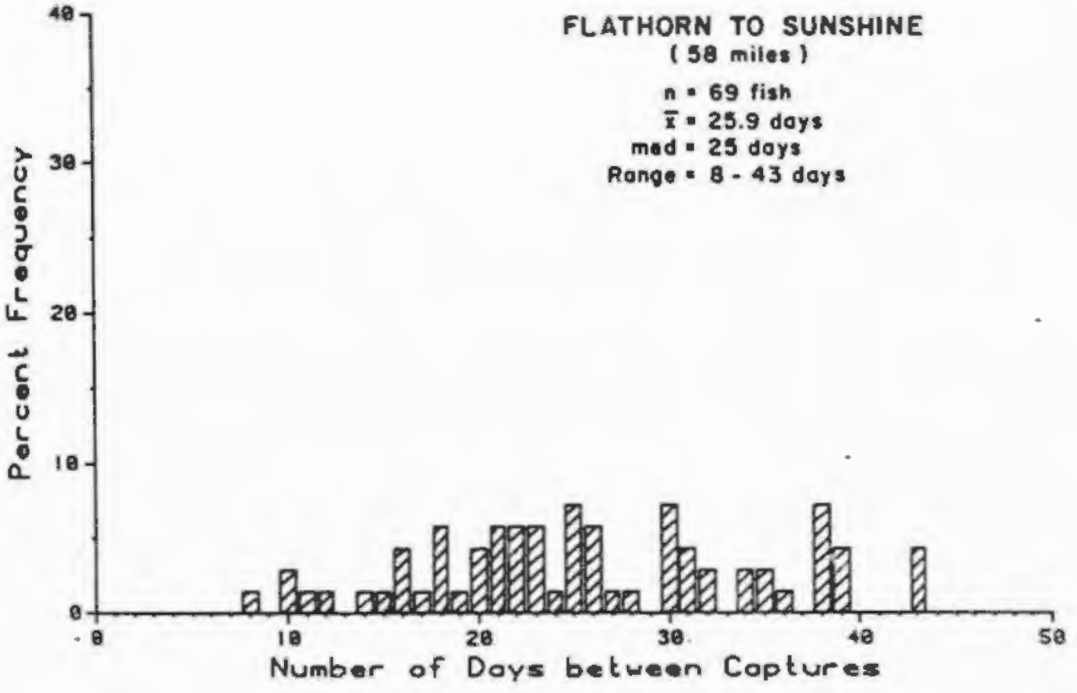


Appendix Figure 2-12. Migrational rates of tagged chum salmon between Sunshine and Talkeetna stations, and Sunshine and Curry stations, 1984.

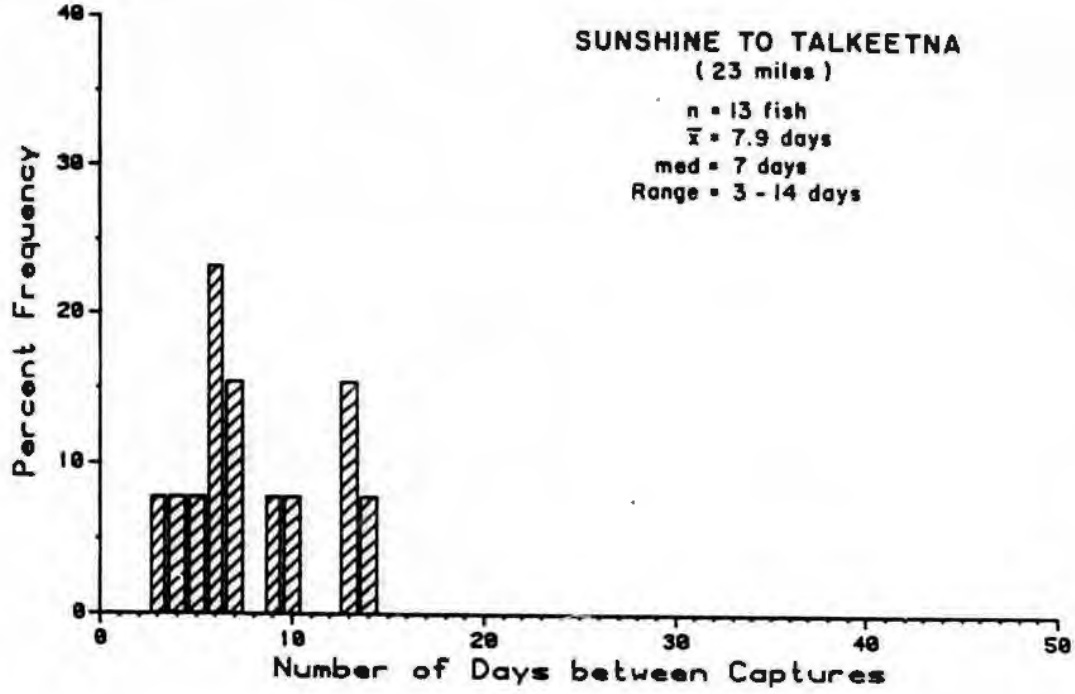


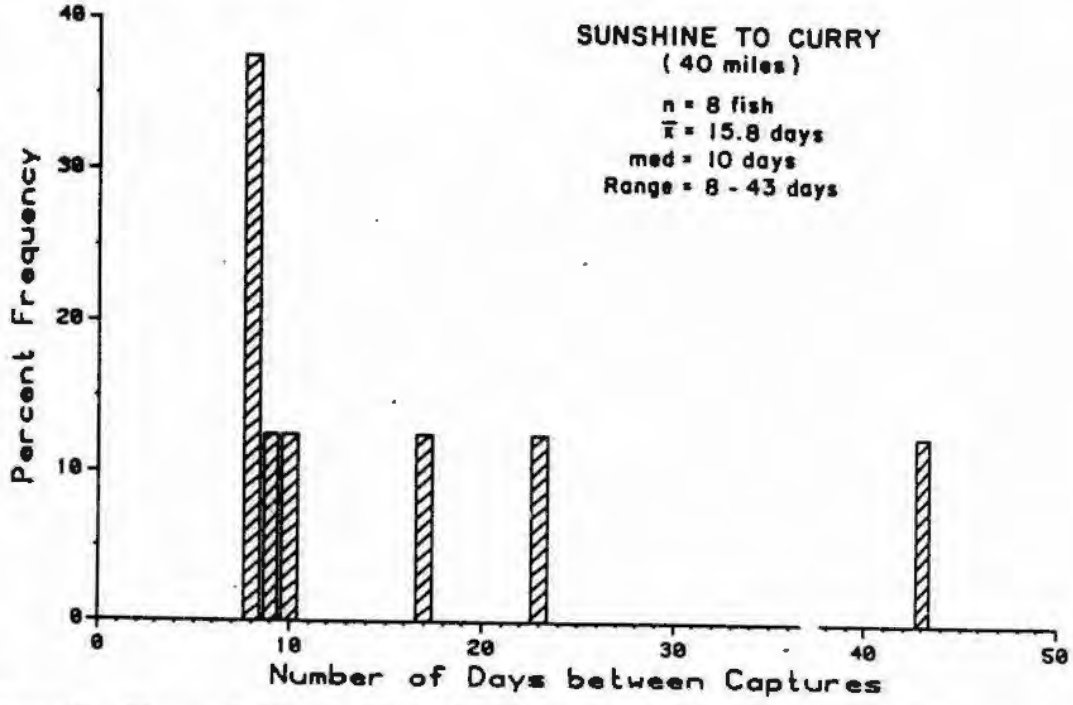
Appendix Figure 2-13. Migrational rates of tagged chum salmon between Talkeetna and Curry stations, 1984.



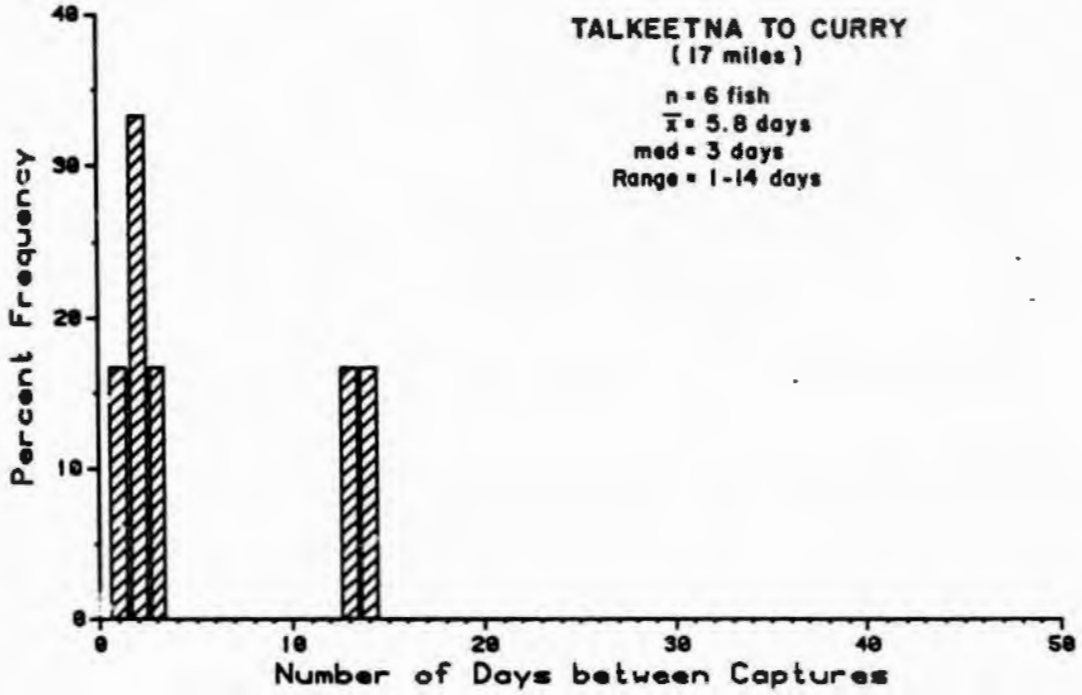


Appendix Figure 2-14. Migrational rates of tagged coho salmon between Flathorn and Yentna stations, and Flathorn and Sunshine stations, 1984.





Appendix Figure 2-15. Migrational rates of tagged coho salmon between Sunshine and Talkeetna stations, and Sunshine and Curry stations, 1984.



Appendix Figure 2-16. Migrational rates of tagged coho salmon between Talkeetna and Curry stations, 1984.

APPENDIX 3

DAILY YENTNA STATION SONAR COUNTS

AND

FIGURES OF DAILY AND CUMULATIVE PERCENT SONAR COUNTS BY SPECIES

Appendix Table 3-1. Yentna Station north bank daily and cumulative sonar counts by species, 1984.

Date	Total Daily Count	Chinook Daily	Chinook Cum	Sockeye Daily	Sockeye Cum	Pink Daily	Pink Cum	Chum Daily	Chum Cum	Coho Daily	Coho Cum	Misc. Daily	Misc. Cum
840701	139	3	3	66	66	20	20	25	25	5	5	20	20
840702	191	4	7	91	157	28	48	34	59	7	12	27	47
840703	102	2	9	49	206	15	63	18	77	4	16	14	61
840704	81	2	11	39	245	12	75	14	91	3	19	11	72
840705	62	1	12	30	275	9	84	11	102	2	21	9	81
840706	42	1	13	20	295	6	90	7	109	2	23	6	87
840707	23	1	14	11	306	3	93	4	113	1	24	3	90
840708	23	1	15	11	317	3	96	4	117	1	25	3	93
840709	131	3	18	62	379	19	115	23	140	5	30	19	112
840710	197	4	22	94	473	29	144	35	175	7	37	28	140
840711	185	4	26	88	561	27	171	33	208	7	44	26	166
840712	220	5	31	105	666	32	203	39	247	8	52	31	197
840713	195	4	35	93	759	28	231	35	282	7	59	28	225
840714	246	5	40	117	876	36	267	44	326	9	68	35	260
840715	270	6	46	129	1005	39	306	48	374	10	78	38	298
840716	690	15	61	329	1334	100	406	123	497	25	103	98	396
840717	2262	49	110	1078	2412	329	735	403	900	82	185	321	717
840718	3472	10	120	1010	3422	1916	2651	464	1364	62	247	10	727
840719	4494	13	133	1307	4729	2481	5132	600	1964	80	327	13	740
840720	7276	0	133	752	5481	5987	11119	537	2501	0	327	0	740
840721	5735	0	133	254	5735	5244	16363	203	2704	34	361	0	740
840722	5296	31	164	249	5984	4954	21317	0	2704	62	423	0	740
840723	10941	0	164	159	6143	10729	32046	53	2757	0	423	0	740
840724	15060	39	203	582	6725	14323	46369	116	2873	0	423	0	740
840725	7492	0	203	399	7124	6741	53110	257	3130	95	518	0	740

Appendix Table 3-1 (cont.). Yentna Station north bank daily and cumulative sonar counts by species, 1984.

Date	Total Daily Count	Chinook		Sockeye		Pink		Chum		Coho		Misc.	
		Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
840726	5517	0	203	142	7266	5233	58343	122	3252	20	538	0	740
840727	4476	0	203	138	7404	4114	62457	138	3390	17	555	69	809
840728	6142	0	203	129	7533	5853	68310	75	3465	64	619	21	830
840729	6553	0	203	130	7663	6293	74603	130	3595	0	619	0	830
840730	7237	0	203	43	7706	7024	81627	149	3744	21	640	0	830
840731	7139	0	203	153	7859	6549	88176	415	4159	22	662	0	830
840801	7988	0	203	117	7976	7147	95323	646	4805	78	740	0	830
840802	5513	0	203	126	8102	4997	100320	390	5195	0	740	0	830
840803	3872	0	203	63	8165	3415	103735	355	5550	39	779	0	830
840804	2837	0	203	132	8297	2469	106204	187	5737	42	821	7	837
840805	2815	0	203	123	8420	2385	108589	221	5958	74	895	12	849
840806	1384	0	203	85	8505	1095	109684	136	6094	68	963	0	849
840807	1346	0	203	110	8615	961	110645	209	6303	66	1029	0	849
840808	1822	0	203	149	8764	1301	111946	283	6586	89	1118	0	849
840809	1663	0	203	140	8904	1065	113011	357	6943	101	1219	0	849
840810	1781	0	203	150	9054	1140	114151	383	7326	108	1327	0	849
840811	1332	0	203	121	9175	739	114890	272	7598	188	1515	12	861
840812	708	0	203	64	9239	393	115283	145	7743	100	1615	6	867
840813	1137	0	203	103	9342	631	115914	233	7976	160	1775	10	877
840814	840	0	203	178	9520	367	116281	95	8071	172	1947	28	905
840815	643	0	203	136	9656	281	116562	73	8144	132	2079	21	926
840816	584	0	203	124	9780	255	116817	66	8210	120	2199	19	945
840817	729	0	203	154	9934	319	117136	82	8292	150	2349	24	969
840818	499	0	203	106	10040	218	117354	56	8348	102	2451	17	986
840819	343	0	203	73	10113	150	117504	39	8387	70	2521	11	997

Appendix Table 3-1 (cont.). Yentna Station north bank daily and cumulative sonar counts by species, 1984.

Date	Total Daily Count	Chinook Daily	Chinook Cum	Sockeye Daily	Sockeye Cum	Pink Daily	Pink Cum	Chum Daily	Chum Cum	Coho Daily	Coho Cum	Misc. Daily	Misc. Cum
840820	19	0	203	4	10117	8	117512	2	8389	4	2525	1	998
840821	0	0	203	0	10117	0	117512	0	8389	0	2525	0	998
840822	442	0	203	93	10210	193	117705	50	8439	91	2616	15	1013
840823	688	0	203	21	10231	72	117777	308	8747	77	2693	210	1223
840824	476	0	203	14	10245	50	117827	213	8960	53	2746	146	1369
840825	516	0	203	15	10260	54	117881	231	9191	58	2804	158	1527
840826	645	0	203	19	10279	67	117948	289	9480	72	2876	198	1725
840827	624	0	203	19	10298	65	118013	279	9759	70	2946	191	1916
840828	203	0	203	6	10304	21	118034	91	9850	23	2969	62	1978
840829	365	0	203	11	10315	38	118072	163	10013	41	3010	112	2090
840830	591	0	203	18	10333	62	118134	264	10277	66	3076	181	2271
840831	271	0	203	8	10341	28	118162	122	10399	30	3106	83	2354
840901	226	0	203	7	10348	24	118186	101	10500	25	3131	69	2423
840902	72	0	203	2	10350	8	118194	32	10532	8	3139	22	2445
840903	102	0	203	3	10353	11	118205	46	10578	11	3150	31	2476
840904	111	0	203	3	10356	12	118217	50	10628	12	3162	34	2510
840905	30	0	203	1	10357	3	118220	14	10642	3	3165	9	2519

Appendix Table 3-2. Yentna Station south bank daily and cumulative sonar counts by species, 1984.

Date	Total Daily Count	Chinook Daily	Chinook Cum	Sockeye Daily	Sockeye Cum	Pink Daily	Pink Cum	Chum Daily	Chum Cum	Coho Daily	Coho Cum	Misc. Daily	Misc. Cum
840701	17	1	1	16	16	0	0	0	0	0	0	0	0
840702	52	2	3	48	64	1	1	1	1	0	0	0	0
840703	86	3	6	78	142	2	3	2	3	1	1	0	0
840704	129	4	10	118	260	3	6	3	6	1	2	0	0
840705	67	2	12	62	322	1	7	2	8	0	2	0	0
840706	44	1	13	41	363	1	8	1	9	0	2	0	0
840707	54	2	15	50	413	1	9	1	10	0	2	0	0
840708	30	1	16	27	440	1	10	1	11	0	2	0	0
840709	67	2	18	62	502	1	11	2	13	0	2	0	0
840710	156	5	23	143	645	3	14	4	17	1	3	0	0
840711	131	0	23	126	771	1	15	2	19	1	4	1	1
840712	139	1	24	133	904	1	16	2	21	1	5	1	2
840713	161	1	25	153	1057	2	18	3	24	1	6	1	3
840714	275	1	26	262	1319	3	21	5	29	2	8	2	5
840715	217	1	27	208	1527	2	23	4	33	1	9	1	6
840716	582	2	29	556	2083	6	29	10	43	4	13	4	10
840717	17485	64	93	16741	18824	170	199	298	341	106	119	106	116
840718	13399	17	110	12341	31165	252	451	705	1046	84	203	0	116
840719	19552	0	110	15567	46732	3094	3545	767	1813	124	327	0	116
840720	27192	0	110	16169	62901	10140	13685	670	2483	213	540	0	116
840721	31734	0	110	14126	77027	16382	30067	780	3263	446	986	0	116
840722	30507	56	166	10523	87550	18728	48795	670	3933	530	1516	0	116
840723	31006	0	166	8059	95609	21318	70113	743	4676	829	2345	57	173
840724	30334	0	166	10495	106104	18180	88293	643	5319	948	3293	68	241
840725	18549	0	166	4001	110105	13582	101875	354	5673	585	3878	27	268

Appendix Table 3-2 (cont.). Yentna Station south bank daily and cumulative sonar counts by species, 1984.

Date	Total Daily Count	Chinook		Sockeye		Pink		Chum		Coho		Misc.	
		Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
840726	16078	0	166	3311	113416	12041	113916	335	6008	391	4269	0	268
840727	16563	21	187	4009	117425	11984	125900	190	6198	338	4607	21	289
840728	22648	0	187	2741	120166	19108	145008	247	6445	533	5140	19	308
840729	29615	0	187	1495	121661	27480	172488	231	6676	409	5549	0	308
840730	16309	0	187	1137	122798	14671	187159	349	7025	152	5701	0	308
840731	16309	0	187	1562	124360	14237	201396	296	7321	214	5915	0	308
840801	14649	0	187	1086	125446	12530	213926	615	7936	379	6294	39	347
840802	10223	0	187	1007	126453	8270	222196	560	8496	361	6655	25	372
840803	10158	0	187	1206	127659	7373	229569	819	9315	760	7415	0	372
840804	8807	0	187	1479	129138	5959	235528	650	9965	719	8134	0	372
840805	6215	0	187	827	129965	4071	239599	522	10487	795	8929	0	372
840806	5342	0	187	1068	131033	3596	243195	431	10918	247	9176	0	372
840807	2568	0	187	561	131594	1550	244745	295	11213	162	9338	0	372
840808	2714	0	187	722	132316	1192	245937	251	11464	549	9887	0	372
840809	2301	0	187	488	132804	1103	247040	282	11746	428	10315	0	372
840810	2756	0	187	584	133388	1322	248362	338	12084	512	10827	0	372
840811	2298	0	187	600	133988	753	249115	281	12365	664	11491	0	372
840812	1596	0	187	417	134405	523	249638	195	12560	461	11952	0	372
840813	1336	0	187	370	134775	317	249955	128	12688	468	12420	53	425
840814	998	0	187	276	135051	237	250192	96	12784	350	12770	39	464
840815	737	0	187	204	135255	175	250367	71	12855	258	13028	29	493
840816	573	0	187	277	135532	58	250425	76	12931	137	13165	25	518
840817	490	0	187	237	135769	49	250474	65	12996	117	13282	22	540
840818	409	0	187	198	135967	41	250515	54	13050	98	13380	18	558
840819	349	0	187	169	136136	35	250550	46	13096	84	13464	15	573

Appendix Table 3-2 (cont.). Yentna Station south bank daily and cumulative sonar counts by species, 1984.

Date	Total Daily Count	Chinook Daily	Chinook Cum	Sockeye Daily	Sockeye Cum	Pink Daily	Pink Cum	Chum Daily	Chum Cum	Coho Daily	Coho Cum	Misc. Daily	Misc. Cum
840820	212	0	187	103	136239	21	250571	28	13124	51	13515	9	582
840821	339	0	187	164	136403	34	250605	45	13169	81	13596	15	597
840822	725	0	187	351	136754	73	250678	96	13265	173	13769	32	629
840823	841	0	187	407	137161	85	250763	111	13376	201	13970	37	666
840824	794	0	187	384	137545	80	250843	105	13481	190	14160	35	701
840825	766	0	187	371	137916	77	250920	101	13582	183	14343	34	735
840826	619	0	187	300	138216	62	250982	82	13664	148	14491	27	762
840827	938	0	187	189	138405	23	251005	480	14144	109	14600	137	899
840828	635	0	187	128	138533	15	251020	325	14469	74	14674	93	992
840829	814	0	187	164	138697	20	251040	417	14886	94	14768	119	1111
840830	611	0	187	123	138820	15	251055	313	15199	71	14839	89	1200
840831	650	0	187	131	138951	16	251071	333	15532	75	14914	95	1295
840901	334	0	187	67	139018	8	251079	171	15703	39	14953	49	1344
840902	136	0	187	0	139018	0	251079	51	15754	17	14970	68	1412
840903	123	0	187	0	139018	0	251079	46	15800	15	14985	62	1474
840904	142	0	187	0	139018	0	251079	53	15853	18	15003	71	1545
840905	34	0	187	0	139018	0	251079	13	15866	4	15007	17	1562

Appendix Table 3-3. Yentna Station daily and cumulative sonar counts by species, 1984.

Date	Total Daily Count	Chinook		Sockeye		Pink		Chum		Coho		Misc.	
		Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
840701	156	4	4	82	82	20	20	25	25	5	5	20	20
840702	243	6	10	139	221	29	49	35	60	7	12	27	47
840703	188	5	15	127	348	17	66	20	80	5	17	14	61
840704	210	6	21	157	505	15	81	17	97	4	21	11	72
840705	129	3	24	92	597	10	91	13	110	2	23	9	81
840706	86	2	26	61	658	7	98	8	118	2	25	6	87
840707	77	3	29	61	719	4	102	5	123	1	26	3	90
840708	53	2	31	38	757	4	106	5	128	1	27	3	93
840709	198	5	36	124	881	20	126	25	153	5	32	19	112
840710	353	9	45	237	1118	32	158	39	192	8	40	28	140
840711	316	4	49	214	1332	28	186	35	227	8	48	27	167
840712	359	6	55	238	1570	33	219	41	268	9	57	32	199
840713	356	5	60	246	1816	30	249	38	306	8	65	29	228
840714	521	6	66	379	2195	39	288	49	355	11	76	37	265
840715	487	7	73	337	2532	41	329	52	407	11	87	39	304
840716	1272	17	90	885	3417	106	435	133	540	29	116	102	406
840717	19747	113	203	17819	21236	499	934	701	1241	188	304	427	833
840718	16871	27	230	13351	34587	2168	3102	1169	2410	146	450	10	843
840719	24046	13	243	16874	51461	5575	8677	1367	3777	204	654	13	856
840720	34468	0	243	16921	68382	16127	24804	1207	4984	213	867	0	856
840721	37469	0	243	14380	82762	21626	46430	983	5967	480	1347	0	856
840722	35803	87	330	10772	93534	23682	70112	670	6637	592	1939	0	856
840723	41947	0	330	8218	101752	32047	102159	796	7433	829	2768	57	913
840724	45394	39	369	11077	112829	32503	134662	759	8192	948	3716	68	981
840725	26041	0	369	4400	117229	20323	154985	611	8803	680	4396	27	1008

Appendix Table 3-3 (cont.). Yentna Station daily and cumulative sonar counts by species, 1984.

Date	Total Daily Count	Chinook Daily	Chinook Cum	Sockeye Daily	Sockeye Cum	Pink Daily	Pink Cum	Chum Daily	Chum Cum	Coho Daily	Coho Cum	Misc. Daily	Misc. Cum
840726	21595	0	369	3453	120682	17274	172259	457	9260	411	4807	0	1008
840727	21039	21	390	4147	124829	16098	188357	328	9588	355	5162	90	1098
840728	28790	0	390	2870	127699	24961	213318	322	9910	597	5759	40	1138
840729	36168	0	390	1625	129324	33773	247091	361	10271	409	6168	0	1138
840730	23546	0	390	1180	130504	21695	268786	498	10769	173	6341	0	1138
840731	23448	0	390	1715	132219	20786	289572	711	11480	236	6577	0	1138
840801	22637	0	390	1203	133422	19677	309249	1261	12741	457	7034	39	1177
840802	15736	0	390	1133	134555	13267	322516	950	13691	361	7395	25	1202
840803	14030	0	390	1269	135824	10788	333304	1174	14865	799	8194	0	1202
840804	11644	0	390	1611	137435	8428	341732	837	15702	761	8955	7	1209
840805	9030	0	390	950	138385	6456	348188	743	16445	869	9824	12	1221
840806	6726	0	390	1153	139538	4691	352879	567	17012	315	10139	0	1221
840807	3914	0	390	671	140209	2511	355390	504	17516	228	10367	0	1221
840808	4536	0	390	871	141080	2493	357883	534	18050	638	11005	0	1221
840809	3964	0	390	628	141708	2168	360051	639	18689	529	11534	0	1221
840810	4537	0	390	734	142442	2462	362513	721	19410	620	12154	0	1221
840811	3630	0	390	721	143163	1492	364005	553	19963	852	13006	12	1233
840812	2304	0	390	481	143644	916	364921	340	20303	561	13567	6	1239
840813	2473	0	390	473	144117	948	365869	361	20664	628	14195	63	1302
840814	1838	0	390	454	144571	604	366473	191	20855	522	14717	67	1369
840815	1380	0	390	340	144911	456	366929	144	20999	390	15107	50	1419
840816	1157	0	390	401	145312	313	367242	142	21141	257	15364	44	1463
840817	1219	0	390	391	145703	368	367610	147	21288	267	15631	46	1509
840818	908	0	390	304	146007	259	367869	110	21398	200	15831	35	1544
840819	692	0	390	242	146249	185	368054	85	21483	154	15985	26	1570

Appendix Table 3-3 (cont.). Yentna Station daily and cumulative sonar counts by species, 1984.

Date	Total Daily Count	Chinook Daily	Chinook Cum	Sockeye Daily	Sockeye Cum	Pink Daily	Pink Cum	Chum Daily	Chum Cum	Coho Daily	Coho Cum	Misc. Daily	Misc. Cum
840820	231	0	390	107	146356	29	368083	30	21513	55	16040	10	1580
840821	339	0	390	164	146520	34	368117	45	21558	81	16121	15	1595
840822	1167	0	390	444	146964	266	368383	146	21704	264	16385	47	1642
840823	1529	0	390	428	147392	157	368540	419	22123	278	16663	247	1889
840824	1270	0	390	398	147790	130	368670	318	22441	243	16906	181	2070
840825	1282	0	390	386	148176	131	368801	332	22773	241	17147	192	2262
840826	1264	0	390	319	148495	129	368930	371	23144	220	17367	225	2487
840827	1562	0	390	208	148703	88	369018	759	23903	179	17546	328	2815
840828	838	0	390	134	148837	36	369054	416	24319	97	17643	155	2970
840829	1179	0	390	175	149012	58	369112	580	24899	135	17778	231	3201
840830	1202	0	390	141	149153	77	369189	577	25476	137	17915	270	3471
840831	921	0	390	139	149292	44	369233	455	25931	105	18020	178	3649
840901	560	0	390	74	149366	32	369265	272	26203	64	18084	118	3767
840902	208	0	390	2	149368	8	369273	83	26286	25	18109	90	3857
840903	225	0	390	3	149371	11	369284	92	26378	26	18135	93	3950
840904	253	0	390	3	149374	12	369296	103	26481	30	18165	105	4055
840905	64	0	390	1	149375	3	369299	27	26508	7	18172	26	4081

Appendix Table 3-4. Sector distribution of north bank sonar counts adjusted for debris, at Yentna Station, 1984.

DATE	SECTOR												
	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
JULY													
1	180	4	4	0	0	0	0	0	0	16	26	69	299
2	125	7	0	1	0	0	0	2	0	7	17	45	204
3	60	13	0	0	0	0	1	0	1	6	18	1/	---
4	36	0	2	0	0	0	0	0	9	8	24	1/	---
5	42	0	0	0	0	0	0	0	1	2	13	1/	---
6	26	2	0	0	0	0	0	0	0	0	3	19	50
7	18	1	0	0	0	0	0	0	0	1	0	6	26
8	19	2	0	0	0	0	0	0	0	0	0	0	21
9	130	10	1	0	0	0	0	1	0	2	16	1/	---
10	145	23	3	2	0	0	0	1	3	4	11	12	204
11	152	9	12	2	0	0	0	1	1	13	7	11	208
12	143	20	3	0	0	0	0	2	1	6	21	26	222
13	99	34	5	0	0	0	1	1	1	4	20	37	202
14	158	28	4	1	0	0	1	1	0	9	45	21	268
15	134	66	13	1	0	0	2	8	4	14	32	49	323
16	50	83	23	6	2	0	11	9	17	29	31	66	327
17	78	181	146	85	27	7	101	113	156	240	217	233	1,584
18	1,194	209	182	85	4	98	192	192	278	466	440	497	3,837
19	1/	216	245	84	39	15	243	240	317	801	1,113	1/	---

Appendix Table 3-4 (cont). Sector distribution of north bank sonar counts, adjusted for debris, at Yentna Station, 1984.

DATE	SECTOR												
	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
JULY													
20	851	285	367	170	54	25	302	433	741	1,359	1,519	1,622	7,728
21	960	459	369	172	47	9	202	337	588	838	1,157	1/	---
22	281	414	278	97	27	8	149	181	343	993	1,349	1,281	5,401
23	321	692	368	99	32	13	342	448	589	1,790	3,017	3,668	11,379
24	290	697	693	338	126	46	831	805	835	1,938	3,375	5,380	15,354
25	242	650	774	345	80	19	342	336	423	1,059	1,398	1,992	7,660
26	813	387	404	179	34	13	274	304	337	867	974	1/	---
27	1,326	333	367	262	35	28	213	149	113	255	488	932	4,501
28	684	172	251	215	73	24	325	302	240	712	1,400	1,936	6,334
29	1,364	448	621	300	99	24	342	308	241	278	967	1,510	6,502
30	1,023	528	651	291	101	27	348	346	313	644	1,398	1,787	7,457
31	1,703	639	771	377	169	33	326	350	308	561	826	1,704	7,767
AUGUST													
1	731	467	529	376	236	89	347	362	357	909	1,527	2,336	8,266
2	698	187	358	157	69	21	230	295	273	562	962	1,760	5,572
3	495	326	267	108	52	16	189	192	177	504	713	941	3,980
4	350	227	173	89	21	7	126	152	124	302	490	782	2,843
5	823	135	139	80	23	3	95	84	66	231	539	597	2,815
6	775	287	157	43	14	1	12	9	3	25	28	35	1,389
7	1,200	200	125	49	7	0	16	15	1	9	19	99	1,740

Appendix Table 3-4 (cont). Sector distribution of north bank sonar counts, adjusted for debris, at Yentna Station, 1984.

DATE	SECTOR												
	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
AUGUST													
8	1,308	319	221	86	10	0	34	15	3	16	29	44	2,085
9	987	245	227	82	9	3	41	22	8	15	39	50	1,728
10	1,010	223	141	71	23	3	69	38	23	37	63	125	1,826
11	773	229	216	64	16	4	39	32	37	40	21	58	1,529
12	1/	127	118	36	10	1	32	24	24	26	48	62	---
13	437	249	112	16	3	0	19	20	23	21	33	285	1,218
14	339	169	56	19	7	1	8	13	21	26	43	168	870
15	336	117	49	11	4	0	11	4	5	6	15	113	671
16	283	147	44	13	2	0	18	7	1	4	5	56	580
17	554	156	32	7	1	1	10	6	6	4	3	25	805
18	583	66	22	9	3	2	8	9	4	4	8	13	731
19	1/	86	33	0	1	0	2	0	0	0	0	1	---
20	19	0	0	0	0	0	0	0	0	0	0	0	19
21	0	0	0	0	0	0	0	0	0	0	0	0	0
22	207	135	43	4	8	0	3	5	3	0	34	1/	---
23	260	329	136	21	4	0	5	6	1	0	10	81	853
24	300	162	34	2	2	0	4	0	5	0	13	56	578
25	245	113	57	3	1	0	1	6	10	21	29	1/	---
26	309	169	93	21	4	1	9	5	3	16	21	1/	---

Appendix Table 3-4 (cont). Sector distribution of north bank sonar counts, adjusted for debris, at Yentna Station, 1984.

DATE	SECTOR												
	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
AUGUST													
27	1/	173	71	47	20	8	3	8	0	20	35	1/	---
28	1/	1/	1/	1/	1/	1/	1/	1/	1/	1/	1/	1/	---
29	108	21	5	8	4	0	0	2	2	21	99	168	438
30	148	35	10	4	2	0	0	2	7	38	94	264	604
31	189	22	17	2	0	0	1	0	1	3	20	23	278
SEPTEMBER													
1	68	18	9	1	0	0	1	3	3	43	13	87	246
2	36	10	2	0	0	0	1	4	0	5	8	1/	---
3	83	7	2	1	0	0	3	3	3	18	6	2	128
4	88	8	2	3	0	1	1	2	3	3	0	6	117
5	50	0	0	4	0	0	0	0	6	0	0	2	62
TOTAL	23,601	9,878	8,619	4,003	1,341	504	5,115	5,281	5,770	13,239	21,399	31,079	129,829
PERCENT	18.2	7.6	6.6	3.1	1.0	0.4	3.9	4.1	4.4	10.2	16.5	24.0	

1/ No data due to debris.

Appendix Table 3-5. Sector distribution of south bank sonar counts, adjusted for debris, at Yentna Station, 1984.

DATE	SECTOR												
	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
JULY													
1	32	4	0	0	0	0	0	0	0	0	0	0	36
2	51	1	0	0	0	0	0	0	0	0	0	0	52
3	44	8	1	0	0	0	0	0	9	0	20	1/	---
4	62	20	1	0	0	0	0	0	6	0	39	22	150
5	51	13	3	1	0	0	0	0	0	0	0	0	68
6	37	8	2	0	0	0	0	0	0	0	0	0	47
7	22	12	2	0	0	0	0	0	0	4	2	1/	---
8	20	7	1	0	0	0	0	0	0	1	0	0	29
9	33	23	5	2	0	0	0	1	2	0	0	4	70
10	89	45	8	0	0	0	0	0	2	1	7	1/	---
11	72	38	14	1	1	0	0	2	0	3	2	1/	---
12	68	26	1	1	0	0	4	1	2	11	14	11	139
13	114	21	8	1	0	0	0	2	4	7	1	2	160
14	155	58	14	1	1	0	0	3	4	11	13	14	274
15	121	56	9	1	0	0	1	4	6	7	3	9	217
16	287	203	25	3	0	0	4	1	10	26	15	8	582
17	9,669	5,971	1,243	94	2	0	37	32	82	133	120	103	17,486
18	128	6,018	6,898	1,438	180	12	190	146	144	198	128	178	15,658
19	99	7,063	8,664	2,048	224	12	215	211	198	342	221	255	19,552
20	2,213	12,172	8,424	1,894	265	24	306	254	300	413	311	588	27,164

Appendix Table 3-5 (cont). Sector distribution of south bank sonar counts, adjusted for debris, at Yentna Station, 1984.

DATE	SECTOR												
	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
JULY													
21	5,633	16,793	6,113	1,083	165	15	245	183	185	313	233	773	31,734
22	6,322	14,258	4,769	877	178	1	388	336	369	637	548	1,910	30,609
23	4,152	14,140	6,533	1,496	266	35	727	563	752	848	614	797	30,923
24	448	15,223	7,632	1,544	271	36	776	627	994	1,120	893	770	30,334
25	227	10,394	5,721	729	57	1	187	142	261	297	275	259	18,550
26	187	6,401	7,983	761	13	2	30	21	48	146	167	125	15,884
27	1,579	10,199	3,837	359	10	0	18	15	10	100	88	1,469	17,684
28	2,268	14,605	4,680	546	35	3	71	41	26	130	122	121	22,648
29	3,114	19,659	6,013	505	18	0	35	12	11	66	73	110	29,616
30	2,009	9,558	3,867	402	25	1	36	11	22	144	74	187	16,336
31	3,398	8,798	3,085	294	32	2	32	24	29	101	100	1/	---
AUGUST													
1	2,712	6,509	3,439	655	72	11	192	130	93	357	230	468	14,868
2	1,148	3,509	2,101	645	170	25	432	340	443	541	463	406	10,223
3	1,278	3,642	1,911	578	138	32	412	309	386	621	391	460	10,158
4	2,119	4,418	1,363	245	31	2	85	91	104	158	86	105	8,807
5	1,662	3,605	680	51	0	0	3	1	1	11	7	194	6,215
6	3,835	1,293	163	3	0	0	0	0	0	33	5	10	5,342
7	1,354	1,067	126	2	0	0	0	0	0	0	11	8	2,568
8	953	1,514	231	3	0	0	0	0	1	0	0	14	2,716

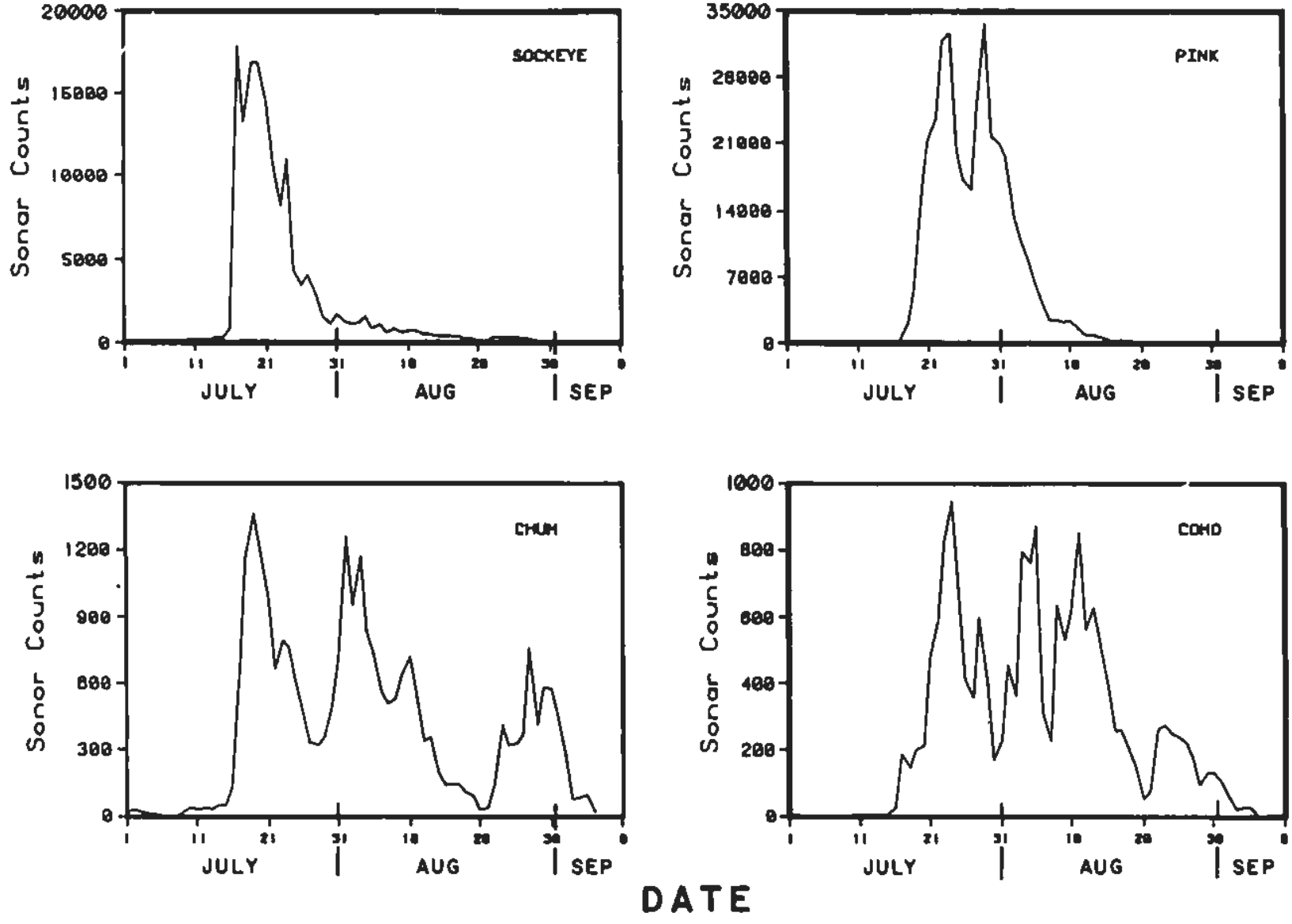
Appendix Table 3-5 (cont). Sector distribution of south bank sonar counts, adjusted for debris, at Yentna Station, 1984.

DATE	SECTOR												
	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
AUGUST													
9	459	1,471	348	18	0	0	1	0	1	1	2	0	2,301
10	798	1,406	438	41	0	0	8	2	5	15	21	22	2,756
11	1,005	941	268	39	2	0	7	4	3	12	9	7	2,297
12	568	700	162	34	1	0	5	11	10	41	36	29	1,597
13	486	525	92	18	5	0	8	14	2	18	33	178	1,379
14	418	351	113	20	1	0	9	10	6	26	10	13	977
15	330	291	57	11	2	0	5	1	3	6	14	16	736
16	317	207	23	2	1	0	3	0	0	14	4	10	581
17	267	183	30	7	0	0	0	0	0	0	0	2	489
18	186	199	23	3	0	0	0	0	0	0	0	2	413
19	320	102	4	0	0	0	0	0	0	0	0	0	426
20	187	42	9	0	0	0	0	0	0	0	0	0	238
21	176	108	44	9	0	0	0	0	0	0	0	1	338
22	202	278	98	11	1	0	7	4	0	3	70	55	729
23	376	264	111	21	7	0	3	3	0	1	24	50	860
24	380	208	151	15	3	0	10	3	1	1	6	15	793
25	260	302	168	23	2	0	0	0	0	0	1	1	757
26	227	218	133	30	8	0	0	4	1	2	2	0	625
27	408	357	119	49	5	2	6	0	4	1	3	6	960
28	408	151	48	5	2	0	3	0	0	4	6	21	648

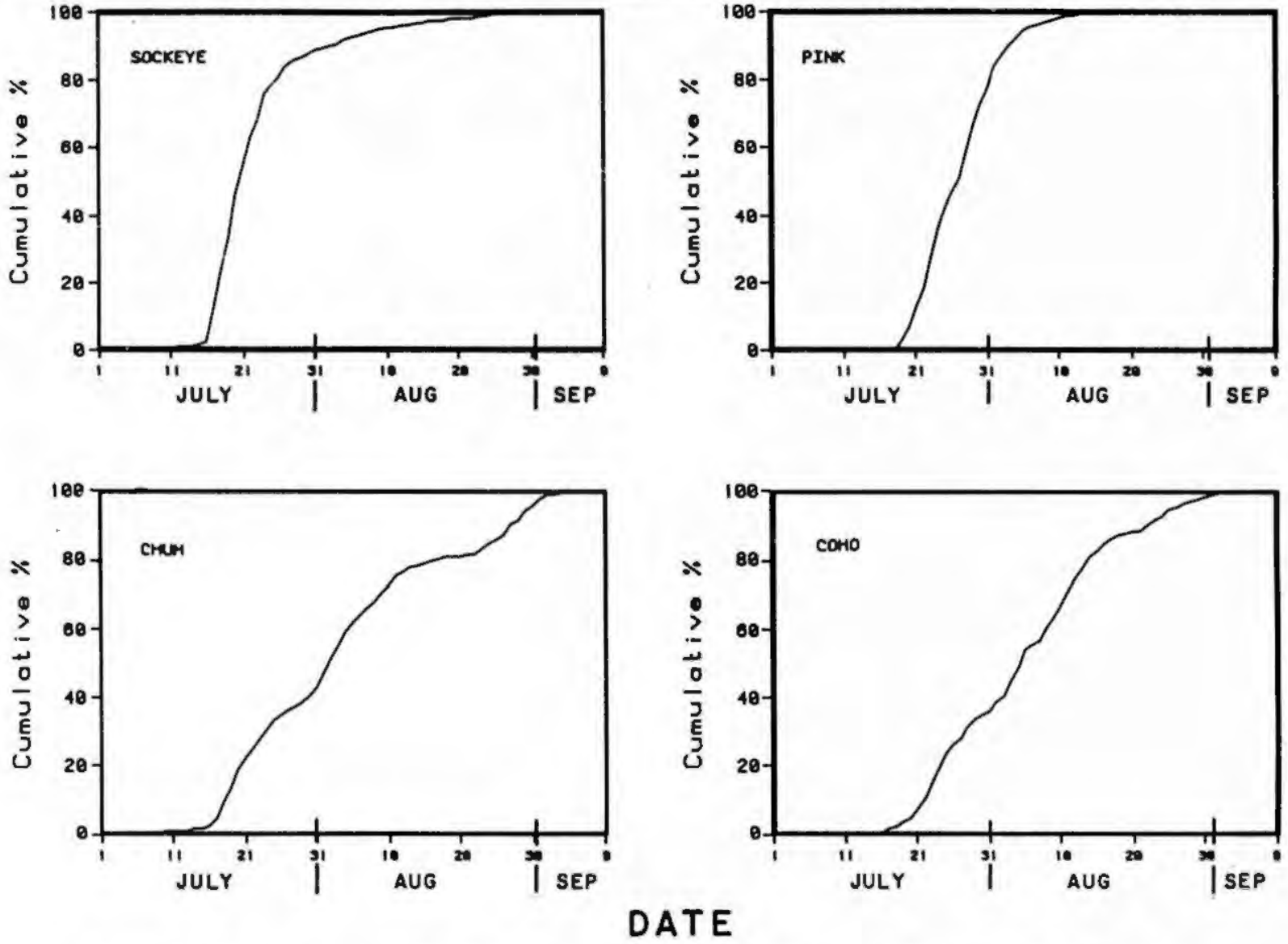
Appendix Table 3-5 (cont). Sector distribution of south bank sonar counts, adjusted for debris, at Yentna Station, 1984.

DATE	SECTOR												
	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
AUGUST													
29	389	214	102	16	9	0	2	1	6	16	31	43	829
30	185	118	67	16	1	0	13	6	18	37	63	97	621
31	175	162	44	10	2	3	11	14	15	38	96	135	705
SEPTEMBER													
1	147	58	17	4	0	0	2	8	11	16	11	63	337
2	82	16	0	0	0	0	2	3	1	6	15	13	138
3	53	9	0	0	0	0	1	2	1	22	42	1/	---
4	49	21	7	0	0	0	1	3	2	30	1/	29	---
5	36	26	4	2	0	0	0	0	0	0	0	0	68
TOTAL	62,932	197,349	95,133	16,372	2,173	233	4,499	3,565	4,551	6,929	5,602	10,159	409,497
PERCENT	15.4	48.2	23.2	4.0	0.5	0.0	1.1	0.9	1.1	1.7	1.4	2.5	

1/ No data due to debris.



Appendix Figure 3-1. Daily sonar counts of sockeye, pink, chum and coho salmon at Yentna Station, 1984.



Appendix Figure 3-2. Cumulative percent of sonar counts by species at Yentna Station, 1984.

APPENDIX 4

MISCELLANEOUS AGE, LENGTH AND SEX DATA

Appendix Table 4-1. Analysis of chinook salmon lengths, in millimeters, by age class from 1984 escapement samples collected at Flathorn, Yentna, Sunshine, Talkeetna and Curry stations.

Collection Site	Age Class	n		Range Limits		Mean		95% Conf. Interval 1/		Median	
		M	F	M	F	M	F	M	F	M	F
Flathorn	3_2	17	-	300-385	-	325	-	-	-	320	-
Station	4_2	5	-	330-520	-	432	-	-	-	450	-
	5_2	2	3	620-870	730-760	745	747	-	-	745	750
	6_2	1	2	1,015	745-835	1,015	790	-	-	1,015	790
	All 2/	37	5	300-1,015	730-835	396	764	-	-	340	750
Yentna	3_2	1	-	300	-	300	-	-	-	300	-
Station	4_2	3	2	435-540	500-555	498	528	-	-	520	528
	5_2	-	1	-	697	-	697	-	-	-	697
	6_2	3	3	825-970	810-940	882	875	-	-	850	875
	All 2/	9	8	300-970	500-940	622	730	-	-	540	754
Sunshine	3_1	6	-	340-370	-	353	-	-	-	350	-
Station	3_2	82	-	240-410	-	344	-	337-351	-	345	-
	4_1	3	-	540-645	-	580	-	-	-	555	-
	4_2	47	14	360-685	500-650	500	564	478-522	-	505	555
	4_3	1	-	370	-	370	-	-	-	370	-
	5_1	-	2	-	640-760	-	700	-	-	-	700
	5_2	169	55	460-890	500-880	612	668	600-623	644-693	600	660
	6_1	4	2	750-910	820-875	843	848	-	-	855	848
	6_2	213	339	515-1,070	550-1,000	813	816	799-826	809-824	815	815
	7_1	-	1	-	850	-	850	-	-	-	850
	7_2	96	211	800-1,140	780-1,150	950	916	936-964	908-923	950	910
	All 2/	854	774	240-1,140	500-1,150	670	826	-	-	665	840

Appendix Table 4-1 (cont). Analysis of chinook salmon lengths, in millimeters, by age class from 1984 escapement samples collected at Flathorn, Yentna, Sunshine, Talkeetna and Curry stations.

Collection Site	Age Class	n		Range Limits		Mean		95% Conf. Interval 1/		Median	
		M	F	M	F	M	F	M	F	M	F
Talkeetna Station	3_1	1	-	310	-	310	-	-	-	310	-
	3_2	6	-	310-350	-	335	-	-	-	340	-
	4_1	2	2	490-500	540-640	495	590	-	-	495	590
	4_2	23	5	410-710	570-630	558	598	527-589	-	550	590
	5_1	2	-	700-830	-	765	-	-	-	765	-
	5_2	97	17	500-880	510-850	638	685	622-653	-	620	660
	6_1	-	4	-	720-1,000	-	865	-	-	-	870
	6_2	145	162	520-1,020	690-1,000	837	837	821-853	828-846	850	823
	7_2	57	129	780-1,150	800-1,100	966	914	945-987	904-924	980	910
	All 2/	419	412	300-1,150	510-1,100	767	853	-	-	790	860
Curry Station	3_1	4	-	330-360	-	348	-	-	-	350	-
	3_2	46	-	300-410	-	355	-	347-363	-	350	-
	4_2	28	-	410-670	-	563	-	540-587	-	565	-
	5_2	57	5	520-900	620-840	644	742	624-664	-	630	780
	6_2	97	93	600-1,010	710-1,000	851	837	835-868	826-847	850	830
	7_1	-	1	-	950	-	950	-	-	-	950
	7_2	38	99	750-1,090	840-1,000	973	924	949-997	917-932	980	930
	All 2/	331	265	300-1,090	620-1,000	702	876	-	-	730	880

1/ Confidence Interval of the Mean.

Appendix Table 4-2. Sex ratios of male and female chinook salmon by age from weighted 1984 escapement samples collected at Flathorn and Yentna stations.

Collection Site	Age	Sample Size	Number		Sex Ratio (M:F)
			Males	Females	
Flathorn Station	3	17	17	0	-
	4	5	5	0	-
	5	5	2	3	0.7:1
	6	3	1	2	0.5:1
	All 1/	42	39	3	13.0:1
Yentna Station	3	1	1	0	-
	4	5	3	2	1.5:1
	5	1	0	1	0:1
	6	6	3	3	1:1
	All 1/	17	9	8	1.1:1

1/ Includes all aged and non-aged samples.

Appendix Table 4-3. Sex ratios of male and female chinook salmon by age from unweighted 1984 escapement samples collected at Flathorn and Yentna stations.

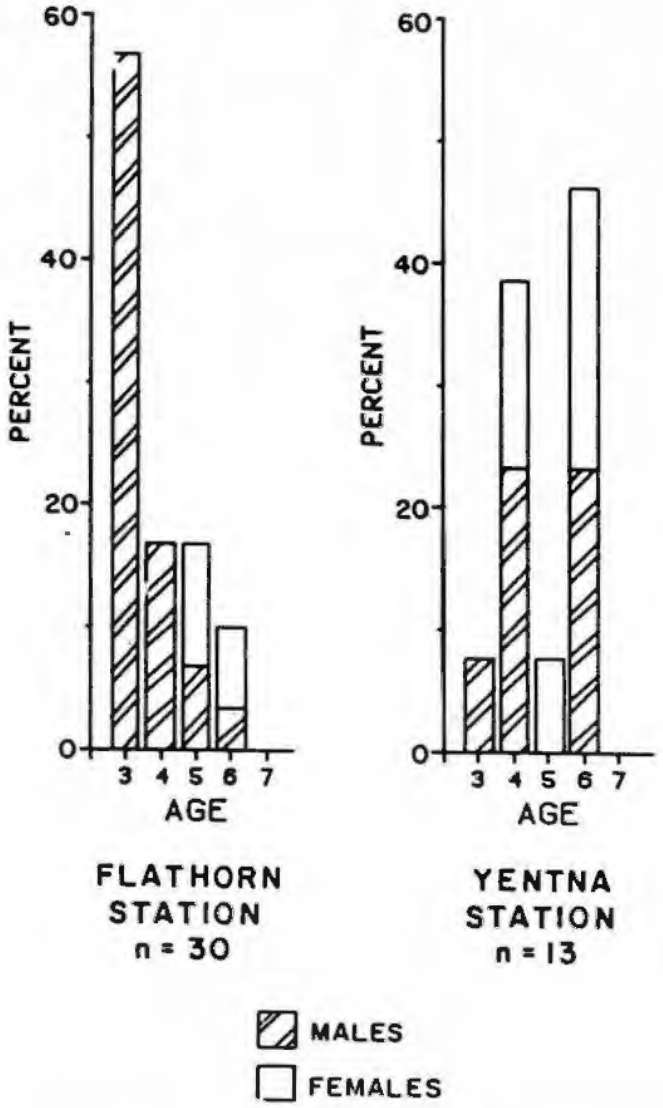
Collection Site	Age	Sample Size	Number		Sex Ratio (M:F)
			Males	Females	
Flathorn Station	3	17	17	0	-
	4	5	5	0	-
	5	5	2	3	0.7:1
	6	3	1	2	0.5:1
	All 1/	42	37	5	7.4:1
Yentna Station	3	1	1	0	-
	4	5	3	2	1.5:1
	5	1	0	1	0:1
	6	6	3	3	1:1
	All 1/	17	9	8	1.1:1

1/ Includes all aged and non-aged samples.

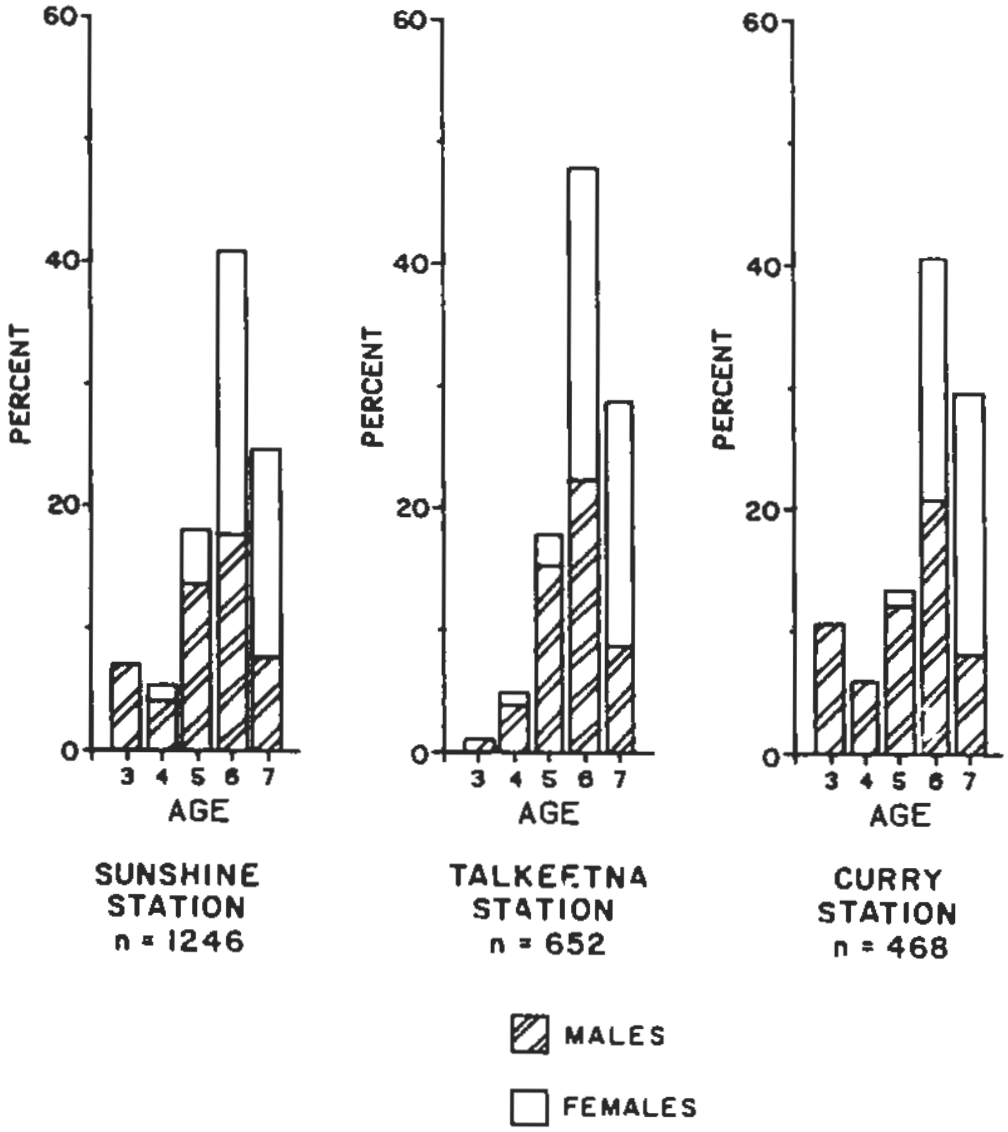
Appendix Table 4-4. Sex ratios of male and female chinook salmon by age from unweighted 1984 escapement samples collected at Sunshine, Talkeetna and Curry stations.

Collection Site	Age	Sample Size	Number		Sex Ratio (M:F)
			Males	Females	
Sunshine Station	3	88	88	0	-
	4	65	51	14	3.6:1
	5	226	169	57	3.0:1
	6	559	218	341	0.6:1
	7	308	96	212	0.5:1
	All 1/	1,629	855	774	1.1:1
Talkeetna Station	3	7	7	0	-
	4	32	25	7	3.6:1
	5	116	99	17	5.8:1
	6	311	145	166	0.9:1
	7	186	57	129	0.4:1
	All 1/	831	419	412	1.0:1
Curry Station	3	50	50	0	-
	4	28	28	0	-
	5	62	57	5	11.4:1
	6	190	97	93	1.0:1
	7	138	38	100	0.4:1
	All 1/	596	331	265	1.3:1

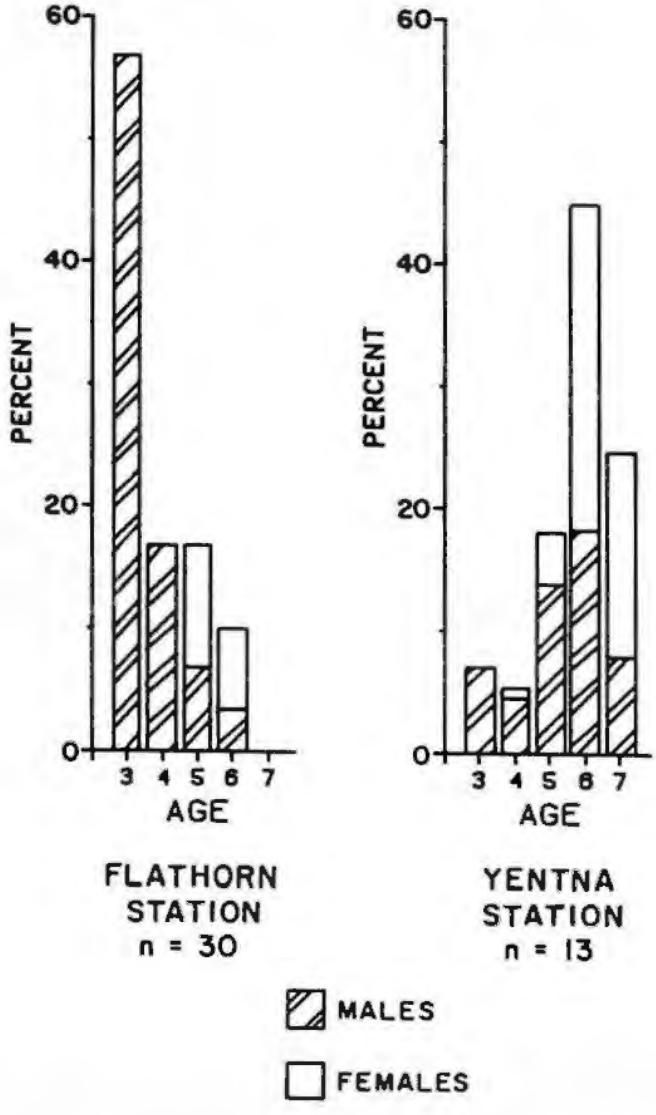
1/ Includes all aged and non-aged samples.



Appendix Figure 4-1. Age composition of fishwheel intercepted chinook salmon at Flathorn and Yentna stations, 1984.



Appendix Figure 4-2. Age composition of fishwheel intercepted chinook salmon at Sunshine, Talkeetna and Curry stations, 1984.



Appendix Figure 4-3. Age composition weighted by catch per unit effort of fishwheel intercepted chinook salmon at Flathorn and Yentna stations, 1984.

Appendix Table 4-5. Analysis of sockeye salmon lengths, in millimeters, by age class from 1984 escapement samples collected at Flathorn, Yentna, Sunshine, Talkeetna and Curry stations.

Collection Site	Age Class	n		Range Limits		Mean		95% Conf. Interval 1/		Median	
		M	F	M	F	M	F	M	F	M	F
Flathorn	3_1	17	1	320-465	420	404	420	-	-	410	420
Station	3_2	103	-	230-430	-	335	-	328-341	-	335	-
	4_1	22	5	445-620	465-585	544	505	520-568	-	550	490
	4_2	458	314	345-630	390-590	478	486	473-483	482-490	475	485
	4_3	16	3	300-530	375-495	396	447	-	-	383	470
	5_1	11	6	540-660	520-615	581	555	-	-	570	548
	5_2	430	288	420-690	400-645	564	538	561-568	534-542	570	540
	5_3	38	41	405-615	420-585	518	499	503-533	487-510	518	500
	6_2	1	1	545	545	545	545	-	-	545	545
	6_3	13	12	480-620	470-575	560	529	-	-	555	533
	All 2/	1,314	768	230-690	375-645	500	511	-	-	515	510
Yentna	3_1	4	1	390-425	455	408	455	-	-	408	455
Station	3_2	29	-	310-403	-	338	-	330-346	-	338	-
	4_1	16	19	487-610	515-620	568	566	-	-	580	566
	4_2	290	245	340-601	411-650	467	485	462-472	481-489	456	485
	4_3	6	-	335-387	-	356	-	-	-	353	-
	5_2	624	720	458-640	425-611	573	545	571-575	543-547	575	548
	5_3	60	87	375-570	403-557	490	487	478-502	481-493	489	491
	6_2	-	2	-	490-530	-	510	-	-	-	510
	6_3	58	92	530-620	465-612	579	551	574-585	547-556	581	550
	All 2/	1,324	1,415	310-640	403-650	532	529	-	-	557	537
Sunshine	4_1	-	1	-	575	-	575	-	-	-	575
Station	4_2	7	4	390-545	410-480	482	443	-	-	530	440
Run 1	5_1	-	1	-	550	-	550	-	-	-	550
	5_2	121	230	375-685	410-605	560	519	554-567	515-523	565	520
	6_2	-	1	-	535	-	535	-	-	-	535
	All 2/	139	261	375-685	410-605	555	519	-	-	560	520

Appendix Table 4-5 (cont). Analysis of sockeye salmon lengths, in millimeters, by age class from 1984 escapement samples collected at Flathorn, Yentna, Sunshine, Talkeetna and Curry stations.

Collection Site	Age Class	n		Range Limits		Mean		95% Conf. Interval 1/		Median	
		M	F	M	F	M	F	M	F	M	F
Sunshine	3_1	7	1	370-425	380	399	380	-	-	405	380
Station	3_2	31	1	275-420	375	328	375	320-337	-	325	375
Run 2	3_3	1	-	365	-	365	-	-	-	365	-
	4_1	8	13	445-600	405-585	555	516	-	-	570	525
	4_2	258	317	355-620	375-585	502	479	495-508	475-483	510	480
	4_3	9	1	335-450	475	383	475	-	-	375	475
	5_2	119	165	380-640	450-620	568	538	560-575	534-543	570	540
	5_3	12	20	420-575	420-540	511	493	-	481-506	530	500
	6_3	-	7	-	495-535	-	513	-	-	-	510
	All 2/	523	608	275-640	370-620	506	499	-	-	520	500
Talkeetna	3_1	2	1	440-450	420	445	420	-	-	445	420
Station	3_2	2	-	320-430	-	375	-	-	-	375	-
	4_1	5	15	515-585	450-580	554	529	-	-	560	540
	4_2	157	201	390-680	400-590	519	493	511-527	488-498	520	500
	4_3	2	-	330-485	-	408	-	-	-	408	-
	5_1	-	2	-	565-575	-	570	-	-	-	570
	5_2	29	28	520-640	500-645	587	557	576-599	544-570	590	558
	5_3	1	6	540	510-555	540	525	-	-	540	520
	6_3	1	1	600	585	600	585	-	-	600	585
	All 2/	262	326	320-680	400-645	525	505	-	-	530	500
Curry	3_1	4	-	410-430	-	423	-	-	-	425	-
Station	3_2	4	-	335-375	-	349	-	-	-	343	-
	4_1	2	6	555-570	540-585	563	565	-	-	563	565
	4_2	92	46	330-600	425-560	477	489	466-488	480-498	470	490
	4_3	8	-	335-460	-	384	-	-	-	375	-
	5_1	1	-	600	-	600	-	-	-	600	-
	5_2	10	25	510-610	495-600	573	550	-	539-561	585	550
	5_3	2	10	515-530	470-530	523	502	-	-	523	503
	6_2	-	1	-	540	-	540	-	-	-	540
	6_3	-	1	-	570	-	570	-	-	-	570
	All 2/	139	107	330-640	415-600	475	514	-	-	465	510

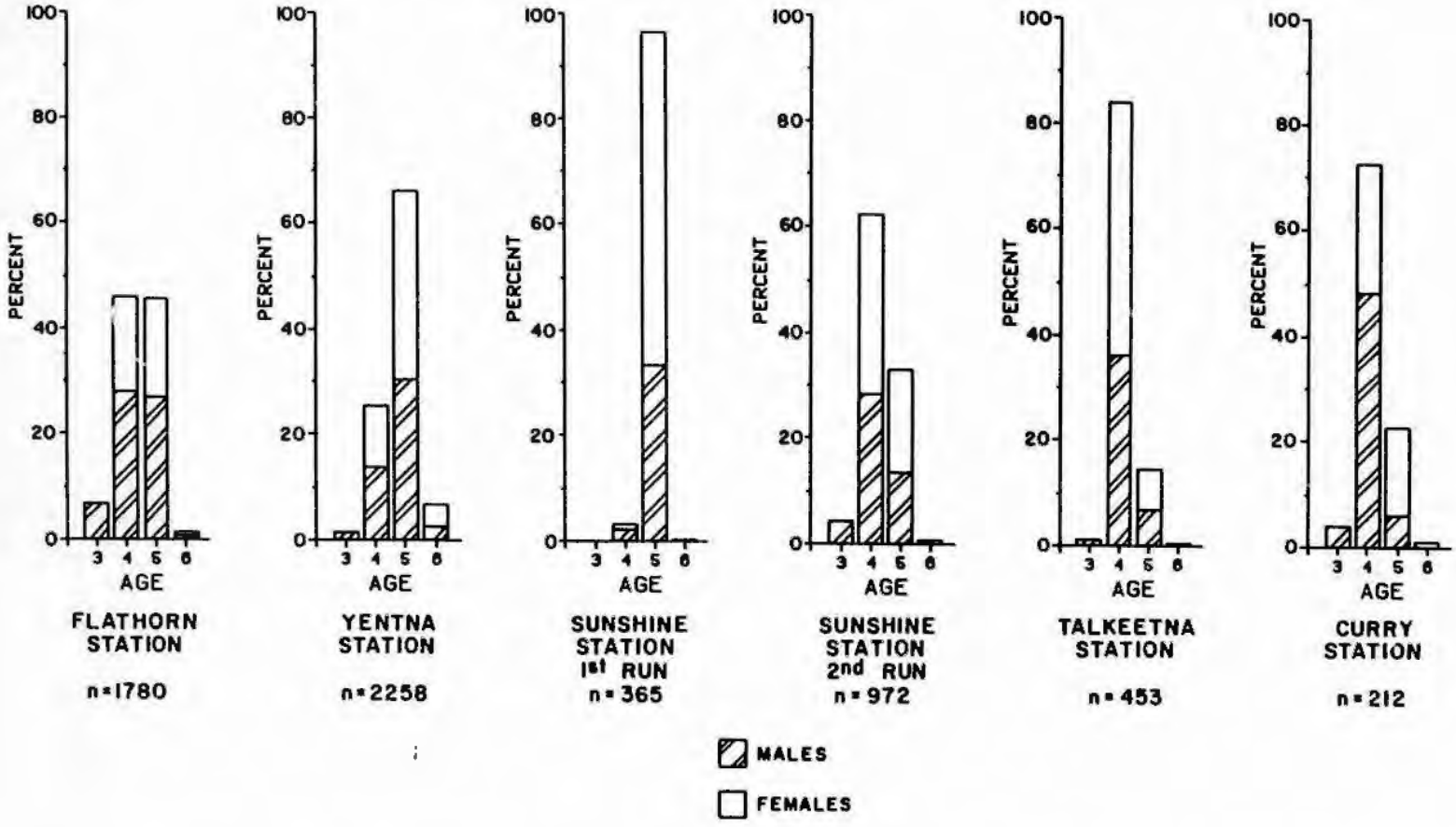
1/ Confidence Interval of the Mean.

2/ Composite of all age and non-aged samples.

Appendix Table 4-6. Sex ratios of male and female sockeye salmon by age from unweighted 1984 escapement samples collected at Flathorn, Yentna, Sunshine, Talkeetna and Curry stations.

Collection Site	Age	Sample Size	Number		Sex Ratio (M:F)
			Males	Females	
Flathorn Station	3	121	120	1	120:1
	4	818	496	322	1.5:1
	5	814	479	335	1.4:1
	6	27	14	13	1.1:1
	All 1/	2,082	1,314	768	1.7:1
Yentna Station	3	34	33	1	33:1
	4	577	313	264	1.2:1
	5	1,495	686	809	0.9:1
	6	152	58	94	0.6:1
	All 1/	2,746	1,328	1,418	0.9:1
Sunshine Station 1st Run	4	12	7	5	1.4:1
	5	352	121	231	0.5:1
	6	1	0	1	0:1
	All 1/	400	139	261	0.5:1
Sunshine Station 2nd Run	3	41	39	2	19.5:1
	4	606	275	331	0.8:1
	5	318	131	187	0.7:1
	6	7	0	7	0:1
	All 1/	1,133	523	610	0.9:1
Talkeetna Station	3	5	4	1	4:1
	4	380	164	216	0.8:1
	5	66	30	36	0.8:1
	6	2	1	1	1:1
	All 1/	588	262	326	0.8:1
Curry Station	3	8	8	0	-
	4	154	102	52	2.0:1
	5	48	13	35	0.4:1
	6	2	0	2	0:1
	All 1/	246	139	107	1.3:1

1/ Includes all aged and non-aged samples.



Appendix Figure 4-4. Age composition of fishwheel intercepted sockeye salmon at selected stations on the Susitna River, 1984.

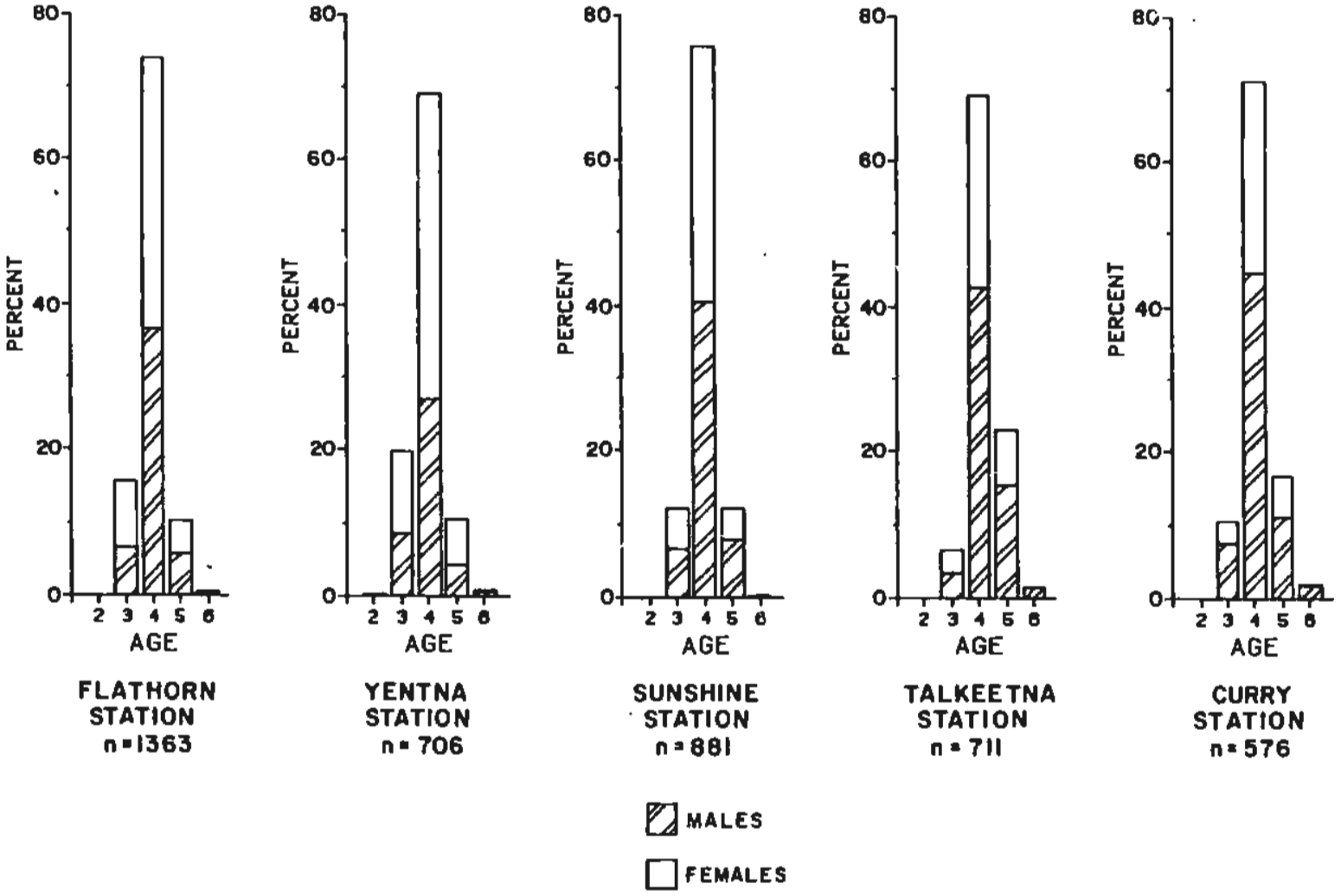
Appendix Table 4-7. Analysis of chum salmon lengths, in millimeters, by age class from 1984 escapement samples collected at Flathorn, Yentna, Sunshine, Talkeetna and Curry stations.

Collection Site	Age Class	n		Range Limits		Mean		95% Conf. Interval 1/		Median	
		M	F	M	F	M	F	M	F	M	F
Flathorn	3_1	87	124	350-635	470-605	550	539	542-558	535-543	555	540
Station	4_1	497	510	455-690	465-800	594	577	591-597	574-580	595	578
	5_1	78	61	545-700	515-710	623	599	615-631	590-608	620	595
	6_1	2	4	630-655	605-670	643	636	-	-	643	635
	All 2/	720	750	350-700	465-800	592	573	-	-	595	570
Yentna	2_1	1	-	423	-	423	-	-	-	423	-
Station	3_1	58	80	510-625	485-600	558	544	552-565	539-550	560	545
	4_1	189	297	501-675	505-668	597	582	592-601	579-585	600	580
	5_1	29	43	580-670	532-682	623	614	614-633	606-623	630	615
	6_1	3	2	615-675	550-625	638	588	-	-	625	588
	All 2/	308	455	423-684	485-682	591	578	-	-	590	578
Sunshine	3_1	58	48	425-630	490-585	547	544	537-557	536-552	550	545
Station	4_1	356	310	480-775	490-670	603	582	599-606	579-586	605	585
	5_1	70	37	515-745	540-670	629	600	621-637	590-610	625	600
	6_1	1	-	645	-	645	-	-	-	645	-
	All 2/	548	459	425-775	490-680	599	579	-	-	600	580
Talkeetna	3_1	23	23	490-585	510-580	552	549	542-562	541-557	550	550
Station	4_1	302	190	500-690	500-700	604	593	600-608	589-598	605	595
	5_1	109	54	550-710	580-720	648	631	642-654	621-640	650	623
	6_1	9	1	610-725	630	664	630	-	-	670	630
	All 2/	509	310	490-730	465-720	614	597	-	-	610	600
Curry	3_1	42	18	505-620	505-585	557	551	550-563	-	555	548
Station	4_1	257	152	470-685	530-660	600	590	596-604	586-594	600	590
	5_1	64	32	530-700	545-650	628	607	619-637	597-617	630	610
	6_1	10	1	595-700	625	664	625	-	-	665	625
	All 2/	443	240	470-705	505-660	601	590	-	-	600	590

Appendix Table 4-8. Sex ratios of male and female chum salmon by age from unweighted 1984 escapement samples collected at Flathorn, Yentna, Sunshine, Talkeetna and Curry stations.

Collection Site	Age	Sample Size	Number		Sex Ratio (M:F)
			Males	Females	
Flathorn Station	3	211	87	124	0.7:1
	4	1,007	497	510	1.0:1
	5	139	78	61	1.3:1
	6	6	2	4	0.5:1
	All 1/	1,470	720	750	1.0:1
Yentna Station	2	1	1	0	-
	3	139	59	80	0.7:1
	4	488	190	298	0.6:1
	5	73	30	43	0.7:1
	6	5	3	2	1.5:1
	All 1/	767	311	456	0.7:1
Sunshine Station	3	106	58	48	1.2:1
	4	667	356	311	1.1:1
	5	107	70	37	1.9:1
	6	1	1	0	-
	All 1/	1,008	548	460	1.2:1
Talkeetna Station	3	46	23	23	1:1
	4	492	302	190	1.6:1
	5	163	109	54	2.0:1
	6	10	9	1	9:1
	All 1/	819	509	310	1.6:1
Curry Station	3	60	42	18	2.3:1
	4	409	257	152	1.7:1
	5	96	64	32	2:1
	6	11	10	1	10:1
	All 1/	683	443	240	1.9:1

1/ Includes all aged and non-aged samples.



Appendix Figure 4-5. Age composition of fishwheel intercepted chum salmon at selected stations on the Susitna River, 1984.

Appendix Table 4-9. Analysis of coho salmon lengths, in millimeters, by age class from 1984 escapement samples collected at Flathorn, Yentna, Sunshine, Talkeetna and Curry stations.

Collection Site	Age Class	n		Range Limits		Mean		95% Conf. Interval 1/		Median	
		M	F	M	F	M	F	M	F	M	F
Flathorn	2_1	-	3	-	400-440	-	422	-	-	-	425
Station	3_2	154	111	320-635	390-600	525	515	516-534	505-526	535	525
	3_3	21	-	240-370	-	292	-	276-308	-	290	-
	4_2	-	1	-	565	-	565	-	-	-	565
	4_3	326	197	325-660	405-650	562	552	556-567	546-558	565	555
	4_4	20	-	270-435	-	321	-	304-338	-	318	-
	5_4	3	6	600-635	430-650	620	571	-	-	625	580
	5_5	3	-	300-360	-	335	-	-	-	345	-
	All 2/	845	475	240-660	390-650	531	538	-	-	555	550
Yentna	3_2	46	59	387-635	442-610	545	532	528-563	521-544	560	545
Station	4_3	126	136	475-640	425-640	573	556	567-579	550-563	580	561
	4_4	1	1	315	285	315	285	-	-	315	285
	5_4	4	4	485-645	540-600	584	570	-	-	604	570
	All 2/	280	321	290-660	285-655	562	549	-	-	574	555
Sunshine	3_2	97	95	380-610	400-600	510	523	499-521	514-531	510	530
Station	4_2	1	-	625	-	625	-	-	-	625	-
	4_3	203	158	415-665	420-670	560	552	554-567	546-558	565	558
	5_4	4	4	585-645	520-600	621	568	-	-	628	575
	All 2/	485	442	380-665	370-670	545	538	-	-	555	545
Talkeetna	3_2	53	45	400-620	440-610	517	532	502-531	518-547	530	540
Station	4_3	125	83	410-690	450-685	570	570	561-579	561-578	580	570
	5_4	1	2	550	580-600	550	590	-	-	550	590
	All 2/	300	249	400-630	410-695	559	555	-	-	560	560
Curry	3_2	39	38	405-595	430-600	493	528	477-509	515-541	505	533
Station	4_3	50	36	430-630	440-610	534	555	516-552	541-570	545	560
	4_4	1	-	190	-	190	-	-	-	190	-
	5_4	2	-	540-555	-	548	-	-	-	548	-
	All 2/	138	126	190-635	420-610	518	543	-	-	528	550

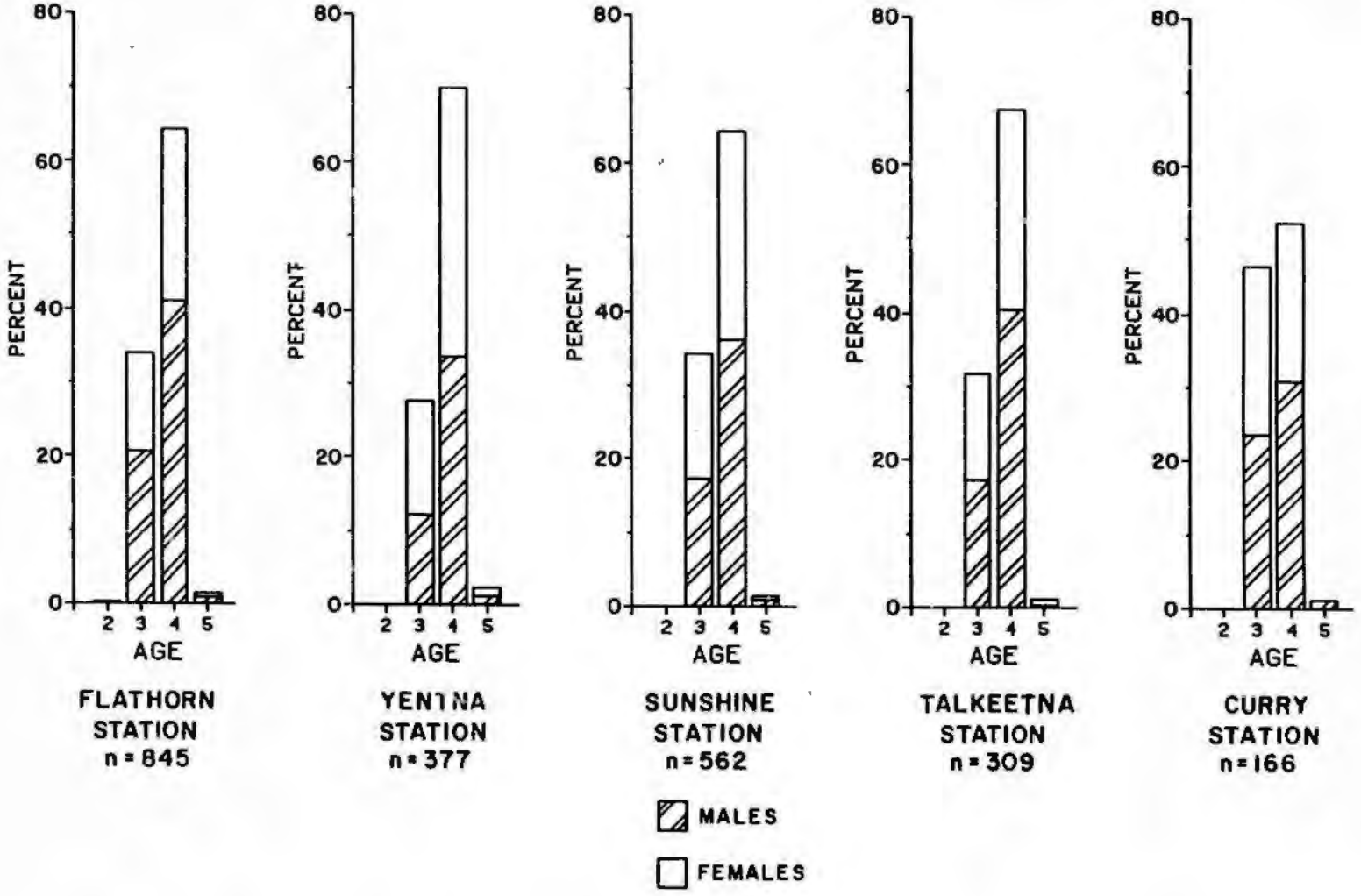
1/ Confidence Interval of the Mean.

2/ Composite of all aged and non-aged samples.

Appendix Table 4-10. Sex ratios of male and female coho salmon by age from unweighted 1984 escapement samples collected at Flathorn, Yentna, Sunshine, Talkeetna and Curry stations.

Collection Site	Age	Sample Size	Number		Sex Ratio (M:F)
			Males	Females	
Flathorn Station	2	3	0	3	0:1
	3	286	175	111	1.6:1
	4	544	346	198	1.8:1
	5	12	6	6	1:1
	All 1/	1,319	844	475	1.8:1
Yentna Station	3	105	46	59	0.8:1
	4	264	127	137	0.9:1
	5	8	4	4	1:1
	All 1/	601	280	321	0.9:1
Sunshine Station	3	192	97	95	1.0:1
	4	362	204	158	1.3:1
	5	8	4	4	1:1
	All 1/	927	485	442	1.1:1
Talkeetna Station	3	98	53	45	1.2:1
	4	208	125	83	1.5:1
	5	3	1	2	0.5:1
	All 1/	549	300	249	1.2:1
Curry Station	3	77	39	38	1.0:1
	4	87	51	36	1.4:1
	5	2	2	0	-
	All 1/	264	138	126	1.1:1

1/ Includes all aged and non-aged samples.



Appendix Figure 4-6. Age composition of fishwheel intercepted coho salmon at selected stations on the Susitna River, 1984.

Appendix Table 4-11. Migrational timing by species at main channel sampling locations on the Yentna and Susitna rivers based on cumulative percent of fishwheel catch per unit effort in 1981-84.

Station	Species	Year	Cumulative Percent of Fishwheel Catch Per Unit Effort 1/				
			>0%	≥5%	≥50%	≥95%	=100%
Sunshine	Chinook	1981	---	---	---	---	---
		1982	6/6	6/18	6/30	7/9	8/15
		1983	6/5	6/9	6/18	7/9	8/18
		1984	6/4	6/9	6/21	7/6	8/4
Talkeetna		1981	---	---	---	---	---
		1982	6/9	6/26	7/4	7/23	8/1
		1983	6/7	6/18	6/28	7/21	8/18
		1984	6/6	6/16	6/26	7/12	8/17
Curry		1981	6/15	6/17	6/24	7/24	8/20
		1982	6/15	6/25	7/3	7/19	8/6
		1983	6/10	6/18	6/25	7/13	7/31
		1984	6/9	6/19	6/25	7/13	7/29
Flathorn(e)	Sockeye	1984	6/29	7/16	7/22	8/9	8/29
(w)	2nd run		6/29	7/16	7/21	8/6	8/31
Yentna	2nd run	1981	6/28	7/10	7/18	7/30	8/27
		1982	6/27	7/18	7/24	8/6	9/5
		1983	7/2	7/14	7/22	8/15	9/4
		1984	7/1	7/17	7/22	8/7	9/1
Sunshine	1st run	1981	---	---	---	---	---
		1982	6/4	6/9	6/13	6/21	6/28
		1983	6/5	6/6	6/10	6/19	6/28
		1984	6/4	6/4	6/10	6/22	6/28
Sunshine	2nd run	1981	6/29	7/16	7/22	8/8	9/4
		1982	7/1	7/20	7/27	8/3	9/13
		1983	6/30	7/17	7/23	8/14	9/5
		1984	6/29	7/20	7/24	8/5	9/4
Talkeetna	2nd run	1981	7/7	7/23	7/31	8/26	9/9
		1982	7/8	7/27	8/1	8/18	9/9
		1983	7/1	7/15	8/1	8/18	9/6
		1984	7/1	7/22	7/28	8/12	9/9
Curry	2nd run	1981	7/17	7/23	8/5	8/22	9/12
		1982	7/16	7/27	8/5	8/28	9/18
		1983	7/6	7/17	8/5	8/25	9/4
		1984	6/30	7/22	8/1	8/25	9/8

Appendix Table 4-11 (cont). Migrational timing by species at main channel sampling locations on the Yentna and Susitna rivers based on cumulative percent of fishwheel catch per unit effort in 1981-84.

Station	Species	Year	Cumulative Percent of Fishwheel Catch Per Unit Effort				
			> 0%	≥ 5%	≥ 50%	≥ 95%	=100%
Flathorn(e)	Pink	1984	6/30	7/21	7/28	8/7	8/29
(w)			7/7	7/22	7/28	8/6	8/30
Yentna		1981	6/28	7/10	7/30	8/24	8/26
		1982	7/7	7/23	7/29	8/7	8/28
		1983	7/2	7/14	7/26	8/15	9/4
		1984	7/4	7/21	7/28	8/5	9/5
Sunshine		1981	7/3	7/26	8/1	8/14	9/1
		1982	7/12	7/29	8/3	8/10	9/10
		1983	7/10	7/20	7/30	8/15	8/30
		1984	6/30	7/25	7/31	8/8	9/10
Talkeetna		1981	7/25	7/29	8/6	8/20	8/28
		1982	7/16	8/2	8/6	8/13	8/30
		1983	7/10	7/23	7/30	8/8	8/26
		1984	7/12	7/26	8/3	8/10	8/31
Curry		1981	7/18	7/30	8/8	8/21	8/29
		1982	7/22	8/2	8/6	8/13	8/26
		1983	7/20	7/24	8/1	8/12	8/23
		1984	7/7	7/29	8/4	8/13	8/27
Flathorn(e)	Chum	1984	7/5	7/18	7/25	8/25	9/2
(w)			7/9	7/18	7/29	8/28	9/2
Yentna		1981	6/28	7/18	7/27	8/21	9/4
		1982	7/17	7/20	8/2	8/18	9/5
		1983	7/4	7/15	7/30	8/23	9/4
		1984	7/9	7/18	8/1	8/29	9/5
Sunshine		1981	7/4	7/26	8/18	9/5	9/15
		1982	6/24	7/29	8/7	8/21	9/28
		1983	7/10	7/22	8/1	9/2	9/11
		1984	7/2	7/23	8/4	8/19	9/10
Talkeetna		1981	7/20	7/28	8/17	9/4	9/13
		1982	7/17	8/2	8/8	8/22	9/13
		1983	7/11	7/25	8/1	8/30	9/12
		1984	7/12	7/25	8/5	8/15	9/11
Curry		1981	7/20	8/5	8/17	8/26	9/15
		1982	7/25	8/3	8/12	8/26	9/14
		1983	7/10	7/22	8/3	8/29	9/9
		1984	7/15	7/28	8/5	8/21	9/7

Appendix Table 4-11 (cont). Migrational timing by species at main channel sampling locations on the Yentna and Susitna rivers based on cumulative percent of fishwheel catch per unit effort in 1981-84.

Station	Species	Year	Cumulative Percent of Fishwheel Catch Per Unit Effort				
			> 0%	≥ 5%	≥ 50%	≥ 95%	= 100%
Flathorn(e)	Coho	1984	7/6	7/18	7/29	8/24	9/2
(w)			7/6	7/18	7/25	8/15	9/2
Yentna		1981	7/7	7/22	7/31	8/17	9/4
		1982	7/15	7/20	8/2	8/24	9/5
		1983	7/8	7/15	7/27	8/23	9/4
		1984	7/8	7/21	8/3	8/22	9/5
Sunshine		1981	7/23	8/1	8/20	8/28	9/15
		1982	7/18	8/3	8/12	8/23	9/28
		1983	7/13	7/23	8/5	8/25	9/11
		1984	7/4	7/29	8/11	8/29	9/10
Talkeetna		1981	7/29	8/4	8/26	9/3	9/13
		1982	8/2	8/5	8/13	9/2	9/13
		1983	7/18	7/30	8/14	9/7	9/12
		1984	7/15	7/31	8/12	8/29	9/11
Curry		1981	8/4	8/6	8/23	9/5	9/19
		1982	8/2	8/5	8/18	9/2	9/11
		1983	7/22	7/28	8/12	9/2	9/6
		1984	7/18	8/1	8/11	8/28	8/31

1/ Date upon which greater than or equal to 0, 5, 50, 95 and 100 percent of the cumulative catch per unit of effort occurred. Unit effort is defined as fishwheel catch per hour. These dates were defined only for salmon escapements which were monitored from start to completion.

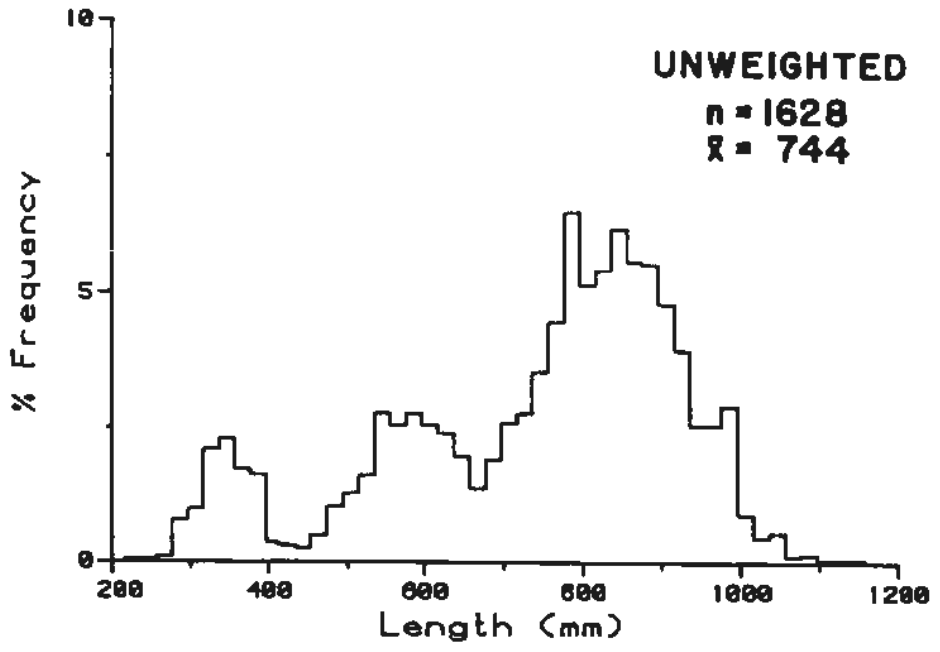
APPENDIX 5

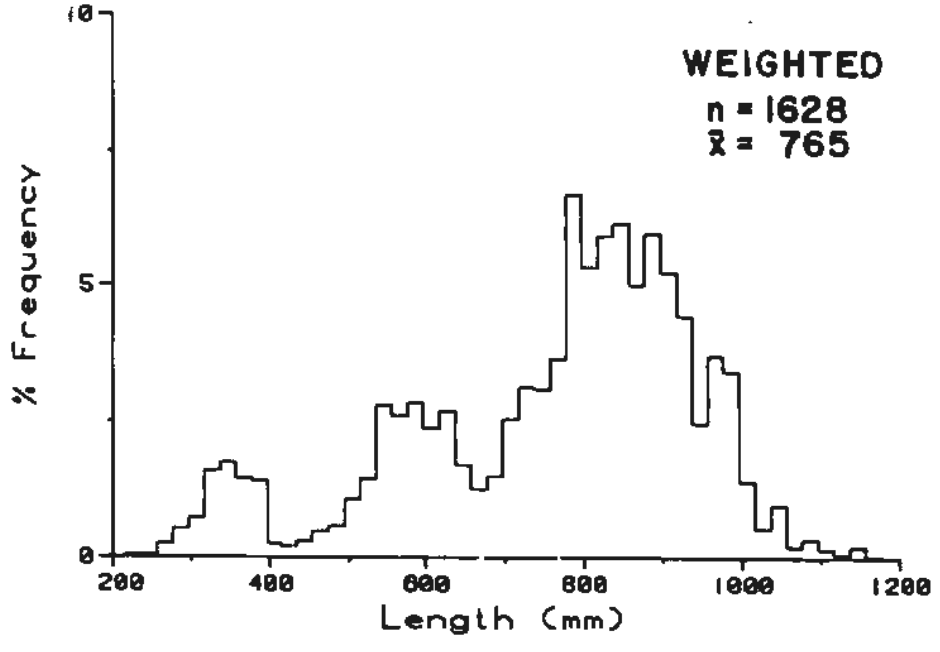
LENGTH FREQUENCIES OF

CHINOOK, SOCKEYE, PINK , CHUM

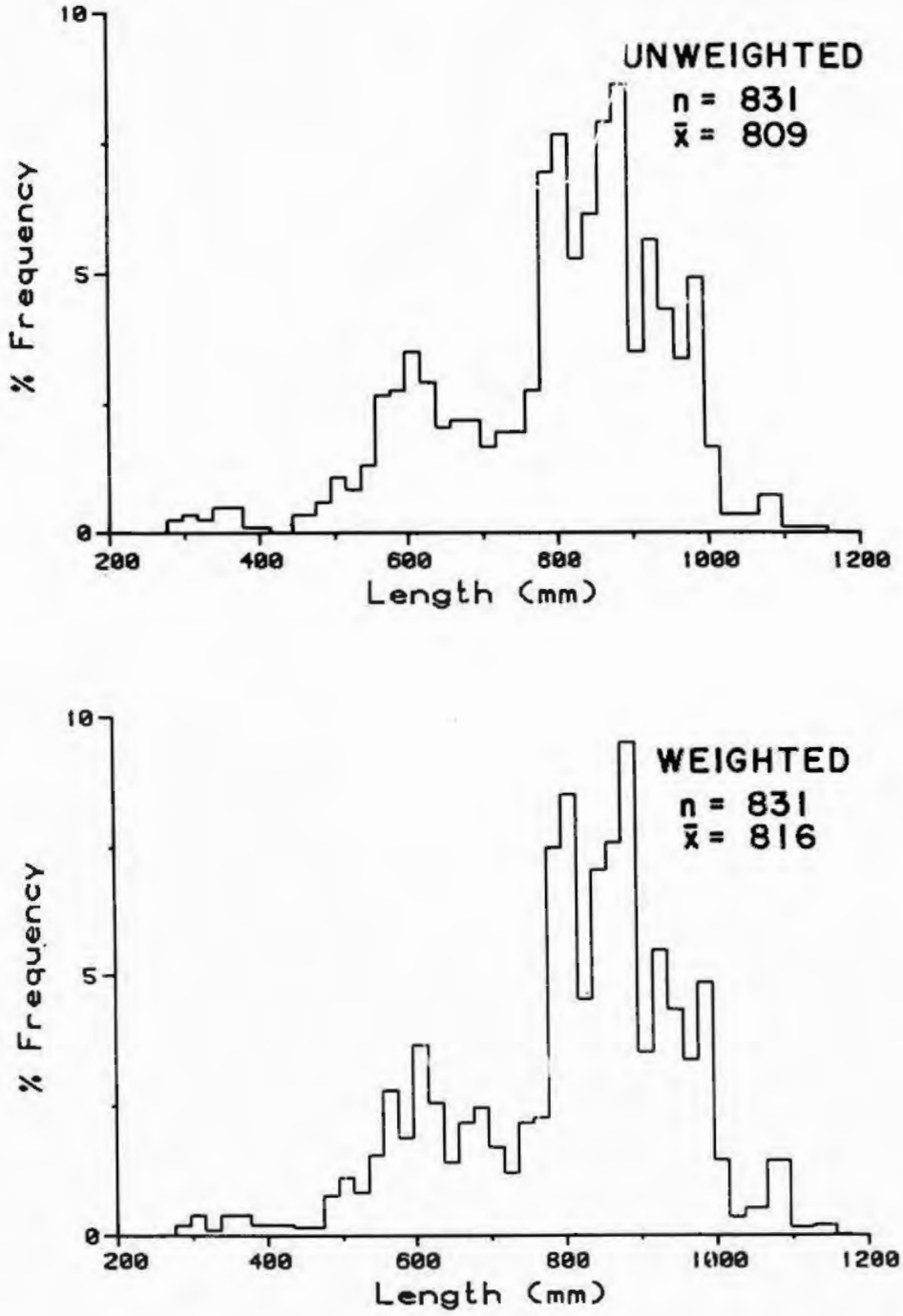
AND

COHO SALMON

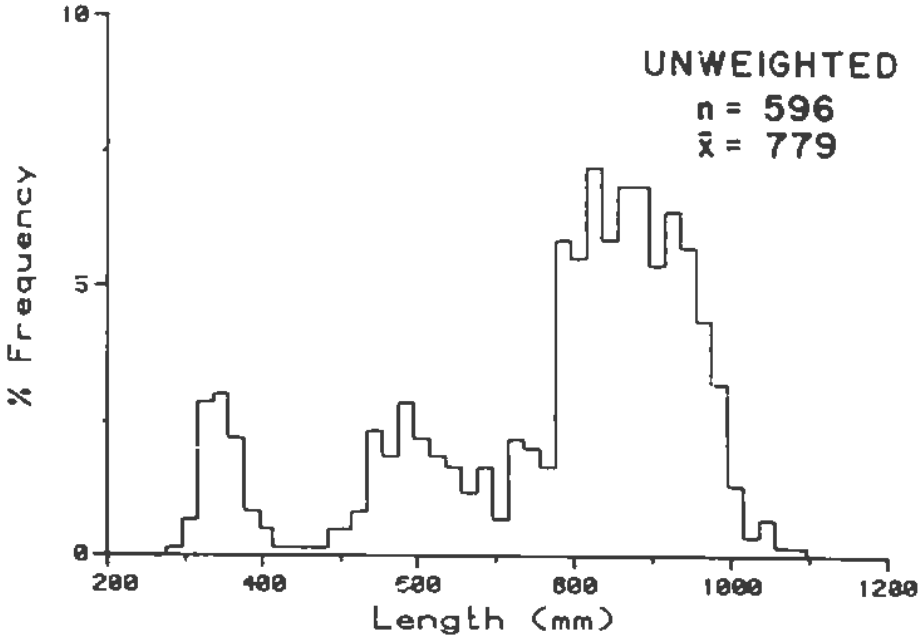


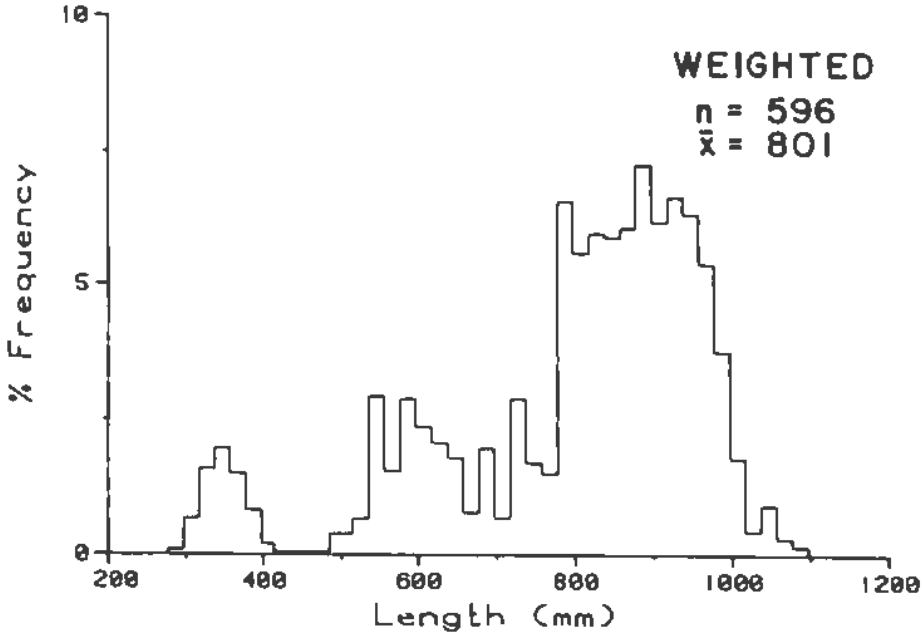


Appendix Figure 5-1. Chinook salmon length frequencies at Sunshine Station weighted and not weighted by fishwheel catch per unit of effort, 1984.

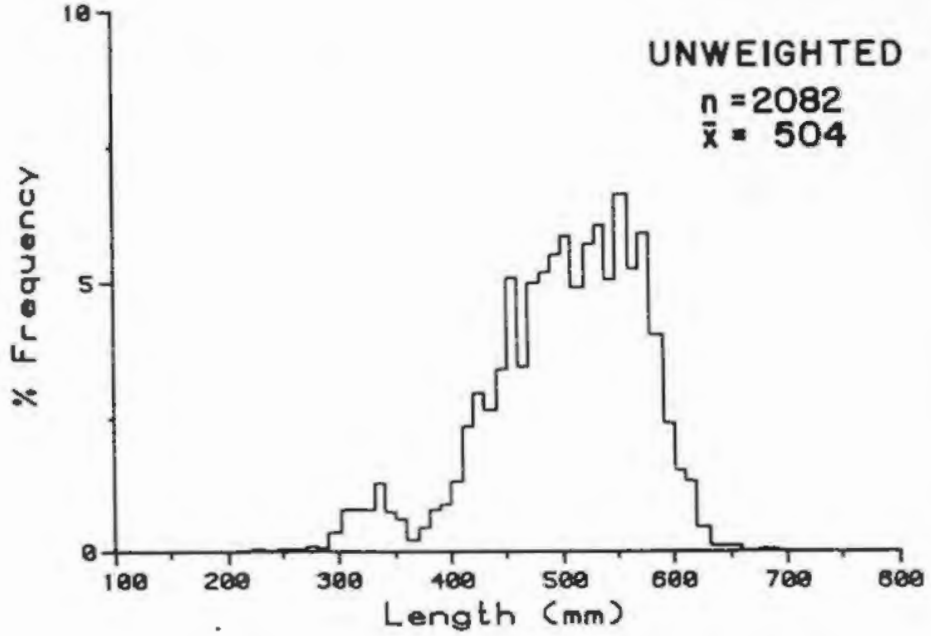


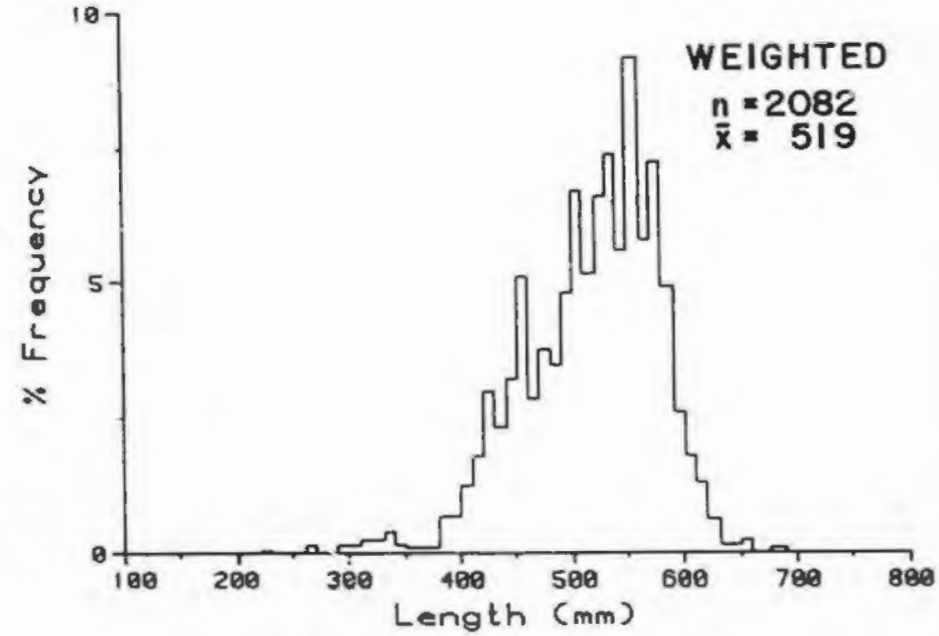
Appendix Figure 5-2. Chinook salmon length frequencies at Talkeetna Station weighted and not weighted by fishwheel catch per unit of effort, 1984.



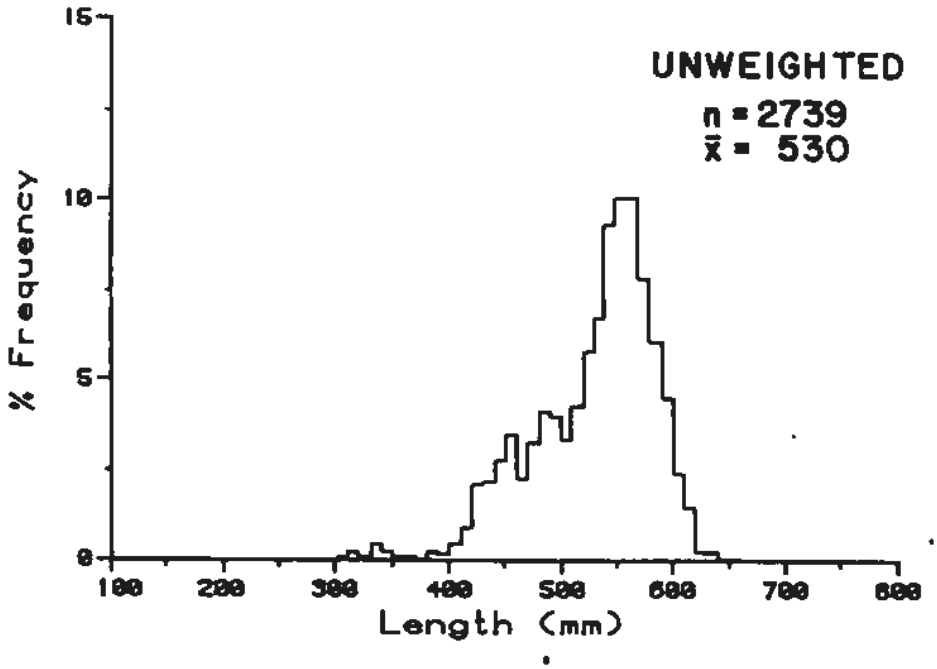


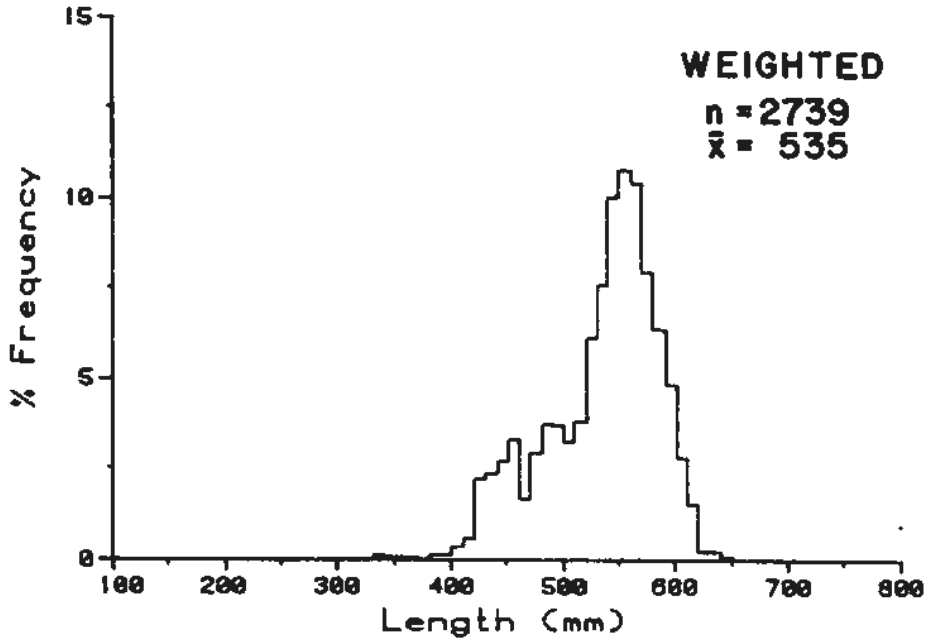
Appendix Figure 5-3. Chinook salmon length frequencies at Curry Station weighted and not weighted by fishwheel catch per unit of effort, 1984.



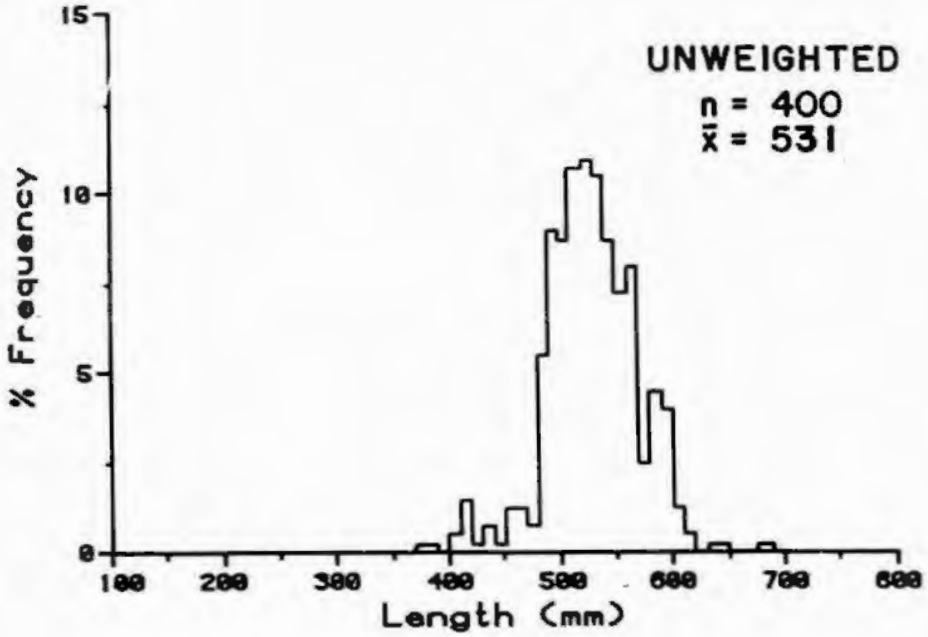


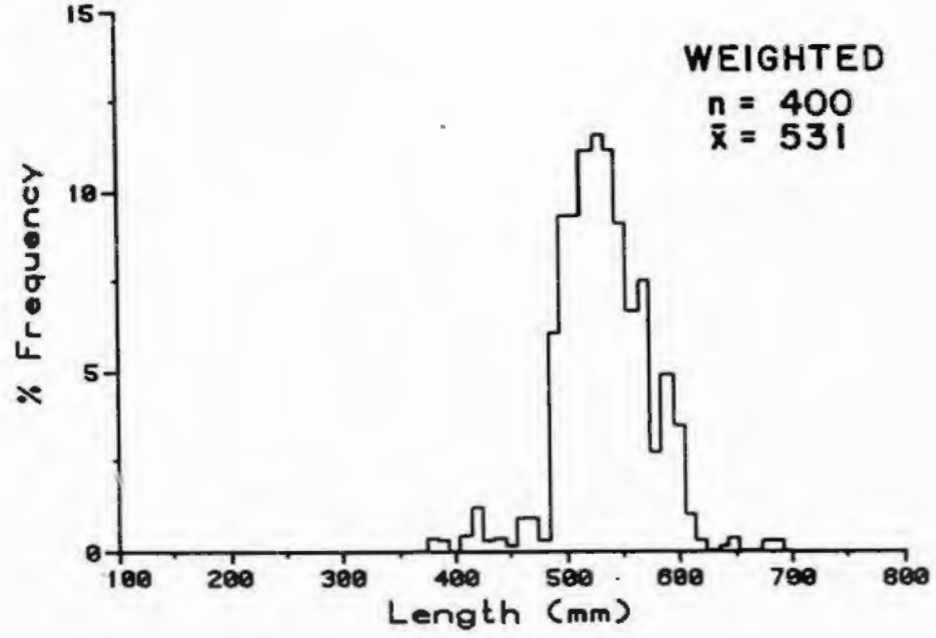
Appendix Figure 5-4. Sockeye salmon length frequencies at Flathorn Station weighted and not weighted by fishwheel catch per unit of effort, 1984.



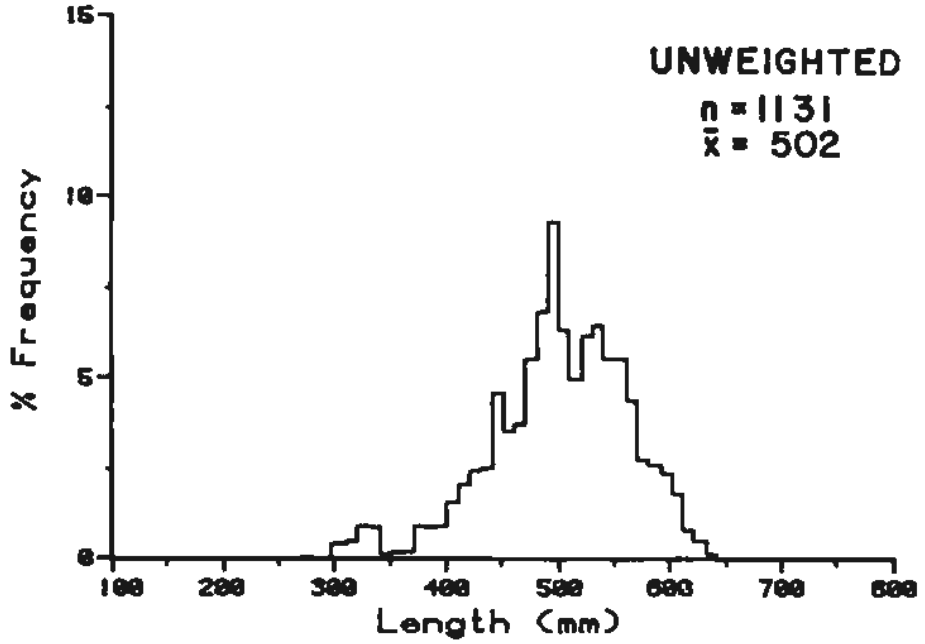


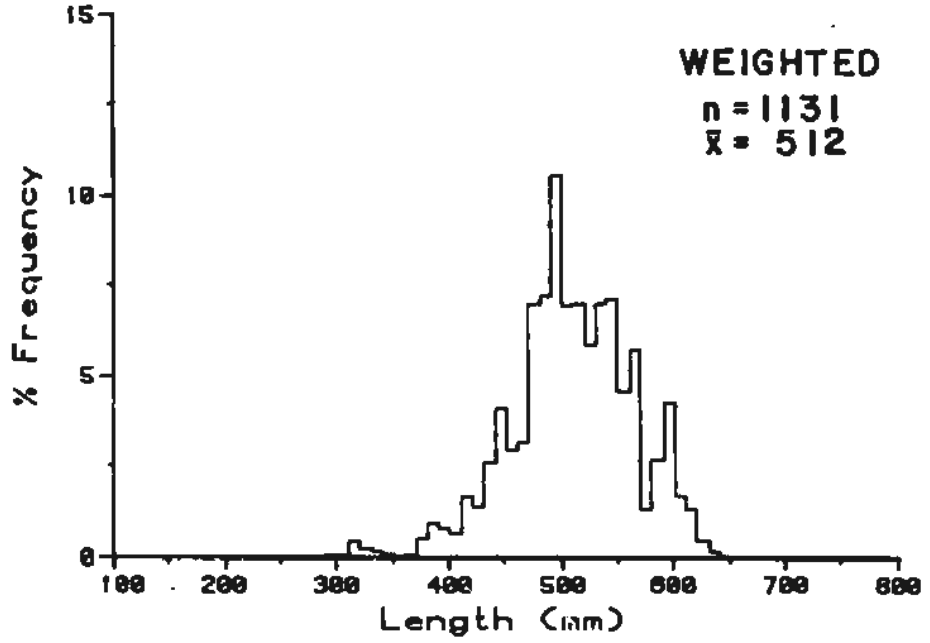
Appendix Figure 5-5. Sockeye salmon length frequencies at Yentna Station weighted and not weighted by fishwheel catch per unit of effort, 1984.



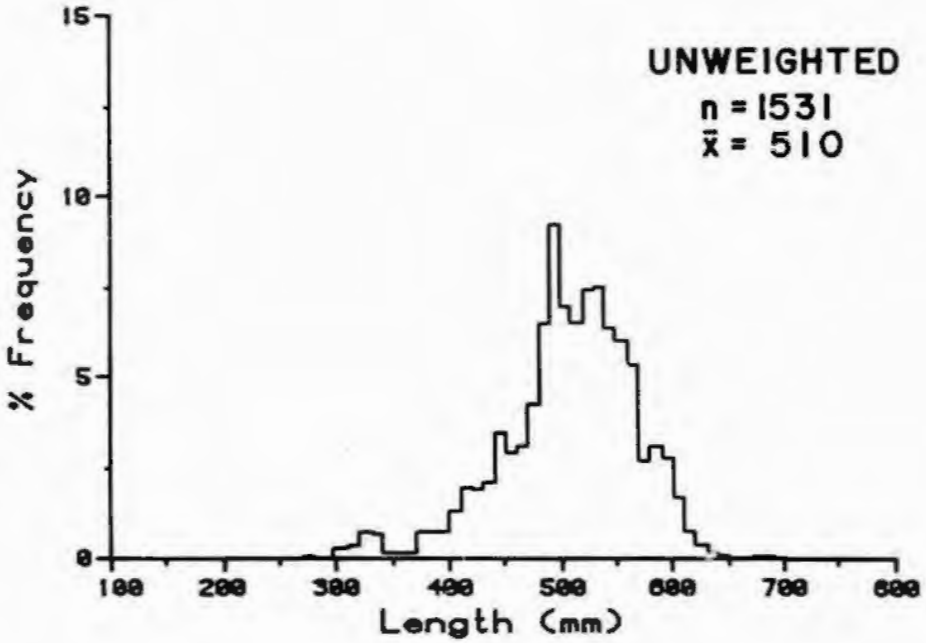


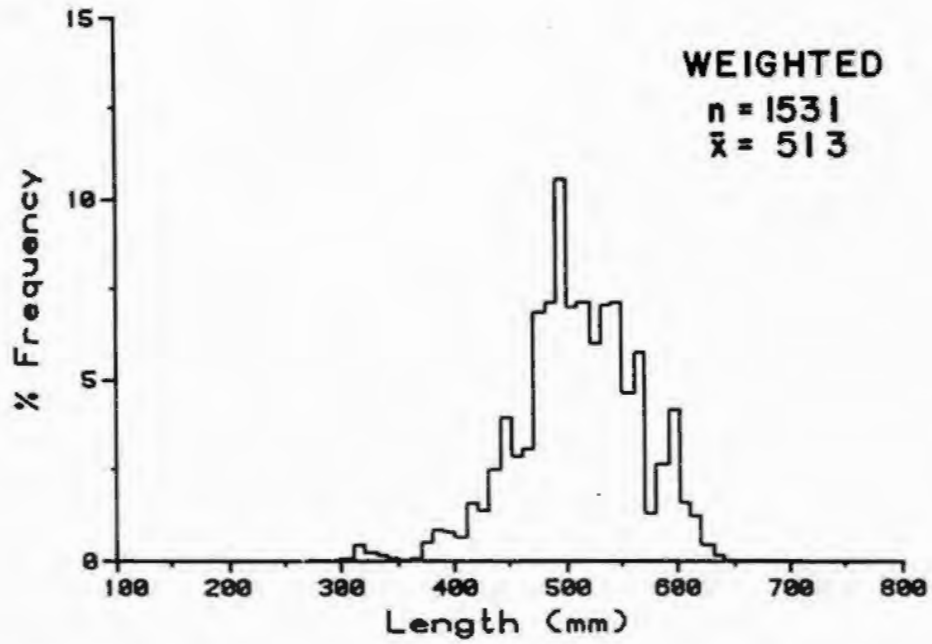
Appendix Figure 5-6. First run sockeye salmon length frequencies at Sunshine Station weighted and not weighted by fishwheel catch per unit of effort, 1984.



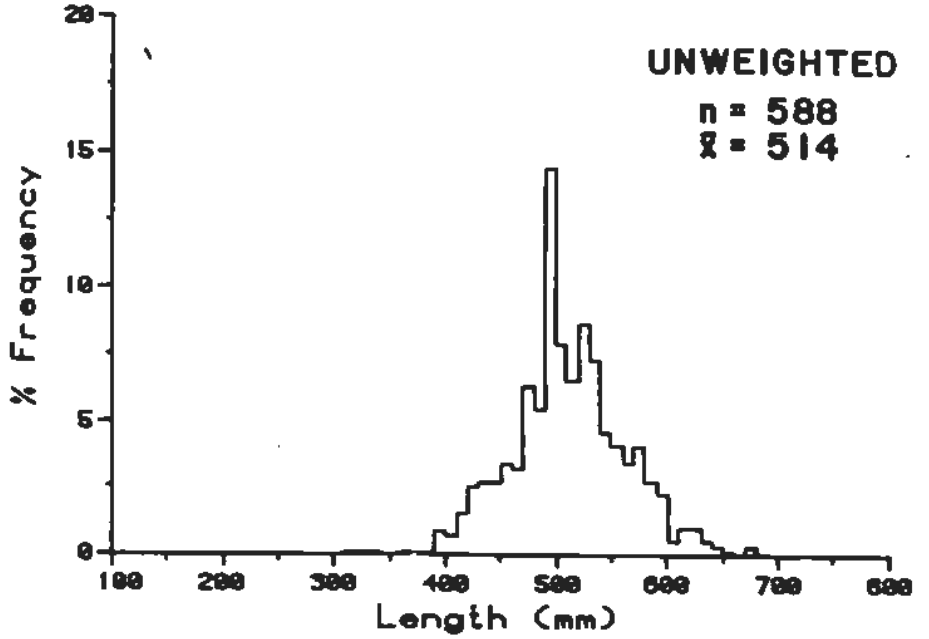


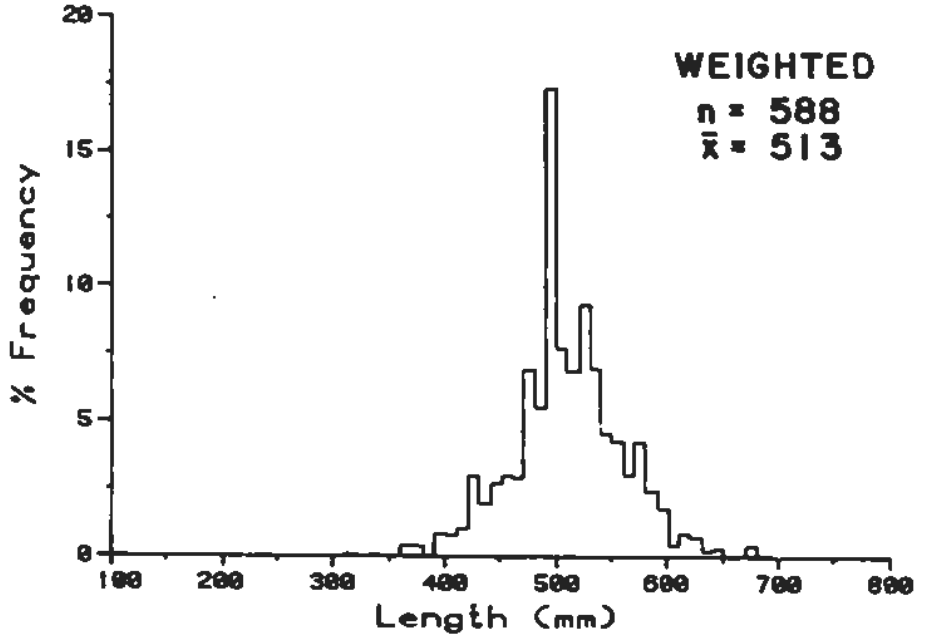
Appendix Figure 5-7. Second run sockeye salmon length frequencies at Sunshine Station weighted and not weighted by fishwheel catch per unit of effort, 1984.



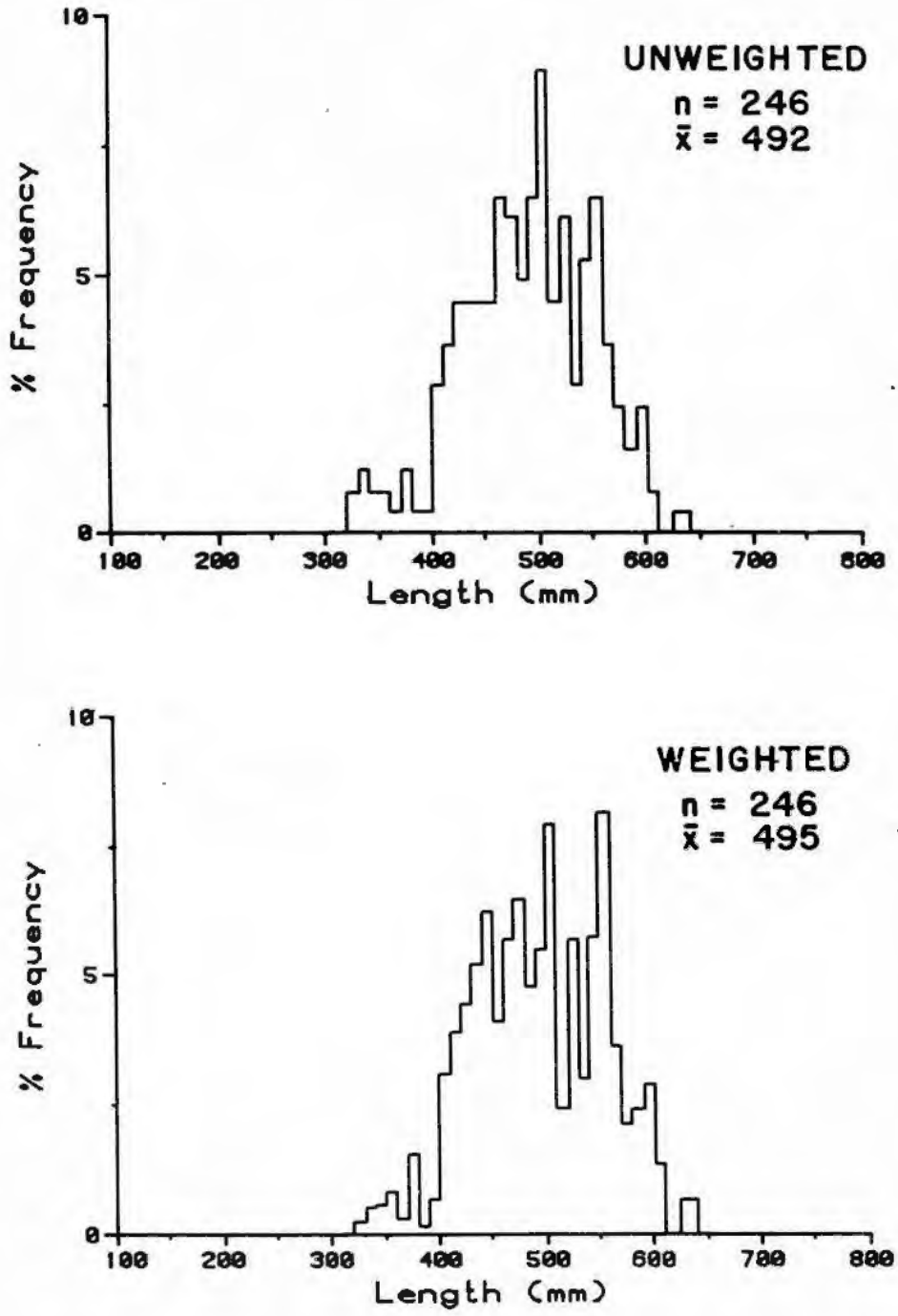


Appendix Figure 5-8. Combined first and second run sockeye salmon length frequencies at Sunshine Station weighted and not weighted by fishwheel catch per unit of effort, 1984.

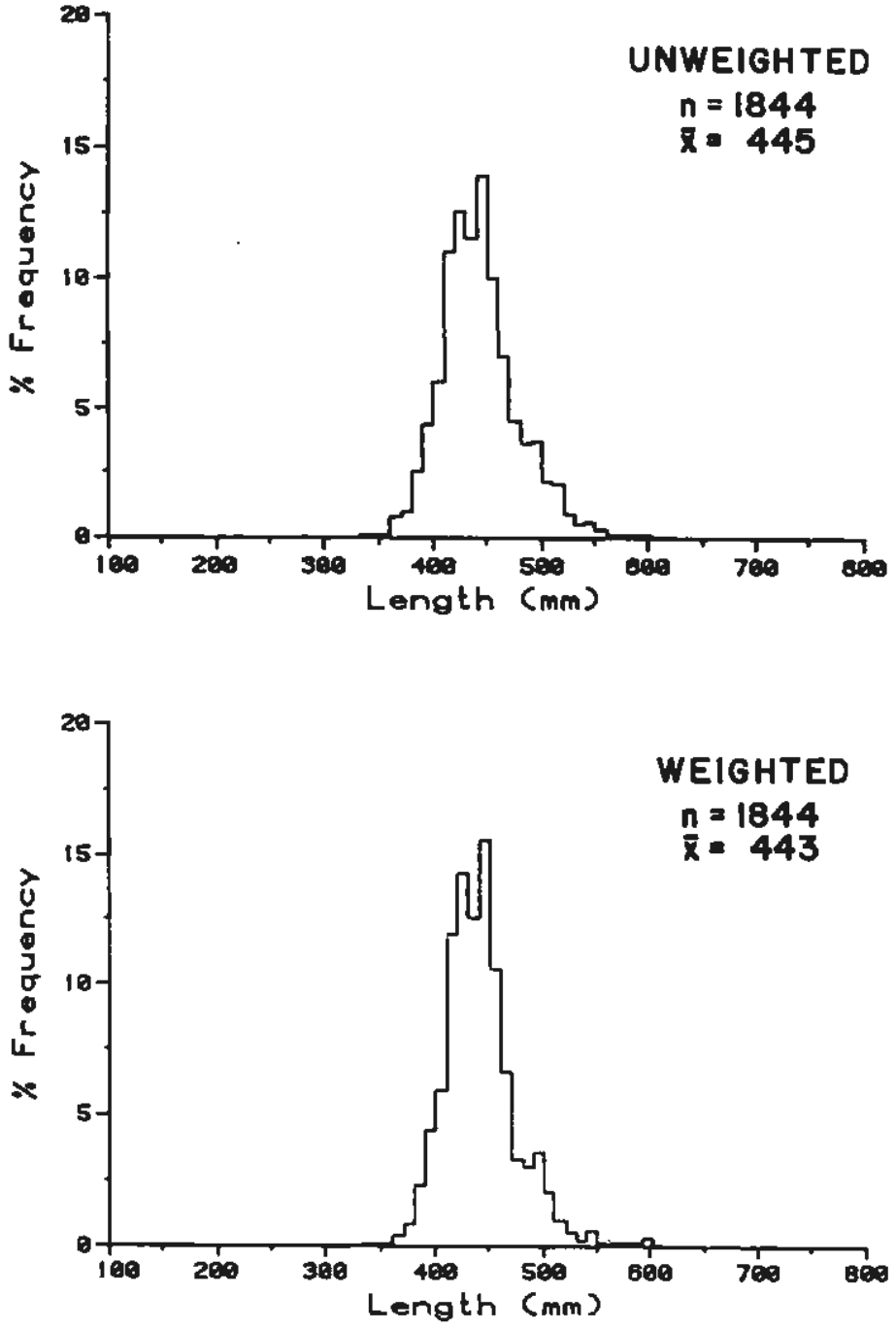




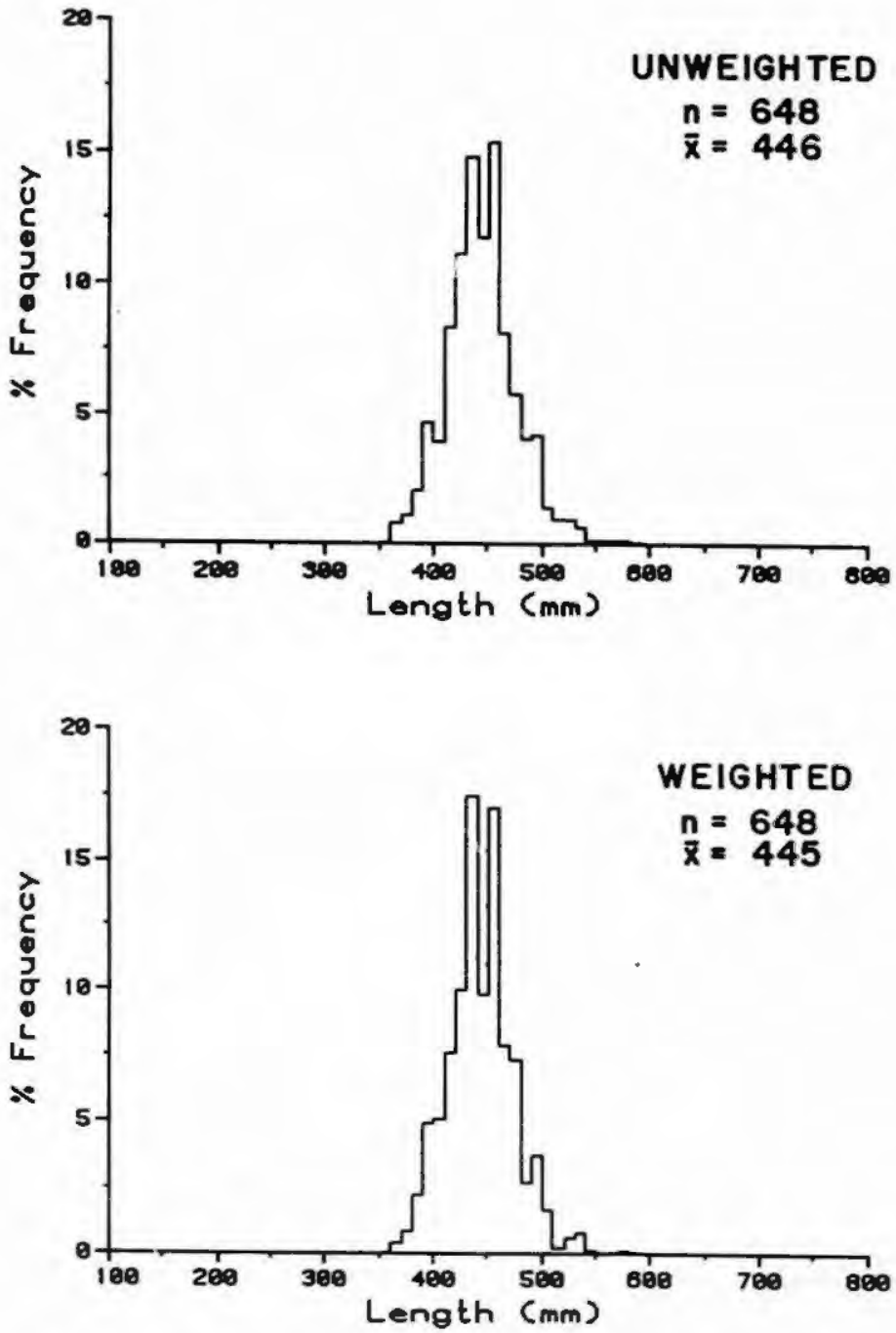
Appendix Figure 5-9. Sockeye salmon length frequencies at Talkeetna Station weighted and not weighted by fishwheel catch per unit of effort, 1984.



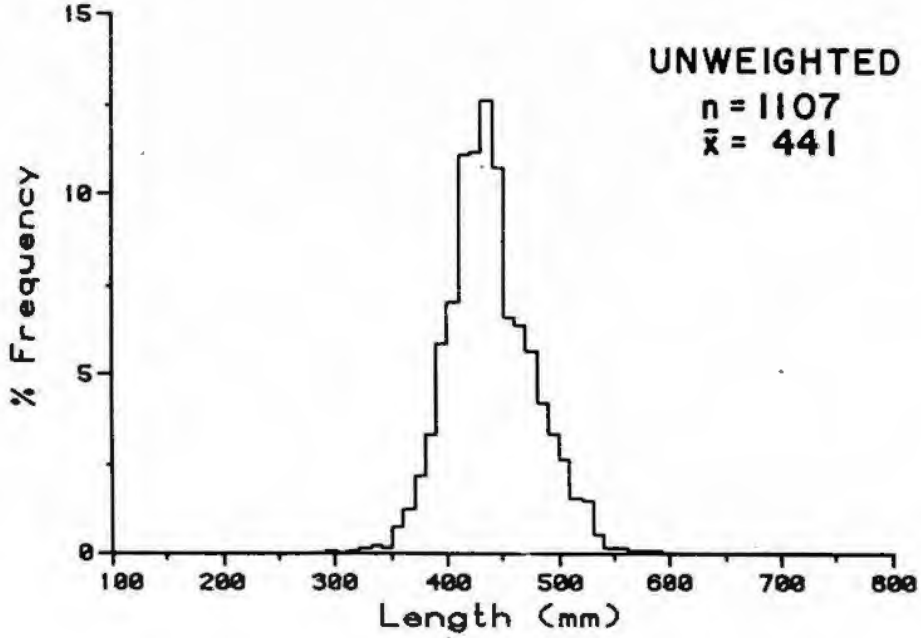
Appendix Figure 5-10. Sockeye salmon length frequencies at Curry Station weighted and not weighted by fishwheel catch per unit of effort, 1984.

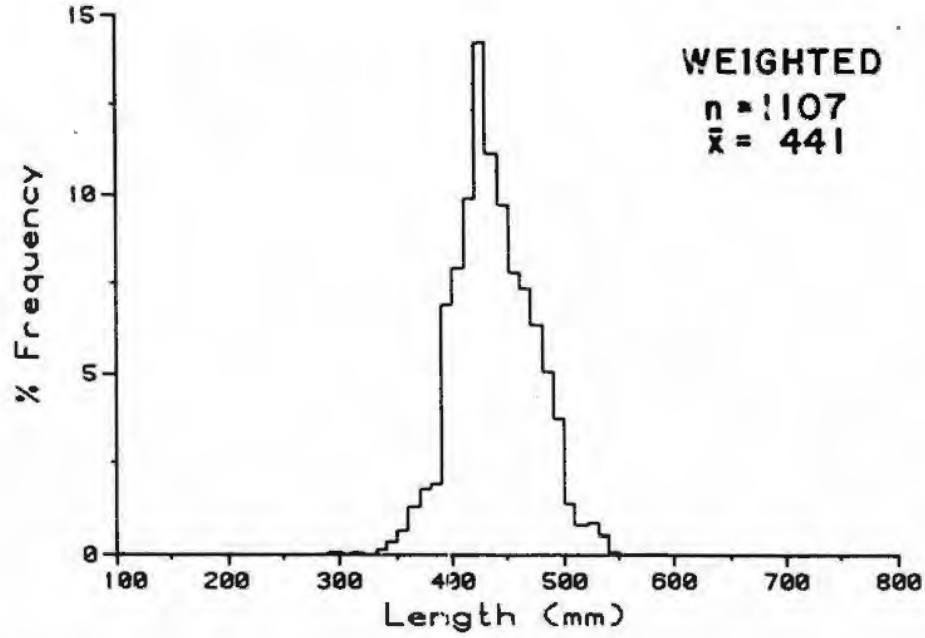


Appendix Figure 5-11. Pink salmon length frequencies at Flathorn Station weighted and not weighted by fishwheel catch per unit of effort, 1984.

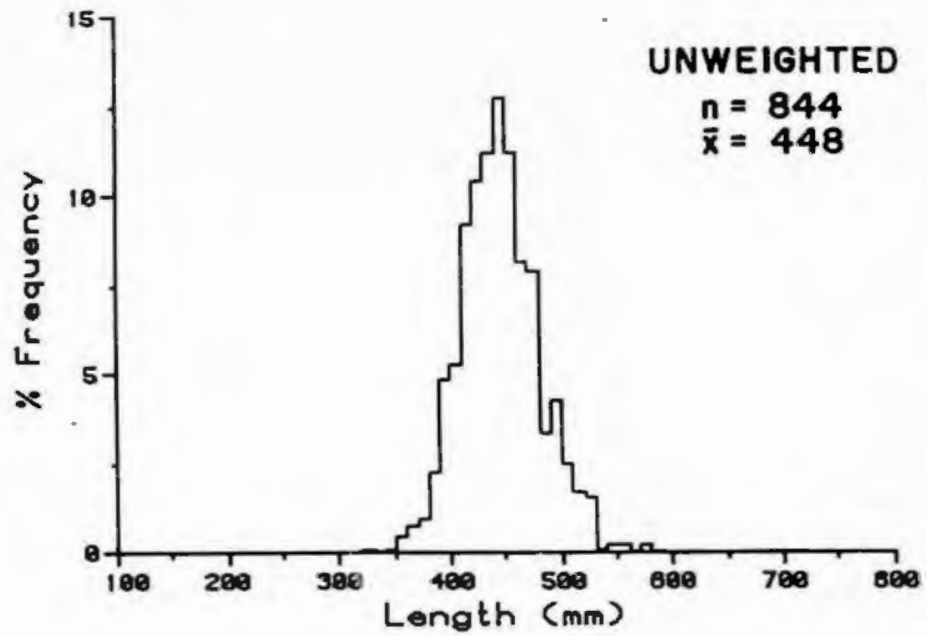


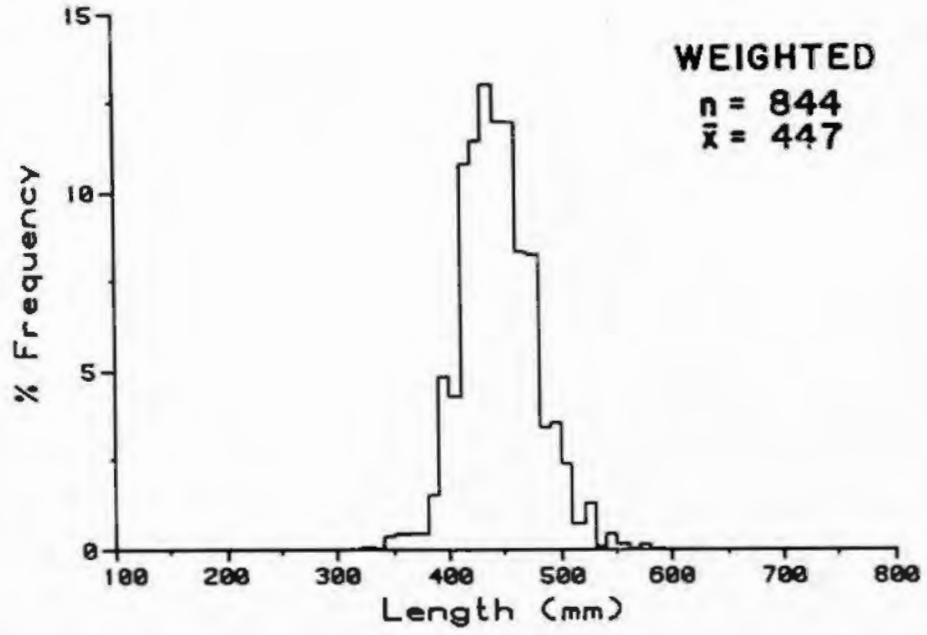
Appendix Figure 5-12. Pink salmon length frequencies at Yentna Station weighted and not weighted by fishwheel catch per unit of effort, 1984.



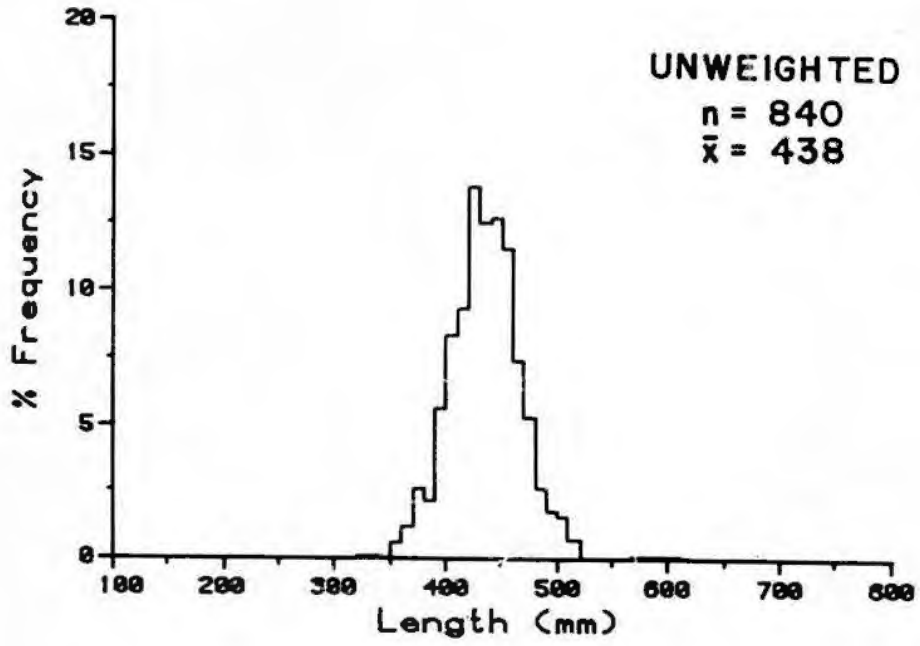


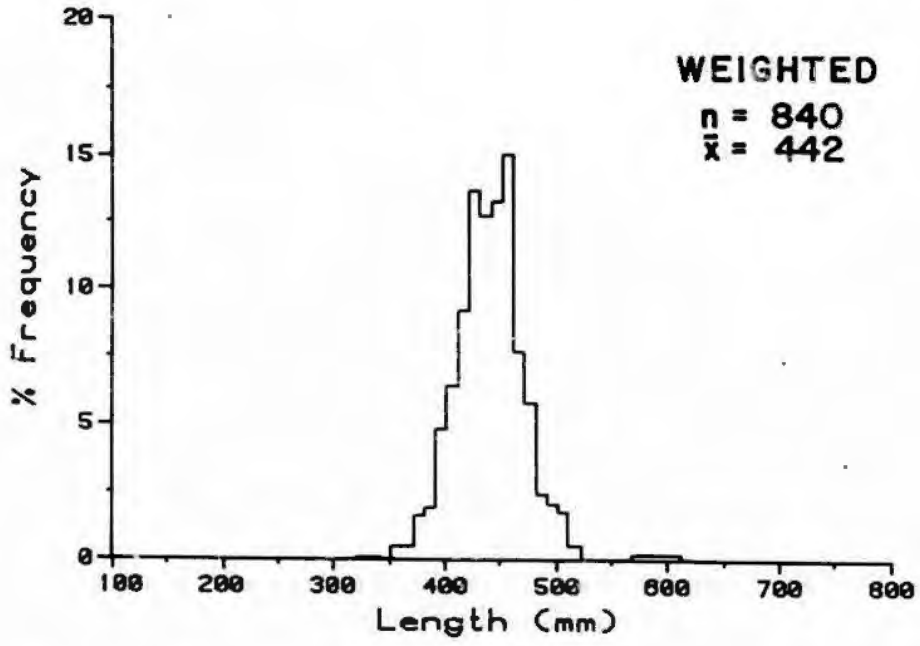
Appendix Figure 5-13. Pink salmon length frequencies at Sunshine Station weighted and not weighted by fishwheel catch per unit of effort, 1984.



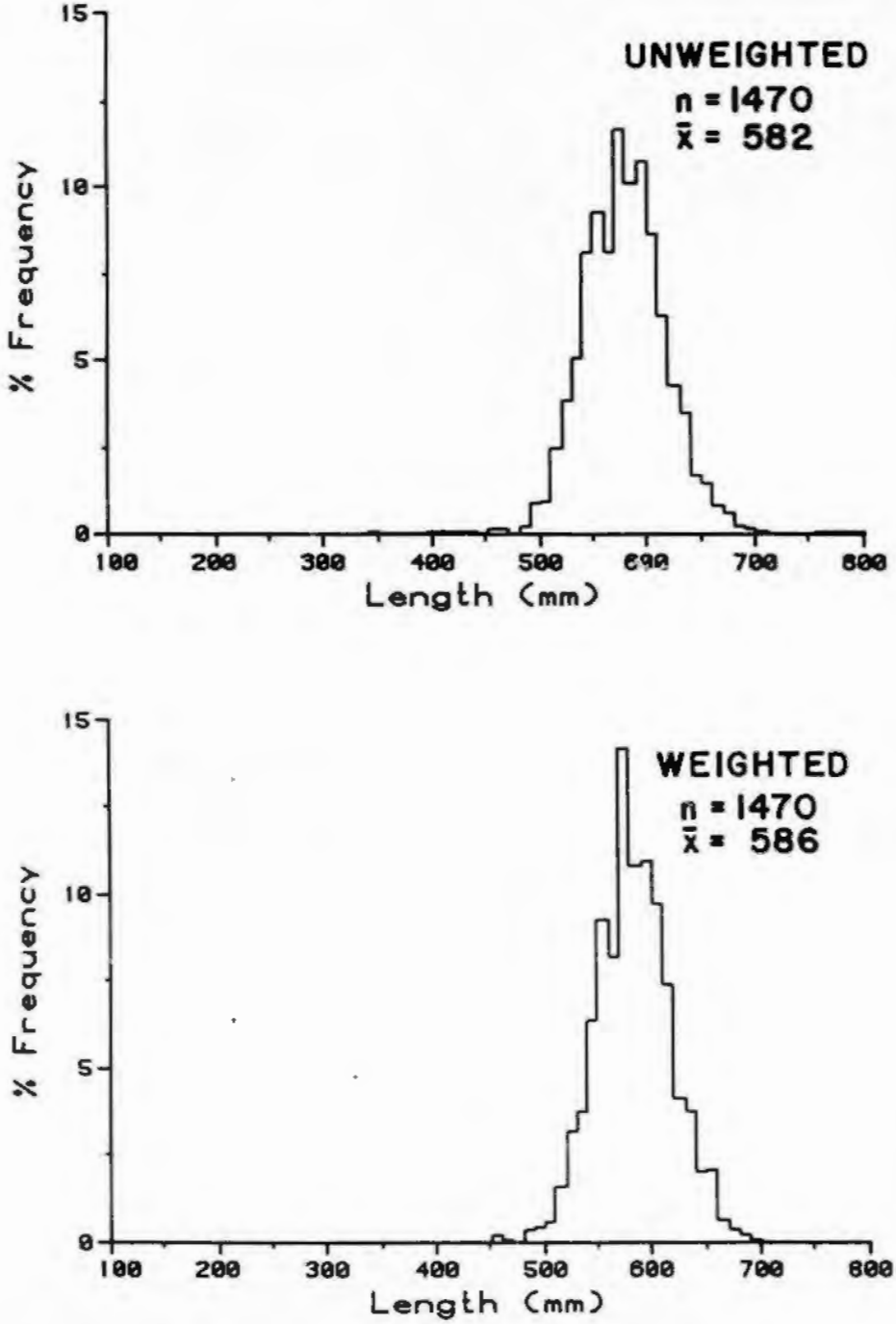


Appendix Figure 5-14. Pink salmon length frequencies at Talkeetna Station weighted and not weighted by fishwheel catch per unit of effort, 1984.

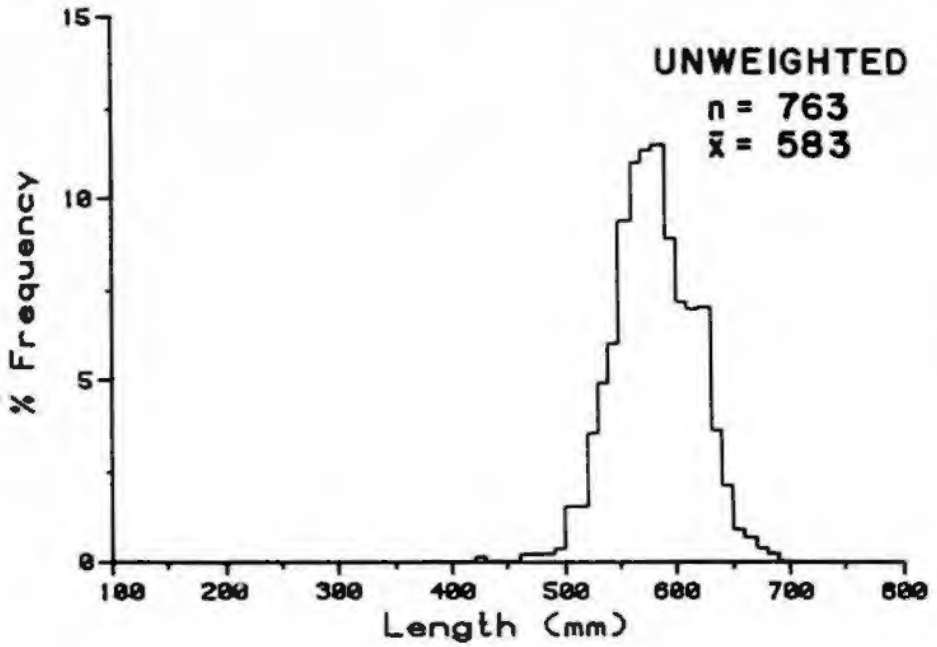


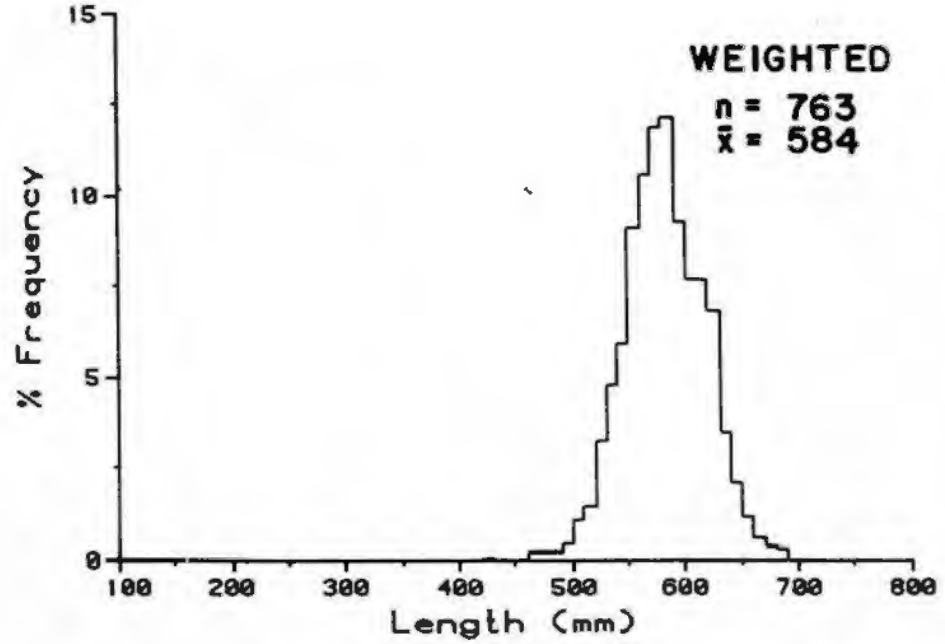


Appendix Figure 5-15. Pink salmon length frequencies at Curry Station weighted and not weighted by fishwheel catch per unit of effort, 1984.

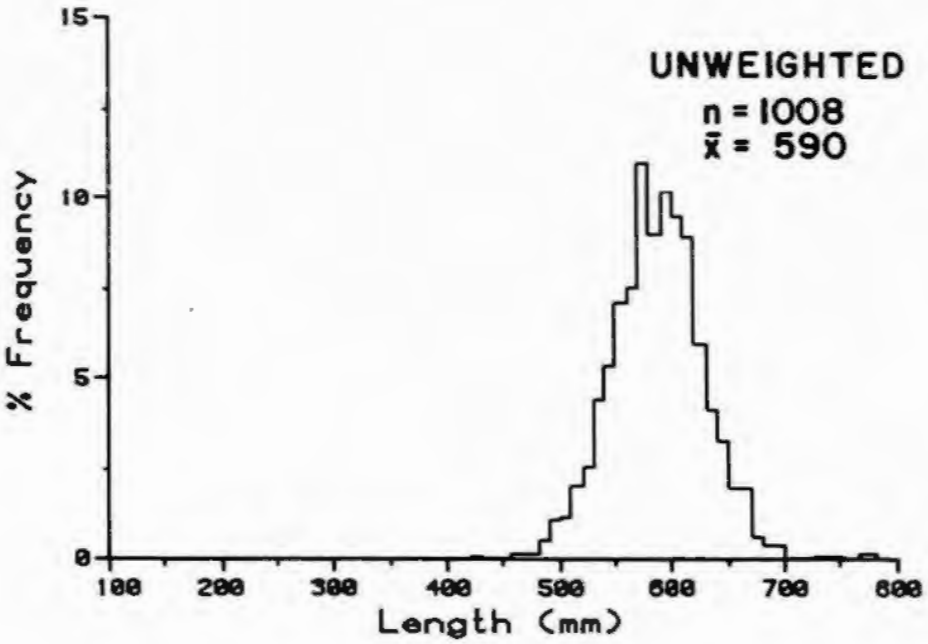


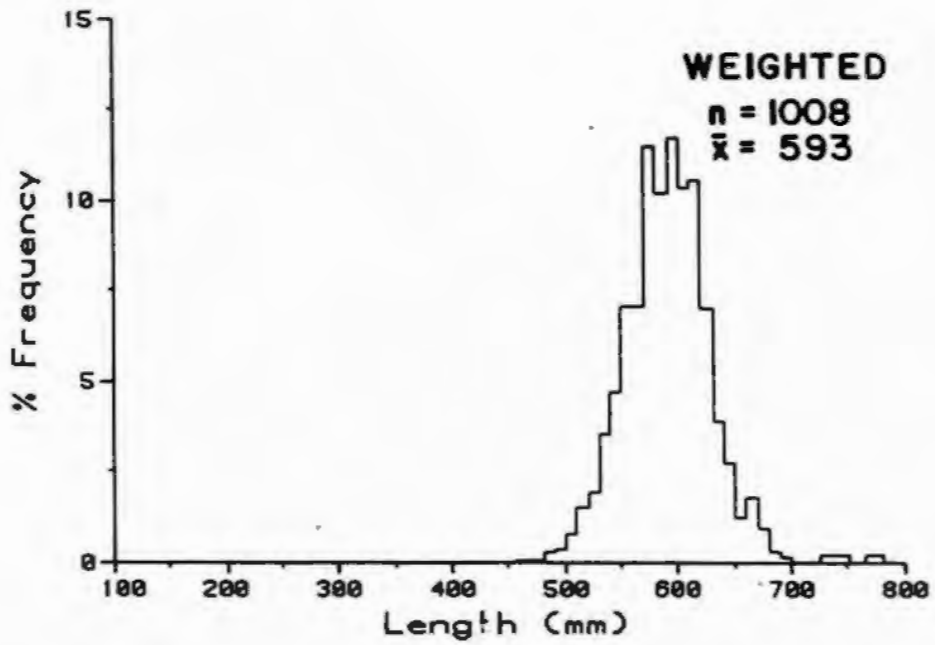
Appendix Figure 5-16. Chum salmon length frequencies at Flathorn Station weighted and not weighted by fishwheel catch per unit of effort, 1984.



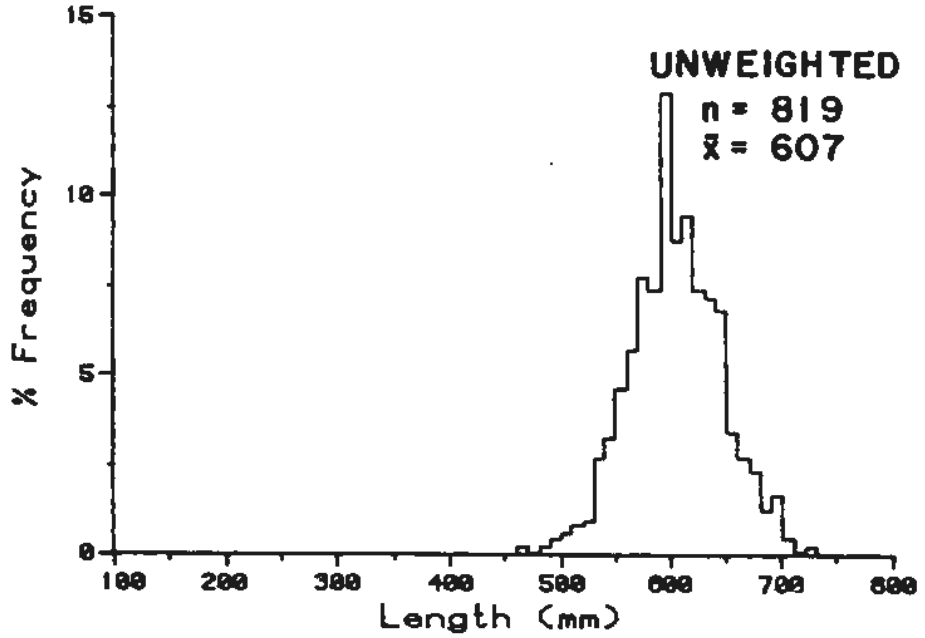


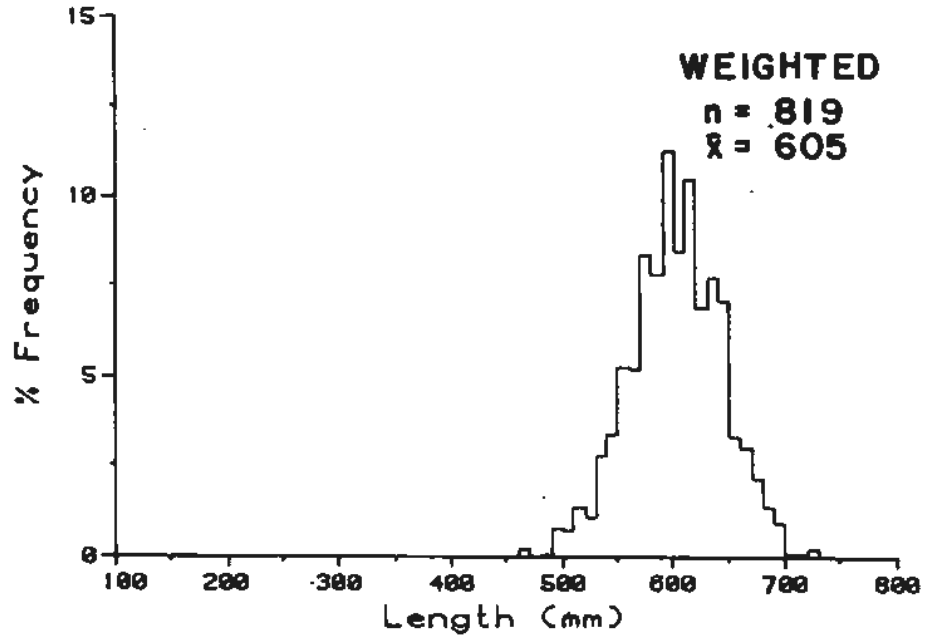
Appendix Figure 5-17. Chum salmon length frequencies at Yentna Station weighted and not weighted by fishwheel catch per unit of effort, 1984.



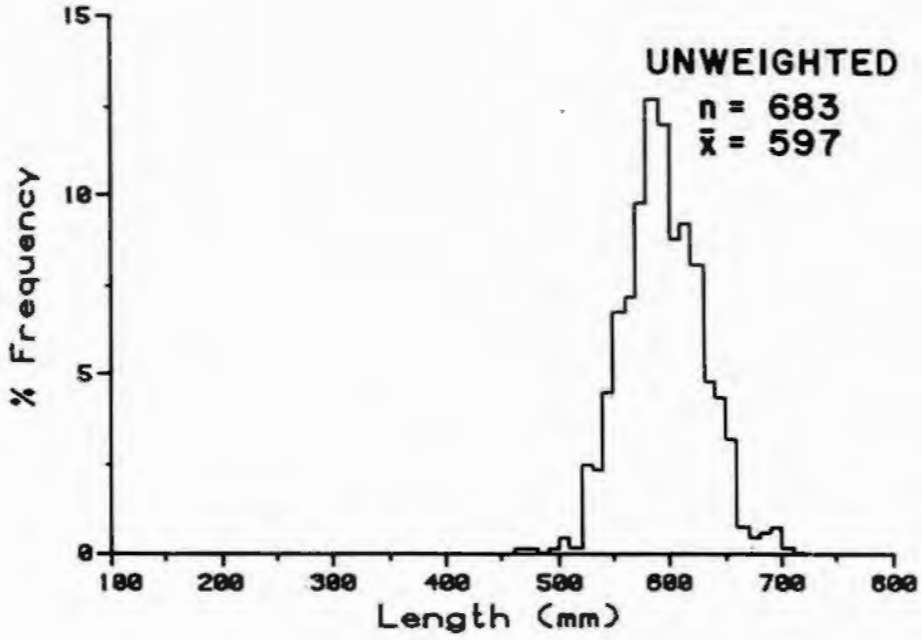


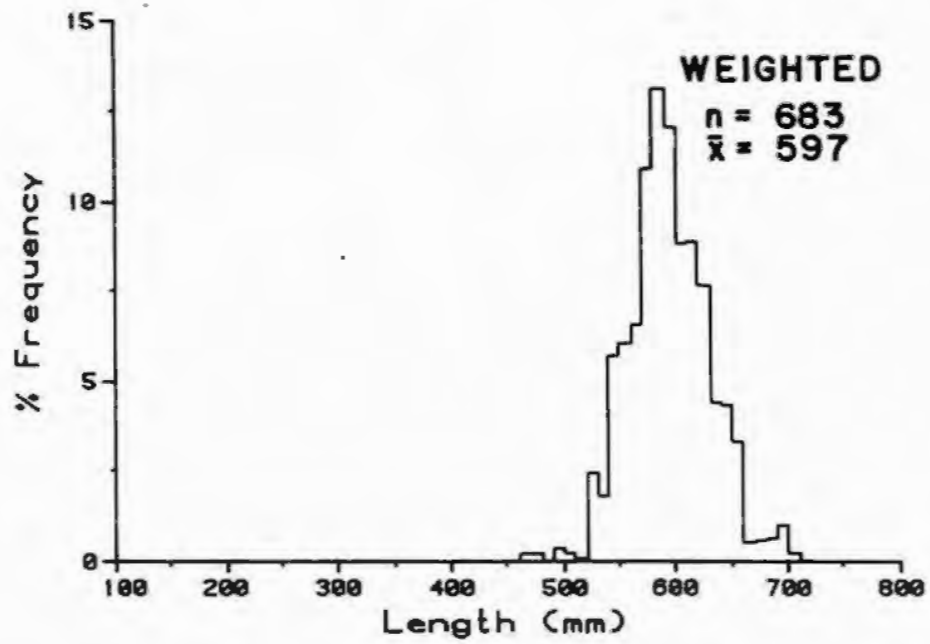
Appendix Figure 5-18. Chum salmon length frequencies at Sunshine Station weighted and not weighted by fishwheel catch per unit of effort, 1984.



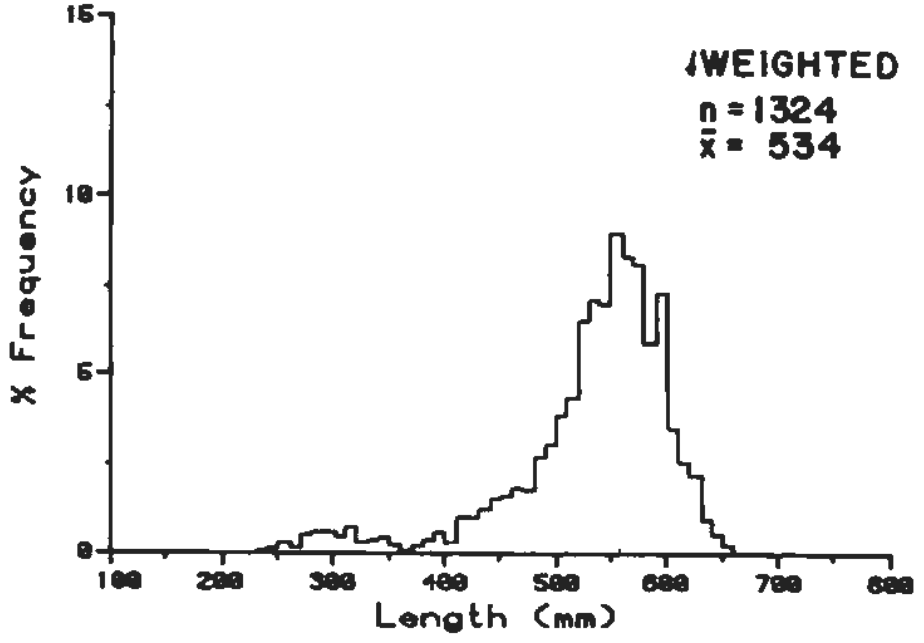


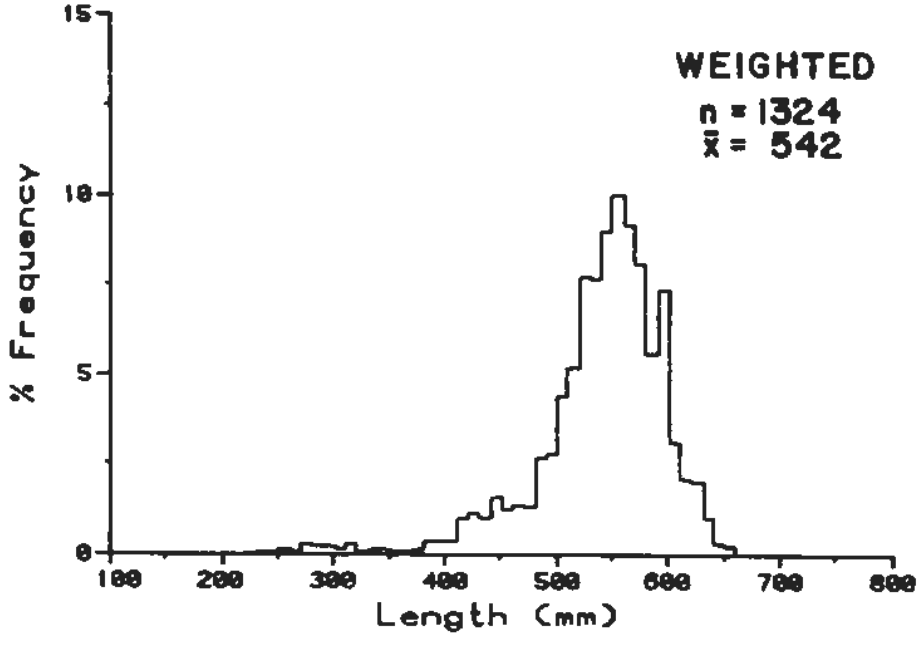
Appendix Figure 5-19. Chum salmon length frequencies at Talkeetna Station weighted and not weighted by fishwheel catch per unit of effort, 1984.



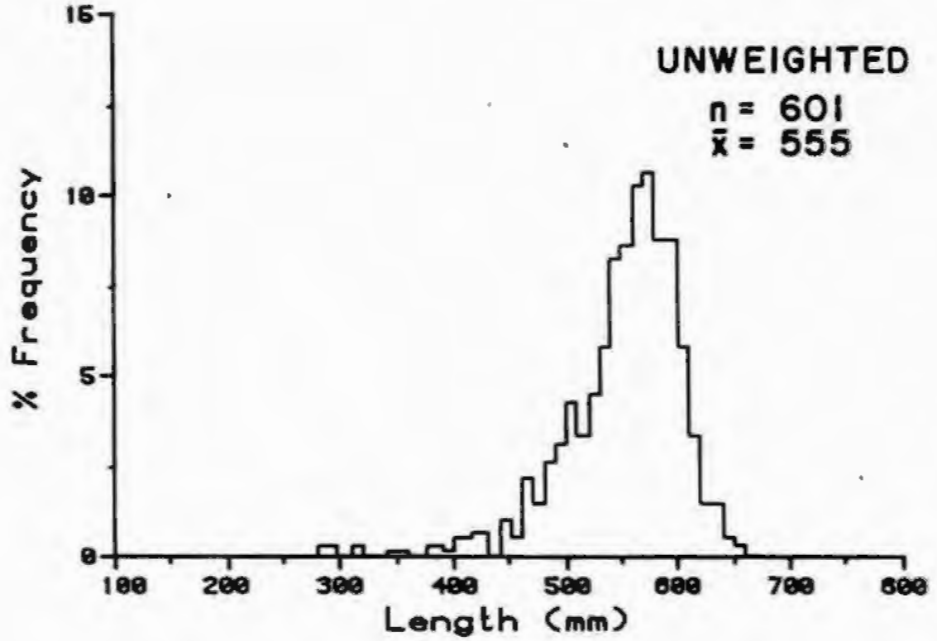


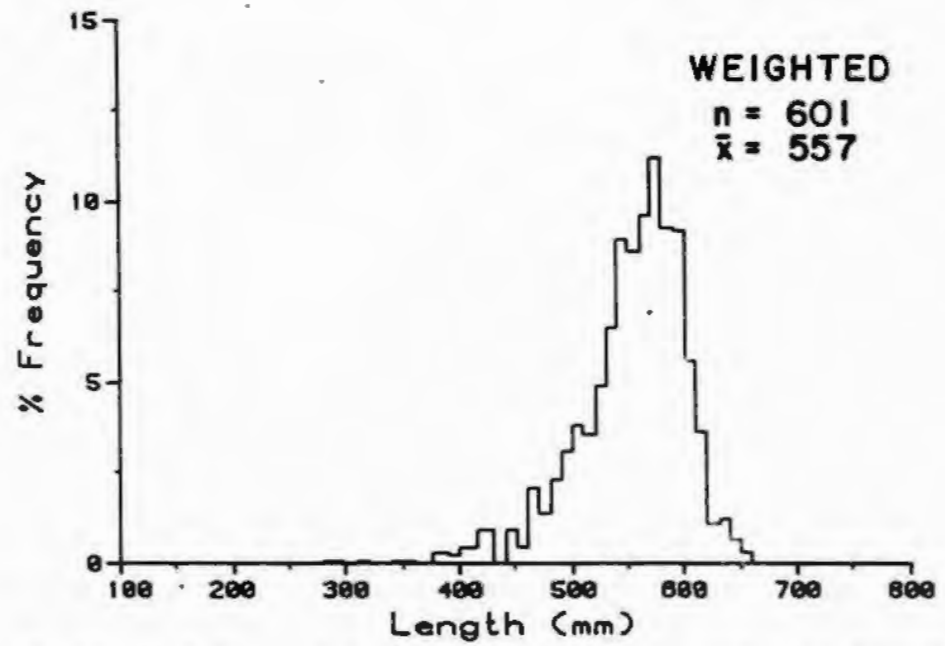
Appendix Figure 5-20. Chum salmon length frequencies at Curry Station weighted and not weighted by fishwheel catch per unit of effort, 1984.



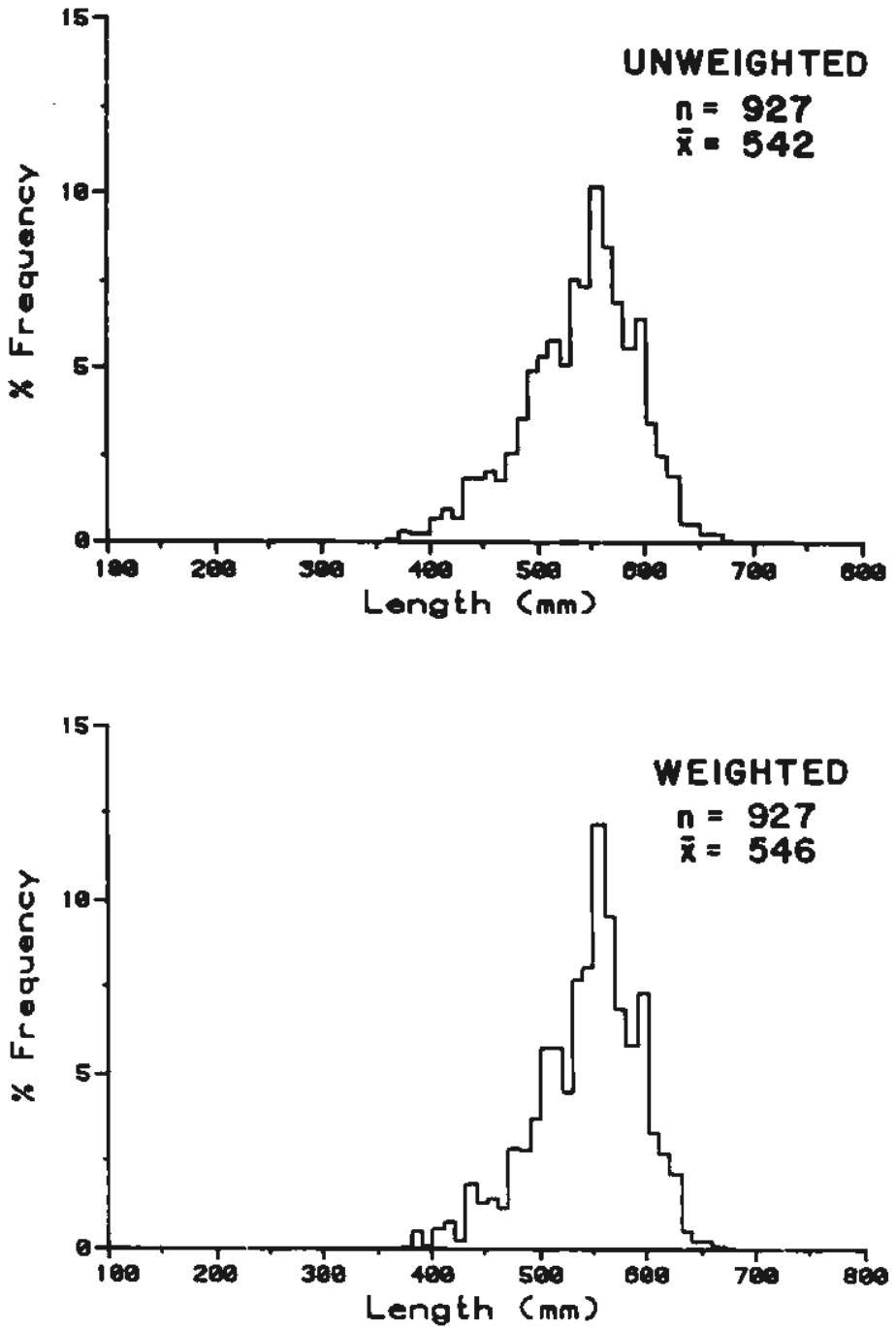


Appendix Figure 5-21. Coho salmon length frequencies at Flathorn Station weighted and not weighted by fishwheel catch per unit of effort, 1984.

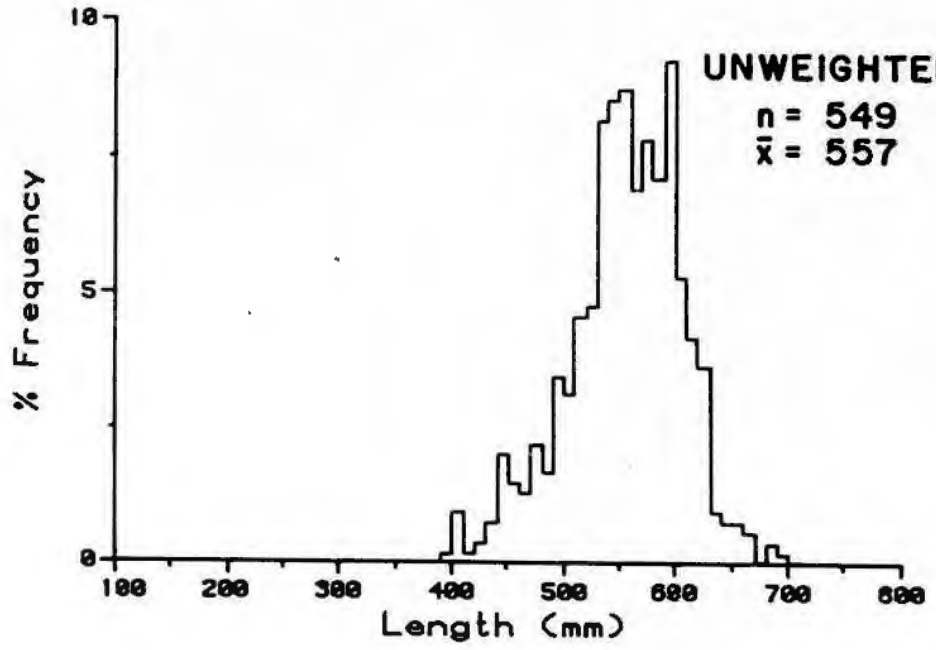


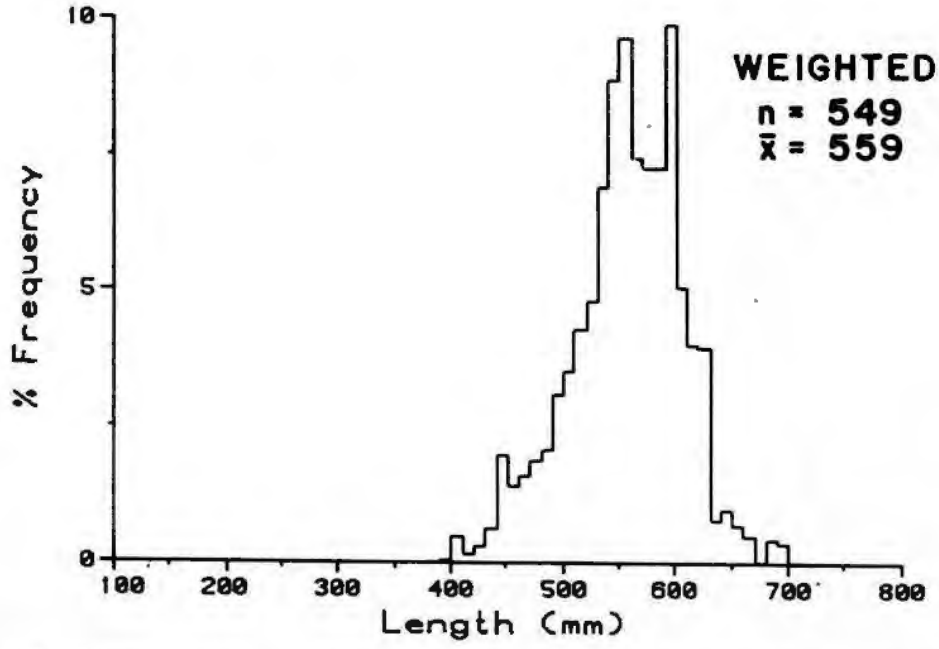


Appendix Figure 5-22. Coho salmon length frequencies at Yentna Station weighted and not weighted by fishwheel catch per unit of effort, 1984.

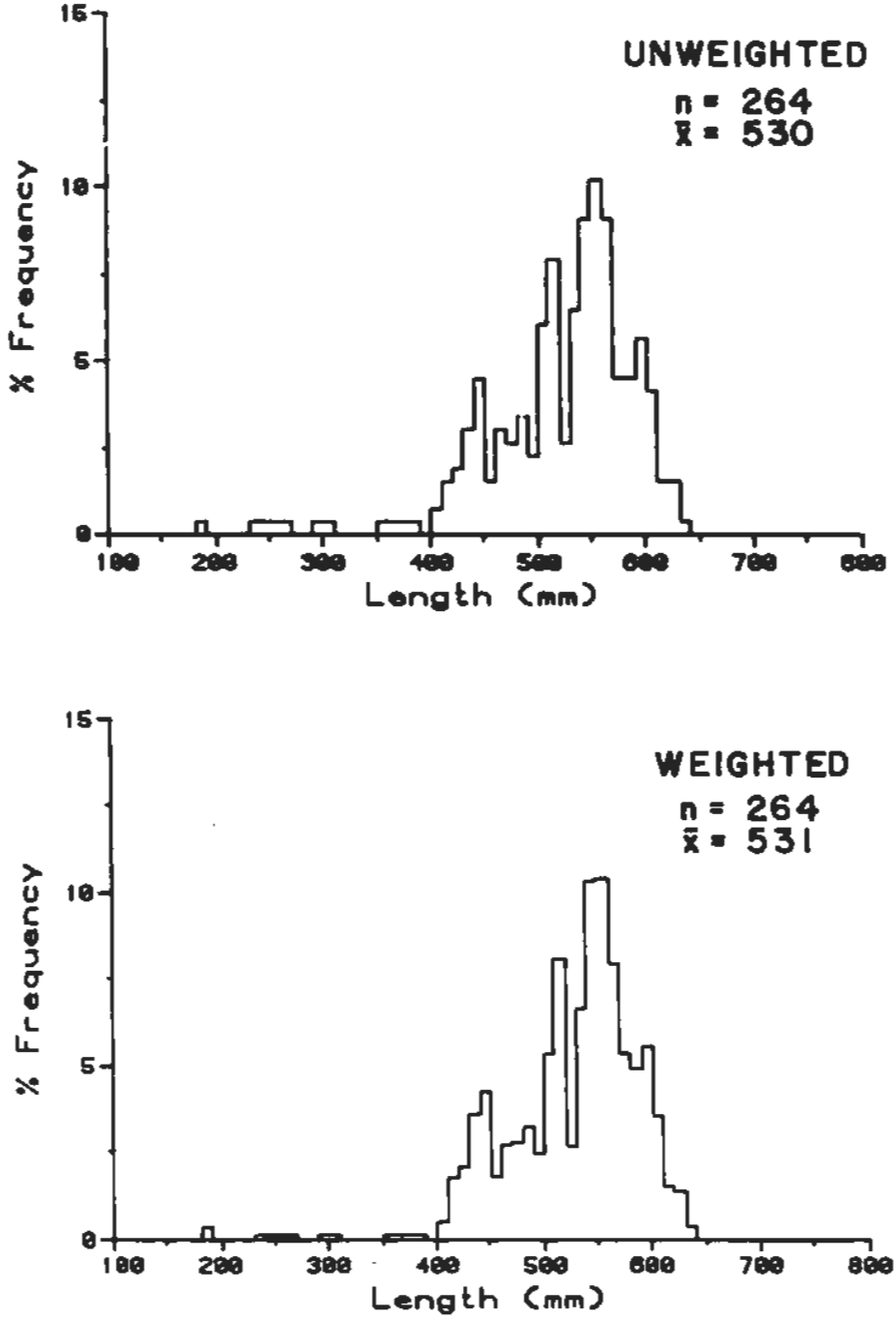


Appendix Figure 5-23. Coho salmon length frequencies at Sunshine Station weighted and not weighted by fishwheel catch per unit of effort, 1984.

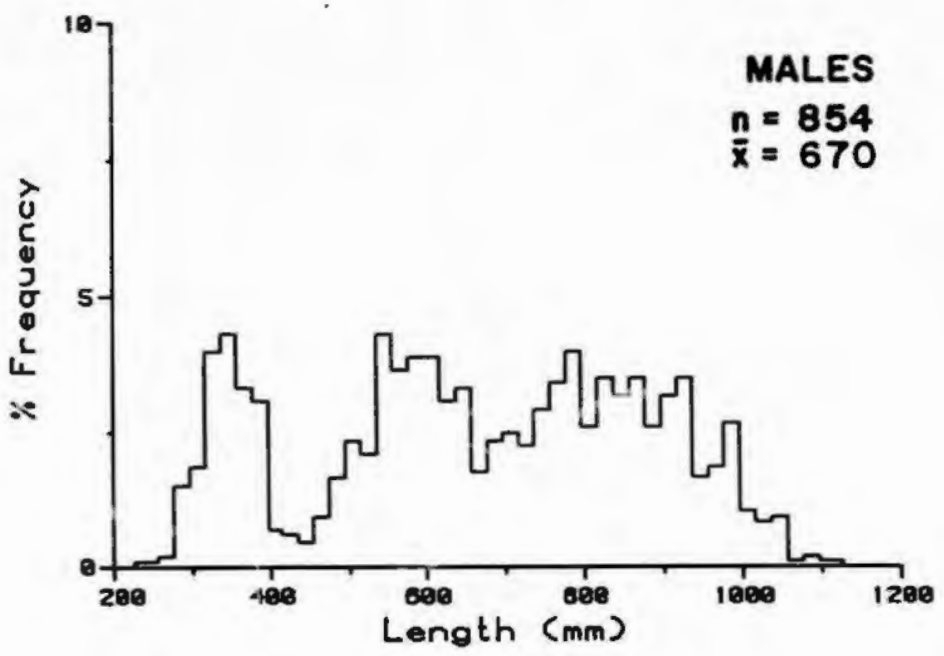


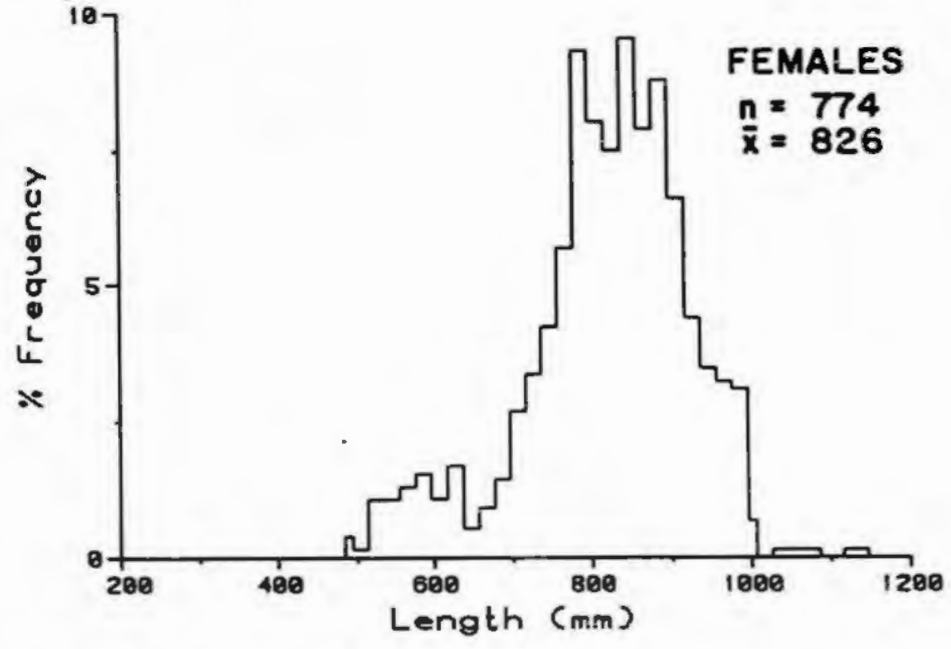


Appendix Figure 5-24. Coho salmon length frequencies at Talkeetna Station weighted and not weighted by fishwheel catch per unit of effort, 1984.

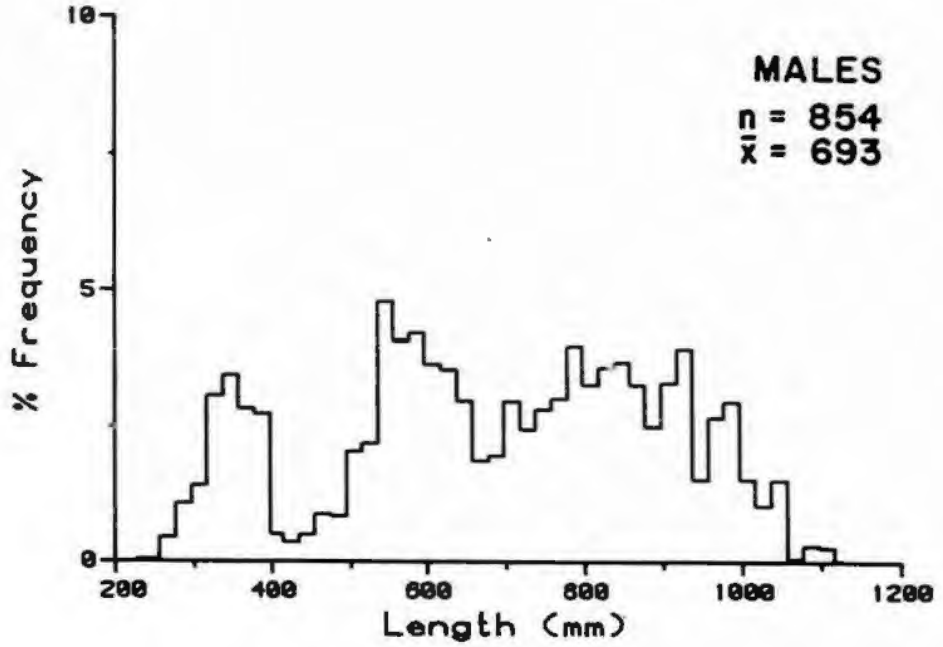


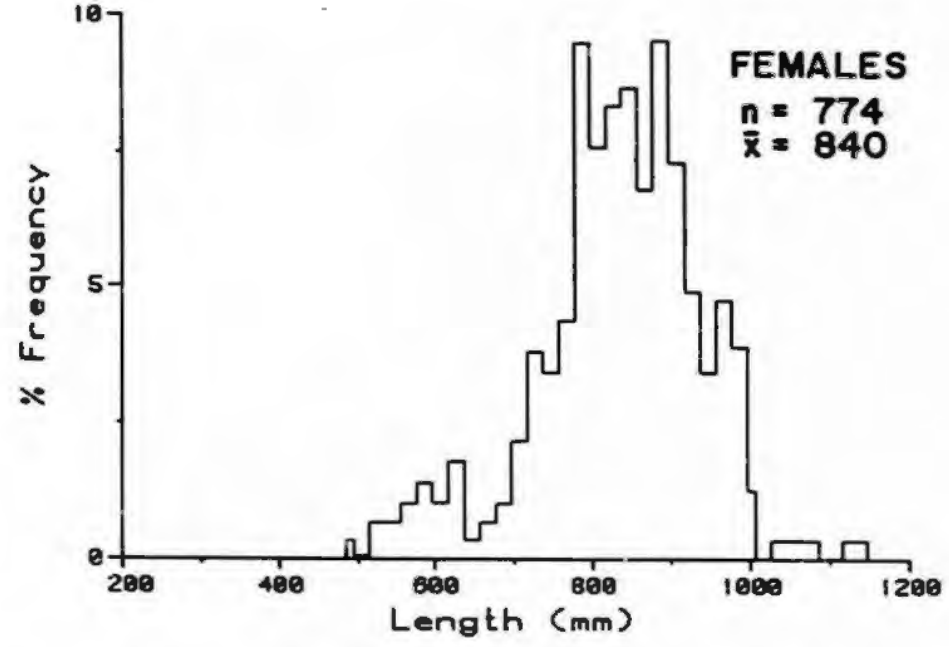
Appendix Figure 5-25. Coho salmon length frequencies at Curry Station weighted and not weighted by fishwheel catch per unit of effort, 1984.



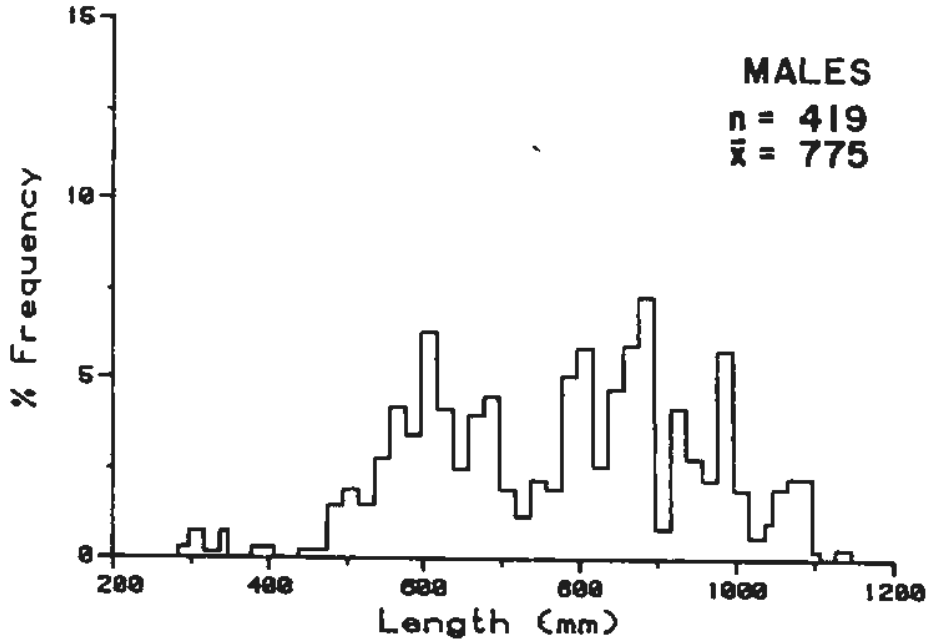


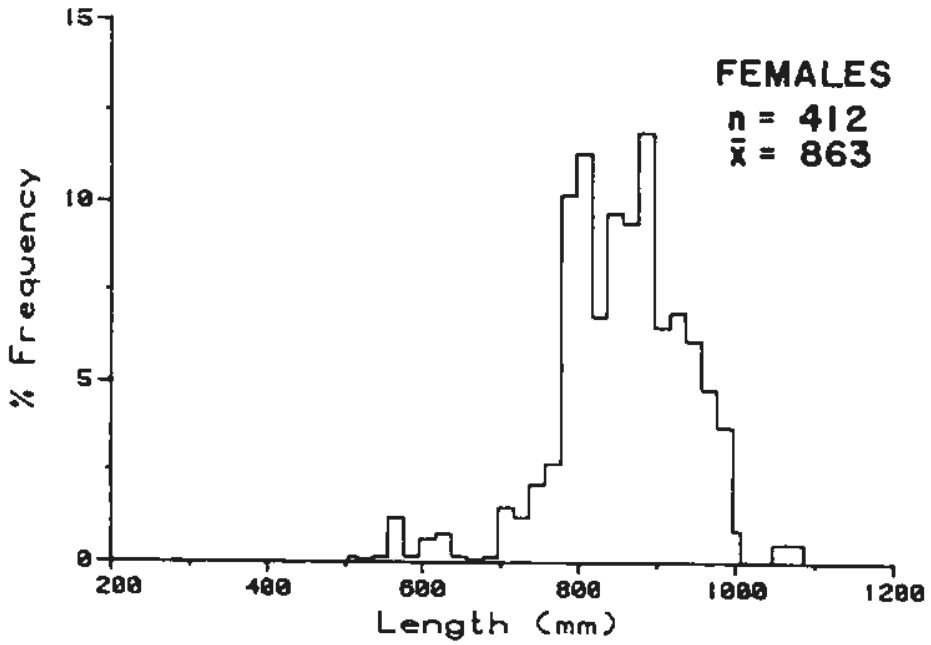
Appendix Figure 5-26. Chinook salmon male and female length frequencies at Sunshine Station weighted by fishwheel catch per unit of effort, 1984.



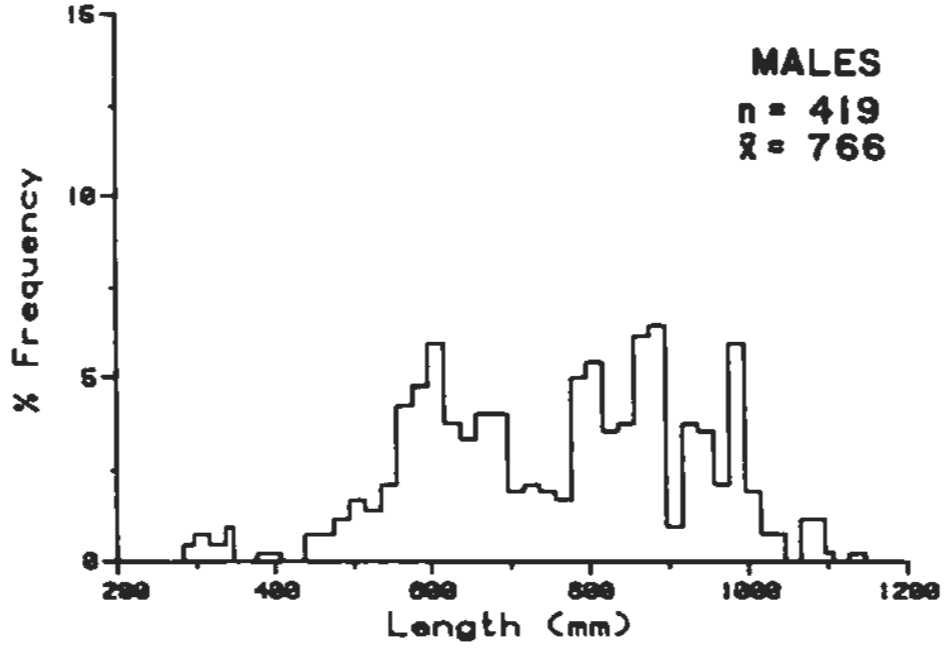


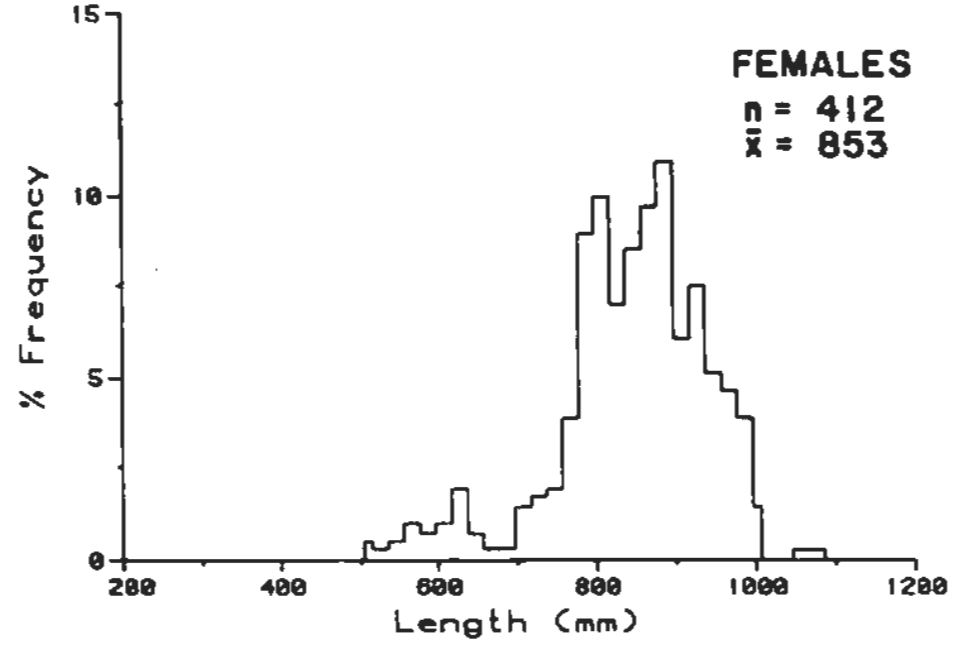
Appendix Figure 5-27. Chinook salmon male and female length frequencies at Sunshine Station not weighted by fishwheel catch per unit of effort, 1984.



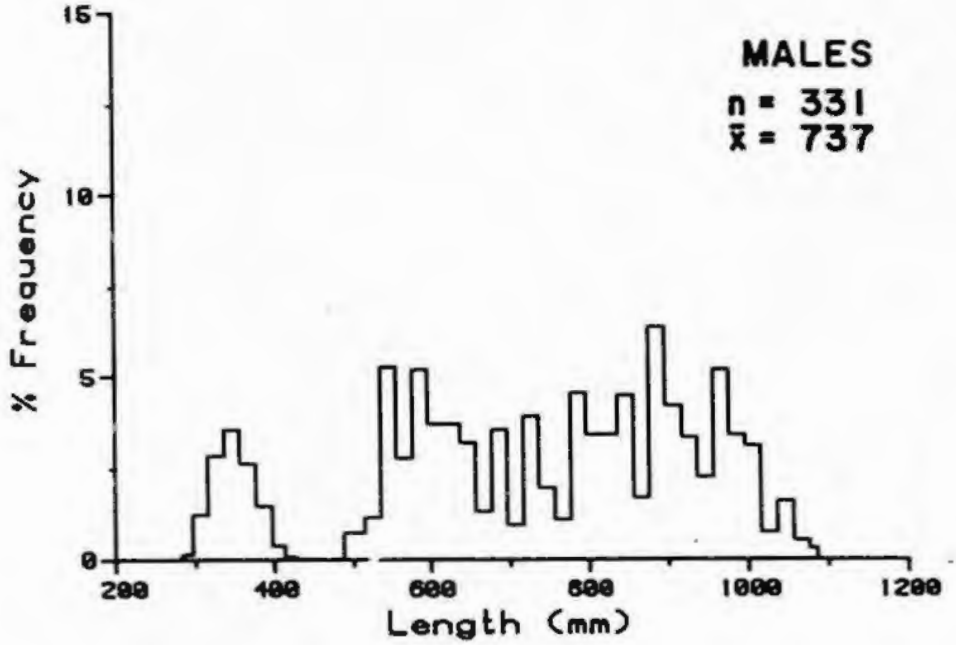


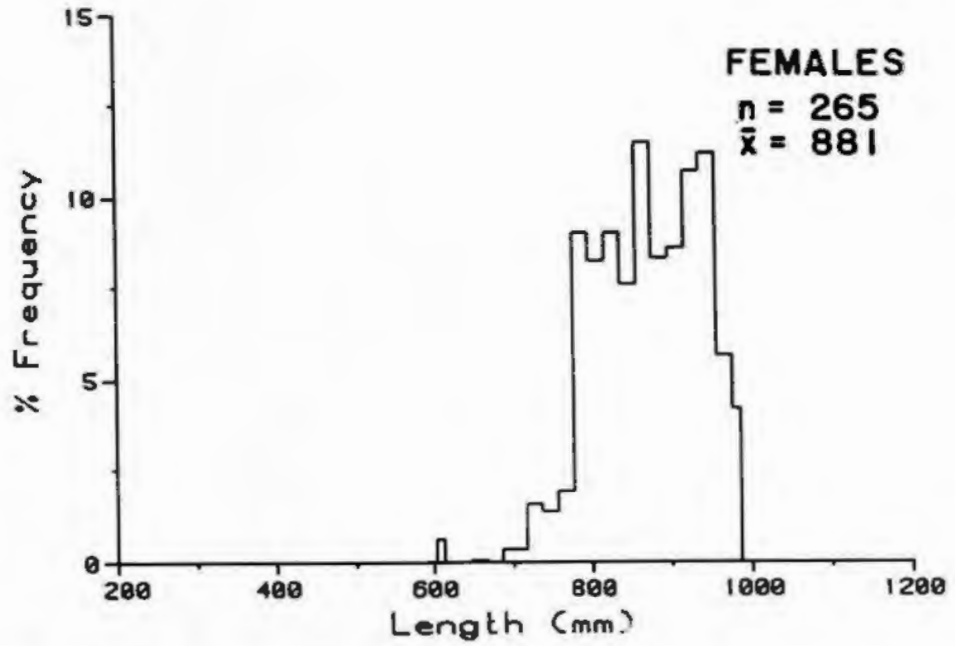
Appendix Figure 5-28. Chinook salmon male and female length frequencies at Talkeetna Station weighted by fishwheel catch per unit of effort, 1984.



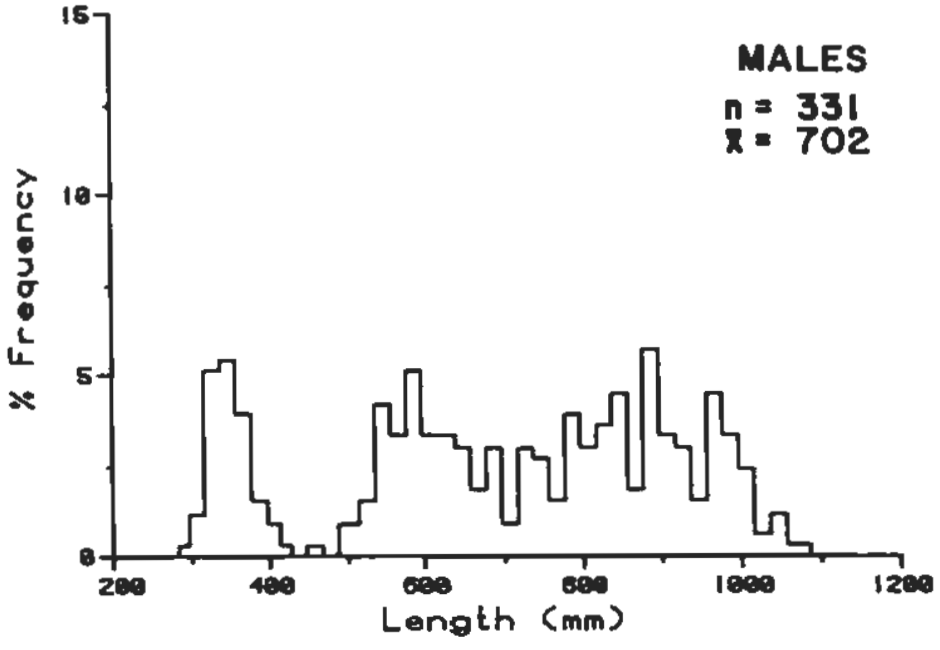


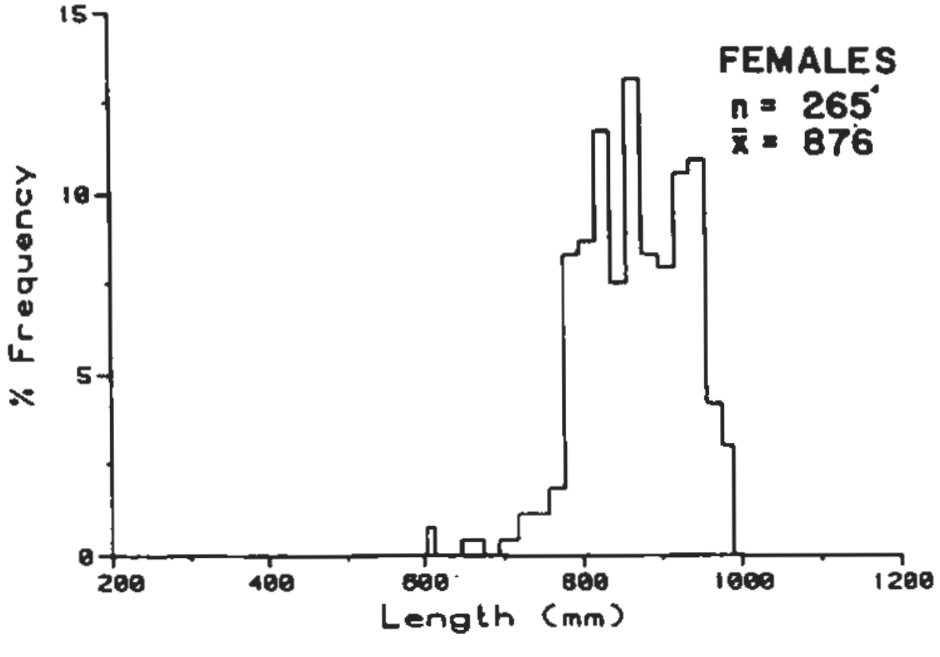
Appendix Figure 5-29. Chinook salmon male and female length frequencies a Talkeetna Station not weighted by fishwheel catch pe unit of effort, 1984.



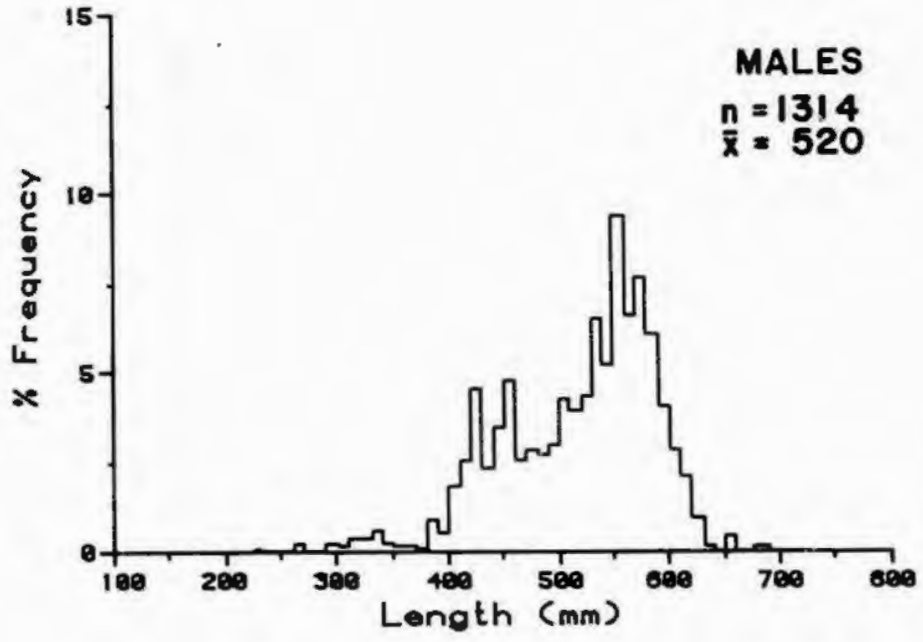


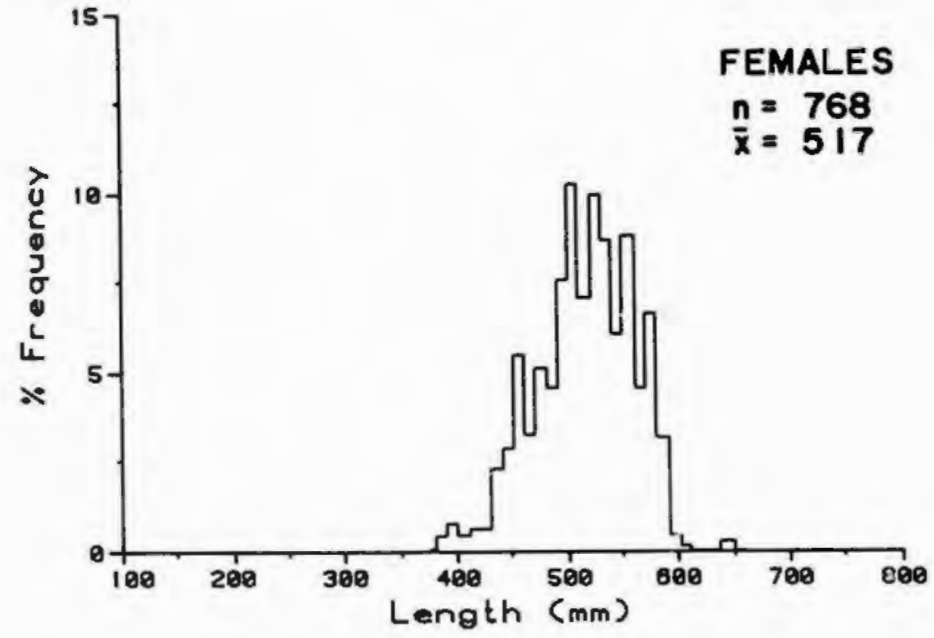
Appendix Figure 5-30. Chinook salmon male and female length frequencies at Curry Station weighted by fishwheel catch per unit of effort, 1984.



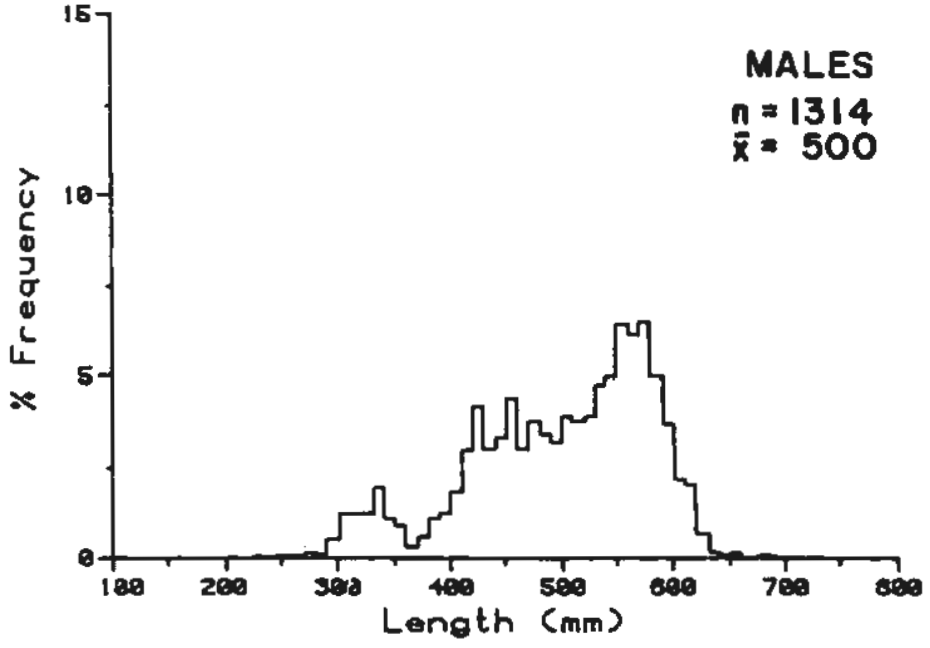


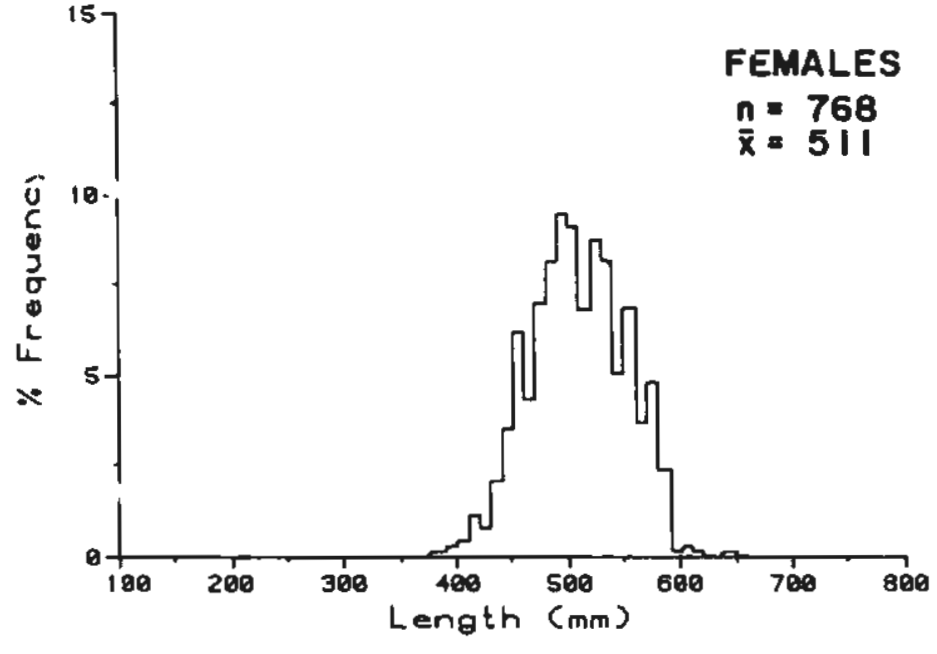
Appendix Figure 5-31. Chinook salmon male and female length frequencies at Curry Station not weighted by fishwheel catch per unit of effort, 1984.



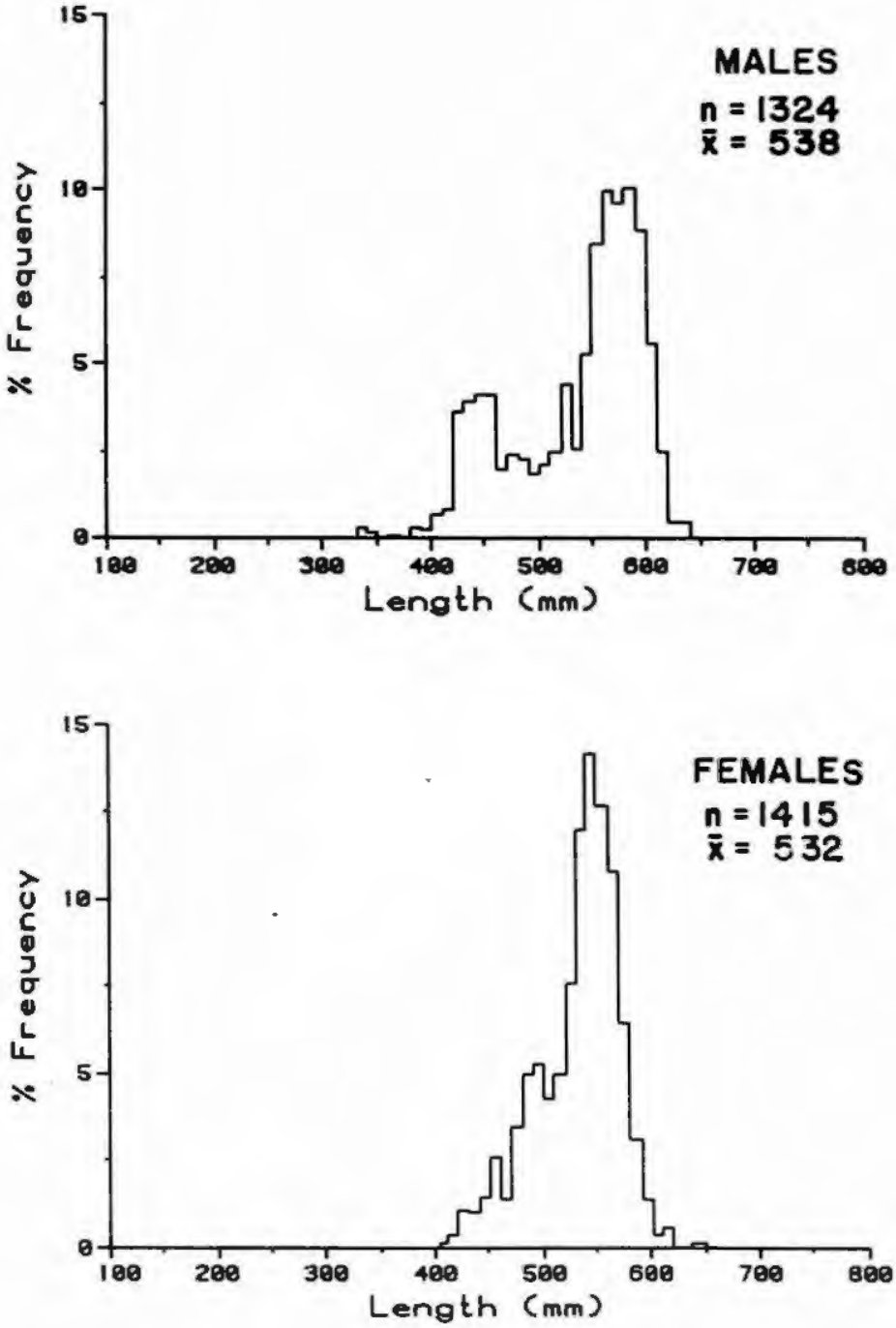


Appendix Figure 5-32. Sockeye salmon male and female length frequencies a Flathorn Station weighted by fishwheel catch per uni of effort, 1984.

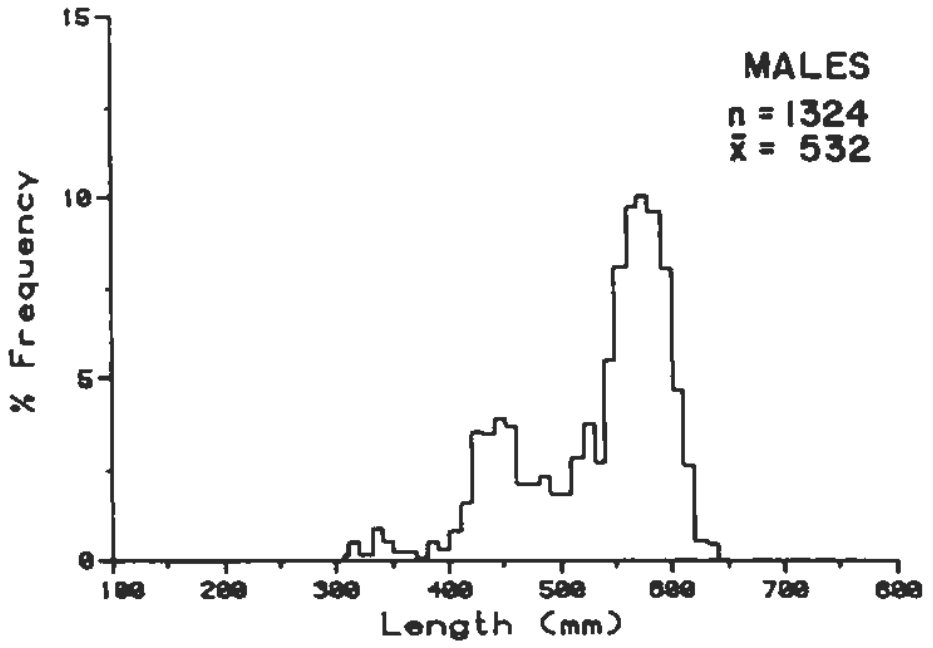


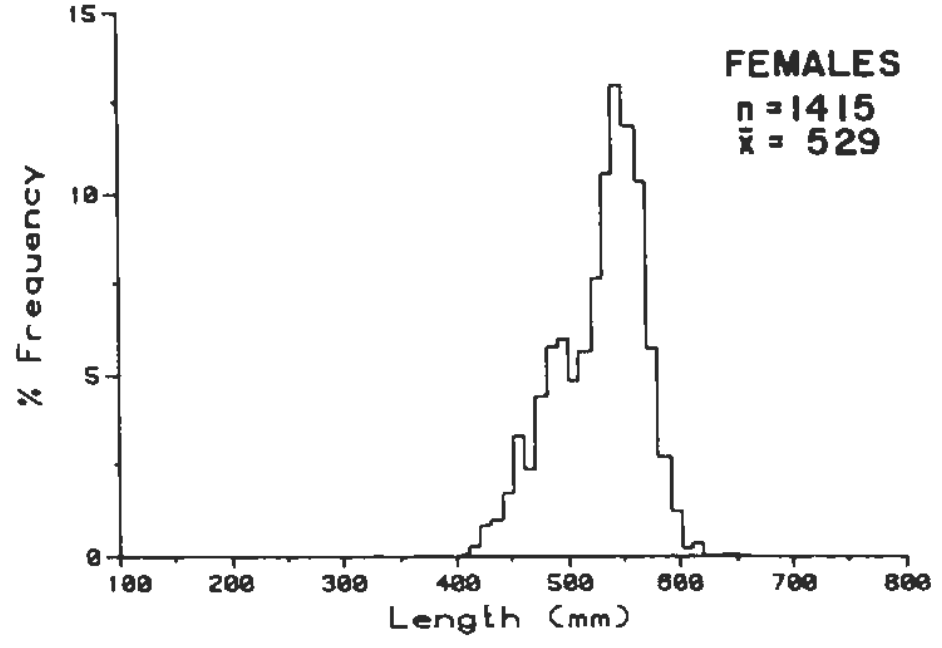


Appendix Figure 5-33. Sockeye salmon male and female length frequencies a Flathorn Station not weighted by fishwheel catch p unit of effort, 1984.

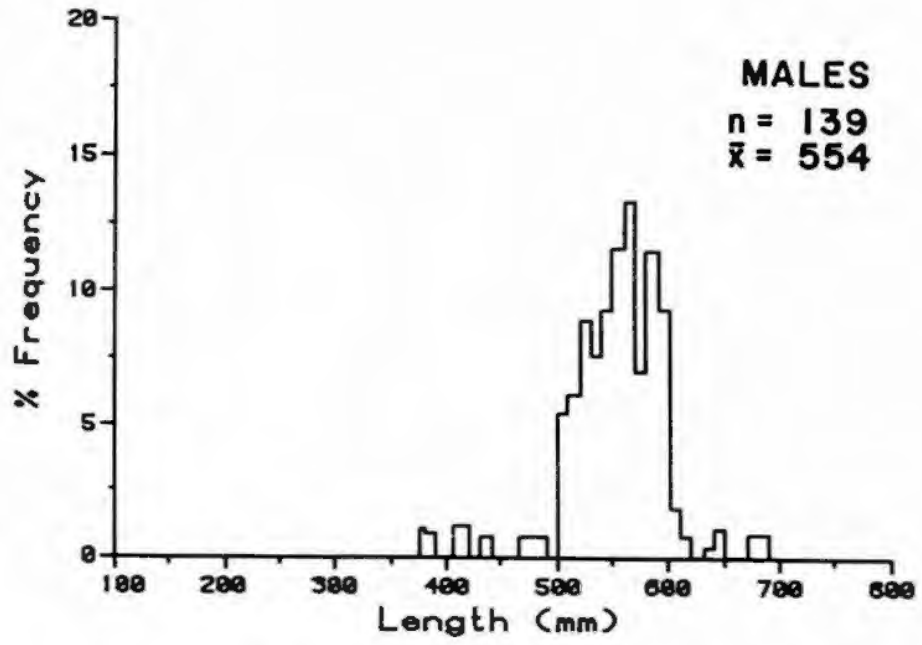


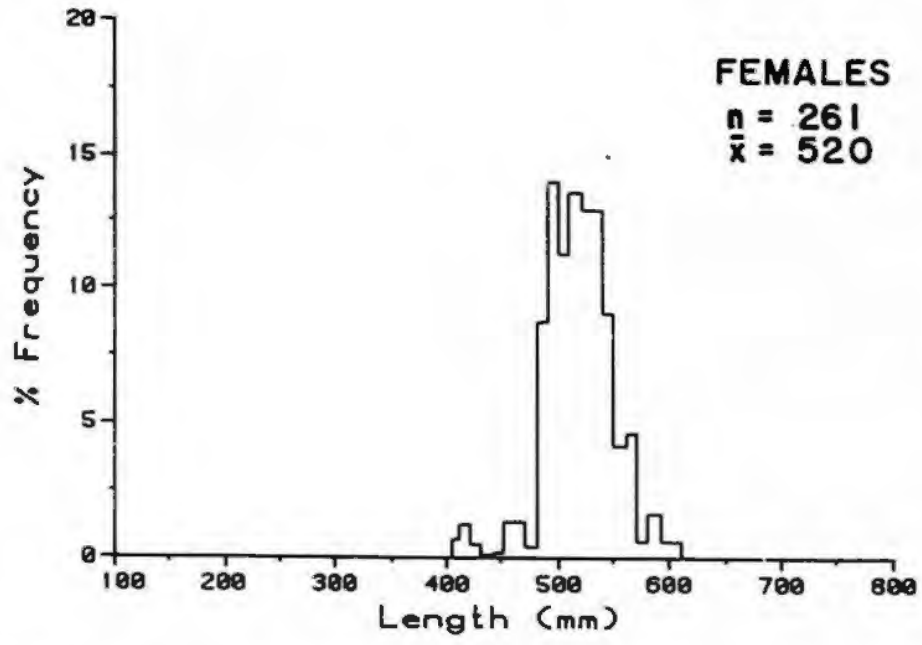
Appendix Figure 5-34. Sockeye salmon male and female length frequencies at Yentna Station weighted by fishwheel catch per unit of effort, 1984.



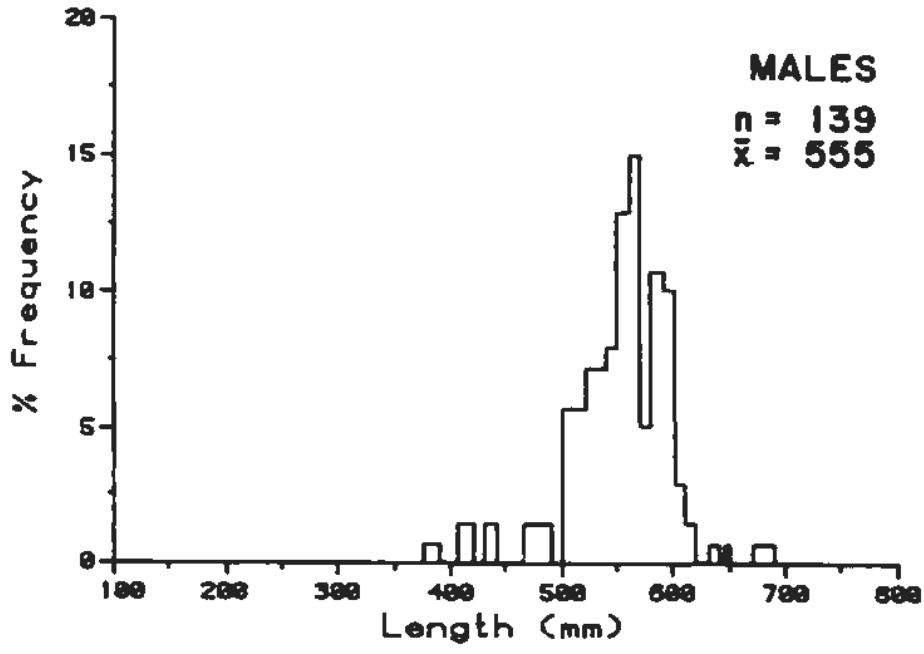


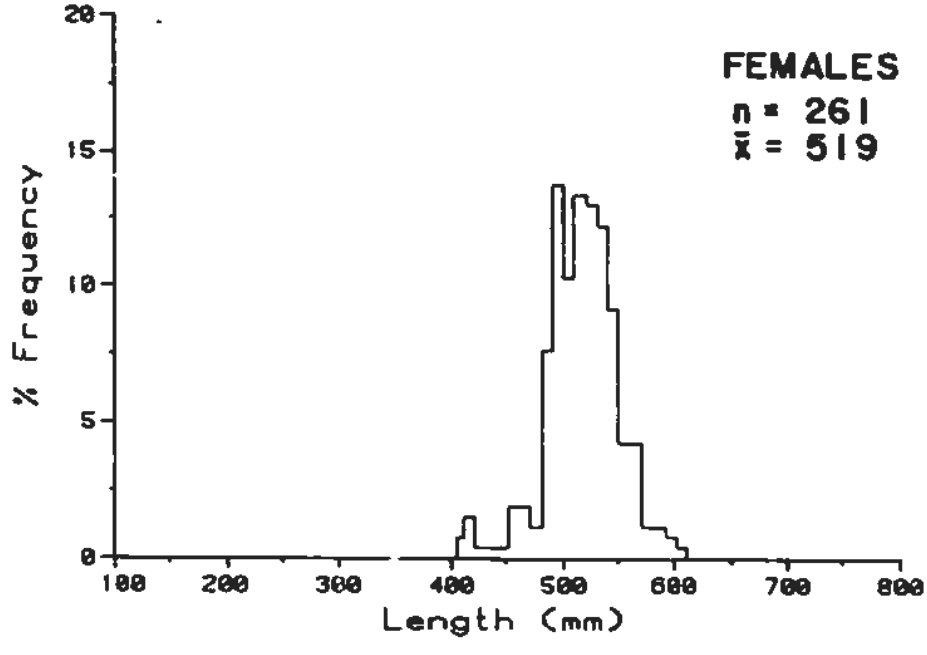
Appendix Figure 5-35. Sockeye salmon male and female length frequencies at Yentna Station not weighted by fishwheel catch per unit of effort, 1984.



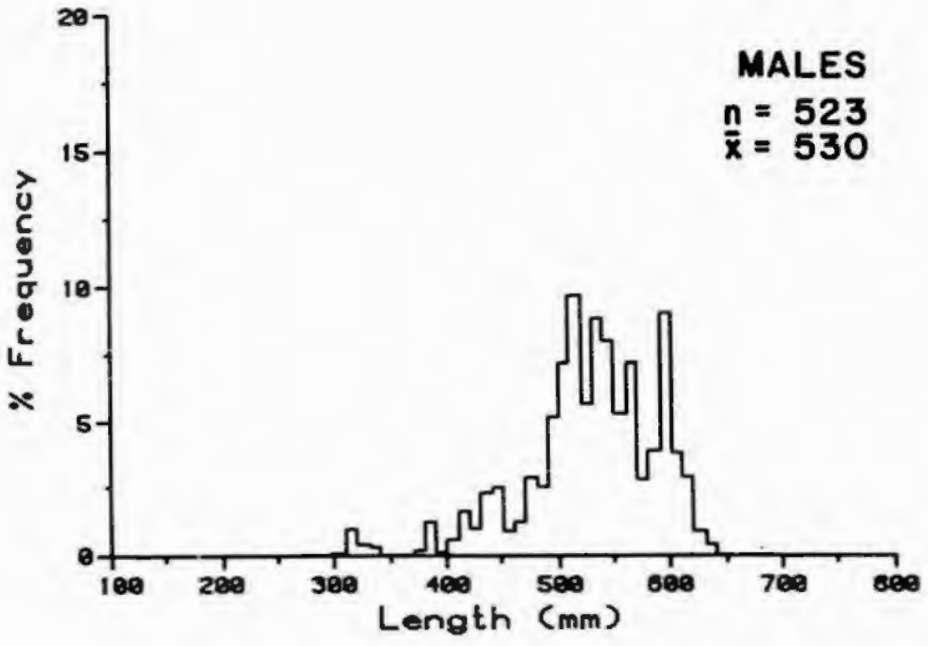


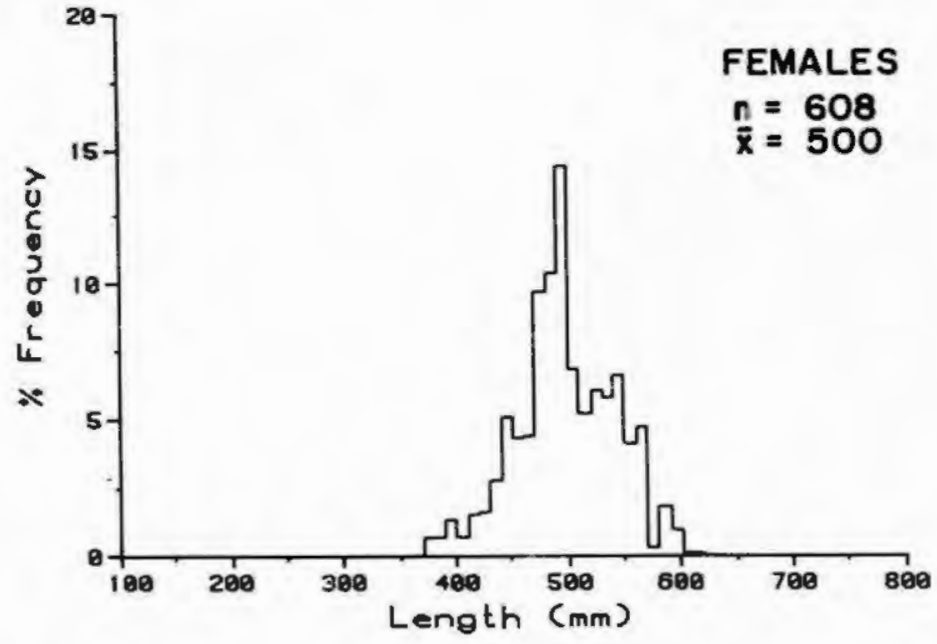
Appendix Figure 5-36. First run sockeye salmon male and female length frequencies at Sunshine Station weighted by fishwheel catch per unit of effort, 1984.



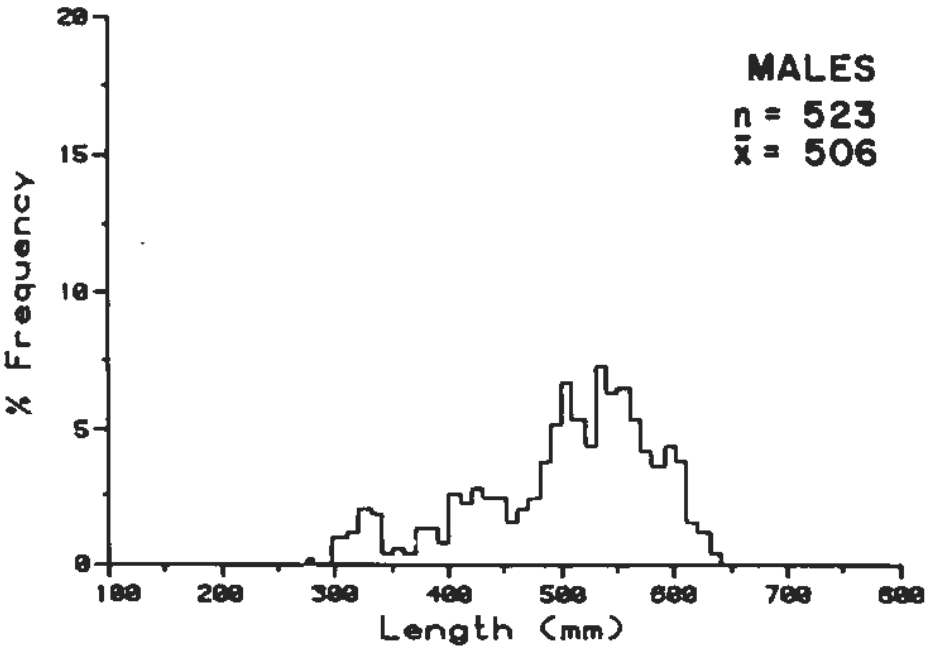


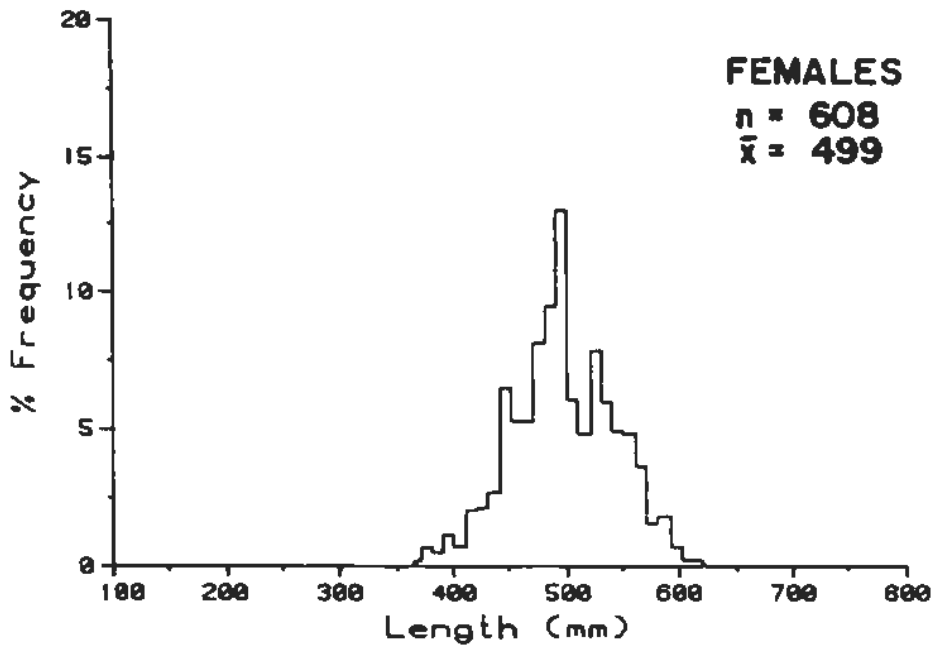
Appendix Figure 5-37. First run sockeye salmon male and female lengt frequencies at Sunshine Station not weighted b fishwheel catch per unit of effort, 1984.



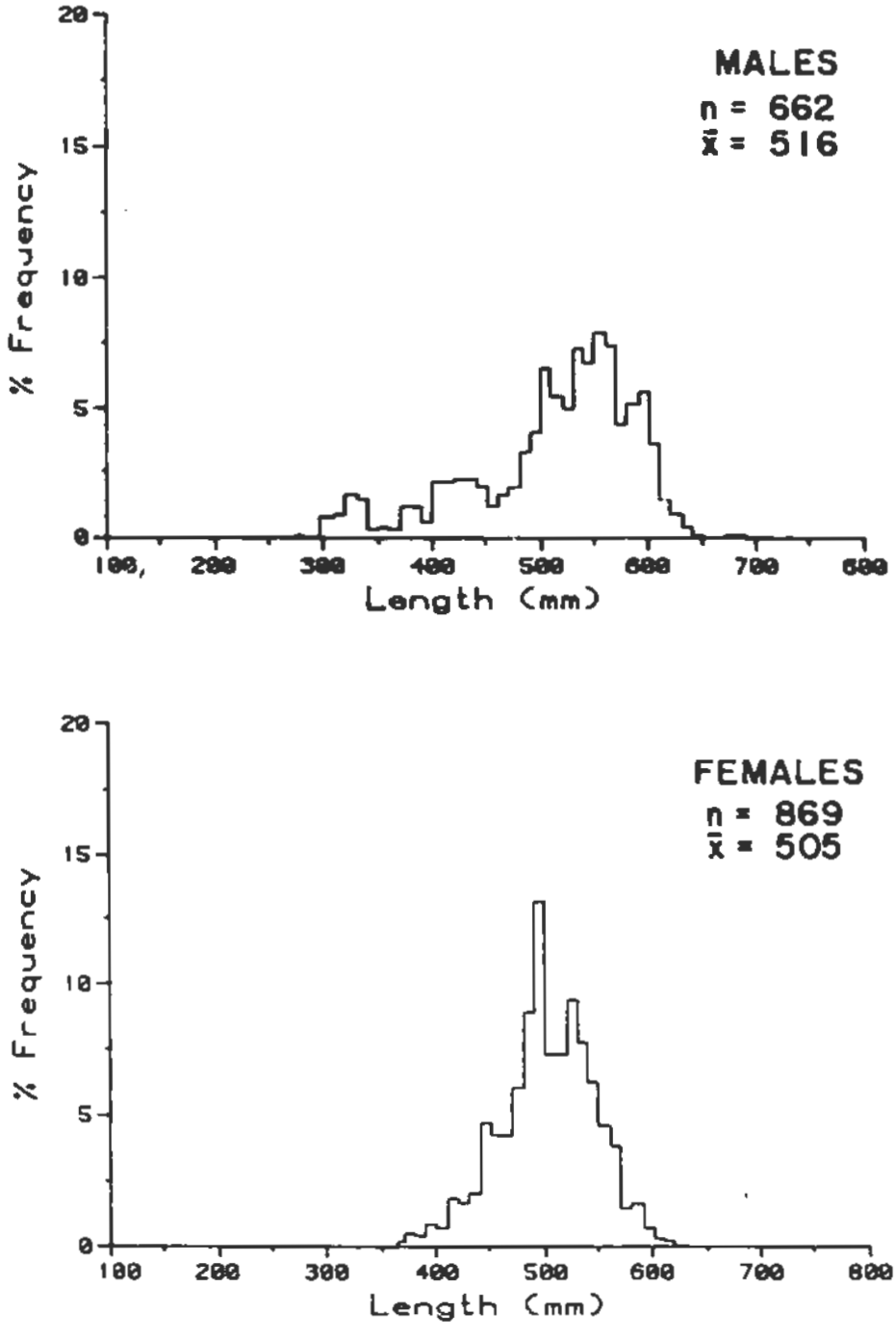


Appendix Figure 5-38. Second run sockeye salmon male and female length frequencies at Sunshine Station weighted by fishwheel catch per unit of effort, 1984.

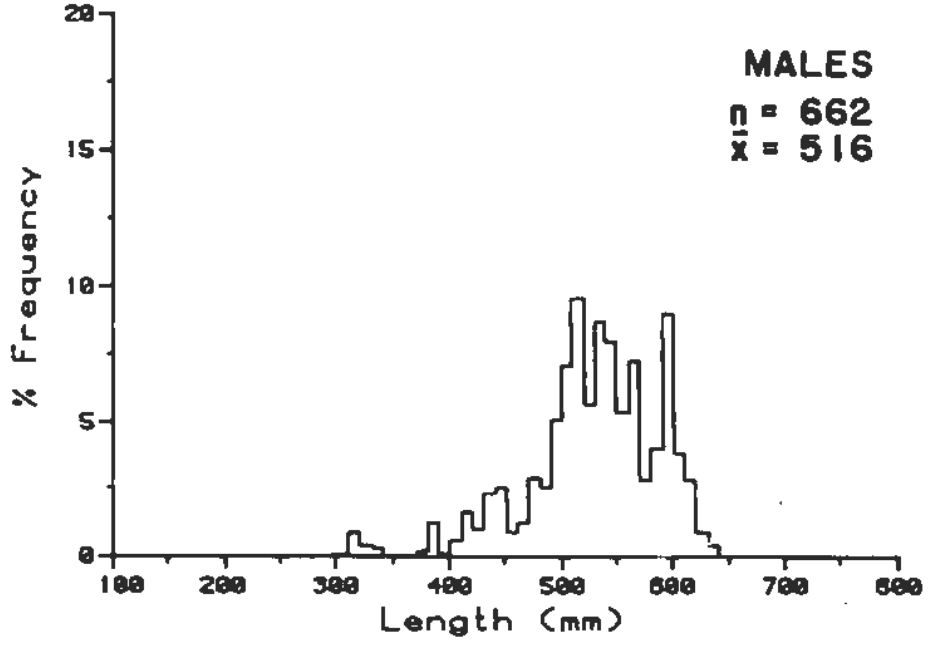


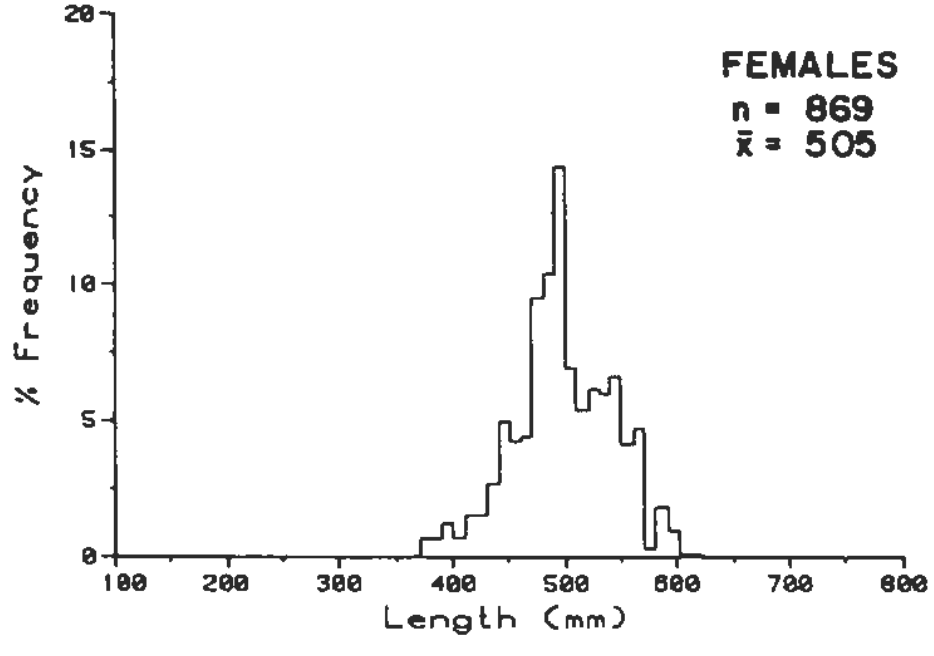


Appendix Figure 5-39. Second run sockeye salmon male and female length frequencies at Sunshine Station not weighted by fishwheel catch per unit of effort, 1984.

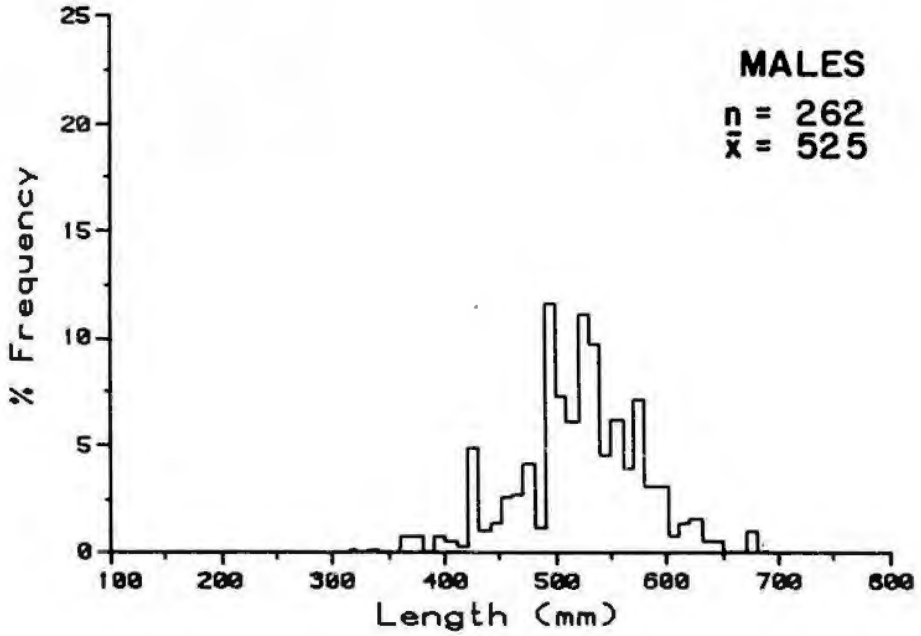


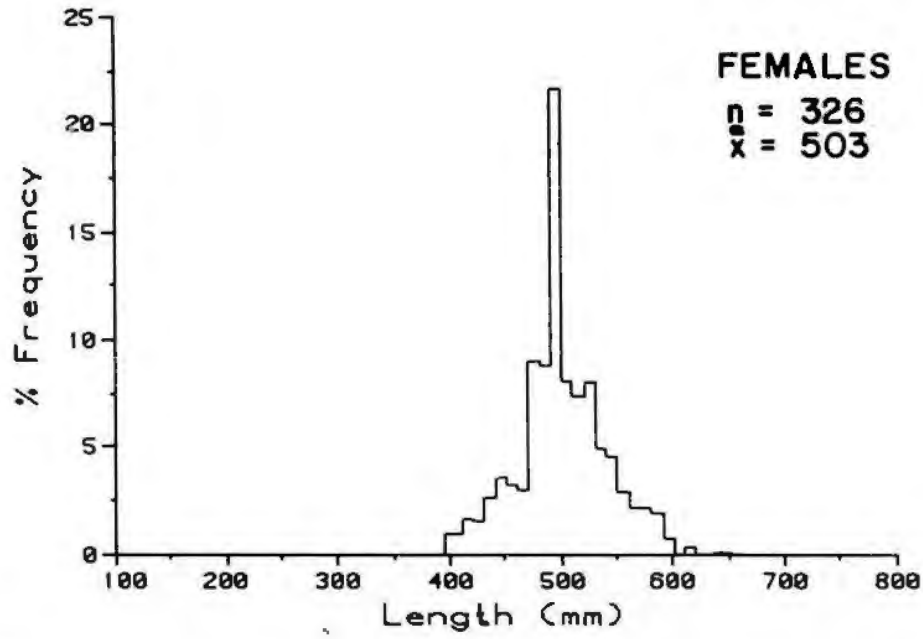
Appendix Figure 5-40. Combined first and second run sockeye salmon male an female length frequencies at Sunshine Statio weighted by fishwheel catch per unit of effort, 1984



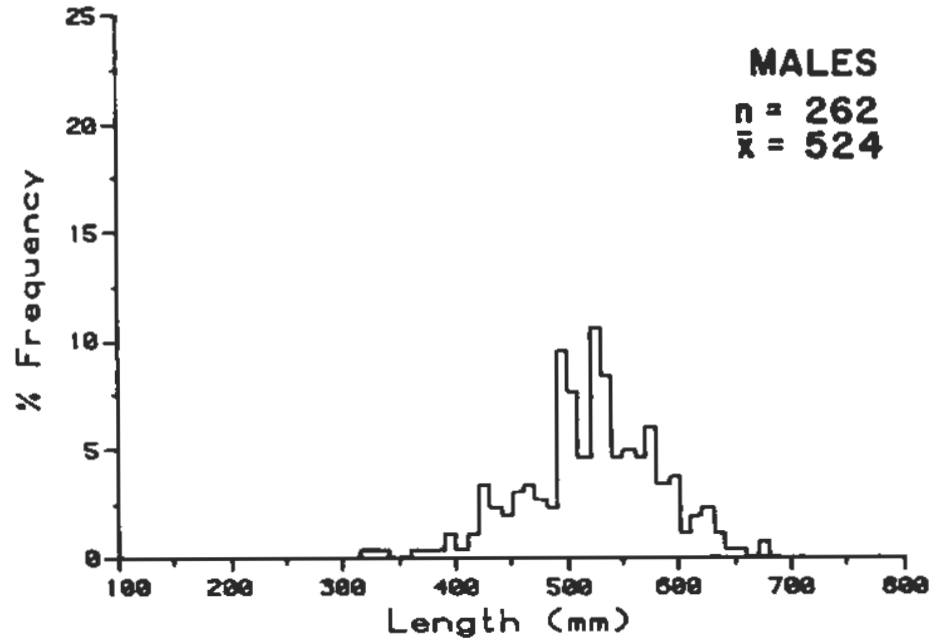


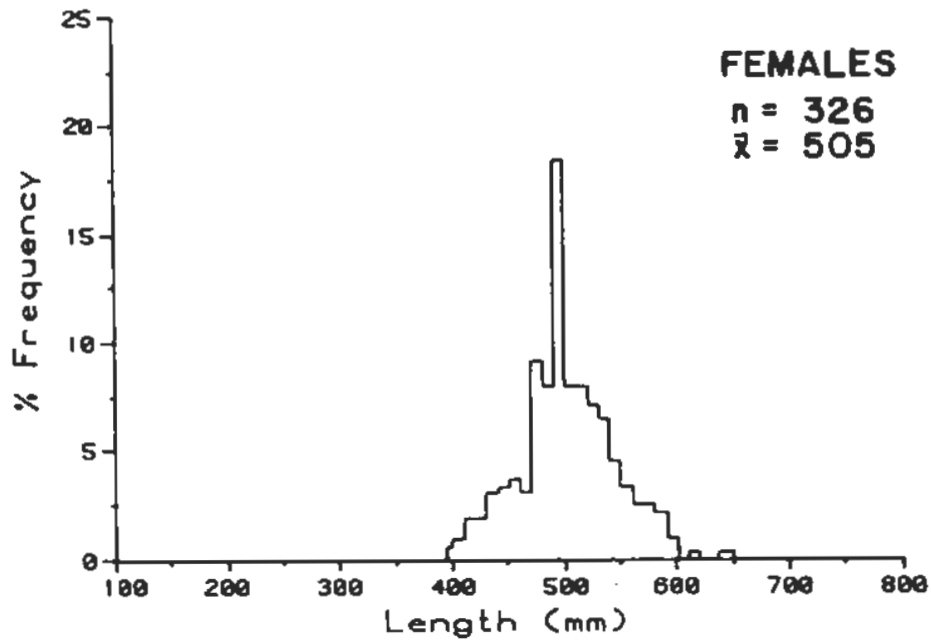
Appendix Figure 5-41. Combined first and second run sockeye salmon male and female length frequencies at Sunshine Station not weighted by fishwheel catch per unit of effort, 1984.



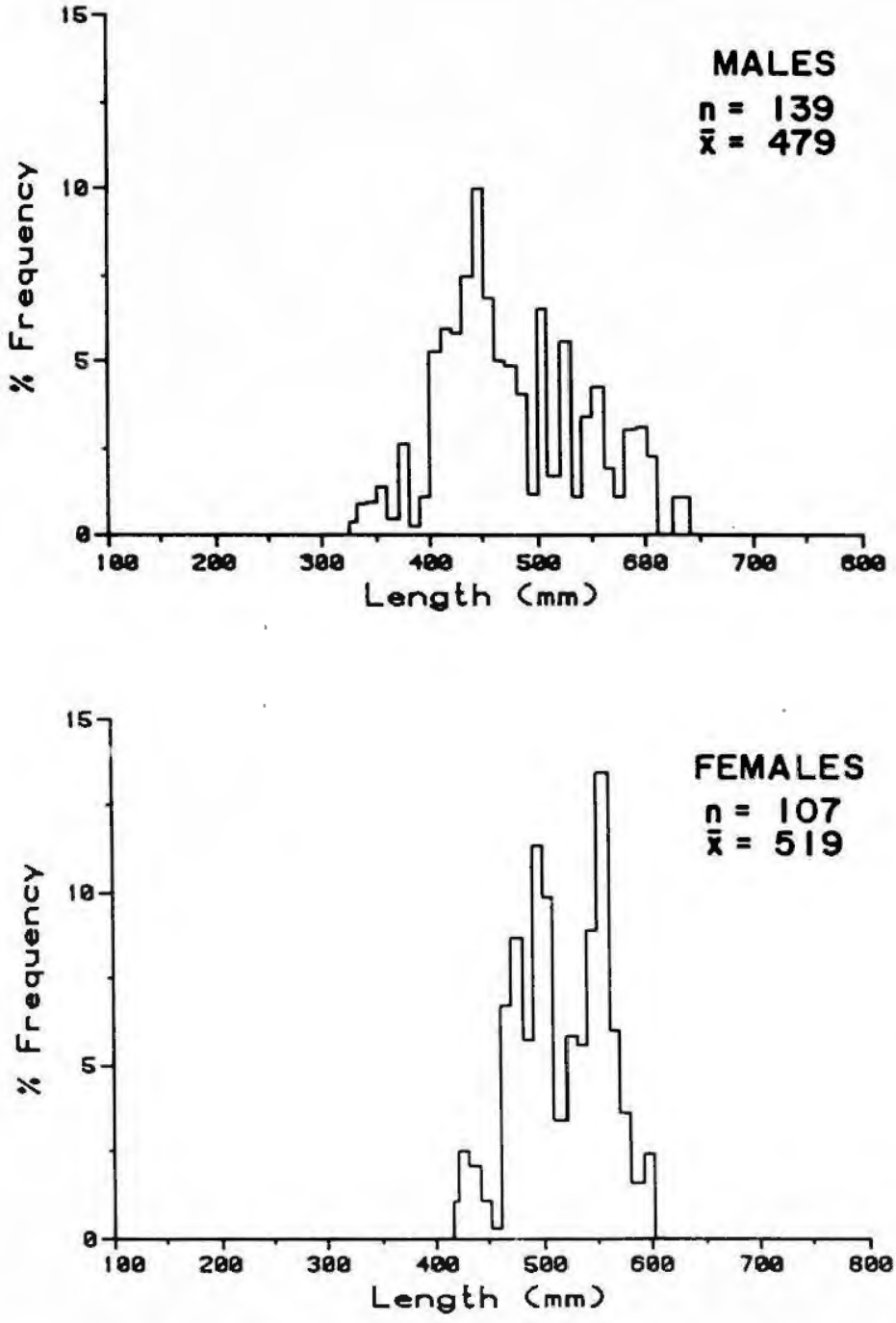


Appendix Figure 5-42. Sockeye salmon male and female length frequencies a Talkeetna Station weighted by fishwheel catch pe unit of effort, 1984.

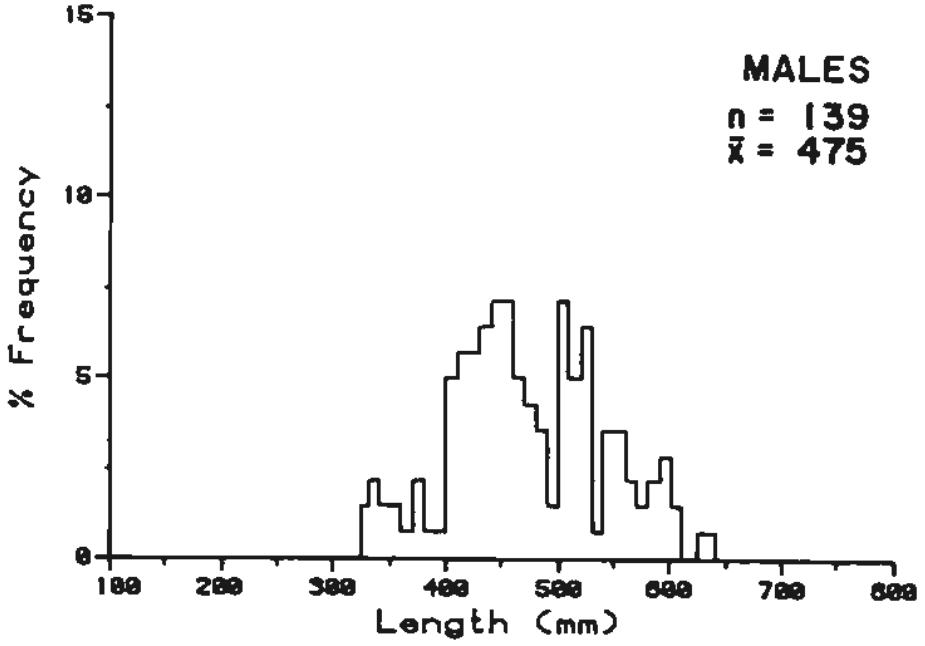


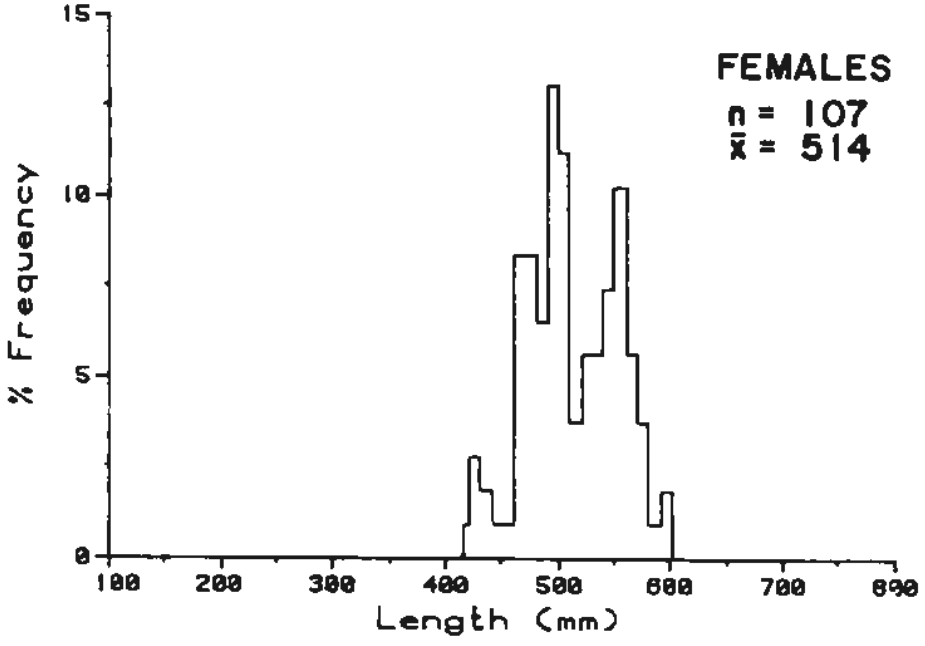


Appendix Figure 5-43. Sockeye salmon male and female length frequencies a Talkeetna Station not weighted by fishwheel catch pe unit of effort, 1984.

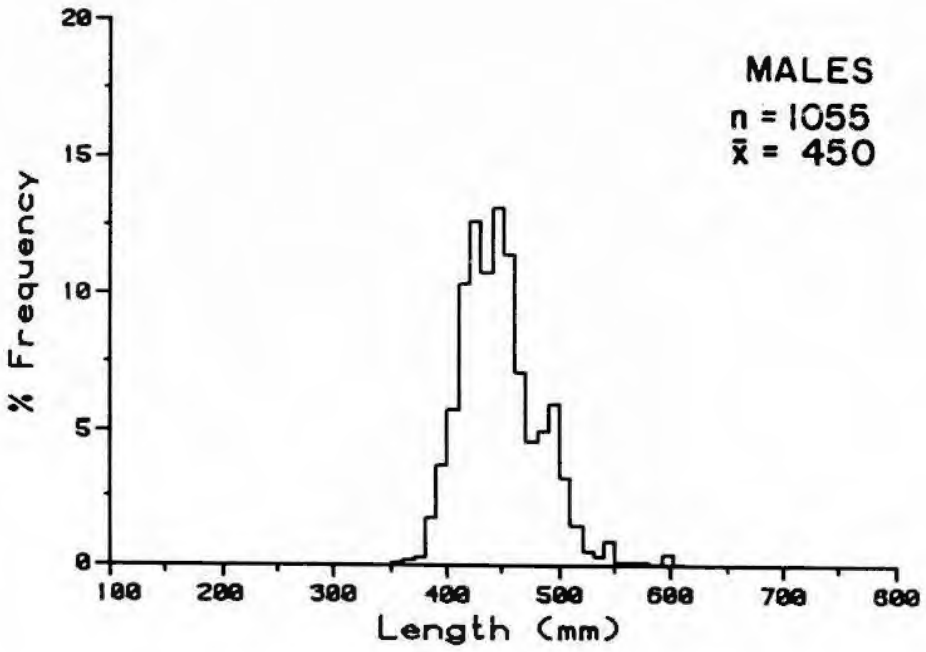


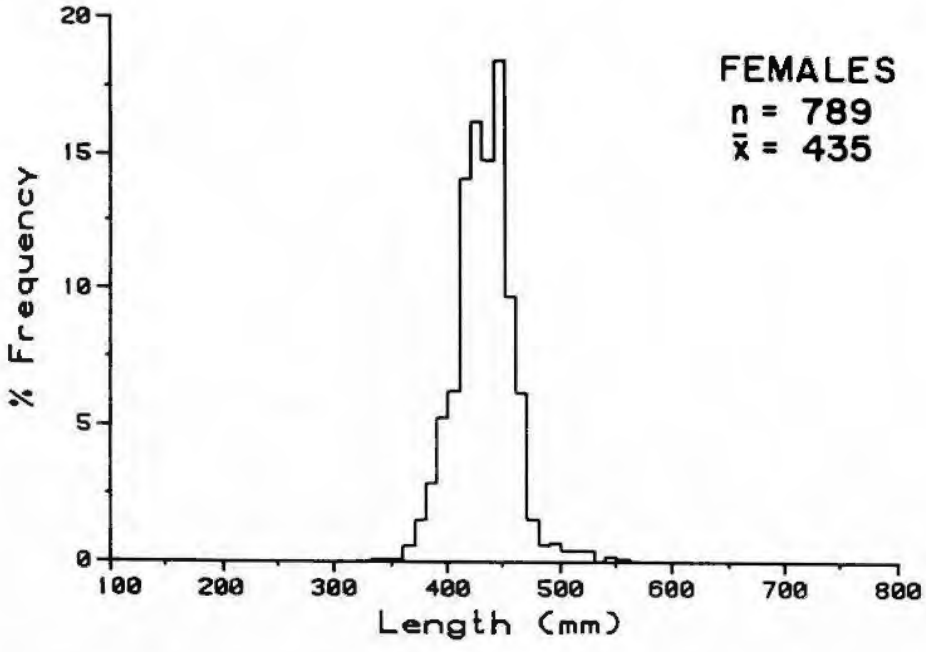
Appendix Figure 5-44. Sockeye salmon male and female length frequencies at Curry Station weighted by fishwheel catch per unit of effort, 1984.



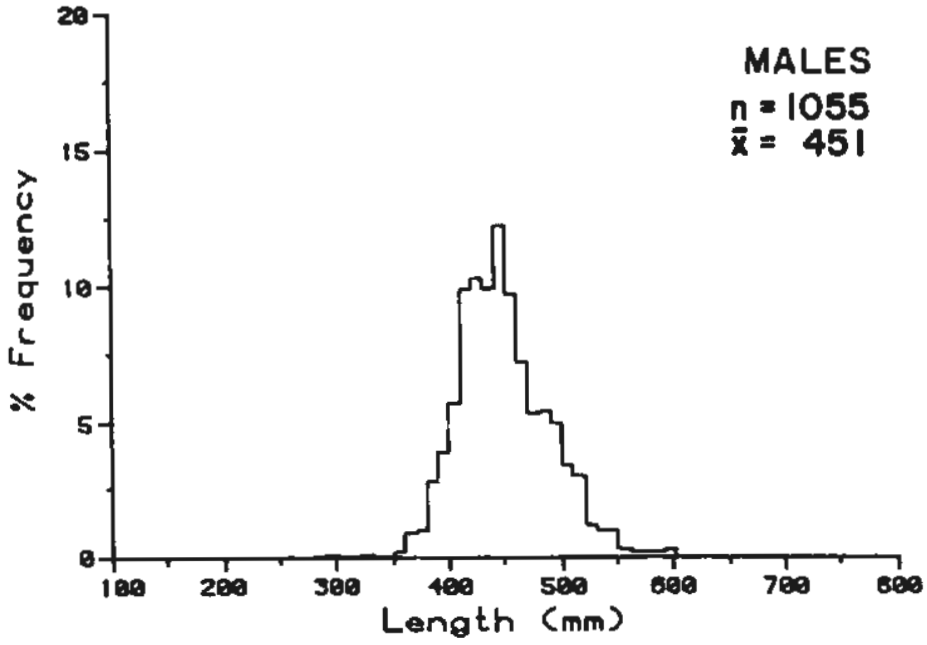


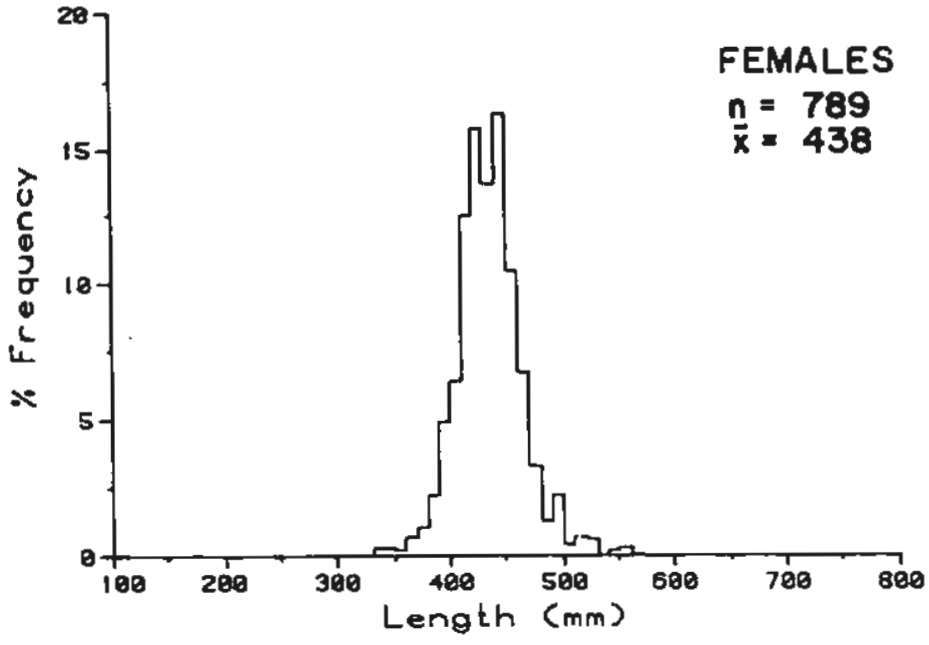
Appendix Figure 5-45. Sockeye salmon male and female length frequencies at Curry Station not weighted by fishwheel catch per unit of effort, 1984.



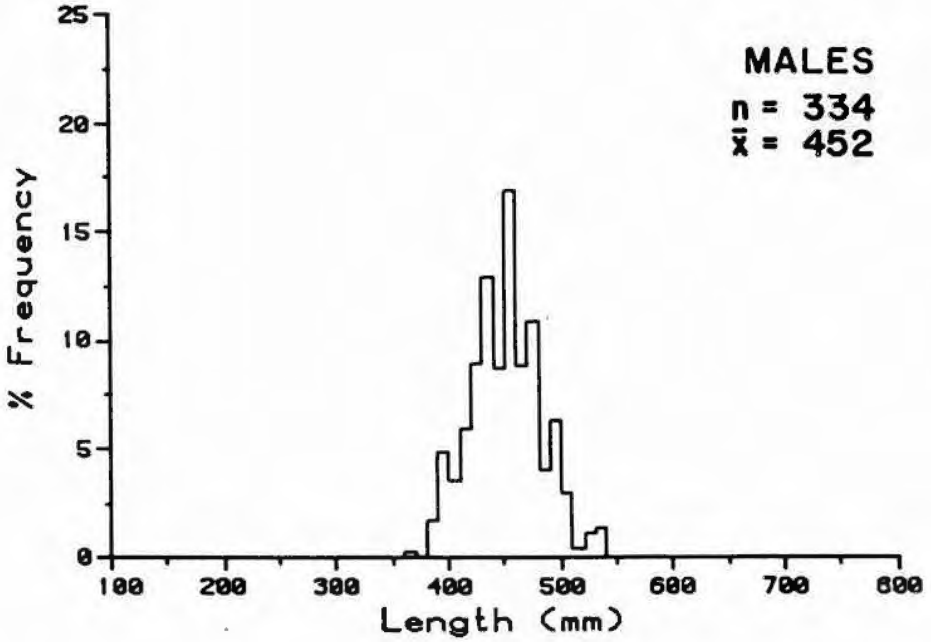


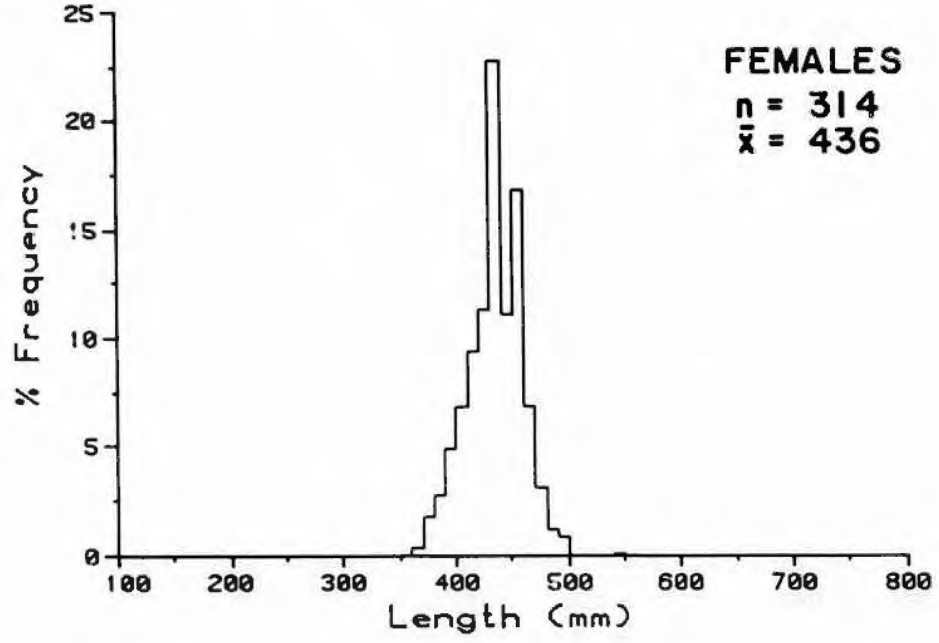
Appendix Figure 5-46. Pink salmon male and female length frequencies at Flathorn Station weighted by fishwheel catch per unit of effort, 1984.



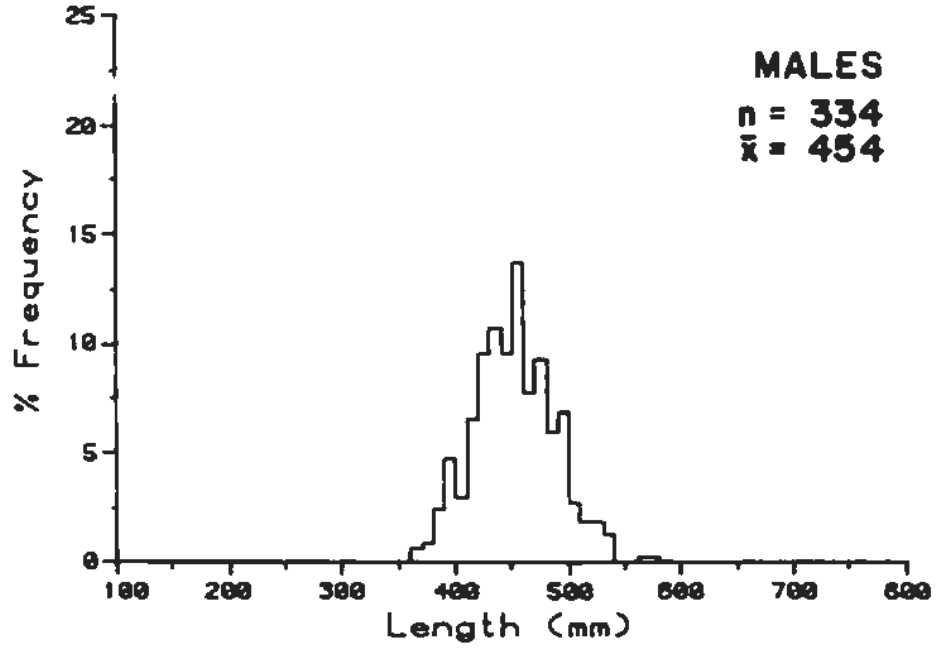


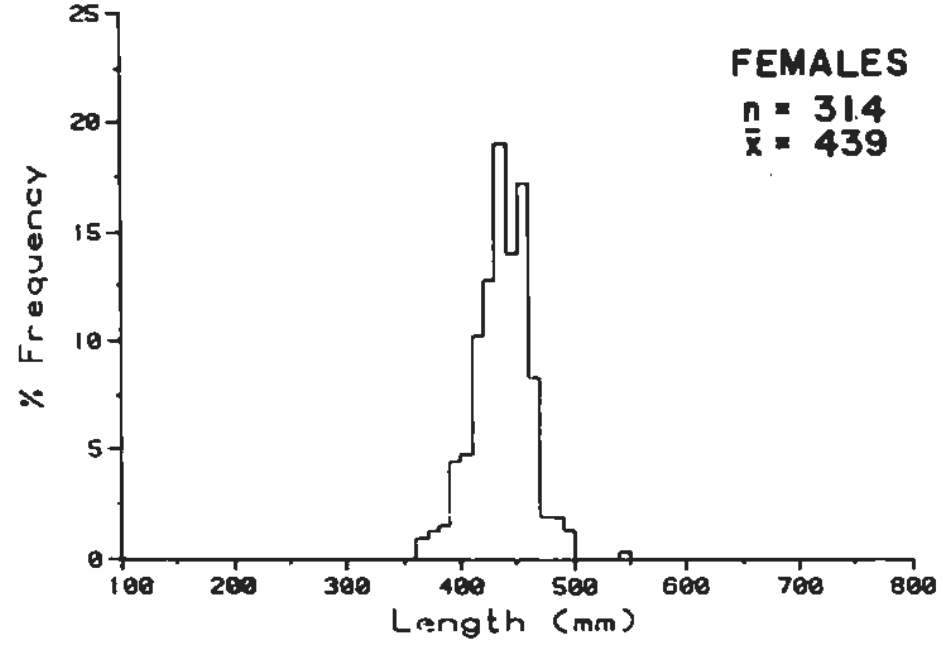
Appendix Figure 5-47. Pink salmon male and female length frequencies a Flathorn Station not weighted by fishwheel catch pe unit of effort, 1984.



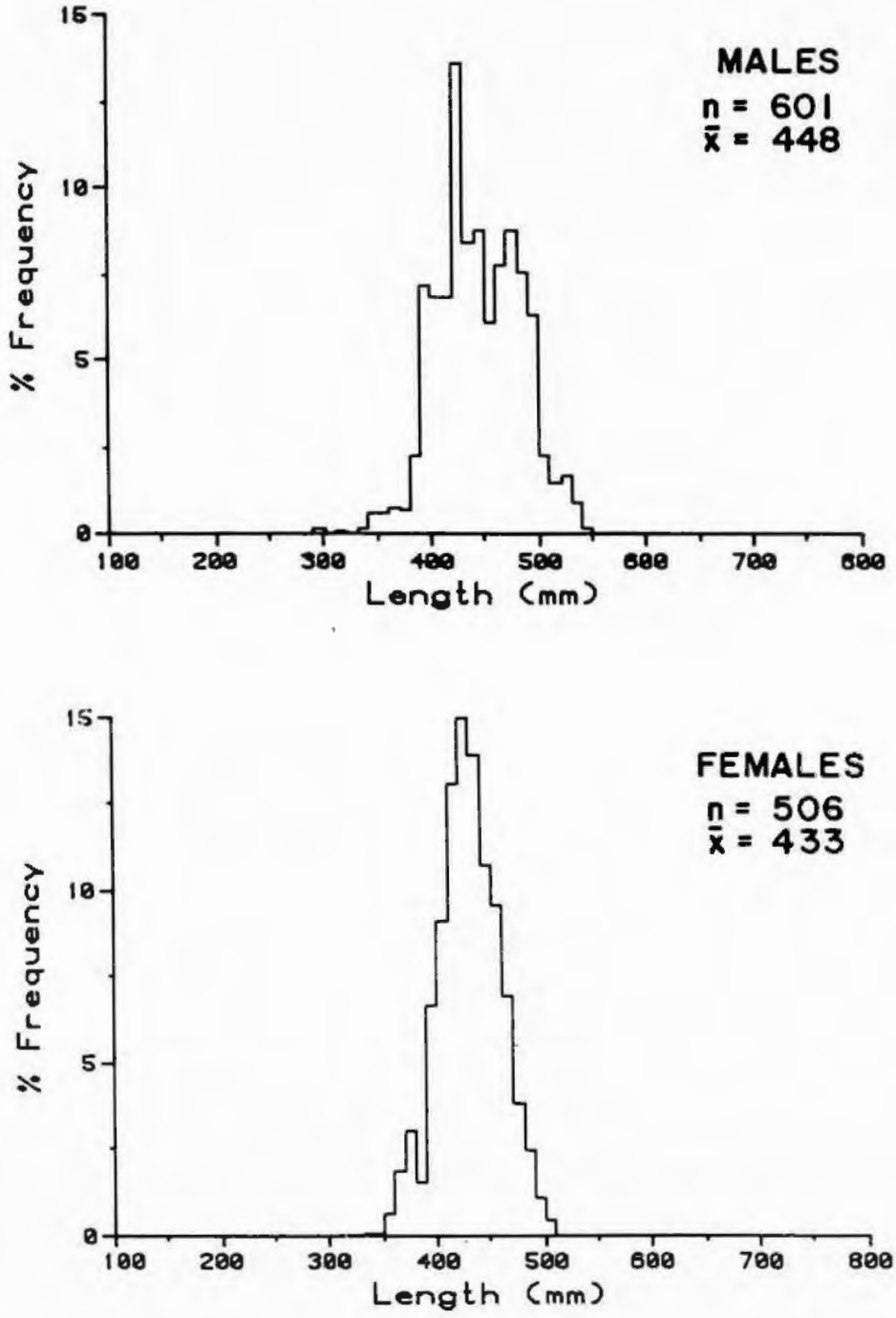


Appendix Figure 5-48. Pink salmon male and female length frequencies at Yentna Station weighted by fishwheel catch per unit of effort, 1984.

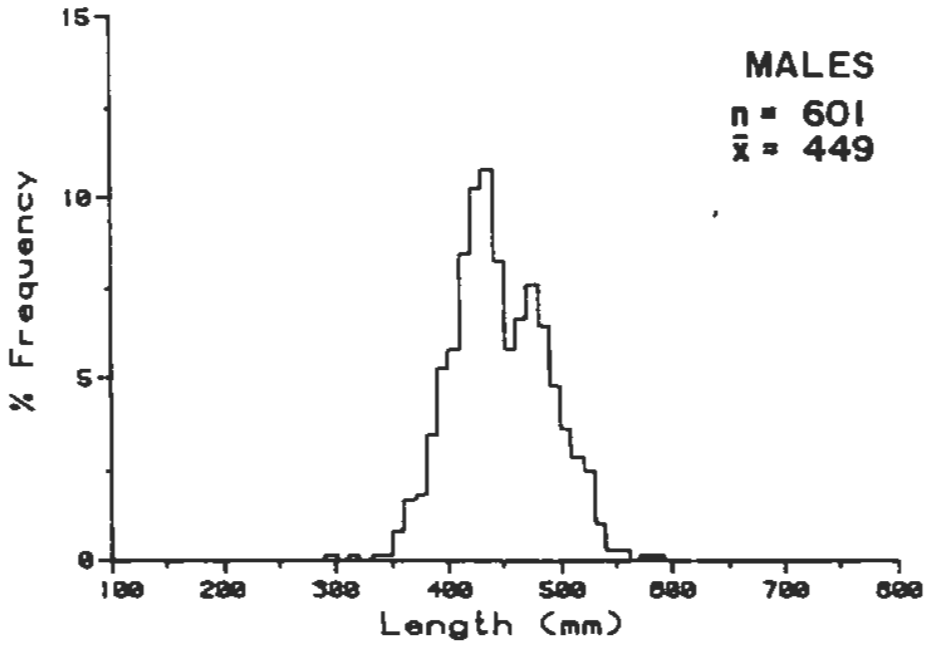


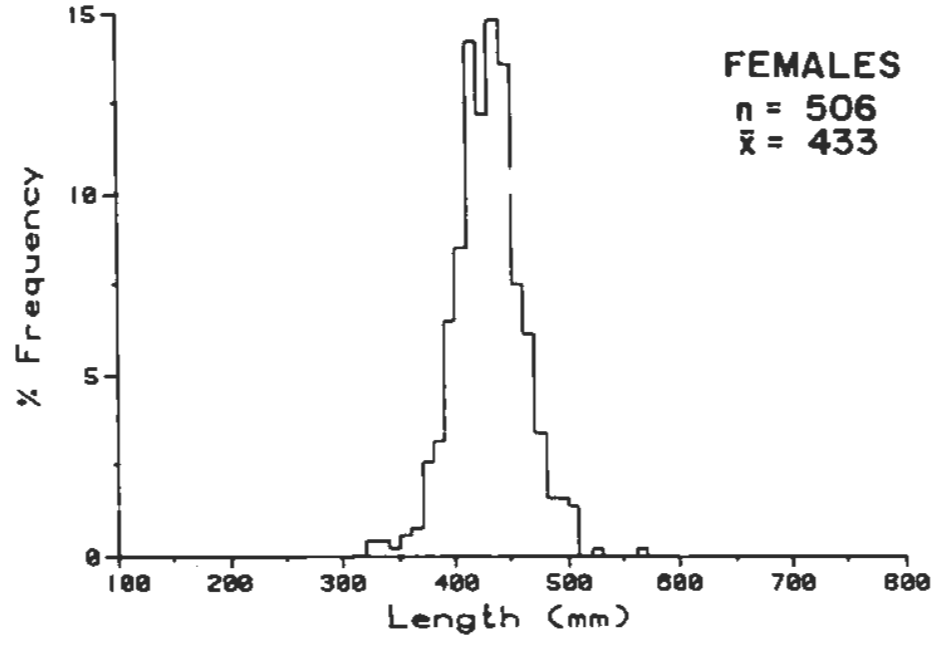


Appendix Figure 5-49. Pink salmon male and female length frequencies at Yentna Station not weighted by fishwheel catch per unit of effort, 1984.

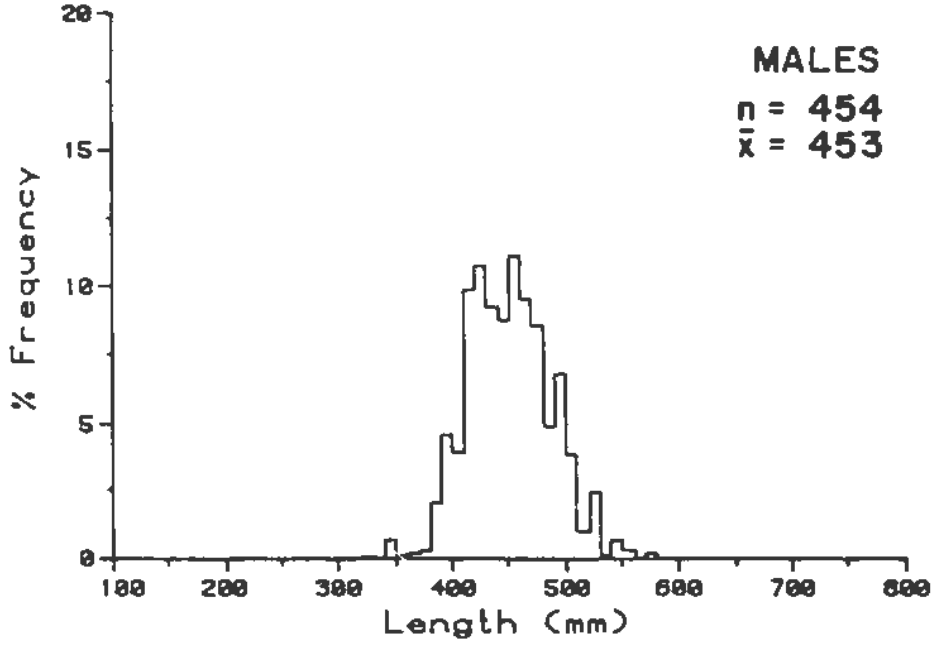


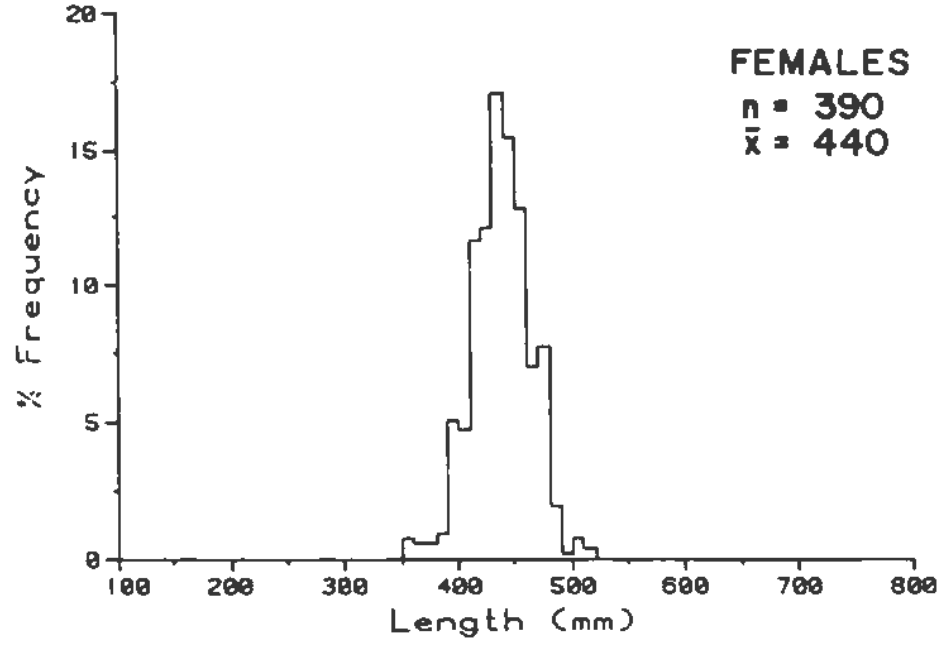
Appendix Figure 5-50. Pink salmon male and female length frequencies at Sunshine Station weighted by fishwheel catch per unit of effort, 1984.



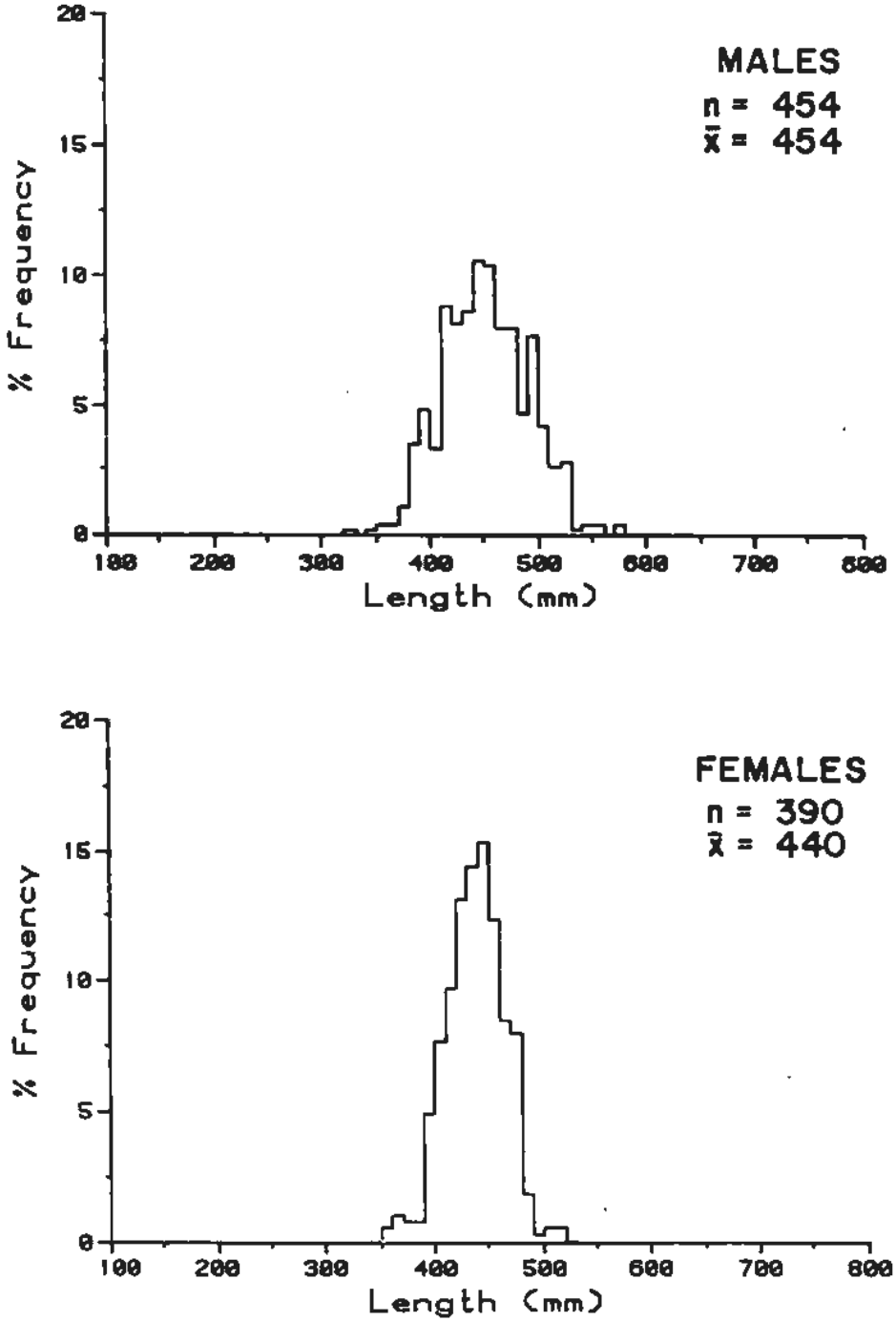


Appendix Figure 5-51. Pink salmon male and female length frequencies at Sunshine Station not weighted by fishwheel catch per unit of effort, 1984.

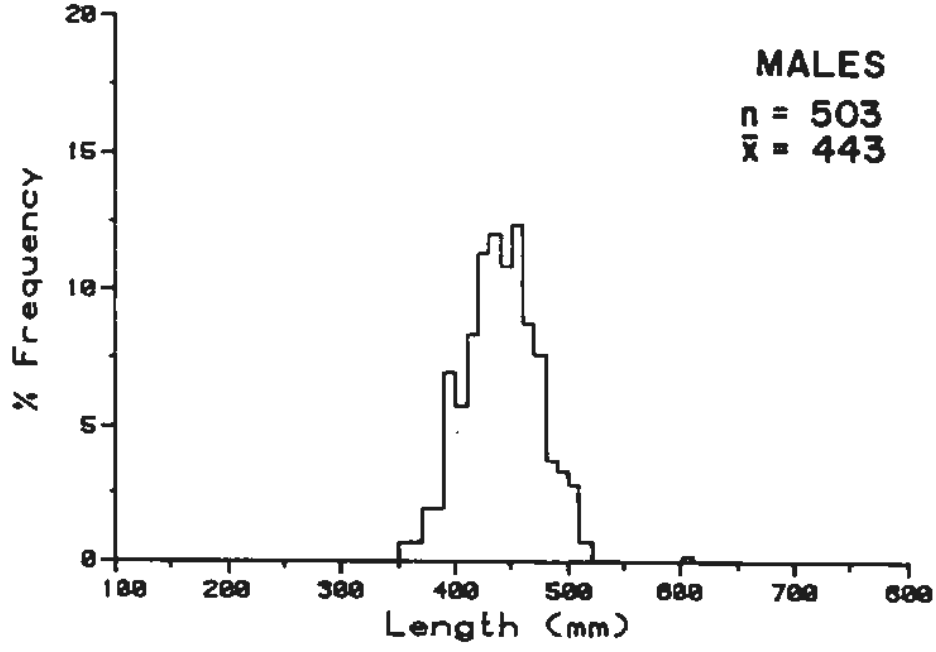


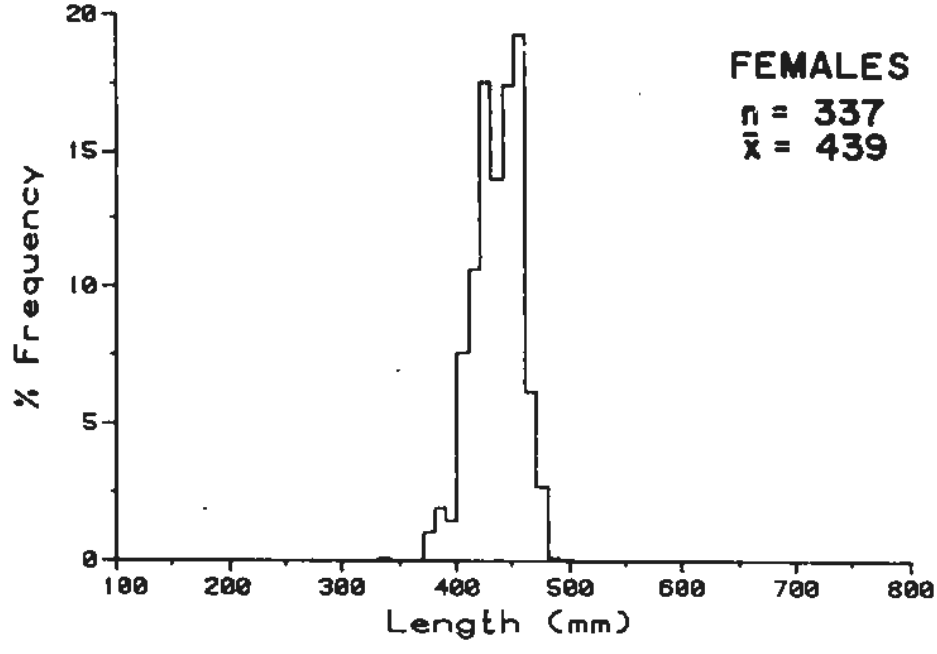


Appendix Figure 5-52. Pink salmon male and female length frequencies at Talkeetna Station weighted by fishwheel catch per unit of effort, 1984.

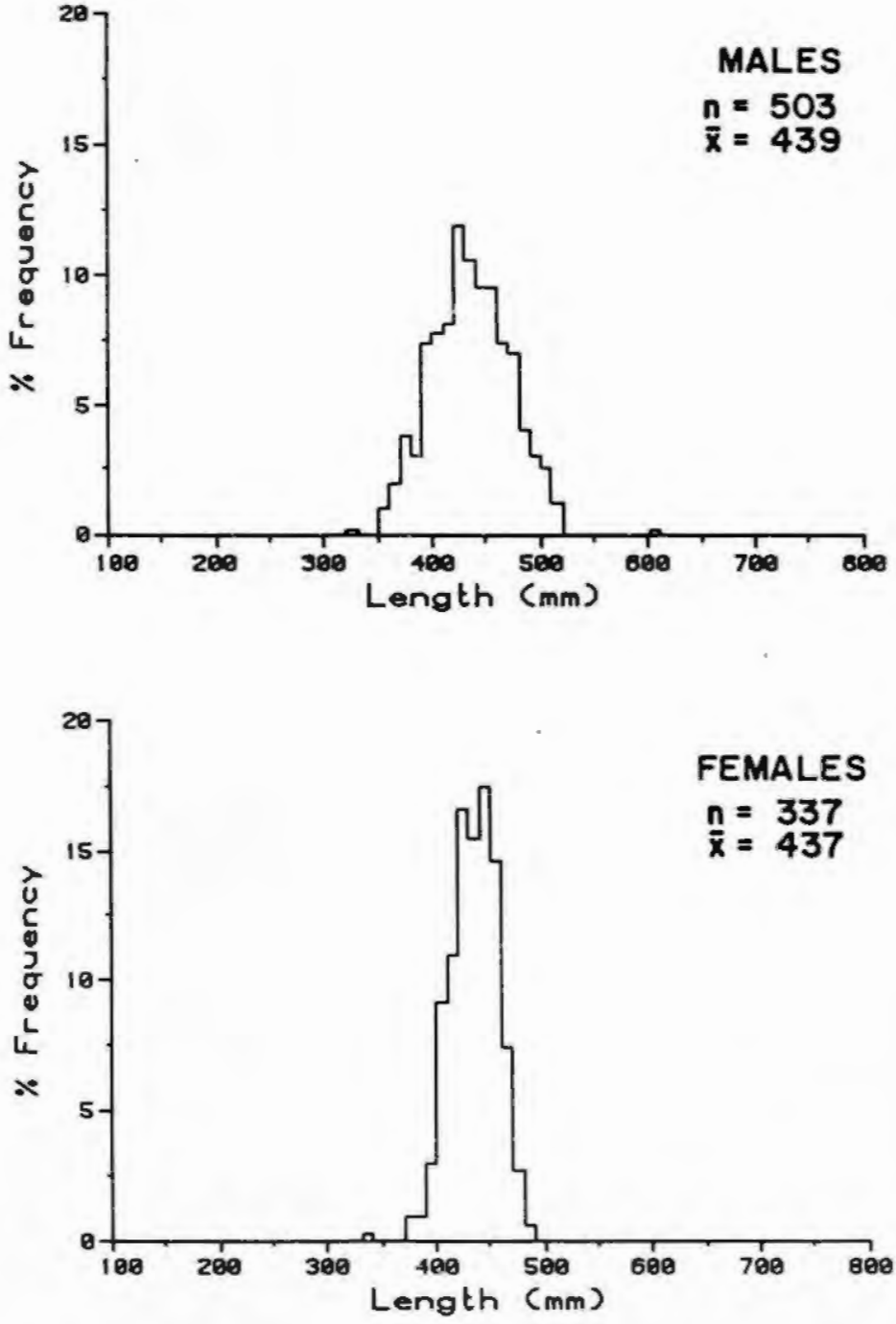


Appendix Figure 5-53. Pink salmon male and female length frequencies at Talkeetna Station not weighted by fishwheel catch per unit of effort, 1984.

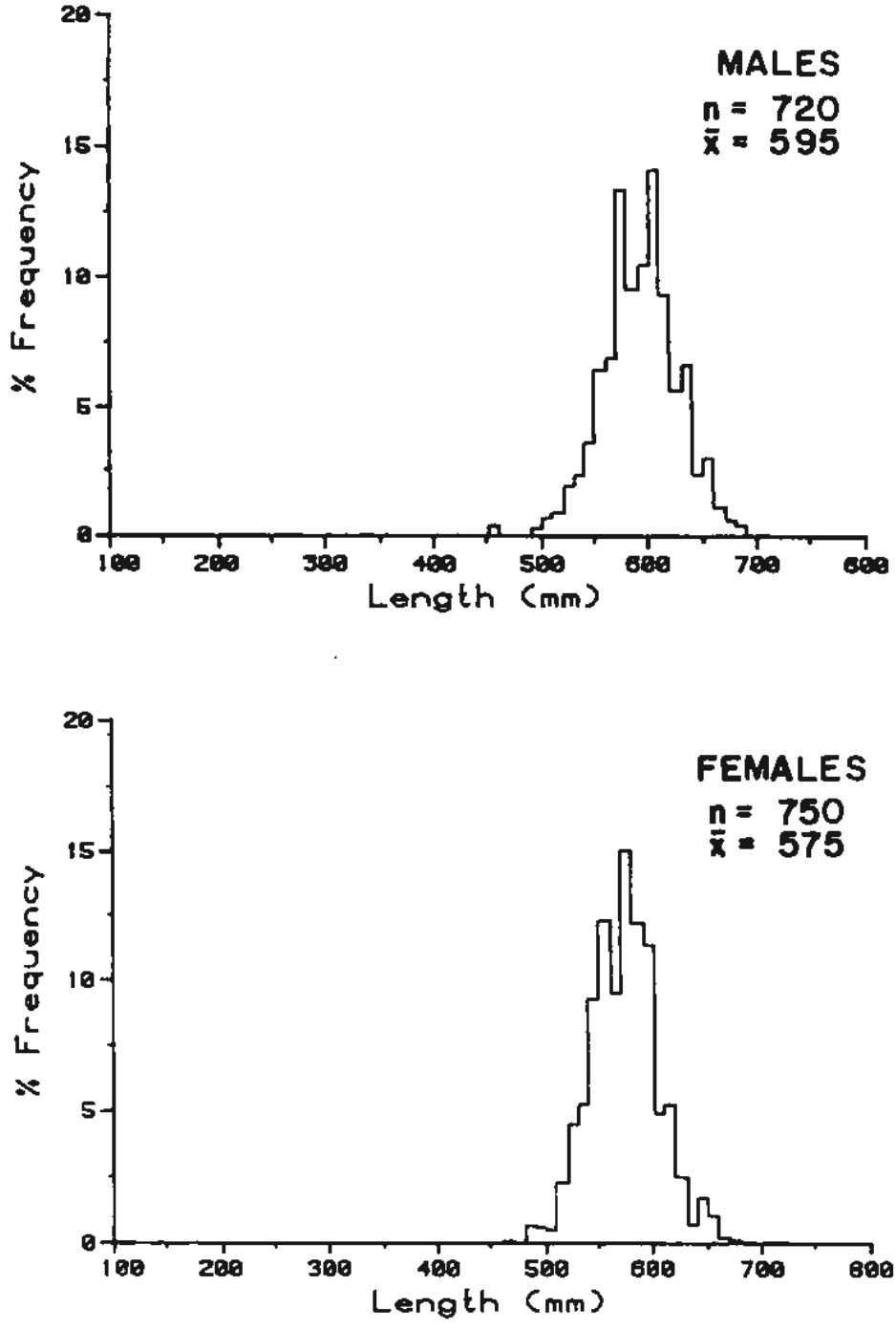




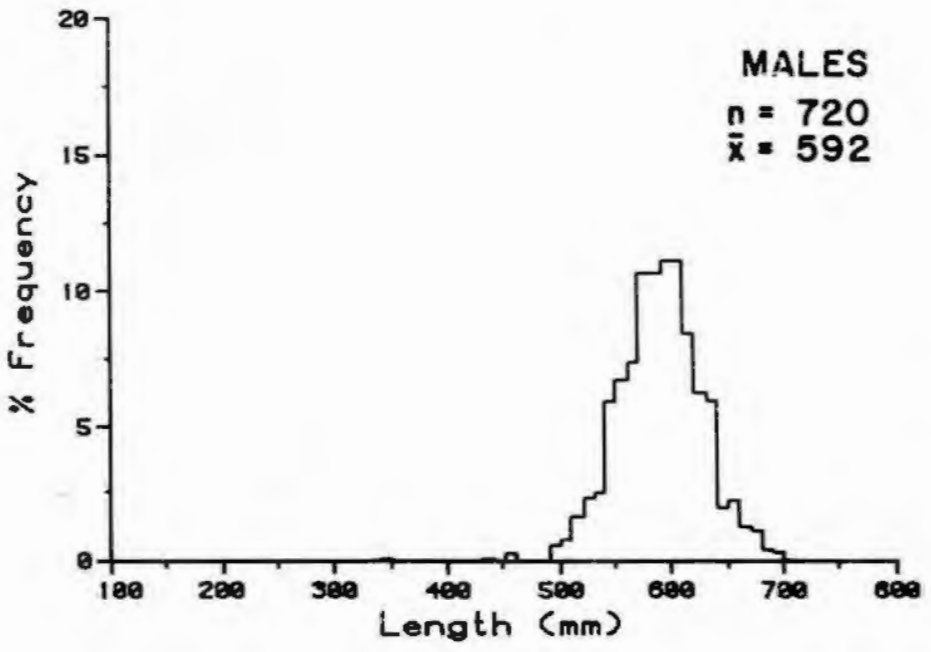
Appendix Figure 5-54. Pink salmon male and female length frequencies Curry Station weighted by fishwheel catch per unit effort, 1984.

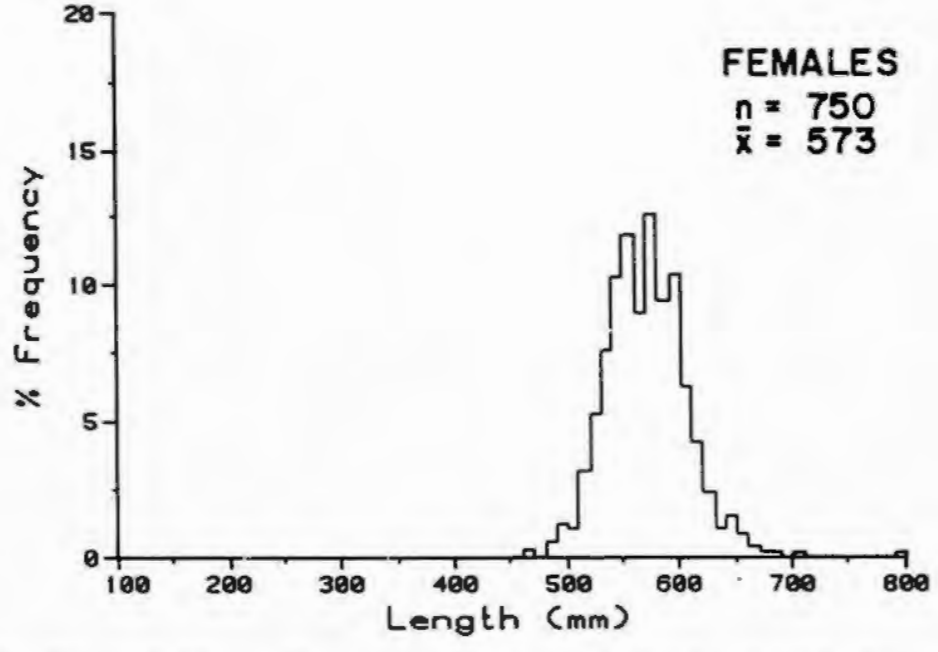


Appendix Figure 5-55. Pink salmon male and female length frequencies at Curry Station not weighted by fishwheel catch per unit of effort, 1984.

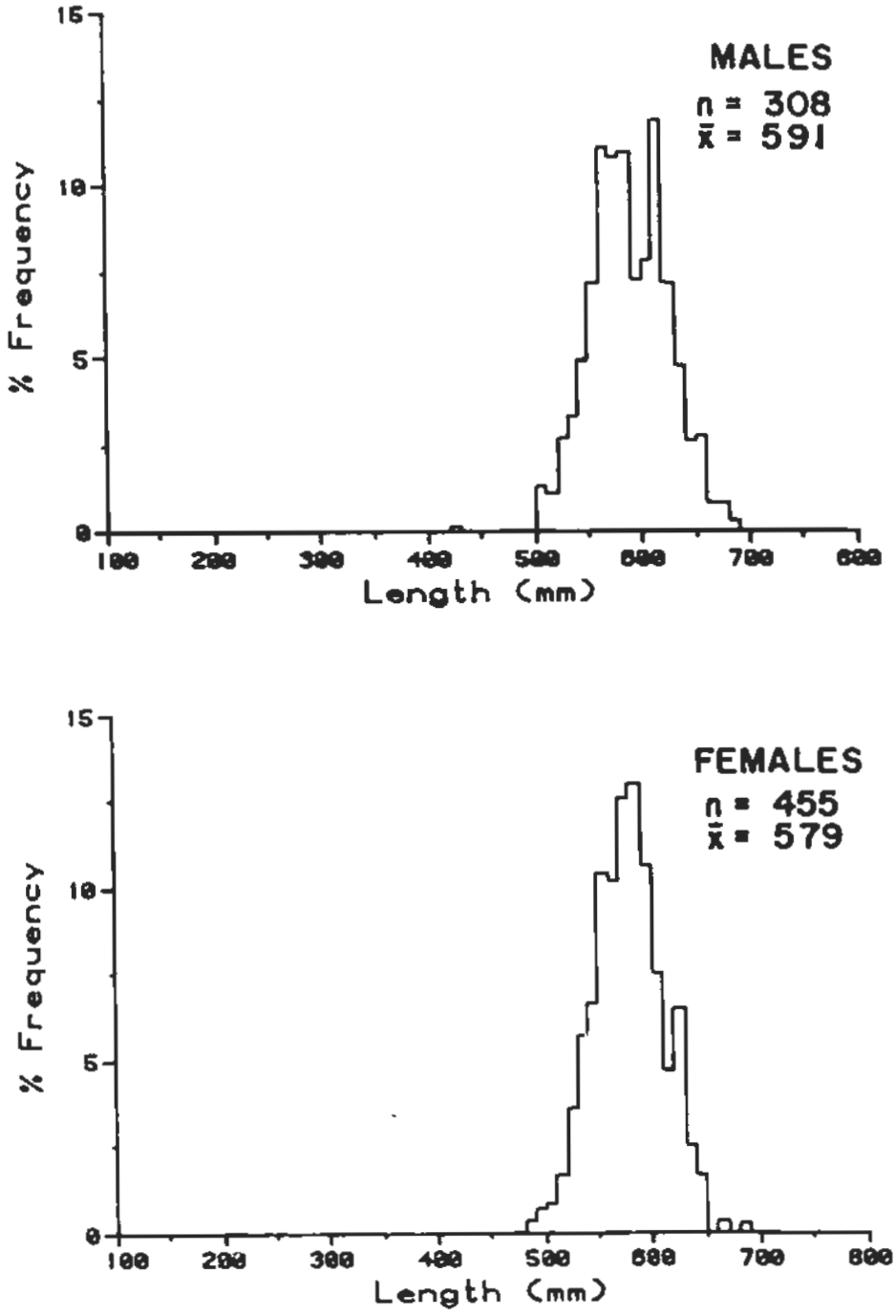


Appendix Figure 5-56. Chum salmon male and female length frequencies at Flathorn Station weighted by fishwheel catch per unit of effort, 1984.

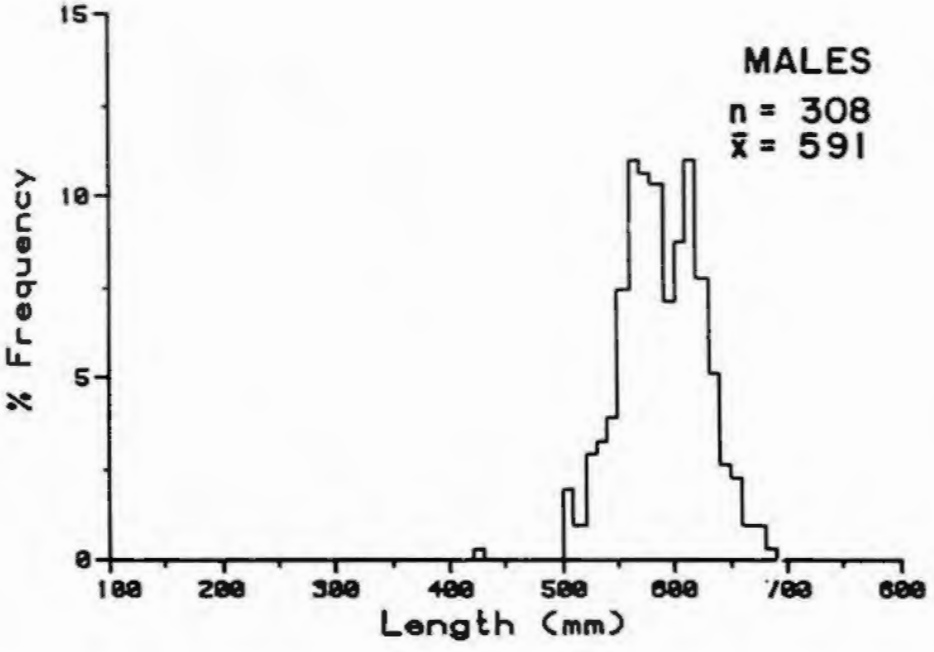


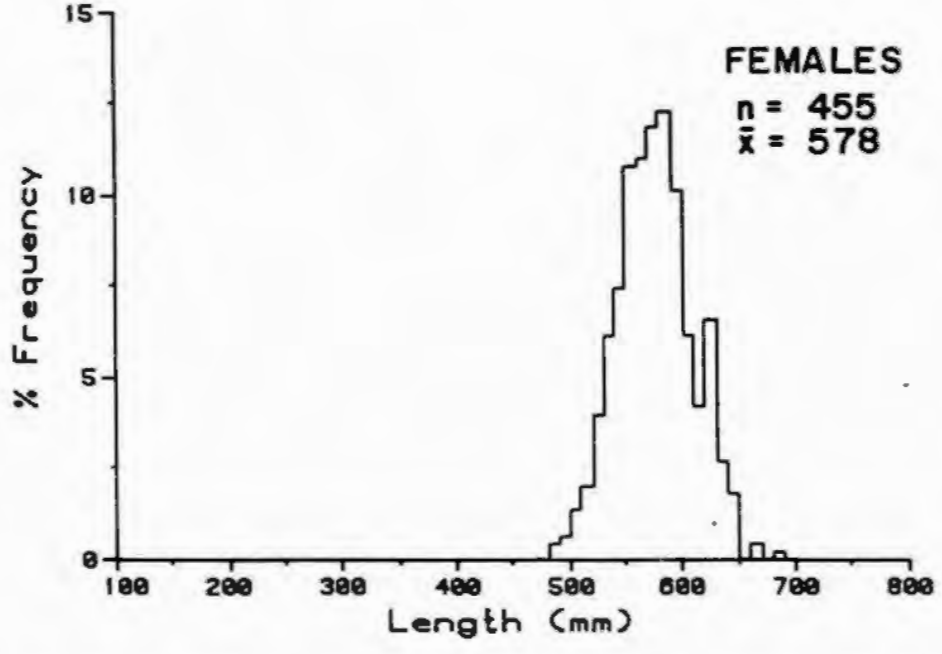


Appendix Figure 5-57. Chum salmon male and female length frequencies at Flathorn Station not weighted by fishwheel catch per unit of effort, 1984.

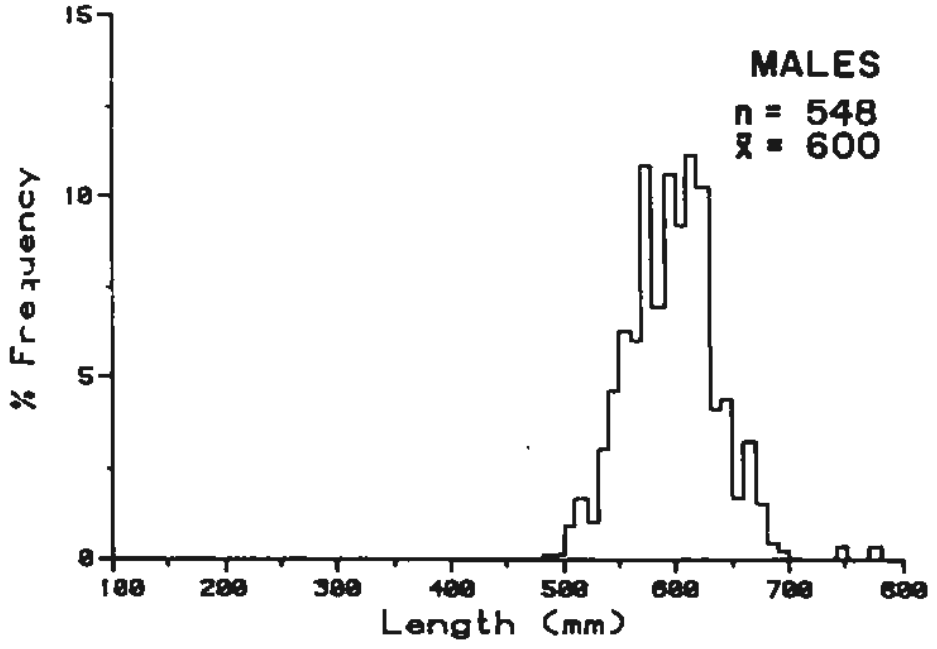


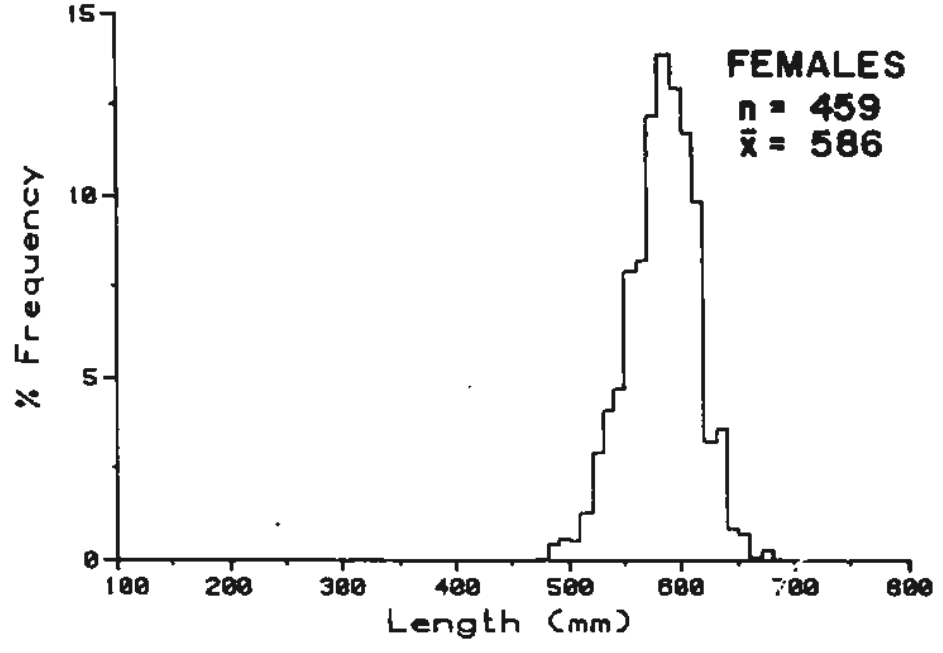
Appendix Figure 5-58. Chum salmon male and female length frequencies at Yentna Station weighted by fishwheel catch per unit of effort, 1984.



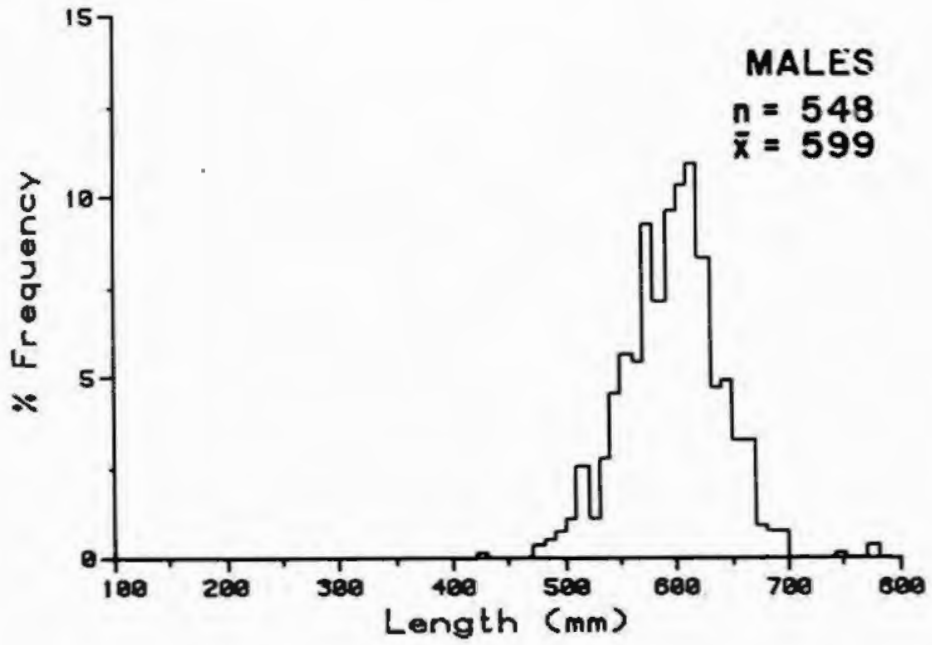


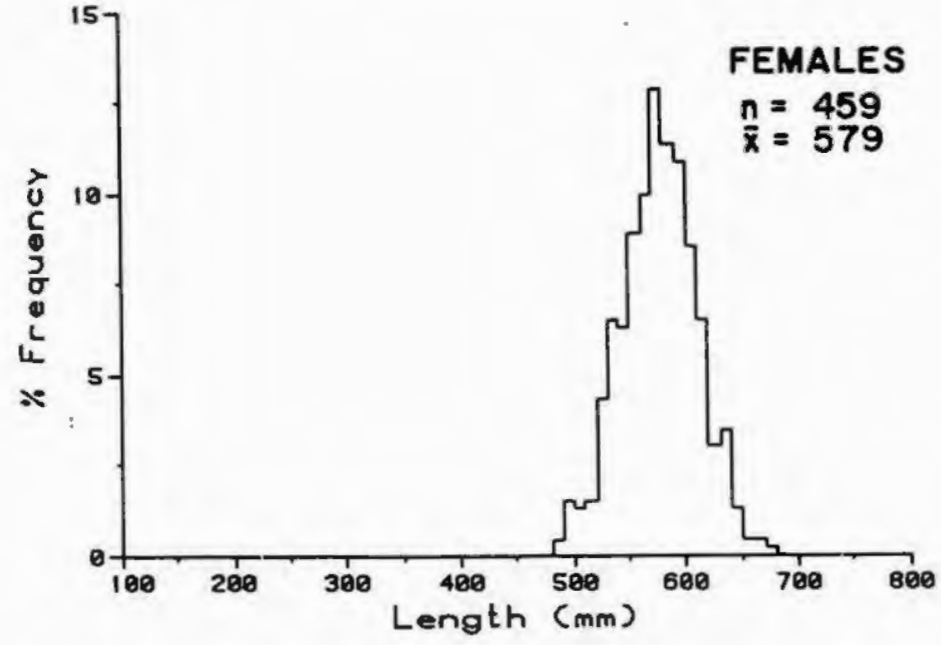
Appendix Figure 5-59. Chum salmon male and female length frequencies at Yentna Station not weighted by fishwheel catch per unit of effort, 1984.



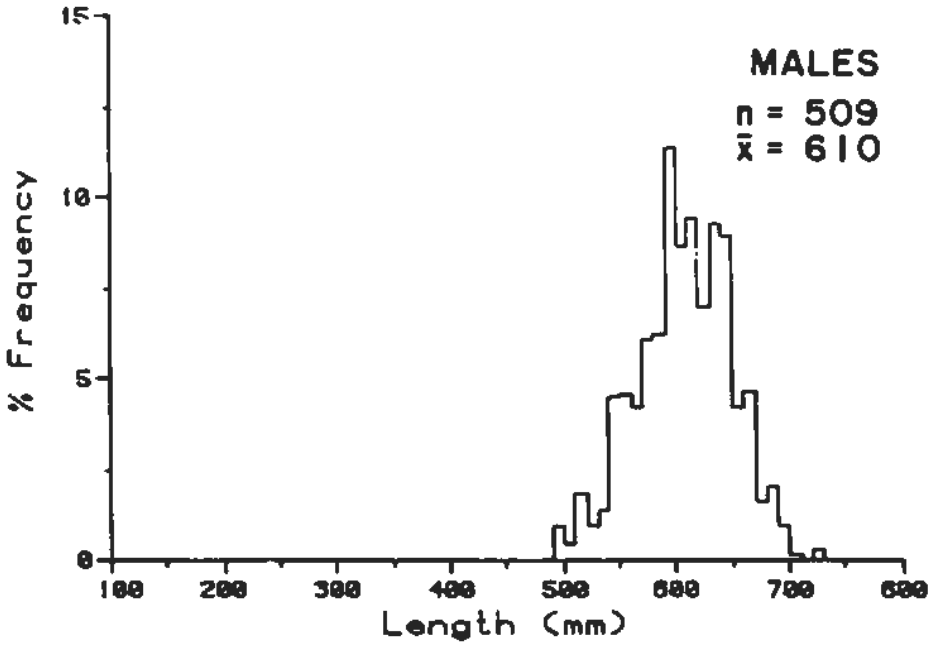


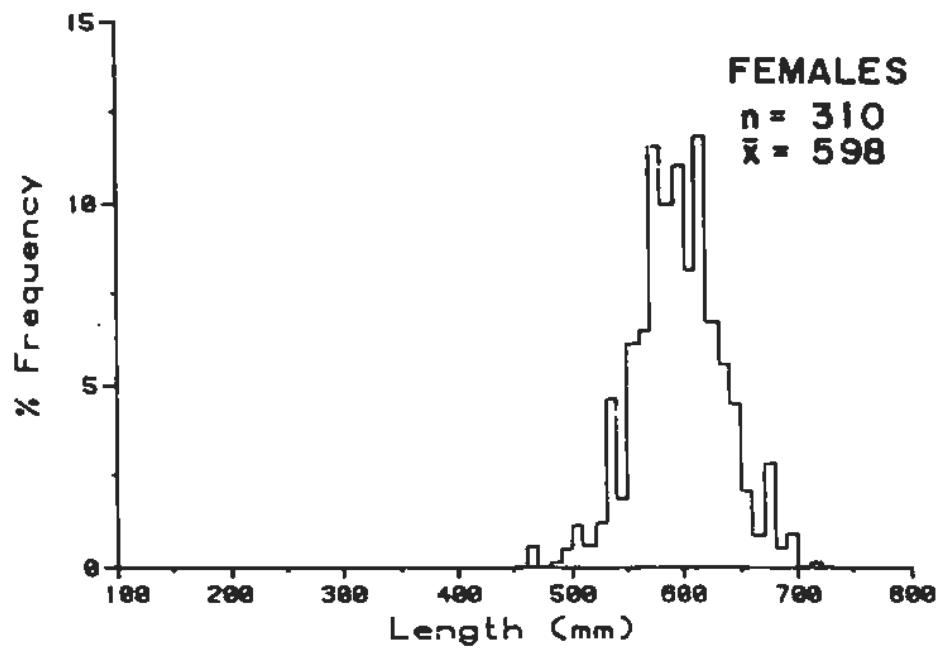
Appendix Figure 5-60. Chum salmon male and female length frequencies at Sunshine Station weighted by fishwheel catch per unit of effort, 1984.



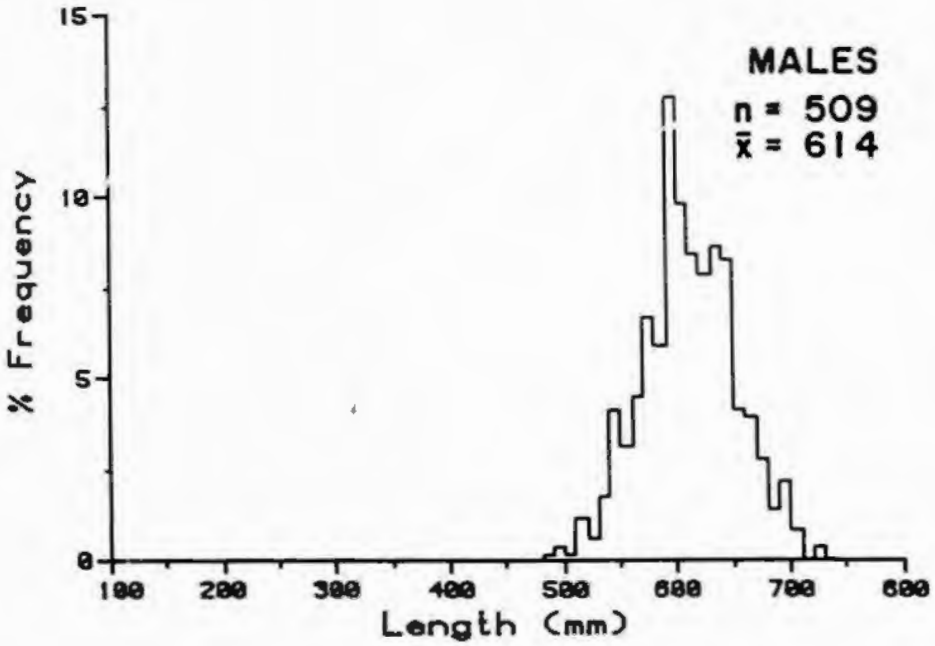


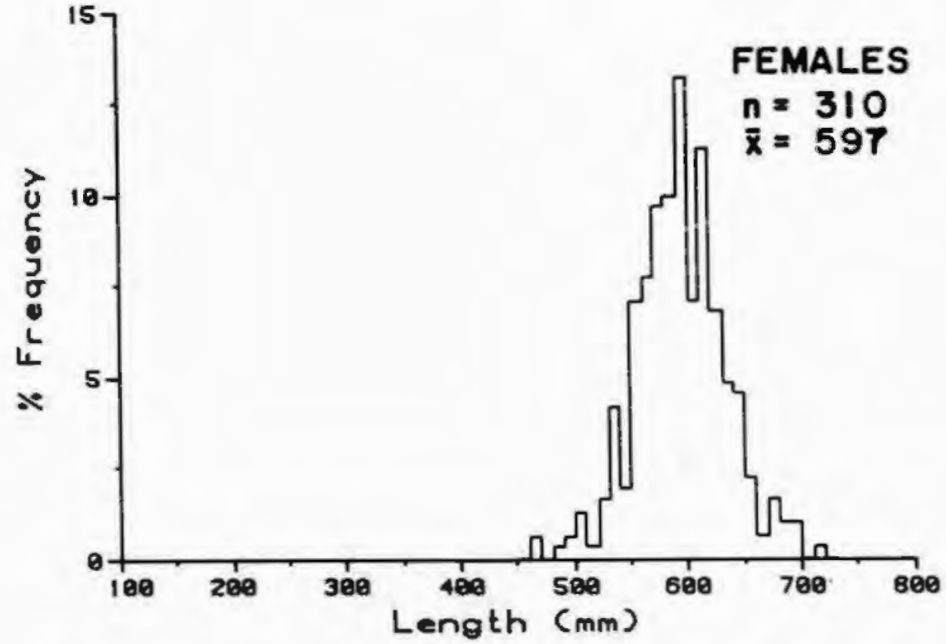
Appendix Figure 5-61. Chum salmon male and female length frequencies at Sunshine Station not weighted by fishwheel catch per unit of effort, 1984.



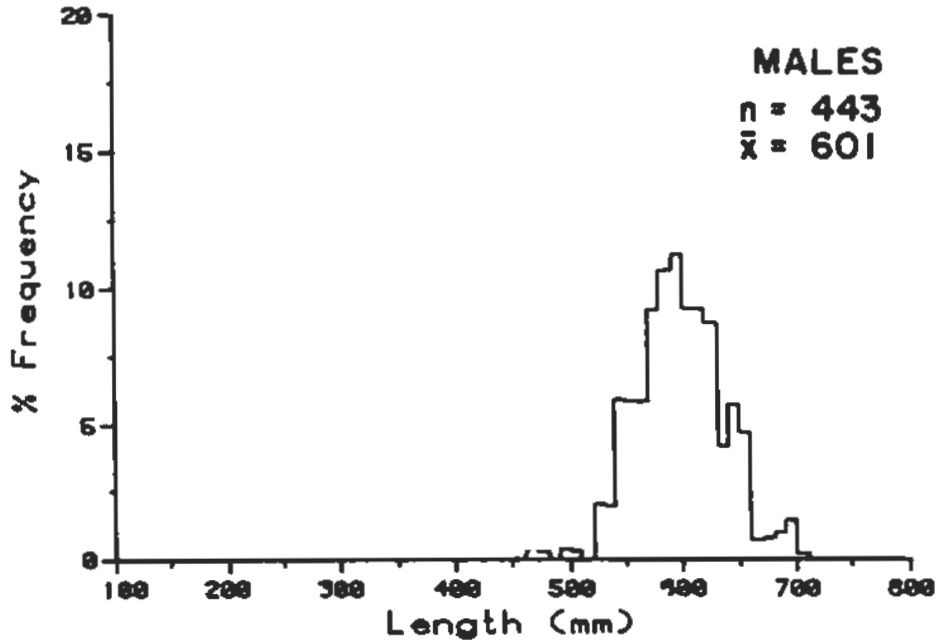


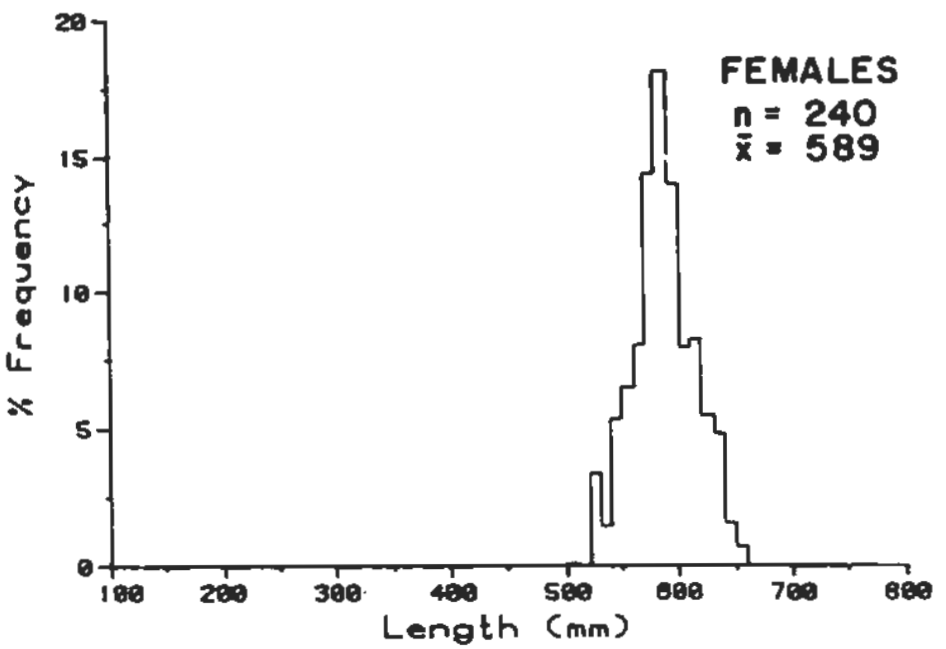
Appendix Figure 5-62. Chum salmon male and female length frequencies Talkeetna Station weighted by fishwheel catch p unit of effort, 1984.



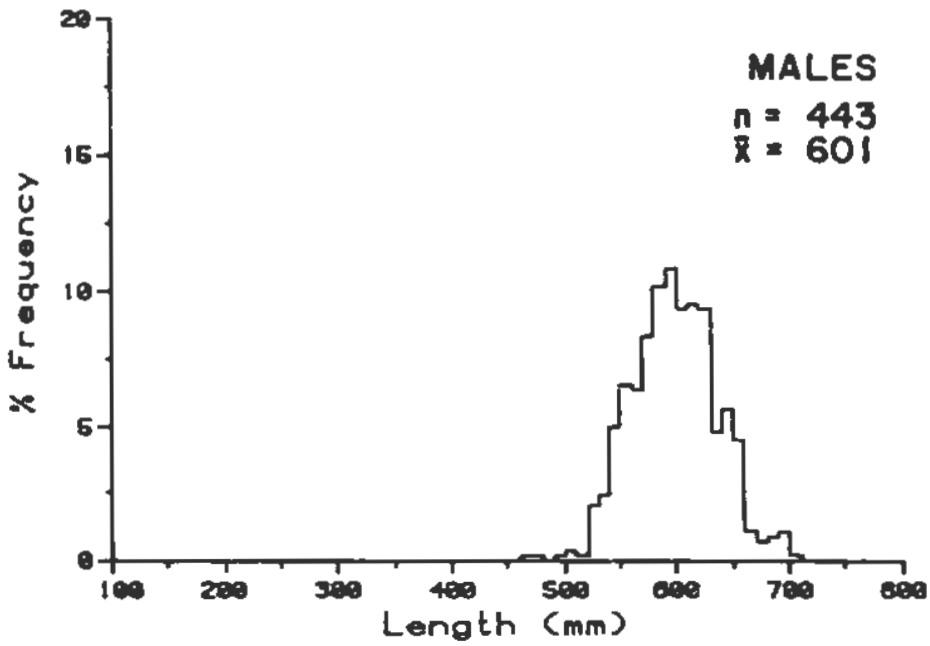


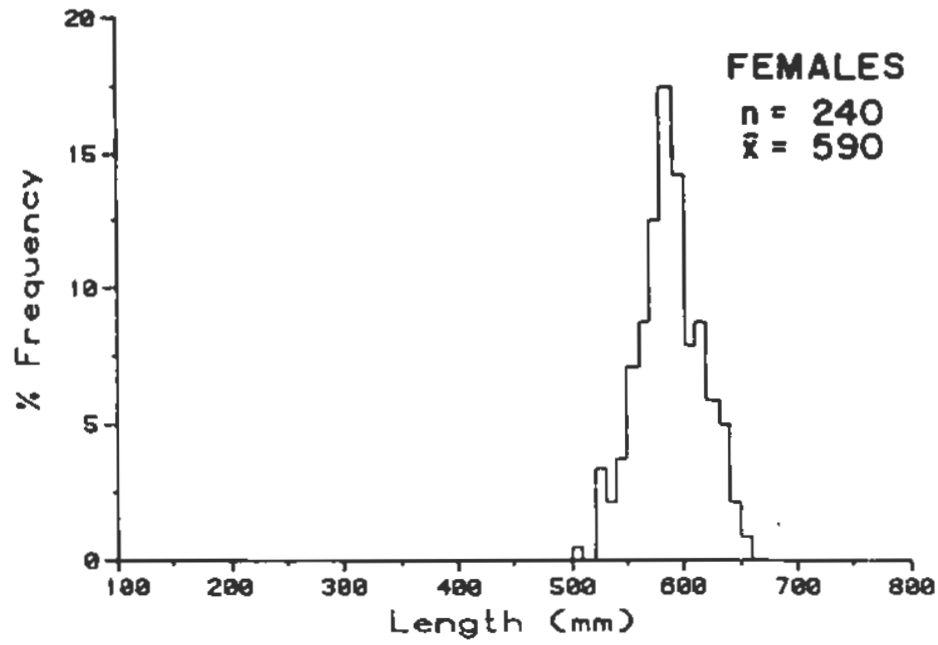
Appendix Figure 5-63. Chum salmon male and female length frequencies at Talkeetna Station not weighted by fishwheel catch per unit of effort, 1984.



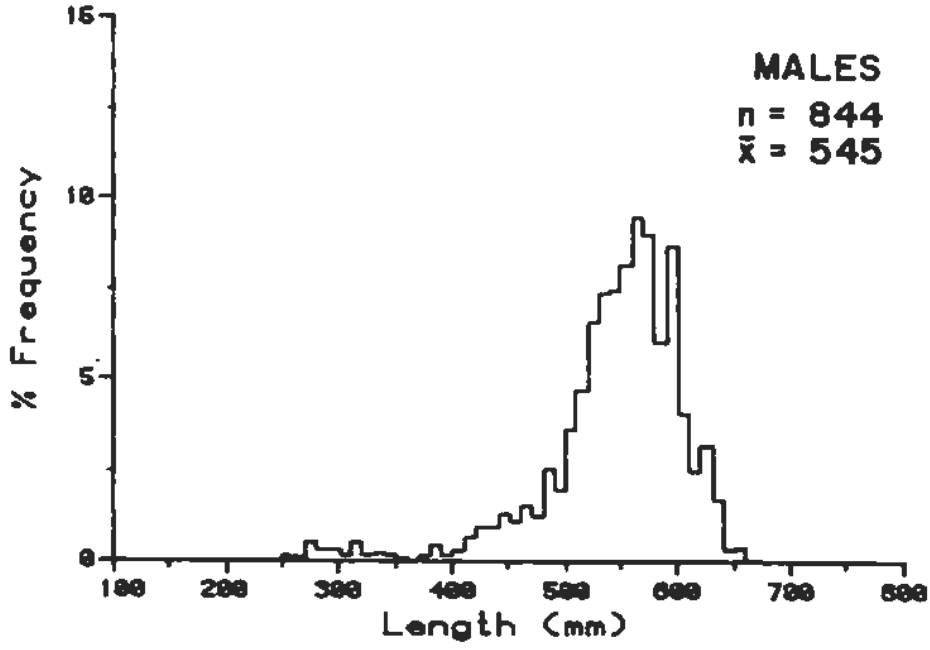


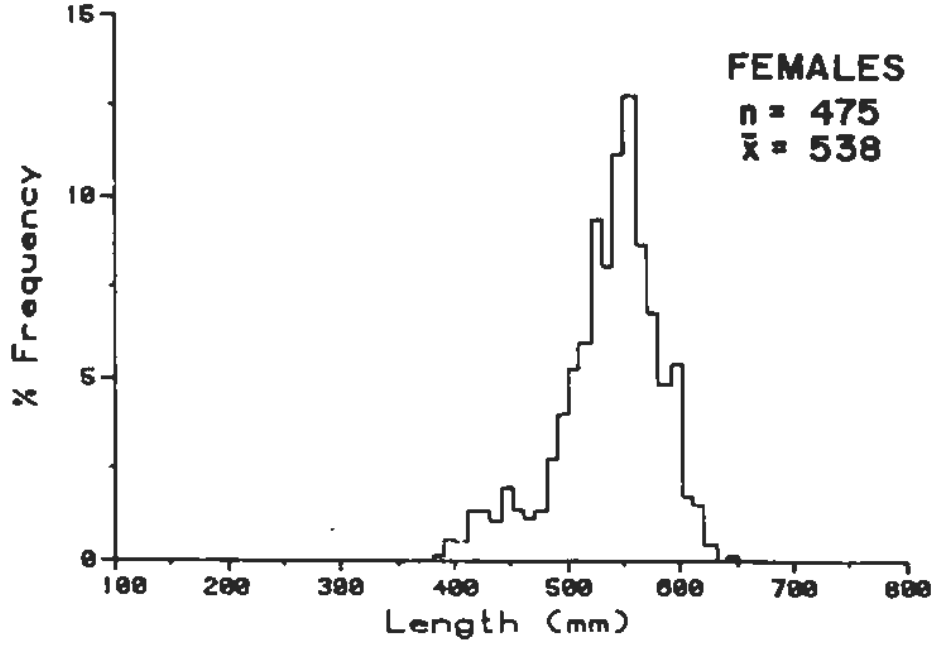
Appendix Figure 5-64. Chum salmon male and female length frequencies at Curry Station weighted by fishwheel catch per unit of effort, 1984.



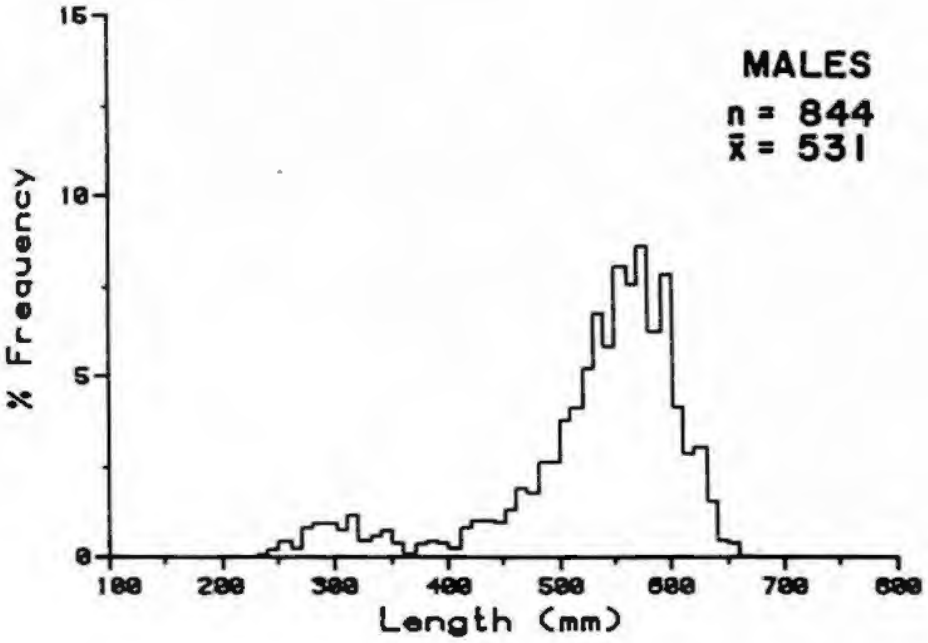


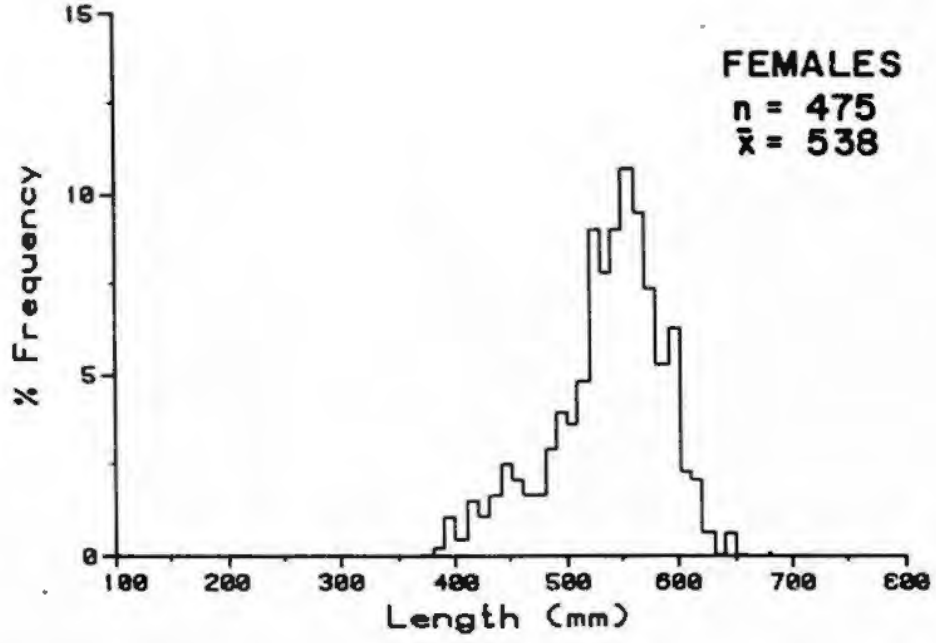
Appendix Figure 5-65. Chum salmon male and female length frequencies at Curry Station not weighted by fishwheel catch per unit of effort, 1984.



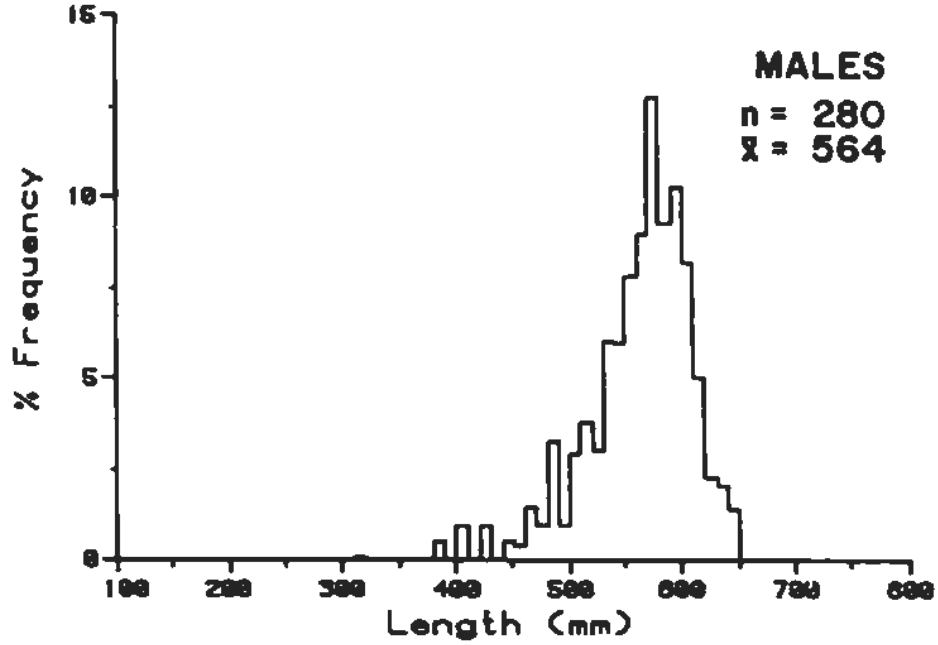


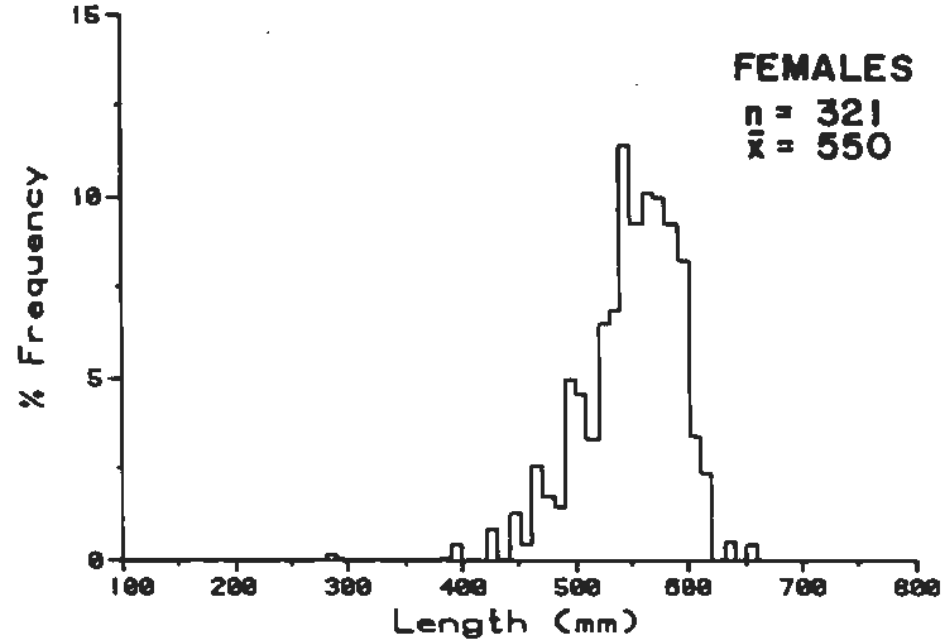
Appendix Figure 5-66. Coho salmon male and female length frequencies a Flathorn Station weighted by fishwheel catch per uni of effort, 1984.



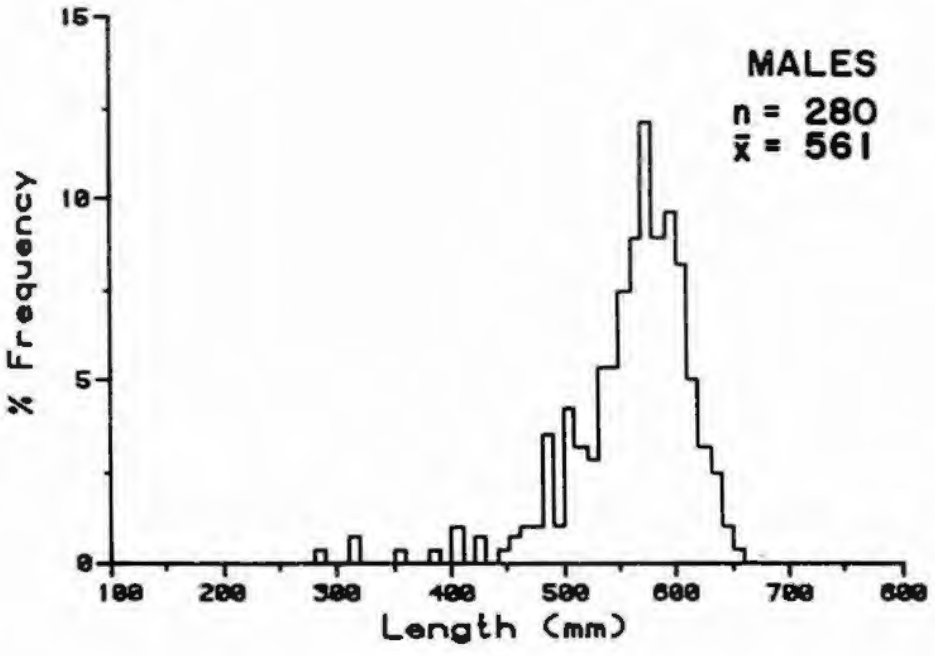


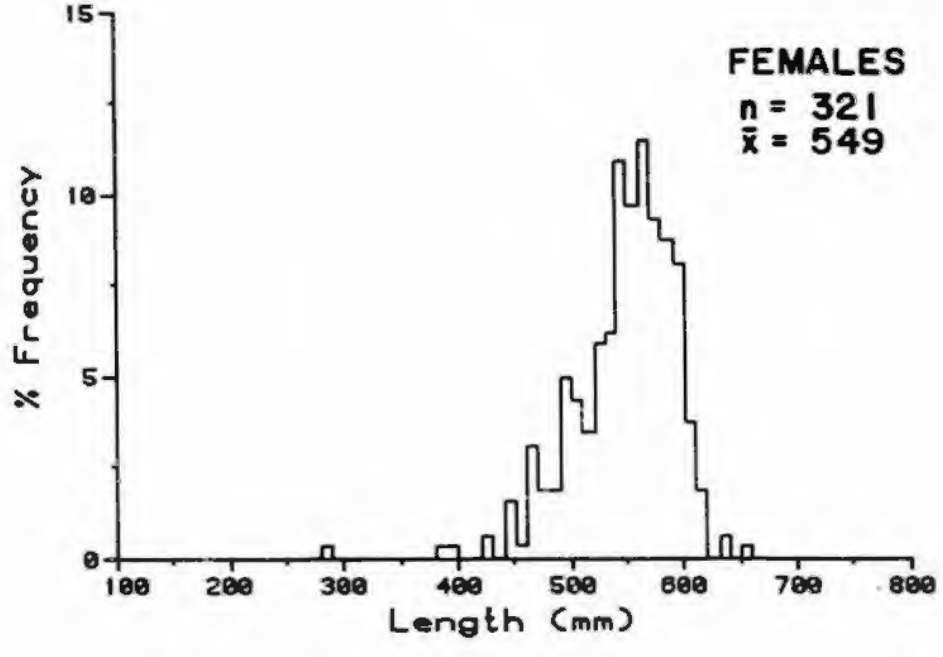
Appendix Figure 5-67. Coho salmon male and female length frequencies at Flathorn Station not weighted by fishwheel catch per unit of effort, 1984.



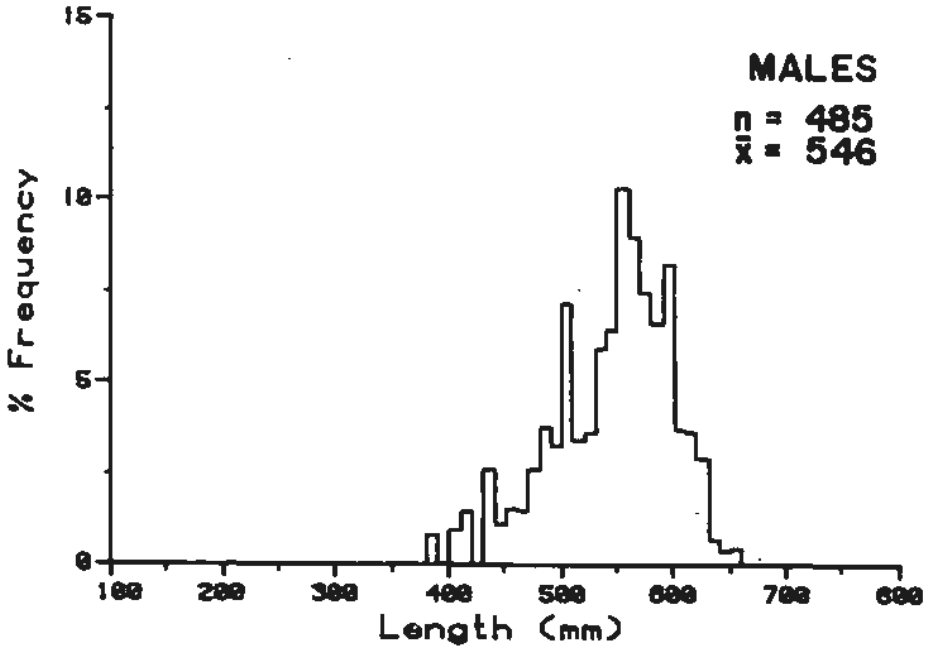


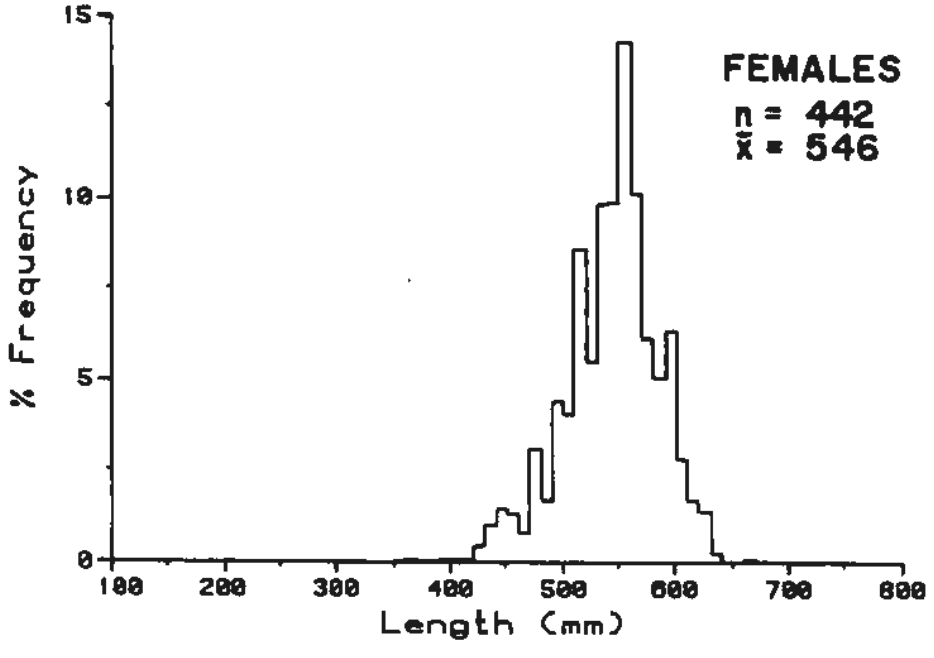
Appendix Figure 5-68. Coho salmon male and female length frequencies at Yentna Station weighted by fishwheel catch per unit of effort, 1984.



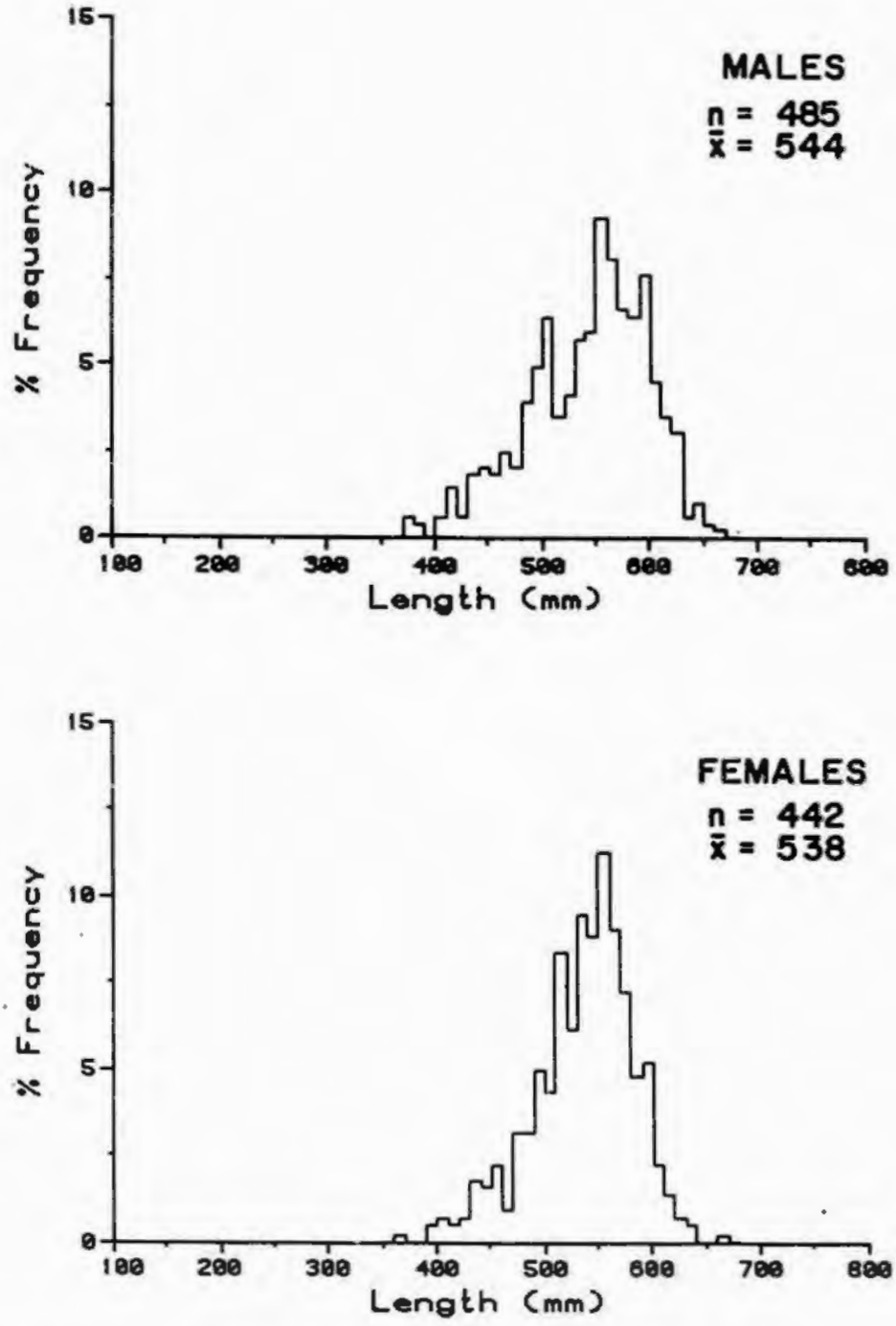


Appendix Figure 5-69. Coho salmon male and female length frequencies Yentna Station not weighted by fishwheel catch p unit of effort, 1984.

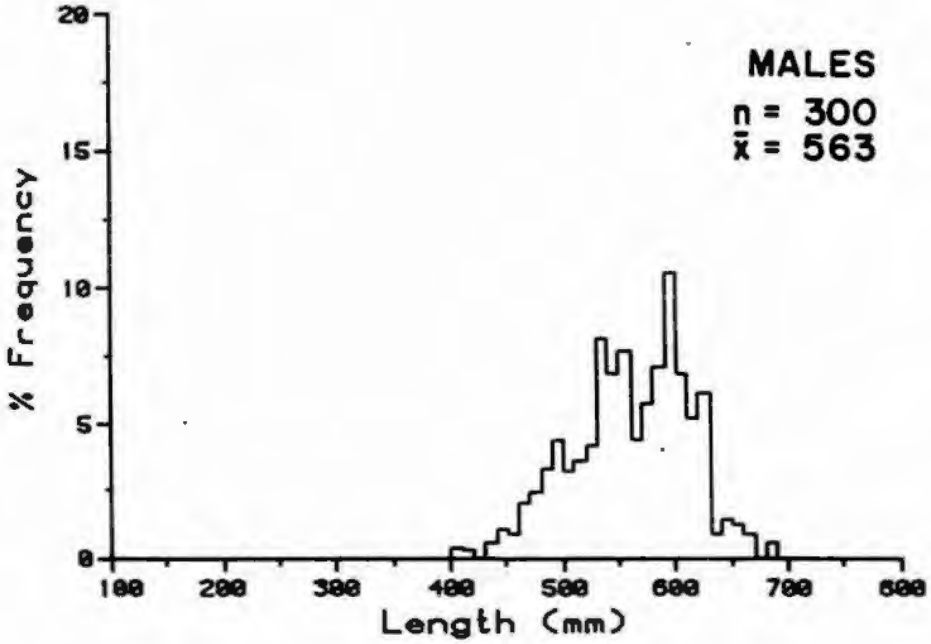


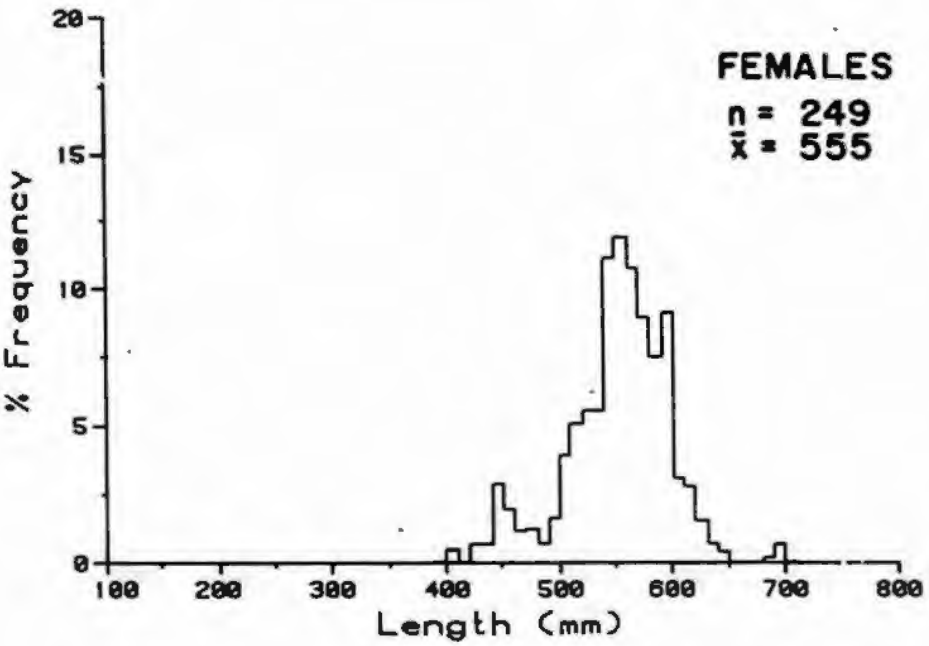


Appendix Figure 5-70. Coho salmon male and female length frequencies Sunshine Station weighted by fishwheel catch per un of effort, 1984.

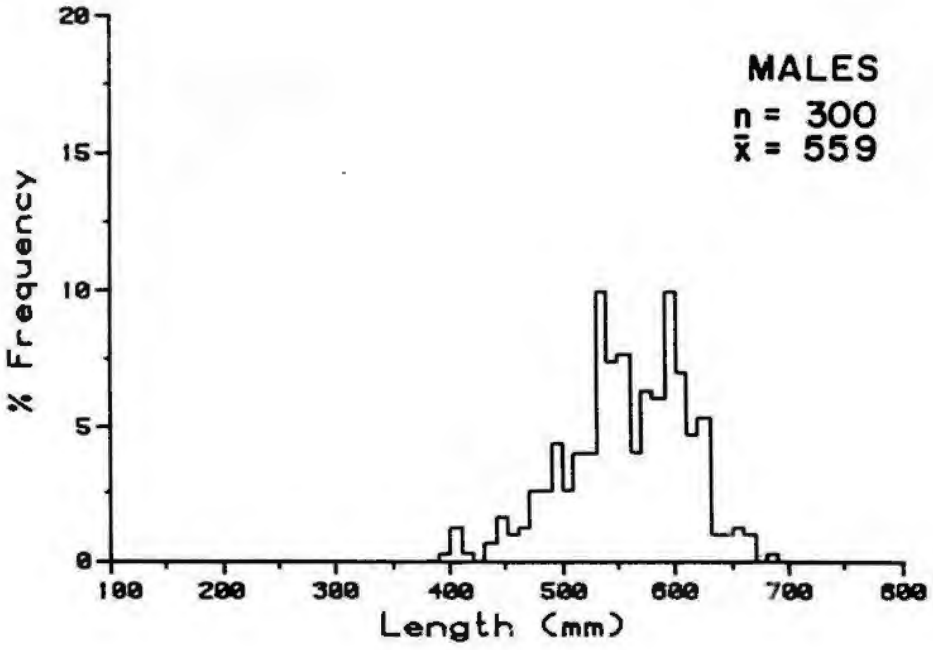


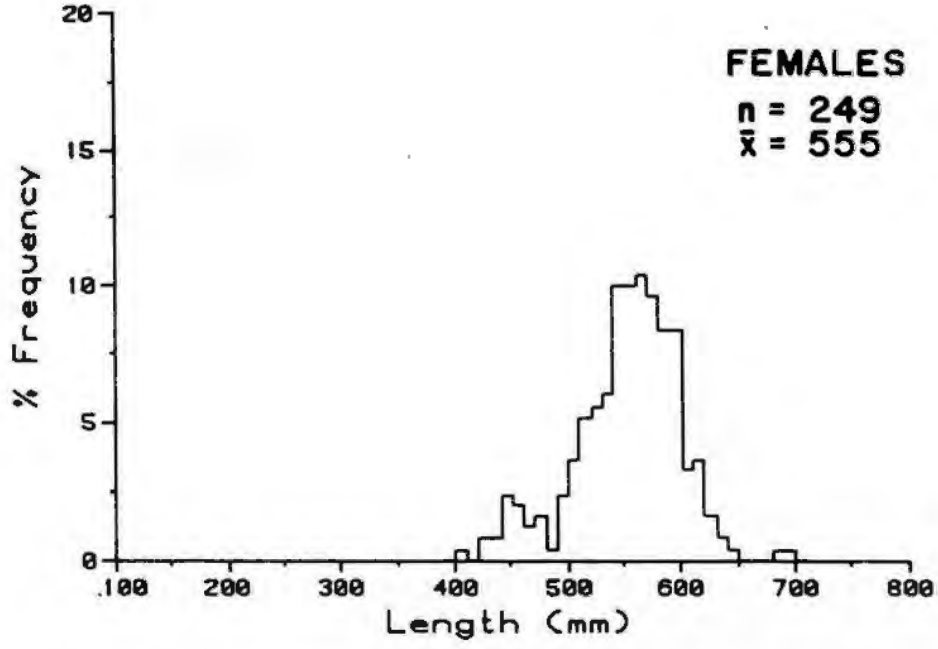
Appendix Figure 5-71. Coho salmon male and female length frequencies at Sunshine Station not weighted by fishwheel catch per unit of effort, 1984.



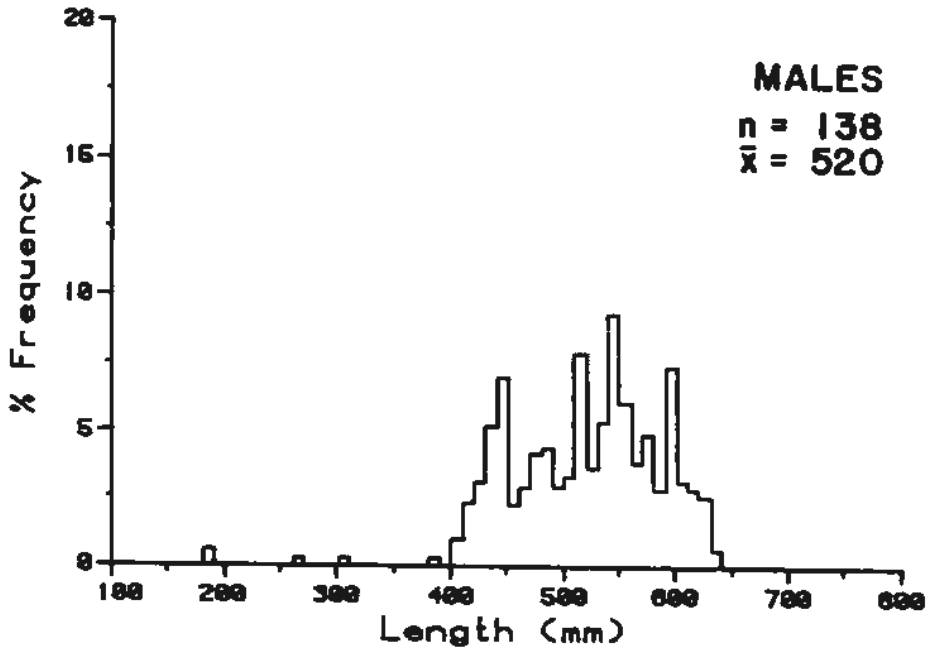


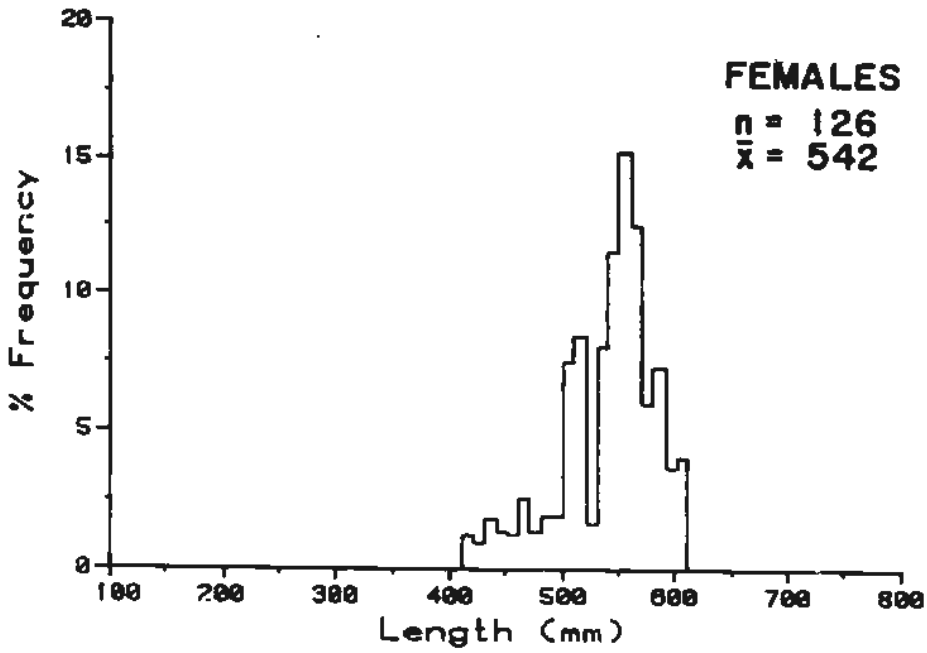
Appendix Figure 5-72. Coho salmon male and female length frequencies at Talkeetna Station weighted by fishwheel catch per unit of effort, 1984.



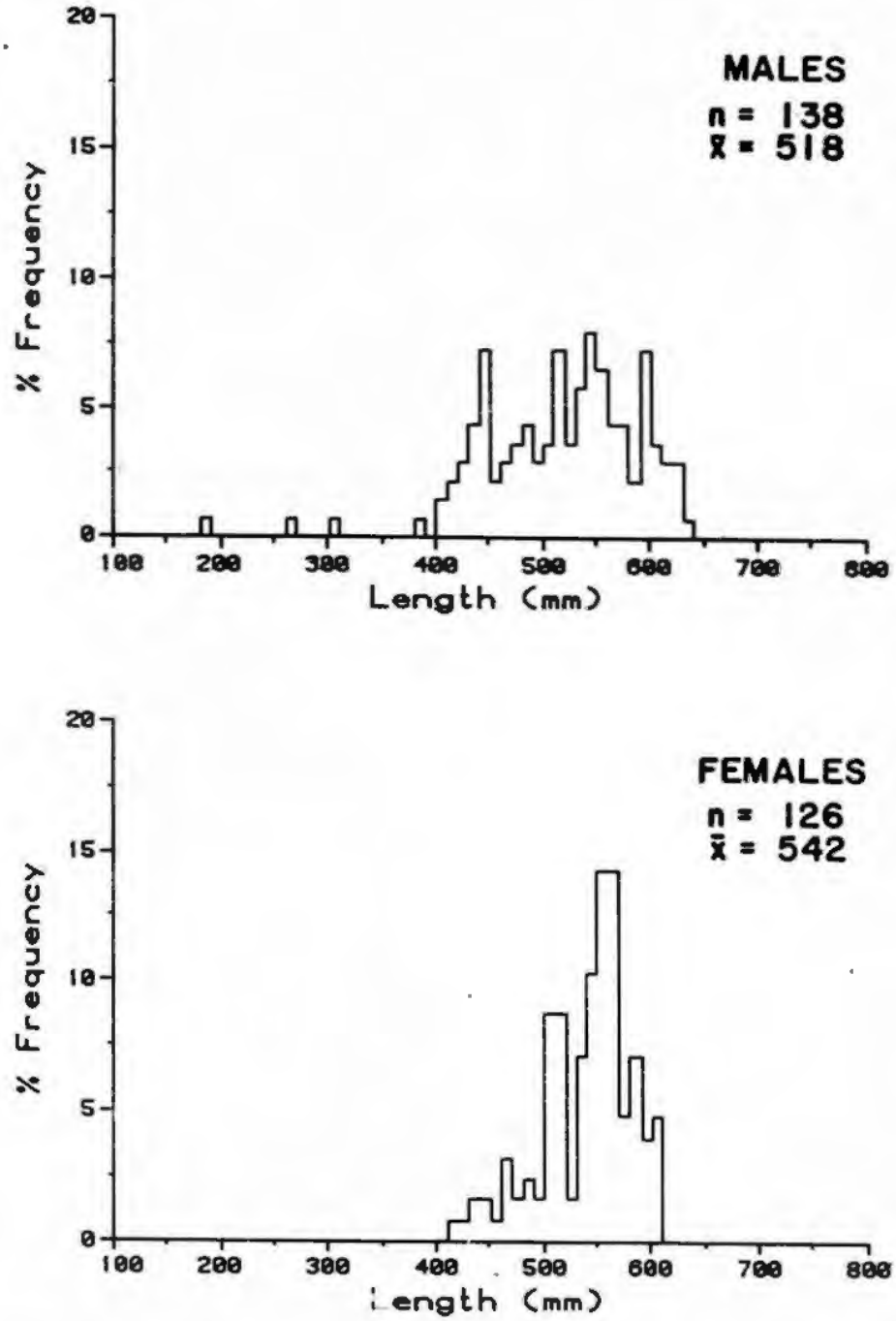


Appendix Figure 5-73. Coho salmon male and female length frequencies at Talkeetna Station not weighted by fishwheel catch per unit of effort, 1984.





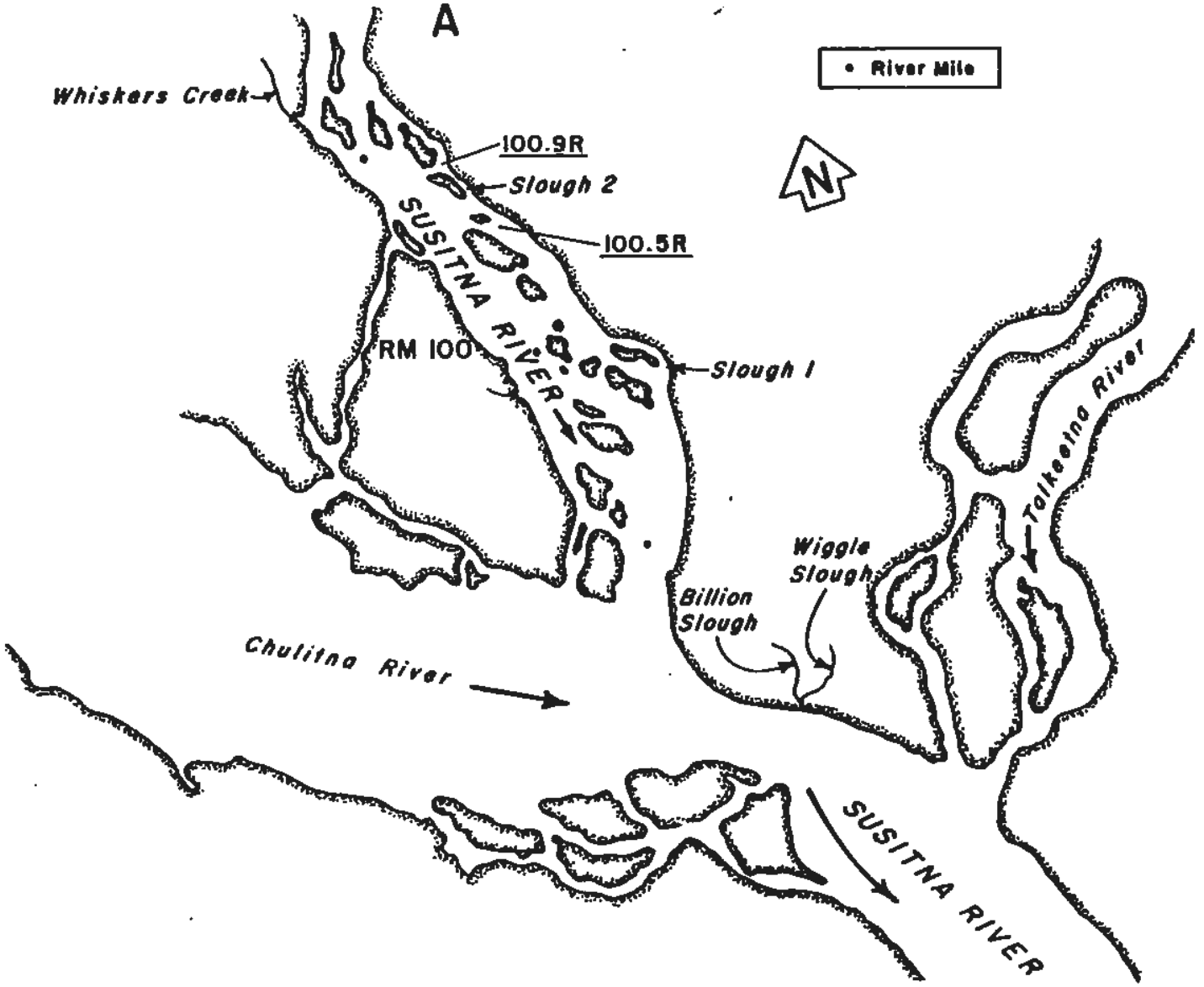
Appendix Figure 5-74. Coho salmon male and female length frequencies at Curry Station weighted by fishwheel catch per unit of effort, 1984.



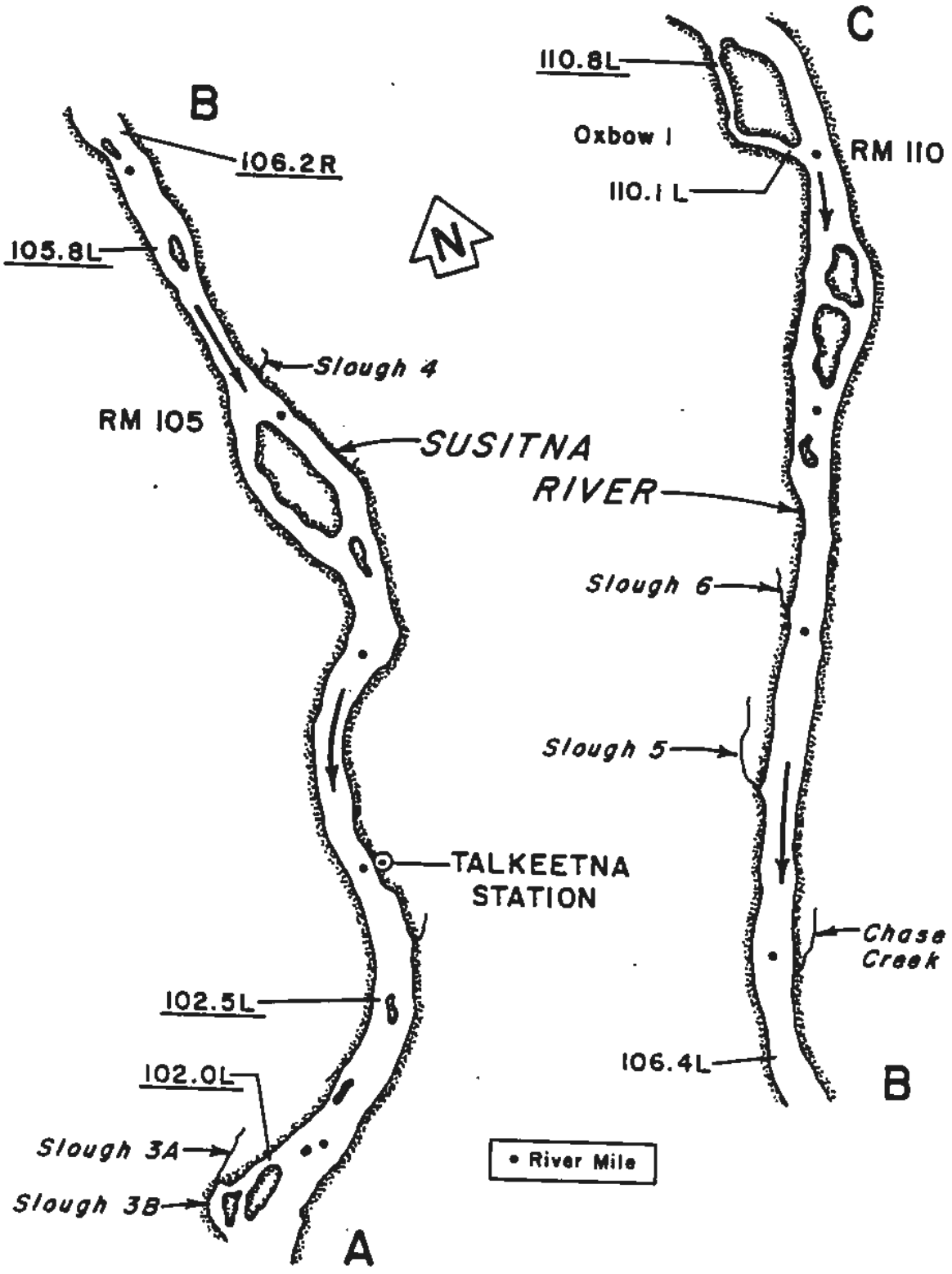
Appendix Figure 5-75. Coho salmon male and female length frequencies at Curry Station not weighted by fishwheel catch per unit of effort, 1984.

APPENDIX 6

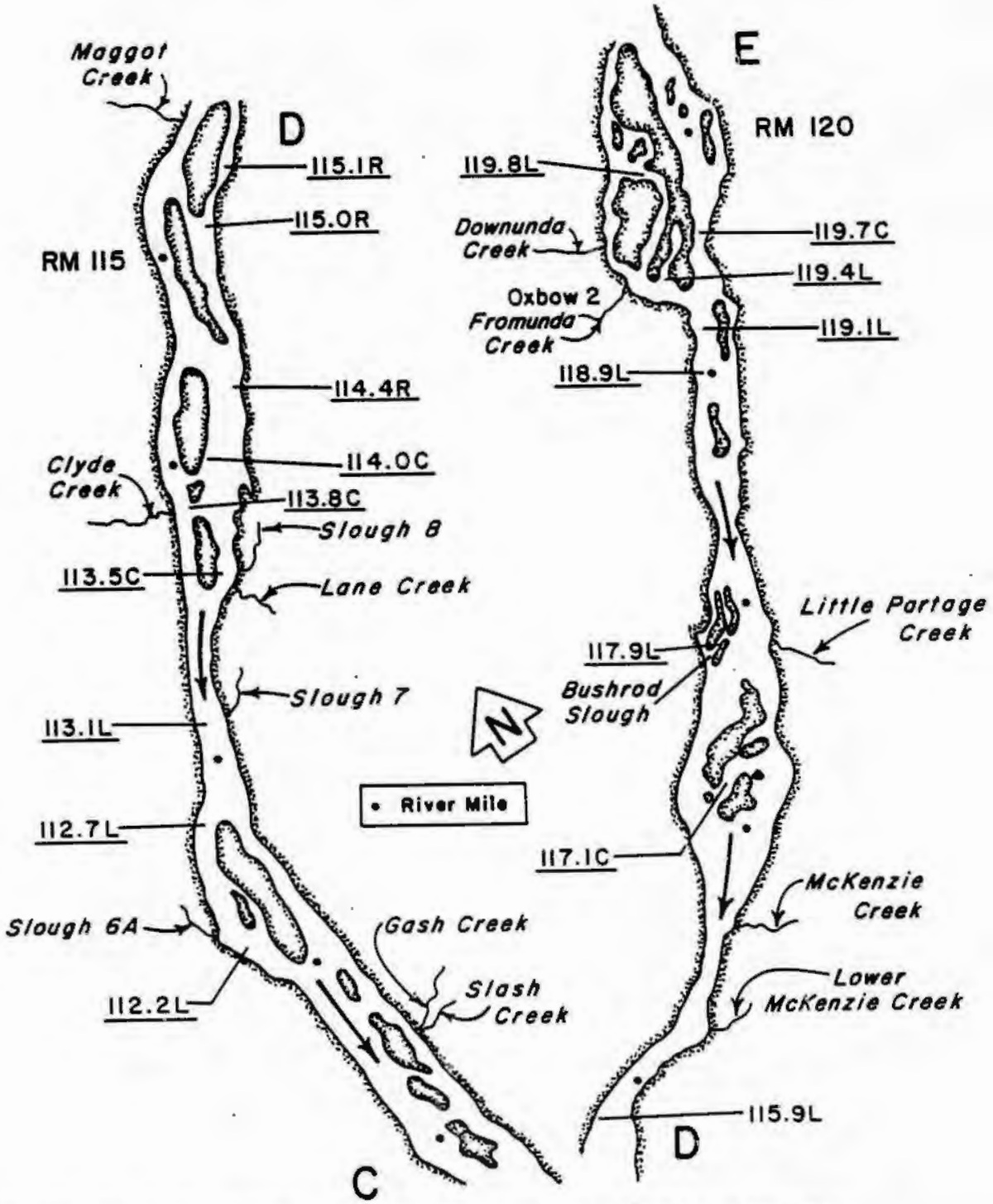
1. SLOUGH, STREAM AND MAINSTEM SPAWNING LOCATION MAP
2. NEW SLOUGH MAPS
3. ZONES OF SLOUGH 8A AND 11
4. MAINSTEM SUSITNA RIVER SPAWNING SITE TABLE AND FIGURES
5. TRIBUTARY SPAWNING FIGURES
6. SLOUGH AND STREAM SURVEY COUNT TABLES
7. TAGGED/UNTAGGED RATIOS FROM SPAWNING GROUND SURVEYS



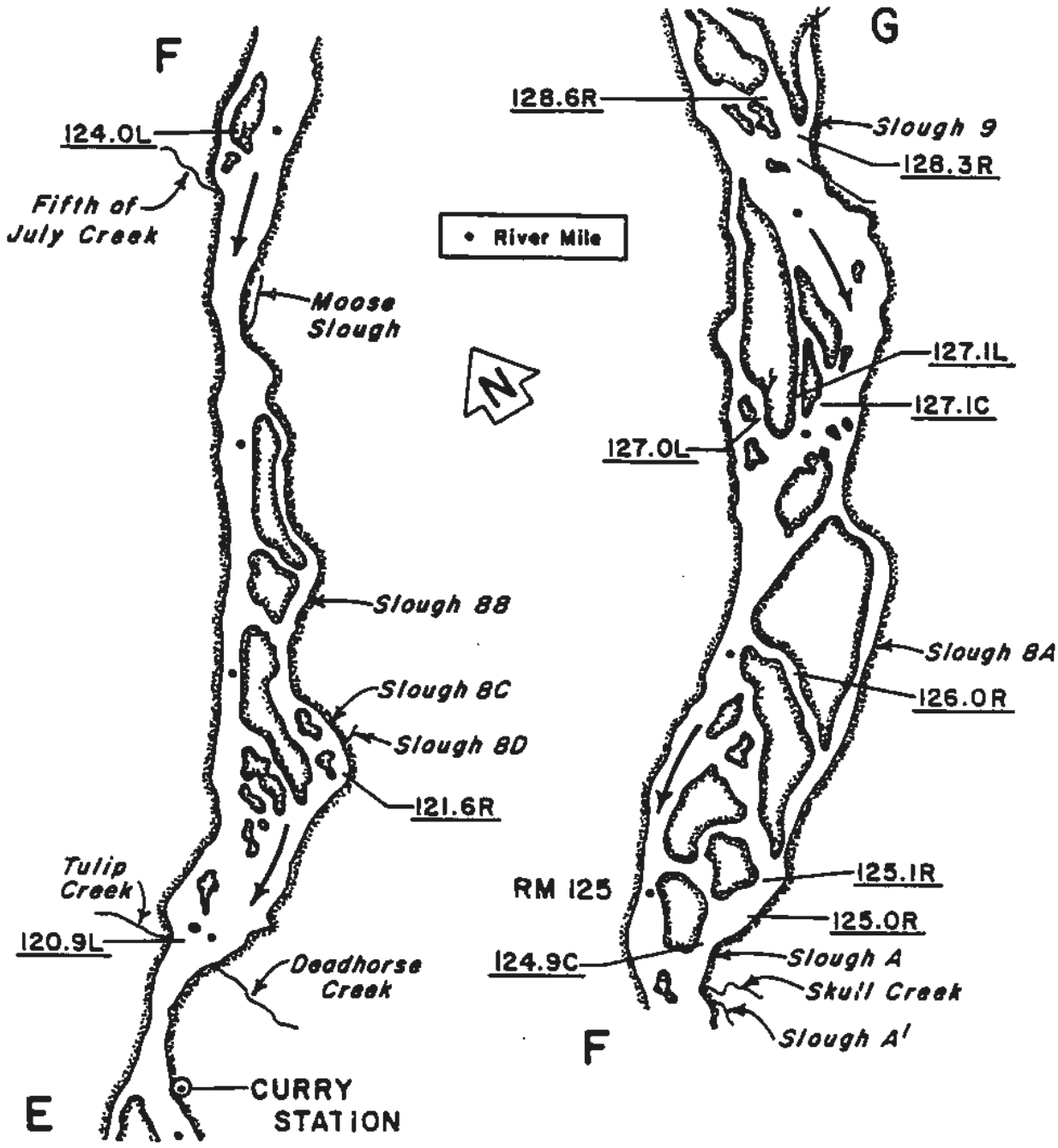
Appendix Figure 6-1. Susitna River slough, stream and mainstem spawning locations from the confluence of the Talkeetna and Chulitna rivers to RM 150.0, 1984.



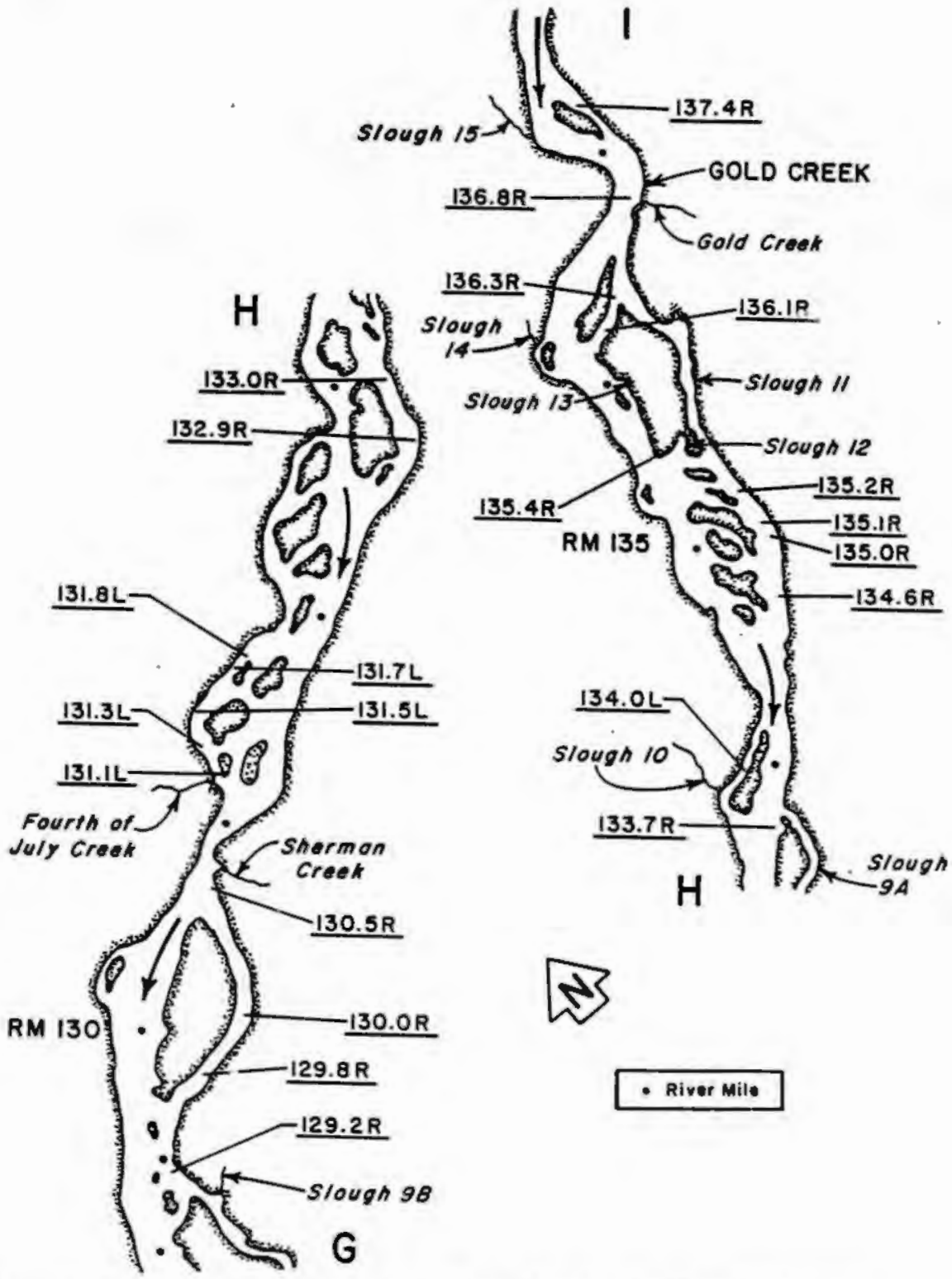
Appendix Figure 6-1 (cont). Susitna River slough, stream and mainstem spawning locations from the confluence of the Talkeetna and Chulitna rivers to RM 150.0, 1984.



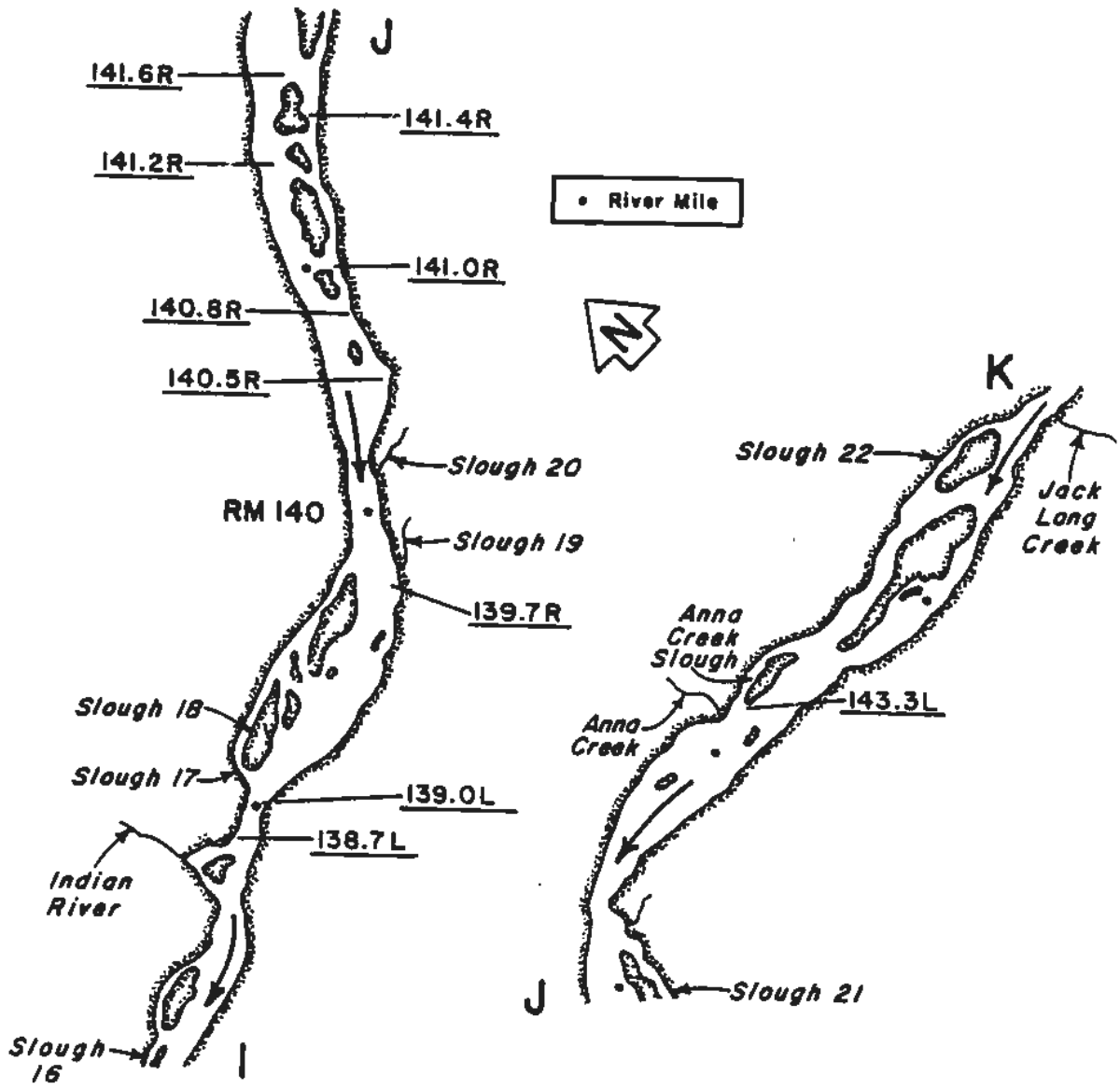
Appendix Figure 6-1 (cont). Susitna River slough, stream and mainstem spawning locations from the confluence of the Talkeetna and Chulitna rivers to RM 150.0, 1984.



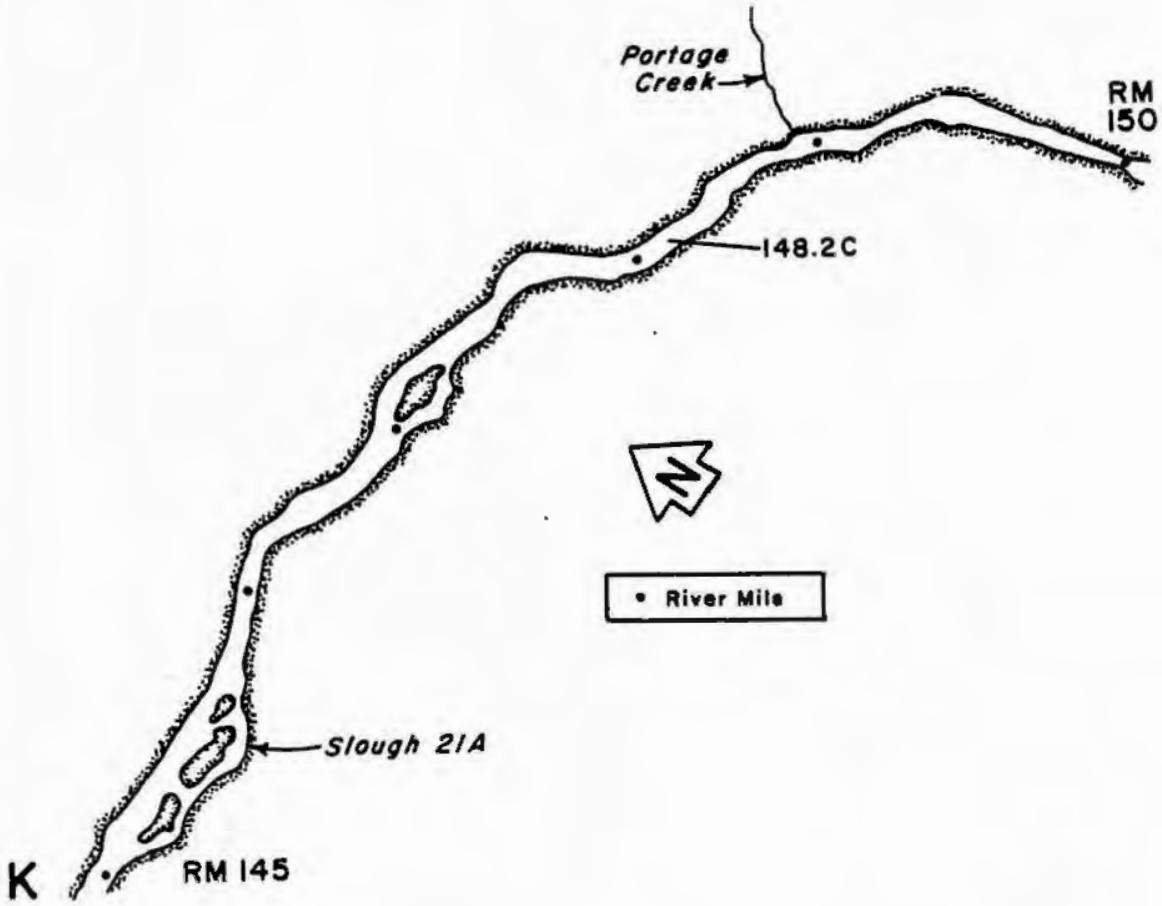
Appendix Figure 6-1 (cont). Susitna River slough, stream and mainstem spawning locations from the confluence of the Talkeetna and Chulitna rivers to RM 150.0, 1984.



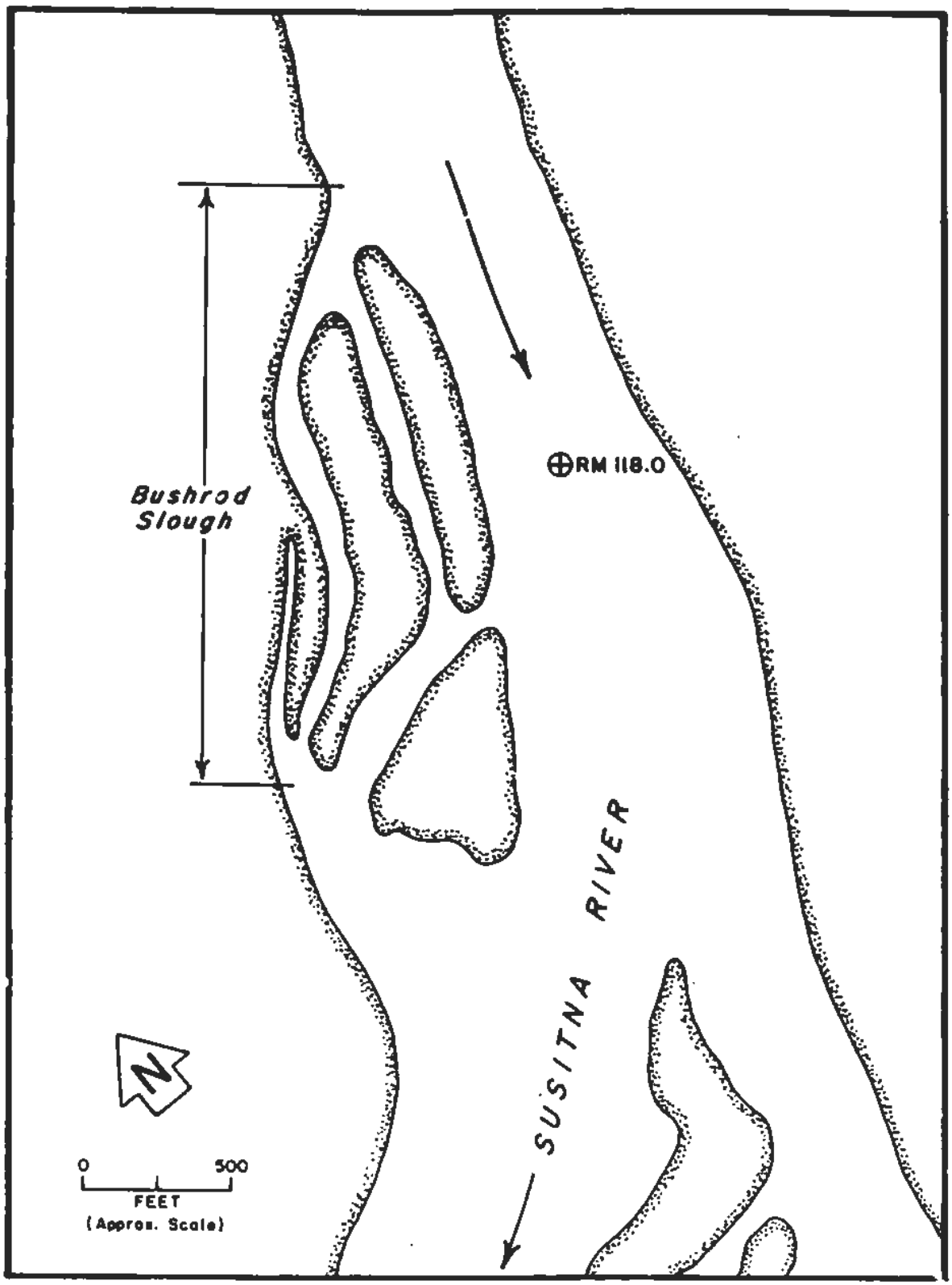
Appendix Figure 6-1 (cont). Susitna River slough, stream and mainstem spawning locations from the confluence of the Talkeetna and Chulitna rivers to RM 150.0, 1984.



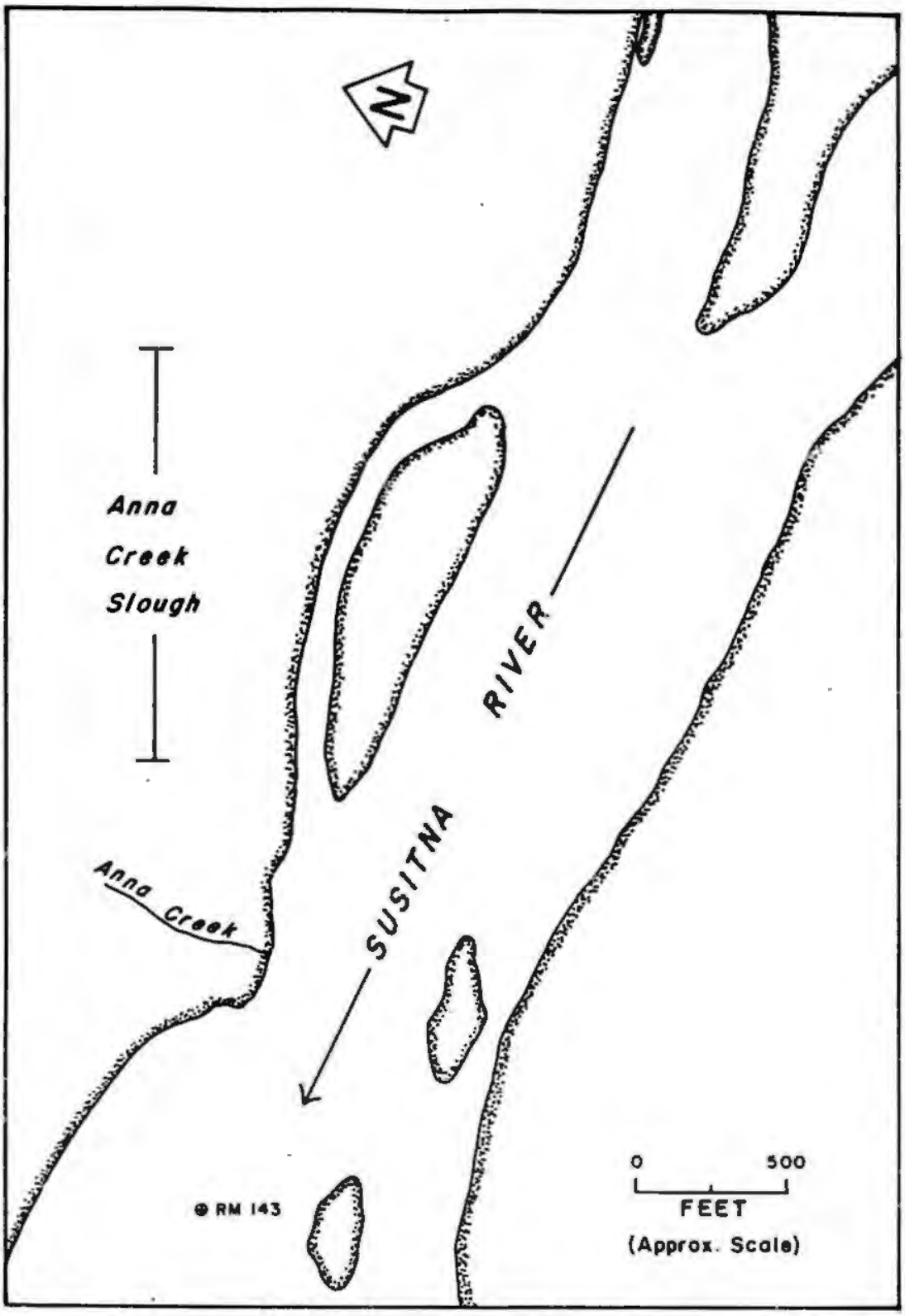
Appendix Figure 6-1 (cont). Susitna River slough, stream and mainstem spawning locations from the confluence of the Talkeetna and Chulitna rivers to RM 150.0, 1984.



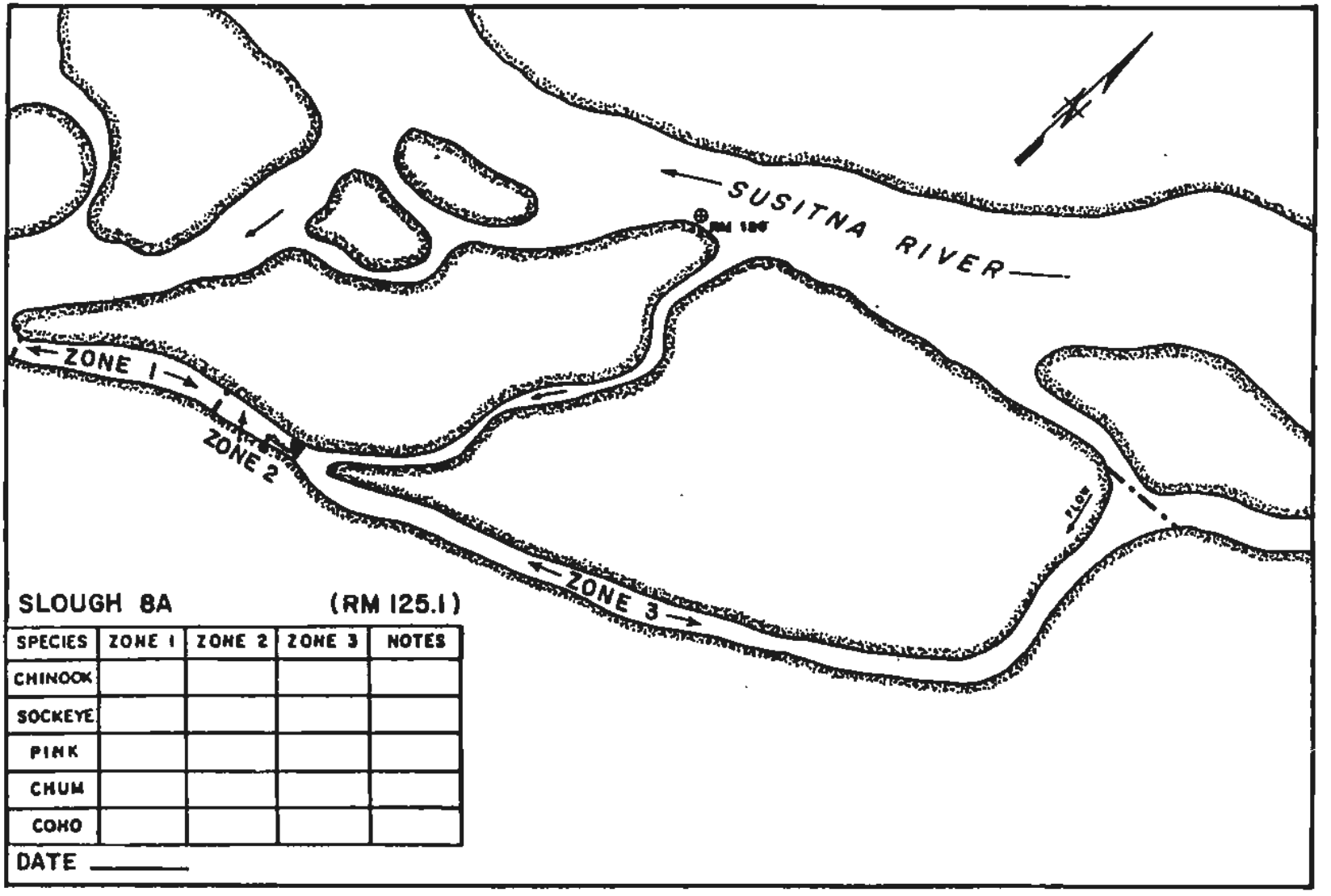
Appendix Figure 6-1 (cont). Susitna River slough, stream and mainstem spawning locations from the confluence of the Talkeetna and Chulitna rivers to RM 150.0, 1984.



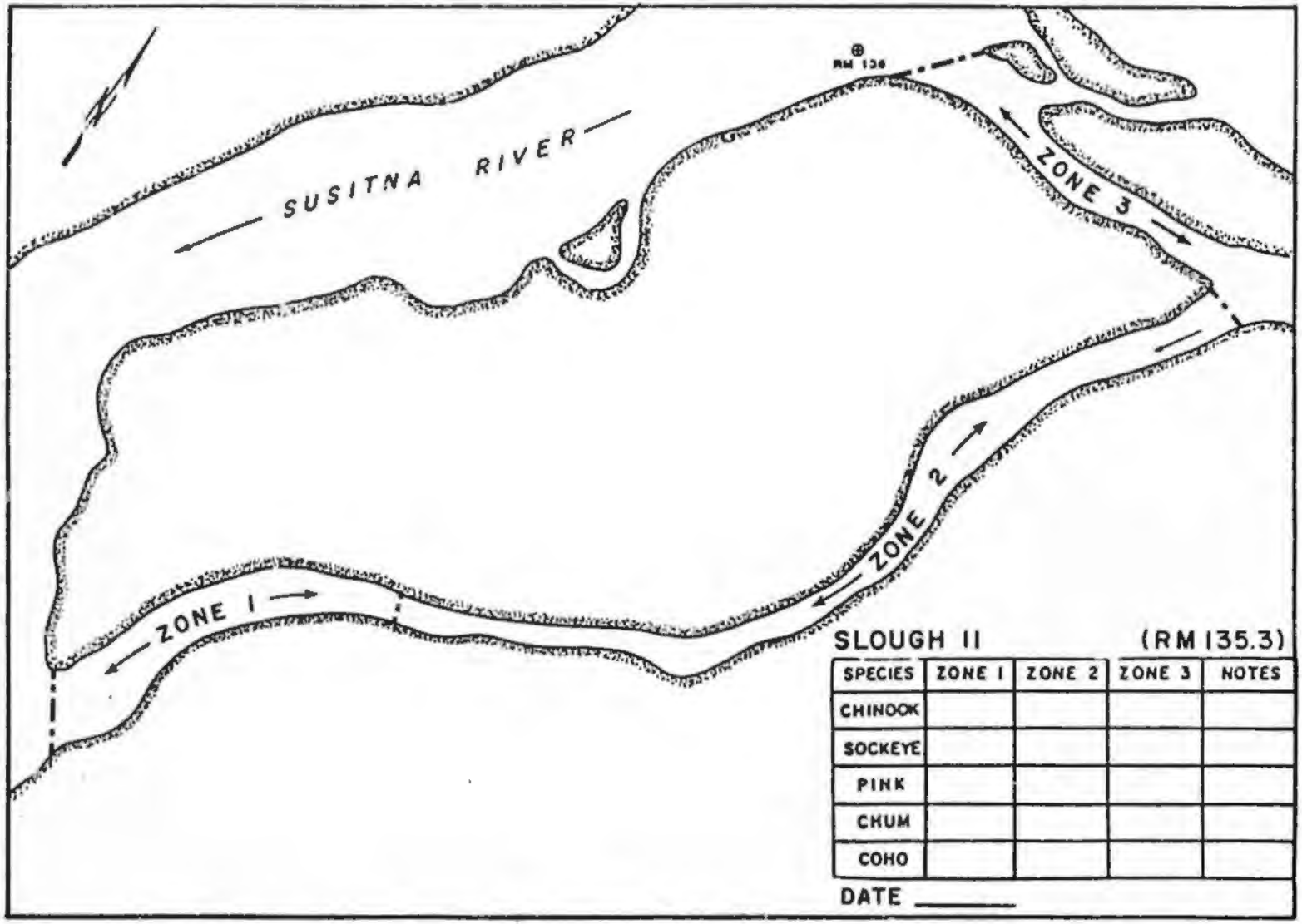
Appendix Figure 6-2. Bushrod Slough located at RM 117.8, 1984.



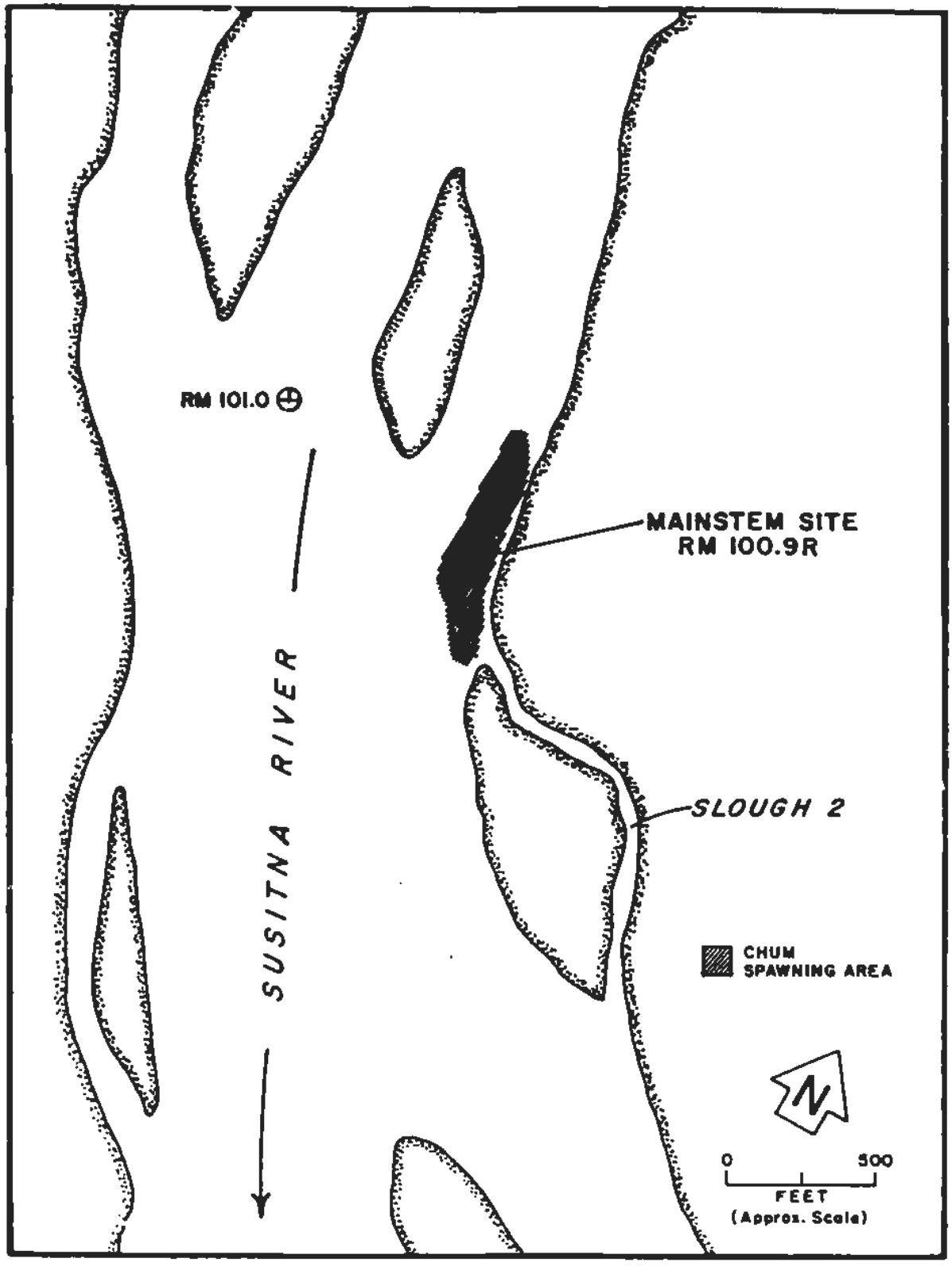
Appendix Figure 6-3. Anna Creek Slough located at RM 143.2, 1984.



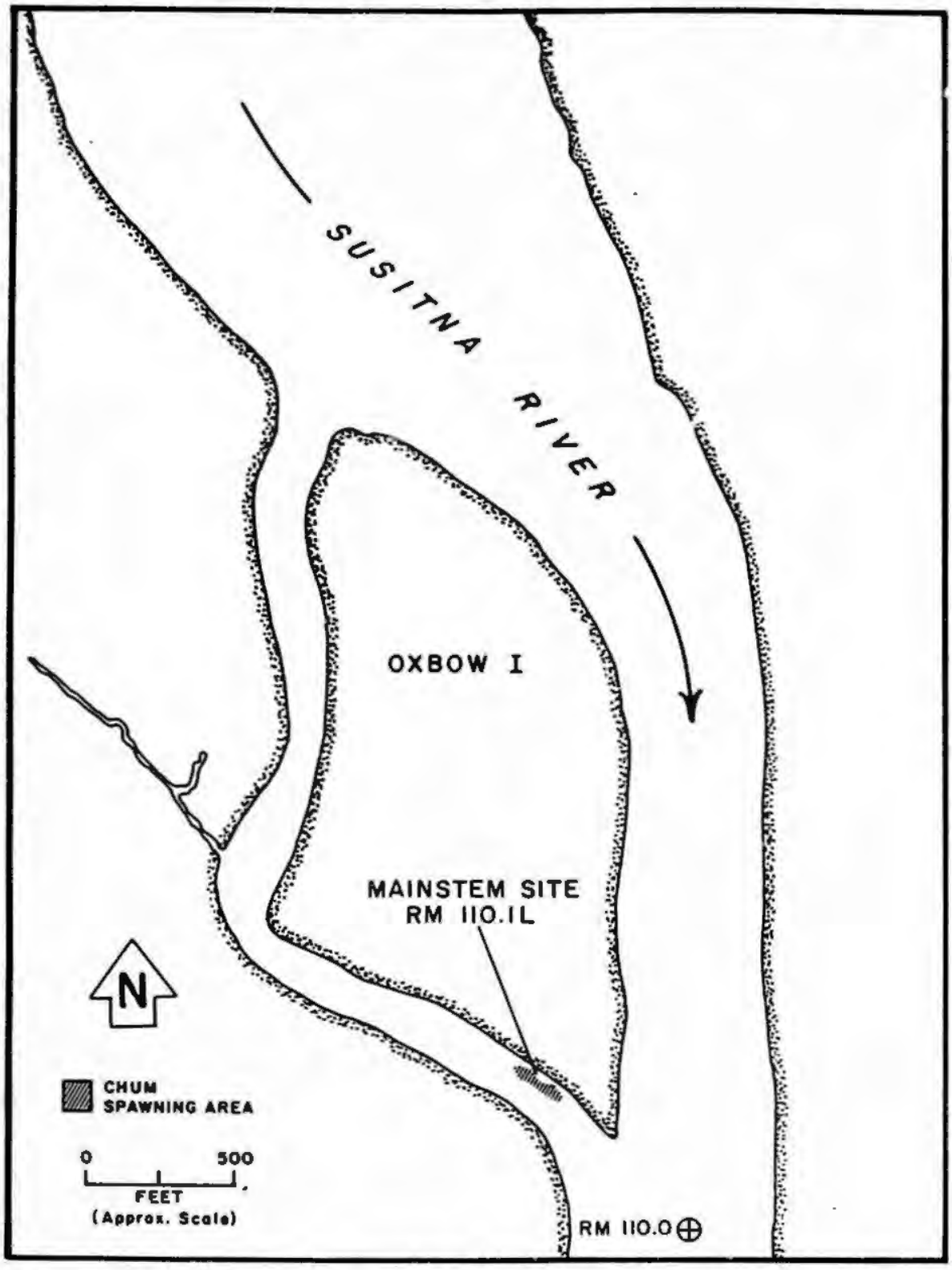
Appendix Figure 6-4. Slough 8A map with habitat locations (zones) defined, 1984.



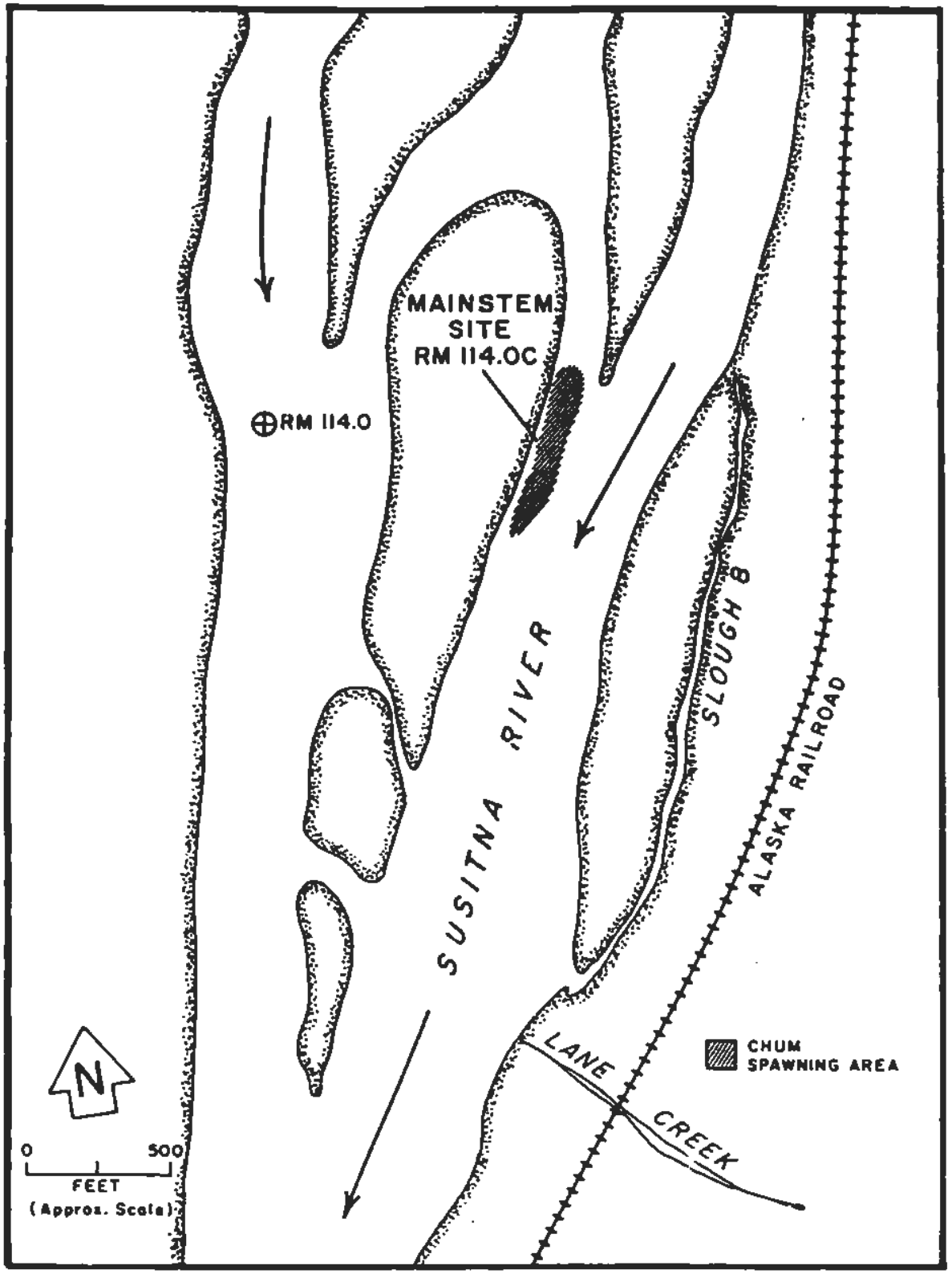
Appendix Figure 6-5. Slough 11 map with habitat locations (zones) defined, 1984.



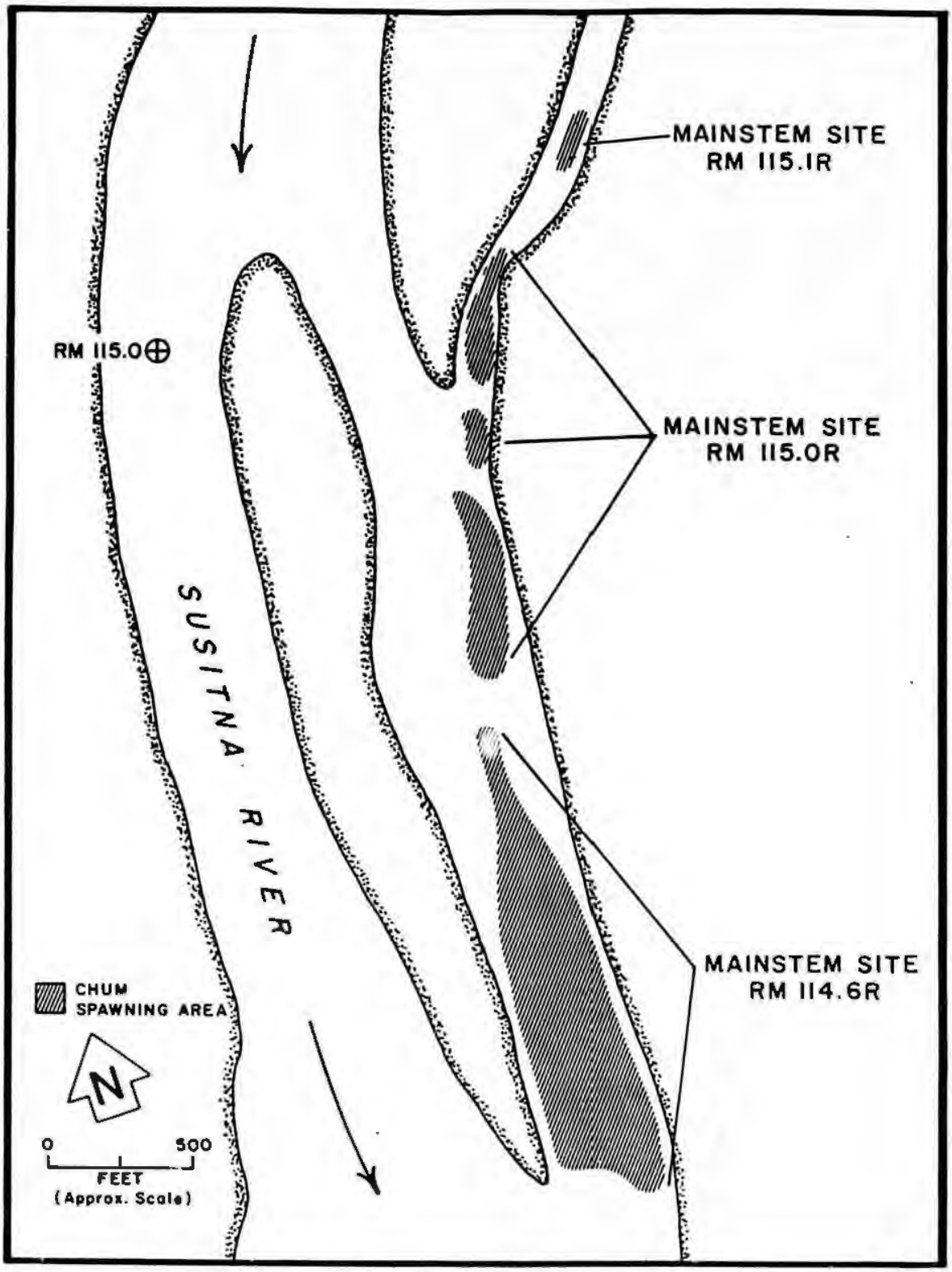
Appendix Figure 6-6. Mainstem Susitna River chum salmon spawning area at RM 100.9R, 1984.



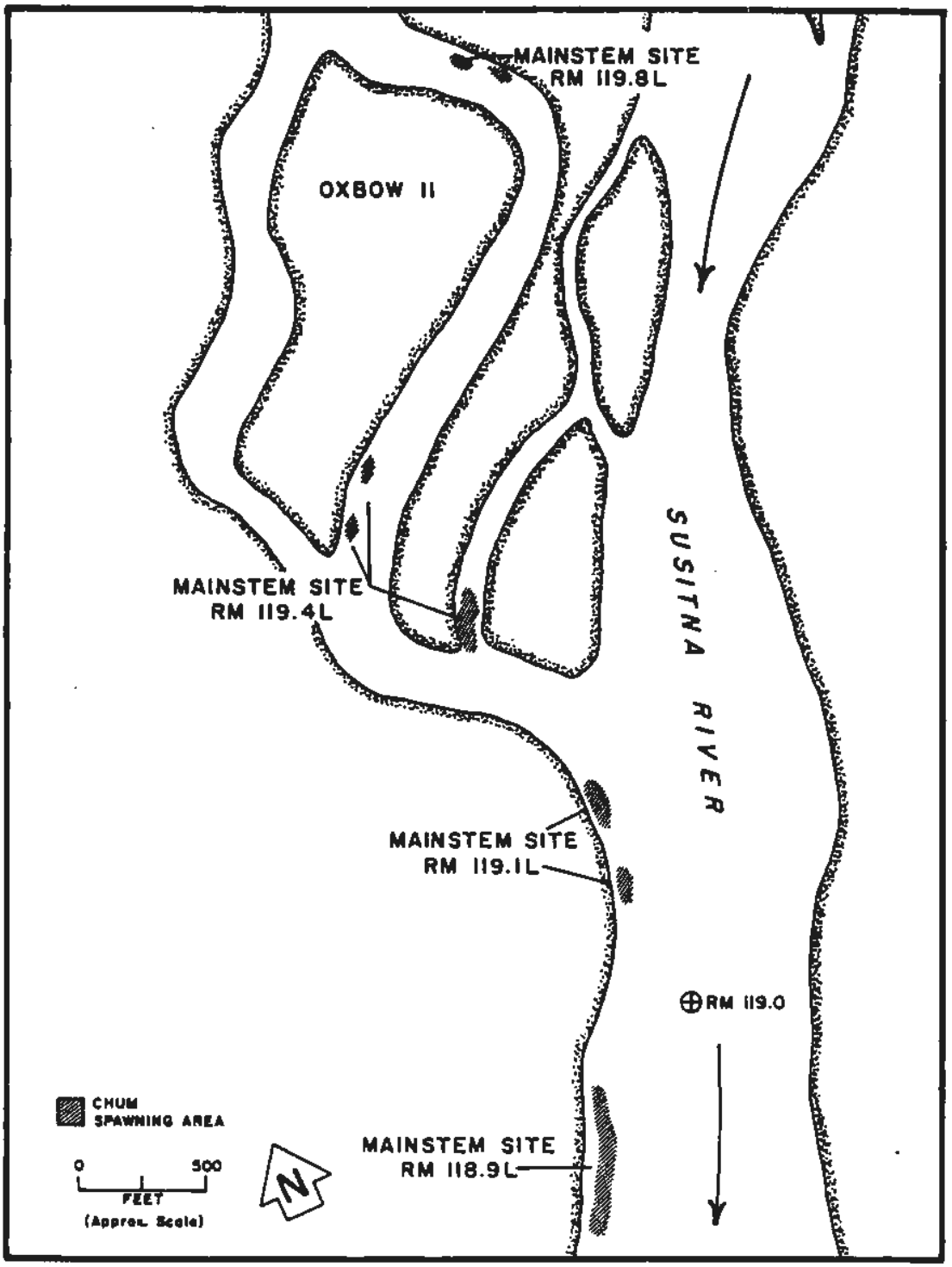
Appendix Figure 6-7. Mainstem Susitna River chum salmon spawning area at RM 110.1L, 1984.



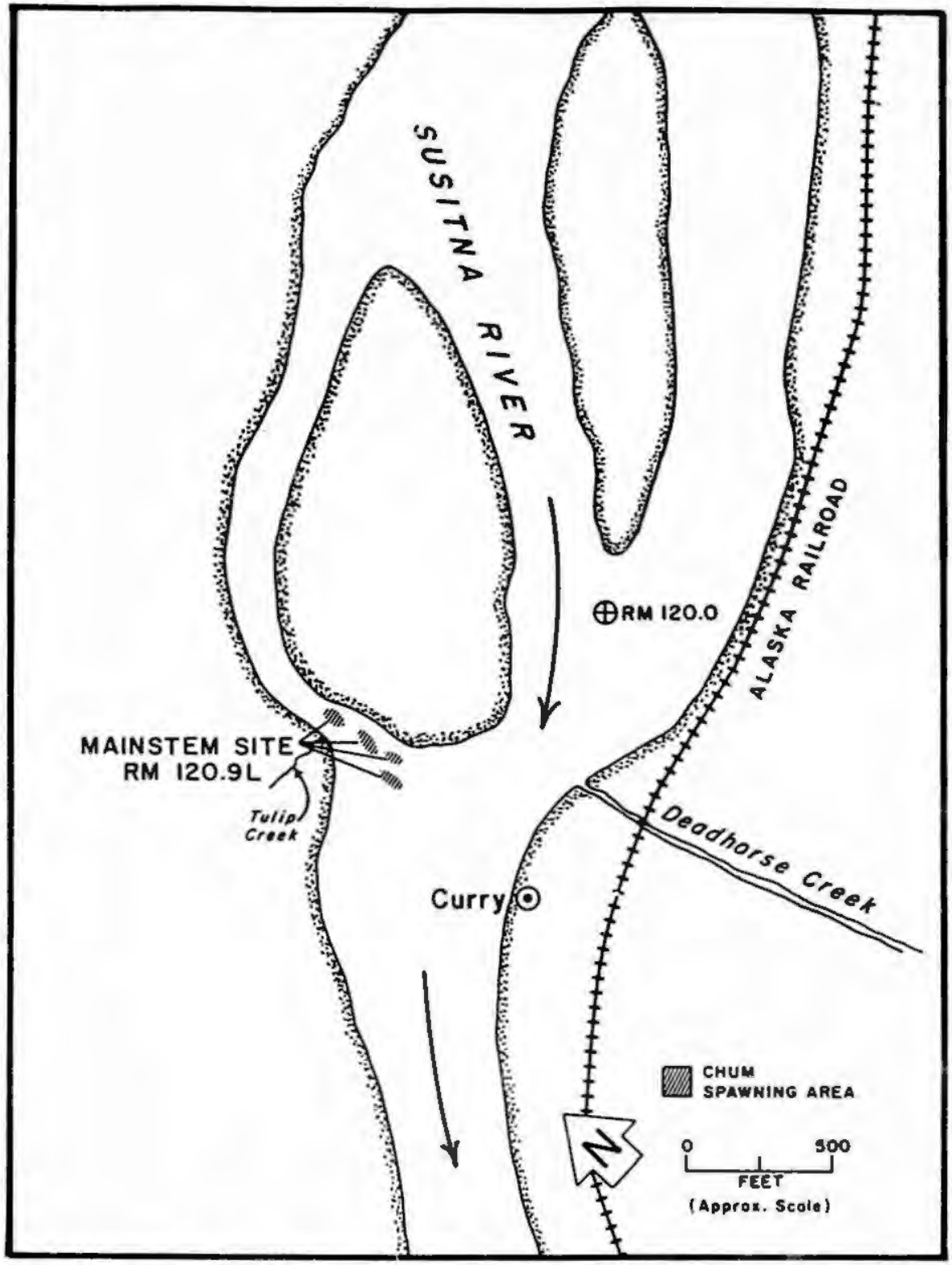
Appendix Figure 6-8. Mainstem Susitna River chum salmon spawning area at RM 114.0C, 1984.



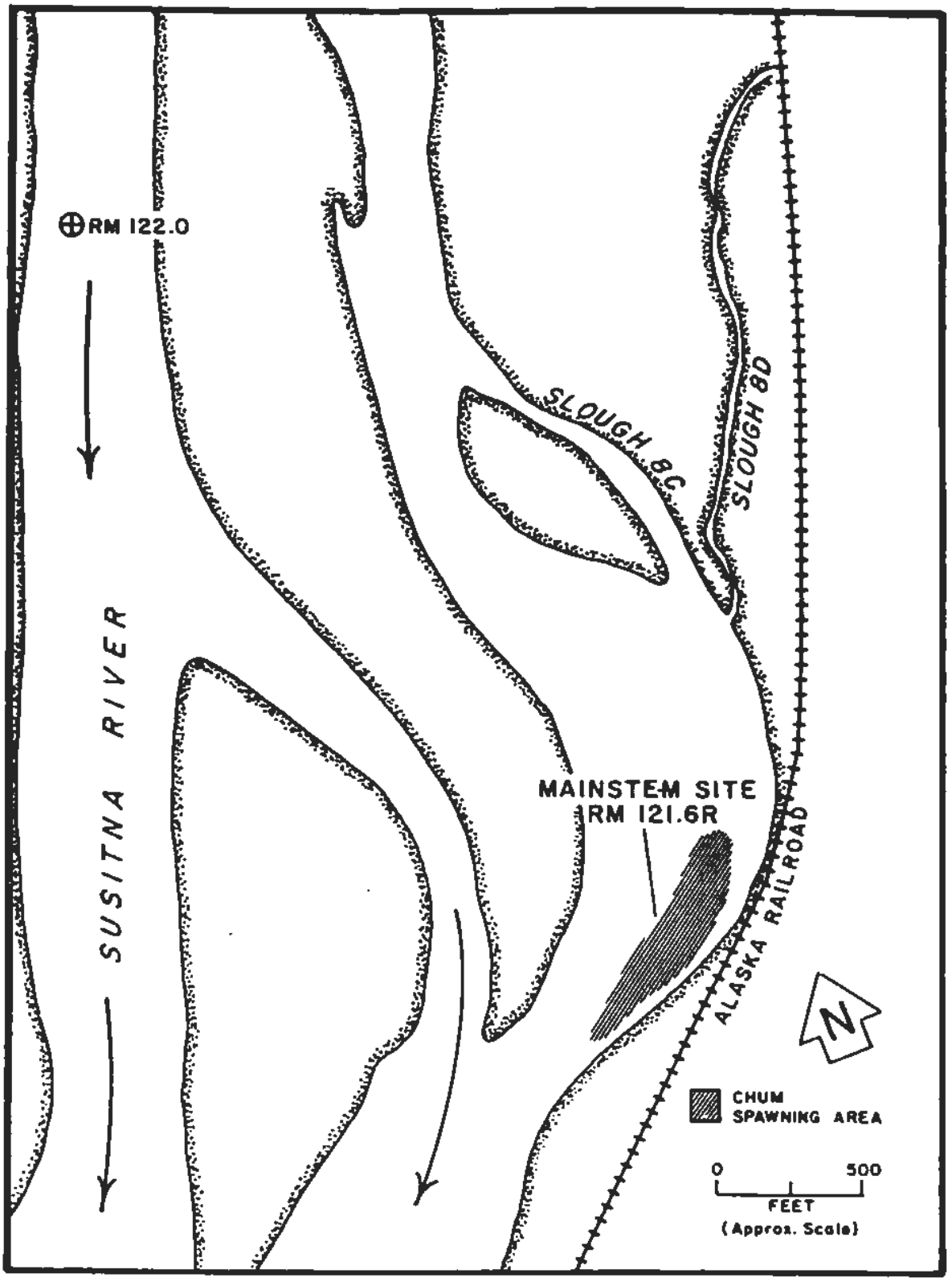
Appendix Figure 6-9. Mainstem Susitna River chum salmon spawning areas at RM 114.6R, 115.0R and 115.1R, 1984.



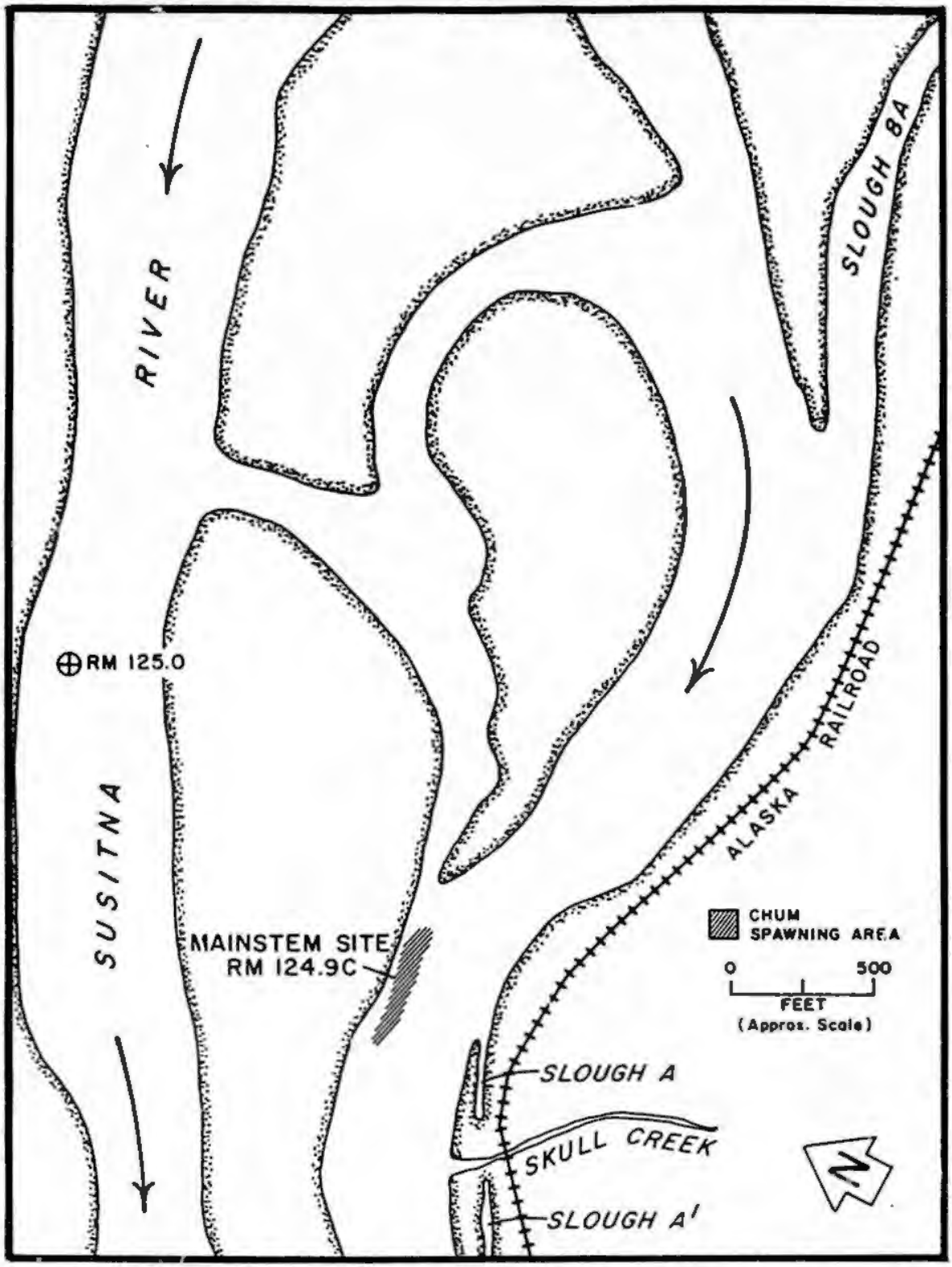
Appendix Figure 6-10. Mainstem Susitna River chum salmon spawning areas at RM 118.9L, 119.1L, 119.4L and 119.8L, 1984.



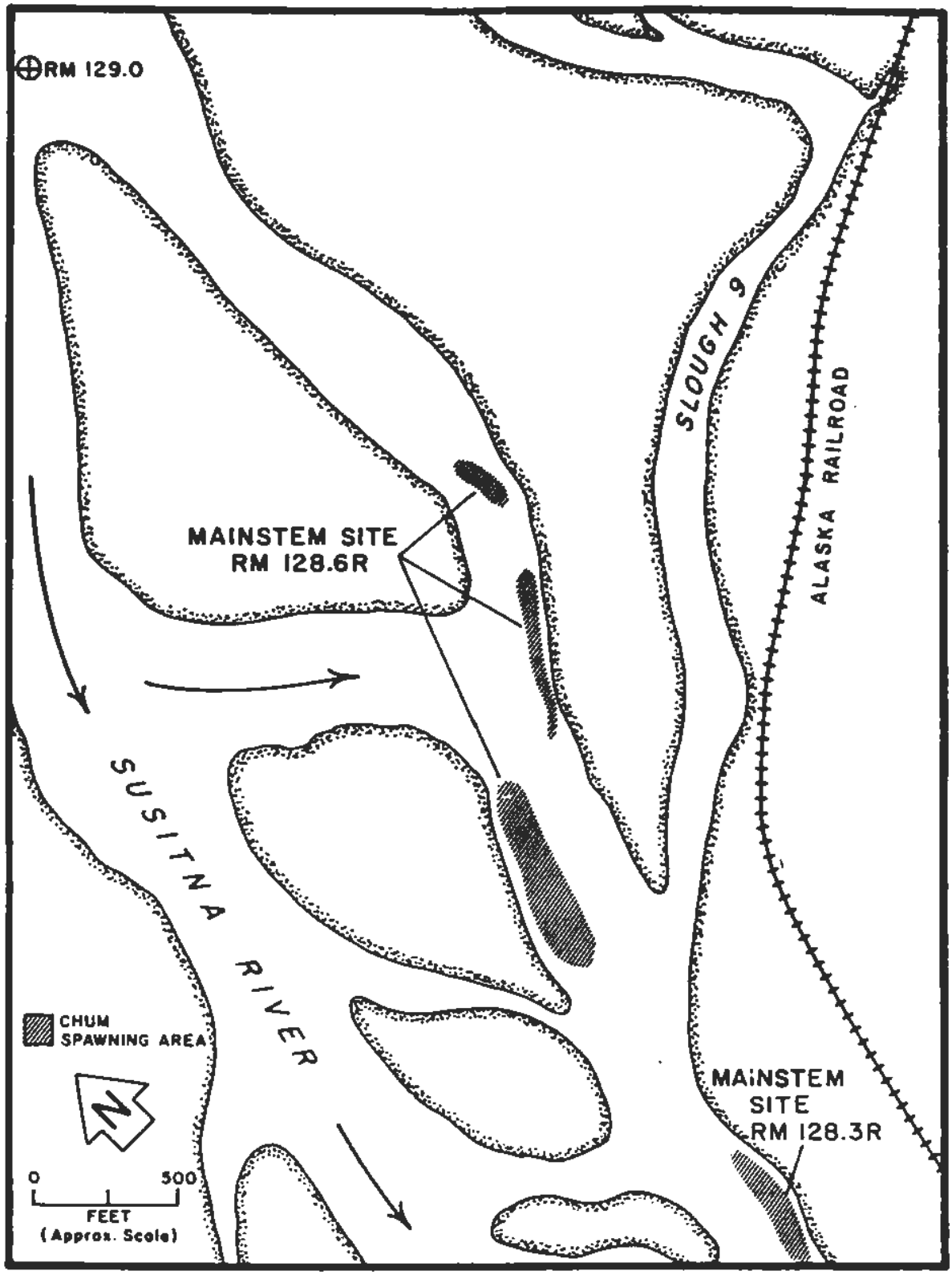
Appendix Figure 6-11. Mainstem Susitna River chum salmon spawning area at RM 120.9L, 1984.



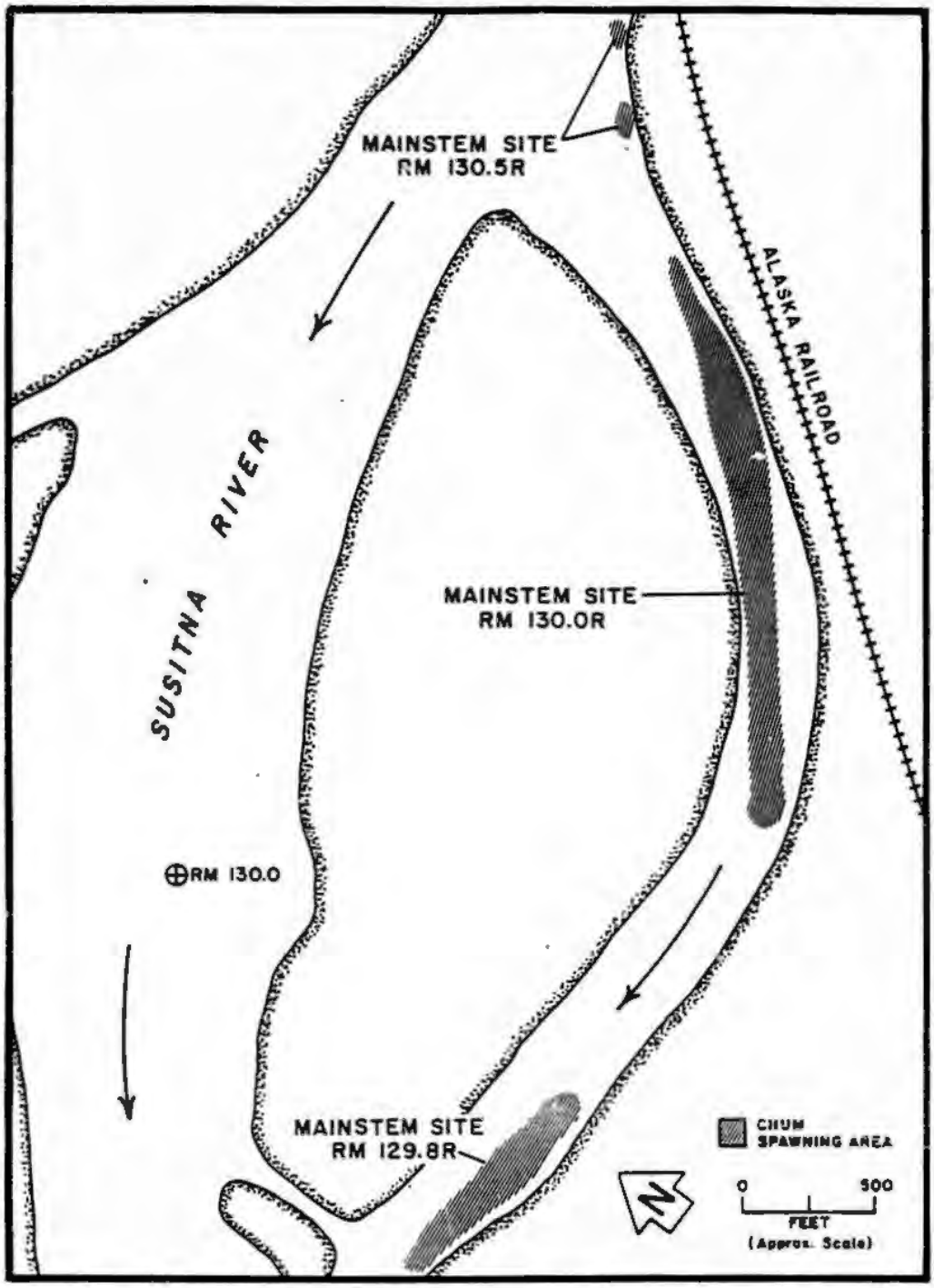
Appendix Figure 6-12. Mainstem Susitna River chum salmon spawning area at RM 121.6R, 1984.



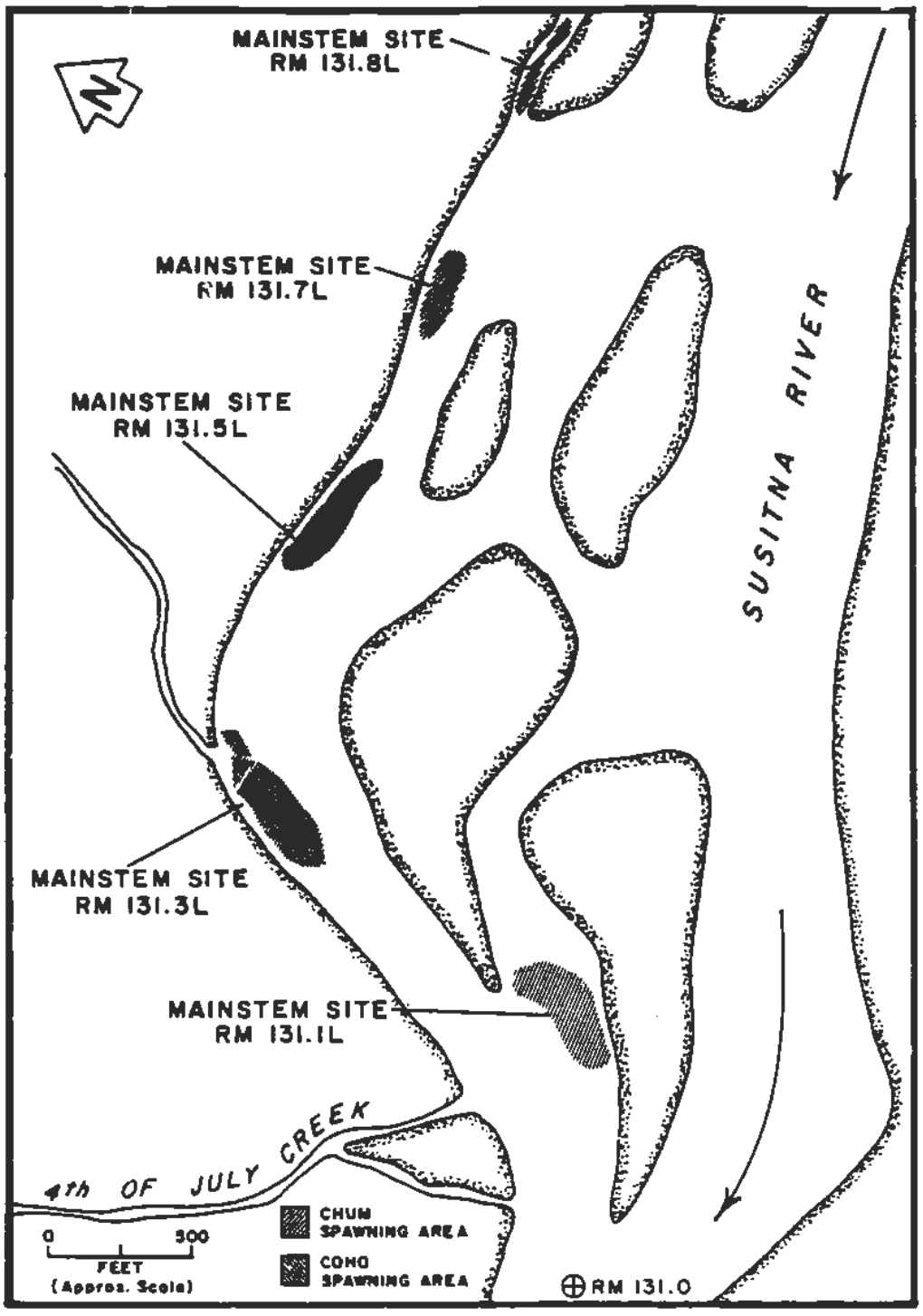
Appendix Figure 8-13. Mainstem Susitna River chum salmon spawning area at RM 124.9C, 1984.



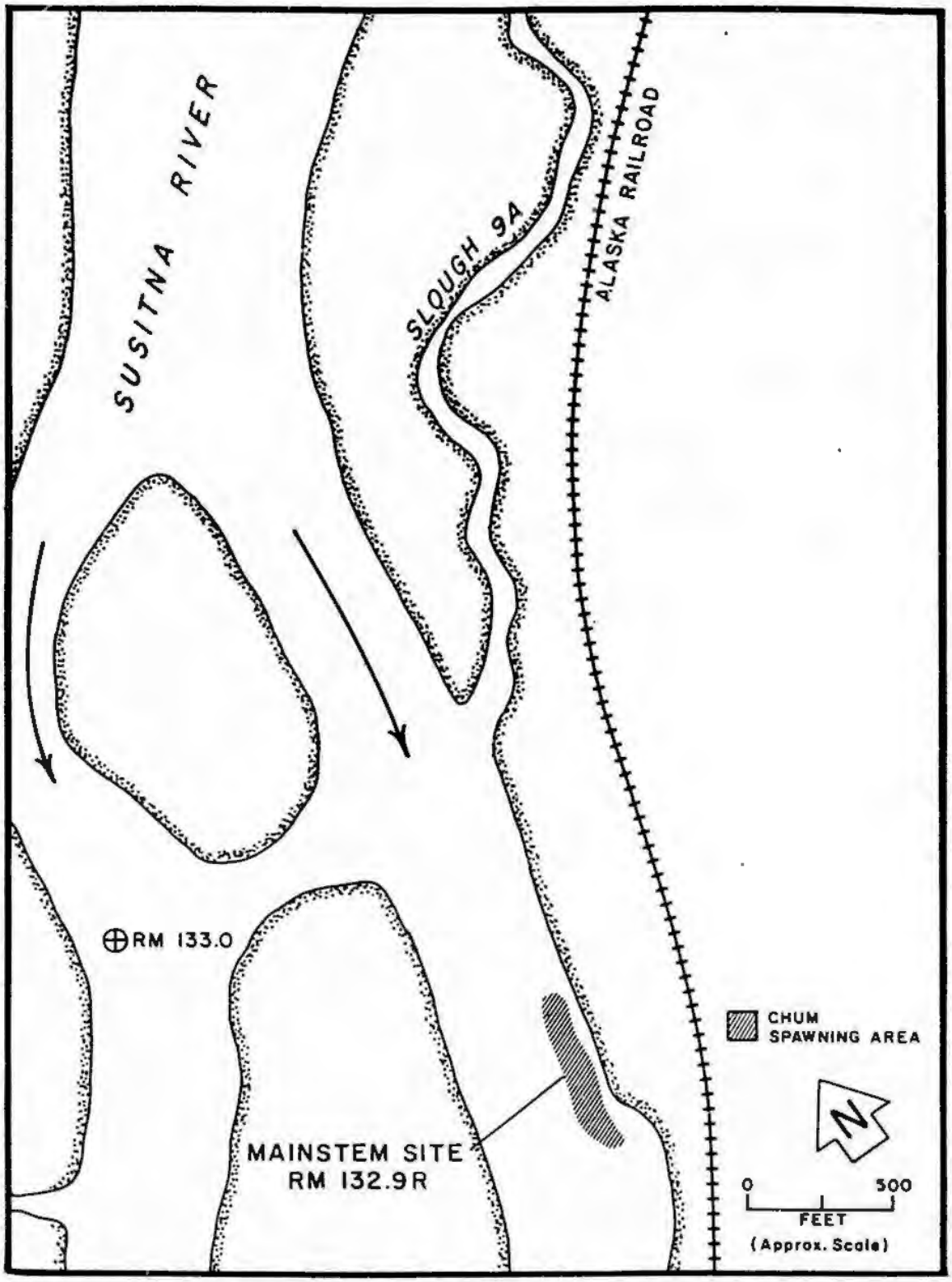
Appendix Figure 6-14. Mainstem Susitna River chum salmon spawning areas at RM 128.3R and 128.6R, 1984.



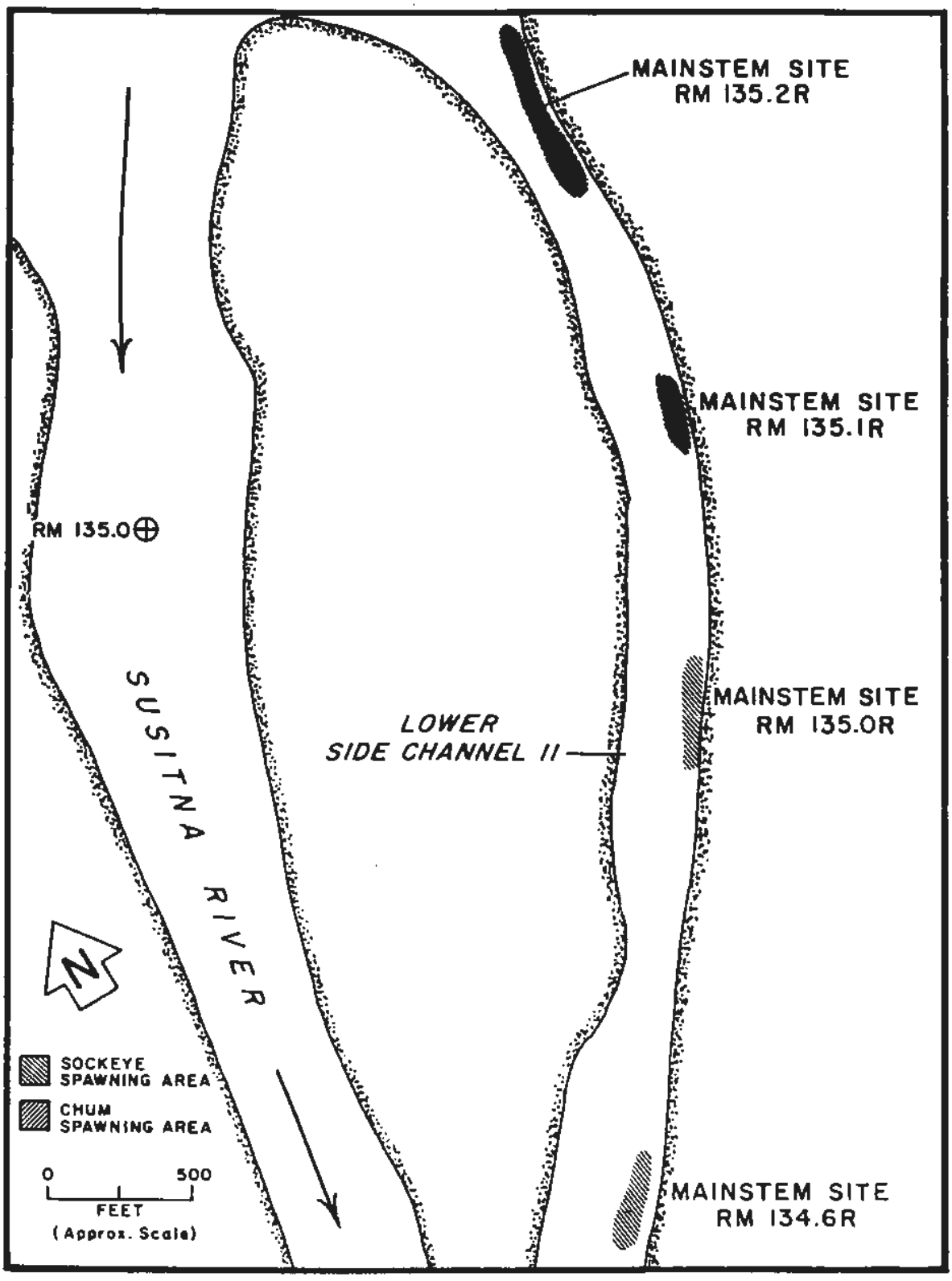
Appendix Figure 6-15. Mainstem Susitna River chum salmon spawning areas at RM 129.8R, 130.0R and 130.5R, 1984.



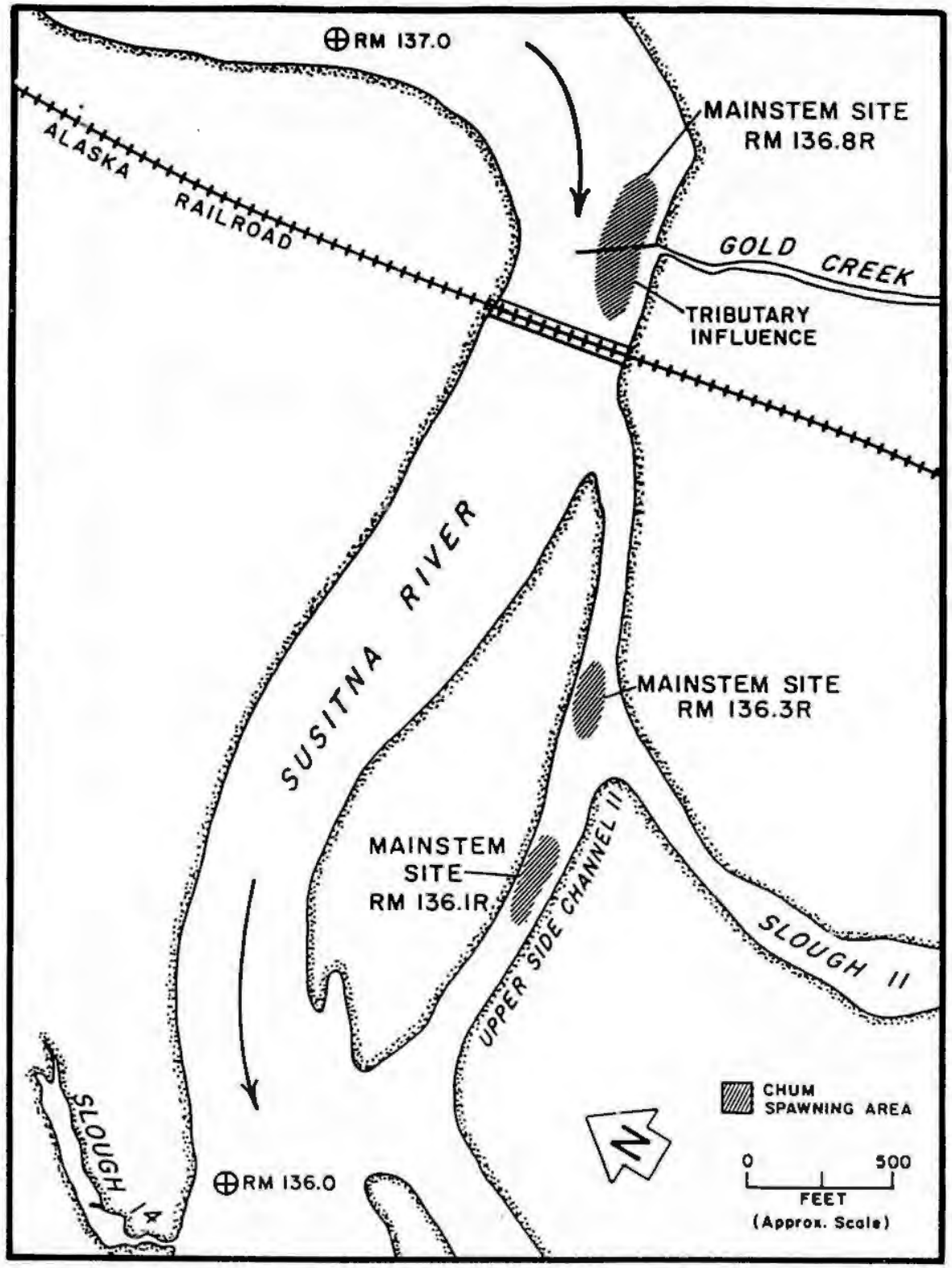
Appendix Figure 6-16. Mainstem Susitna River chum salmon spawning areas at RM 131.1L, 131.3L, 131.5L, 131.7L and 131.8L and coho salmon spawning at RM 131.5L, 1984.



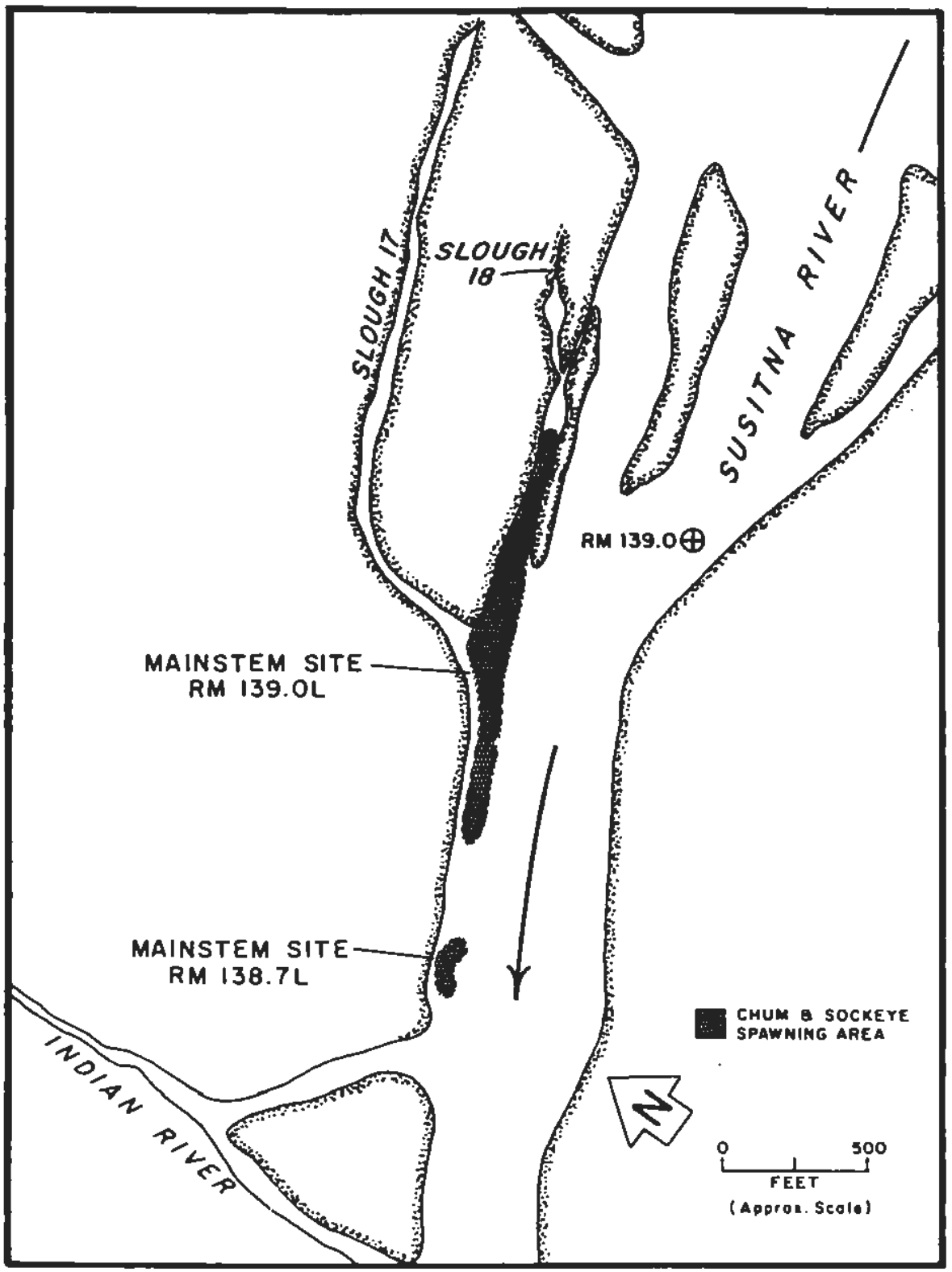
Appendix Figure 6-17. Mainstem Susitna River chum salmon spawning area at RM 132.9R, 1984.



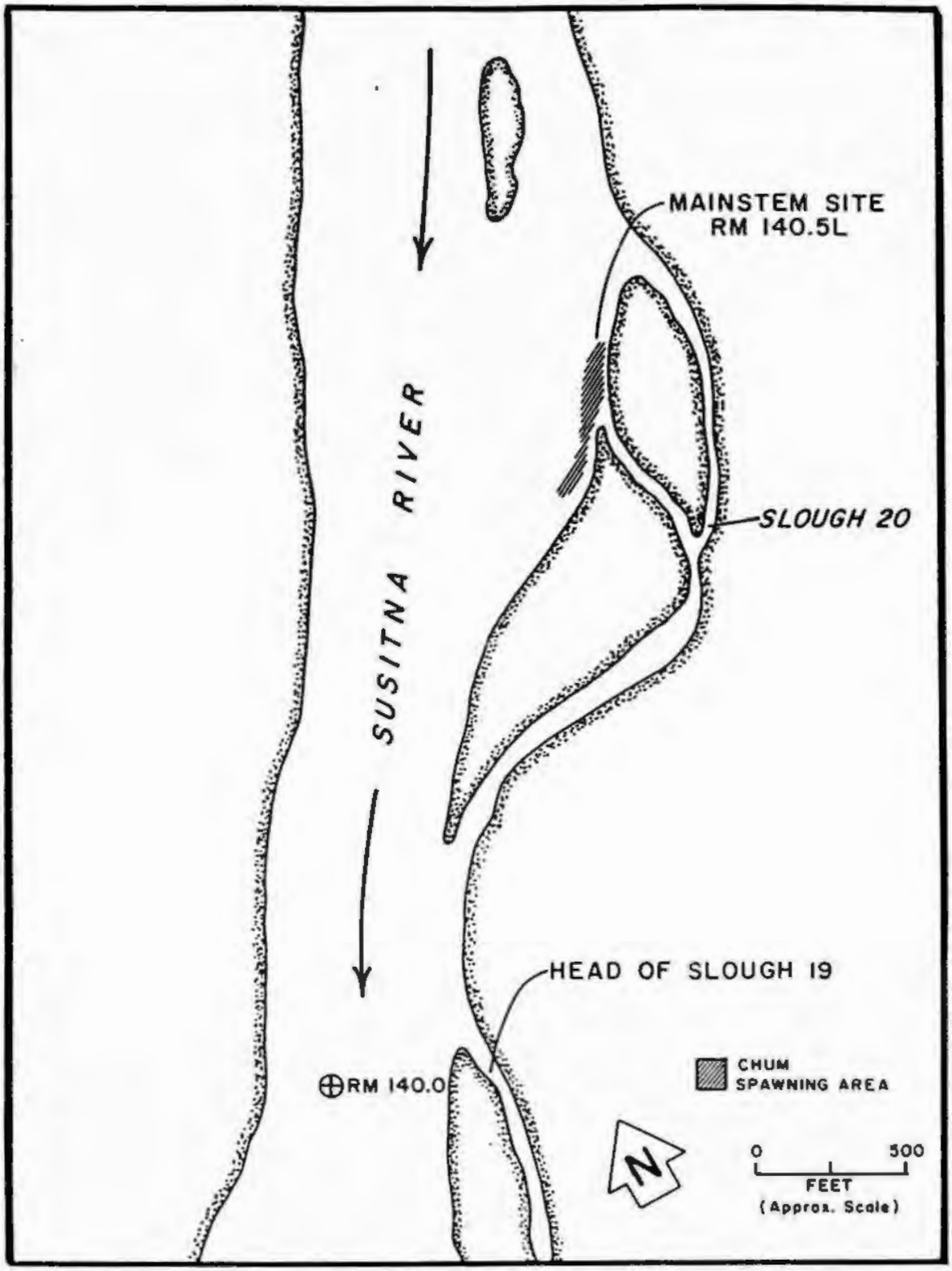
Appendix Figure 6-18. Mainstem Susitna River sockeye salmon spawning areas at RM 134.6R, 135.0R, 135.1R and 135.2R, and chum salmon spawning areas at RM 135.1R and 135.2R, 1984.



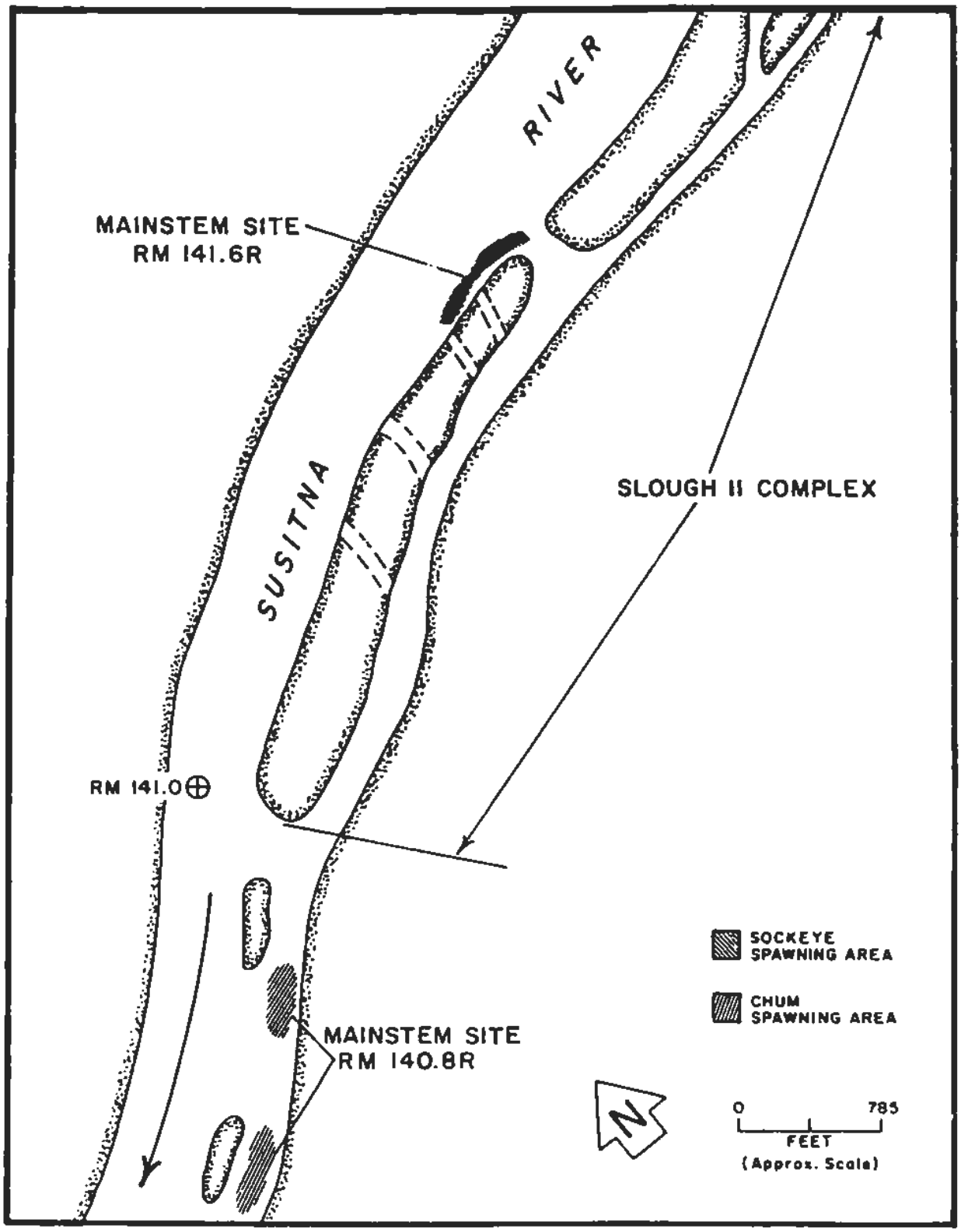
Appendix Figure 6-19. Mainstem Susitna River chum salmon spawning areas at RM 136.1R, 136.3R, and 136.8R, 1984.



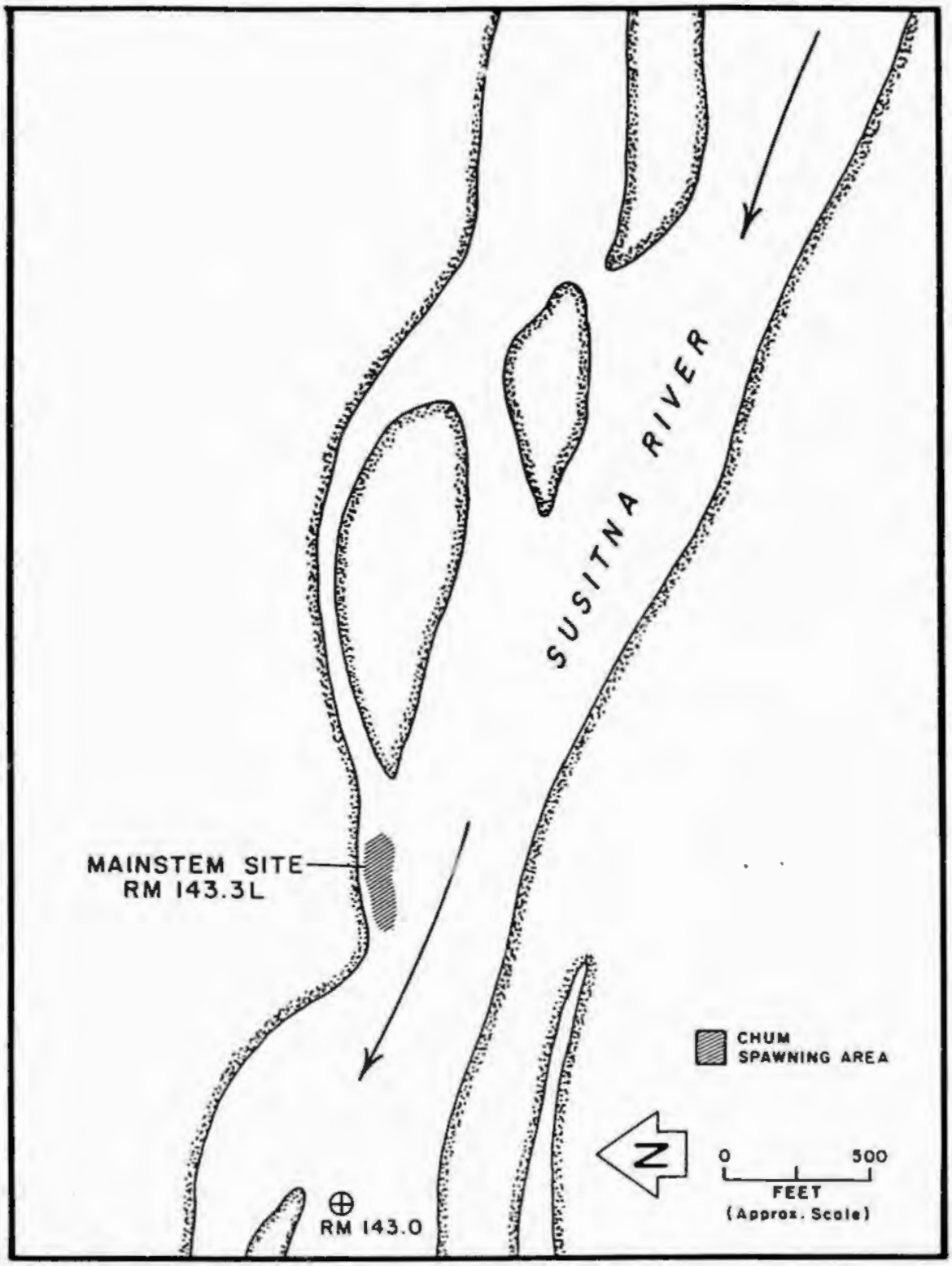
Appendix Figure 6-20. Mainstem Susitna River sockeye and chum salmon spawning areas at RM 138.7L and 139.0L, 1984.



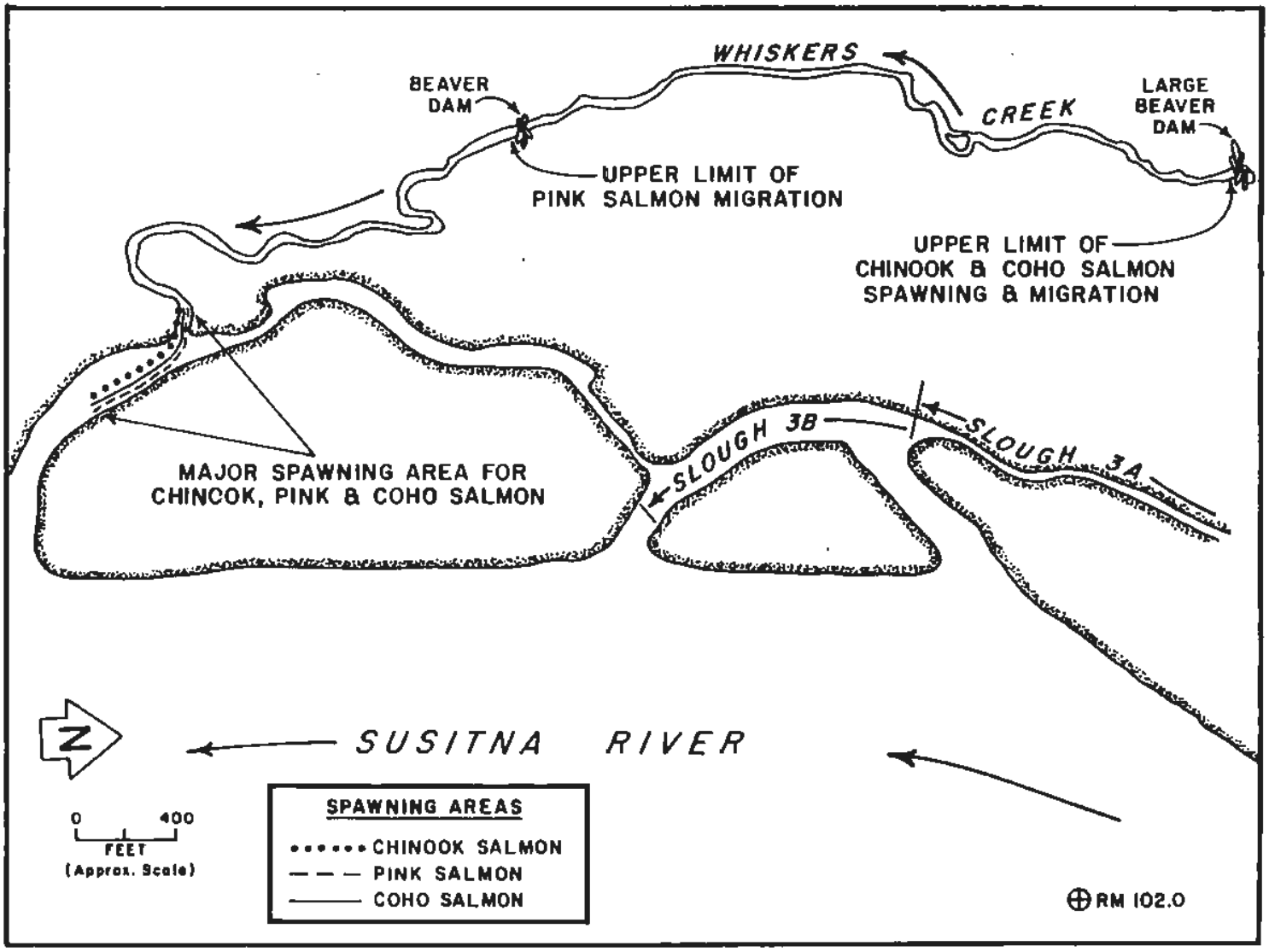
Appendix Figure 6-21. Mainstem Susitna River chum salmon spawning area at RM 140.5L, 1984.



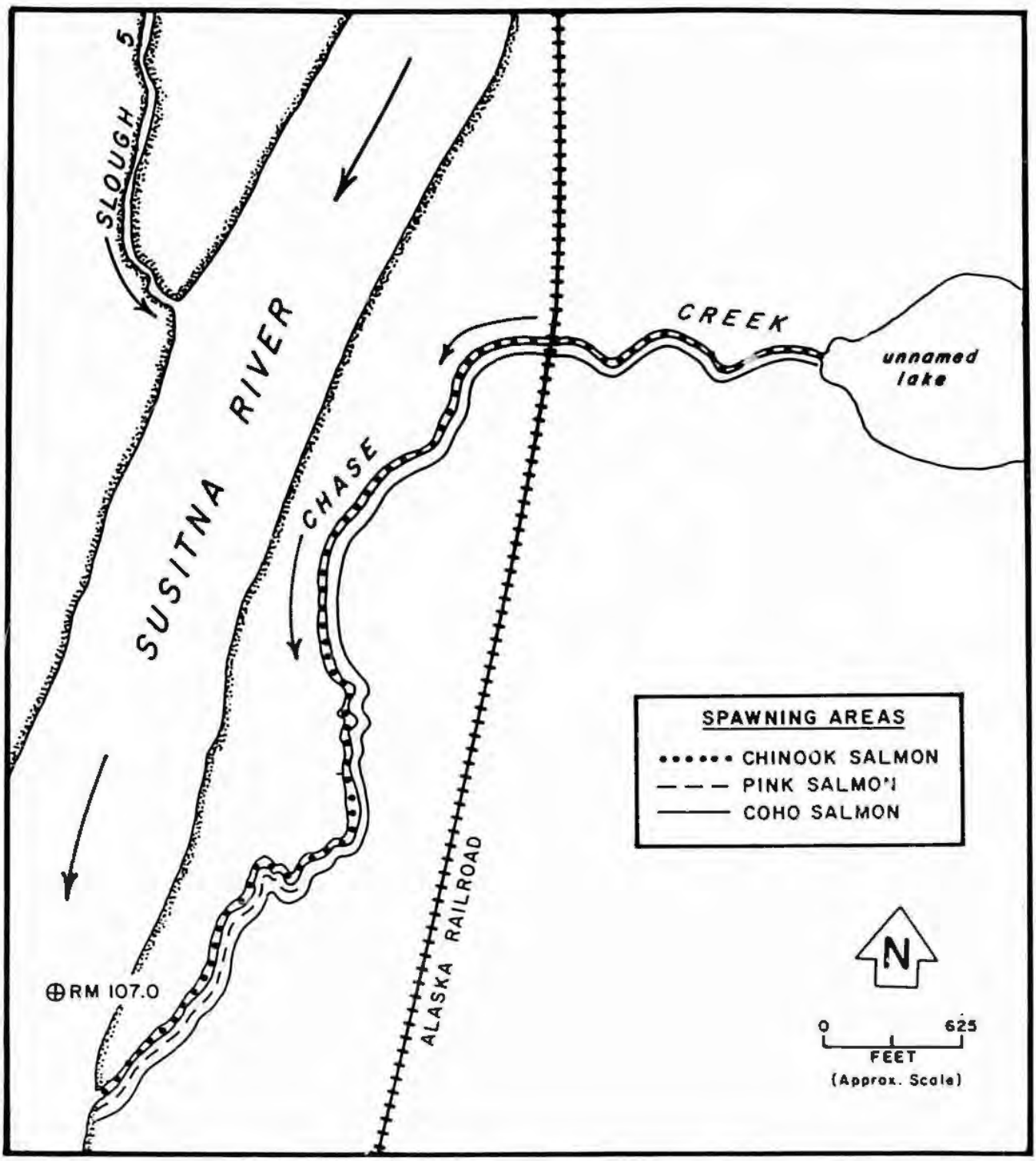
Appendix Figure 6-22. Mainstem Susitna River sockeye and chum salmon spawning areas at RM 141.6R and chum salmon spawning area at RM 140.8R, 1984.



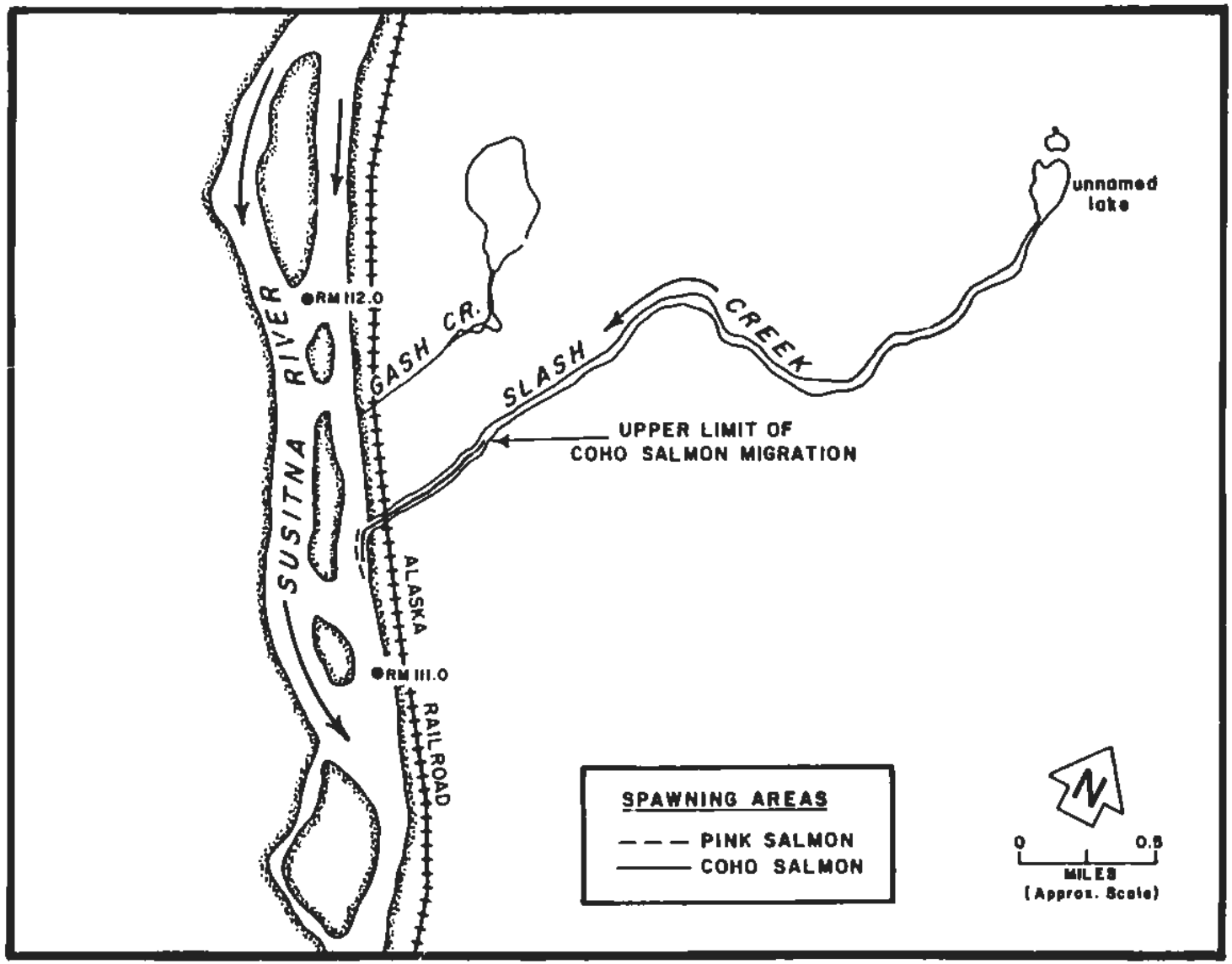
Appendix Figure 6-23. Mainstem Susitna River chum salmon spawning area at RM 143.3l, 1984.



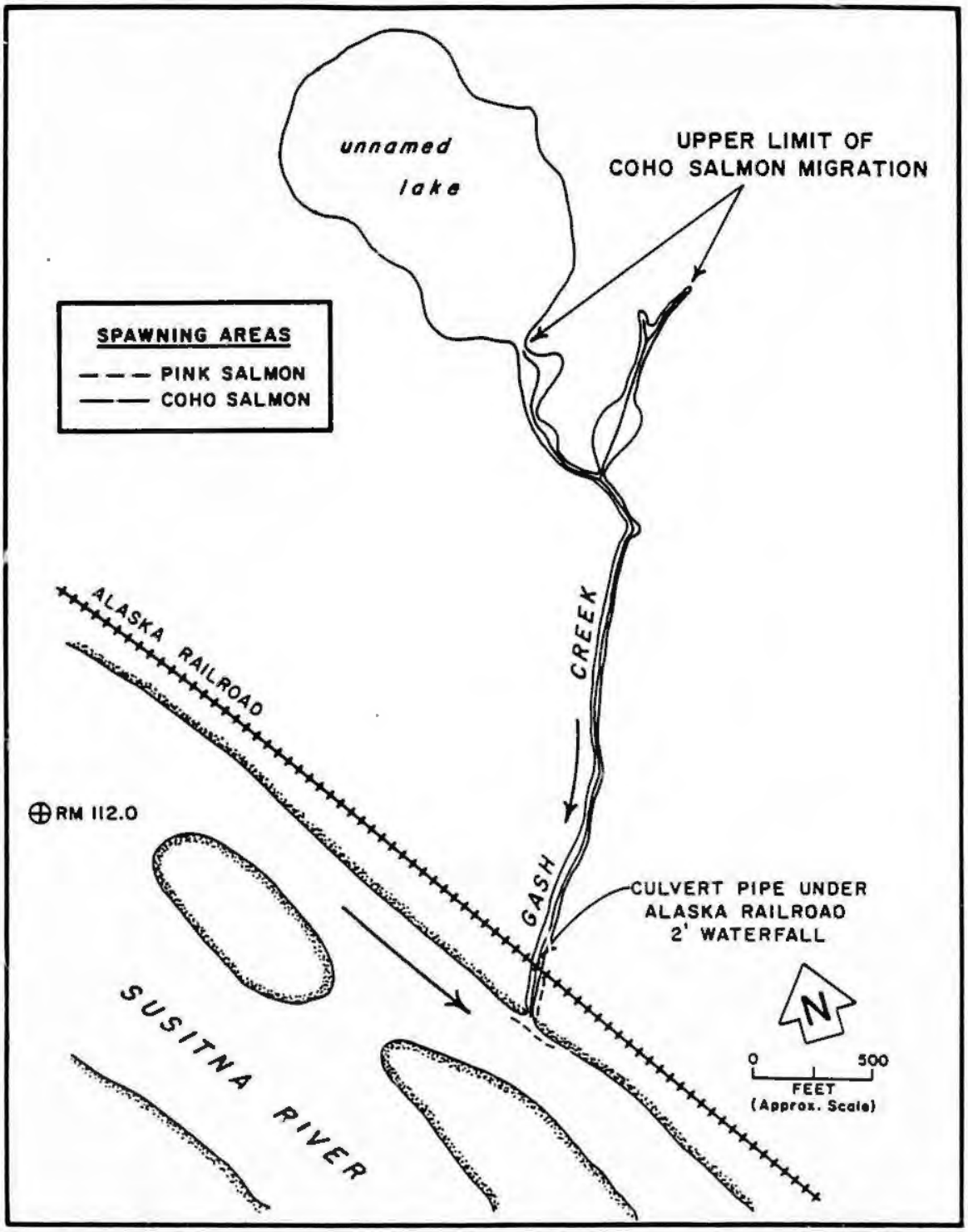
Appendix Figure 6-24. Spawning areas and distribution of chinook, pink and coho salmon in Whiskers Creek (RM 101.4), 1984.



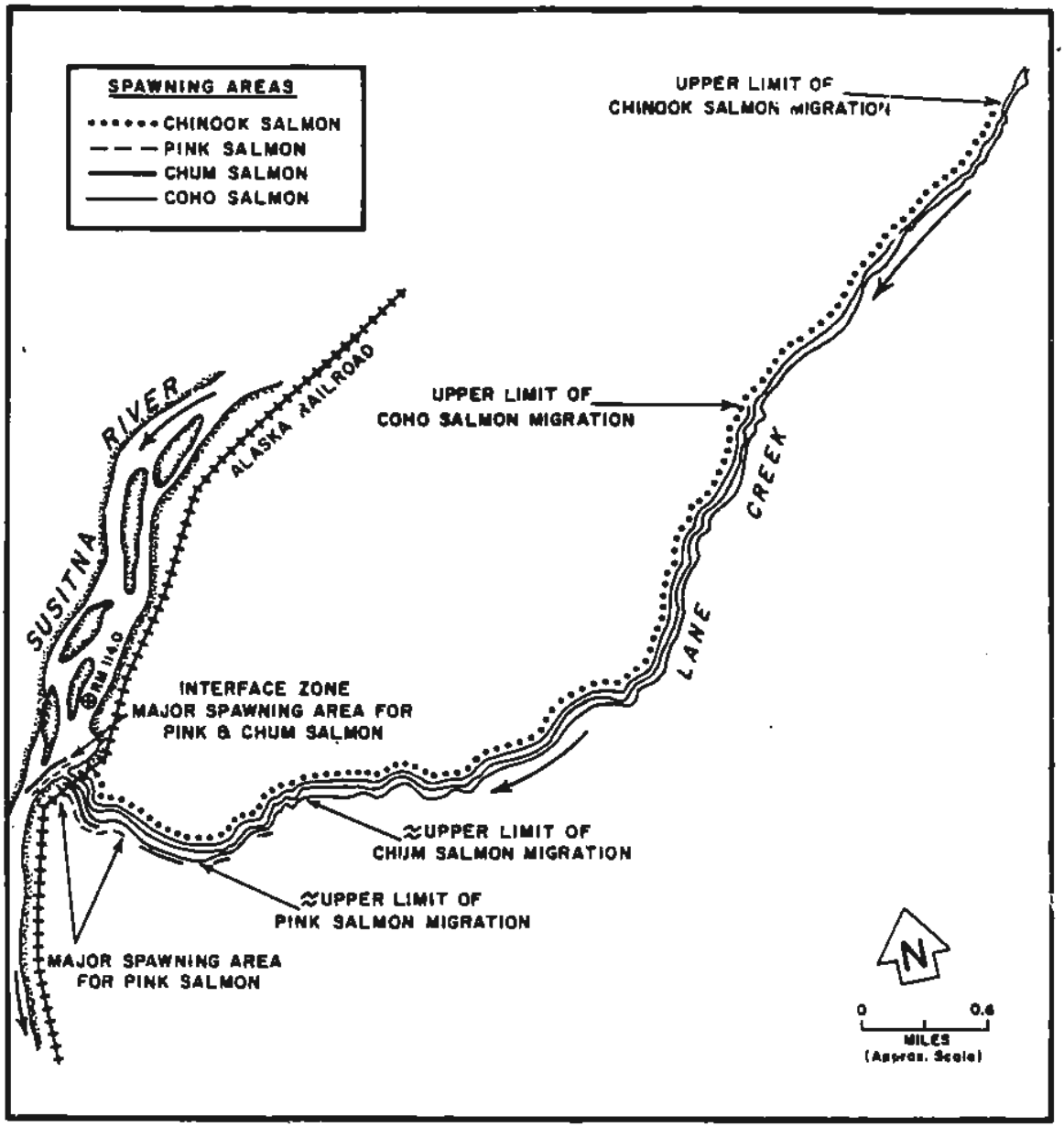
Appendix Figure 6-25. Spawning areas and distribution of chinook, pink and coho salmon in Chase Creek (RM 106.9), 1984.



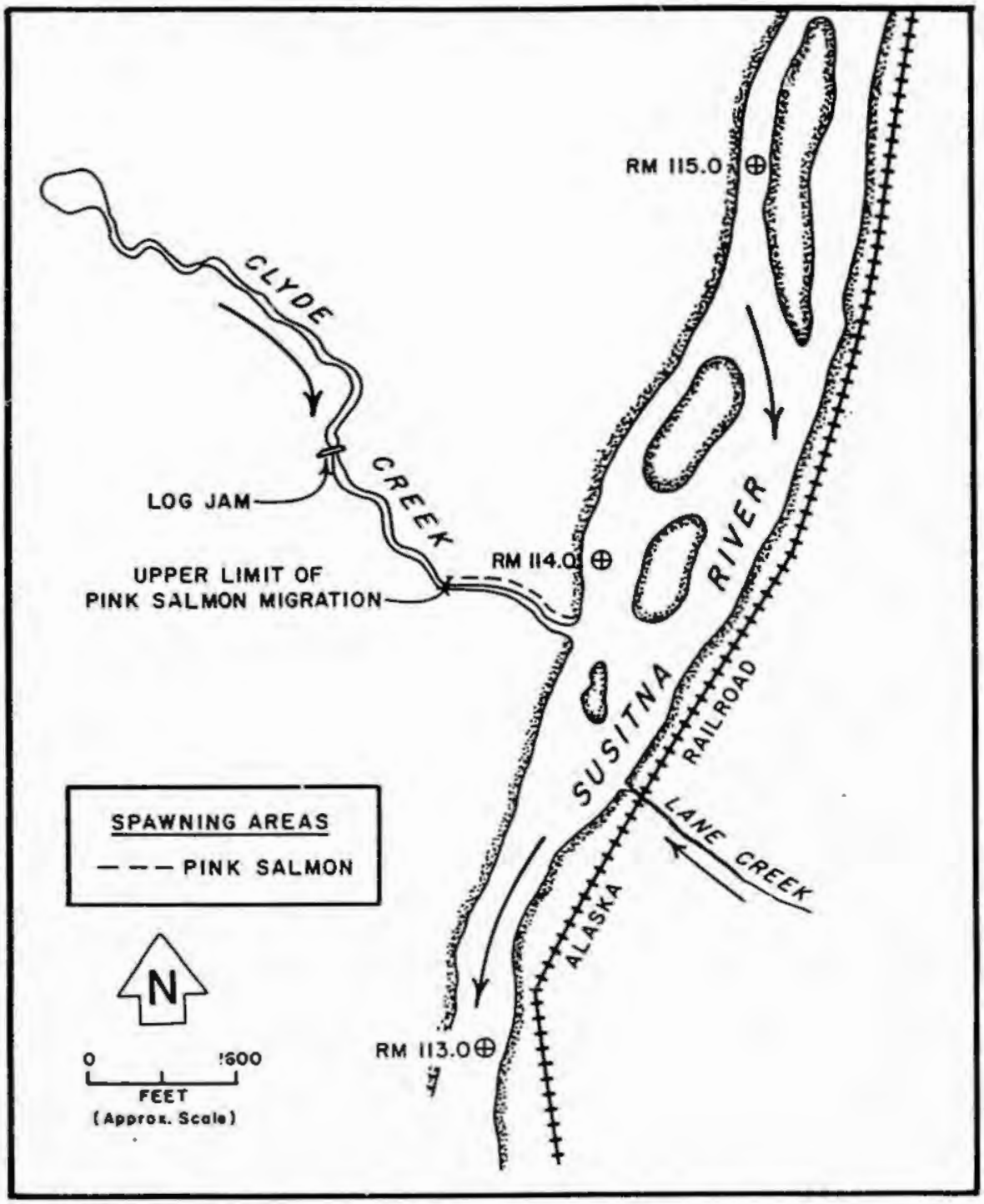
Appendix Figure 6-26. Spawning areas and distribution of pink and coho salmon in Slash Creek (RM 111.2), 1984.



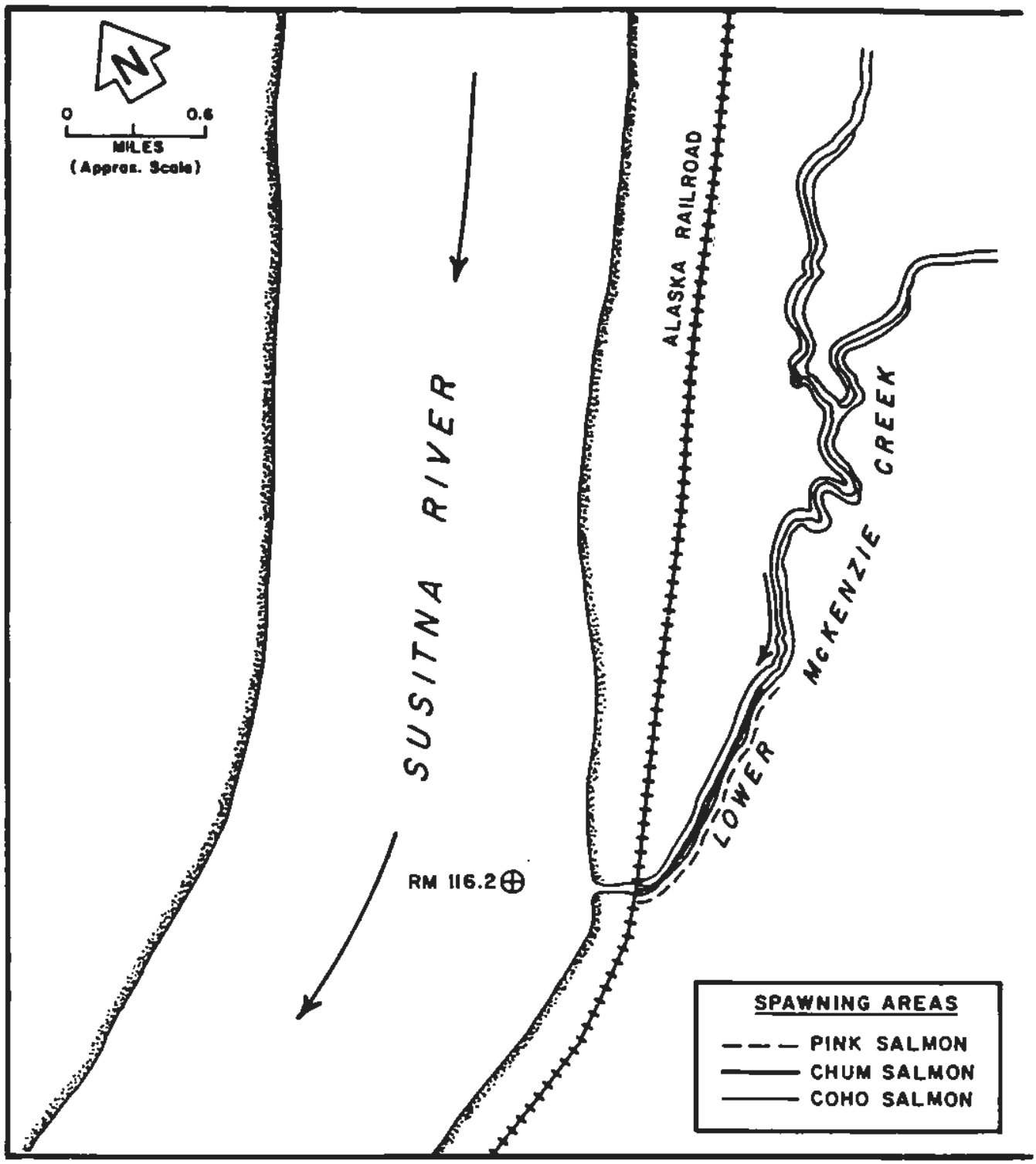
Appendix Figure 6-27. Spawning areas and distribution of pink and coho salm Gash Creek (RM 111.6), 1984.



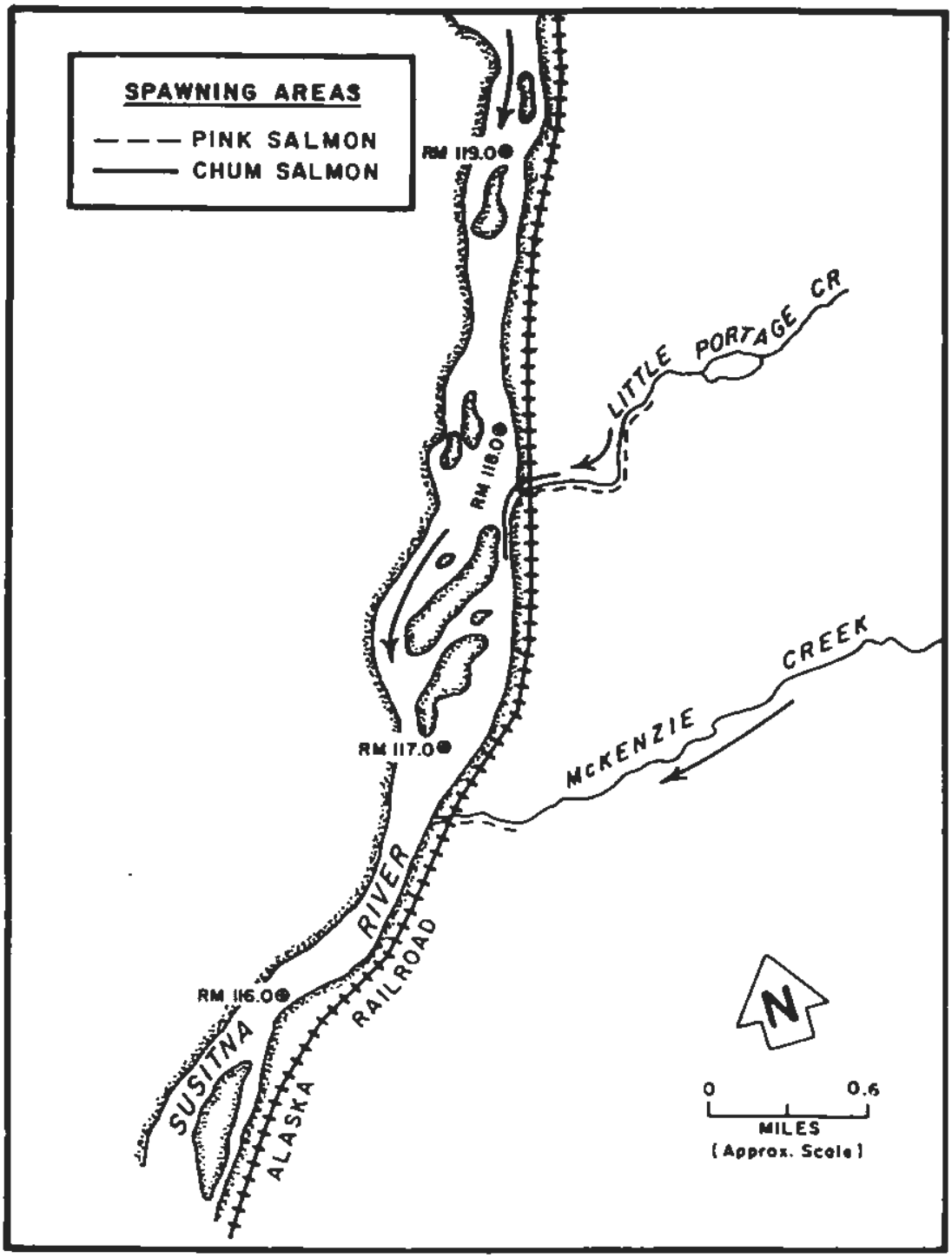
Appendix Figure 6-28. Spawning areas and distribution of chinook, pink, chum an coho salmon in Lane Creek (RM 113.6), 1984.



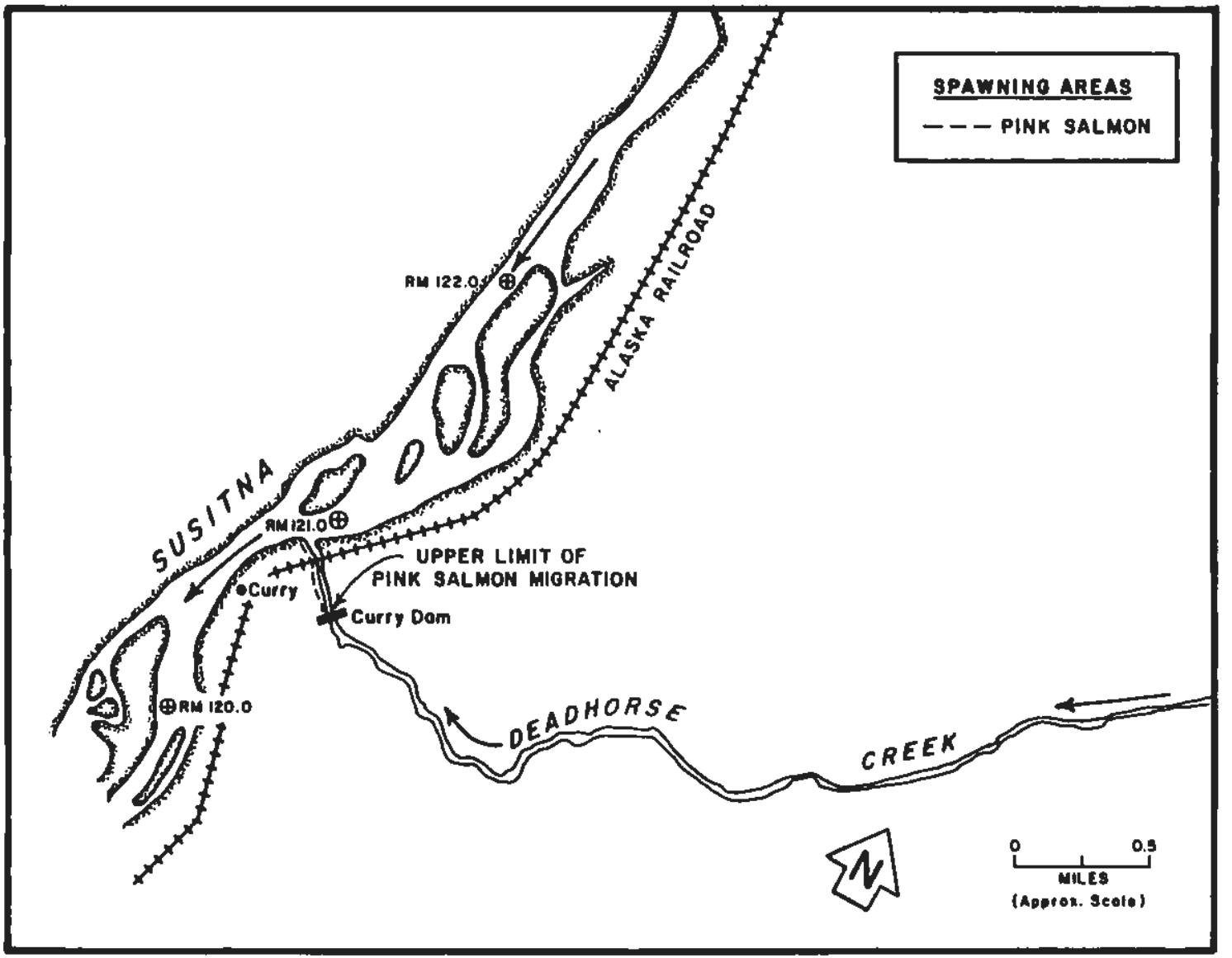
pendix Figure 6-29. Spawning area and distribution of pink salmon in Clyde Creek (RM 113.8), 1984.



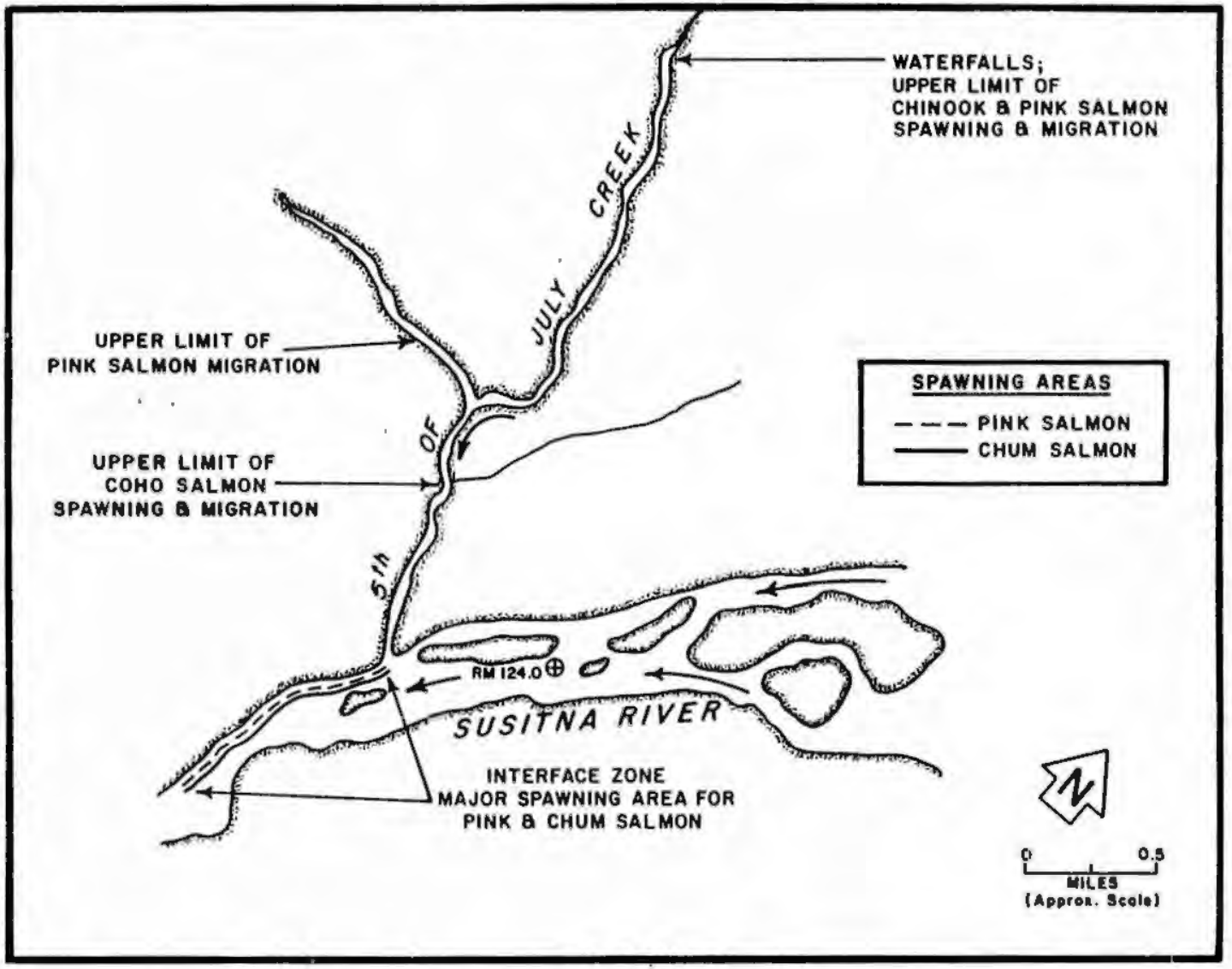
Appendix Figure 6-30. Spawning areas and distribution of pink, chum and coho salmon in Lower McKenzie Creek (RM 116.2), 1984.



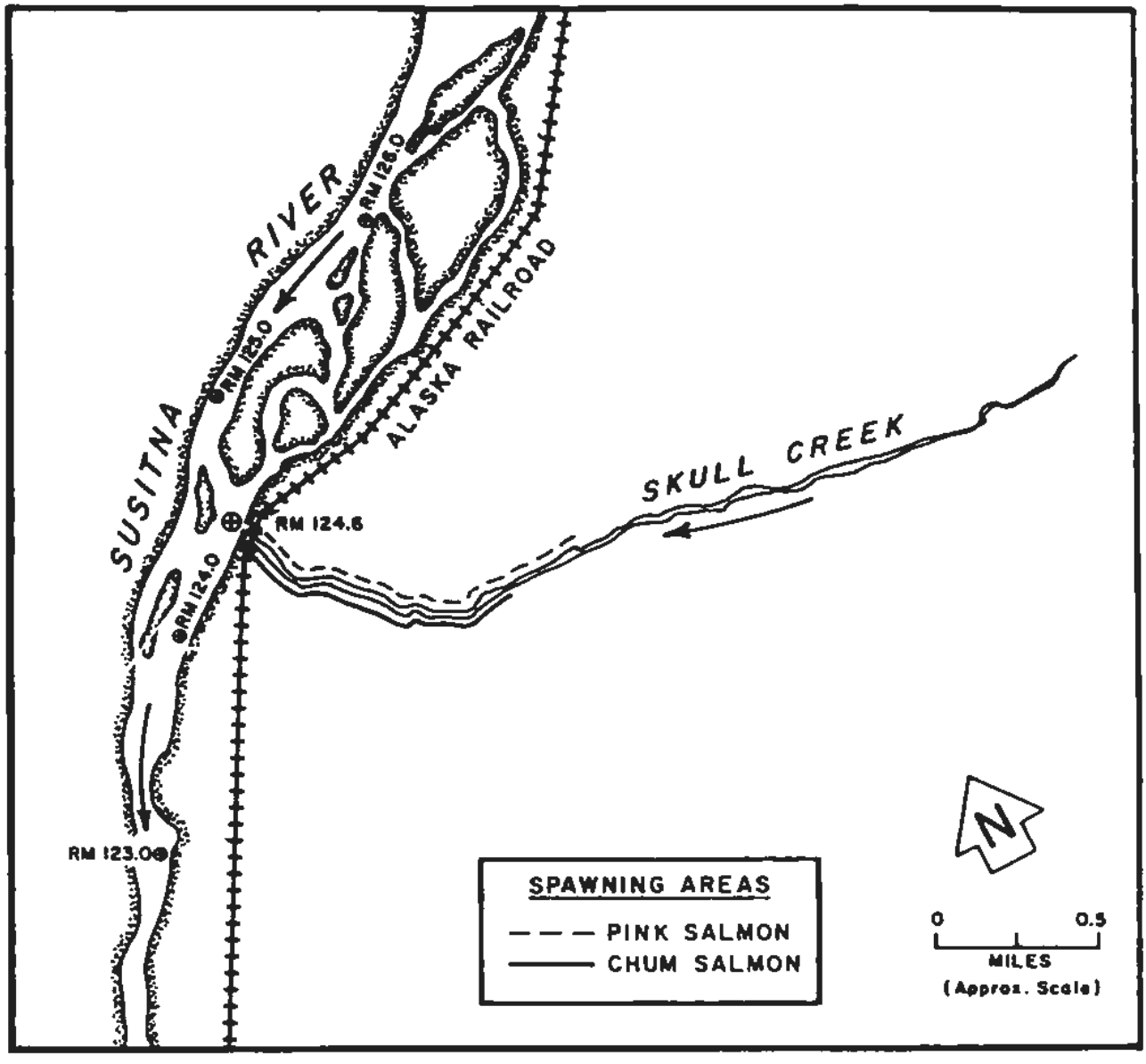
Appendix Figure 6-31. Spawning areas and distribution of pink and chum salmon McKenzie (RM 116.7) and Little Portage (RM 117.7) creek 1984.



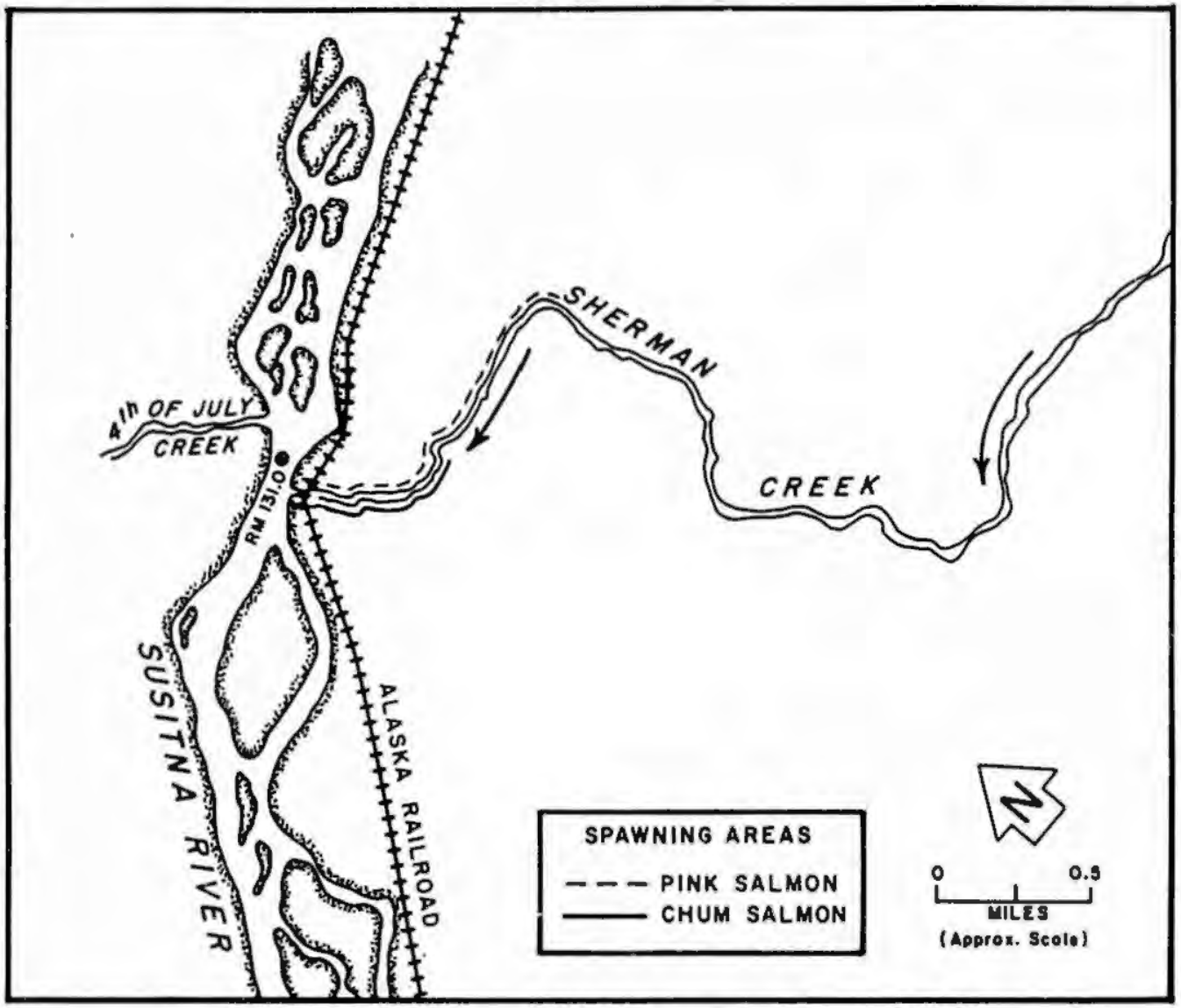
Appendix Figure 6-32. Spawning area and distribution of pink salmon in Deadhorse Creek (RM 120.8) in 1984.



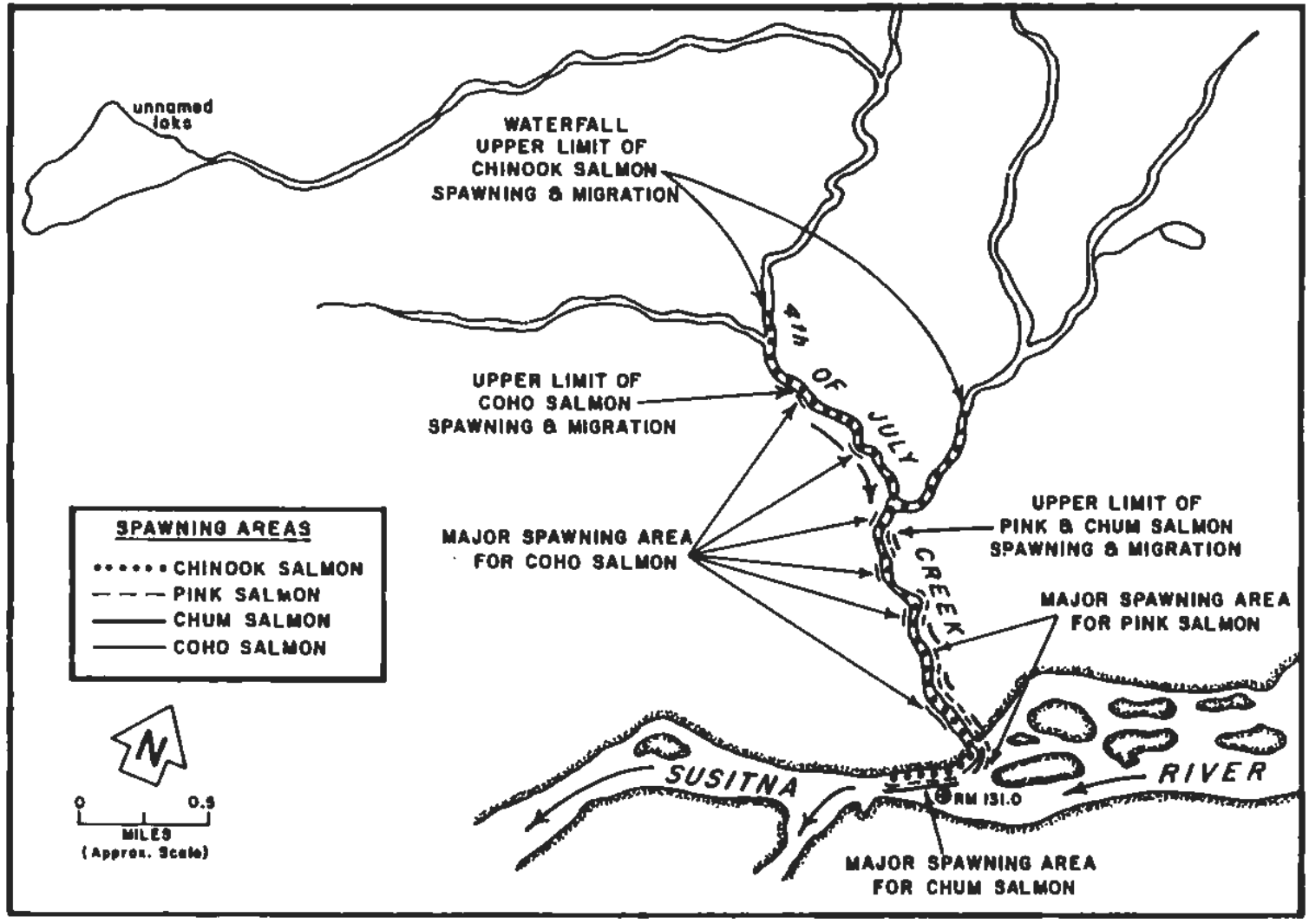
Appendix Figure 6-33. Spawning areas and distribution of pink and chum salmon in Fifth of July Creek (RM 123.7), 1984.



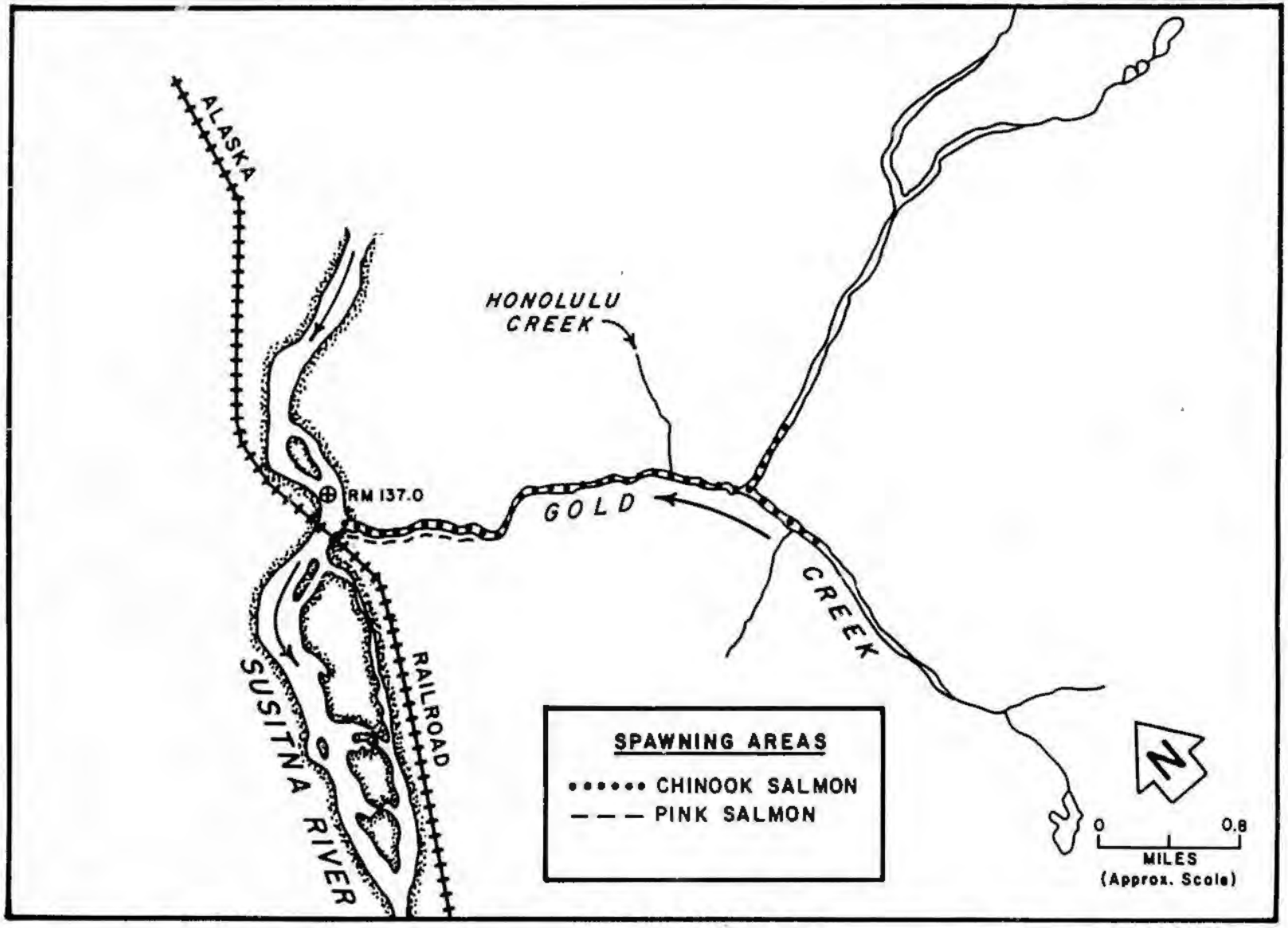
Appendix Figure 6-34. Spawning areas and distribution of pink and chum salmon i Skull Creek (RM 124.7), 1984.



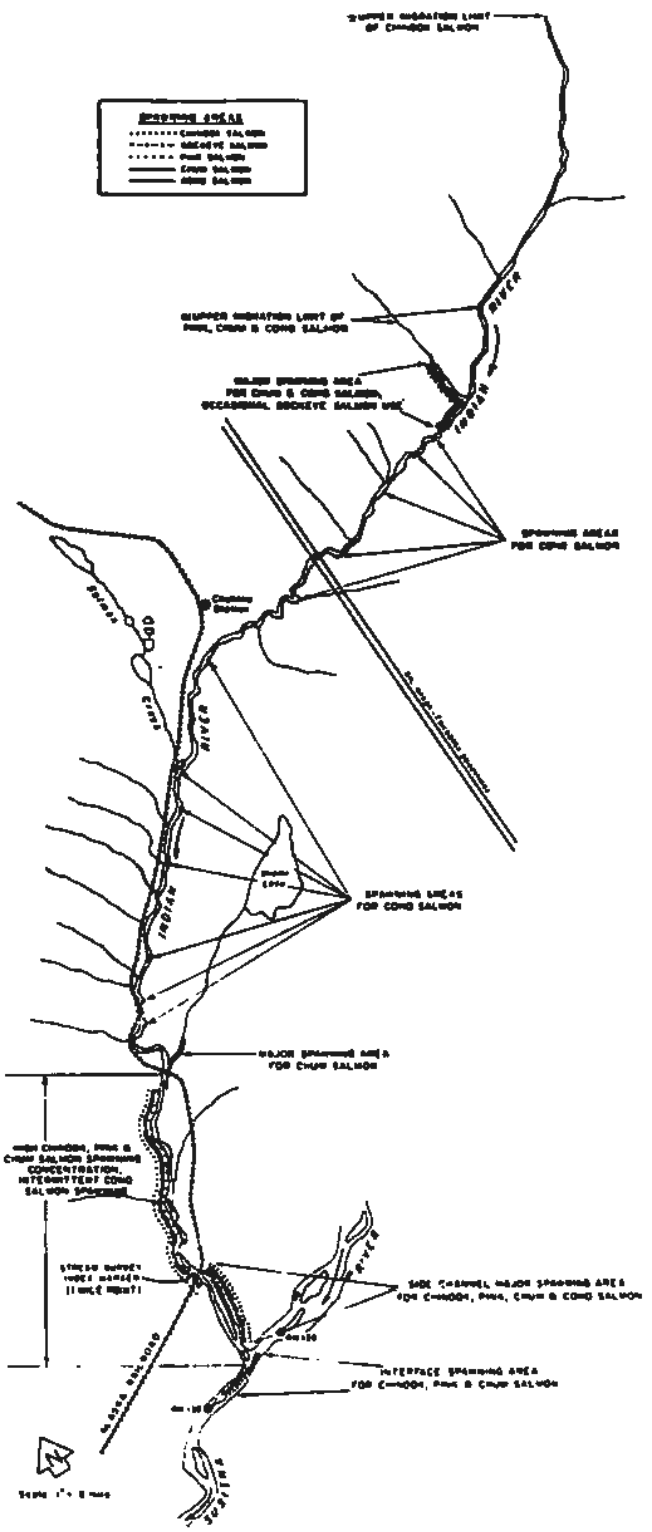
Appendix Figure 6-35. Spawning areas and distribution of pink and chum salmon in Sherman Creek (RM 130.8), 1984.



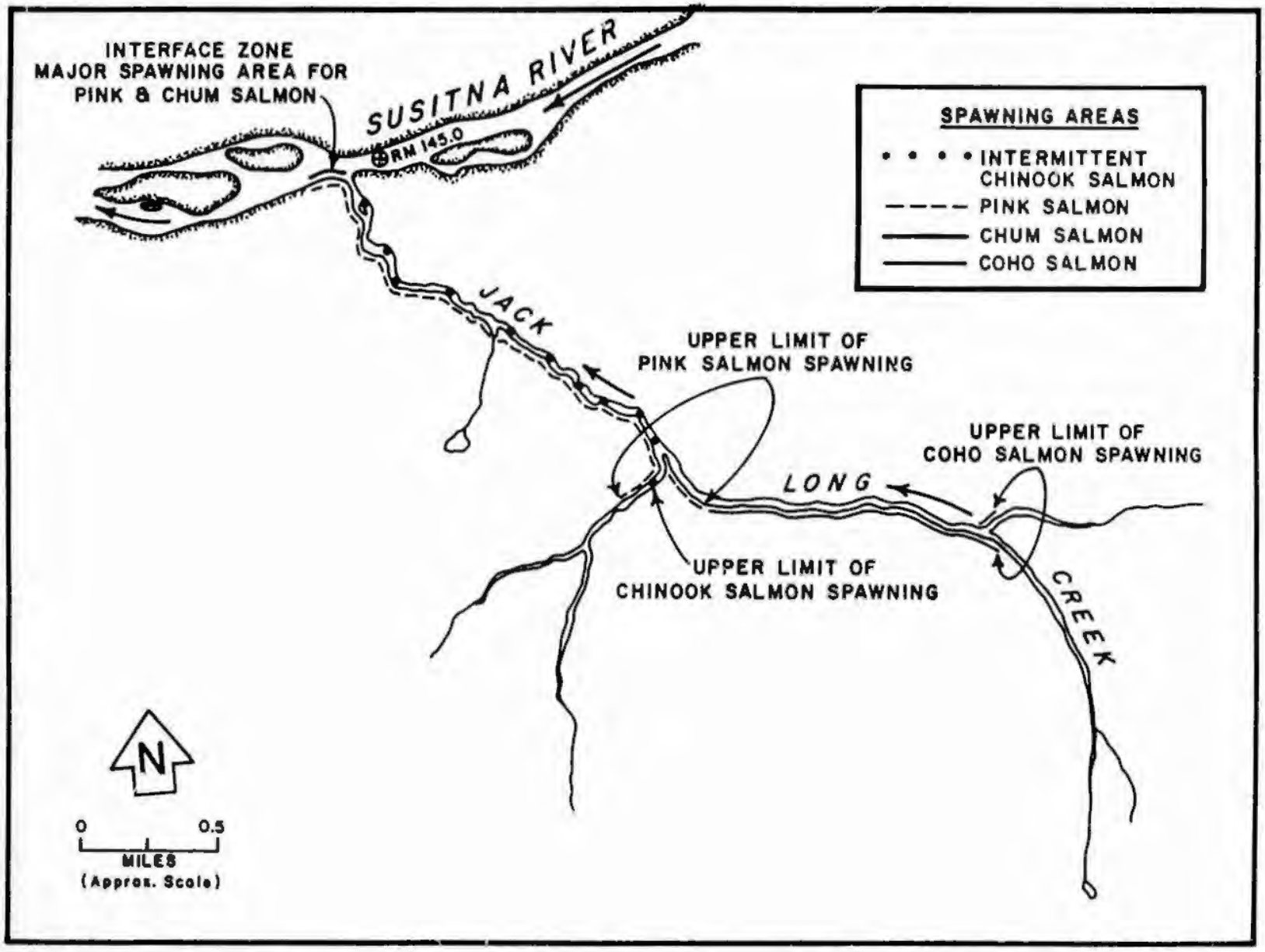
Appendix Figure 6-36. Spawning areas and distribution of chinook, pink, chum and coho salmon in Fourth of July Creek (RM 131.1), 1984.



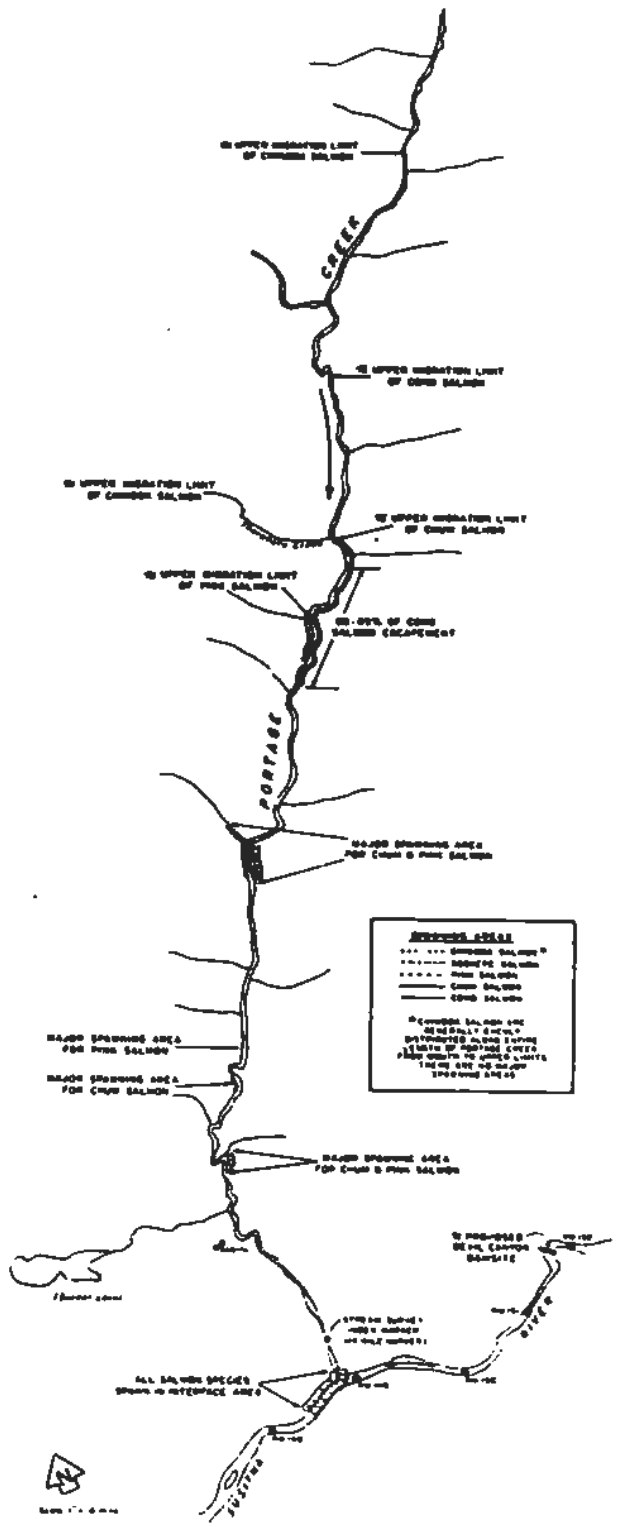
Appendix Figure 6-37. Spawning areas and distribution of chinook, pink and chum salmon in Gold Creek (RM 136.7), 1984.



Appendix Figure 6-38. Spawning areas and distribution of chinook, pink, chum and coho salmon in Indian River (RM 138.6), 1984.



Appendix Figure 6-39 Spawning areas and distribution of chinook, pink, chum and coho salmon in Jack Long Creek (RM 144.5), 1984.



Appendix Figure 6-40. Spawning areas and distribution of chinook, pink, chum and coho slamon in Portage Creek (RM 148.9), 1984.

Appendix Table 6-1 Mainstem Susitna River salmon spawning locations and survey results above RM 98.6, 1984.

River Mile	Date	Survey Conditions	Fish Present	Adult Salmon Enumerated							
				Sockeye		Chinook		Coho		Other	
				Number	Spawning	Number	Spawning	Number	Spawning	Number	Spawning
Backwood	9/8	Good	yes	0	no	1	yes	0	no	0	no
SI 21	9/8	Good	yes	0	no	15	yes	0	no	0	no
SI 210	9/1	Good	yes	0	no	1	yes	0	no	0	no
100.5 R	8/24	Good	no	0	no	0	no	0	no	0	no
100.5 R	9/1	Good	no	0	no	0	no	0	no	0	no
100.5 R	9/8	Good	no	0	no	0	no	0	no	0	no
100.5 R	9/15	Good	no	0	no	0	no	0	no	0	no
100.5 R	9/22	Good	no	0	no	0	no	0	no	0	no
100.5 R	9/29	Good	no	0	no	0	no	0	no	0	no
101.2 R	8/24	Good	no	0	no	0	no	0	no	0	no
101.2 R	9/1	Good	no	0	no	0	no	0	no	0	no
101.2 R	9/8	Good	no	0	no	0	no	0	no	0	no
101.2 R	9/15	Good	yes	0	no	81	yes	0	no	0	no
101.2 R	9/22	Good	no	0	no	0	no	0	no	0	no
101.2 R	9/29	Good	yes	0	no	16	yes	0	no	0	no
102.0 L	8/24	Good	no	0	no	0	no	0	no	0	no
102.0 L	9/1	Good	no	0	no	0	no	0	no	0	no
102.0 L	9/8	Good	no	0	no	0	no	0	no	0	no
102.0 L	9/15	Good	no	0	no	0	no	0	no	0	no
102.0 L	9/22	Good	no	0	no	0	no	0	no	0	no
102.0 L	9/29	Good	no	0	no	0	no	0	no	0	no
105.0 L	8/24	Good	no	0	no	0	no	0	no	0	no
105.0 L	9/1	Good	no	0	no	0	no	0	no	0	no
105.0 L	9/8	Good	no	0	no	0	no	0	no	0	no
105.0 L	9/15	Good	no	0	no	0	no	0	no	0	no
105.0 L	9/22	Good	no	0	no	0	no	0	no	0	no
105.0 L	9/29	Good	no	0	no	0	no	0	no	0	no
106.2 R	8/24	Good	no	0	no	0	no	0	no	0	no
106.2 R	9/1	Good	no	0	no	0	no	0	no	0	no
106.2 R	9/8	Good	no	0	no	0	no	0	no	0	no
106.2 R	9/15	Good	no	0	no	0	no	0	no	0	no
106.2 R	9/22	Good	no	0	no	0	no	0	no	0	no
106.2 R	9/29	Good	no	0	no	0	no	0	no	0	no
110.0 L	9/1	Good	yes	0	no	1	yes	0	no	0	no
110.1 L	8/24	Good	no	0	no	0	no	1	no	0	no
110.1 L	9/1	Good	no	0	no	0	no	3	no	0	no
110.1 L	9/8	Good	yes	0	no	3	yes	0	no	0	no
110.1 L	9/15	Good	no	0	no	0	no	0	no	0	no
110.1 L	9/22	Good	no	0	no	0	no	0	no	0	no
110.1 L	9/29	Good	no	0	no	0	no	0	no	0	no

Appendix Table 6-1 (cont). Mainstem Susitna River salmon spawning locations and survey results above RM 98.6, 1984.

River Mile	Date	Survey Conditions	Fish Present	Sockeye		Chum		Coho		Other	
				Number	Spawning	Number	Spawning	Number	Spawning	Number	Spawning
110.8 L	9/1	Good	no	0	no	0	no	0	no	0	no
110.8 L	9/8	Good	no	0	no	0	no	0	no	0	no
110.8 L	9/15	Good	no	0	no	0	no	0	no	0	no
110.8 L	9/22	Good	no	0	no	0	no	0	no	0	no
110.8 L	9/29	Good	no	0	no	1	no	0	no	0	no
112.0 L	9/15	Good	no	0	no	0	no	1	no	0	no
112.2 L	8/24	[illegible]	no	0	no	0	no	0	no	0	no
112.2 L	9/1	[illegible]	no	0	no	0	no	0	no	0	no
112.2 L	9/8	[illegible]	no	0	no	0	no	0	no	0	no
112.2 L	9/15	[illegible]	no	0	no	0	no	0	no	0	no
112.2 L	9/22	[illegible]	no	0	no	0	no	0	no	0	no
112.2 L	9/29	[illegible]	no	0	no	0	no	0	no	0	no
112.7 L	8/24	[illegible]	no	0	no	0	no	0	no	0	no
112.7 L	9/1	[illegible]	no	0	no	0	no	0	no	0	no
112.7 L	9/8	[illegible]	no	0	no	0	no	0	no	0	no
112.7 L	9/22	[illegible]	no	0	no	0	no	0	no	0	no
112.7 L	9/29	[illegible]	no	0	no	0	no	0	no	0	no
113.5 C	8/24	Good	no	0	no	0	no	0	no	0	no
113.5 C	9/1	[illegible]	no	0	no	0	no	0	no	0	no
113.5 C	9/8	[illegible]	no	0	no	0	no	0	no	0	no
113.5 C	9/15	[illegible]	no	0	no	0	no	0	no	0	no
113.5 C	9/22	[illegible]	no	0	no	0	no	0	no	0	no
113.5 C	9/29	[illegible]	no	0	no	0	no	0	no	0	no
114.0 C	8/24	[illegible]	no	0	no	0	no	0	no	0	no
114.0 C	9/1	[illegible]	no	0	no	0	no	0	no	0	no
114.0 C	9/8	[illegible]	no	0	no	0	no	0	no	0	no
114.0 C	9/15	[illegible]	yes	0	no	46	yes	0	no	0	no
114.0 C	9/22	[illegible]	no	0	no	0	no	0	no	0	no
114.0 C	9/29	[illegible]	no	0	no	0	no	0	no	0	no
114.4 R	9/1	[illegible]	yes	0	no	1	yes	0	no	0	no
114.4 R	9/8	[illegible]	yes	0	no	59	yes	0	no	0	no
114.4 R	9/22	[illegible]	yes	0	no	5	yes	0	no	0	no
114.5 R	9/8	[illegible]	yes	0	no	1	yes	0	no	0	no
114.6 R	8/24	[illegible]	no	0	no	0	no	0	no	0	no
114.6 R	9/1	[illegible]	no	0	no	0	no	0	no	0	no
114.6 R	9/8	[illegible]	no	0	no	0	no	0	no	0	no
114.6 R	9/15	[illegible]	no	0	no	0	no	0	no	0	no
114.6 R	9/22	[illegible]	no	0	no	1	no	0	no	0	no
114.6 R	9/29	Good	no	0	no	0	no	0	no	0	no
115.0 R	8/24	Good	no	0	no	0	no	0	no	0	no
115.0 R	9/1	Good	yes	0	no	15	yes	0	no	0	no
115.0 R	9/8	Good	yes	0	no	7	yes	0	no	0	no
115.0 R	9/15	Good	no	0	no	0	no	0	no	0	no
115.0 R	9/22	Good	no	1	no	0	no	0	no	0	no
115.0 R	9/29	Good	yes	4	no	4	yes	0	no	0	no

Appendix Table 6-1 (cont). Mainstem Susitna River salmon spawning locations and survey results above RM 98.6, 1984.

River Mile	Date	Survey Conditions	Fish Present	Adult Salmon Enumerated							
				Sockeye		Chum		Coho		Other	
				Number	Spawning	Number	Spawning	Number	Spawning	Number	Spawning
115.9 L	8/24	Good	no	0	no	0	no	0	no	0	no
115.9 L	9/1	Good	no	0	no	0	no	0	no	0	no
115.9 L	9/8	Good	no	0	no	0	no	0	no	0	no
115.9 L	9/15	Good	no	0	no	0	no	0	no	0	no
115.9 L	9/22	Good	no	0	no	0	no	0	no	0	no
115.9 L	9/29	Good	no	0	no	0	no	0	no	0	no
117.9 L	8/24	Good	no	0	no	0	no	0	no	0	no
117.9 L	9/1	Good	no	0	no	0	no	0	no	0	no
117.9 L	9/8	Good	no	0	no	0	no	0	no	0	no
117.9 L	9/15	Good	no	0	no	0	no	0	no	0	no
117.9 L	9/22	Good	no	0	no	0	no	0	no	0	no
117.9 L	9/29	Good	no	0	no	0	no	0	no	0	no
118.9 L	8/24	Good	no	0	no	0	no	0	no	0	no
118.9 L	9/1	Good	yes	0	no	3	yes	0	no	0	no
118.9 L	9/8	Good	yes	0	no	31	yes	0	no	0	no
118.9 L	9/15	Good	yes	0	no	10	yes	0	no	0	no
118.9 L	9/22	Good	no	0	no	0	no	0	no	0	no
118.9 L	9/29	Good	no	0	no	0	no	0	no	0	no
119.1 L	8/24	Good	no	0	no	0	no	0	no	0	no
119.1 L	9/1	Good	yes	0	no	6	yes	0	no	0	no
119.1 L	9/8	Good	yes	0	no	15	yes	0	no	0	no
119.1 L	9/15	Good	yes	0	no	2	yes	0	no	0	no
119.1 L	9/22	Good	no	0	no	0	no	0	no	0	no
119.1 L	9/29	Good	no	0	no	0	no	0	no	0	no
119.4 L	8/24	Good	no	0	no	0	no	0	no	0	no
119.4 L	9/1	Good	no	0	no	0	no	0	no	0	no
119.4 L	9/8	Good	yes	0	no	2	yes	0	no	0	no
119.4 L	9/15	Good	no	0	no	0	no	0	no	0	no
119.4 L	9/22	Good	no	0	no	0	no	0	no	0	no
119.4 L	9/29	Good	no	0	no	0	no	0	no	0	no
119.7 C	8/24	Good	no	0	no	0	no	0	no	0	no
119.7 C	9/1	Good	no	0	no	0	no	0	no	0	no
119.7 C	9/8	Good	no	0	no	0	no	0	no	0	no
119.7 C	9/15	Good	no	0	no	0	no	0	no	0	no
119.7 C	9/22	Good	no	0	no	0	no	0	no	0	no
119.7 C	9/29	Good	no	0	no	0	no	0	no	0	no
121.6 R	9/15	Good	yes	0	no	3	yes	0	no	0	no
124.0 L	8/24	Good	no	0	no	0	no	0	no	0	no
124.0 L	9/1	Good	no	0	no	0	no	0	no	0	no
124.0 L	9/8	Good	no	0	no	0	no	0	no	0	no
124.0 L	9/15	Good	no	0	no	0	no	0	no	0	no
124.0 L	9/22	Good	yes	0	no	16	yes	0	no	0	no
124.0 L	9/29	Good	no	0	no	0	no	0	no	0	no
124.9 L	9/1	Good	no	0	no	0	no	0	no	0	no

Appendix Table 6-1 (cont). Mainstem Susitna River salmon spawning locations and survey results above RM 98.6, 1984.

River Mile	Date	Survey Conditions	Fish Present	Adult Salmon Enumerated							
				Sockeye		Chum		Coho		Other	
				Number	Spawning	Number	Spawning	Number	Spawning	Number	Spawning
124.9 C	9/15	Good	n/a	0	no	8	yes	0	no	0	no
124.9 L	8/24	Good	no	0	no	0	no	0	no	0	no
124.9 L	9/15	Good	no	0	no	0	no	0	no	0	no
124.9 L	9/22	Good	no	0	no	0	no	0	no	0	no
124.9 L	9/29	Good	yes	0	no	1	yes	0	no	0	no
125.0 L	8/24	Good	no	0	no	0	no	0	no	0	no
125.0 L	9/1	Good	no	0	no	0	no	0	no	0	no
125.0 L	9/8	Good	no	0	no	0	no	0	no	0	no
125.0 L	9/15	Good	no	0	no	0	no	0	no	0	no
125.0 L	9/22	Good	no	0	no	0	no	0	no	0	no
125.0 L	9/29	Good	no	0	no	0	no	0	no	0	no
125.1 R	8/24	Good	no	0	no	0	no	0	no	0	no
125.1 R	9/1	Good	no	0	no	0	no	0	no	0	no
125.1 R	9/8	Good	no	0	no	0	no	0	no	0	no
125.1 R	9/15	Good	no	0	no	0	no	0	no	0	no
125.1 R	9/22	Good	no	0	no	0	no	0	no	0	no
125.1 R	9/29	Good	no	0	no	0	no	0	no	0	no
127.1 L	8/24	Good	no	0	no	0	no	0	no	0	no
127.1 L	9/1	Good	no	0	no	0	no	0	no	0	no
127.1 L	9/8	Good	no	0	no	0	no	0	no	0	no
127.1 L	9/15	Good	no	0	no	0	no	0	no	0	no
127.1 L	9/22	Good	no	0	no	0	no	0	no	0	no
127.1 L	9/29	Good	no	0	no	0	no	0	no	0	no
127.8 R	9/15	Good	yes	0	no	4	yes	0	no	0	no
128.3 C	9/8	Good	yes	0	no	73	yes	0	no	0	no
128.6 R	8/24	Good	no	0	no	0	no	0	no	0	no
128.6 R	9/1	Good	yes	0	no	27	yes	0	no	0	no
128.6 R	9/8	Good	yes	0	no	15	yes	0	no	0	no
128.6 R	9/15	Good	yes	0	no	77	yes	0	no	0	no
128.6 R	9/22	Good	no	0	no	0	no	0	no	0	no
128.6 R	9/29	Good	yes	0	no	6	yes	0	no	0	no
128.7 R	9/15	Good	yes	0	no	18	yes	0	no	0	no
129.2 R	8/24	Good	no	0	no	0	no	0	no	0	no
129.2 R	9/1	Good	no	0	no	0	no	0	no	0	no
129.2 R	9/8	Good	no	0	no	0	no	0	no	0	no
129.2 R	9/15	Good	no	0	no	0	no	0	no	0	no
129.2 R	9/22	Good	no	0	no	0	no	0	no	0	no
129.2 R	9/29	Good	no	0	no	0	no	0	no	0	no
129.8 R	8/24	Good	no	0	no	0	no	0	no	0	no
129.8 R	9/1	Good	yes	0	no	18	yes	0	no	0	no
129.8 R	9/8	Good	no	0	no	0	no	0	no	0	no
129.8 R	9/15	Good	yes	0	no	1	yes	0	no	0	no
129.8 R	9/22	Good	no	0	no	0	no	0	no	0	no
129.8 R	9/29	Good	no	0	no	0	no	0	no	0	no

Appendix Table 6-1 (cont). Mainstem Susitna River salmon spawning locations and survey results above RM 98.6, 1984.

River Mile	Date	Survey Conditions	Fish Present	Adult Salmon Enumerated							
				Sockeye		Chum		Coho		Other	
				Number	Spawning	Number	Spawning	Number	Spawning	Number	Spawning
130.5 R	8/24	Good	no	0	no	0	no	0	no	0	no
130.5 R	9/1	Good	yes	0	no	16	yes	0	no	0	no
130.5 R	9/8	Good	yes	0	no	36	yes	0	no	0	no
130.5 R	9/15	Good	yes	0	no	1	yes	0	no	0	no
130.5 R	9/22	Good	no	0	no	0	no	0	no	0	no
130.5 R	9/29	Good	no	0	no	0	no	0	no	0	no
131.0 L	9/1	Good	yes	0	no	32	yes	0	no	0	no
131.0 L	9/8	Good	no	0	no	0	no	0	no	0	no
131.0 L	9/15	Good	yes	0	no	10	yes	0	no	0	no
131.0 R	9/15	Good	yes	1	yes	0	no	0	no	0	no
131.0 L	8/24	Good	no	0	no	0	no	0	no	0	no
131.0 L	9/22	Good	no	0	no	0	no	0	no	0	no
131.0 L	9/29	Good	no	0	no	0	no	0	no	0	no
131.1 L	8/24	Good	no	0	no	0	no	0	no	0	no
131.1 L	9/1	Good	yes	0	no	11	yes	0	no	0	no
131.1 L	9/8	Good	yes	0	no	81	yes	0	no	0	no
131.1 L	9/22	Good	no	0	no	0	no	0	no	0	no
131.1 L	9/29	Good	no	0	no	0	no	0	no	0	no
131.2 L	9/8	Good	yes	0	no	18	yes	0	no	0	no
131.2 L	9/15	Good	yes	0	no	15	yes	0	no	0	no
131.2 L	9/29	Good	yes	0	no	2	yes	0	no	0	no
131.3 L	8/24	Good	no	0	no	0	no	0	no	0	no
131.3 L	9/1	Good	no	0	no	0	no	0	no	0	no
131.3 L	9/8	Good	yes	0	no	57	yes	0	no	0	no
131.3 L	9/15	Good	yes	0	no	13	yes	0	no	0	no
131.3 L	9/22	Good	no	0	no	0	no	0	no	0	no
131.3 L	9/29	Good	no	0	no	0	no	0	no	0	no
131.5 L	8/24	Good	yes	0	no	5	yes	2	yes	0	no
131.5 L	9/15	Good	yes	0	no	102	yes	0	no	0	no
131.6 L	9/8	Good	yes	0	no	40	yes	0	no	0	no
131.7 L	9/8	Good	yes	0	no	19	yes	0	no	0	no
131.7 L	9/15	Good	yes	0	no	20	yes	0	no	0	no
131.7 L	9/22	Good	yes	0	no	7	yes	0	no	0	no
133.0 R	9/15	Good	yes	0	no	20	yes	0	no	0	no
133.7 R	8/24	Good	no	0	no	0	no	0	no	0	no
133.7 R	9/1	Good	no	0	no	6	no	0	no	0	no
133.7 R	9/8	Good	no	0	no	0	no	0	no	0	no
133.7 R	9/15	Good	no	0	no	0	no	0	no	0	no
133.7 R	9/22	Good	no	0	no	0	no	0	no	0	no
133.7 R	9/29	Good	no	0	no	0	no	0	no	0	no

Appendix Table 6-1 (cont). Mainstem Susitna River salmon spawning locations and survey results above RM 98.6, 1984.

River Mile	Date	Survey Conditions	Fish Present	Adult Salmon Enumerated							
				Sockeye		Chum		Coho		Other	
				Number	Spawning	Number	Spawning	Number	Spawning	Number	Spawning
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
130.6 L	9/1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
130.6 L	9/8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
130.6 L	9/15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
130.6 L	9/22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
130.6 L	9/29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
130.6 R	9/1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
130.6 R	9/8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
130.6 R	9/22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
130.6 R	9/29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
134.2 R	8/24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
134.7 R	9/29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
135.0 R	8/24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
135.0 R	9/1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
135.0 R	9/8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
135.0 R	9/15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
135.0 R	9/22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
135.0 R	9/29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
135.1 L	9/15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
135.4 R	8/24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
135.4 R	9/1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
135.4 R	9/8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
135.4 R	9/15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
135.4 R	9/22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
135.4 R	9/29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
136.1 R	8/24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
136.1 R	9/1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
136.1 R	9/8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
136.1 R	9/15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
136.1 R	9/22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
136.1 R	9/29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
136.3 R	9/8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
136.3 R	9/15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
136.8 R	8/24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
136.8 R	9/1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
136.8 R	9/8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
136.8 R	9/15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
136.8 R	9/22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
136.8 R	9/29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
137.4 R	8/24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
137.4 R	9/1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
137.4 R	9/8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
137.4 R	9/15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
137.4 R	9/22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
137.4 R	9/29	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Appendix Table 6-1 (cont). Mainstem Susitna River salmon spawning locations and survey results above RM 98.6, 1984.

River Mile	Date	Survey Conditions	Fish Present	Adult Salmon Enumerated							
				Sockeye		Chum		Coho		Other	
				Number	Spawning	Number	Spawning	Number	Spawning	Number	Spawning
138.3 L	9/1	Good	yes	0	no	3	yes	0	no	0	no
138.3 L	9/8	Good	no	0	no	0	no	0	no	0	no
138.3 L	9/15	Good	no	0	no	0	no	0	no	0	no
138.3 L	9/22	Good	no	0	no	0	no	0	no	0	no
138.3 L	9/29	Good	no	0	no	0	no	0	no	0	no
138.7 L	8/24	Good	no	0	no	0	no	0	no	0	no
138.7 L	9/1	Good	no	0	no	0	no	0	no	0	no
138.7 L	9/8	Good	yes	0	no	21	yes	0	no	0	no
138.7 L	9/15	Good	yes	0	no	5	yes	0	no	0	no
138.7 L	9/22	Good	no	0	no	0	no	0	no	0	no
138.7 L	9/29	Good	no	0	no	0	no	0	no	0	no
138.8 L	9/15	Good	yes	4	yes	36	yes	0	no	0	no
139.0 L	8/24	Good	no	0	no	0	no	0	no	0	no
139.0 L	9/1	Good	yes	0	no	15	yes	0	no	0	no
139.0 L	9/8	Good	yes	2	yes	87	yes	0	no	0	no
139.0 L	9/15	Good	yes	0	no	15	yes	0	no	0	no
139.0 L	9/22	Good	yes	4	yes	0	no	0	no	0	no
139.0 L	9/29	Good	no	0	no	0	no	0	no	0	no
139.4 L	8/24	Good	no	0	no	0	no	0	no	0	no
139.4 L	9/1	Good	yes	0	no	4	yes	0	no	0	no
139.4 L	9/8	Good	yes	0	no	37	yes	0	no	0	no
139.4 L	9/15	Good	no	0	no	0	no	0	no	0	no
139.4 L	9/22	Good	no	0	no	0	no	0	no	0	no
139.4 L	9/29	Good	no	0	no	0	no	0	no	0	no
139.7 R	8/24	Good	no	0	no	0	no	0	no	0	no
139.7 R	9/1	Good	no	0	no	0	no	0	no	0	no
139.7 R	9/8	Good	no	0	no	0	no	0	no	0	no
139.7 R	9/15	Good	no	0	no	0	no	0	no	0	no
139.7 R	9/22	Good	no	0	no	0	no	0	no	0	no
139.7 R	9/29	Good	no	0	no	0	no	0	no	0	no
140.5 R	8/24	Good	no	0	no	0	no	0	no	0	no
140.5 R	9/1	Good	yes	0	no	4	yes	0	no	0	no
140.5 R	9/8	Good	no	0	no	0	no	0	no	0	no
140.5 R	9/15	Good	no	0	no	0	no	0	no	0	no
140.5 R	9/22	Good	no	0	no	0	no	0	no	0	no
140.5 R	9/29	Good	no	0	no	0	no	0	no	0	no
140.8 R	9/15	Good	yes	0	no	2	yes	0	no	0	no
141.2 R	8/24	Good	no	0	no	0	no	0	no	0	no
141.2 R	9/1	Good	no	0	no	0	no	0	no	0	no
141.2 R	9/8	Good	no	0	no	0	no	0	no	0	no
141.2 R	9/15	Good	no	0	no	0	no	0	no	0	no
141.2 R	9/22	Good	no	0	no	0	no	0	no	0	no
141.2 R	9/29	Good	no	0	no	0	no	0	no	0	no

Appendix Table 6-1 (cont). Mainstem Susitna River salmon spawning locations and survey results above RM 98.6, 1984.

River Mile	Date	Survey Conditions	Fish Present	Adult Salmon Enumerated							
				Sockeye		Chum		Coho		Other	
				Number	Spawning	Number	Spawning	Number	Spawning	Number	Spawning
101.4 R	9/1	Good	yes	0	no	43	yes	0	no	0	no
101.4 R	9/8	Good	no	0	no	0	no	0	no	0	no
101.4 R	9/15	Good	no	0	no	0	no	0	no	0	no
101.4 R	9/22	Good	no	0	no	0	no	0	no	0	no
101.4 R	9/29	Good	no	0	no	0	no	0	no	0	no
101.4 R	8/31	Good	no	0	no	0	no	0	no	0	no
101.4 R	9/1	Good	no	0	no	0	no	0	no	0	no
101.4 R	9/8	Good	no	0	no	0	no	0	no	0	no
101.4 R	9/15	Good	yes	1	yes	1	yes	0	no	0	no
101.4 R	9/22	Good	no	0	no	0	no	0	no	0	no
101.4 R	9/29	Good	no	0	no	0	no	0	no	0	no
101.1 L	9/1	Good	yes	0	no	43	yes	0	no	0	no
100.2 L	8/24	Good	no	0	no	0	no	0	no	0	no
100.2 L	9/1	Good	no	0	no	0	no	0	no	0	no
100.2 L	9/8	Good	no	0	no	0	no	0	no	0	no
100.2 L	9/15	Good	no	0	no	0	no	0	no	0	no
100.2 L	9/22	Good	no	0	no	0	no	0	no	0	no
100.2 L	9/29	Good	no	0	no	0	no	0	no	0	no

Appendix Table 6-2. Escapement survey counts of Susitna River streams between RM 98.6 and 195.0, 1984.

Spawning Area	River Mile	Survey Methods	Date	Survey Distance	Survey Condition	Adult Salmon Enumerated														
						Chinook			Sockeye			Pink			Chum			Coho		
						Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total
[illegible] CREEK	101.4	B	07/22	0.00	F	47	0	47	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	101.4	B	08/01	0.00	B	0	0	0	0	0	0	0	0	0	0	0	0	90	0	90
[illegible] CREEK	101.4	B	08/08	0.00	B	0	0	0	0	0	0	0	0	0	0	0	0	301	0	301
[illegible] CREEK	101.4	B	08/15	0.00	F	0	0	0	0	0	0	0	0	0	0	0	0	33	0	33
[illegible] CREEK	101.4	B	08/22	0.00	E	0	0	0	0	0	0	0	0	0	0	0	0	217	0	217
[illegible] CREEK	101.4	B	08/29	0.00	B	0	0	0	0	0	0	0	0	0	0	0	0	221	32	273
[illegible] CREEK	101.4	B	10/13	0.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	14	14
[illegible] CREEK	101.4	B	10/16	0.00	B	0	0	0	0	0	0	0	0	0	0	0	0	90	42	132
[illegible] CREEK	101.4	F	07/11	0.50	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	101.4	F	07/22	0.50	E	40	0	40	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	101.4	F	07/27	0.50	F	1	0	1	0	0	0	41	0	41	0	0	0	0	0	0
[illegible] CREEK	101.4	F	08/02	0.50	F	1	0	1	0	0	0	47	0	47	0	0	0	0	0	0
[illegible] CREEK	101.4	F	08/09	0.50	F	0	0	0	0	0	0	170	4	174	0	0	0	0	0	0
[illegible] CREEK	101.4	F	08/15	0.50	E	0	0	0	0	0	0	266	27	293	0	0	0	10	0	10
[illegible] CREEK	101.4	F	08/21	0.50	F	0	0	0	0	0	0	2	0	10	0	0	0	0	0	0
[illegible] CREEK	101.4	F	09/06	0.50	E	0	0	0	0	0	0	0	16	16	0	0	0	95	0	95
[illegible] CREEK	101.4	F	09/13	0.50	B	0	0	0	0	0	0	0	0	0	0	0	0	114	3	117
[illegible] CREEK	101.4	F	09/20	0.50	B	0	0	0	0	0	0	0	0	0	0	0	0	13	5	18
[illegible] CREEK	101.4	B	09/30	0.50	E	0	0	0	0	0	0	0	0	0	0	0	0	17	5	22
[illegible] CREEK	101.4	F	10/07	0.50	E	0	0	0	0	0	0	0	0	0	0	0	0	1	27	28
CHASE CREEK	106.9	B	08/01	2.00	B	0	0	0	0	0	0	0	0	0	0	0	0	120	0	120
CHASE CREEK	106.9	B	08/08	2.00	B	0	0	0	0	0	0	0	0	0	0	0	0	95	0	95
CHASE CREEK	106.9	B	08/15	2.00	F	0	0	0	0	0	0	0	0	0	0	0	0	70	0	70
CHASE CREEK	106.9	B	08/22	2.00	B	0	0	0	0	0	0	0	0	0	0	0	0	43	4	47
CHASE CREEK	106.9	B	08/29	2.00	B	0	0	0	0	0	0	0	0	0	0	0	0	62	12	74
CHASE CREEK	106.9	B	10/06	2.00	B	0	0	0	0	0	0	0	0	0	0	0	0	25	9	34
CHASE CREEK	106.9	B	10/13	2.00	E	0	0	0	0	0	0	0	0	0	0	0	0	25	1	26
CHASE CREEK	106.9	F	07/13	0.75	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CHASE CREEK	106.9	F	07/27	0.75	E	0	0	0	0	0	0	41	0	41	0	0	0	0	0	0
CHASE CREEK	106.9	F	08/02	0.75	F	0	1	1	0	0	0	99	0	99	0	0	0	0	0	0
CHASE CREEK	106.9	F	08/09	0.75	B	0	3	3	0	0	0	35	13	48	0	0	0	2	0	2
CHASE CREEK	106.9	F	08/16	0.75	B	0	3	3	0	0	0	246	192	438	0	1	1	8	0	8
CHASE CREEK	106.9	F	08/30	0.75	E	0	0	0	0	0	0	5	135	140	0	0	0	239	0	239
CHASE CREEK	106.9	F	09/04	0.75	E	0	0	0	0	0	0	0	116	116	0	0	0	302	0	302
CHASE CREEK	106.9	F	09/17	0.75	E	0	0	0	0	0	0	0	0	0	0	0	0	85	4	89
CHASE CREEK	106.9	F	09/24	0.75	B	0	0	0	0	0	0	0	0	0	0	0	0	44	0	44
CHASE CREEK	106.9	F	09/30	0.75	E	0	0	0	0	0	0	0	0	0	0	0	0	29	13	42
CHASE CREEK	106.9	F	10/07	0.75	E	0	0	0	0	0	0	0	0	0	0	0	0	26	12	38
CHASE CREEK	106.9	F	10/14	0.75	E	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10
SLASH CREEK	111.2	F	07/23	0.75	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLASH CREEK	111.2	F	07/30	0.75	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLASH CREEK	111.2	F	08/07	0.75	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLASH CREEK	111.2	F	08/14	0.75	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLASH CREEK	111.2	F	08/21	0.75	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLASH CREEK	111.2	F	08/27	0.75	F	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0
SLASH CREEK	111.2	F	09/05	0.75	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLASH CREEK	111.2	F	09/11	0.75	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLASH CREEK	111.2	F	09/24	0.75	B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLASH CREEK	111.2	F	09/30	0.75	E	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5
SLASH CREEK	111.2	F	10/07	0.75	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix Table 6-2 (cont). Escapement survey counts of Susitna River streams between RM 98.6 and 195.0, 1984.

Spawning Area	River Mile	Survey Methods	Date	Survey Minutes	Survey Condition	Adult Salmon Enumerated														
						Chinook			Coho			Pink			Chum			Sockeye		
						Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total
[illegible]	111.6	W	[illegible]	1.00	G	0	0	0	0	0	0	0	0	0	0	0	0	11	0	11
[illegible]	111.6	F	07/23	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	111.6	F	07/30	1.00	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	111.6	F	08/03	1.00	E	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
[illegible]	111.6	F	08/14	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	111.6	F	08/20	1.00	E	0	0	0	0	0	0	5	1	6	0	0	0	0	0	0
[illegible]	111.6	F	08/27	1.00	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	111.6	F	09/08	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	20	0	20
[illegible]	111.6	F	09/14	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	39	2	41
[illegible]	111.6	F	09/21	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	232	1	233
[illegible]	111.6	F	09/28	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	175	17	192
[illegible]	111.6	F	10/03	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	92	35	127
[illegible]	111.6	F	10/11	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	34	37	71
[illegible]	113.6	W	07/23	1.00	E	21	0	21	0	0	0	0	1	0	0	0	0	0	0	0
[illegible]	113.6	W	07/23	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	113.6	W	08/20	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	21	0	21
[illegible]	113.6	W	10/04	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	11	0	11
[illegible]	113.6	F	07/30	0.25	F	0	0	0	0	0	0	35	0	35	0	0	0	0	0	0
[illegible]	113.6	F	08/07	0.25	F	1	0	1	0	0	0	466	0	466	21	1	25	0	0	0
[illegible]	113.6	F	08/14	0.25	E	0	1	0	0	0	0	1142	12	1161	14	2	16	0	0	0
[illegible]	113.6	F	08/21	0.25	E	0	0	0	0	0	0	630	300	930	17	14	31	1	0	1
[illegible]	113.6	F	08/27	0.25	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	113.6	F	09/05	0.25	E	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0
[illegible]	113.6	F	09/10	0.25	E	0	0	0	0	0	0	0	1	1	0	0	0	1	0	1
[illegible]	113.6	F	09/20	0.25	E	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
[illegible]	113.6	F	09/30	0.25	E	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
[illegible]	113.6	F	10/08	0.25	E	0	0	0	0	0	0	0	0	0	0	0	0	5	1	6
[illegible]	113.8	F	08/07	0.25	E	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
[illegible]	113.8	F	08/14	0.25	E	0	0	0	0	0	0	1	1	10	0	0	0	0	0	0
[illegible]	113.8	F	08/21	0.25	E	0	0	0	0	0	0	24	0	24	0	0	0	0	0	0
[illegible]	113.8	F	08/27	0.25	F	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0
[illegible]	113.8	F	09/08	0.25	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	113.8	F	09/13	0.25	E	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
[illegible]	113.8	F	09/20	0.25	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	113.8	F	09/30	0.25	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	113.8	F	08/07	0.25	E	0	0	0	0	0	0	107	0	107	0	0	0	0	0	0
[illegible]	113.8	F	08/14	0.25	E	0	0	0	0	0	0	23	15	38	0	0	0	0	0	0
[illegible]	113.8	F	08/21	0.25	E	0	0	0	0	0	0	36	10	46	0	0	0	0	0	0
[illegible]	113.8	F	08/27	0.25	F	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
[illegible]	113.8	F	09/05	0.25	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	113.8	F	09/15	0.25	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	113.8	F	09/24	0.25	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix Table 6-2 (cont). Escapement survey counts of Susitna River streams between RM 98.6 and 195.0, 1984.

Spawning Area	River Mile	Survey Methods	Date	Survey Distance	Survey Condition	Adult Salmon Enumerated														
						Chinook			Sockeye			Pink			Chum			Coho		
						Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total
LOWER MCKENZIE CREEK	116.2	B	06/29	2.00	G	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5
LOWER MCKENZIE CREEK	116.2	F	07/30	0.25	G	0	0	0	0	0	0	305	0	305	0	0	0	0	0	0
LOWER MCKENZIE CREEK	116.2	F	08/07	0.25	E	0	0	0	0	0	0	226	0	226	0	0	0	0	0	0
LOWER MCKENZIE CREEK	116.2	F	08/14	0.25	E	0	0	0	0	0	0	104	9	113	0	0	0	0	0	0
LOWER MCKENZIE CREEK	116.2	F	08/21	0.25	E	0	0	0	0	0	0	59	12	71	0	0	0	0	0	0
LOWER MCKENZIE CREEK	116.2	F	08/27	0.25	F	0	0	0	0	0	0	5	0	5	23	0	23	24	0	24
LOWER MCKENZIE CREEK	116.2	F	09/05	0.25	G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LOWER MCKENZIE CREEK	116.2	F	09/14	0.25	G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LOWER MCKENZIE CREEK	116.2	F	09/24	0.25	G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LOWER MCKENZIE CREEK	116.2	F	09/30	0.25	G	0	0	0	0	0	0	0	0	0	0	0	0	0	3	10
LOWER MCKENZIE CREEK	116.2	F	10/05	0.25	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MCKENZIE CREEK	116.7	F	07/30	0.25	G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MCKENZIE CREEK	116.7	F	08/07	0.25	E	0	0	0	0	2	0	11	0	11	0	0	0	0	0	0
MCKENZIE CREEK	116.7	F	08/14	0.25	G	0	0	0	0	0	0	5	0	5	0	0	0	0	0	0
MCKENZIE CREEK	116.7	F	08/21	0.25	E	0	0	0	0	0	0	5	0	5	0	0	0	0	0	0
MCKENZIE CREEK	116.7	F	08/27	0.25	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MCKENZIE CREEK	116.7	F	09/05	0.25	G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MCKENZIE CREEK	116.7	F	09/14	0.25	G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MCKENZIE CREEK	116.7	F	09/24	0.25	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LITTLE PORTAGE CREEK	117.7	F	07/23	0.25	I	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LITTLE PORTAGE CREEK	117.7	F	07/30	0.25	F	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
LITTLE PORTAGE CREEK	117.7	F	08/07	0.25	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LITTLE PORTAGE CREEK	117.7	F	08/13	0.25	F	0	0	0	0	0	0	157	0	157	2	0	2	0	0	0
LITTLE PORTAGE CREEK	117.7	S	08/20	0.25	G	0	0	0	0	0	0	110	14	113	17	1	18	0	0	0
LITTLE PORTAGE CREEK	117.7	F	08/27	0.25	F	0	0	0	0	0	0	25	1	25	0	0	0	0	0	0
LITTLE PORTAGE CREEK	117.7	F	09/05	0.25	G	0	0	0	0	0	0	0	0	0	5	1	5	0	0	0
LITTLE PORTAGE CREEK	117.7	F	09/14	0.25	G	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0
LITTLE PORTAGE CREEK	117.7	F	09/24	0.25	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FOURMILE CREEK	119.3	F	08/07	0.25	G	0	0	0	0	0	0	24	0	24	0	0	0	0	0	0
FOURMILE CREEK	119.3	F	08/13	0.25	G	0	0	0	0	0	0	38	2	40	0	0	0	0	0	0
FOURMILE CREEK	119.3	F	08/21	0.25	E	0	0	0	0	0	0	1	3	5	0	0	0	0	0	0
FOURMILE CREEK	119.3	F	08/27	0.25	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FOURMILE CREEK	119.3	F	09/05	0.25	G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FOURMILE CREEK	119.3	F	09/14	0.25	G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FOURMILE CREEK	119.3	F	09/24	0.25	G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BOWLBAN CREEK	119.4	F	08/07	0.25	G	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
BOWLBAN CREEK	119.4	F	08/13	0.25	G	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
BOWLBAN CREEK	119.4	F	08/21	0.25	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BOWLBAN CREEK	119.4	F	08/27	0.25	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BOWLBAN CREEK	119.4	F	09/05	0.25	G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BOWLBAN CREEK	119.4	F	09/14	0.25	G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BOWLBAN CREEK	119.4	F	09/24	0.25	G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEADHORSE CREEK	120.0	F	08/06	0.25	G	0	0	0	0	0	0	11	0	11	0	0	0	0	0	0
DEADHORSE CREEK	120.0	F	08/13	1.50	E	0	0	0	0	0	0	327	10	337	0	0	0	0	0	0
DEADHORSE CREEK	120.0	F	08/20	0.25	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix Table 6-2 (cont). Escapement survey counts of Susitna River streams between RM 98.6 and 195.0, 1984.

Spawning Area	River Mile	Survey Methods	Date	Survey Distance	Survey Condition	Chinook Live	Chinook Dead	Chinook Total	Sockeye Live	Sockeye Dead	Sockeye Total	Pink Live	Pink Dead	Pink Total	Chum Live	Chum Dead	Chum Total	Coho Live	Coho Dead	Coho Total
[illegible]	130.8	F	08/27	0.75	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	130.8	F	09/08	0.75	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	130.8	F	09/13	0.25	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	130.8	F	09/17	0.50	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	130.9	F	08/07	0.25	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] OF ANIA CREEK	131.1	A	07/27	0.50	1	10	0	10	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] OF ANIA CREEK	131.2	F	07/27	0.75	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] OF ANIA CREEK	131.3	F	07/25	0.50	2	17	0	17	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] OF ANIA CREEK	131.3	F	08/30	0.25	2	1	0	1	0	0	0	1	0	1	0	0	0	0	0	0
[illegible] OF ANIA CREEK	131.7	F	08/06	0.25	2	0	0	0	0	0	0	171	0	171	2	0	2	0	0	0
[illegible] OF ANIA CREEK	131.7	F	08/13	0.50	2	0	0	0	0	0	0	291	20	311	1	0	1	0	0	0
[illegible] OF ANIA CREEK	131.7	F	08/30	0.25	2	0	0	0	0	0	0	160	54	212	0	1	1	0	0	0
[illegible] OF ANIA CREEK	131.7	F	08/06	0.25	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] OF ANIA CREEK	131.7	F	08/04	0.50	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] OF ANIA CREEK	131.7	F	08/11	0.25	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] OF ANIA CREEK	131.7	F	09/15	0.25	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] OF ANIA CREEK	131.7	F	09/28	0.75	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] OF ANIA CREEK	131.7	F	10/05	0.75	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	134.7	B	07/23	1.50	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
[illegible] CREEK	134.7	B	08/29	1.50	0	0	0	0	0	0	0	0	0	0	2	0	2	2	0	2
[illegible] CREEK	134.7	F	07/30	0.75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	134.7	F	08/06	0.75	2	0	0	0	0	0	0	10	0	10	0	0	0	0	0	0
[illegible] CREEK	134.7	F	08/13	0.75	0	0	0	0	0	0	0	117	0	133	0	0	0	0	0	0
[illegible] CREEK	134.7	F	08/20	0.75	0	0	0	0	0	0	0	46	25	81	2	2	4	0	0	0
[illegible] CREEK	134.7	F	08/28	0.75	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	134.7	F	09/04	0.25	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	134.7	F	09/11	0.25	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	134.7	F	09/26	0.75	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	134.7	F	09/30	0.75	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	138.0	*	07/23	2.00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	138.0	F	07/23	0.75	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	138.0	F	07/30	0.25	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	138.0	F	08/06	0.75	2	0	0	0	0	0	0	41	0	41	2	0	2	0	0	0
[illegible] CREEK	138.0	F	08/13	0.25	2	0	0	0	0	0	0	11	3	14	1	0	1	0	0	0
[illegible] CREEK	138.0	F	08/20	0.75	2	0	0	0	0	0	0	1	10	11	3	1	4	0	0	0
[illegible] CREEK	138.0	F	08/28	0.75	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	138.0	F	09/04	0.75	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	138.0	F	09/11	0.75	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	138.0	F	09/21	0.25	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
[illegible] CREEK	138.0	F	09/28	0.75	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] OF ANIA CREEK	130.1	B	07/23	4.00	0	98	3	97	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] OF ANIA CREEK	130.5	B	07/23	1.00	0	34	0	34	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] OF ANIA CREEK	130.1	B	09/15	1.00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] OF ANIA CREEK	130.5	B	09/29	2.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] OF ANIA CREEK	130.1	F	07/30	0.25	0	25	0	25	0	0	0	551	0	551	129	0	129	0	0	0
[illegible] OF ANIA CREEK	130.6	F	08/06	0.75	2	6	0	6	1300	0	1300	700	2	702	11	0	11	0	0	0
[illegible] OF ANIA CREEK	130.1	F	08/13	0.25	1	0	0	0	0	0	0	1430	103	1642	122	21	143	0	0	0
[illegible] OF ANIA CREEK	130.5	F	08/20	0.25	1	0	0	0	0	0	0	305	124	429	109	66	175	0	0	0
[illegible] OF ANIA CREEK	130.1	F	08/28	0.25	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] OF ANIA CREEK	130.1	F	09/04	0.75	1	0	0	0	0	0	0	0	0	0	57	61	78	0	0	0
[illegible] OF ANIA CREEK	130.1	F	09/21	0.75	1	0	0	0	0	0	0	0	0	0	11	5	22	0	0	0
[illegible] OF ANIA CREEK	130.1	F	09/29	0.25	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
[illegible] OF ANIA CREEK	130.1	F	09/30	0.75	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] OF ANIA CREEK	130.1	F	10/05	0.75	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix Table 6-2 (cont). Escapement survey counts of Susitna River streams between RM 98.6 and 195.0, 1984.

Spawning Area	River Mile	Survey Methods	Date	Survey Distance	Survey Condition	Adult Salmon Enumerated														
						Chinook			Sockeye			Pink			Chum			Coho		
						Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total
GOLD CREEK	136.7	B	07/22	7.00	F	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0
GOLD CREEK	136.7	B	08/01	7.00	G	20	3	23	0	0	0	0	0	0	0	0	0	0	0	0
GOLD CREEK	136.7	B	08/10	7.00	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GOLD CREEK	136.7	B	08/01	7.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GOLD CREEK	136.7	B	08/08	7.00	G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GOLD CREEK	136.7	B	08/15	7.00	G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GOLD CREEK	136.7	B	08/22	7.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GOLD CREEK	136.7	B	08/29	7.00	G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GOLD CREEK	136.7	F	08/08	0.25	G	0	1	1	0	0	0	82	0	82	0	0	0	0	0	0
GOLD CREEK	136.7	F	08/24	0.25	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GOLD CREEK	136.7	F	08/26	0.25	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GOLD CREEK	136.7	F	08/30	0.25	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GOLD CREEK	136.7	F	08/30	0.25	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDIAN RIVER	138.6	B	07/25	16.00	G	1000	56	1056	0	0	0	0	0	0	0	0	0	0	0	0
INDIAN RIVER	138.6	B	08/01	16.00	G	342	93	435	0	0	0	1466	0	1466	437	0	437	0	0	0
INDIAN RIVER	138.6	B	08/11	16.00	E	46	1	47	1	0	1	7966	0	7966	2247	0	2247	3	0	3
INDIAN RIVER	138.6	B	08/18	16.00	F	0	0	0	0	0	0	7361	1305	9066	1460	290	1750	175	0	175
INDIAN RIVER	138.6	B	08/01	16.00	G	0	0	0	0	0	0	0	0	0	302	137	309	211	0	211
INDIAN RIVER	138.6	B	08/08	16.00	G	0	0	0	0	0	0	0	0	0	62	0	62	277	0	277
INDIAN RIVER	138.6	B	08/15	16.00	G	0	0	0	0	0	0	0	0	0	3	0	3	415	0	415
INDIAN RIVER	138.6	B	08/22	16.00	E	0	0	0	0	0	0	0	0	0	0	0	0	361	0	361
INDIAN RIVER	138.6	B	08/29	16.00	G	0	0	0	0	0	0	0	0	0	0	0	0	87	3	87
INDIAN RIVER	138.6	B	10/06	16.00	G	0	0	0	0	0	0	0	0	0	0	0	0	31	0	31
INDIAN RIVER	138.6	B	10/13	16.00	E	0	0	0	0	0	0	0	0	0	0	0	0	33	45	77
INDIAN RIVER	138.6	F	07/24	1.00	G	190	9	199	0	0	0	0	0	0	0	0	0	0	0	0
INDIAN RIVER	138.6	F	07/31	1.00	F	133	45	178	0	0	0	549	0	549	396	0	396	0	0	0
INDIAN RIVER	138.6	F	08/08	1.00	G	53	48	100	0	0	0	3246	159	3405	427	67	494	2	0	2
INDIAN RIVER	138.6	F	08/11	1.00	E	0	0	0	0	0	0	1960	26	1834	499	14	513	3	0	3
INDIAN RIVER	138.6	F	08/17	1.00	G	0	0	0	0	0	0	1324	898	2202	995	277	1272	45	0	45
INDIAN RIVER	138.6	F	08/24	1.00	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDIAN RIVER	138.6	F	08/02	1.00	G	0	0	0	0	0	0	3	1	4	334	140	354	29	0	29
INDIAN RIVER	138.6	F	08/10	1.00	G	0	0	0	0	0	0	0	0	0	15	213	230	78	0	78
INDIAN RIVER	138.6	F	08/30	1.00	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDIAN RIVER	138.6	F	08/30	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
INDIAN RIVER	138.6	F	10/05	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	1	11
INDIAN RIVER	138.6	F	10/11	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JACK LONG CREEK	144.3	B	07/31	8.00	E	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
JACK LONG CREEK	144.3	B	08/08	8.00	G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JACK LONG CREEK	144.3	B	08/15	8.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JACK LONG CREEK	144.3	B	08/22	8.00	E	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5
JACK LONG CREEK	144.3	B	08/29	8.00	G	0	0	0	0	0	0	0	0	0	0	0	0	5	1	6
JACK LONG CREEK	144.3	F	07/31	0.25	E	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
JACK LONG CREEK	144.3	F	08/08	0.25	E	2	0	2	0	0	0	11	0	11	1	0	1	0	0	0
JACK LONG CREEK	144.3	F	08/17	0.25	G	0	0	0	0	0	0	5	0	5	1	0	1	0	0	0
JACK LONG CREEK	144.3	F	08/24	0.25	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JACK LONG CREEK	144.3	F	09/02	0.25	G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JACK LONG CREEK	144.3	F	09/10	0.25	G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JACK LONG CREEK	144.3	F	09/30	0.25	G	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JACK LONG CREEK	144.3	F	09/26	0.25	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
JACK LONG CREEK	144.3	F	10/03	0.25	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix Table 6-2 (cont). Escapement survey counts of Susitna River streams between RM 98.6 and 195.0, 1984.

Spawning Area	River Mile	Survey Methods	Date	Survey Distance	Survey Condition	Adult Salmon Enumerated														
						Chinook			Sockeye			Pink			Chum			Coho		
						Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total
PORTAGE CREEK	140.9	A	07/21	25.00	E	99	0	99	0	0	0	0	0	0	0	0	0	0	0	0
PORTAGE CREEK	140.9	A	07/25	25.00	P	190	12	190	0	0	0	0	0	0	0	0	0	0	0	0
PORTAGE CREEK	140.9	A	08/01	25.00	E	5236	310	5446	0	0	0	90	0	90	115	0	115	0	0	0
PORTAGE CREEK	140.9	A	08/11	25.00	E	363	296	663	0	0	0	2903	4	2907	403	2	405	15	0	15
PORTAGE CREEK	140.9	A	08/18	25.00	E	12	0	12	10	0	10	1896	209	2105	1151	434	1585	91	0	91
PORTAGE CREEK	140.9	A	09/01	25.00	E	0	0	0	0	0	0	0	0	0	46	14	60	0	0	0
PORTAGE CREEK	140.9	A	09/08	25.00	E	0	0	0	0	0	0	0	0	0	11	0	11	95	0	95
PORTAGE CREEK	140.9	A	09/15	25.00	E	0	0	0	0	0	0	0	0	0	0	0	0	120	0	120
PORTAGE CREEK	140.9	A	09/22	25.00	E	0	0	0	0	0	0	0	0	0	0	0	0	94	0	94
PORTAGE CREEK	140.9	A	09/29	25.00	E	0	0	0	0	0	0	0	0	0	0	0	0	115	0	115
PORTAGE CREEK	140.9	A	10/06	25.00	E	0	0	0	0	0	0	0	0	0	0	0	0	46	0	46
PORTAGE CREEK	140.9	A	10/13	25.00	E	0	0	0	0	0	0	0	0	0	0	0	0	45	0	45
PORTAGE CREEK	140.9	F	07/31	0.25	P	46	3	49	0	0	0	46	0	46	53	0	53	0	0	0
PORTAGE CREEK	140.9	F	08/01	0.25	E	127	26	133	0	0	0	0	0	0	0	0	0	0	0	0
PORTAGE CREEK	140.9	F	08/04	0.25	E	32	18	50	0	0	0	0	0	0	0	0	0	0	0	0
PORTAGE CREEK	140.9	F	08/08	0.25	P	5	6	11	0	0	0	150	0	150	242	0	242	6	0	6
PORTAGE CREEK	140.9	F	08/17	0.25	P	0	0	0	13	0	13	53	5	58	242	0	242	71	0	71
PORTAGE CREEK	140.9	F	08/18	0.25	E	0	3	3	0	0	0	283	13	302	139	17	156	0	0	0
PORTAGE CREEK	140.9	F	08/24	0.25	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PORTAGE CREEK	140.9	F	09/02	0.25	E	0	0	0	2	0	2	0	0	0	0	1	1	0	0	0
PORTAGE CREEK	140.9	F	09/10	0.25	E	0	0	0	1	0	1	0	0	0	0	0	0	1	0	1
PORTAGE CREEK	140.9	F	09/20	0.25	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PORTAGE CREEK	140.9	F	09/26	0.25	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PORTAGE CREEK	140.9	F	10/03	0.25	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CHEECHAKO CREEK	152.5	A	07/31	1.25	A	16	0	16	0	0	0	0	0	0	0	0	0	0	0	0
CHEECHAKO CREEK	152.5	A	08/01	1.25	A	39	1	39	0	0	0	0	0	0	0	0	0	0	0	0
CHEECHAKO CREEK	152.5	A	08/11	1.25	A	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0
CHEECHAKO CREEK	152.5	A	08/18	1.25	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CHEECHAKO CREEK	152.5	A	09/15	1.25	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CHEECHAKO CREEK	152.5	A	09/29	1.25	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CHEECHAKO CREEK	152.5	A	10/13	1.25	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CHINOOK CREEK	156.0	A	07/31	1.00	F	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0
CHINOOK CREEK	156.0	A	08/01	1.00	E	13	2	15	0	0	0	0	0	0	0	0	0	0	0	0
CHINOOK CREEK	156.0	A	08/11	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CHINOOK CREEK	156.0	A	08/18	1.00	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CHINOOK CREEK	156.0	A	09/15	1.00	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CHINOOK CREEK	156.0	A	09/29	1.00	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CHINOOK CREEK	156.0	A	10/13	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEVIL CREEK	161.0	A	07/31	0.50	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEVIL CREEK	161.0	A	08/01	0.50	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEVIL CREEK	161.0	A	08/11	0.50	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEVIL CREEK	161.0	A	08/18	0.50	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEVIL CREEK	161.0	A	09/15	0.50	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEVIL CREEK	161.0	A	10/13	0.50	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FOG CREEK	176.1	A	07/31	1.00	E	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0
FOG CREEK	176.1	A	08/01	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FOG CREEK	176.1	A	08/04	1.00	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FOG CREEK	176.1	A	08/10	1.00	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BEAR CREEK	178.0	A	07/31	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BEAR CREEK	178.0	A	08/04	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BEAR CREEK	178.0	A	08/10	1.00	A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BEAR CREEK	178.0	A	08/01	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix Table 6-2 (cont). Escapement survey counts of Susitna River streams between RM 98.6 and 195.0, 1984.

Spawning Area	River Mile	Survey Methods	Date	Survey Distance	Survey Condition	Adult Salmon Enumerated														
						Chinook			Sockeye			Pink			Chum			Coho		
						Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total
[illegible] CREEK	101.1	N	07/21	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	101.1	N	08/01	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	101.1	N	08/04	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	101.1	N	08/10	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	106.7	N	07/21	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	106.7	N	08/01	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	106.7	N	08/04	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	194.1	N	08/01	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible] CREEK	194.1	N	08/04	1.00	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix Table 6-3. Escapement survey counts of Susitna River sloughs between RM 98.6 and 161.0, 1984.

Slough	River Mile	Date	Survey Conditions	Percent Surveyed	Adult Salmon Enumerated														
					Chinook			Sockeye			Pink			Chum			Coho		
					Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total
[redacted]	99.6	8 / 9	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	99.6	8 /26	P	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	99.6	9 / 4	E	100	0	0	0	8	2	10	0	0	0	11	1	12	0	0	0
[redacted]	99.6	9 /24	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	100.2	8 / 9	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	100.2	8 /15	P	20	0	0	0	0	0	0	2	0	2	2	0	2	0	0	0
[redacted]	100.2	8 /17	E	50	0	0	0	0	0	0	2	0	2	12	1	13	0	0	0
[redacted]	100.2	8 /26	P	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	100.2	9 / 4	E	50	0	0	0	7	0	7	0	0	0	118	11	129	0	0	0
[redacted]	100.2	9 /15	P	100	0	0	0	4	0	4	0	0	0	1	11	12	0	0	0
[redacted]	100.2	9 /17	E	100	0	0	0	5	0	5	0	0	0	1	12	13	0	0	0
[redacted]	100.2	9 /24	E	100	0	0	0	4	0	4	0	0	0	0	12	12	0	0	0
[redacted]	100.2	9 /28	E	100	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0
[redacted]	100.2	9 /30	E	100	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0
[redacted]	100.2	10 / 7	E	100	0	0	0	4	0	4	0	0	0	0	0	0	0	0	0
[redacted]	101.4	8 / 9	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	101.4	8 /17	E	10	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
[redacted]	101.4	8 /26	E	70	0	0	0	10	0	10	1	0	1	21	0	21	0	0	0
[redacted]	101.4	9 / 4	E	70	0	0	0	18	2	20	0	0	0	66	10	76	0	0	0
[redacted]	101.4	9 /17	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	101.4	9 /24	E	100	0	0	0	0	0	0	11	13	24	0	0	0	0	0	0
[redacted]	101.4	9 /30	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	101.9	8 /17	E	10	0	0	0	11	0	11	0	0	0	0	0	0	0	0	0
[redacted]	101.9	8 /26	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	101.9	9 / 4	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	101.9	9 / 4	E	100	0	0	0	0	0	0	46	10	56	0	0	0	0	0	0
[redacted]	101.9	9 /15	E	100	0	0	0	11	0	11	0	0	0	1	0	1	0	0	0
[redacted]	101.9	9 /17	E	100	0	0	0	8	0	8	0	0	0	1	16	17	0	0	0
[redacted]	101.9	9 /24	E	100	0	0	0	2	1	3	0	0	0	0	7	7	0	0	0
[redacted]	101.9	9 /30	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	105.2	8 / 7	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	105.2	8 / 9	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	105.2	8 /16	E	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	105.2	8 /28	E	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	105.2	9 / 4	E	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	105.2	9 /17	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	105.2	9 /24	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	107.6	8 / 7	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	107.6	8 / 9	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	107.6	8 /28	P	10	0	0	0	0	1	1	0	2	2	0	0	0	0	0	0
[redacted]	107.6	9 / 4	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	107.6	9 /17	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	107.6	9 /24	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix Table 6-3 (cont). Escapement survey counts of Susitna River sloughs between RM 98.6 and 161.0, 1984.

Slough	River Mile	Date	Survey Conditions	Percent Surveyed	Adult Salmon Enumerated													
					Chinook			Sockeye			Pink			Chum			Coho		
					Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total
SLOUGH 6	100.2	8 / 7	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 6	100.2	8 /20	P	20	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
SLOUGH 6	100.2	9 / 4	G	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 6	100.2	9 /17	G	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 6	100.2	9 /24	G	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 6A	112.3	8 / 7	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 6A	112.3	8 /14	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 6A	112.3	8 /21	G	100	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
SLOUGH 6A	112.3	9 / 5	G	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 6A	112.3	9 /16	G	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 6A	112.3	9 /24	G	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 6A	112.3	9 /29	G	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 7	113.2	8 / 7	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 7	113.2	8 /14	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 7	113.2	8 /21	G	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 7	113.2	9 /24	G	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8	113.7	8 / 7	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8	113.7	8 /14	E	100	0	0	0	0	0	0	0	1	1	14	1	15	0	0	0
SLOUGH 8	113.7	8 /21	E	100	0	0	0	0	0	0	0	0	0	46	6	52	0	0	0
SLOUGH 8	113.7	9 / 5	E	100	0	0	0	2	0	2	0	0	0	51	14	65	0	0	0
SLOUGH 8	113.7	9 /16	E	100	0	0	0	0	0	0	0	0	0	20	26	46	0	0	0
SLOUGH 8	113.7	9 /21	E	100	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
SLOUGH 8	113.7	9 /24	G	100	0	0	0	0	0	0	0	0	0	1	10	11	0	0	0
BUSHROD SLOUGH	117.8	8 /13	E	100	0	0	0	0	0	0	8	2	10	27	0	27	0	0	0
BUSHROD SLOUGH	117.8	8 /20	E	100	0	0	0	0	0	0	4	2	6	86	4	90	0	0	0
BUSHROD SLOUGH	117.8	8 /27	G	10	0	0	0	0	0	0	0	0	0	22	0	22	0	0	0
BUSHROD SLOUGH	117.8	9 / 5	E	100	0	0	0	0	0	0	0	0	0	22	2	24	0	0	0
BUSHROD SLOUGH	117.8	9 /16	G	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BUSHROD SLOUGH	117.8	9 /22	G	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BUSHROD SLOUGH	117.8	9 /24	G	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8D	121.8	8 / 6	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8D	121.8	8 /13	E	100	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0
SLOUGH 8D	121.8	8 /17	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8D	121.8	8 /20	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8D	121.8	8 /21	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8D	121.8	8 /31	G	100	0	0	0	0	0	0	0	0	0	8	3	11	0	0	0
SLOUGH 8D	121.8	9 / 4	E	100	0	0	0	0	0	0	0	0	0	8	41	49	0	0	0
SLOUGH 8D	121.8	9 /13	G	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8D	121.8	9 /22	G	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8D	121.8	9 /28	G	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix Table 6-3 (cont). Escapement survey counts of Susitna River sloughs between RM 98.6 and 161.0, 1984.

Slough	River Mile	Date	Survey Conditions	Percent Surveyed	Adult Salmon Enumerated: Chinook Live	Chinook Dead	Chinook Total	Sockeye Live	Sockeye Dead	Sockeye Total	Pink Live	Pink Dead	Pink Total	Chum Live	Chum Dead	Chum Total	Coho Live	Coho Dead	Coho Total
SLOUGH 8C	121.9	8 / 6	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8C	121.9	8 /13	P	100	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
SLOUGH 8C	121.9	8 /17	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8C	121.9	8 /20	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8C	121.9	8 /21	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8C	121.9	8 /31	G	100	0	0	0	0	0	0	0	0	0	63	5	68	0	0	0
SLOUGH 8C	121.9	9 / 6	E	100	0	0	0	0	0	0	0	0	0	73	37	110	0	0	0
SLOUGH 8C	121.9	9 /13	G	100	0	0	0	0	0	0	0	0	0	69	72	321	0	2	2
SLOUGH 8C	121.9	9 /22	G	100	0	0	0	0	0	0	0	0	0	3	113	116	0	0	0
SLOUGH 8C	121.9	9 /28	G	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8B	122.2	8 / 6	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8B	122.2	8 /13	P	100	0	0	0	0	0	0	3	0	3	5	0	5	0	0	0
SLOUGH 8B	122.2	8 /17	G	100	0	0	0	1	0	1	57	11	68	174	2	176	0	0	0
SLOUGH 8B	122.2	8 /20	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8B	122.2	8 /21	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8B	122.2	8 /26	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8B	122.2	8 /31	G	100	0	0	0	0	0	0	0	0	0	379	21	400	0	0	0
SLOUGH 8B	122.2	9 / 6	E	100	0	0	0	0	0	0	0	0	0	270	79	349	0	0	0
SLOUGH 8B	122.2	9 / 8	G	100	0	0	0	0	0	0	0	0	0	135	52	187	0	0	0
SLOUGH 8B	122.2	9 /13	G	100	0	0	0	0	0	0	0	0	0	69	266	335	0	0	0
SLOUGH 8B	122.2	9 /15	G	100	0	0	0	0	0	0	0	0	0	26	50	76	0	0	0
SLOUGH 8B	122.2	9 /22	G	100	0	0	0	0	0	0	0	0	0	1	148	149	0	0	0
SLOUGH 8B	122.2	9 /28	G	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MOOSE SLOUGH	123.5	8 / 6	P	100	0	0	0	0	0	0	25	0	25	3	0	3	0	0	0
MOOSE SLOUGH	123.5	8 /13	P	100	0	0	0	4	0	4	0	0	0	150	0	150	1	0	1
MOOSE SLOUGH	123.5	8 /19	P	100	0	0	0	0	0	0	2	0	2	87	0	87	0	0	0
MOOSE SLOUGH	123.5	8 /26	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MOOSE SLOUGH	123.5	9 / 3	E	100	0	0	0	0	0	0	0	0	0	38	38	76	0	0	0
MOOSE SLOUGH	123.5	9 / 9	E	100	0	0	0	0	0	0	0	0	0	5	44	49	0	0	0
MOOSE SLOUGH	123.5	9 /20	G	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MOOSE SLOUGH	123.5	9 /27	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH A1	124.6	8 / 6	E	100	0	0	0	0	0	0	24	0	24	13	0	13	0	0	0
SLOUGH A1	124.6	8 /13	E	100	0	0	0	0	0	0	23	0	23	109	2	111	0	0	0
SLOUGH A1	124.6	8 /19	E	100	0	0	0	0	0	0	1	2	3	75	34	109	0	0	0
SLOUGH A1	124.6	8 /26	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH A1	124.6	9 / 3	E	100	0	0	0	0	0	0	0	0	0	18	35	53	0	0	0
SLOUGH A1	124.6	9 / 9	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH A1	124.6	9 /20	G	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH A1	124.6	9 /27	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix Table 6-3 (cont). Escapement survey counts of Susitna River sloughs between RM 98.6 and 161.0, 1984.

Slough	River Mile	Date	Survey Conditions	Percent Surveyed	Adult Salmon Enumerated													
					Chinook			Sockeye			Pink			Chum			Coho		
					Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total
SLOUGH A	124.7	8 / 6	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH A	124.7	8 /13	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH A	124.7	8 /20	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH A	124.7	8 /26	E	100	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0
SLOUGH A	124.7	9 / 4	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8A	125.4	8 / 6	E	100	0	0	0	3	0	3	5	0	5	45	1	46	0	0	0
SLOUGH 8A	125.4	8 /13	E	75	0	0	0	16	1	17	40	6	46	277	3	280	0	0	0
SLOUGH 8A	125.4	8 /19	E	100	0	0	0	59	0	59	118	16	134	535	58	593	0	0	0
SLOUGH 8A	125.4	8 /26	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8A	125.4	9 / 3	E	100	0	0	0	123	5	128	2	1	3	646	271	917	0	0	0
SLOUGH 8A	125.4	9 / 9	E	100	0	0	0	112	13	125	0	0	0	223	339	562	0	0	0
SLOUGH 8A	125.4	9 /20	E	100	0	0	0	39	1	40	0	0	0	8	12	20	0	0	0
SLOUGH 8A	125.4	9 /26	E	100	0	0	0	10	35	45	0	0	0	7	20	27	0	0	0
SLOUGH 8A	125.4	10 / 4	E	100	0	0	0	3	0	3	0	0	0	1	0	1	0	0	0
SLOUGH 8A	125.4	10 /11	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8	126.3	8 / 6	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8	126.3	8 /13	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8	126.3	8 /20	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8	126.3	8 /21	G	30	0	0	0	0	0	0	0	0	0	11	1	12	0	0	0
SLOUGH 8	126.3	8 /21	G	20	0	0	0	0	0	0	0	0	0	32	0	32	0	0	0
SLOUGH 8	126.3	8 /26	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 8	126.3	9 / 4	E	100	0	0	0	8	1	9	0	0	0	76	32	108	0	0	0
SLOUGH 8	126.3	9 /11	E	100	0	0	0	4	0	4	0	0	0	11	19	30	0	0	0
SLOUGH 8	126.3	9 /21	E	100	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
SLOUGH 8	126.3	9 /27	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 9	128.3	8 / 6	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 9	128.3	8 /13	P	100	0	0	0	0	0	0	0	1	1	4	0	4	0	0	0
SLOUGH 9	128.3	8 /20	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 9	128.3	8 /26	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 9	128.3	9 / 4	E	100	0	0	0	6	0	6	0	0	0	721	129	350	0	0	0
SLOUGH 9	128.3	9 /11	E	100	0	0	0	0	0	0	0	0	0	27	111	138	0	0	0
SLOUGH 9	128.3	9 /21	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 9B	129.2	8 / 6	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 9B	129.2	8 /10	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 9B	129.2	8 /14	G	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 9B	129.2	8 /20	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 9B	129.2	8 /21	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 9B	129.2	8 /26	G	100	0	0	0	7	0	7	0	0	0	21	2	23	0	0	0
SLOUGH 9B	129.2	9 / 1	G	100	0	0	0	6	0	6	0	0	0	56	7	63	0	0	0
SLOUGH 9B	129.2	9 / 8	G	100	0	0	0	6	1	7	0	0	0	13	12	25	0	0	0
SLOUGH 9B	129.2	9 /21	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix Table 6-3 (cont). Escapement survey counts of Susitna River sloughs between RM 98.6 and 161.0, 1984.

Slough	River Mile	Date	Survey Conditions	Percent Surveyed	Adult Salmon Enumerated													
					Chinook			Sockeye			Pink			Chum			Coho		
					Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total
[redacted]	10	133.[illegible]	8 / 6	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	10	133.9	8 /13	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	10	133.9	8 /18	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	10	133.9	8 /21	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	10	133.9	8 /26	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	10	133.9	9 / 4	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	10	133.9	9 / 9	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	10	133.9	9 /17	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	10	133.9	9 /21	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	10	133.9	9 /27	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	10	133.8	8 / 6	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	10	133.8	8 /10	[illegible]	50	0	0	0	0	0	0	0	0	[illegible]	0	[illegible]	0	0	0
[redacted]	10	133.8	8 /13	[illegible]	25	0	0	0	0	0	0	0	0	[illegible]	[illegible]	[illegible]	0	0	0
[redacted]	10	133.8	8 /20	[illegible]	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	10	133.8	8 /26	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	10	133.8	9 / 4	[illegible]	100	0	0	0	0	0	0	0	0	[illegible]	[illegible]	[illegible]	0	0	0
[redacted]	10	133.8	9 /11	[illegible]	100	0	0	0	0	0	0	0	0	[illegible]	[illegible]	[illegible]	0	0	0
[redacted]	10	133.8	9 /21	[illegible]	100	0	0	0	0	0	0	0	0	[illegible]	0	[illegible]	0	0	0
[redacted]	10	133.8	9 /27	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	11	135.3	8 / 6	[illegible]	100	0	0	0	0	0	[illegible]	0	[illegible]	[illegible]	0	[illegible]	0	0	0
[redacted]	11	135.3	8 /13	[illegible]	100	0	0	[illegible]	0	[illegible]	[illegible]	0	[illegible]	[illegible]	0	[illegible]	0	0	0
[redacted]	11	135.3	8 /19	[illegible]	100	0	0	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0
[redacted]	11	135.3	8 /26	[illegible]	75	0	0	[illegible]	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0
[redacted]	11	135.3	9 / 4	[illegible]	100	0	0	[illegible]	0	[illegible]	0	0	0	[illegible]	[illegible]	[illegible]	0	0	0
[redacted]	11	135.3	9 / 9	[illegible]	100	0	0	[illegible]	[illegible]	[illegible]	0	0	0	[illegible]	[illegible]	[illegible]	0	0	0
[redacted]	11	135.3	9 /17	[illegible]	100	0	0	[illegible]	[illegible]	[illegible]	0	0	0	[illegible]	[illegible]	[illegible]	[illegible]	0	[illegible]
[redacted]	11	135.3	9 /21	[illegible]	100	0	0	[illegible]	0	[illegible]	0	0	0	[illegible]	0	[illegible]	0	0	0
[redacted]	11	135.3	9 /27	[illegible]	100	0	0	[illegible]	0	[illegible]	0	0	0	[illegible]	0	[illegible]	0	0	0
[redacted]	11	135.3	10 / 4	[illegible]	100	0	0	[illegible]	0	[illegible]	0	0	0	[illegible]	0	[illegible]	0	0	0
[redacted]	11	135.3	10 /10	[illegible]	100	0	0	[illegible]	0	[illegible]	0	0	0	[illegible]	0	[illegible]	0	0	0
[redacted]	12	135.4	8 / 6	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	12	135.4	8 /18	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	12	135.4	8 /26	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	12	135.4	9 / 4	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	12	135.4	9 /21	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	13	135.8	8 / 6	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	13	135.8	8 /18	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	13	135.8	8 /21	[illegible]	100	0	0	0	0	0	0	0	0	[illegible]	0	[illegible]	0	0	0
[redacted]	13	135.8	8 /26	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	13	135.8	8 /27	[illegible]	100	0	0	0	0	0	0	0	0	[illegible]	0	[illegible]	0	0	0
[redacted]	13	135.8	9 / 4	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[redacted]	13	135.8	9 /21	[illegible]	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix Table 6-3 (cont). Escapement survey counts of Susitna River sloughs between RM 98.6 and 161.0, 1984.

Slough	River Mile	Date	Survey Conditions	Percent Surveyed	Adult Salmon Enumerated													
					Chinook			Sockeye			Pink			Chum			Coho		
					Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total
SLOUGH 14	135.9	8 / 6	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 14	135.9	8 /18	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 14	135.9	8 /26	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 14	135.9	8 /27	E	100	0	0	0	0	0	0	0	0	0	1	0	1	2	0	2
SLOUGH 14	135.9	9 / 4	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 14	135.9	9 /21	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 15	137.2	8 / 8	P	100	0	0	0	1	0	1	500	0	500	100	0	100	10	0	10
SLOUGH 15	137.2	8 /17	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 15	137.2	8 /24	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 15	137.2	9 / 2	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 15	137.2	9 /10	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 15	137.2	9 /20	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 15	137.2	9 /26	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 16	137.3	8 / 8	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 16	137.3	8 /17	E	100	0	0	0	0	0	0	0	0	0	12	2	14	0	0	0
SLOUGH 16	137.3	8 /24	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 16	137.3	9 / 1	E	100	0	0	0	0	0	0	0	0	0	15	0	15	0	0	0
SLOUGH 16	137.3	9 / 2	E	100	0	0	0	0	0	0	0	0	0	6	1	7	0	0	0
SLOUGH 16	137.3	9 /10	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 16	137.3	9 /20	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 16	137.3	9 /26	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 17	138.9	8 / 8	E	100	0	0	0	16	0	16	1	0	1	39	0	39	0	0	0
SLOUGH 17	138.9	8 /17	E	100	0	0	0	1	0	1	0	0	0	29	0	29	0	0	0
SLOUGH 17	138.9	8 /24	P	100	0	0	0	15	0	15	0	0	0	70	0	70	0	0	0
SLOUGH 17	138.9	9 / 2	E	100	0	0	0	3	0	3	0	0	0	47	19	66	0	0	0
SLOUGH 17	138.9	9 /10	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 17	138.9	9 /20	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 17	138.9	9 /26	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 17	138.9	10 / 3	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 18	139.1	8 /24	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 18	139.1	8 /26	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 18	139.1	9 / 2	E	20	0	0	0	0	0	0	0	0	0	10	1	11	0	0	0
SLOUGH 18	139.1	9 /20	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 18	139.1	9 /26	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 19	139.7	8 / 8	E	50	0	0	0	0	0	0	0	0	0	19	0	19	0	0	0
SLOUGH 19	139.7	8 /17	E	100	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0
SLOUGH 19	139.7	8 /24	E	40	0	0	0	4	0	4	0	0	0	39	1	40	0	0	0
SLOUGH 19	139.7	9 / 2	E	100	0	0	0	7	2	9	0	0	0	30	13	43	0	0	0
SLOUGH 19	139.7	9 /10	E	100	0	0	0	11	0	11	0	0	0	1	4	5	0	0	0
SLOUGH 19	139.7	9 /20	E	100	0	0	0	6	0	6	0	0	0	0	0	0	0	0	0
SLOUGH 19	139.7	9 /26	E	100	0	0	0	4	0	4	0	0	0	1	0	1	0	0	0
SLOUGH 19	139.7	10 / 3	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix Table 6-3 (cont). Escapement survey counts of Susitna River sloughs between RM 98.6 and 161.0, 1984.

Slough	River Mile	Date	Survey Conditions	Percent Surveyed	Adult Salmon Enumerated													
					Chinook			Sockeye			Pink			Chum			Coho		
					Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total
SLOUGH 20	160.0	8 / 8	G	50	0	0	0	0	0	0	36	1	37	39	0	39	0	0	0
SLOUGH 20	160.0	9 /17	E	100	0	0	0	0	0	0	74	11	85	126	12	138	0	0	0
SLOUGH 20	160.0	9 /24	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 20	160.0	9 / 2	G	100	0	0	0	0	0	0	0	0	0	117	143	260	0	0	0
SLOUGH 20	160.0	9 /10	G	100	0	0	0	0	0	0	0	0	0	0	114	114	0	0	0
SLOUGH 20	160.0	9 /20	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 20	160.0	9 /24	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 21	161.1	8 / 8	E	25	0	0	0	0	0	0	0	0	0	12	0	12	0	0	0
SLOUGH 21	161.1	8 /17	E	100	0	0	0	36	0	36	1	7	8	936	45	981	0	0	0
SLOUGH 21	161.1	8 /24	G	33	0	0	0	11	1	12	0	0	0	367	191	558	0	0	0
SLOUGH 21	161.1	9 / 2	G	100	0	0	0	115	0	115	0	0	0	1443	711	2154	0	0	0
SLOUGH 21	161.1	9 /10	G	100	0	0	0	116	6	122	0	0	0	424	1096	1520	0	0	0
SLOUGH 21	161.1	9 /20	E	100	0	0	0	44	18	62	0	0	0	24	799	823	0	0	0
SLOUGH 21	161.1	9 /24	E	100	0	0	0	28	12	40	0	0	0	5	680	685	0	0	0
SLOUGH 21	161.1	10 / 3	E	100	0	0	0	14	6	20	0	0	0	1	0	1	0	0	0
SLOUGH 21	161.1	10 /10	E	100	0	0	0	5	1	6	0	0	0	0	0	0	0	0	0
ANNA CREEK SLOUGH	163.2	9 / 2	G	100	0	0	0	0	0	0	0	0	0	32	3	35	0	0	0
ANNA CREEK SLOUGH	163.2	9 /10	G	100	0	0	0	0	0	0	0	0	0	3	17	20	0	0	0
ANNA CREEK SLOUGH	163.2	9 /20	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 22	164.5	8 / 8	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 22	164.5	8 /17	E	100	0	0	0	0	0	0	0	0	0	32	3	35	0	0	0
SLOUGH 22	164.5	8 /24	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 22	164.5	9 / 2	G	100	0	0	0	2	0	2	0	0	0	109	42	151	0	0	0
SLOUGH 22	164.5	9 /10	G	100	0	0	0	1	0	1	0	0	0	7	0	7	0	0	0
SLOUGH 22	164.5	9 /20	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 22	164.5	9 /24	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 21A	165.3	8 / 8	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 21A	165.3	8 /17	E	100	0	0	0	0	0	0	0	0	0	0	10	10	0	0	0
SLOUGH 21A	165.3	8 /24	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 21A	165.3	9 / 1	G	100	0	0	0	0	0	0	0	0	0	5	1	6	0	0	0
SLOUGH 21A	165.3	9 / 2	E	100	0	0	0	0	0	0	0	0	0	5	1	6	0	0	0
SLOUGH 21A	165.3	9 / 8	G	100	0	0	0	0	0	0	0	0	0	5	4	7	0	0	0
SLOUGH 21A	165.3	9 /10	G	100	0	0	0	0	0	0	0	0	0	5	4	7	0	0	0
SLOUGH 21A	165.3	9 /20	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SLOUGH 21A	165.3	9 /24	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix Table 6-4. Chinook salmon spawning ground surveys of selected spawning areas and resultant tagged to untagged ratios, 1984.

Spawning Area	River Mile	Date	Survey Conditions	SUNSHINE TAGS								TALKEETNA TAGS				CURRY TAGS			
				EAST BANK				WEST BANK											
				Tagged (#)	Untagged	Total (#)	Ratio (t/r)	Tagged (#)	Untagged	Total (#)	Ratio (t/r)	Tagged (#)	Untagged	Total (#)	Ratio (t/r)	Tagged (#)	Untagged	Total (#)	Ratio (t/r)
RABIDEAUX CREEK	83.1	8 / 3	E	4	616	620	103.3	24	596	620	25.0								
RABIDEAUX CREEK	83.1	7 /23	G	0	0	0	0.0	0	0	0	0.0								
RABIDEAUX CREEK	83.1	8 / 2	F	0	7	7	0.0	0	2	2	0.0								
RABIDEAUX CREEK	83.1	7 /25	G	3	594	597	199.0	45	552	597	12.3								
SUNSHINE CREEK	85.1	7 /29	F	0	4	4	0.0	0	4	4	0.0								
SUNSHINE CREEK	85.1	7 /23	G	0	14	14	0.0	2	12	14	7.0								
BIRCH CREEK SLOUGH	89.0	8 / 9	E	0	13	13	0.0	0	13	13	0.0								
BIRCH CREEK SLOUGH	89.0	7 /23	G	21	105	126	6.0	0	126	126	0.0								
BIRCH CREEK SLOUGH	89.0	8 /23	G	0	17	17	0.0	0	17	17	0.0								
BIRCH CREEK SLOUGH	89.0	8 / 2	G	0	4	4	0.0	0	4	4	0.0								
BIRCH CREEK	89.2	8 /16	E	0	9	9	0.0	0	9	9	0.0								
BIRCH CREEK	89.2	8 / 9	F	1	26	27	27.0	0	27	27	0.0								
BIRCH CREEK	89.2	7 /29	E	0	9	9	0.0	0	9	9	0.0								
TRAPPER CREEK	91.3	7 /23	G	1	14	15	15.0	2	13	15	7.5								
TRAPPER CREEK	91.5	7 /20	F	0	4	4	0.0	0	4	4	0.0								
PRAIRIE CREEK	97.1	7 /24	G	24	1505	1659	22.4	3	1656	1659	331.0								
PRAIRIE CREEK	97.1	8 / 3	G	95	1537	1632	17.2	0	1632	1632	0.0								
CLEAR CRK / TALKEETNA RIVER	97.1	8 / 4	G	32	171	203	6.3	3	201	203	101.5								
PAPA BEAR CREEK INLET STREAM	97.1	7 /26	E	0	9	9	0.0	0	9	9	0.0								
BYERS CREEK	97.0	7 /26	F	1	38	39	39.0	1	38	39	39.0								
MIDDLE FORK CHULITNA	97.8	7 /24	E	12	3884	3896	324.7	78	3818	3896	49.9								
MIDDLE FORK CHULITNA	97.8	7 /24	G	1	294	295	295.0	0	295	295	36.9								
MIDDLE FORK CHULITNA	97.8	8 / 4	F	5	1033	1038	345.3	9	1027	1036	115.1								
WHISKERS CREEK	101.5	7 /15	E	1	39	40	40.0	2	38	40	20.0								
WHISKERS CREEK	101.4	7 /27	F	0	1	1	0.0	0	1	1	0.0								
WHISKERS CREEK	101.4	8 / 2	G	0	1	1	0.0	0	1	1	0.0								
LAKE CREEK	113.6	7 /30	G	1	5	6	6.0	2	4	6	3.0	0	6	6	0.0				
FIFTH OF JULY CREEK	123.7	7 /23	G	4	30	34	8.5	0	34	34	0.0	5	29	34	6.8	1	33	34	34.0
FIFTH OF JULY CREEK	123.7	7 /30	E	0	5	5	0.0	0	5	5	0.0	0	5	5	0.0	1	4	5	5.0
FOURTH OF JULY CREEK	131.0	8 / 6	G	0	4	4	0.0	0	4	4	0.0	0	4	4	0.0	0	4	4	0.0
INDIAN RIVER	138.6	7 /24	E	22	177	199	9.0	3	196	199	66.3	26	173	199	7.7	16	183	199	12.4
INDIAN RIVER	138.6	7 /31	G	10	179	189	18.9	1	188	189	189.0	16	173	189	11.8	7	182	189	27.0
INDIAN RIVER	138.6	8 / 8	E	2	98	100	50.0	0	100	100	0.0	4	96	100	25.0	4	96	100	25.0
JACK LONG CREEK	144.5	7 /31	E	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0
JACK LONG CREEK	144.5	8 / 8	E	0	2	2	0.0	0	2	2	0.0	0	2	2	0.0	0	2	2	0.0
PORTAGE CREEK	148.9	7 /31	G	2	35	37	18.5	0	37	37	0.0	4	33	37	9.3	3	34	37	12.3
PORTAGE CREEK	148.9	8 / 4	E	0	50	50	0.0	0	50	50	0.0	3	47	50	16.7	1	49	50	50.0
PORTAGE CREEK	148.9	8 / 8	E	0	11	11	0.0	0	11	11	0.0	1	10	11	11.0	1	10	11	11.0

Appendix Table 6-5. Sockeye salmon spawning ground surveys of selected spawning areas and resultant tagged to untagged ratios, 1984.

Spawning Area	River Mile	Date	Survey Conditions	FLATHORN TAGS				SUNSHINE TAGS				TALKEETNA TAGS				CURRY TAGS			
				Tagged (a)	Untagged	Total (c)	Ratio (c/a)	Tagged (a)	Untagged	Total (c)	Ratio (c/a)	Tagged (a)	Untagged	Total (c)	Ratio (c/a)	Tagged (a)	Untagged	Total (c)	Ratio (c/a)
N FORK YENTNA (SIDE CHANNEL)	28.0	9 /11	G	11	1477	1488	135.3												
N FORK YENTNA (SIDE CHANNEL)	28.0	9 /12	G	6	1179	1134	189.0												
WILSON CREEK	29.2	8 / 9	G	0	20	20	0.0												
FISH CREEK	31.2	8 /17	F	2	74	76	38.0												
WILLOW CREEK	49.1	8 / 6	G	0	124	124	0.0												
WILLOW CREEK	49.1	8 /12	G	0	220	220	0.0												
LITTLE WILLOW CREEK	54.5	8 / 3	G	2	8	10	5.0												
LITTLE WILLOW CREEK	54.5	8 /21	G	1	12	13	13.0												
CASWELL CREEK	64.0	7 /30	F	0	6	6	0.0												
SHEEP CREEK	66.1	7 /30	F	0	11	11	0.0												
GOOSE CREEK	72.0	8 /14	G	0	3	3	0.0												
SUNSHINE CREEK	85.5	7 /23	G	0	39	39	0.0	6	33	39	6.5								
SUNSHINE CREEK	85.1	7 /29	F	0	26	26	0.0	0	26	26	0.0								
SUNSHINE CREEK	85.5	8 / 3	G	2	69	71	35.5	25	46	71	2.8								
SUNSHINE CREEK	85.1	8 /10	F	0	2	2	0.0	0	2	2	0.0								
BIRCH CREEK SLOUGH	89.0	7 /23	G	0	375	375	0.0	56	319	375	6.7								
BIRCH CREEK SLOUGH	89.0	8 / 2	G	0	230	230	0.0	12	218	230	18.2								
BIRCH CREEK SLOUGH	89.0	8 / 9	G	1	91	93	46.5	27	66	93	3.5								
BIRCH CREEK SLOUGH	89.0	8 /16	G	0	6	6	0.0	1	5	6	6.0								
BIRCH CREEK SLOUGH	89.0	8 /23	G	0	10	10	0.0	1	17	18	18.0								
BIRCH CREEK	89.0	7 /29	G	0	174	174	0.0	12	163	175	81.5								
BIRCH CREEK	89.0	8 / 9	G	0	2	2	0.0	0	2	2	0.0								
BIRCH CREEK	89.0	8 /23	G	0	11	11	0.0	1	10	11	11.0								
TRAPPER CREEK	91.5	7 /28	F	0	45	45	0.0	3	42	45	15.0								
TRAPPER CREEK	91.5	8 /15	F	0	200	200	0.0	19	186	200	10.3								
CACHE CREEK	95.3	8 /15	G	0	11	11	0.0	1	11	12	12.0								
PRAIRIE CREEK	97.1	7 /24	G	0	30	30	0.0	0	30	30	0.0								
PRAIRIE CREEK	97.1	8 / 3	G	3	232	232	77.3	60	175	235	5.9								
FISH CREEK	97.1	8 / 9	G	0	10	10	0.0	2	8	10	5.0								
DEVIL LAKE & OUTLET	97.0	8 /14	G	0	19	19	0.0	2	17	19	9.5								
DEVIL CREEK	97.0	8 /14	G	0	90	90	0.0	12	78	90	7.5								
UNNAMED TRIB TO TROPETINA	97.0	8 / 2	G	0	77	77	0.0	2	75	77	38.5								
UNNAMED TRIB TO TROPETINA	97.0	8 /10	G	3	203	204	102.0	17	187	204	12.0								
TROUBLESOME CREEK	97.0	8 /14	G	0	1	1	0.0	0	1	1	0.0								
PERIODICAL SLOUGH	98.6	7 /14	G	0	4	4	0.0	0	4	4	0.0								
SLOUGH 1	99.6	7 / 6	G	0	10	10	0.0	2	8	10	5.0								

Appendix Table 6-5 (cont). Sockeye salmon spawning ground surveys of selected spawning areas and resultant tagged to untagged ratios, 1984.

Spawning Area	River Mile	Date	Survey Conditions	FLATHORN TAGS				SUNSHINE TAGS				TALKEETNA TAGS				CURRY TAGS			
				Tagged (r)	Untagged	Total (n)	Ratio (n/r)	Tagged (r)	Untagged	Total (n)	Ratio (n/r)	Tagged (r)	Untagged	Total (n)	Ratio (n/r)	Tagged (r)	Untagged	Total (n)	Ratio (n/r)
SLOUGH 2	100.2	9/6	E	0	7	7	0.0	1	6	7	7.0								
SLOUGH 2	100.2	9/17	E	0	5	5	0.0	0	5	5	0.0								
SLOUGH 2	100.2	9/21	E	0	4	4	0.0	0	4	4	0.0								
SLOUGH 2	100.2	9/28	E	0	2	2	0.0	0	2	2	0.0								
SLOUGH 2	100.2	9/30	E	0	2	2	0.0	0	2	2	0.0								
SLOUGH 2	100.2	10/7	E	0	4	4	0.0	0	4	4	0.0								
SLOUGH 3A	101.4	9/26	E	0	10	10	0.0	0	10	10	0.0								
SLOUGH 3A	101.4	9/6	E	0	20	20	0.0	4	16	20	5.0								
SLOUGH 3A	101.9	9/17	E	0	11	11	0.0	1	10	11	11.0								
SLOUGH 3A	101.9	9/17	E	0	0	0	0.0	0	0	0	0.0								
SLOUGH 3A	101.9	9/24	E	0	3	3	0.0	0	3	3	0.0								
SLOUGH 8	113.7	9/5	E	0	2	2	0.0	1	1	2	2.0	1	1	2	2.0				
SLOUGH 8	113.7	9/21	E	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0				
SLOUGH 9B	122.3	9/17	E	0	1	1	0.0	0	6	6	0.0	0	1	1	0.0	0	1	1	0.0
SLOUGH 8A	125.4	9/6	E	0	3	3	0.0	0	3	3	0.0	0	3	3	0.0	0	3	3	0.0
SLOUGH 8A	125.4	9/13	E	0	17	17	0.0	2	15	17	0.5	3	14	17	5.7	2	15	17	0.5
SLOUGH 8A	125.4	9/19	E	1	58	59	29.0	6	53	59	9.8	6	53	59	9.8	9	50	59	5.6
SLOUGH 8A	125.4	9/3	E	1	127	128	128.0	14	112	126	9.0	23	105	128	5.6	14	114	128	9.1
SLOUGH 8A	125.4	9/9	E	1	124	125	125.0	6	119	125	20.8	22	103	125	5.7	13	112	125	9.6
SLOUGH 8A	125.4	9/20	E	0	60	60	0.0	2	58	60	29.0	5	57	60	12.5	1	59	60	60.0
SLOUGH 8A	125.4	9/26	E	0	45	45	0.0	1	44	45	45.0	0	45	45	0.0	1	44	45	45.0
SLOUGH 8A	125.4	10/4	E	0	3	3	0.0	0	3	3	0.0	1	2	3	3.0	0	3	3	0.0
SLOUGH 8	126.3	9/6	E	0	9	9	0.0	0	9	9	0.0	2	2	9	4.5	2	2	9	4.5
SLOUGH 8	126.3	9/11	E	0	4	4	0.0	0	4	4	0.0	1	3	4	3.0	1	3	4	3.0
SLOUGH 9	130.3	9/4	E	0	6	6	0.0	1	5	6	5.0	0	6	6	0.0	0	6	6	0.0
SLOUGH 9B	129.2	8/26	E	0	7	7	0.0	0	7	7	0.0	1	6	7	7.0	0	7	7	0.0
SLOUGH 9B	129.2	9/1	E	0	6	6	0.0	1	5	6	5.0	1	5	6	5.0	1	5	6	5.0
SLOUGH 9B	129.2	9/8	E	0	7	7	0.0	0	7	7	0.0	1	6	7	7.0	0	7	7	0.0
SLOUGH 11	135.3	8/13	E	0	3	3	0.0	1	2	3	3.0	1	2	3	3.0	0	3	3	0.0
SLOUGH 11	135.3	8/19	E	0	10	10	0.0	2	11	10	9.0	3	15	18	6.0	0	10	10	0.0
SLOUGH 11	135.3	8/26	E	2	91	93	46.5	10	83	93	9.3	10	83	93	9.3	14	79	93	6.6
SLOUGH 11	135.3	9/3	E	1	350	351	351.0	49	302	351	7.2	46	305	351	7.6	34	317	351	10.3
SLOUGH 11	135.3	9/9	E	1	563	564	564.0	75	489	564	7.5	60	504	564	9.4	43	521	564	13.1
SLOUGH 11	135.3	9/17	E	0	507	507	0.0	53	454	507	9.6	31	476	507	16.4	23	484	507	22.0
SLOUGH 11	135.3	9/21	E	0	244	244	0.0	34	210	244	7.2	41	203	244	6.0	18	226	244	13.6
SLOUGH 11	135.3	9/26	E	0	156	156	0.0	20	136	156	7.6	23	133	156	6.8	6	150	156	26.0
SLOUGH 11	135.3	10/4	E	0	10	10	0.0	1	17	18	18.0	7	11	18	2.6	0	10	10	0.0
SLOUGH 11	135.3	10/16	E	0	4	4	0.0	1	3	4	4.0	1	3	4	4.0	0	4	4	0.0
SLOUGH 17	138.9	8/8	E	0	16	16	0.0	1	15	16	16.0	2	14	16	8.0	1	15	16	16.0
SLOUGH 17	138.9	8/17	E	0	1	1	0.0	0	1	1	0.0	1	0	1	1.0	0	1	1	0.0
SLOUGH 17	138.9	9/3	E	0	3	3	0.0	0	3	3	0.0	1	2	3	3.0	0	3	3	0.0
SLOUGH 19	139.7	8/24	E	0	4	4	0.0	0	4	4	0.0	0	4	4	0.0	0	4	4	0.0
SLOUGH 19	139.7	9/3	E	0	9	9	0.0	0	9	9	0.0	1	8	9	9.0	0	9	9	0.0
SLOUGH 19	139.7	9/10	E	0	11	11	0.0	0	11	11	0.0	2	9	11	5.5	0	11	11	0.0
SLOUGH 19	139.7	9/20	E	0	6	6	0.0	1	5	6	6.0	0	6	6	0.0	0	6	6	0.0
SLOUGH 19	139.7	9/26	E	0	4	4	0.0	0	4	4	0.0	0	4	4	0.0	0	4	4	0.0
SLOUGH 21	141.1	8/17	E	1	37	38	38.0	4	54	58	14.5	6	52	58	9.7	3	55	58	19.3
SLOUGH 21	141.1	8/24	E	0	12	12	0.0	2	10	12	6.0	3	9	12	4.0	3	9	12	4.0
SLOUGH 21	141.1	9/3	E	0	115	115	0.0	12	103	115	9.6	11	104	115	10.5	17	98	115	6.8
SLOUGH 21	141.1	9/10	E	0	122	122	0.0	8	114	122	15.3	9	113	122	13.6	11	109	122	9.9
SLOUGH 21	141.1	9/20	E	0	62	62	0.0	3	59	62	20.7	1	61	62	62.0	1	61	62	62.0
SLOUGH 21	141.1	9/26	E	0	48	48	0.0	0	48	48	0.0	3	37	48	12.3	0	48	48	0.0
SLOUGH 21	141.1	10/3	E	0	30	30	0.0	0	30	30	0.0	0	30	30	0.0	0	30	30	0.0
SLOUGH 21	141.1	10/10	E	0	6	6	0.0	0	6	6	0.0	0	6	6	0.0	0	6	6	0.0
SLOUGH 22	144.5	9/3	E	0	2	2	0.0	0	2	2	0.0	0	2	2	0.0	1	1	2	2.0
SLOUGH 22	144.5	9/10	E	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0	1	0	1	1.0
PORTAGE CREEK	148.9	9/10	E	0	1	1	0.0	0	1	1	0.0	1	1	1	0.0	0	1	1	0.0

Appendix Table 6-6. Pink salmon spawning ground surveys of selected spawning areas and resultant tagged to untagged ratios, 1984.

				FLATHORN TAGS				SUNSHINE TAGS				TALKEETNA TAGS				CURRY TAGS			
Spawning Area	River Mile	Date	Survey Conditions	Tagged (T)	Untagged	Total (C)	Ratio (C/T)	Tagged (T)	Untagged	Total (C)	Ratio (C/T)	Tagged (T)	Untagged	Total (C)	Ratio (C/T)	Tagged (T)	Untagged	Total (C)	Ratio (C/T)
LAKE CREEK/YENTNA RIVER	30.0	8 /17	G	3	2597	2600	866.7												
TALACHULITNA R./SKWENTNA R.	20.0	8 /17	G	1	404	405	405.0												
WILLOW CREEK	49.1	7 /27	F	0	121	121	0.0												
WILLOW CREEK	49.1	8 / 6	G	0	1516	1516	0.0												
WILLOW CREEK	49.1	8 /13	G	0	910	910	0.0												
WILLOW CREEK	49.1	8 /17	G	0	216	216	0.0												
WILLOW CREEK	49.1	8 /22	F	0	1300	1300	0.0												
WILLOW CREEK	49.1	8 /30	F	0	133	133	0.0												
LITTLE WILLOW CREEK	50.5	8 / 3	G	0	740	740	0.0												
LITTLE WILLOW CREEK	50.5	8 /11	F	0	146	146	0.0												
LITTLE WILLOW CREEK	50.5	8 /21	E	1	443	444	444.0												
CASWELL CREEK	64.0	7 /30	F	0	61	61	0.0												
CASWELL CREEK	64.0	8 / 6	F	0	62	62	0.0												
CASWELL CREEK	64.0	8 /13	F	0	121	121	0.0												
CASWELL CREEK	64.0	8 /20	G	0	31	31	0.0												
CASWELL CREEK	64.0	9 / 6	G	1	39	40	40.0												
SHEEP CREEK	66.1	8 / 6	F	0	42	42	0.0												
SHEEP CREEK	66.1	8 /13	F	0	66	66	0.0												
SHEEP CREEK	66.1	8 /20	F	0	0	0	0.0												
SHEEP CREEK	66.1	9 / 6	F	0	11	11	0.0												
GOOSE CREEK	72.0	7 /31	G	0	34	34	0.0												
GOOSE CREEK	72.0	7 /31	F	0	279	279	0.0												
GOOSE CREEK	72.0	8 / 7	G	1	247	248	248.0												
GOOSE CREEK	72.0	8 /14	G	1	312	313	313.0												
GOOSE CREEK	72.0	8 /21	G	0	16	16	0.0												
GOOSE CREEK	72.0	8 /29	G	0	12	12	0.0												
GOOSE CREEK	72.0	9 / 7	E	0	6	6	0.0												
MONTANA CREEK	77.0	7 /31	F	0	13	13	0.0												
MONTANA CREEK	77.0	8 / 7	G	0	331	331	0.0												
MONTANA CREEK	77.0	8 /14	G	2	414	416	208.0												
MONTANA CREEK	77.0	8 /21	F	0	28	28	0.0												
MONTANA CREEK	77.0	9 / 7	G	0	12	12	0.0												
RABIDEUX CREEK	83.1	8 / 2	F	0	3	3	0.0	0	3	3	0.0								
RABIDEUX CREEK	83.1	8 / 3	G	0	15	15	0.0	1	15	16	[illegible]								
RABIDEUX CREEK	83.1	8 /10	F	0	29	29	0.0	2	37	39	19.5								
RABIDEUX CREEK	83.1	8 /17	F	0	34	34	0.0	3	31	34	11.3								
SUNSHINE CREEK	85.1	7 /30	F	0	1600	1600	0.0	48	1560	1608	33.5								
SUNSHINE CREEK	85.1	8 / 3	F	0	461	461	0.0	30	431	461	15.4								
SUNSHINE CREEK	85.1	8 /10	F	0	937	937	0.0	41	896	937	22.9								
SUNSHINE CREEK	85.1	8 /17	G	0	540	540	0.0	27	513	540	20.0								
SUNSHINE CREEK	85.1	8 /24	G	0	14	14	0.0	2	12	14	7.0								
SUNSHINE CREEK	85.1	9 / 1	G	0	2	2	0.0	1	1	2	2.0								
SUNSET SLOUGH	85.5	9 /21	G	0	4	4	0.0	0	4	4	0.0								
BIRCH CREEK SLOUGH	89.0	8 / 2	G	0	3790	3790	0.0	291	3499	3790	13.0								
BIRCH CREEK SLOUGH	89.0	8 / 9	G	6	19654	19660	3276.7	551	19109	19660	35.7								
BIRCH CREEK SLOUGH	89.0	8 /16	G	0	6400	6400	0.0	91	6309	6400	70.3								
BIRCH CREEK SLOUGH	89.0	8 /23	G	2	1126	1128	564.0	92	1036	1128	12.3								
BIRCH CREEK SLOUGH	89.0	9 /16	G	0	0	0	0.0	0	0	0	0.0								
BIRCH CREEK SLOUGH	89.0	9 /25	G	0	4	4	0.0	0	4	4	0.0								

Appendix Table 6-6 (cont). Pink salmon spawning ground surveys of selected spawning areas and resultant tagged to untagged ratios, 1984.

Spawning Area	River Mile	Date	Survey Condition	FLATHORN TAGS				SUNSHINE TAGS				TALKEETNA TAGS				CURRY TAGS			
				Tagged (F)	Untagged	Total (t)	Ratio (t/F)	Tagged (F)	Untagged	Total (t)	Ratio (t/F)	Tagged (F)	Untagged	Total (t)	Ratio (t/F)	Tagged (F)	Untagged	Total (t)	Ratio (t/F)
BIRCH CREEK	89.2	7 /29	G	0	132	132	0.0	4	128	132	32.0								
BIRCH CREEK	89.2	8 / 9	G	2	1593	1595	797.5	24	1537	1595	64.5								
BIRCH CREEK	89.2	8 /15	G	3	977	980	326.7	32	948	980	30.6								
BIRCH CREEK	89.2	8 /21	F	1	73	73	73.0	10	53	63	6.3								
BIRCH CREEK	89.2	9 / 3	F	0	84	84	0.0	0	84	84	0.0								
BIRCH CREEK	89.2	9 / 7	F	0	37	37	0.0	3	34	37	12.3								
BIRCH CREEK	89.2	9 / 9	G	1	130	131	131.0	9	122	131	14.6								
BIRCH CREEK	89.2	9 /16	G	0	12	12	0.0	2	10	12	6.0								
TRAPPER CREEK	91.5	7 /28	F	0	234	234	0.0	2	232	234	117.0								
TRAPPER CREEK	91.5	7 /28	F	0	2	2	0.0	0	2	2	0.0								
TRAPPER CREEK	91.5	8 / 6	F	0	332	332	0.0	30	302	332	11.1								
TRAPPER CREEK	91.5	8 /15	F	0	344	344	0.0	33	473	344	15.3								
TRAPPER CREEK	91.5	9 / 3	G	1	10	11	11.0	1	10	11	11.0								
TRAPPER CREEK	91.5	9 / 8	G	0	10	10	0.0	2	14	10	9.0								
CACHE CREEK	95.5	8 /15	G	0	17	17	0.0	0	17	17	0.0								
CACHE CREEK	95.5	8 /22	G	1	16	17	17.0	2	15	17	8.5								
CACHE CREEK	95.5	9 / 8	G	0	6	6	0.0	2	4	6	3.0								
FISH CREEK	97.1	8 / 9	G	5	7509	7512	29	94	3418	7512	79.9								
CLEAR CRK / TALKEETNA RIVER	97.1	8 /21	G	1	1621	1622	1622.0	13	1609	1622	124.8								
BYERS LAKE & OUTLET	97.8	8 /14	G	0	88	88	0.0	1	87	88	88.0								
BYERS CREEK	97.8	8 /14	G	3	3351	3354	1451.3	54	3300	3354	102.9								
TROUBLESOME CREEK	97.8	8 /14	G	9	4166	4674	519.3	92	4392	4674	34.6								
SLOUGH 2	100.2	8 /17	G	0	2	2	0.0	0	2	2	0.0								
SLOUGH 3	100.2	8 /17	G	0	2	2	0.0	0	2	2	0.0								
WHISKERS CREEK	101.4	7 /27	F	0	41	41	0.0	1	40	41	41.0								
WHISKERS CREEK	101.4	8 / 9	G	0	160	160	0.0	2	158	160	80.0								
WHISKERS CREEK	101.4	8 /15	G	0	344	344	0.0	7	337	344	38.0								
SLOUGH 10	101.4	8 /26	G	0	1	1	0.0	0	1	1	0.0								
CHASE CREEK	106.9	7 /27	G	0	41	41	0.0	1	40	41	41.0	1	33	41	6.8				
CHASE CREEK	106.9	8 / 9	G	0	55	55	0.0	1	54	55	55.0	2	53	55	27.5				
CHASE CREEK	106.9	8 /16	G	0	246	246	0.0	1	245	246	246.0	31	215	246	7.9				
CHASE CREEK	106.9	8 /28	G	0	5	5	0.0	0	5	5	0.0	1	4	5	5.0				
LAKE CREEK	113.6	7 /30	G	0	33	33	0.0	0	33	33	0.0	4	29	33	8.0				
LAKE CREEK	113.6	8 / 7	G	0	436	436	0.0	7	429	436	62.3	28	408	436	12.1				
LAKE CREEK	113.6	8 /14	G	0	1147	1147	0.0	9	1138	1147	127.4	99	1048	1147	11.6				
LAKE CREEK	113.6	8 /21	G	0	21	21	0.0	0	21	21	0.0	2	19	21	10.5				
LAKE CREEK	113.6	8 /21	E	1	607	608	608.0	4	604	608	152.0	34	574	608	17.9				
CLYDE CREEK	113.8	8 / 7	G	0	4	4	0.0	0	4	4	0.0	0	4	4	0.0				
CLYDE CREEK	113.8	8 /14	E	0	0	0	0.0	0	0	0	0.0	0	0	0	0.0				
CLYDE CREEK	113.8	8 /21	E	1	34	34	34.0	0	34	34	0.0	1	33	34	34.0				
CLYDE CREEK	113.8	8 /27	G	0	5	5	0.0	0	5	5	0.0	1	4	5	5.0				
MAGGOT CREEK	115.6	8 / 7	G	0	107	107	0.0	2	105	107	53.5	19	88	107	5.6				
MAGGOT CREEK	115.6	8 /14	E	0	23	23	0.0	0	23	23	0.0	1	22	23	23.0				
MAGGOT CREEK	115.6	8 /21	E	0	30	30	0.0	3	27	30	10.0	0	30	30	0.0				
LOWER MCKENZIE CREEK	116.2	7 /30	G	0	305	305	0.0	10	575	305	58.3	34	531	305	10.0				
LOWER MCKENZIE CREEK	116.2	8 / 7	G	0	226	226	0.0	1	225	226	226.0	11	215	226	20.5				
LOWER MCKENZIE CREEK	116.2	8 /14	G	0	106	106	0.0	9	97	106	11.8	2	104	106	53.0				
LOWER MCKENZIE CREEK	116.2	8 /21	E	0	59	59	0.0	0	59	59	0.0	1	58	59	59.0				
UPPER MCKENZIE CREEK	116.7	8 / 7	G	0	11	11	0.0	0	11	11	0.0	0	11	11	0.0				
UPPER MCKENZIE CREEK	116.7	8 /14	G	0	3	3	0.0	0	3	3	0.0	0	3	3	0.0				
UPPER MCKENZIE CREEK	116.7	8 /21	E	0	5	5	0.0	4	5	5	0.0	1	4	5	5.0				
LITTLE PORTAGE CREEK	117.1	7 /30	G	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0				
LITTLE PORTAGE CREEK	117.1	8 / 7	G	0	0	0	0.0	0	0	0	0.0	0	0	0	0.0				
LITTLE PORTAGE CREEK	117.1	8 /13	E	0	132	132	0.0	2	130	132	66.0	2	130	132	66.0				
LITTLE PORTAGE CREEK	117.1	8 /20	G	0	140	140	0.0	5	135	140	28.6	11	137	148	13.5				

Appendix Table 6-6 (cont). Pink salmon spawning ground surveys of selected spawning areas and resultant tagged to untagged ratios, 1984.

				FLATHORN TAGS				SUNSHINE TAGS				TALKEETNA TAGS				CURRY TAGS			
Spawning Area	River Mile	Date	Survey Conditions	Tagged (t)	Untagged	Total (c)	Ratio (c/t)	Tagged (t)	Untagged	Total (c)	Ratio (c/t)	Tagged (t)	Untagged	Total (c)	Ratio (c/t)	Tagged (t)	Untagged	Total (c)	Ratio (c/t)
[illegible] SLOUGH	117.8	8/13	E	0	1	3	0.0	1	1	1	0.0	1	1	2	0.0				
[illegible] SLOUGH	117.8	8/20	E	0	4	4	0.0	0	4	4	0.0	0	3	4	0.0				
[illegible] CREEK	119.3	8/7	E	0	24	24	0.0	0	24	24	0.0	2	22	24	12.0				
[illegible] CREEK	119.3	8/15	E	1	10	11	41.0	4	11	11	0.0	0	11	11	0.0				
[illegible] CREEK	119.3	8/15	G	0	37	37	0.0	0	37	37	0.0	2	27	37	13.5				
[illegible] CREEK	119.3	8/21	E	0	4	4	1.0	0	4	4	0.0	0	4	4	0.0				
[illegible] CREEK	119.4	8/7	G	0	6	6	0.0	0	6	6	0.0	0	6	6	0.0				
[illegible] CREEK	119.4	8/15	E	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0				
[illegible] CREEK	120.0	8/6	G	0	41	41	0.0	0	41	41	0.0	3	38	41	13.7	3	38	41	13.2
[illegible] CREEK	120.0	8/15	E	0	327	[illegible]	0.0	2	325	327	163.5	14	303	317	15.6	16	297	327	16.9
[illegible] CREEK	120.9	8/1	E	5	0	0	0.	0	0	0	0.0	1	1	0	7.7	0	0	0	0.0
SLOUGH [illegible]	122.2	8/17	G	0	57	57		0	57	57	0.0	1	54	57	14.0	1	51	57	8.5
FIFTH OF JULY CREEK	123.7	7/30	F	0	4	4	0.0	0	4	4	0.0	2	2	4	2.0	0	4	4	0.0
FIFTH OF JULY CREEK	123.7	8/6	E	0	139	139	0.0	5	134	139	27.0	23	116	139	6.0	14	125	139	8.7
FIFTH OF JULY CREEK	123.7	8/6	E	0	32	32	0.0	0	32	32	0.0	2	30	32	16.0	3	29	32	10.1
FIFTH OF JULY CREEK	123.7	8/15	E	1	290	291	291.0	3	288	291	96.3	31	260	291	7.7	43	248	291	5.1
FIFTH OF JULY CREEK	123.7	8/20	G	0	160	160	0.0	2	158	160	84.3	11	157	168	15.3	23	145	168	7.3
SLOUGH [illegible]	124.6	8/6	E	0	30	35	0.0	1	31	31	0.0	1	23	24	24.0	1	21	21	21.0
SLOUGH [illegible]	124.6	8/15	E	0	33	33	0.0	0	33	33	0.0	0	23	23	0.0	5	11	33	5.6
SLOUGH [illegible]	124.6	8/19	E	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0
SKULL CREEK	124.7	8/6	E	0	10	10	0.0	0	10	10	0.0	0	10	10	0.0	4	6	10	3.3
SKULL CREEK	124.7	8/15	G	0	117	117	0.0	1	108	117	11.0	0	105	117	13.0	16	101	112	7.3
SKULL CREEK	124.7	8/20	G	0	46	46	0.0	0	46	46	0.0	1	45	46	46.0	3	43	46	15.3
SLOUGH [illegible]	125.4	8/6	E	0	3	3	0.0	0	3	3	0.0	0	3	3	0.0	1	2	3	1.7
SLOUGH [illegible]	125.4	8/13	G	0	40	40	0.0	1	39	40	40.0	0	40	40	0.0	2	38	40	20.0
SLOUGH [illegible]	125.4	8/19	G	0	118	118	0.0	0	118	118	0.0	6	112	118	19.7	1	117	118	118.0
SLOUGH [illegible]	125.4	9/3	E	0	2	2	0.0	0	3	3	0.0	0	2	2	0.0	0	2	2	0.0
SHERMAN CREEK	130.8	8/6	E	0	43	43	0.0	0	43	43	0.0	1	42	43	43.0	0	34	43	0.0
SHERMAN CREEK	130.8	8/13	E	0	41	41	0.0	1	41	41	41.0	0	38	41	0.0	7	34	41	5.1
SHERMAN CREEK	130.8	8/20	E	0	3	3	0.0	0	3	3	0.0	0	3	3	0.0	0	3	3	0.0
FOURTH OF JULY CREEK	131.0	8/6	E	0	630	630	0.0	9	641	650	72.2	31	571	650	9.2	24	526	650	27.4
FOURTH OF JULY CREEK	131.0	8/15	E	0	1439	1439	0.0	20	1419	1439	71.6	173	1267	1439	8.3	90	1361	1450	16.9
FOURTH OF JULY CREEK	131.0	8/20	E	0	303	303	0.0	3	297	300	30.1	27	276	303	11.3	21	284	305	14.3
SLOUGH 11	135.3	8/6	E	0	6	6	0.0	0	6	6	0.0	1	3	6	6.0	0	6	6	0.0
SLOUGH 11	135.3	8/13	E	0	97	97	0.0	3	94	97	32.3	7	90	97	13.9	3	94	97	32.3
SLOUGH 11	135.3	8/19	E	0	86	83	0.0	2	81	83	41.5	11	72	83	7.5	5	78	83	16.6
SLOUGH 11	135.3	8/26	G	0	21	21	0.0	0	21	21	0.0	2	19	21	10.5	1	20	21	21.0
GOLD CREEK	136.7	8/8	G	0	82	82	0.0	1	81	82	82.0	10	72	82	8.2	8	74	87	10.3
INDIAN RIVER	138.6	7/31	G	0	325	325	0.0	13	313	325	41.0	34	291	325	9.6	34	291	325	10.4
INDIAN RIVER	138.6	8/6	E	2	3244	3246	1623.0	36	3210	3246	90.1	313	2931	3246	10.5	172	3074	3246	18.9
INDIAN RIVER	138.6	8/17	E	3	4381	4384	1461.3	45	4339	4384	97.4	330	4055	4384	13.3	153	4231	4384	28.7
INDIAN RIVER	138.6	9/2	E	0	3	3	0.0	0	3	3	0.0	0	3	3	0.0	1	2	3	3.0
SLOUGH 17	138.9	8/8	E	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0
SLOUGH 20	140.0	8/6	G	0	36	36	0.0	3	33	36	12.0	4	30	36	6.0	2	31	36	18.0
SLOUGH 20	140.0	8/17	E	0	74	74	0.0	1	73	74	74.0	6	68	74	9.3	8	66	74	9.3
SLOUGH 21	141.1	8/17	E	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0
JACK LONG CREEK	144.5	8/8	E	0	11	11	0.0	0	11	11	0.0	2	13	14	7.0	1	13	14	14.0
JACK LONG CREEK	144.5	8/17	E	0	3	3	0.0	0	3	3	0.0	0	3	3	0.0	0	3	3	0.0
SIDE CHANNEL OF PORTAGE	148.0	8/18	E	0	287	287	0.0	10	277	287	28.7	27	260	287	10.6	10	277	287	28.7
PORTAGE CREEK	148.8	8/8	E	0	38	38	0.0	3	35	38	12.3	12	26	38	4.0	3	35	38	19.3
PORTAGE CREEK	148.8	8/17	E	0	53	53	0.0	0	53	53	0.0	2	51	53	26.5	0	54	53	5.9

Appendix Table 6-7. Chum salmon spawning ground surveys of selected spawning areas and resultant tagged to untagged ratios, 1984.

Spawning Area	River Mile	Date	Survey Conditions	FLATHORN TAGS				SUNSHINE TAGS				TALKEETNA TAGS				CURRY TAGS			
				Tagged (T)	Untagged	Total (t)	Ratio (t/T)	Tagged (T)	Untagged	Total (t)	Ratio (t/T)	Tagged (T)	Untagged	Total (t)	Ratio (t/T)	Tagged (T)	Untagged	Total (t)	Ratio (t/T)
N FORK YENTNA (SIDE CHANNEL)	28.0	9 /11	G	0	391	391	0.0												
N FORK YENTNA (SIDE CHANNEL)	28.0	9 /13	E	0	220	220	0.0												
LAKE CREEK/YENTA RIVER	30.0	8 /17	G	1	356	560	140.0												
TALKEETNA R./YENTNA R.	30.0	8 /17	G	0	111	111	0.0												
WILLOW CREEK	49.1	7 /27	F	0	0	0	0.0												
WILLOW CREEK	49.1	8 / 6	G	0	332	332	0.0												
WILLOW CREEK	49.1	8 /13	G	0	32	32	0.0												
LITTLE WILLOW CREEK	50.5	8 / 3	G	0	34	34	0.0												
LITTLE WILLOW CREEK	50.5	8 /11	F	0	6	6	0.0												
LITTLE WILLOW CREEK	50.5	8 /21	E	0	3	3	0.0												
CASWELL CREEK BLOOM	62.2	10 / 9	G	0	0	0	0.0												
KCII-7 COMPLEX	63.0	10 /11	G	0	4	4	0.0												
CASWELL CREEK	64.0	8 / 6	F	0	61	61	0.0												
CASWELL CREEK	64.0	8 /13	F	0	73	73	0.0												
CASWELL CREEK	64.0	8 /30	G	0	39	39	0.0												
CASWELL CREEK	64.0	9 / 6	G	0	45	45	0.0												
SHEEP CREEK	66.1	7 /30	F	0	10	10	0.0												
SHEEP CREEK	66.1	8 / 6	F	0	66	66	0.0												
SHEEP CREEK	66.1	8 /13	F	1	69	70	70.0												
SHEEP CREEK	66.1	8 /30	G	0	13	13	0.0												
SHEEP CREEK	66.1	9 / 6	G	0	17	17	0.0												
GOOSE CREEK	72.0	7 /31	G	0	84	84	0.0												
GOOSE CREEK	72.0	8 / 7	G	0	339	339	0.0												
GOOSE CREEK	72.0	8 /14	G	1	382	383	383.0												
GOOSE CREEK	72.0	8 /21	G	0	20	20	0.0												
GOOSE CREEK	72.0	8 /29	G	0	12	12	0.0												
CIRCULAR SLOUGH	73.3	9 /25	G	2	87	89	44.5												
MONTANA CREEK	77.0	8 / 7	F	0	61	61	0.0												
MONTANA CREEK	77.0	8 /14	F	0	61	61	0.0												
MONTANA CREEK	77.0	8 /21	G	0	30	30	0.0												
MONTANA CREEK	77.0	9 / 7	G	0	6	6	0.0												
MARIEANN CREEK	83.1	8 / 2	F	1	1	3	3.0	0	2	2	0.0								
SUNSHINE CREEK	85.1	8 / 3	F	0	99	99	0.0	0	99	99	0.0								
SUNSHINE CREEK	85.1	8 /24	G	0	3	3	0.0	0	3	3	0.0								
SUNSET SLOUGH	85.5	9 /21	G	0	177	177	0.0	2	175	177	88.5								
SUNSET SLOUGH	85.5	9 /28	E	0	165	165	0.0	2	163	165	82.5								
BIRCH CAMP AREA	88.5	10 /11	G	0	23	23	0.0	0	23	23	0.0								

Appendix Table 6-7 (cont). Chum salmon spawning ground surveys of selected spawning areas and resultant tagged to untagged ratios, 1984.

Spawning Area	River Mile	Date	Survey Conditions	FLATHORN TAGS Tagged (r)	Untagged	Total (c)	Ratio (c/r)	SUNSHINE TAGS Tagged (r)	Untagged	Total (c)	Ratio (c/r)	TALKEETNA TAGS Tagged (r)	Untagged	Total (c)	Ratio (c/r)	CURRY TAGS Tagged (r)	Untagged	Total (c)	Ratio (c/r)
BIRCH CREEK SLOUGH	89.0	7 /31	E	0	3	3	0.0	0	3	3	0.0								
BIRCH CREEK SLOUGH	89.0	8 / 9	G	4	1060	1064	266.0	122	942	1064	8.7								
BIRCH CREEK SLOUGH	89.0	8 /16	G	0	128	128	0.0	19	109	128	6.7								
BIRCH CREEK SLOUGH	89.0	8 /16	G	0	348	348	0.0	27	321	348	12.9								
BIRCH CREEK SLOUGH	89.0	8 /23	G	0	336	336	0.0	13	313	326	25.1								
BIRCH CREEK SLOUGH	89.0	9 /16	G	0	117	117	0.0	2	115	117	58.5								
BIRCH CREEK SLOUGH	89.0	9 /25	E	0	60	60	0.0	4	56	60	15.0								
BIRCH CREEK	89.2	8 /31	G	0	39	39	0.0	3	36	39	13.0								
BIRCH CREEK	89.2	9 / 3	F	0	63	63	0.0	1	62	63	63.0								
BIRCH CREEK	89.2	9 / 9	G	0	14	14	0.0	2	12	14	7.0								
BIRCH CREEK	89.2	9 /25	G	0	52	52	0.0	3	49	52	17.3								
TRAPPER CREEK	91.5	7 /28	F	0	5	5	0.0	1	4	5	5.0								
TRAPPER CREEK	91.5	8 / 8	F	0	39	39	0.0	4	35	39	10.0								
TRAPPER CREEK	91.5	8 /15	F	0	41	41	0.0	4	37	41	10.3								
TRAPPER CREEK	91.5	9 / 8	G	0	15	15	0.0	1	14	15	15.0								
TRAPPER CREEK SLOUGH	91.6	9 /26	G	0	141	141	0.0	1	140	141	141.0								
TRAPPER CREEK SLOUGH	91.6	10 / 1	F	0	149	149	0.0	0	149	149	0.0								
TRAPPER CREEK SLOUGH	92.0	10 / 2	G	0	130	130	0.0	0	130	130	0.0								
TRAPPER CREEK SLOUGH	92.0	10 / 3	F	0	1	1	0.0	0	1	1	0.0								
TRAPPER CREEK SLOUGH	92.0	10 / 9	G	0	30	30	0.0	0	30	30	0.0								
[illegible] SLOUGH	93.2	9 /18	G	0	84	84	0.0	1	83	84	84.0								
[illegible] SLOUGH	93.2	9 /24	G	0	12	12	0.0	0	12	12	0.0								
CACHE CREEK	95.5	8 /15	G	0	39	39	0.0	0	39	39	0.0								
CACHE CREEK	95.5	8 /27	G	0	3	3	0.0	1	2	3	3.0								
CLEAR CRK / TALKEETNA RIVER	97.1	8 / 6	F	4	3014	3018	754.5	196	[illegible]	3018	16.5								
CLEAR CRK / TALKEETNA RIVER	97.1	8 /31	G	1	19	20	20.0	1	19	20	20.0								
FISH CREEK	97.5	8 / 9	G	0	38	38	0.0	2	36	38	19.0								
BYERS LAKE & OUTLET	98.0	8 /14	E	0	3	3	0.0	0	3	3	0.0								
BYERS CREEK	98.0	8 /14	G	0	140	140	0.0	9	131	140	15.6								
TROUBLESOME CREEK	98.0	8 /14	G	0	180	180	0.0	17	163	180	10.6								
CACHE SLOUGH	98.5	9 /27	E	0	160	160	0.0	2	158	160	80.0								
PENINSULA SLOUGH	98.6	9 /14	G	0	439	439	0.0	26	413	439	16.9								
CHULITNA SOUTH AREA	98.9	10 / 9	G	0	81	81	0.0	0	81	81	0.0								
CHULITNA SOUTH AREA	98.9	10 / 9	G	0	37	37	0.0	0	37	37	0.0								
SLOUGH 1	99.6	9 / 6	E	0	12	12	0.0	5	7	12	2.4								
SLOUGH 3	100.2	8 /15	G	0	3	3	0.0	0	3	3	0.0								
SLOUGH 3	100.2	8 /17	E	0	13	13	0.0	1	12	13	13.0								
SLOUGH 3	100.2	8 /17	E	0	13	13	0.0	1	12	13	13.0								
SLOUGH 3	100.2	9 / 6	E	0	129	129	0.0	9	120	129	14.3								
SLOUGH 3	100.2	9 /17	G	0	35	35	0.0	1	34	35	35.0								
SLOUGH 3B	101.4	8 /17	G	0	1	1	0.0	0	1	1	0.0								
SLOUGH 3B	101.4	8 /17	G	0	1	1	0.0	0	1	1	0.0								
SLOUGH 3B	101.4	8 /26	E	0	21	21	0.0	3	18	21	7.0								
SLOUGH 3B	101.4	8 /26	E	0	21	21	0.0	3	18	21	7.0								
SLOUGH 3B	101.4	9 / 6	E	0	36	36	0.0	3	31	34	11.3								
SLOUGH 3B	101.4	9 / 6	E	0	36	36	0.0	3	31	34	11.3								
SLOUGH 3B	101.4	9 /17	G	0	17	17	0.0	0	17	17	0.0								
SLOUGH 3B	101.4	9 /24	G	0	30	30	0.0	0	30	30	0.0								

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Appendix Table 6-7 (cont). Chum salmon spawning ground surveys of selected spawning areas and resultant tagged to untagged ratios, 1984.

Spawning Area	River Mile	Date	Survey Conditions	FLATHORN TAGS				SUNSHINE TAGS				TALKEETA TAGS				CURRY TAGS			
				Tagged (f)	Untagged	Total (t)	Ratio (t/f)	Tagged (f)	Untagged	Total (t)	Ratio (t/f)	Tagged (f)	Untagged	Total (t)	Ratio (t/f)	Tagged (f)	Untagged	Total (t)	Ratio (t/f)
LAKE CREEK	113.6	7/30	E	0	6	6	0.0	1	5	6	6.0	1	5	6	6.0				
LAKE CREEK	113.6	8/7	E	0	4	4	0.0	0	4	4	0.0	0	4	4	0.0				
LAKE CREEK	113.6	8/14	E	0	16	16	0.0	1	15	16	16.0	5	11	16	3.2				
LAKE CREEK	113.6	8/21	E	0	7	7	0.0	0	7	7	0.0	1	6	7	7.0				
LAKE CREEK	113.6	8/31	E	0	24	24	0.0	0	24	24	0.0	2	22	24	12.0				
LAKE CREEK	113.6	9/5	E	0	2	2	0.0	1	1	2	2.0	0	2	2	0.0				
SLOUGH B	113.7	8/14	E	0	13	13	0.0	0	13	13	0.0	2	13	15	7.5				
SLOUGH B	113.7	9/5	E	0	65	65	0.0	1	64	65	65.0	2	63	65	32.5				
SLOUGH B	113.7	9/16	E	0	46	46	0.0	1	45	46	46.0	0	46	46	0.0				
SLOUGH B	113.7	9/30	B	0	11	11	0.0	0	11	11	0.0	0	11	11	0.0				
LOWER MCKENZIE CREEK	116.2	8/27	B	0	23	23	0.0	4	19	23	5.8	1	22	23	23.0				
LITTLE PORTAGE CREEK	117.7	8/20	B	0	18	18	0.0	0	18	18	0.0	0	18	18	0.0				
BUSHROD SLOUGH	117.8	8/13	E	0	27	27	0.0	1	26	27	27.0	1	26	27	27.0				
BUSHROD SLOUGH	117.8	8/20	E	0	90	90	0.0	9	81	90	10.0	6	84	90	15.0				
BUSHROD SLOUGH	117.8	8/27	B	0	22	22	0.0	0	22	22	0.0	1	21	22	22.0				
BUSHROD SLOUGH	117.8	9/5	E	0	24	24	0.0	1	23	24	24.0	0	24	24	0.0				
SLOUGH BB	121.0	8/13	E	0	3	3	0.0	1	1	2	2.0	0	2	2	0.0	0	2	2	0.0
SLOUGH BB	121.0	8/31	B	0	11	11	0.0	2	9	11	5.5	0	11	11	0.0	1	10	11	11.0
SLOUGH BB	121.0	9/4	E	0	49	49	0.0	0	49	49	0.0	1	48	49	49.0	2	47	49	24.5
SLOUGH BC	121.9	8/31	B	0	60	60	0.0	0	60	60	0.0	1	64	68	17.0	3	63	66	13.6
SLOUGH BC	121.9	9/6	E	0	110	110	0.0	0	102	110	13.8	1	109	110	110.0	6	104	110	18.3
SLOUGH BC	121.9	9/13	B	0	121	121	0.0	2	119	121	60.5	2	119	121	60.5	3	118	121	40.3
SLOUGH BC	121.9	9/22	B	0	116	116	0.0	0	116	116	0.0	0	116	116	0.0	0	116	116	0.0
SLOUGH BB	122.2	8/17	B	0	176	176	0.0	15	161	176	11.7	28	148	176	6.3	17	159	176	10.4
SLOUGH BB	122.2	8/31	B	1	399	400	400.0	24	376	400	16.7	25	375	400	16.0	21	379	400	19.0
SLOUGH BB	122.2	9/6	E	0	349	349	0.0	18	331	349	19.4	7	342	349	49.9	12	337	349	29.1
SLOUGH BB	122.2	9/8	B	0	187	187	0.0	0	187	187	0.0	0	187	187	0.0	0	187	187	0.0
SLOUGH BB	122.2	9/13	B	0	335	335	0.0	1	334	335	335.0	1	334	335	335.0	3	332	335	111.7
SLOUGH BB	122.2	9/15	B	0	76	76	0.0	0	76	76	0.0	0	76	76	0.0	0	76	76	0.0
SLOUGH BB	122.2	9/22	B	0	149	149	0.0	0	149	149	0.0	0	149	149	0.0	0	149	149	0.0
MOOSE SLOUGH	123.5	9/3	E	0	76	76	0.0	5	71	76	15.2	3	73	76	25.3	4	72	76	19.0
MOOSE SLOUGH	123.5	9/9	B	0	49	49	0.0	4	45	49	12.3	1	48	49	49.0	0	49	49	0.0
FIFTH OF JULY CREEK	123.7	8/6	E	0	2	2	0.0	0	2	2	0.0	0	2	2	0.0	1	1	2	2.0
FIFTH OF JULY CREEK	123.7	8/13	E	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0
SLOUGH A1	124.4	8/6	E	0	13	13	0.0	4	9	13	3.3	2	11	13	6.5	1	12	13	13.0
SLOUGH A1	124.4	8/13	E	0	111	111	0.0	11	100	111	10.1	8	103	111	13.9	14	97	111	7.9
SLOUGH A1	124.4	8/19	E	0	109	109	0.0	6	103	109	18.2	5	104	109	21.8	6	103	109	18.2
SLOUGH A1	124.4	9/3	E	0	53	53	0.0	1	52	53	53.0	1	52	53	53.0	0	53	53	0.0

Appendix Table 6-7 (cont). Chum salmon spawning ground surveys of selected spawning areas and resultant tagged to untagged ratios, 1984.

Spawning Area	River Mile	Date	Survey Conditions	FLATHORN TAGS				SUNSHINE TAGS				TALKEETNA TAGS				CURRY TAGS			
				Tagged (f)	Untagged	Total (t)	Ratio (t/f)	Tagged (f)	Untagged	Total (t)	Ratio (t/f)	Tagged (f)	Untagged	Total (t)	Ratio (t/f)	Tagged (f)	Untagged	Total (t)	Ratio (t/f)
SKULL CREEK	126.7	9/13	0	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0
SKULL CREEK	126.7	9/20	0	0	4	4	0.0	0	4	4	0.0	1	3	4	0.0	0	4	4	0.0
SLOUGH A	126.7	9/26	C	0	2	2	0.0	0	2	2	0.0	1	1	2	2.0	0	2	2	0.0
SLOUGH 8A	125.4	9/6	C	0	46	46	0.0	3	41	44	13.7	3	44	44	23.0	1	43	44	44.0
SLOUGH 8A	125.4	9/13	C	0	280	280	0.0	10	262	280	19.6	39	241	280	7.2	25	255	280	11.2
SLOUGH 8A	125.4	9/19	C	0	393	393	0.0	25	368	393	16.9	56	337	393	10.1	48	345	393	12.4
SLOUGH 8A	125.4	9/23	C	1	916	917	917.0	27	890	917	34.6	28	889	917	32.8	21	896	917	43.7
SLOUGH 8A	125.4	9/9	C	0	562	562	0.0	6	556	562	93.7	4	558	562	140.5	5	557	562	112.4
SLOUGH 8A	125.4	9/30	C	0	30	30	0.0	0	30	30	0.0	3	18	30	10.0	1	19	30	30.0
SLOUGH 8A	125.4	9/26	C	0	37	37	0.0	0	37	37	0.0	0	37	37	0.0	0	37	37	0.0
SLOUGH 8A	125.4	10/4	C	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0
SLOUGH 8	126.3	9/21	C	0	32	32	0.0	8	24	32	4.0	1	31	32	32.0	0	32	32	0.0
SLOUGH 8	126.3	9/23	C	0	12	12	0.0	1	11	12	12.0	1	11	12	12.0	0	12	12	0.0
SLOUGH 8	126.3	9/4	C	0	188	188	0.0	2	186	188	94.0	2	186	188	94.0	10	98	108	10.8
SLOUGH 8	126.3	9/11	C	0	38	38	0.0	0	38	38	0.0	0	38	38	0.0	1	29	30	30.0
SLOUGH 7	128.2	9/6	C	0	330	330	0.0	3	345	330	78.0	1	341	330	38.9	9	341	350	38.9
SLOUGH 9B	127.2	8/28	C	0	73	73	0.0	0	65	73	7.1	1	64	73	8.1	1	72	73	73.0
SLOUGH 9B	127.2	9/5	C	0	63	63	0.0	5	58	63	12.6	5	58	63	12.6	1	62	63	63.0
SLOUGH 9B	127.2	9/8	C	0	35	35	0.0	0	35	35	0.0	0	35	35	0.0	0	35	35	0.0
SHERMAN CREEK	130.8	8/6	I	0	2	2	0.0	0	2	2	0.0	0	2	2	0.0	0	2	2	0.0
SHERMAN CREEK	130.8	9/13	C	0	4	4	0.0	0	4	4	0.0	2	4	6	3.0	1	5	6	6.0
SHERMAN CREEK	130.8	9/20	C	0	6	6	0.0	0	6	6	0.0	0	6	6	0.0	0	6	6	0.0
FOURTH OF JULY CREEK	131.0	8/6	C	0	13	13	0.0	2	11	13	6.5	1	12	13	13.0	2	11	13	6.5
FOURTH OF JULY CREEK	131.0	8/13	C	0	193	193	0.0	17	176	193	11.4	23	170	193	8.4	10	183	193	19.3
FOURTH OF JULY CREEK	131.0	8/20	C	1	174	175	175.0	6	169	175	29.2	18	157	175	9.7	2	173	175	87.5
FOURTH OF JULY CREEK	131.0	9/6	C	0	70	70	0.0	5	65	70	14.0	0	70	70	0.0	1	69	70	70.0
SLOUGH 9A	133.0	8/10	I	0	46	46	0.0	8	38	46	5.8	7	39	46	6.6	7	39	46	6.6
SLOUGH 9A	133.0	8/13	C	0	41	41	0.0	7	34	41	5.9	8	33	41	5.1	2	39	41	20.5
SLOUGH 9A	133.0	9/6	C	0	363	363	0.0	11	352	363	27.5	10	353	363	36.3	13	290	303	23.3
SLOUGH 9A	133.0	9/11	C	0	170	170	0.0	3	167	170	56.7	3	167	170	55.7	9	161	170	18.9
SLOUGH 9A	133.0	9/20	C	0	14	14	0.0	0	14	14	0.0	0	14	14	0.0	0	14	14	0.0
SLOUGH 10	133.9	8/6	C	0	2	2	0.0	0	2	2	0.0	1	1	2	2.0	0	2	2	0.0
SLOUGH 10	133.9	8/13	C	0	5	5	0.0	1	4	5	2.0	2	3	5	2.5	0	5	5	0.0
SLOUGH 10	133.9	8/23	C	0	26	26	0.0	5	21	26	5.2	2	24	26	13.0	0	26	26	0.0
SLOUGH 10	133.9	8/23	C	0	52	52	0.0	4	48	52	13.0	1	51	52	52.0	4	48	52	13.0
SLOUGH 10	133.9	8/26	I	0	36	36	0.0	1	35	36	36.0	0	32	36	9.0	3	33	36	12.0
SLOUGH 10	133.9	9/3	C	0	29	29	0.0	0	29	29	0.0	0	29	29	0.0	0	29	29	0.0
SLOUGH 10	133.9	9/3	C	0	32	32	0.0	0	32	32	0.0	3	29	32	10.7	0	32	32	0.0
SLOUGH 10	133.9	9/6	C	0	32	32	0.0	0	32	32	0.0	3	29	32	10.7	4	28	32	8.0
SLOUGH 11	135.3	8/6	C	0	34	34	0.0	7	47	54	7.7	11	43	54	3.9	1	53	54	54.0
SLOUGH 11	135.3	8/13	C	0	422	422	0.0	29	393	422	14.6	33	389	422	6.9	14	408	422	30.1
SLOUGH 11	135.3	8/19	C	3	1232	1235	411.7	76	1159	1235	16.3	162	1073	1235	7.6	87	1148	1235	14.2
SLOUGH 11	135.3	8/26	C	1	1582	1583	1583.0	71	1512	1583	22.3	185	1470	1583	13.1	86	1497	1583	18.4
SLOUGH 11	135.3	9/3	C	0	1540	1540	0.0	33	1507	1540	47.3	99	1501	1540	26.4	76	1534	1540	66.0
SLOUGH 11	135.3	9/9	C	0	1066	1066	0.0	6	1060	1066	177.7	5	1061	1066	213.2	0	1050	1066	133.3
SLOUGH 11	135.3	9/17	C	0	1586	1586	0.0	4	1582	1586	396.5	0	1586	1586	0.0	0	1586	1586	0.0
SLOUGH 11	135.3	9/23	C	0	22	22	0.0	0	22	22	0.0	0	22	22	0.0	0	22	22	0.0
SLOUGH 11	135.3	9/26	C	0	5	5	0.0	0	5	5	0.0	0	5	5	0.0	0	5	5	0.0
SLOUGH 11	135.3	10/4	C	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0

Appendix Table 6-7 (cont). Chum salmon spawning ground surveys of selected spawning areas and resultant tagged to untagged ratios, 1984.

				FLATHORN TAGS				SUNSHINE TAGS				TALKEETNA TAGS				CURRY TAGS			
Spawning Area	River Mile	Date	Survey Conditions	Tagged (r)	Untagged	Total (c)	Ratio (c/r)	Tagged (r)	Untagged	Total (c)	Ratio (c/r)	Tagged (r)	Untagged	Total (c)	Ratio (c/r)	Tagged (r)	Untagged	Total (c)	Ratio (c/r)
SLOUGH 13	135.0	8/21	G	0	12	12	0.0	0	12	12	0.0	1	11	12	12.0	1	11	12	12.0
SLOUGH 13	135.0	8/27	G	0	22	22	0.0	6	16	22	3.7	2	20	22	11.0	1	21	22	22.0
SLOUGH 14	135.9	8/27	G	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0
SLOUGH 16	137.3	8/17	E	0	14	14	0.0	0	14	14	0.0	2	12	14	7.0	0	14	14	0.0
SLOUGH 16	137.3	9/1	E	0	15	15	0.0	0	15	15	0.0	0	15	15	0.0	0	15	15	0.0
SLOUGH 16	137.3	9/3	E	0	7	7	0.0	0	7	7	0.0	1	6	7	7.0	0	7	7	0.0
INDIAN RIVER	138.6	7/31	G	1	159	160	160.0	15	145	160	10.7	33	127	160	4.8	18	142	160	8.9
INDIAN RIVER	138.6	8/8	E	1	433	434	434.0	34	400	434	12.8	69	365	434	6.3	29	405	434	15.0
INDIAN RIVER	138.6	8/17	E	2	1270	1272	636.0	63	1209	1272	20.2	168	1104	1272	7.6	67	1205	1272	19.0
INDIAN RIVER	138.6	9/3	G	0	310	310	0.0	4	306	310	77.5	13	305	310	24.5	5	305	310	62.0
INDIAN RIVER	138.6	9/10	G	0	217	217	0.0	0	217	217	0.0	1	216	217	217.0	0	217	217	0.0
SLOUGH 17	138.9	8/8	E	0	39	39	0.0	6	33	39	6.5	9	30	39	4.3	2	37	39	19.5
SLOUGH 17	138.9	8/17	E	0	29	29	0.0	0	29	29	0.0	2	27	29	14.5	0	29	29	0.0
SLOUGH 17	138.9	9/3	G	0	66	66	0.0	2	64	66	33.0	2	64	66	33.0	2	64	66	33.0
SLOUGH 18	139.1	9/2	E	0	11	11	0.0	1	10	11	11.0	0	11	11	0.0	1	10	11	11.0
SLOUGH 19	139.7	8/8	G	0	19	19	0.0	1	18	19	19.0	1	18	19	19.0	1	18	19	19.0
SLOUGH 19	139.7	8/17	E	0	3	3	0.0	0	3	3	0.0	1	2	3	3.0	0	3	3	0.0
SLOUGH 19	139.7	8/24	G	0	60	60	0.0	1	59	60	60.0	6	54	60	4.7	6	54	60	10.0
SLOUGH 19	139.7	9/3	E	0	45	45	0.0	1	44	45	45.0	1	44	45	45.0	1	44	45	45.0
SLOUGH 19	139.7	9/10	G	0	5	5	0.0	0	5	5	0.0	0	5	5	0.0	0	5	5	0.0
SLOUGH 19	139.7	9/26	E	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0
SLOUGH 20	140.0	8/8	G	0	39	39	0.0	3	36	39	13.0	3	36	39	13.0	3	36	39	13.0
SLOUGH 20	140.0	8/17	E	2	136	138	69.0	10	128	138	13.8	26	112	138	5.3	10	128	138	13.8
SLOUGH 20	140.0	9/3	G	0	280	280	0.0	3	277	280	93.3	7	273	280	40.0	1	279	280	280.0
SLOUGH 21	141.1	8/8	E	0	12	12	0.0	1	11	12	12.0	2	10	12	6.0	1	11	12	12.0
SLOUGH 21	141.1	8/17	E	1	900	901	901.0	53	848	901	17.0	105	796	901	8.6	77	824	901	11.7
SLOUGH 21	141.1	8/24	G	0	458	458	0.0	1	457	458	458.0	48	410	458	9.5	24	434	458	19.1
SLOUGH 21	141.1	9/3	G	0	2354	2354	0.0	59	2295	2354	39.9	104	2250	2354	22.6	88	2266	2354	26.8
SLOUGH 21	141.1	9/10	G	1	1519	1520	1520.0	9	1511	1520	168.9	5	1515	1520	304.0	11	1509	1520	138.2
SLOUGH 21	141.1	9/20	E	0	823	823	0.0	1	822	823	823.0	0	823	823	0.0	0	823	823	0.0
SLOUGH 21	141.1	9/26	E	0	605	605	0.0	0	605	605	0.0	0	605	605	0.0	0	605	605	0.0
SLOUGH 21	141.1	10/3	E	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0
ANNA CREEK HS SLOUGH	143.2	9/3	G	0	35	35	0.0	3	32	35	11.7	0	35	35	0.0	2	33	35	17.5
ANNA CREEK HS SLOUGH	143.2	9/10	G	0	20	20	0.0	0	20	20	0.0	0	20	20	0.0	0	20	20	0.0
SLOUGH 22	144.5	8/17	E	0	30	30	0.0	0	30	30	0.0	8	22	30	3.8	4	26	30	7.5
SLOUGH 22	144.5	9/3	G	0	151	151	0.0	1	150	151	151.0	7	144	151	21.6	4	147	151	37.8
SLOUGH 22	144.5	9/10	G	0	7	7	0.0	0	7	7	0.0	0	7	7	0.0	0	7	7	0.0
JACK LONG CREEK	144.5	8/8	E	0	4	4	0.0	0	4	4	0.0	2	2	4	2.0	0	4	4	0.0
JACK LONG CREEK	144.5	8/17	E	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0	0	1	1	0.0
SLOUGH 21A	145.3	9/1	G	0	6	6	0.0	0	6	6	0.0	0	6	6	0.0	0	6	6	0.0
SLOUGH 21A	145.3	9/3	E	0	6	6	0.0	0	6	6	0.0	0	6	6	0.0	1	5	6	6.0
SLOUGH 21A	145.3	9/10	G	0	7	7	0.0	0	7	7	0.0	0	7	7	0.0	0	7	7	0.0
SIDE CHANNEL UP PORTAGE	148.0	8/10	E	0	156	156	0.0	7	149	156	22.3	20	136	156	7.8	12	144	156	13.0
PORTAGE CREEK	148.9	7/31	G	0	3	3	0.0	0	3	3	0.0	0	3	3	0.0	0	3	3	0.0
PORTAGE CREEK	148.9	8/8	E	0	42	42	0.0	1	41	42	42.0	6	36	42	7.0	5	37	42	8.4
PORTAGE CREEK	148.9	8/17	E	0	12	12	0.0	2	10	12	6.0	2	10	12	6.0	2	10	12	6.0

Appendix Table 6-8. Coho salmon spawning ground surveys of selected spawning areas and resultant tagged to untagged ratios, 1984.

Spawning Area	Stream Mile	Date	Survey Conditions	FLATHORN TAGS				SUNSHINE TAGS				TALKEETNA TAGS				CURRY TAGS			
				Tagged (F)	Untagged	Total (t)	Ratio (t/f)	Tagged (F)	Untagged	Total (t)	Ratio (t/f)	Tagged (F)	Untagged	Total (t)	Ratio (t/f)	Tagged (F)	Untagged	Total (t)	Ratio (t/f)
[illegible]	20.0	9 /12	E	[illegible]	2	2	0.0												
LAKE CREEK/PEXTA RIVER	20.0	8 /31	G	1	31	32	32.0												
TALKEETNA R./PEXTA R.	20.0	9 /17	G	4	280	284	71.0												
[illegible] CREEK	20.2	8 /25	F	0	69	69	0.0												
[illegible] CREEK	49.1	8 / 6	G	0	[illegible]	[illegible]	0.0												
[illegible] CREEK	49.1	8 /12	G	0	[illegible]	[illegible]	0.0												
[illegible] CREEK	49.1	8 /22	G	11	1215	1226	110.5												
LITTLE [illegible] CREEK	[illegible]	8 / 1	G	0	[illegible]	[illegible]	0.0												
LITTLE [illegible] CREEK	[illegible]	8 /11	F	0	[illegible]	[illegible]	0.0												
LITTLE [illegible] CREEK	[illegible]	8 /21	G	0	[illegible]	[illegible]	0.0												
LITTLE [illegible] CREEK	[illegible]	8 /30	G	0	10	10	0.0												
CARMEN CREEK	53.0	8 / 6	F	0	[illegible]	[illegible]	0.0												
[illegible] CREEK	53.0	8 /12	F	0	[illegible]	[illegible]	0.0												
[illegible] CREEK	53.0	8 /21	G	0	[illegible]	[illegible]	0.0												
[illegible] CREEK	53.0	9 / 1	G	0	[illegible]	[illegible]	0.0												
CARMEN CREEK	53.0	9 /12	G	0	15	15	0.0												
[illegible] CREEK	54.1	8 /28	F	0	1	1	0.0												
[illegible] CREEK	54.1	9 / 1	F	0	1	1	0.0												
[illegible] CREEK	54.1	9 /12	G	0	24	24	0.0												
[illegible] CREEK	54.1	9 /21	G	0	15	15	0.0												
[illegible] CREEK	73.0	8 / 2	F	0	[illegible]	[illegible]	0.0												
[illegible] CREEK	73.0	8 /11	F	0	[illegible]	[illegible]	0.0												
[illegible] CREEK	73.0	8 /30	G	1	[illegible]	[illegible]	11.0												
[illegible] CREEK	73.0	9 / 1	G	0	[illegible]	[illegible]	0.0												
[illegible] CREEK	73.0	9 /12	G	0	[illegible]	[illegible]	0.0												
[illegible] R.Basin	74.0	10 / 1	G	0	4	4	0.0												
[illegible] CREEK	77.0	8 / 2	F	0	[illegible]	[illegible]	0.0												
[illegible] CREEK	77.0	8 /14	F	0	[illegible]	[illegible]	0.0												
[illegible] CREEK	77.0	8 /31	F	0	[illegible]	[illegible]	0.0												
[illegible] CREEK	77.0	9 / 1	G	0	[illegible]	[illegible]	0.0												
[illegible] CREEK	77.0	9 / 7	G	0	[illegible]	[illegible]	0.0												
[illegible] CREEK	77.0	9 /14	G	0	51	51	0.0												
[illegible] R.Basin	79.3	9 /10	G	0	4	4	0.0												
[illegible] CREEK	81.1	9 /28	F	0	1	1	0.0	1	1	1	1.0								
[illegible] CREEK	81.1	10 / 1	G	0	484	484	0.0	1	484	484	484.0								
[illegible] CREEK	84.1	9 /28	F	0	4	4	0.0	1	3	4	3.0								
[illegible] CREEK	84.1	9 /29	F	0	19	20	20.0	1	19	20	19.0								

Appendix Table 6-8 (cont). Coho salmon spawning ground surveys of selected spawning areas and resultant tagged to untagged ratios, 1984.

Spawning Area	River Mile	Date	Survey Conditions	FLATHORN TAGS				SUNSHINE TAGS				TALKEETNA TAGS				CURRY TAGS			
				Tagged (r)	Untagged	Total (c)	Ratio (c/r)	Tagged (r)	Untagged	Total (c)	Ratio (c/r)	Tagged (r)	Untagged	Total (c)	Ratio (c/r)	Tagged (r)	Untagged	Total (c)	Ratio (c/r)
QUESTION CREEK	84.1	9 /20	F	2	47	49	24.5	0	41	49	6.1								
QUESTION CREEK	84.1	9 /20	G	1	5	6	6.0	1	5	6	6.0								
QUESTION CREEK	84.1	9 /20	G	0	320	320	0.0	40	280	320	8.0								
QUESTION CREEK	84.1	9 /29	E	0	68	68	0.0	10	[illegible]	68	6.8								
SUNSHINE CREEK	85.1	8 / 3	G	0	3	3	0.0	0	3	3	0.0								
SUNSHINE CREEK	85.1	8 /10	F	0	30	30	0.0	1	29	30	30.0								
SUNSHINE CREEK	85.1	8 /17	G	0	35	35	0.0	4	31	35	8.8								
SUNSHINE CREEK	85.1	8 /24	G	1	51	52	52.0	7	45	52	7.4								
SUNSHINE CREEK	85.1	9 / 1	G	1	83	84	84.0	2	82	84	42.0								
SUNSHINE CREEK	85.1	9 /17	G	0	3	3	0.0	1	2	3	3.0								
SUNSHINE CREEK	85.1	9 /29	F	0	54	54	0.0	10	44	54	5.4								
SUNSET SLOUGH	85.5	9 /29	E	0	5	5	0.0	0	5	5	0.0								
NORTH SUNSET SLOUGH	87.5	9 /21	G	0	5	5	0.0	4	1	5	1.3								
BIRCH CREEK SLOUGH	89.0	8 / 9	G	0	234	234	0.0	38	196	234	6.2								
BIRCH CREEK SLOUGH	89.0	8 /16	G	0	75	75	0.0	23	52	75	3.3								
BIRCH CREEK SLOUGH	89.0	8 /23	G	0	84	84	0.0	14	70	84	6.0								
BIRCH CREEK SLOUGH	89.0	9 /16	G	0	13	13	0.0	1	12	13	13.0								
BIRCH CREEK SLOUGH	89.0	9 /16	G	0	27	27	0.0	0	27	27	0.0								
BIRCH CREEK SLOUGH	89.0	10 / 1	G	0	16	16	0.0	0	16	16	0.0								
BIRCH CREEK	89.2	8 /23	E	0	12	12	0.0	1	11	12	12.0								
BIRCH CREEK	89.2	9 / 3	F	0	53	53	0.0	2	51	53	26.5								
BIRCH CREEK	89.2	9 / 9	G	0	18	18	0.0	1	17	18	18.0								
BIRCH CREEK	89.2	9 /16	G	0	217	217	0.0	7	210	217	31.0								
BIRCH CREEK	89.2	9 /29	G	0	236	236	0.0	4	232	236	59.0								
TRAPPER CREEK	91.5	8 / 8	F	0	2	2	0.0	0	2	2	0.0								
TRAPPER CREEK	91.5	8 /15	F	0	4	4	0.0	0	4	4	0.0								
TRAPPER CREEK	91.5	9 /15	E	0	21	21	0.0	1	20	21	21.0								
TRAPPER CREEK SLOUGH	91.5	9 /26	E	0	2	2	0.0	0	2	2	0.0								
TRAPPER CREEK SLOUGH	91.5	10 / 1	F	0	24	24	0.0	2	22	24	12.0								
TRAPPER CREEK SLOUGH	91.5	10 / 2	F	0	20	20	0.0	1	24	20	7.0								
TRAPPER CREEK SLOUGH	91.5	10 / 3	G	0	17	17	0.0	2	15	17	8.5								
TRAPPER CREEK SLOUGH	91.5	10 / 4	G	0	23	23	0.0	0	23	23	0.0								
CACHE CREEK	95.5	8 /22	G	0	1	1	0.0	0	1	1	0.0								
CACHE CREEK	95.5	9 /15	G	1	22	23	23.0	3	20	23	7.7								
CLEAR CRK / TALKEETNA RIVER	97.1	8 /21	E	1	227	228	228.0	17	211	228	13.4								
FISH CREEK / TALKEETNA RIVER	97.1	8 / 9	G	0	25	25	0.0	1	24	25	25.0								
BYERS LAKE & OUTLET	97.8	8 /14	E	0	2	2	0.0	0	2	2	0.0								
BYERS CREEK	97.8	8 /14	G	0	9	9	0.0	1	8	9	9.0								
TROUBLESOME CREEK	97.8	8 /14	G	0	14	14	0.0	0	14	14	0.0								
PESHTOLIA SLOUGH	98.6	9 /14	G	0	2	2	0.0	0	2	2	0.0								
WHISKERS CREEK	101.4	8 / 9	G	0	6	6	0.0	1	5	6	6.0								
WHISKERS CREEK	101.4	8 /15	E	0	10	10	0.0	0	10	10	0.0								
WHISKERS CREEK	101.4	9 / 4	E	0	65	65	0.0	10	55	65	6.5								
WHISKERS CREEK	101.4	9 /17	G	0	117	117	0.0	17	100	117	6.9								
WHISKERS CREEK	101.4	9 /24	G	0	18	18	0.0	2	16	18	9.0								
WHISKERS CREEK	101.4	9 /30	E	0	22	22	0.0	1	21	22	22.0								
WHISKERS CREEK	101.4	10 / 7	E	0	38	38	0.0	1	37	38	38.0								

Appendix Table 6-8 (cont). Coho salmon spawning ground surveys of selected spawning areas and resultant tagged to untagged ratios, 1984.

Spawning Area	River Mile	Date	Survey Conditions	FLATHORN TAGS Tagged (r)	Untagged	Total (c)	Ratio (c/r)	SUNSHINE TAGS Tagged (r)	Untagged	Total (c)	Ratio (c/r)	TALKEETNA TAGS Tagged (r)	Untagged	Total (c)	Ratio (c/r)	CURRY TAGS Tagged (r)	Untagged	Total (c)	Ratio (c/r)
CHASE CREEK	106.9	8 / 9	E	0	2	2	0.0	0	2	2	0.0	0	2	2	0.0				
CHASE CREEK	106.9	8 /16	G	0	8	8	0.0	0	8	8	0.0	0	8	8	0.0				
CHASE CREEK	106.9	8 /28	E	0	211	211	0.0	15	196	211	14.1	27	184	211	7.8				
CHASE CREEK	106.9	8 /29	E	0	28	28	0.0	1	27	28	28.0	6	22	28	4.7				
CHASE CREEK	106.9	9 / 4	E	0	202	202	0.0	29	173	202	7.0	37	165	202	5.5				
CHASE CREEK	106.9	9 /17	E	1	84	85	85.0	17	68	85	5.0	14	71	85	6.1				
CHASE CREEK	106.9	9 /20	G	1	43	44	44.0	3	41	44	14.7	6	38	44	7.3				
CHASE CREEK	106.9	9 /30	E	0	42	42	0.0	3	39	42	14.0	1	41	42	42.0				
CHASE CREEK	106.9	10 / 2	E	0	32	32	0.0	1	31	32	32.0	2	30	32	16.0				
CHASE CREEK	106.9	10 /16	E	0	10	10	0.0	2	8	10	5.0	2	8	10	5.0				
SLASH CREEK	111.2	9 /16	G	0	61	61	0.0	8	53	61	7.6	7	54	61	8.7				
SLASH CREEK	111.2	9 /30	E	1	4	5	5.0	0	5	5	0.0	1	4	5	5.0				
GASH CREEK	111.6	9 / 5	G	0	20	20	0.0	4	16	20	5.0	4	16	20	5.0				
GASH CREEK	111.6	9 /21	G	1	233	234	234.0	32	202	234	7.3	17	217	234	13.8				
GASH CREEK	111.6	9 /30	G	1	191	192	192.0	21	171	192	9.1	14	178	192	13.7				
GASH CREEK	111.6	10 / 7	G	0	127	127	0.0	14	113	127	9.1	6	121	127	21.2				
GASH CREEK	111.6	10 /16	E	0	71	71	0.0	5	66	71	14.2	1	70	71	71.0				
SLOUGH 6A	112.3	8 /21	G	0	3	3	0.0	0	3	3	0.0	1	2	3	3.0				
LANE CREEK	113.6	8 /21	G	0	3	3	0.0	0	3	3	0.0	1	2	3	3.0				
LANE CREEK	113.6	9 /24	G	0	2	2	0.0	0	2	2	0.0	1	1	2	2.0				
LANE CREEK	113.6	10 / 3	E	0	8	8	0.0	1	7	8	8.0	0	8	8	0.0				
LOWER MCKENZIE CREEK	116.2	8 /27	G	0	24	24	0.0	6	18	24	4.0	0	24	24	0.0				
LOWER MCKENZIE CREEK	116.2	9 /24	G	0	9	9	0.0	2	7	9	4.5	0	9	9	0.0				
SLOUGH 11	135.3	9 /17	G	0	1	1	0.0	1	0	1	1.0	0	1	1	0.0	0	1	1	0.0
SLOUGH 11	135.9	8 /27	G	0	2	2	0.0	1	1	2	2.0	0	2	2	0.0	1	1	2	2.0
INDIAN RIVER	138.6	8 / 8	E	0	2	2	0.0	0	2	2	0.0	0	2	2	0.0	0	2	2	0.0
INDIAN RIVER	138.6	8 /17	E	0	45	45	0.0	3	42	45	15.0	5	40	45	9.0	8	37	45	5.6
INDIAN RIVER	138.6	9 / 2	G	0	28	28	0.0	3	25	28	9.3	3	25	28	9.3	2	26	28	14.0
INDIAN RIVER	138.6	9 /10	G	0	70	70	0.0	9	61	70	7.8	5	65	70	14.0	8	62	70	8.8
INDIAN RIVER	138.6	9 /20	E	0	8	8	0.0	1	7	8	8.0	0	8	8	0.0	1	7	8	8.0
INDIAN RIVER	138.6	10 / 3	E	0	10	10	0.0	2	8	10	5.0	1	9	10	10.0	0	10	10	0.0
PORTAGE CREEK	148.9	8 /17	E	0	1	1	0.0	0	1	1	0.0	1	0	1	1.0	0	1	1	0.0
PORTAGE CREEK	148.9	9 /10	G	0	1	1	0.0	1	0	1	1.0	0	1	1	0.0	0	1	1	0.0

ADULT SALMON

LOWER SUSITNA RIVER SPAWNING SURVEYS

BY

Kim M. Levesque

Donald R. Seagren

ALASKA DEPARTMENT OF FISH AND GAME
COMMERCIAL FISHERIES
SUSITNA HYDRO AQUATIC STUDIES
1985

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1.0 Introduction

The proposed hydroelectric project may impact the lower Susitna River salmon spawning areas. Flow, water quality and temperature changes may occur in the slough, side channel, main channel, and stream habitats utilized by spawning salmon. Information on the magnitude and timing of salmon spawning in these habitats is necessary to assess potential impacts and to plan appropriate mitigation measures.

2.0 Objectives

1) Identify all salmon spawning areas i. main channel, side channel, slough and stream habitats in the lower Susitna River (RM 28.0-RM 98.6).

2) Identify the general habitat characteristics of those areas utilized by spawning salmon.

Anadromous fish species addressed in this report are:

Pacific Salmon	Oncorhynchus sp
Chinook salmon	O. tshawytscha
Sockeye salmon	O. nerka
Pink salmon	O. gorbuscha
Chum salmon	O. keta
Coho salmon	O. kisutch

3.0 Methods

3.1 Mainstem and Slough Habitat

Aerial surveys were conducted weekly on the lower Susitna River (RM 28.0-RM 98.6) (Figure 1) from July 21 to October 17, 1984 to identify sites utilized by spawning salmon (Plate 1). Potential spawning sites were then surveyed on foot to verify actual spawning activity. Verification of spawning was done visually, observing redds (Plate 2) and salmon spawning activity (Plate 3). To confirm the visual observations, all sites were sampled using standard egg pumping equipment and methods (Plate 4) to determine the presence of salmon eggs. Spawning areas were then mapped with the species, number of live and dead salmon, number of redds and upwelling activity noted. Complete survey methods can be found in Section 2.2.1 of Barrett et al, 1985.

An aerial survey of the lower river (RM 26.0 to RM 96.0) was conducted by R&M Consultants on March 18, 1983 (Coffin, 1983). During this survey, open leads were delineated on 1:2000 blue line maps. No attempt was made to distinguish between velocity leads and warm water leads. This information served as an indicator to possible spawning areas.

3.2 Stream Habitat

Seventeen streams in the lower Susitna River reach (RM 28.0 to RM 98.6) were surveyed in 1984 to provide information on the magnitude, timing and distribution of chinook, sockeye, pink, chum and coho salmon spawning in stream mouth reaches (Figure 1). The term interface reach

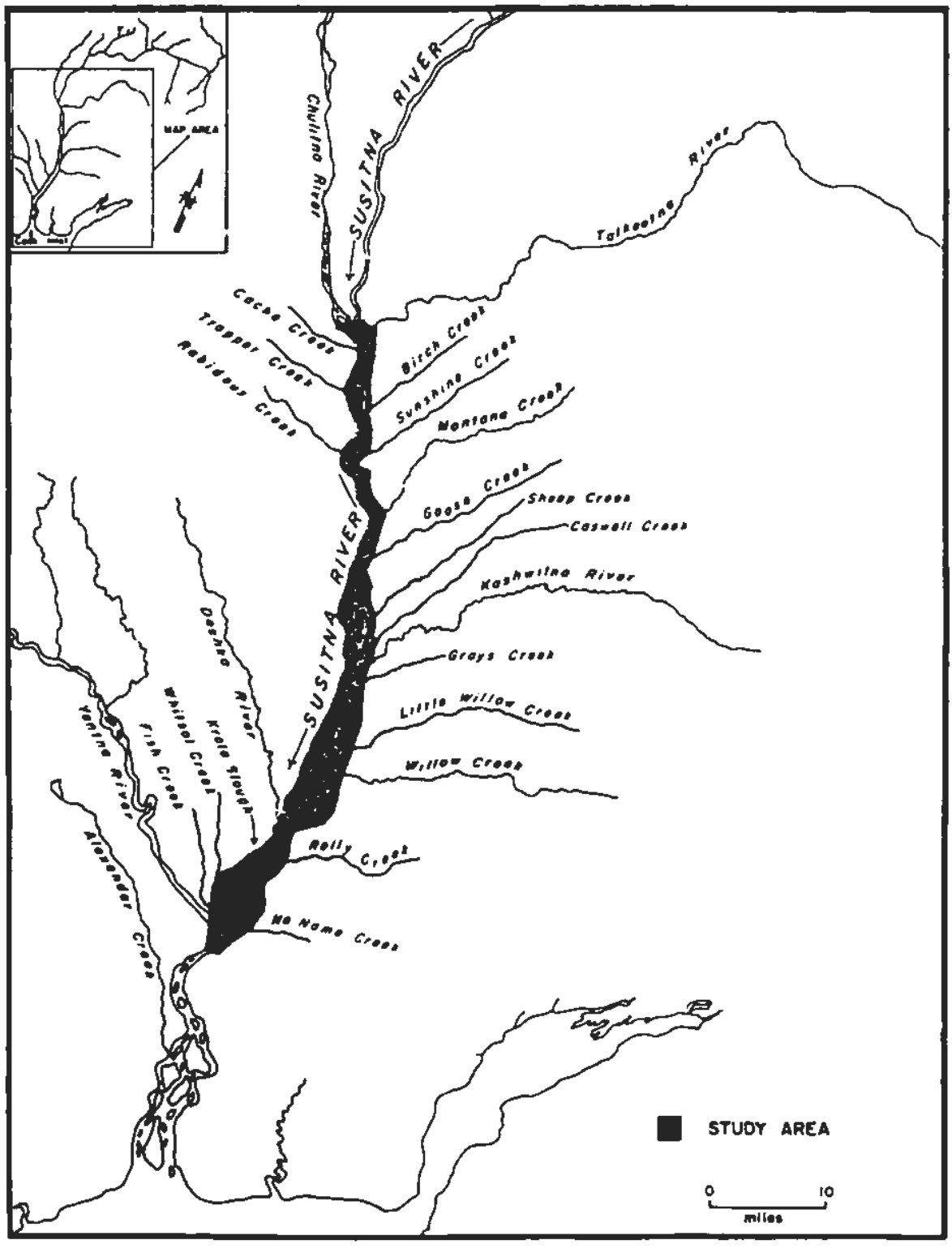


Figure 1. Lower Susitna River Salmon Spawning Survey Area (RM 28.0 to RM 98.6), 1984.

insert	plate	1	whole	page

insert	plate	2	whole	page

insert plate 3 whole page

insert plate 4 whole page

will be used throughout the reminder of this report to describe the reach from the stream mouth to one third mile upstream. Survey efforts were concentrated in the interface reach of each stream to evaluate spawning utilization of these habitats.

Streams in the lower river reach generally had lower gradients than those in the middle river reach. Lower gradient streams usually have more backwater area than those with a steep gradient (ADF&G, 1983a). At each of the lower river stream interface reaches, habitat data consisting of stream channel widths, depths and substrate composition were collected at two mainstem discharges. In addition to habitat data, backwater effects were also assessed to determine effects of mainstem discharge on interface reaches. Complete survey methods can be found in Section 2.2.1 of Barrett et al, 1985.

4.0 Results and Discussion

4.1 Mainstem Habitat

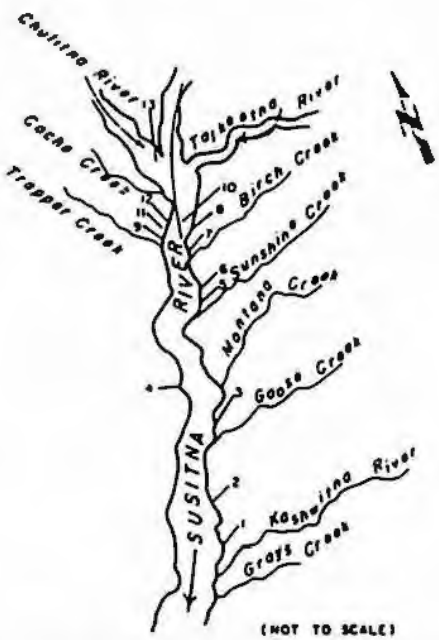
The mainstem habitat is comprised of main channel and side channel habitats. Main channel habitat is typically characterized by high water velocities and well armored streambeds (adapted from Sautner et al, 1984). Side channel habitat is characterized by shallower depths, lower velocities and smaller streambed materials than the adjacent habitat of the main channel river (adapted from Sautner et al, 1984). For a more complete description of these habitat-types, the reader should consult the glossary at the end of this report. For the purposes of this study, the main channel habitats and side channel habitats are classified as

mainstem habitats. Determination of the physical and hydraulic characteristics necessary to accurately define each habitat type was beyond the scope of this study.

Survey conditions prior to late September were poor due to high water and turbidity levels. As a result, surveys conducted prior to this time may not have observed all spawning activity that may have been present. A flood in early September eliminated all signs of spawning prior to that time. Lower water and turbidity levels in early to late fall improved the survey conditions, increasing the number and accuracy of spawning observations.

Surveys identified 13 mainstem salmon spawning sites in the lower river reach (RM 28.0 to RM 98.6) in 1984 (Figure 2). Chum salmon were the predominant species, utilizing 12 mainstem sites for spawning. Coho salmon were observed spawning in only two mainstem sites. The other three species of Pacific salmon were not observed spawning in mainstem sites. Individual site descriptions and maps can be found in Appendix A.

An estimate of the total spawning escapement utilizing mainstem sites in this reach can be determined by using procedures outlined in Barrett et al, 1985. By using the total live peak escapement counts, it is estimated that 2,754 chum salmon (0.3% of the minimum estimated Susitna River escapement) and 309 coho salmon (0.2% of the minimum estimated Susitna River escapement) utilized mainstem spawning sites between RM 28.0 and RM 98.6 during 1984.



Site Number	Location River Mile 1/	Location Legal	Observed Upwelling	Species	Observed Fish Observed Number of Redds	Observed Fish Observed Live	Observed Fish Observed Dead	Spawning Observation Date
1	62.1R	S21N05W12AAC	Upwelling	Chum	5	2	6	10/09
2	71.4R	S22N05W13DBD	B. Seepage 3/	Chum	4	4	0	10/09
3	73.9C	S23N05W24DAB	Open Lead	Chum	7	0	1	10/10
4	79.7L	S23N05W35ADA	B. Seepage 3/ Open Lead	Chum	7	18	7	10/08
5	87.0R	S24N05W01BDA	Open Lead	Chum	48	173	0	09/28
6	87.5R	S25N05W36DBD	Open Lead	Coho	3	5	0	09/25
7	88.7R	S25N05W25BCA	B. Seepage 3/	Chum	11	23	0	10/09
8	90.1R	S25N05W13BCB	None	Chum	19	41	27	10/09
9	92.0C-94.5L	S25N05W15DAB S25N05W02DAA	Upwelling	Chum	99	538	257	09/23
				Coho		98	19	10/10
10	95.0C	S26N05W36BCD	None	Chum	1	3	0	09/27
11	95.5C 2/	S26N05W36CBA	None	Chum				09/27
12	95.8C 2/	S26N05W36BCB	None	Chum				09/27
13	98.0L	S26N05W14DCD	Upwelling	Chum	11	27	0	10/09
	98.0L	S26N05W22AAC	None	Chum	7	12	0	10/09
	98.0L	S26N05W22ABA	None	Chum	4	10	0	10/09
	98.0L	S26N05W15CCB	None	Chum	26	67	0	10/09

1/ Looking upstream: R-right bank; C-center; L-left bank.
2/ Data was combined in the field with an adjacent slough site
3/ Bank Seepage

Figure 2. Mainstem salmon spawning areas identified in the lower reach of the Susitna River between RM 28.0 and RM 98.6 in 1984.

Based on peak live counts, the three most important mainstem sites for chum salmon (in descending order of importance) are: Trapper Creek side channel (RM 92.0C-RM 94.5L); Sunset side channel (RM 87.0R) and collectively the four sites in the mouth of the Chulitna River (RM 98.0L). The rest of the mainstem sites contained less than 50 fish. The most important mainstem site for coho salmon is the Trapper Creek side channel (RM 92.0C-RM 94.5L) followed by the Sunset side channel (RM 87.5R).

Upwelling, bank seepage or winter open leads were observed in nine of the sites. The predominant sites utilized by chum salmon and both sites used by coho salmon all had associated upwelling/bank seepage. Closer examination may find upwelling/bank seepage in all or some of the remaining sites where it was not observed in 1984. Chum salmon selecting upwelling areas in which to spawn was reinforced by the data.

4.2 Slough Habitat

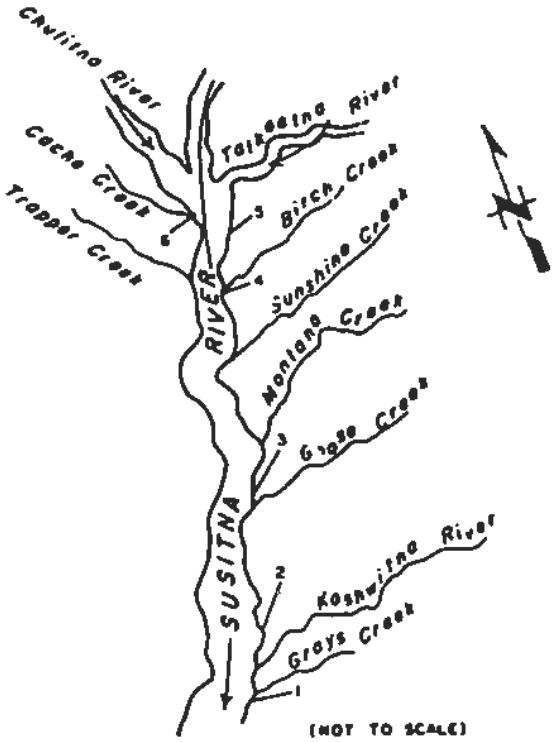
Slough habitats can be divided into two types, upland sloughs and side sloughs. The main difference between the two types is that the upstream end of an upland slough does not connect with the mainstem even at high mainstem discharges (Sautner et al, 1984). A feature that distinguishes side slough habitat from side channel habitat is the side sloughs convey clear water form small tributaries and/or upwelling groundwater in an unbreached condition (Sautner et al, 1984). The reader should consult the glossary for a complete description of slough habitats. The salmon spawning sites located in this study all fall in the side slough category and will all be referred to as slough habitats.

Survey conditions encountered in slough surveys are identical to those already described under mainstem habitat. As mainstem discharges fell in late fall, survey conditions improved, increasing the number and accuracy of spawning observations.

Salmon were observed spawning in six slough sites in the lower river reach (RM 28.0 to RM 98.6) in 1984 (Figure 3). As was found with the mainstem spawning sites, chum salmon were the predominant species utilizing sloughs for spawning. Of the 6 slough spawning sites, chum salmon used five while coho salmon used one. The other three species of Pacific salmon were not observed spawning in slough sites surveyed. Individual site descriptions and maps can be found in Appendix A.

It is estimated that 656 chum salmon (0.1% of the minimum estimated Susitna River escapement) and 12 coho salmon (0.1% of the minimum estimated Susitna River escapement) utilized slough spawning sites between RM 28.0 and RM 98.6 during 1984. Procedures for these calculations using peak live and dead counts can be found in Barrett et al, 1985.

Utilizing peak live counts, the most important slough sites for chum salmon (in descending order of importance) are: Cache Creek Slough (RM 96.0L) and Musher Slough (RM 95.2R). The remaining three slough sites utilized by chum salmon had less than fifty fish. The only slough site found to have spawning coho salmon was Rustic Wilderness Slough (RM 57.0R).



Site Number	Location: River Mile[1/]	Location: Legal	Observed Upwelling	Observed Species	Fish Observed: Number of Redds	Fish Observed: Live	Fish Observed: Dead	Spawning Observation Date
1	57.0R	S21N05W25CCD	Upwelling	Coho	9	6	0	10/13
2	63.2R	S21N05W01CCD	Upwelling	Chum	3	4	0	10/11
3	74.5R	S23N05W19RCR	Open Lead	Chum	12	0	16	10/08
4	89.5R	S25N05W24R5C	None	Chum	4	12	0	10/09
5	95.2R	S26N05W36A09	B. Seepage[2/]	Chum	41	84	52	09/28
6	96.0L	S26N05W35A8B	None	Chum	4	160	--	09/27

1/ Looking upstream: R-right bank; C-center; L-left bank.
2/ Bank seepage

Figure 3. Slough salmon spawning areas identified in the lower reach of the Susitna River between RM 28.0 and RM 98.6 in 1984.

Upwelling, bank seepage or winter open leads were observed at four sites. The most important chum salmon site had no upwelling observed. This does not mean that upwelling is not present. This site has a creek associated with it which might provide adequate flows and supplies of dissolved oxygen in the absence of upwelling. As has been found in the mainstem sites and previous studies, chum salmon appear to be selecting upwelling areas for spawning sites.

4.3 Stream Habitat

Based on habitat observations of the interface reach the seventeen streams surveyed fell into two general categories. The first category had primarily silt-sand substrates with tannin stained water. Lower river streams in this category are: Fish Creek (RM 31.2); No Name Creek (RM 31.7); Whitsol Creek (RM 35.2); Rolly Creek (RM 39.0); Grays Creek (RM 59.5); and Rabideux (RM 83.1). The second category of streams had substrates ranging from small gravels to cobbles and clear water. Lower river streams in this category are: Willow Creek (RM 49.1); Little Willow Creek (RM 50.5); Kashwitna River (RM 61.0); Caswell Creek (RM 64.0); Sheep Creek (RM 66.1); Goose Creek (RM 72.0); Montana Creek (RM 77.0); Sunshine Creek (RM 85.1); Birch Creek (RM 89.2); Trapper Creek (RM 91.5); and Cache Creek (RM 95.5). Site maps and descriptions of each creek are in Appendix B.

4.3.1 Chinook Salmon

Seventeen streams in the lower Susitna River reach (RM 28.0 to RM 98.6)

were surveyed for adult salmon spawning activity from July 21 to October 17 in 1984 (Appendix Table D-1). Of the seventeen streams surveyed, chinook salmon were observed in eleven streams (Table 1).

Table 1. Chinook salmon peak 1984 index counts for streams between Susitna RM 28.0 and RM 98.6 in order of contribution. 1/

Stream	River Mile	Date	Number Counted Live	Dead	Total	Percent Contribution
Montana Creek	77.0	7/23	2,309	0	2,309	76.3
Rabideux Creek	83.1	8/3	560	60	620	20.5
Gray's Creek	59.5	8/20	1	27	28	.9
Birch Creek	89.2	8/9	20	6	26	.9
Sunshine Creek	85.1	7/7	10	4	14	.5
Trapper Creek	91.5	7/23	15	0	15	.5
Fish Creek	31.2	7/31	5	0	5	.2
Goose Creek	72.0	7/31	3	0	3	.1
Little Willow Creek	50.5	7/27	1	0	1	.1
Caswell Creek	64.0	8/6	1	1	2	0
Sheep Creek	66.1	7/26	1	0	1	0
		TOTAL	2,925	101	3,027	100.0%

1/ The index area surveyed was from the stream mouth to three quarters of a mile up stream.

The total peak survey count of chinook salmon in the eleven streams was 3,027 fish (Table 1). The majority were observed in Montana Creek (76.3%). The remaining 23.7% were distributed among the other ten streams as listed in Table 1. These counts are not intended to represent the total number of chinook salmon in these streams. Only the first three quarter mile from the stream mouth was surveyed providing an index count to relative abundance.

Based on survey observations, chinook salmon were generally abundant on lower river streams in the third week of July. Chinook salmon were observed in Montana Creek from July 23 to August 14 in 1984 with the peak count occurring on July 23 (Appendix Table D-1).

Chinook salmon were not observed spawning in lower river stream interfaces in 1984 (Table 2). Previous data indicates that rubble-cobble substrates are preferred for chinook spawning (ADF&G, 1983b). Habitat data collected in lower river stream interfaces indicates that smaller substrates, primarily silt-sand or gravel-rubble are prevalent in these areas (Appendix Table B-1). Suitability data also indicates that chinook salmon prefer velocities from 1.7 to 2.3 feet/second for spawning. Although velocity data was not collected in lower river streams in 1984, it is the authors opinion that velocities in the interface areas of these streams are generally less than those preferred by spawning chinook salmon. Chinook salmon were observed in upper portions of many of these streams.

Table 2. Summary of adult chinook salmon usage of stream interface reaches [1] between Susitna RM 28.0 and RM 98.6 in 1984.

Stream	River Mile	Passage	Spawning
Fish Creek	31.2	X	
No Name Creek	31.7		
Whitsol Creek	35.2		
Rolly Creek	39.0		
Willow Creek	49.1		
Little Willow Creek	50.5	X	
Grays Creek	59.5	X	
Kashwitna Creek	61.0		
Caswell Creek	64.0	X	
Sheep Creek	66.1		
Goose Creek	72.0	X	
Montana Creek	77.0	X	
Rabideux Creek	83.1	X	
Sunshine Creek	85.1	X	
Birch Creek	89.2	X	
Trapper Creek	91.5	X	
Cache Creek	95.5		

1/ First third mile from mouth.

Table 3. Sockeye salmon peak 1984 index counts for streams between Susitna RM 28.0 and RM 98.6 in order of contribution. [1]

Stream	River Mile	Date	Number Counted			Percent Contribution
			Live	Dead	Total	
Willow Creek	49.1	8/12	217	3	220	24.8
Trapper Creek	91.5	8/15	200	0	200	22.5
Birch Creek	89.2	7/29	174	0	174	19.6
Fish Creek	31.2	8/17	75	1	76	8.6
Goose Creek	72.0	7/24	74	0	74	8.3
Sunshine Creek	85.1	8/3	71	0	71	8.0
Whitsol Creek	35.2	8/9	20	0	20	2.3
Little Willow Creek	50.5	8/21	12	1	13	1.5
Cache Creek	95.5	8/15	12	0	12	1.4
Sheep Creek	66.1	7/30	12	0	12	1.4
Rabideux Creek	83.1	7/29	8	0	8	.9
Caswell Creek	64.0	7/30	6	0	6	.7
		TOTAL	881	5	886	100.0%

1/ The index area surveyed was from the stream mouth to three quarters of a mile up stream.

4.3.2 Sockeye Salmon

Seventeen streams in the lower Susitna river reach (RM 28.0 to 98.6) were surveyed from July 2[illegible] to October 17 in 1984 (Appendix Table D-1). Of the seventeen streams surveyed, sockeye salmon were observed in twelve streams (Table 3).

The total peak count of sockeye salmon in the twelve streams was 886 fish (Table 3). The majority were observed in Willow Creek (24.8%), Trapper Creek (22.5%) and in Birch Creek (19.6%). The remaining 33.1% were distributed among the remaining nine streams as listed in Table 3. These counts are not intended to represent the total numbers of sockeye salmon in these streams. Only the first three quarter mile from the stream mouth was surveyed providing an index count of relative abundance.

Based on survey observations, sockeye salmon were generally abundant in lower river streams during the first three weeks of August (Table 3). Sockeye salmon were observed in Willow Creek from August 6 to August 12 in 1984, with the peak survey count occurring on August 12 (Appendix Table D-1). In Trapper Creek, sockeye salmon were observed from July 28 to August 22, with the peak survey count occurring on August 15. The peak survey count in Birch Creek occurred on July 29 with observation dates ranging from July 29 to August 23.

Sockeye salmon were not found to utilize lower river stream interface reaches for spawning in 1984 (Table 4). Previous data suggests that

sockeye salmon prefer gravel-rubble substrates for spawning (ADF&G, 1983b). Habitat data collected at stream interface reaches indicates that these substrates were available in eleven out of seventeen streams. Although sockeye salmon were observed in many of these streams, they were found to utilize upstream portions of the streams rather than interface reaches (Table 4).

Table 4. Summary of adult sockeye salmon usage of stream interface reaches [1]/ between Susitna RM 28.0 and RM 98.6 in 1984.

Stream	River Mile	Passage	Spawning
Fish Creek	31.2		
Noname Creek	31.7		
Whitsol Creek	35.2	X	
Rolly Creek	39.0		
Willow Creek	49.1	X	
Little Willow Creek	50.5	X	
Grays Creek	59.5		
Kashwitna Creek	61.0		
Caswell Creek	64.0	X	
Sheep Creek	66.1	X	
Goose Creek	72.0	X	
Montana Creek	77.0		
Rabideux Creek	83.1	X	
Sunshine Creek	85.1	X	
Birch Creek	89.2	X	
Trapper Creek	91.5	X	
Cache Creek	95.5	X	

[1]/ First third mile from mouth.

4.3.3 Pink Salmon

Seventeen streams in the lower Susitna River reach (RM 28.0 to RM 98.6) were surveyed from July 1 to October 17 in 1984 (Appendix Table D-1). Of the seventeen streams surveyed, pink salmon were observed in thirteen streams (Table 5).

Table 5. Pink salmon peak 1984 index counts for streams between Susitna RM 28.0 and RM 98.6 in order of contribution. 1/

Stream	River Mile	Date	Number Counted Live	Dead	Total	Percent Contribution
Willow Creek	49.1	8/6	8,516	15	8,531	60.2
Birch Creek	89.2	8/9	1,595	42	1,637	11.6
Sunshine Creek	85.1	7/29	1,608	3	1,611	11.4
Little Willow Creek	50.5	8/3	748	0	748	5.3
Montana Creek	77.0	8/14	416	33	449	3.2
Trapper Creek	91.5	8/15	345	7	345	2.4
Goose Creek	72.0	7/31	313	3	316	2.2
Sheep Creek	66.1	8/13	255	9	284	2.0
Caswell Creek	64.0	8/13	121	5	126	.9
Rabideux Creek	83.1	8/17	89	2	91	.6
Grays Creek	59.5	7/27	20	0	20	.1
Cache Creek	95.5	8/15	17	0	17	.1
Kashwitna River	61.0	8/20	1	1	2	0
		TOTAL	14,006	120	14,177	100.0%

1/ The index area surveyed was from the stream mouth to three quarter of a mile upstream.

The total peak count of pink salmon in the thirteen streams was 14,177 fish (Table 5). The majority were observed in Willow Creek (60.2%) and in Birch Creek (11.6%). The remaining 28.2% were distributed among the remaining eleven streams as listed in Table 5. These counts are not intended to represent the total numbers of pink salmon in these streams. Only the first three quarter mile from the stream mouth was surveyed providing an index count of relative abundance.

Based on survey observations, pink salmon were generally abundant in lower river streams during the first three weeks of August (Table 5). Pink salmon were observed in Willow Creek from July 27 to September 9 in 1984 with the peak survey count occurring on August 6 (Appendix Table D-1). In Birch Creek pink salmon were observed form July 29 to September 25 with the peak survey count occurring on August 9.

Ten stream interface reaches were found to be used for spawning by pink salmon in 1984 (Table 6).

Table 6. Summary of adult pink salmon usage of stream interface reaches 1/ between Susitna RM 28.0 and RM 98.6 in 1984.

Stream	River Mile	Passage	Spawning
Fish Creek	31.2		
Noname Creek	31.7		
Whitsol Creek	35.2		
Rolly Creek	39.0		
Willow Creek	49.1	X	X
Little Willow Creek	50.5	X	X
Grays Creek	59.5	X	
Kashwitna Creek	61.0	X	
Caswell Creek	64.0	X	X
Sheep Creek	66.1	X	X
Goose Creek	72.0	X	X
Montana Creek	77.0	X	X
Rabideux Creek	83.1	X	
Sunshine Creek	85.1	X	X
Birch Creek	89.2	X	X
Trapper Creek	91.5	X	X
Cache Creek	95.5	X	X

1/ First third mile from mouth.

Based on peak survey counts, the majority of pink salmon spawning activity in interface reaches occurred in Willow Creek (48.6%) and in Birch Creek (15.3%) (Table 7). The additional eight streams supported the remaining 36.1% of pink salmon spawning. Site maps in Appendix B depict the locations of spawning areas within each interface reach.

Table 7. Pink salmon peak 1984 survey counts in stream interfaces between Susitna RM 28.0 and RM 98.6 in order of contribution. 1/

Stream	River Mile	Date	Number Counted Live	Dead	Total	Percent Contribution
Willow Creek	49.1	8/6	2,871	0	2,871	48.6
Birch Creek	89.2	8/9	889	15	904	15.3
Sunshine Creek	85.1	8/10	750	16	766	13.0
Little Willow Creek	50.5	8/21	287	125	412	7.0
Goose Creek	72.0	7/31	279	3	282	4.8
Trapper Creek	91.5	7/28	234	0	234	3.9
Sheep Creek	66.1	8/13	209	2	211	3.6
Montana Creek	77.0	8/14	170	12	182	3.1
Caswell Creek	64.0	8/20	26	3	29	0.5
Cache Creek	95.5	8/22	14	0	14	0.2
		TOTAL	5,729	176	5,905	100.0%

1/ The index area surveyed was from the stream mouth to three quarter of a mile upstream.

Habitat parameters (stream width, depth and substrate) were collected at each of the stream interfaces where pink salmon spawning was observed. These data are presented in Appendix Table D-1. The findings indicate that spawning pink salmon prefer gravel-rubble substrates. Each interface reach where pink salmon spawning was observed had gravel-rubble substrates. Sites having silt-sand substrates were not observed being used by pink salmon for spawning in 1984 (Appendix Table B-1). This is consistent with previous data for the Susitna River system (ADF&G, 1982).

4.3.4 Chum Salmon

Seventeen streams in the lower Susitna River reach (RM 28.0 to RM 98.6) were surveyed from July 21 to October 17 in 1984 (Appendix Table D-1).

Of the seventeen streams surveyed, chum salmon were observed in twelve streams (Table 8).

Table 8. Chum salmon peak 1984 index counts for streams between Susitna RM 28.0 and RM 98.6 in order of contribution. 1/

Stream	River Mile	Date	Number Counted Live	Dead	Total	Percent Contribution
Goose Creek	72.0	8/14	378	5	383	25.5
Willow Creek	49.1	8/6	332	0	332	22.0
Sheep Creek	66.1	8/13	181	0	181	12.0
Kashwitna River	61.0	9/27	1	171	172	11.4
Cache Creek	95.5	9/15	0	85	85	5.6
Caswell Creek	64.0	8/13	72	1	73	4.9
Birch Creek	89.2	9/2	53	10	63	4.2
Montana Creek	77.0	8/7	61	0	61	4.0
Trapper Creek	91.5	8/8	59	0	59	3.9
Sunshine Creek	85.1	8/3	49	0	49	3.3
Little Willow Creek	50.5	8/3	33	1	34	2.3
Rabideux Creek	83.1	7/29	13	0	13	.9
		TOTAL	1,232	273	1,505	100.0%

1/ The index area surveyed was from the stream mouth to three quarters of a mile upstream.

The total peak count of chum salmon in the twelve streams was 1,505 fish (Table 6). The majority were observed in Goose Creek (25.5%), Willow Creek (22.0%) and in Sheep Creek (12.0%). The remaining 40.5% were distributed among the remaining nine streams as listed in Table 8. These counts do not necessarily represent the total number of chum salmon in these streams but an index count of relative abundance.

Based on survey observations, chum salmon were generally abundant in lower river streams during the first three weeks in August in 1984 (Table 8). Chum salmon were observed in Goose Creek from July 27 to

September 7, 1984 with the peak survey count occurring on August 14. In Willow Creek, chum salmon were observed from July 27 to September 9. The peak survey count was observed on August 6. The Sheep Creek chum salmon peak survey count occurred on August 13. Observation dates ranged from July 30 to September 6.

Chum salmon were observed spawning in the interface reach of five lower river stream interface in 1984 (Table 9).

Based on peak survey counts, the majority of chum salmon spawning activities occurred in Willow Creek (49.8%) and in Trapper Creek (14.6%) (Table 10).

The additional three streams supported the remaining (35.6%) of chum salmon spawning. Site maps in Appendix B depict the locations of spawning areas within each interface reach.

Habitat parameters (stream width, depth and substrate) were collected at each of the stream interfaces where chum salmon spawning was observed. These data are presented in Appendix Table E-1. The findings indicate that spawning chum salmon prefer gravel-rubble substrates. Each stream interface reach where chum salmon spawning was observed had gravel-rubble substrates (Appendix Table B-1). Stream interface reaches having silt-sand substrates were not used for spawning by chum salmon in 1984. Studies conducted by ADF&G Su Hydro Aquatic Habitat are consistent with our findings (ADF&G, 1983b).

Table 9. Summary of adult chum salmon usage of stream interface reaches 1/ between Susitna RM 28.0 and RM 98.6 in 1984.

Stream	River Mile	Passage	Spawning
Fish Creek	31.2		
Noname Creek	31.7		
Whitsol Creek	35.2		
Rolly Creek	39.0		
Willow Creek	49.1	X	X
Little Willow Creek	50.5	X	
Grays Creek	59.5		
Kashwitna Creek	61.0	X	
Caswell Creek	64.0	X	X
Sheep Creek	66.1	X	
Goose Creek	72.0	X	
Montana Creek	77.0	X	X
Rabideux Creek	83.1	X	
Sunshine Creek	85.1	X	X
Birch Creek	89.2	X	
Trapper Creek	91.5	X	X
Cache Creek	95.5	X	

1 First third mile from mouth.

Table 10. Chum salmon peak 1984 survey counts for stream interfaces between Susitna RM 28.0 and RM 98.6 in order of contribution. 1/

Stream	River Mile	Date	Number Counted Live	Dead	Total	Percent Contribution
Willow Creek	49.1	8/6	157	0	157	49.8
Trapper Creek	91.5	8/8	46	0	46	14.6
Montana Creek	77.0	8/14	41	0	41	13.0
Sunshine Creek	85.1	8/30	37	0	37	11.8
Caswell Creek	64.0	8/13	33	1	34	10.8
		TOTAL	314	1	315	100.0%

1/ The index area surveyed was from the stream mouth to three quarters of a mile upstream.

4.3.5 Coho Salmon

Seventeen streams in the lower Susitna River reach (RM 28.0 to RM 98.6) were surveyed from July 21 to October 17 in 1984 (Appendix Table D-1). Of the streams surveyed, coho salmon were observed in thirteen streams (Table 11). Two additional streams, Question Creek (84.1) and Answer Creek (RM 84.0) were surveyed from September 20 to the 29 for coho salmon spawning (Table 11).

The total peak survey count of coho salmon in the fifteen streams was 2,923 fish (Table 11). The majority were observed in Willow Creek (41.9%) and in Rabideux Creek (16.4%). The remaining 41.7% were distributed among the remaining thirteen streams as listed in Table 7. These counts are index counts of relative abundance and are not intended to represent total numbers of coho salmon in these streams.

Based on survey observations, coho salmon were generally abundant on lower river streams late August and again in the last week in September and first week of October in 1984 (Table 11). Coho salmon were observed in Willow Creek from August 8 to September 18 in 1984 with the peak survey count occurring on August 22 (Appendix Table D-1). In Rabideux Creek coho salmon were observed from September 1 to October 1 with the peak survey count occurring on October 1.

Coho salmon were not observed spawning in stream interface reaches in 1984 (Table 12). Previous data suggests that coho salmon prefer rubble-cobble substrates for spawning (ADF&G, 1982). Habitat data collected at lower river stream interfaces indicates that most of the

Table 11. Coho salmon peak 1984 index counts for streams between Susitna RM 28.0 and RM 98.6 in order of contribution.[1/]

Stream	River Mile	Date	Number Counted Live	Dead	Total	Percent Contribution
Willow Creek	49.1	8/22	1,224	2	1,226	41.9
Rabideux Creek	83.1	10/1	480	0	480	16.4
Question Creek	84.1	9/28	320	0	320	10.9
Birch Creek	89.2	9/28	236	0	236	8.1
Whitsol Creek	35.2	9/27	187	0	187	6.4
Caswell Creek	64.0	8/13	102	0	102	3.5
Sunshine Creek	85.1	9/1	84	0	84	2.9
Answer Creek	84.0	9/28	60	0	60	2.1
Montana Creek	77.0	9/14	61	0	61	2.1
Goose Creek	72.0	9/7	45	0	45	1.5
Kashwitna River	61.0	9/27	0	33	33	1.1
Trapper Creek	91.5	9/15	29	2	31	1.1
Sheep Creek	66.1	9/13	24	1	25	.9
Cache Creek	95.5	9/15	23	0	23	.8
Little Willow Creek	50.5	8/29	10	0	10	.3
		TOTAL	2,885	38	2,923	100.0%

1/ First three quarter mile from mouth is the upstream extent of survey reach.

Table 12. Summary of adult coho salmon usage of stream interface reaches[1/] between Susitna RM 28.0 and RM 98.6 in 1984.

Stream	River Mile	Passage	Spawning
Fish Creek	31.2		
Noname Creek	31.7		
Whitsol Creek	35.2	X	
Rolly Creek	39.0		
Willow Creek	49.1	X	
Little Willow Creek	50.5	X	
Grays Creek	59.5		
Kashwitna Creek	61.0		
Caswell Creek	64.0	X	
Sheep Creek	66.1	X	
Goose Creek	72.0	X	
Montana Creek	77.0	X	
Rabideux Creek	83.1	X	
Sunshine Creek	85.1	X	
Birch Creek	89.2	X	
Trapper Creek	91.5	X	
Cache Creek	95.5	X	

1/ First third mile from mouth.

stream interfaces in this reach have either silt-sand or gravel-rubble substrates. These substrates may be too small to be utilized by coho salmon for spawning. Surveys indicate coho salmon utilized upper portions of twelve of these streams.

5.0 Summary

5.1 Mainstem and Slough Habitat

Surveys conducted from RM 28.0 to RM 98.6 located thirteen mainstem and six slough spawning sites during 1984. Chum salmon were the predominant species utilizing both habitat types. An estimated chum salmon escapement of 3,552 (0.4% of the minimum estimated Susitna River escapement) was observed using mainstem and slough spawning sites in this reach. The estimated escapement of coho salmon spawning in mainstem and slough sites in this reach is 327 (0.2% of the minimum estimated Susitna River escapement). The other species of Pacific salmon were not observed spawning in these habitat types in this reach. Both species appear to be selecting sites that have upwelling or bank seepage associated with them. Compared with the middle reach of the Susitna River from Talkeetna (RM 97.0) to Devils Canyon (RM 150.0), mainstem and slough spawning in the lower reach in minimal. There are some sites, such as Trapper Creek side channel, that should have further study and be included in mitigation planning. Studies should be continued to further define spawning areas and conditions in this reach.

5.2 Stream Habitat

5.2.1 Chinook Salmon

A total peak survey count of 3,027 chinook salmon were observed within the index areas of eleven lower river streams in 1984. The majority were observed in Montana Creek (76.3%). The peak observation period during the survey period (July 21 to October 17) was the third week of July.

Chinook salmon were not observed spawning in lower river stream interface reaches in 1984. Interface reaches were used for milling and for passage to upstream spawning habitats.

5.2.2 Sockeye Salmon

In 1984, a total peak survey count of 886 sockeye salmon were observed within the index areas of twelve lower river streams. The majority were observed in Willow Creek (24.8%), Trapper Creek (22.5%) and in Birch Creek (19.6%). The peak of spawning occurred during the first three weeks in August.

Sockeye salmon did not utilize lower river stream interface reaches for spawning in 1984. Interface reaches were used for milling and for passage to upstream spawning habitats.

5.2.3 Pink Salmon

A total peak survey count of 14,177 pink salmon were observed within the index area of thirteen lower river streams in 1984. The majority were observed in Willow Creek (60.2%) and in Birch Creek (11.6%). The peak of spawning occurred during the first three weeks of August.

Ten of the seventeen stream interfaces surveyed were found to be used for pink salmon spawning in 1984. The total peak survey count of pink salmon in stream interface reaches was 5,905 fish. The majority were observed in Willow Creek (48.6%) and in Birch Creek (15.3%). Pink

salmon selected only stream interfaces having gravel-rubble substrates for spawning in 1984.

5.2.4 Chum Salmon

In 1984, a total peak count of 1,505 chum salmon were observed within the index area of twelve lower river streams. The majority were observed in Goose Creek (25.5%), Willow Creek (22.0%) and in Sheep Creek (12.0%). The peak of spawning occurred during the first three weeks in August.

Five of the seventeen stream interface reaches surveyed were used by chum salmon for spawning in 1984. The total peak survey count of chum salmon in stream interface reaches was 315 fish. The majority of spawning in interface reaches occurred in Willow Creek (49.8%) and in Trapper Creek (14.6%). Chum salmon selected only stream interfaces reaches having gravel rubble substrates for spawning in 1984.

5.3.5 Coho Salmon

A total peak surveys count of 2923 coho salmon were observed within the index areas of thirteen lower river streams in 1984. The majority were observed in Willow Creek (41.9%) and in Rabideux Creek (16.4%). The peak observations of coho salmon in 1984 were the last week of August and again the first week of October.

Coho salmon were not observed spawning in lower river stream interface reaches in 1984. Interface reaches were used for milling and for passage to upstream spawning habitats.

6.0 GLOSSARY

General characteristics of habitat classifications that are associated with the Susitna River (adapted from Sautner et al, 1984).

Main Channel Habitat: Consists of those portions of the Susitna River that normally convey water throughout the year. Both single and multiple channel reaches are included in this habitat category. Groundwater and tributary inflow appear to be inconsequential contributors to the overall characteristics of main channel habitat. Main channel habitat is typically characterized by high water velocities and well armored streambeds. Substrates generally consist of boulder and cobble size materials with interstitial spaces filled with a grout-like mixture of small gravels and glacial sands. Suspended sediment concentrations and turbidity are high during summer due to the influence of glacial melt-water. Discharges recede in early fall and the main channel clears appreciably in October.

Mainstem Habitat: Consists of main channel and side channel habitats.

Side Channel Habitat: Consists of those portions of the Susitna River that normally convey water during the open water season but become appreciably dewatered during periods of low main channel discharge. Side channel habitat may exist either in well defined overflow channels, or in poorly defined channels flowing through partially submerged gravel bars and islands along the margins of the main channel river. Side channel streambed elevations are typically

lower than the mean monthly water surface elevations of the main channel Susitna River observed during June, July and August. Side channel habitats are characterized by shallower depths, lower velocities and smaller streambed materials than the adjacent habitat of the main channel river.

Side Slough Habitat: This habitat is located in overflow channels between the edge of the floodplain and the main channel and side channels of the Susitna River. It is usually separated from the main channel and/or side channels by well vegetated bars. An exposed alluvial berm often separates the head of the slough from main channel discharge or side channel flows. The controlling streambed/bank elevations at the upstream end of the side sloughs are slightly less than the water surface elevations of the mean monthly discharges of the mainstem Susitna River observed for June, July and August. At intermediate and low-discharge periods, the side sloughs convey clear water from small tributaries and/or upwelling groundwater. These clear water inflows are essential contributors to the existence of this habitat type. The water surface elevation of the Susitna River generally causes a backwater area to extend well up into the slough from its lower end. Even though this substantial backwater area exists, the sloughs function hydraulically very much like small stream systems and several hundred feet of the slough channel often conveys water independent of mainstem backwater effects. At high discharges, the water surface elevation of the mainstem river is sufficient to overtop

the upper end of the slough. Surface water temperatures in the side sloughs during summer months are principally a function of air temperature, solar radiation, and the temperature of the local runoff.

Stream Habitat: Consists of full complement of hydraulic and morphologic conditions that occur in the streams. Their seasonal flow, sediment, and thermal regimes reflect the integration of the hydrology, geology, and climate of the stream drainage. The physical attributes of stream habitat are not dependent on mainstem conditions.

Stream Mouth Habitat: Extends from the uppermost point in the stream influenced by mainstem Susitna River or slough backwater effects to the downstream extent of the stream plume which extends into the mainstem Susitna River or slough.

Upland Slough Habitat: Differs from side slough habitat in that the upstream end of the slough does not interconnect with the surface waters of the main channel Susitna River or it side channels even at high mainstem discharges. These sloughs are characterized by the presence of beaver dams and an accumulation of silt covering the substrate resulting from the absence of mainstem scouring discharges.

7.0 REFERENCES

Alaska Department of Fish and Game (ADF&G). 1982. Susitna Hydro Aquatic Studies Phase II. Basic data report volume 4. Parts I and II.

_____. 1983a. Phase II Report. Synopsis of the 1982 Aquatic Studies and Analysis of Fish and Habitat Relationships.

_____. 1983b. Aquatic Habitat and Instream Flow Investigations. Chapter 6 and 7. Susitna Hydro Aquatic Studies Program.

_____. 1984. An atlas to the catalog of Waters Important for spawning, rearing or migration of anadromous fishes. Southcentral Region Resources Management. Region II.

Barrett, B.M., F.M. Thompson, and S.N. Wick. 1985. Adult Anadromous Fish Investigations, May-October 1984. Susitna Hydro Aquatic Studies Report Series. No. 1. Alaska Department of Fish and Game. Anchorage, Alaska.

Coffin, Jeff. 1983. Memorandum on Lower Susitna River Open Leads, March 18, 1983. R&M Consultants, Inc. Anchorage, Alaska. 6p.

Sautner, J.S., L.J. Vining, and L.A. Rundquist. 1984. An evaluation of passage conditions for adult salmon in sloughs and side channels of the middle Susitna River, Chapter 6 in C.C. Estes and D.S. Vincent-Lang, editors. Aquatic habitat and instream flow investigations (May-October 1983). Alaska Department of Fish and Game Susitna Hydro Studies. Report Number 3. Prepared for Alaska Power Authority. Anchorage, Alaska.

U.S. Geological Survey (USGS). 1985 Provisional data for Alaska: Water year 1985. Anchorage, Alaska.

8.0 CONTRIBUTORS

Adult Anadromous (AA) Project Leader	Bruce Barrett
AA Assistant Project Leader	Mike Thompson
Graphics	Roxann Peterson Carol Hepler Bob Wilkey
Typing	Bobbie Greene Anneliese Kohut
Data Processing	Donna Buchholz Kristine Roseland Kim Levesque
Data Collection	Bill Bale Susan Bulkow John Nelson Don Perrin Kristine Roseland Dan Salmon
Text	Kim Levesque Don Seagren
Editors	Bruce Barrett Mike Thompson Susan Wick

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10.0 APPENDICES

10.1 Appendix A: Site descriptions and maps of mainstem and slough salmon spawning areas located in the Lower Susitna River between RM 28.0 and RM 98.6 in 1984.

10.2 Appendix B: Habitat descriptions, site maps and adult salmon usage for stream interface reaches in the Lower Susitna River between RM 28.0 and RM 98.6 in 1984.

10.3 Appendix C: Survey counts of adult salmon in sloughs between Susitna RM 28.0 and 98.6 in 1984.

10.4 Appendix D: Index counts of adult salmon in streams between Susitna RM 28.0 and 98.6 in 1984.

10.5 Appendix E: Habitat data collected at stream interface reaches between Susitna RM 28.0 and 98.6 in 1984.

APPENDIX A

Site descriptions and maps of mainstem and slough salmon spawning areas located in the Lower Susitna River between RM 28.0 and RM 98.6 in 1984.

The following salmon spawning site descriptions are those located during 1984. They are ordered starting with the downstream most spawning site and moving upstream.

RM 57.0R

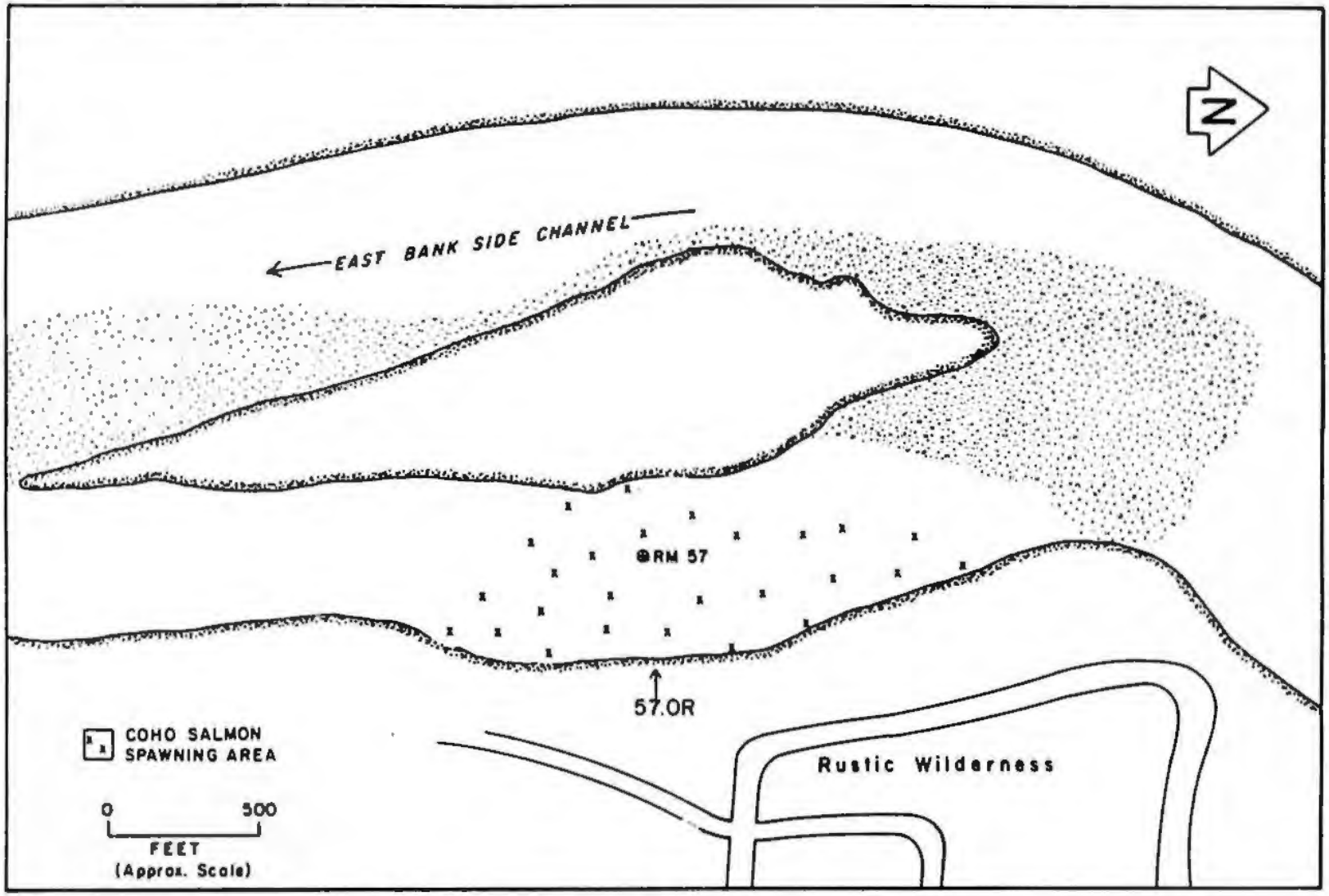
This is a slough spawning site located adjacent to the East Bank Side Channel near the Rustic Wilderness subdivision (Appendix Figure A-1). It is the only slough site to be utilized by coho salmon. A survey on October 13, 1984 located six live coho salmon and nine redds. Based on the number of redds, this site was probably used by more salmon than were counted. Upwelling was present throughout the spawning site.

RM 62.1R

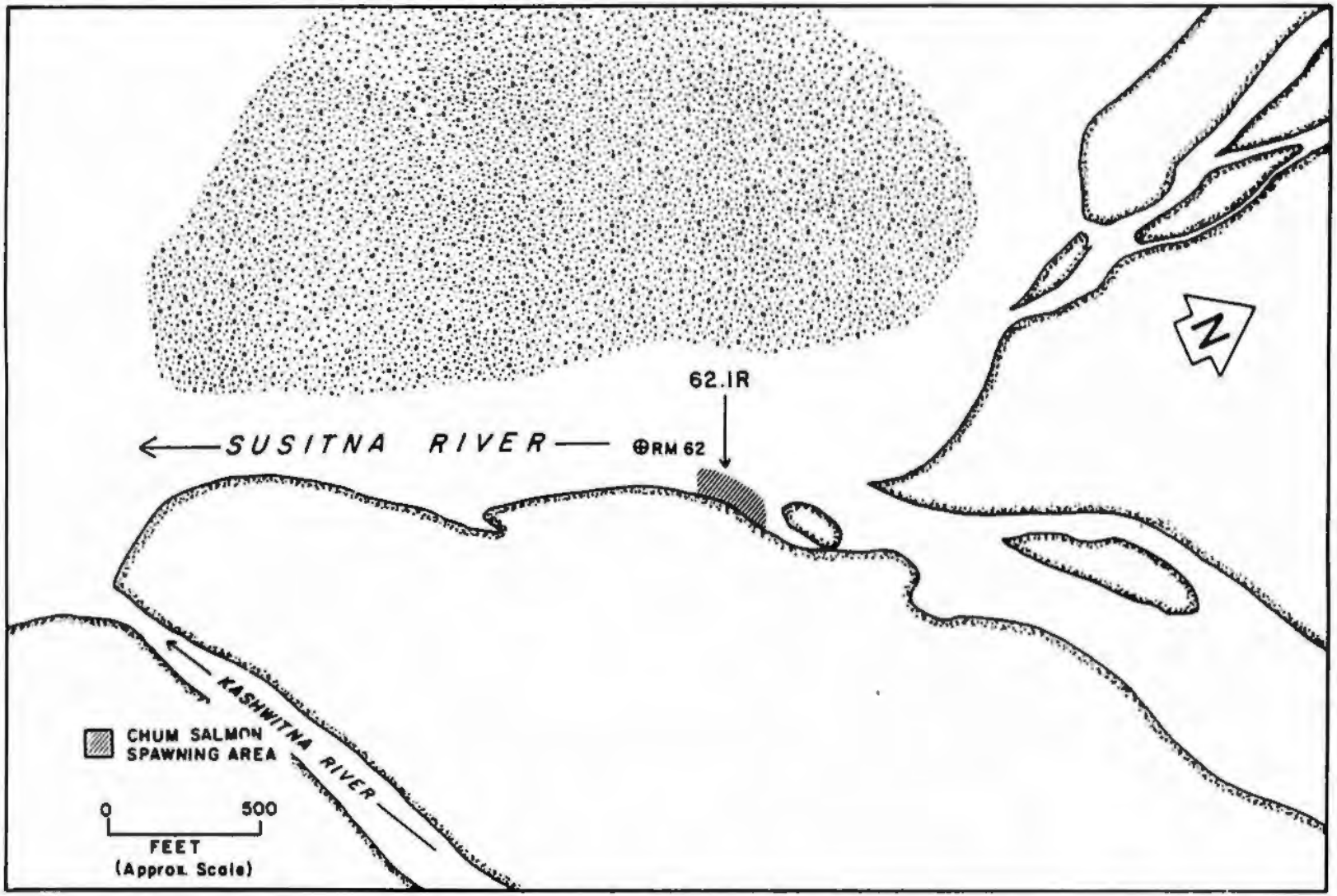
This mainstem spawning site was observed immediately downstream of the mouth of Caswell Slough (Appendix Figure A-2). This site is separated from the main channel at low discharges by an exposed gravel bar. A survey on October 9, 1984 identified five redd sites with two live and six dead chum salmon. Upwelling was also observed. The upwelling observation coincides with the open lead observations made in this area by R&M Consultants, Inc. on March 18, 1983 (Coffin, 1983).

RM 63.2R

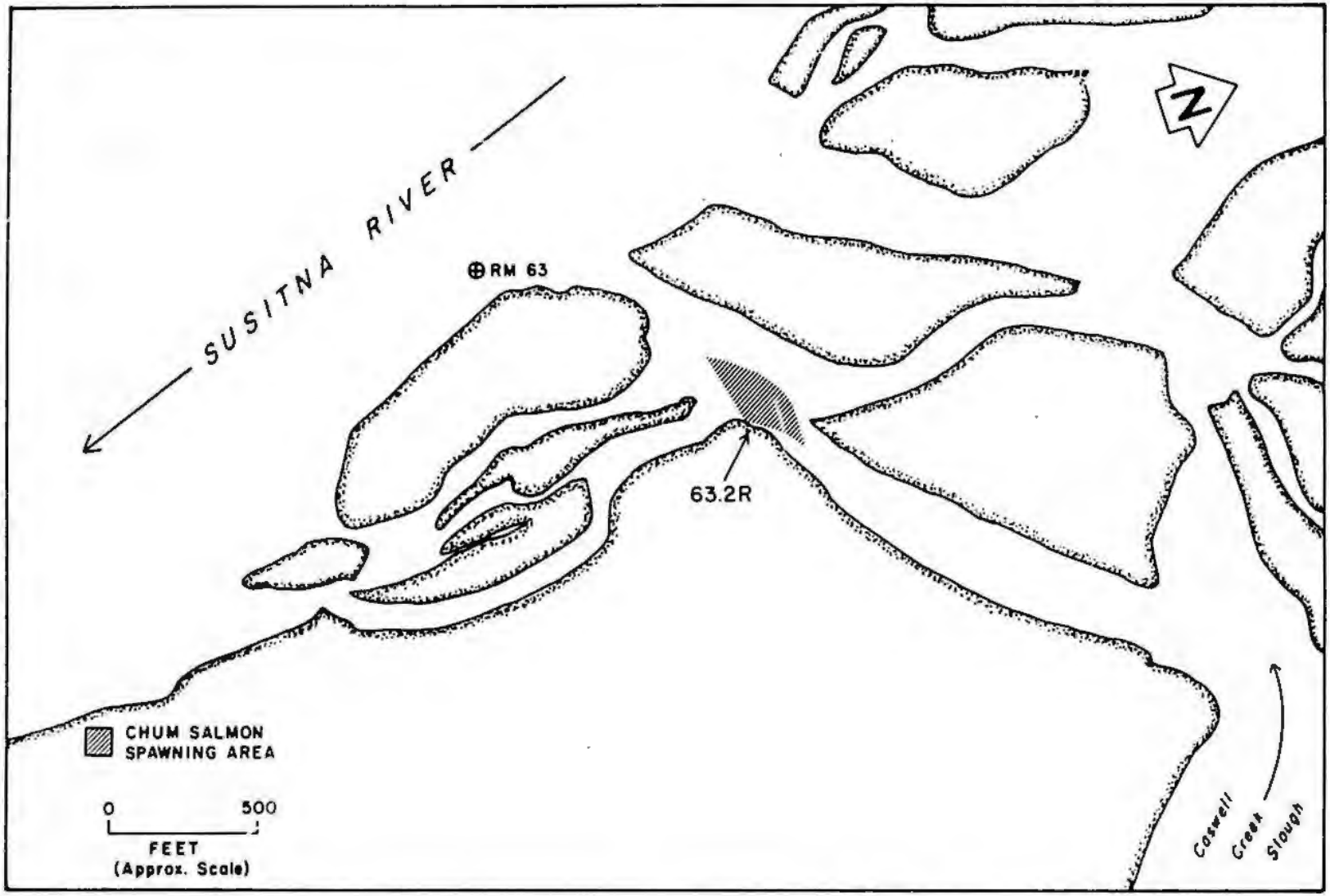
This is a minor slough spawning site located near the mouth of Caswell Creek Slough (Appendix Figure A-3). Four live chum salmon and three redds



Appendix Figure A-1. Coho salmon slough spawning site at RM 57.0R in the lower Susitna River, 1984.



Appendix Figure A-2. Chum salmon mainstem spawning site at RM 62.1R in the lower Susitna River, 1984.



Appendix Figure A-3.Chum salmon slough spawning site at RM 63.2R in the lower Susitna River, 1984.

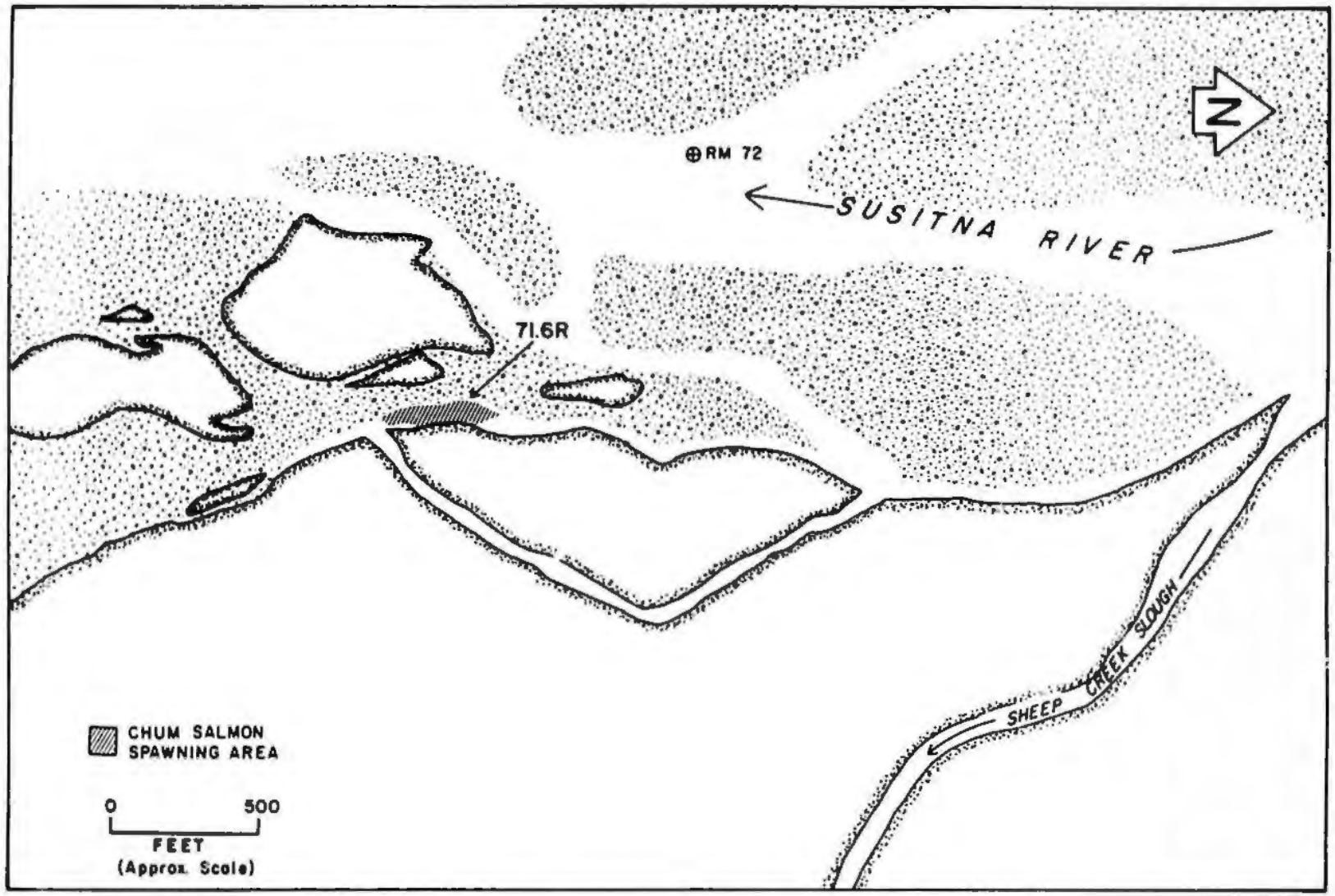
were observed during a survey conducted on October 11, 1984. Upwelling was observed in the vicinity of the spawning area. The influence of Caswell Creek Slough may also have had an influence on fish selecting this as a spawning site.

RM 71.6R

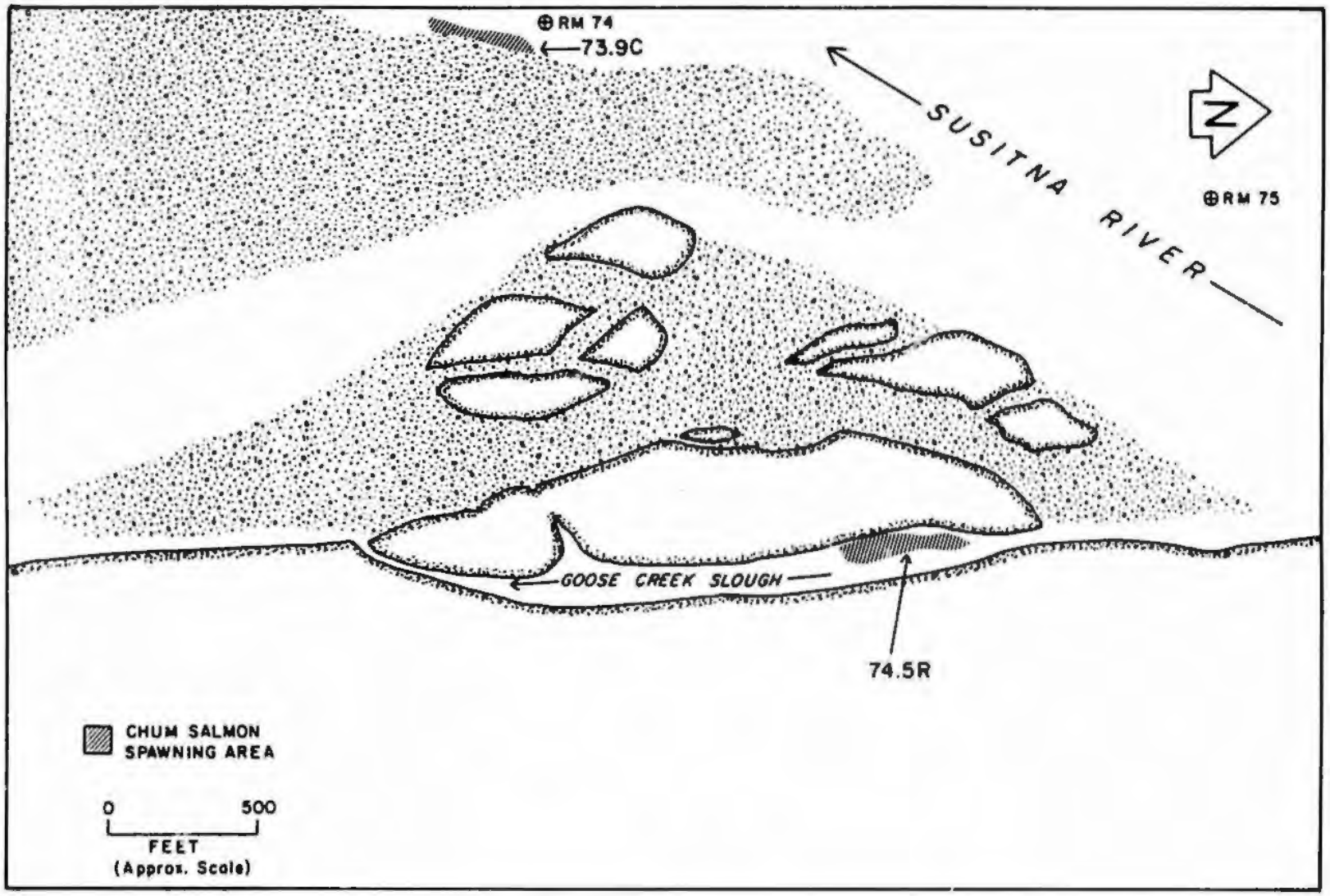
Twelve redds were observed at RM 71.6R on October 9, 1984 (Appendix Figure A-4). These redds were assumed to be chum salmon redds. No live fish were observed but eight dead chum salmon were in this vicinity. This side channel site, located near the head of Sheep Creek Slough, is separated from the main channel Susitna River by gravel bars that are exposed at low discharges. Bank seepage was observed at this site.

RM 73.9C

A main channel chum salmon spawning site was located at RM 73.9C, near Goose Creek Slough (Appendix Figure A-5). It is located in the center of the channel on a gravel bar disected by the mainstem Susitna River. Only small portions of this complex are vegetated, indicating frequent inundation by the mainstem. A survey conducted on September 25, 1984 found seven redd sites and three dead chum salmon. The number of redds indicates that the site was utilized by a greater number of salmon than were observed. The R&M survey indicates an open lead in this area. No upwelling was observed in this site. No observed upwelling and the site being directly on the mainstem indicates that the open lead may be velocity related.



Appendix Figure A-4. Chum salmon mainstem spawning sites at RM 71.6R in the lower Susitna River, 1984.



Appendix Figure A-5. Chum salmon mainstem and slough spawning sites between RM 74.0 and RM 75.0 in the lower Susitna River, 1984.

RM 74.5R

This site is located at the upper end of Goose Creek Slough (Appendix Figure A-5). It is a chum salmon spawning site with twelve redds counted during a survey on October 8, 1984. While no upwelling was observed, the area has open leads, indicating the presence of upwelling.

RM 79.2L

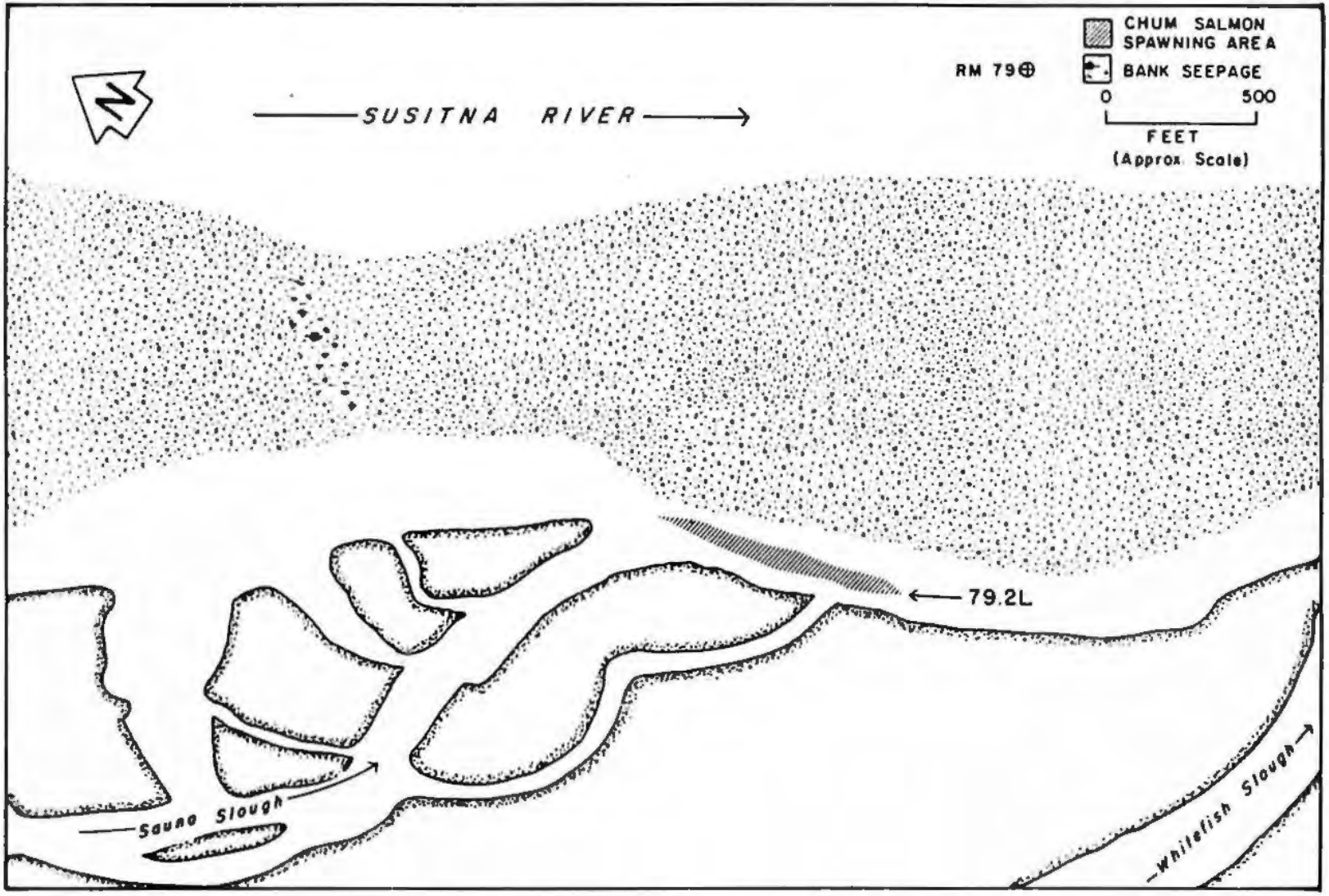
Site 79.2L is a chum salmon spawning location off the mouth of Sauna Slough (Appendix Figure A-6). The site is separated from the mainstem by a sparsely vegetated gravel bar. Seven redds and 18 chum salmon were observed on October 8, 1984. The area has an open lead and bank seepage was observed approximately one half mile upstream from the spawning site.

RM 87.0R

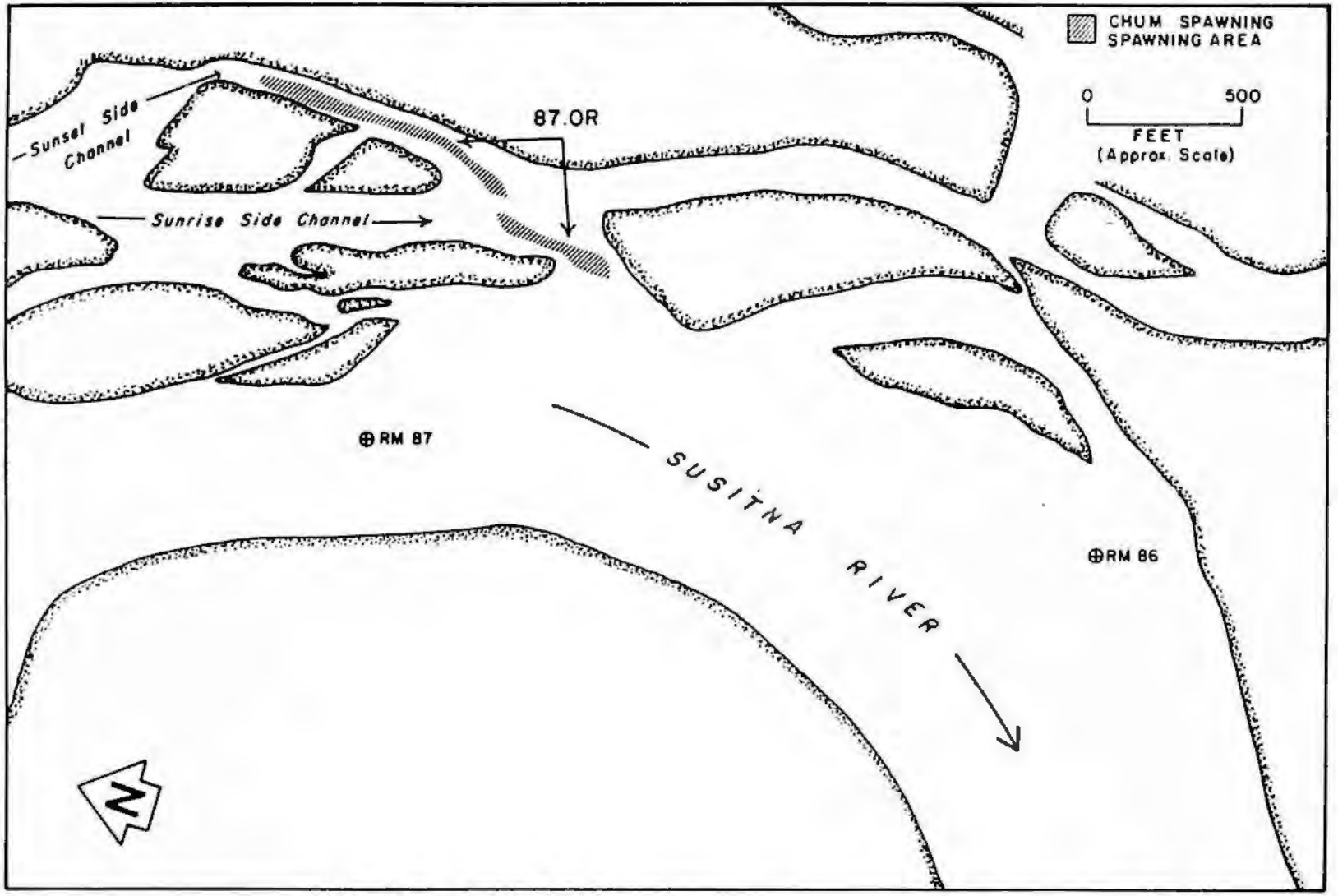
This site is located in the Sunrise - Sunset Side Channel area (Appendix Figure A-7). It had the second highest usage by chum salmon of all mainstem sites found in 1984. This high usage is reflected in peak live salmon counts of 173 fish and 48 redds observed. Numerous open leads were observed in the area indicating possible presence of upwelling.

RM 87.5R

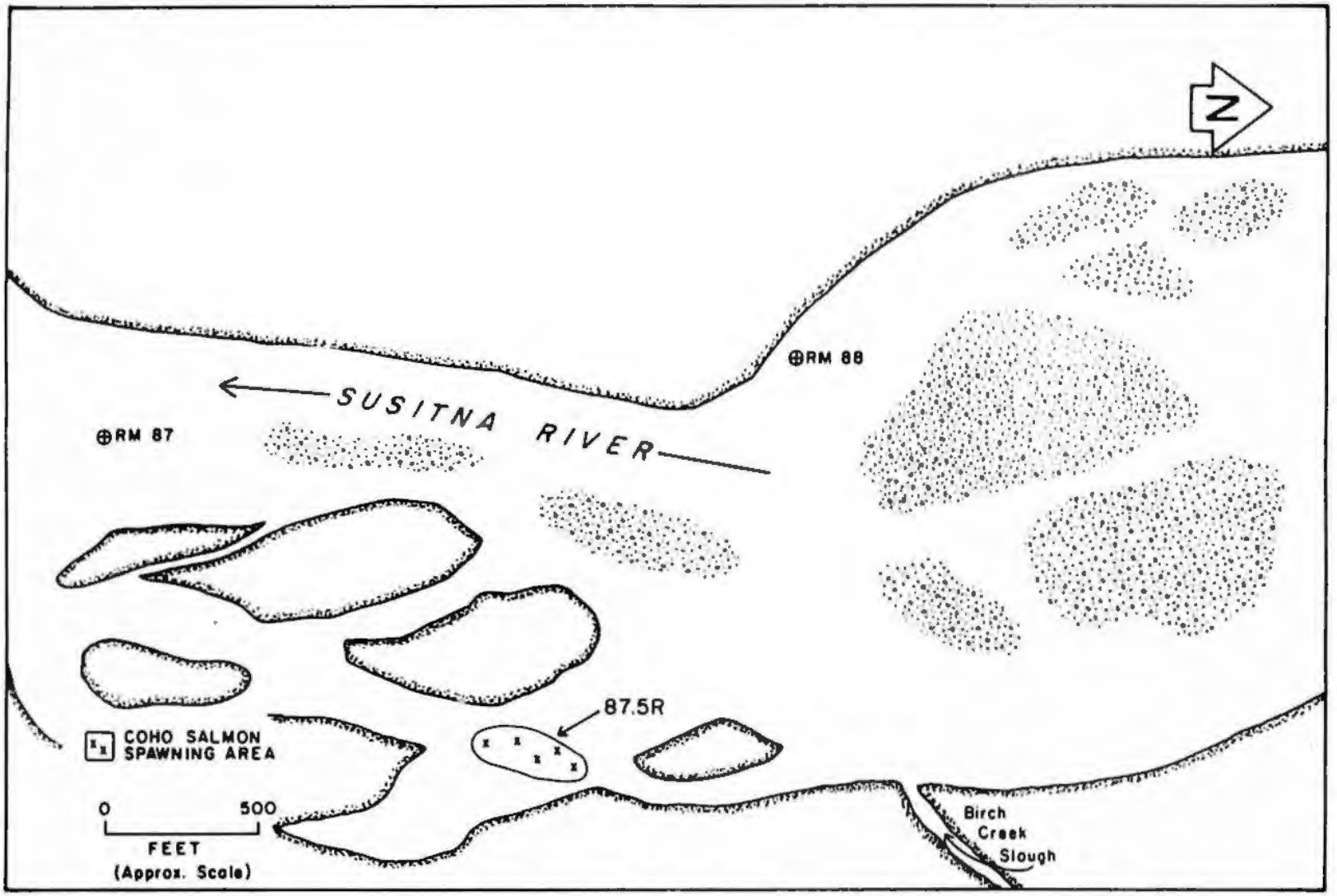
The upper Sunset Side Channel was utilized by a small number of coho salmon (Appendix Figure A-8). Five coho salmon and three redds were



Appendix Figure A-6. Chum salmon mainstem spawning site at RM 79.2L in the lower Susitna River, 1984.



Appendix Figure A-7. Chum salmon mainstem spawning site at RM 87.0R in the lower Susitna River, 1984.



Appendix Figure A-8. Coho salmon mainstem spawning site at RM 87.5R in the lower Susitna River, 1984.

observed at this site on September 25, 1984. Open leads are present at this site. The open leads may be due to upwelling or the influence of Birch Creek Slough, found immediately upstream.

RM 88.7R

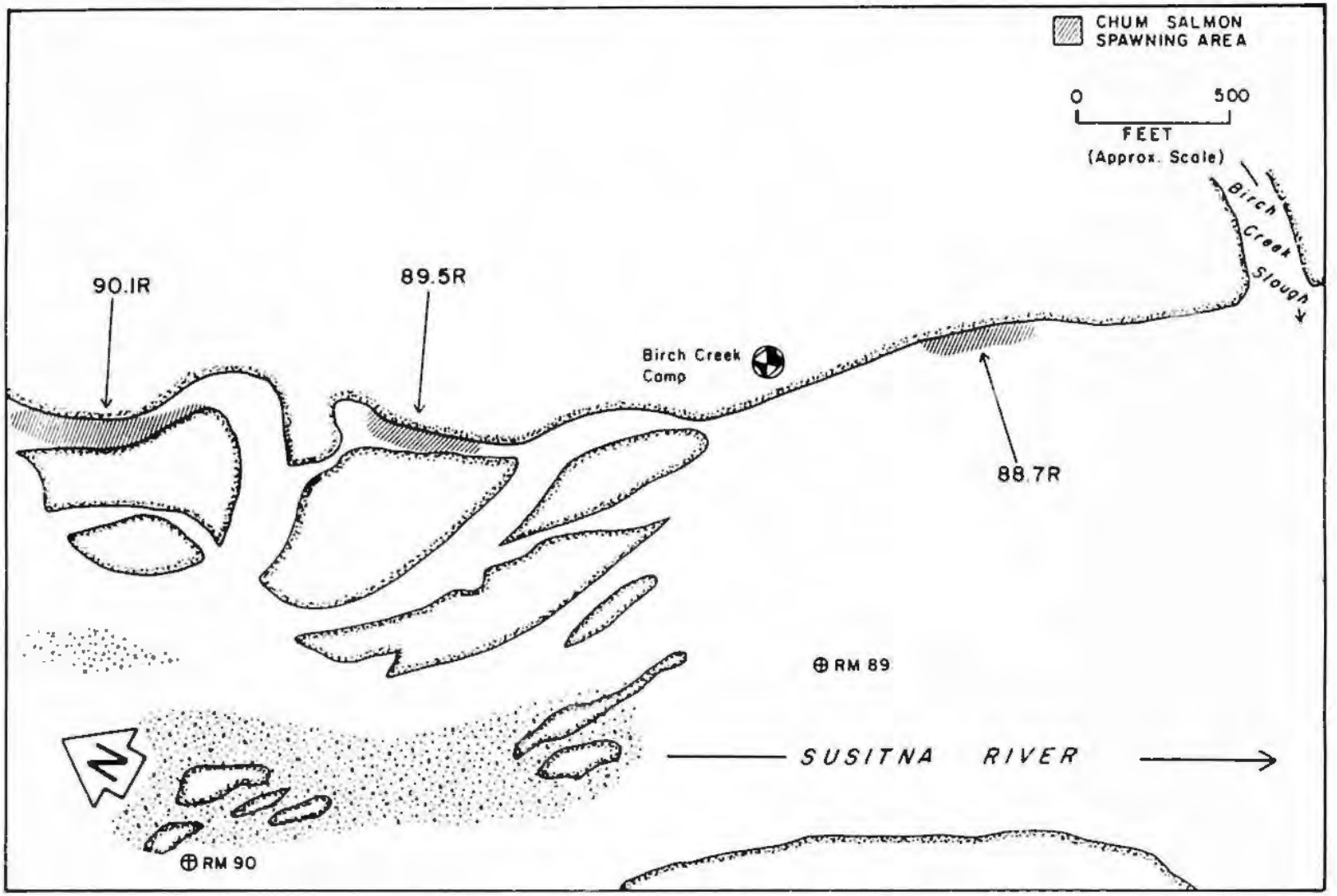
A site upstream of the mouth of Birch Creek Slough is located directly on the mainstem at RM 88.7R (Appendix Figure A-9). The adjacent bank is high and steep with bank seepage present. Twenty three chum salmon and eleven redds were observed during a survey conducted on October 9, 1984.

RM 89.5R

This slough spawning site utilized by chum salmon is located approximately one mile upstream of the mouth of Birch Creek Slough (Appendix Figure A-9). Peak counts of twelve chum salmon and four redds were observed on October 9, 1984. While no upwelling was observed in this specific site, bank seepage was observed in chum salmon spawning sites located upstream and downstream of this site.

RM 90.1R

A side channel habitat located at RM 90.1R was utilized by spawning chum salmon (Appendix Figure A-9). Bank seepage was observed during surveys of this site. A survey on October 9, 1984 observed nineteen redd and 41 chum salmon. Based on the number of redds and live fish observed this site is the third most important mainstem spawning location.



Appendix Figure A-9. Chum salmon mainstem and slough spawning sites between RM 88.0 and RM 91.0 in the lower Susitna River, 1984.

RM 92.0C-94.5L

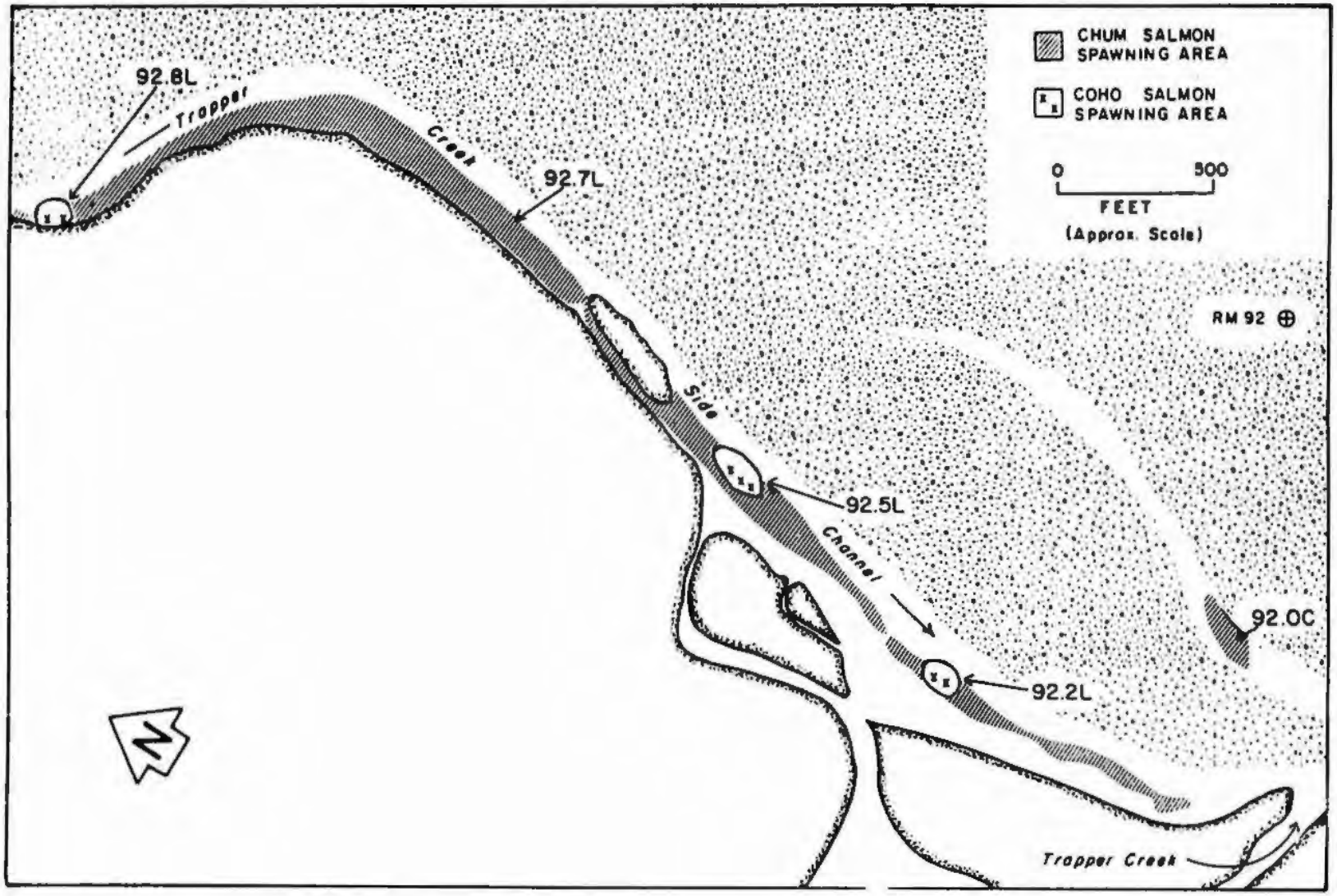
A side channel located near Trapper Creek from RM 92.0C to RM 94.5L was the most important mainstem spawning site located (Appendix Figures A-10, A-11 and A-12). The channel is located along the left bank, separated from the main channel by a broad, sparsely vegetated gravel bar. A total of 90 redds were observed at this site. Due to the overlap of areas utilized by spawning chum and coho salmon, it was impossible to differentiate redds between the species. Surveys conducted between September 23 and October 2, 1984 observed 538 live chum salmon and 75 live coho salmon. Upwelling was observed extensively throughout this site. This was the major mainstem spawning site located.

RM 95.0C

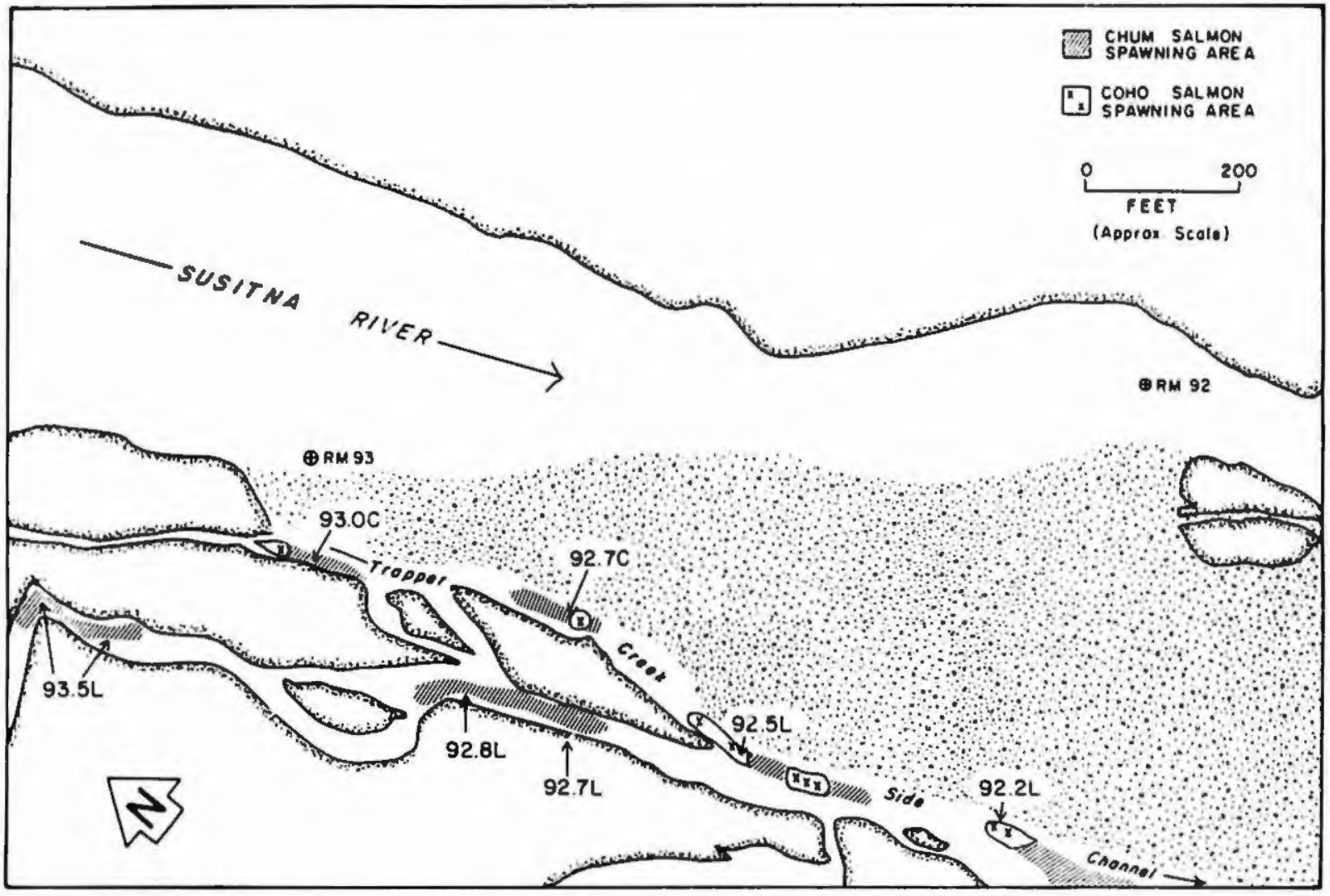
A minor chum salmon spawning site was located at RM 95.0C (Appendix Figure A-12). A single chum redd with eggs and three live chum salmon were found in a pool behind a beaver dam. Part of this area is vegetated indicating some present stability. No evidence of upwelling was observed.

RM 95.2R

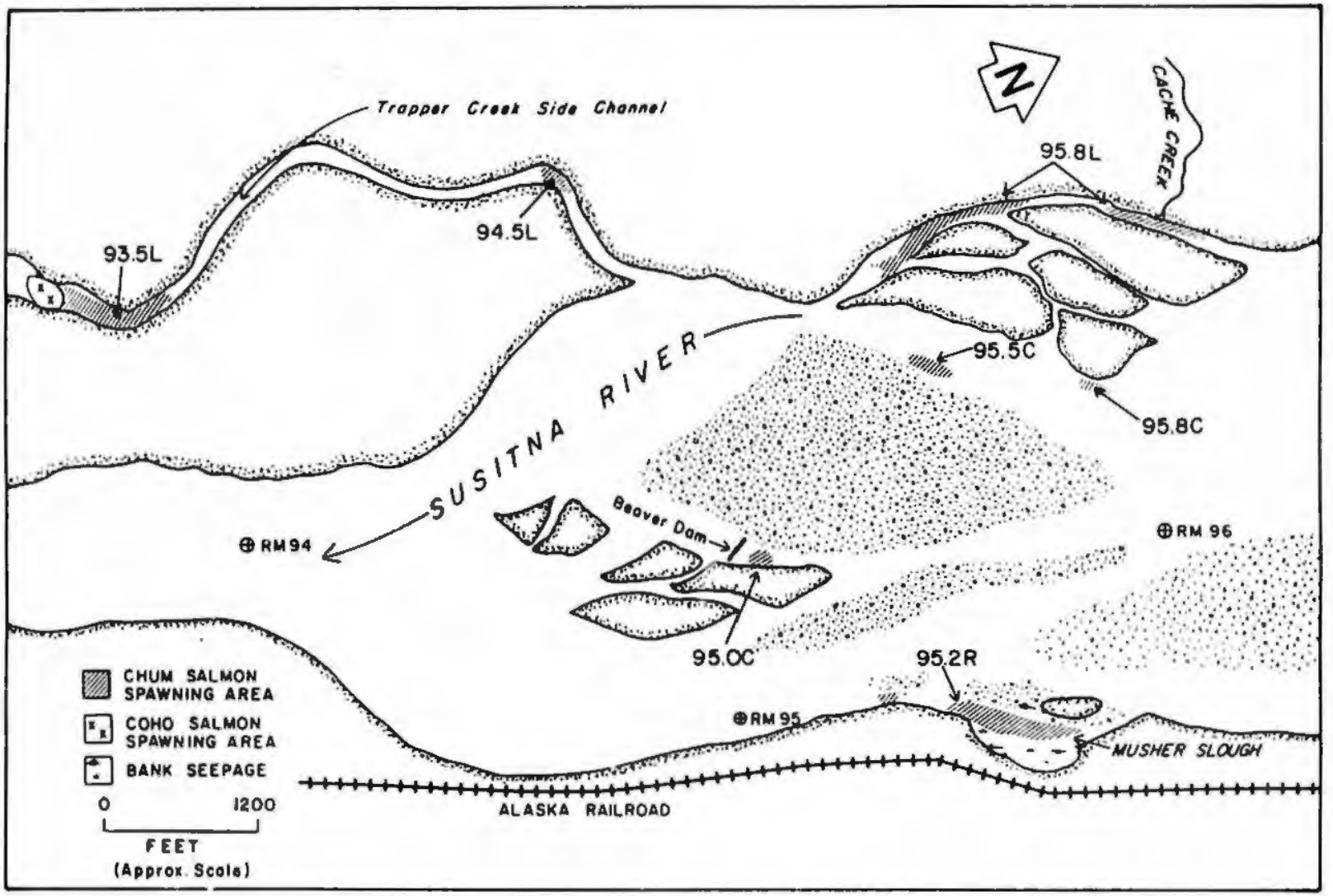
This chum salmon spawning site is located in Musher Slough (Appendix Figure A-12). It is the most important slough spawning site in this reach with 41 redds and 84 live chum salmon observed on September 18, 1984. Bank seepage was observed at this site.



Appendix Figure A-10. Chum and coho salmon mainstem spawning sites between RM 92.0 and RM 93.0 in the lower Susitna River, 1984.



Appendix Figure A-11. Chum and coho salmon mainstem spawning sites between RM 92.0 and RM 93.5 in the lower Susitna River, 1984.



Appendix Figure A-12. Chum and coho salmon mainstem and slough spawning sites between RM 93.5 and RM 96.0

RM 95.5C and RM 95.8C

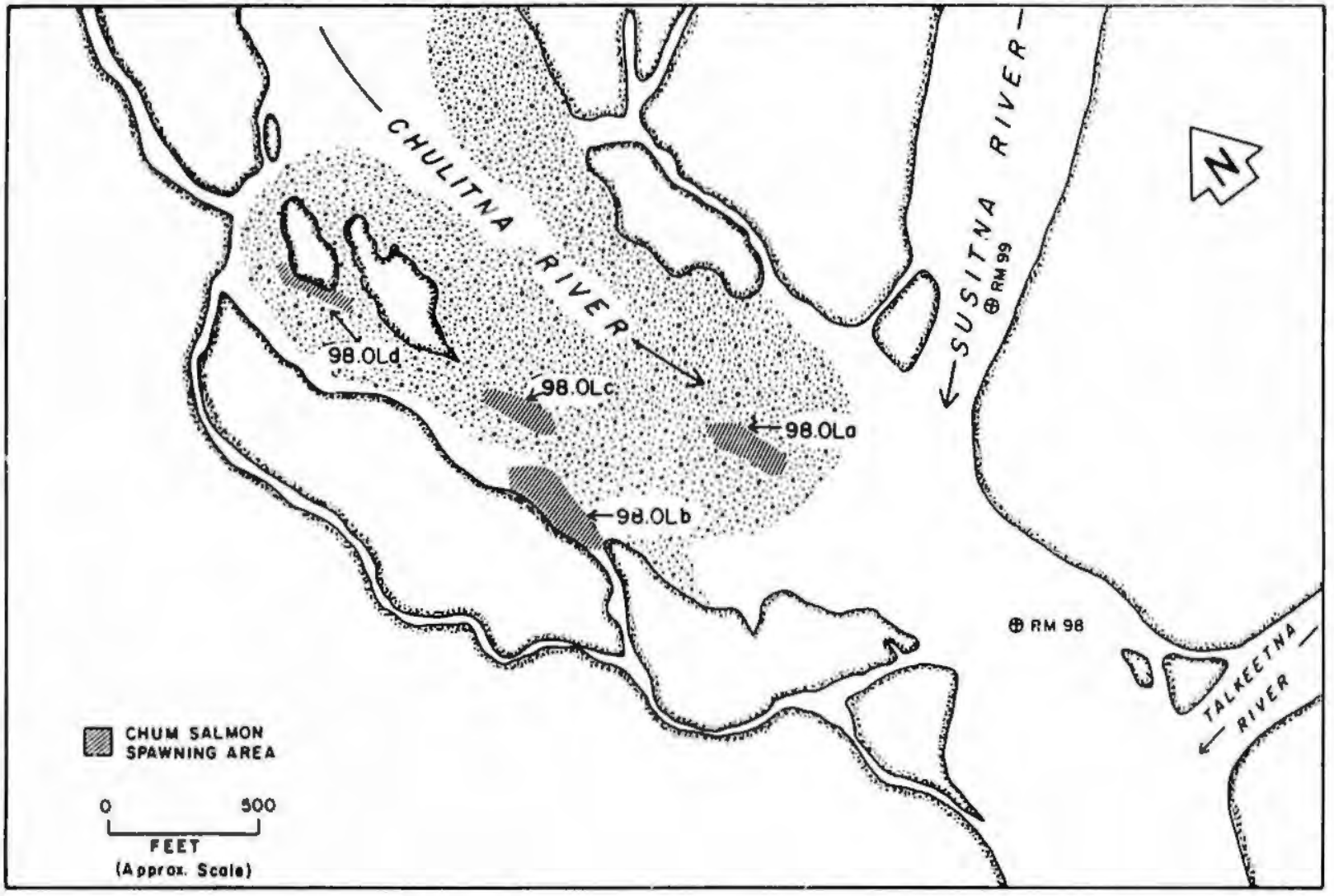
Two minor mainstem sites located at RM 95.5C and RM 95.8C (Appendix Figure A-12) were observed to have chum salmon spawning on September 27, 1984. These sites are directly on the main channel and had limited use. Data associated with these two sites was combined in the field with an adjacent slough site.

RM 95.8L

This slough site is directly across from Musher Slough (Appendix Figure A-12). It has been called Cache Creek slough since Cache Creek enters the left bank at the upper end of the slough. A survey conducted on September 27, 1984 counted 160 live chum salmon but only 4 redds. The number of live fish to number of redds ratio is low compared to other sites. The chum salmon located at this site may have been milling prior to moving to other spawning sites or may have spawned at a later date. No upwelling was observed at this site but the influence of Cache Creek may make conditions suitable for chum salmon spawning.

RM 98.0L

Four individual chum salmon spawning sites were located in the braided channels at the mouth of the Chulitna River (RM 98.0L) (Appendix Figure A-13). Collectively, this is the second most productive site located in 1984. A total of 51 redds and 116 chum salmon was observed during a survey conducted on October 9, 1984. Only one of the spawning sites had



Appendix Figure A-13. Chum salmon mainstem spawning sites at RM 98.0 in the lower Susitna River, 1984.

observed upwelling associated with it. The entire area is unstable due to yearly flood events. Sites utilized this year may be unavailable to spawning salmon in following years.

APPENDIX B

Habitat descriptions, site maps and adult salmon usage for stream interface reaches in the lower Susitna River between RM 28.0 and RM 98.6 in 1984.

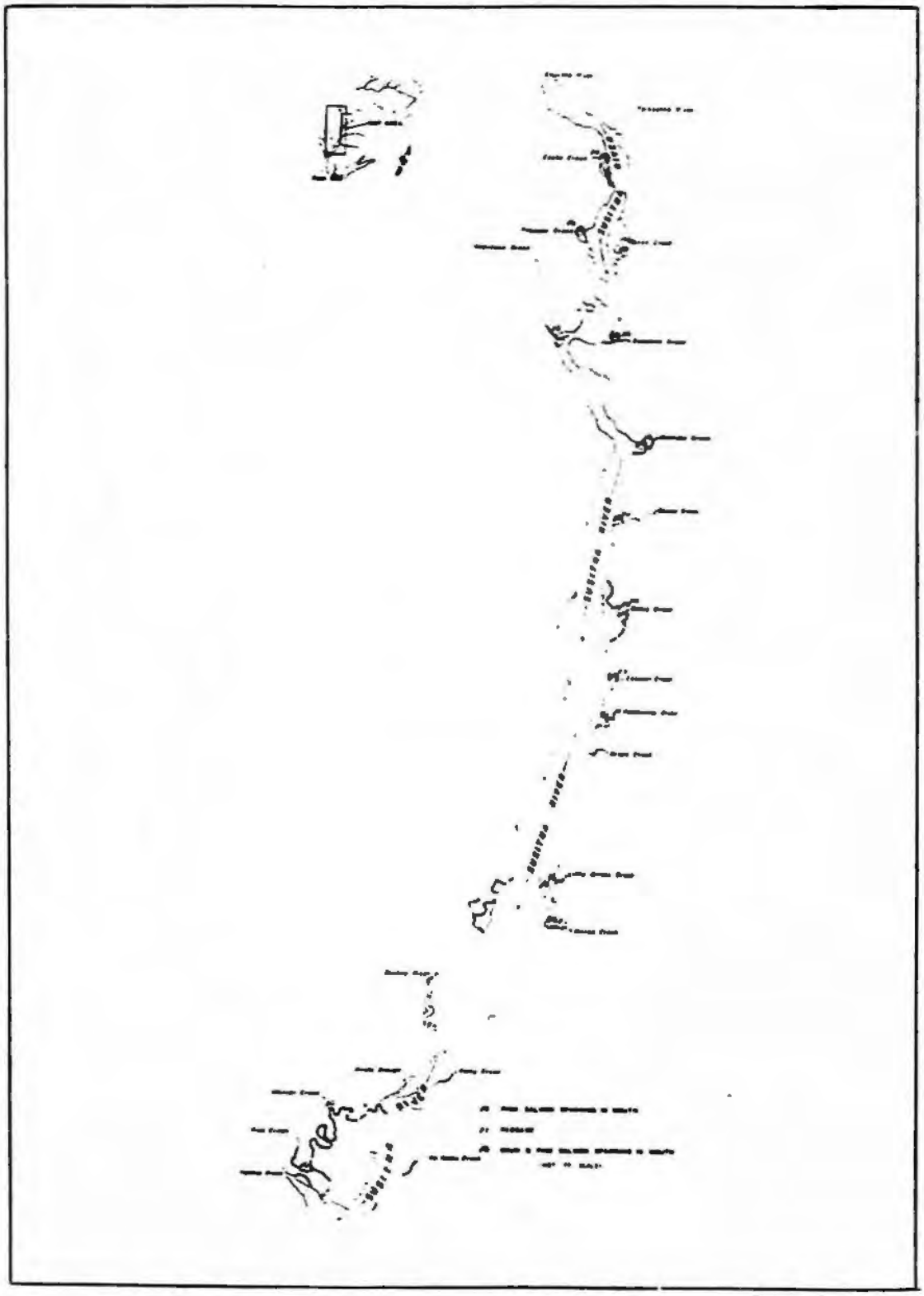
Habitat parameters of channel width, depth and substrate components were measured in the interface reach of eighteen lower Susitna River streams located between RM 28.0 and 98.6 in 1984 (Figure B-1). These data were collected at two mainstem discharges as measured by U.S. Geological Survey at the Sunshine gaging station (RM 83.9) (Appendix Table E-1). This appendix presents those findings by stream and in addition, defines individual use of the stream interface reaches for adult salmon spawning and passage.

Appendix Table B-1 summarizes the habitat and adult salmon use data for all lower Susitna River stream interfaces sampled in 1984.

FISH CREEK (RM 31.2)

Interface Reach Habitat Description

The interface reach of Fish Creek is up to 150 feet wide and ten feet deep high discharges, but the average width is less than 120 feet with average depths less than six feet (Appendix Table E-1). The primary substrate is silt-sand and the water is tannin stained (Figure B-2). At a Susitna River discharge of 43,320 cfs on August 14, 1984 there were no mainstem backwater effects observed in the stream. Susitna water was backed up into the stream interface approximately 30 feet at a mainstem discharge of 87,270 cfs on August 25. The Yentna River which influences the mouth of Kroto Slough below Fish Creek may also have affected the backwater area observed.



Appendix Figure B-1. Locations of streams in the lower Susitna River Reach (RM 28.0 to RM 98.6) and adult salmon usage for each interface reach.

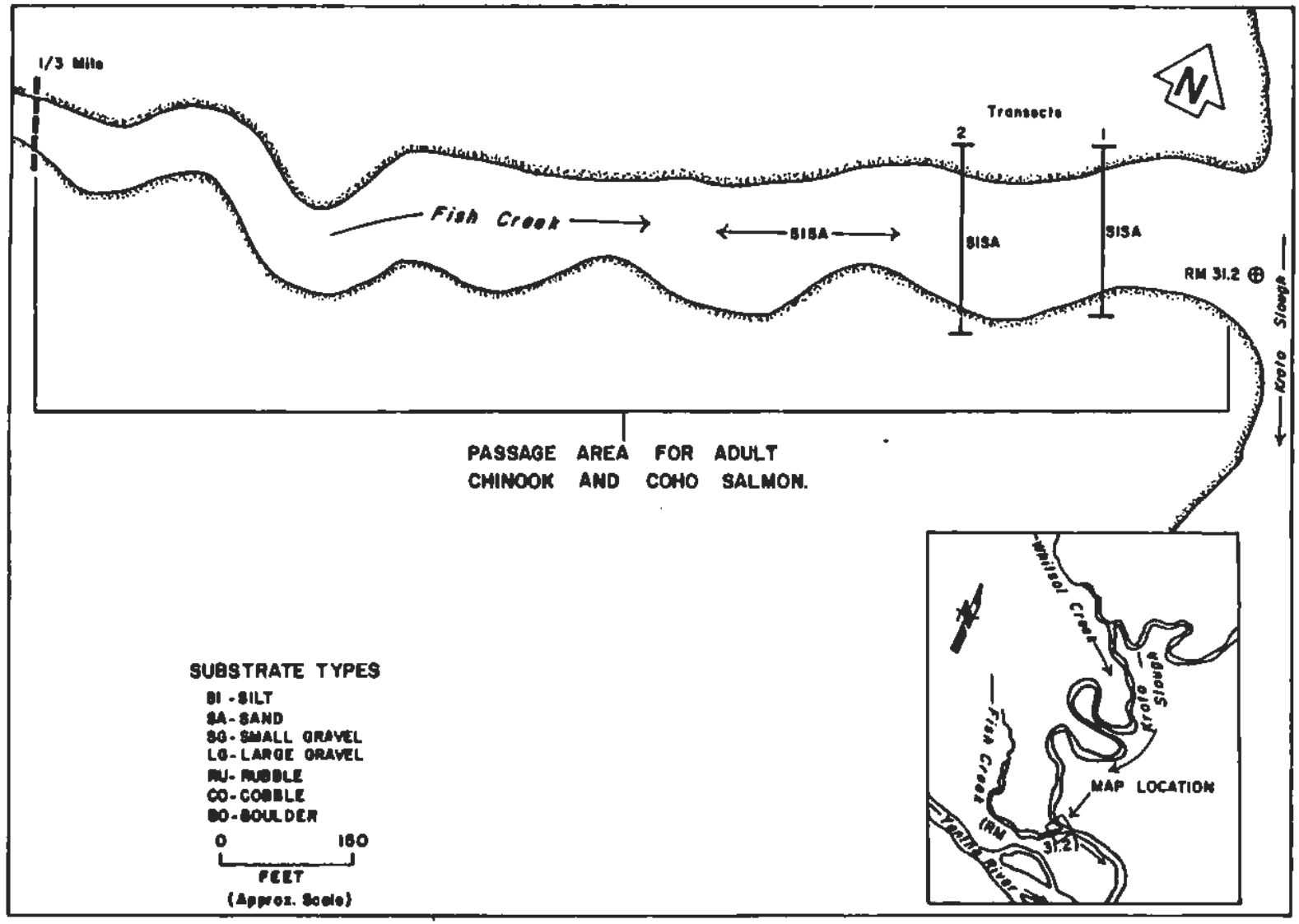
Appendix Table B-1. Summary of stream interface reach descriptions and adult salmon usage for streams between RM 28.0 and RM 98.6 of the Susitna River in 1984.

Stream	River Mile	Selected (Cross Section) Transects: Substrate Types[1]	Average[3] Depth(ft)	Average[3] Width(ft)	Adult Salmon Use[2]: Chinook	Sockeye	Pink	Chum	Coho
Fish	31.2	SISA	3.2	120	P	P			
Noname	31.7	SISA	2.1	50					
Whitsol	35.2	SISA	1.7	140		P			P
Rolly	39.0	SISA	3.2	70					
Deshka	40.6	SISA	6.0	200	P	P	P	P	P
Willow	49.1	LGRU	4.0	50		P	P,S	P,S	P
Little Willow	50.5	RULG	1.4	70	P	P	P,S	P	P
Gray's	59.5	SISA	3.0	60	P		P		
Kashwitna	61.0	RUCO	6.0	100			P		
Caswell	64.0	LGRU	3.1	70	P	P	P,S	P,S	P
Sheep	66.1	SGLG	4.0	150		P	P,S	P	P
Goose	74.0	SGLG	1.6	50	P	P	P,S	P	P
Montana	77.0	RULG	1.6	60	P		P,S	P,S	P
Rabideux	83.1	SISA	3.6	140	P	P	P	P	P
Sunshine	85.1	RULG	2.3	45	P	P	P,S	P,S	P
Birch	89.2	SGLG	1.0	60	P	P	P,S	P	P
Trapper	91.5	RULG	1.2	30	P	P	P,S	P,S	P
Cache	95.5	SGLG	1.2	45		P	P,S	P	P

1/ SI (silt), SA (sand), SG (small gravel), LG (large gravel), RU (rubble), CO (cobble), BO (boulder).

2/ P = Passage; S = Spawning

3/ Average depths and widths at Susitna mainstem discharges between 43,320 and 48,900 cfs measured at USGS gaging station RM 83.9



Appendix Figure B-2. Fish Creek (RM 31.2) interface reach with transects, substrates and adult salmon usage indicated.

Adult Salmon Use

Salmon spawning did not occur in the interface reach of Fish Creek (RM 31.2) between July 21 and October 17, 1984 as determined by repeated ground and aerial surveys. Two (1984) cross section transects revealed bed composition mainly of silts and sands which indicated unsuitable salmon spawning habitat (Appendix Figure B-2). The interface reach is a passage area for chinook and coho salmon spawning in upstream habitats (ADF&G, 1984).

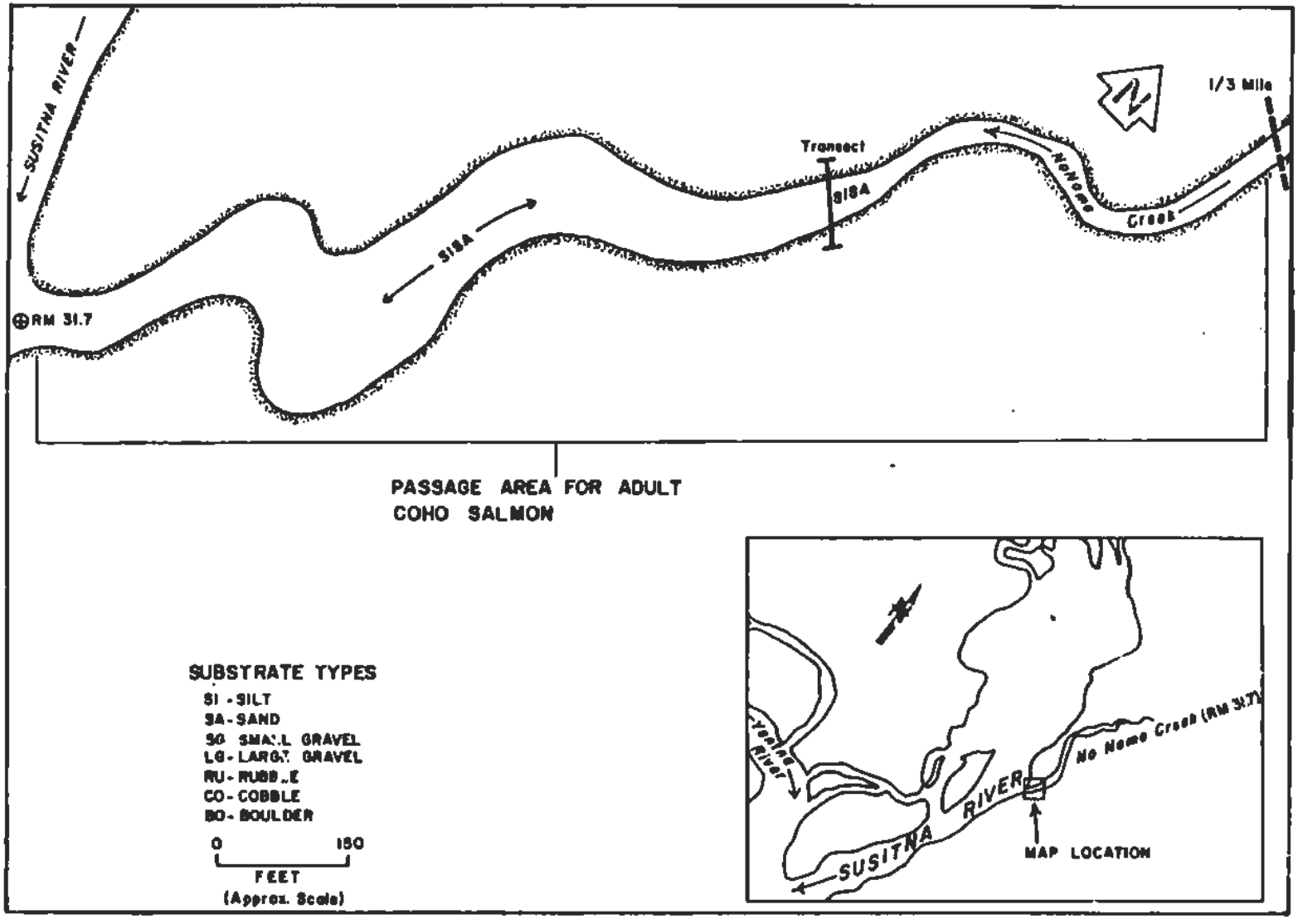
NO NAME CREEK (RM 31.7)

Interface Reach Habitat Description

The interface reach of No Name Creek was typically 50 feet across with average depth of two feet expanding to 95 feet and depths of 7.5 feet at higher Susitna River discharges (110,600 cfs) (Appendix Table E-1). Streambed substrates in the mouth area are silt-sand and the water is tannin (Appendix Figure B-3). At Susitna River discharges of 110,600 cfs (August 26) at Sunshine Station, Susitna water backed up into the interface reach approximately 200 feet.

Adult Salmon Use

Repeated ground and aerial surveys determined salmon spawning did not occur in the interface reach of No Name Creek between July 21 and October 17, 1984. A cross section transect revealed a streambed substrate composition mainly of silts and sands which indicates



Appendix Figure B-3. No name Creek(RM 31.7) interface reach with transect, substrates and adult salmon usage indicated.

unsuitable salmon spawning habitat (Appendix Figure B-3). The interface reach is a passage area for coho salmon spawning in upstream habitats (ADF&G, 1984).

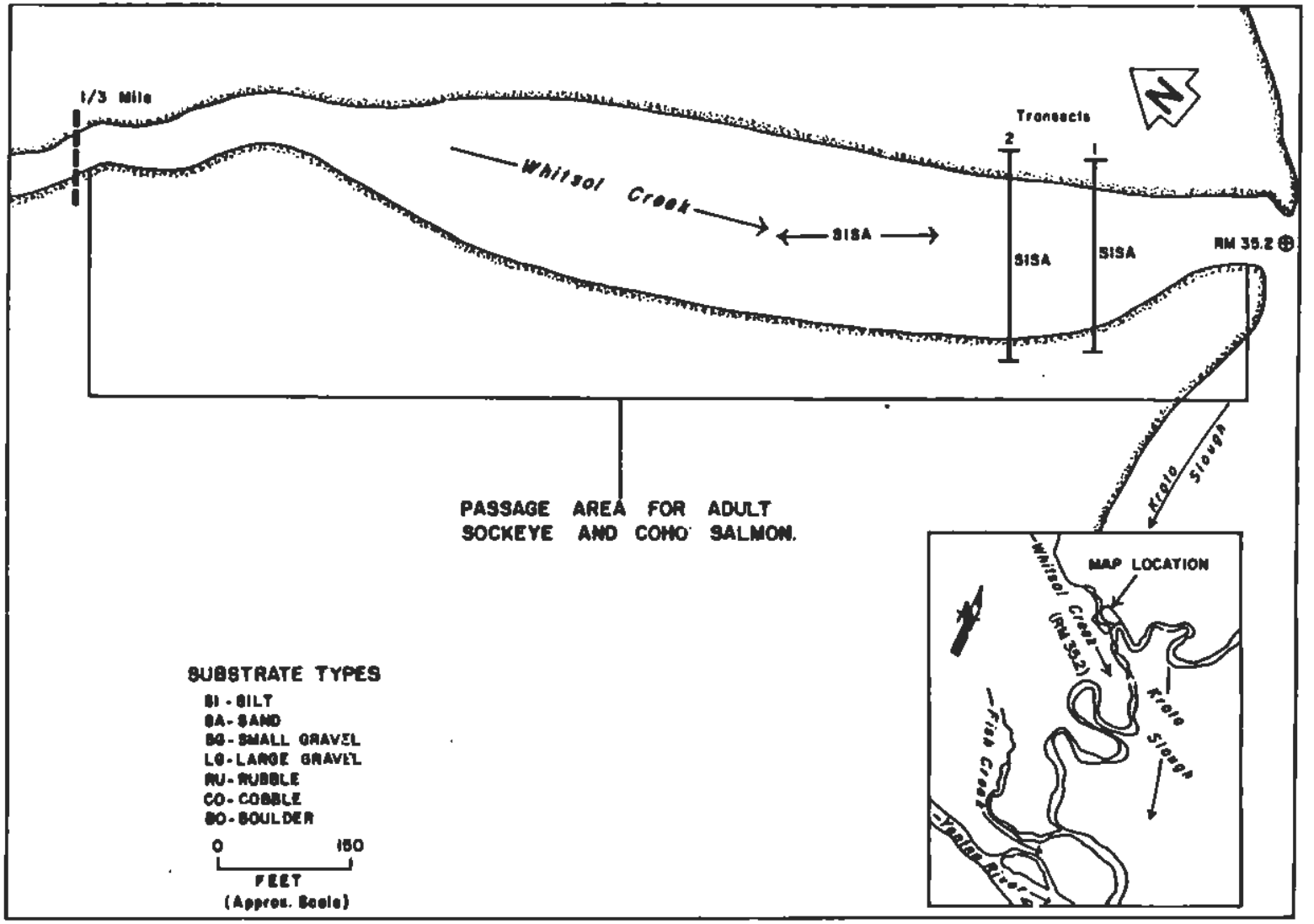
WHITSOL CREEK (RM 35.2)

Interface Reach Habitat Description

The interface reach of Whitsol Creek is up to 160 feet wide and as deep as six feet at high discharges. The average width is less than 140 feet with depths less than two feet (Appendix Table E-1). Water is tannin stained and visibility is poor. Streambed substrates have greater than six inches of silt and sand (Appendix Figure B-4). At a mainstem discharge of 43,320 cfs at Sunshine Station on August 14, 1984 there were no mainstem backwater effects in the mouth, however, on August 25 at a discharge of 87,370 cfs mainstem water backed up 230 feet into the creek.

Adult Salmon Use

The interface reach of Whitsol Creek was not used for salmon spawning between July 21 and October 17, 1984, as determined by repeated ground and aerial surveys. Two cross section transects revealed a streambed composition mainly of silts and sands indicating unsuitable salmon spawning habitat (Appendix Figure B-4) (ADF&G, 1983b). The interface reach is a passage area for sockeye and coho salmon spawning in upstream habitats.



Appendix Figure B-4. Whitsol Creek (RM 35.2) interface reach with transects, substrates and adult salmon usage indicated.

DESHKA RIVER (RM 40.6)

Interface Reach Habitat Description

The Deshka River is several hundred feet wide and over six feet deep in the interface reach. Primary substrates are silts and sands and the water is tannin stained. Transect data was not collected in this site.

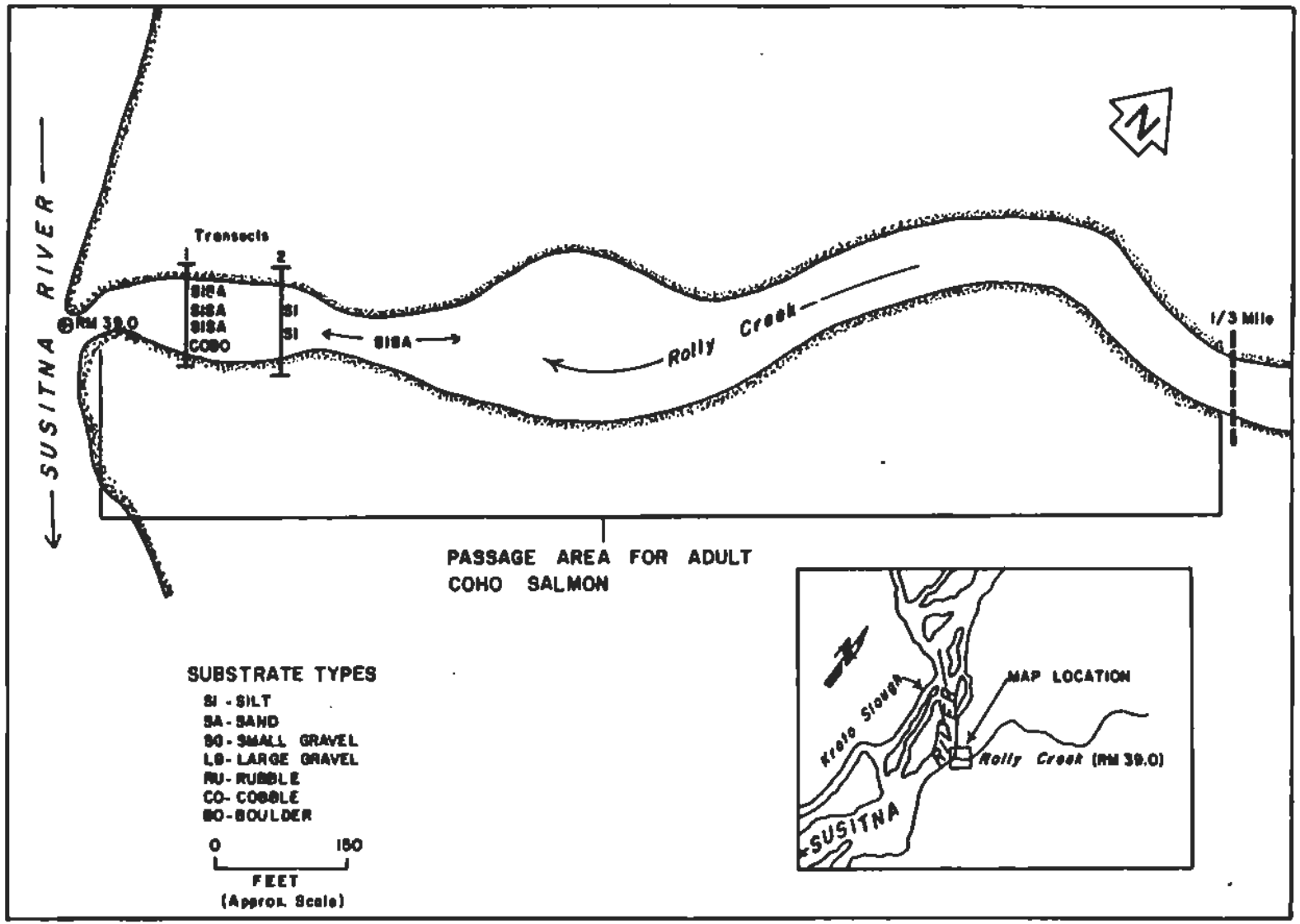
Adult Salmon Use

Repeated ground and aerial surveys determined salmon spawning did not occur in the interface reach of the Deshka River (RM 40.6). General substrate evaluations revealed the streambed composition is mainly silts and sands which indicate unsuitable salmon spawning habitat (ADF&G, 1983b). The interface reach is a passage reach for chinook, sockeye, pink and coho salmon spawning in upstream habitats (ADF&G, 1984).

ROLLY CREEK (RM 39.0)

Interface Reach Habitat Description

Rolly Creek is approximately 70 feet across and generally less than six feet deep in the mouth area (Appendix Table E-1). Water is tannin stained and visibility poor. The primary substrate is silt-sand greater than six inches deep (Appendix Figure B-5). There were no mainstem backwater effects to the interface reach at a mainstem discharge of 43,320 cfs on August 14, 1984. At a mainstem discharge of 110,600 cfs on August 25, the creek was inaccessible due to a log jam at its mouth.



Appendix Figure B-5. Rolly creek (RM 39.0) interface reach with transects, substrates and adult salmon usage indicated.

Adult Salmon Use

Salmon spawning did not occur in the interface reach of Rolly Creek (RM 39.0) between July 21 and October 17, 1984. Two 1984 cross-section transects revealed streambed composition primarily of silts and sands indicating unsuitable salmon spawning habitat (Figure B-5) (ADF&G, 1983b). The interface reach is a passage area for chinook and coho salmon spawning in upstream habitats (ADF&G, 1984).

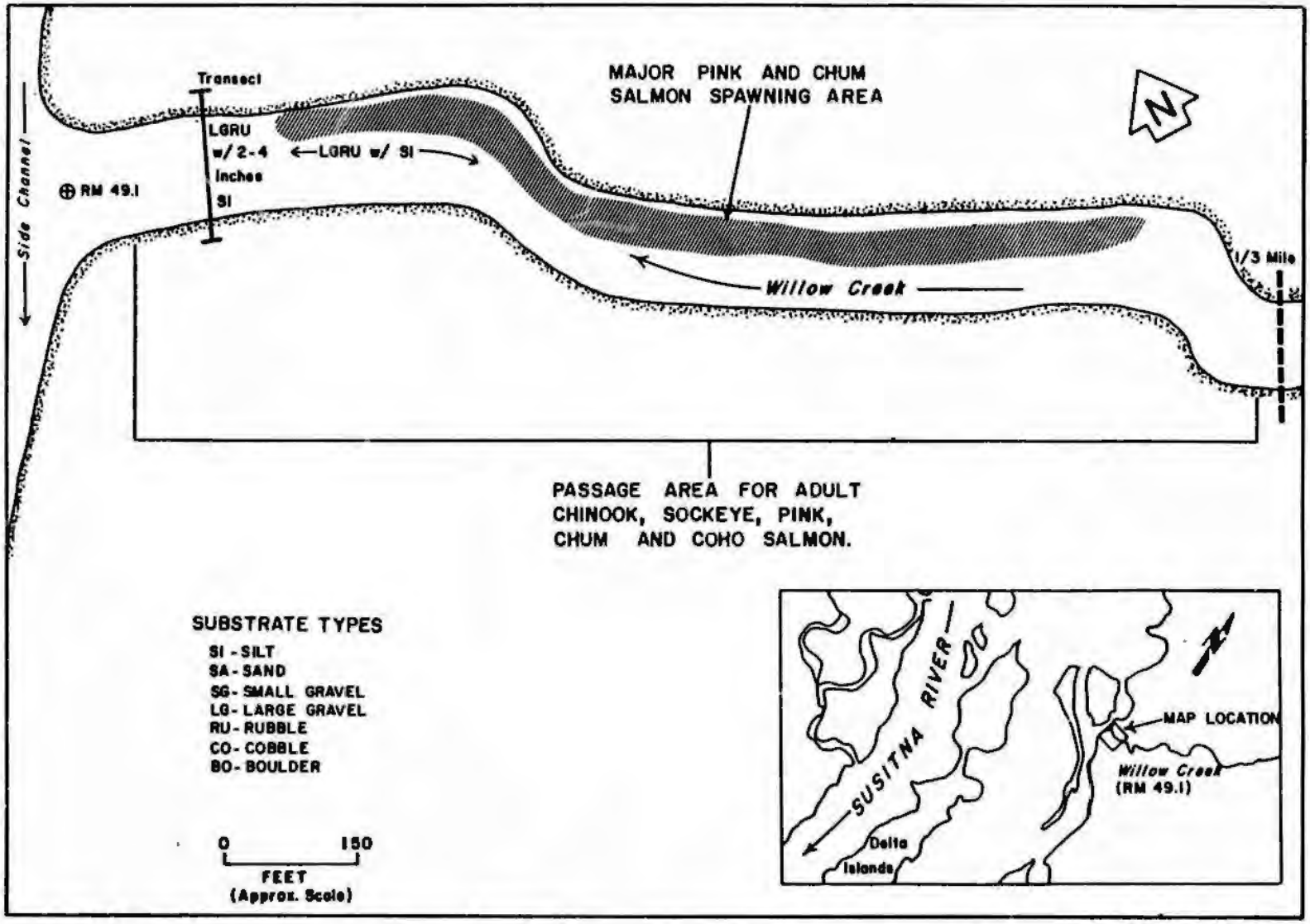
WILLOW CREEK (RM 49.1)

Interface Reach Habitat Description

The interface reach of Willow Creek is typically 50 feet across with depths of six and a half feet or less (Appendix Table E-1). Water is usually clear. Substrate is primarily gravel-rubble with two to four inches of silt overlaying suitable spawning substrate (Appendix Figure B-6). There were no mainstem backwater effects in the interface reach at mainstem discharges of 46,900 cfs (August 13, 1984) or 110,600 cfs (August 26, 1984).

Adult Salmon Use

Both pink salmon and chum salmon were observed spawning in the mouth of Willow Creek in 1984 (Appendix Figure B-6). This stream interface reach had the largest percentages of pink (48.6%) and chum salmon (49.8%) spawning of any stream interface reach. One 1984 cross-section transect revealed a streambed substrates composition primarily of large gravels



Appendix Figure B-6. Willow Creek (RM 49.1) interface reach with transect, substrates and adult salmon usage indicated.

and rubbles which are considered to be suitable salmon spawning substrates (ADF&G, 1983b). The interface reach is a passage area for chinook, sockeye, chum and coho salmon spawning in upstream habitats (Appendix Table D-1).

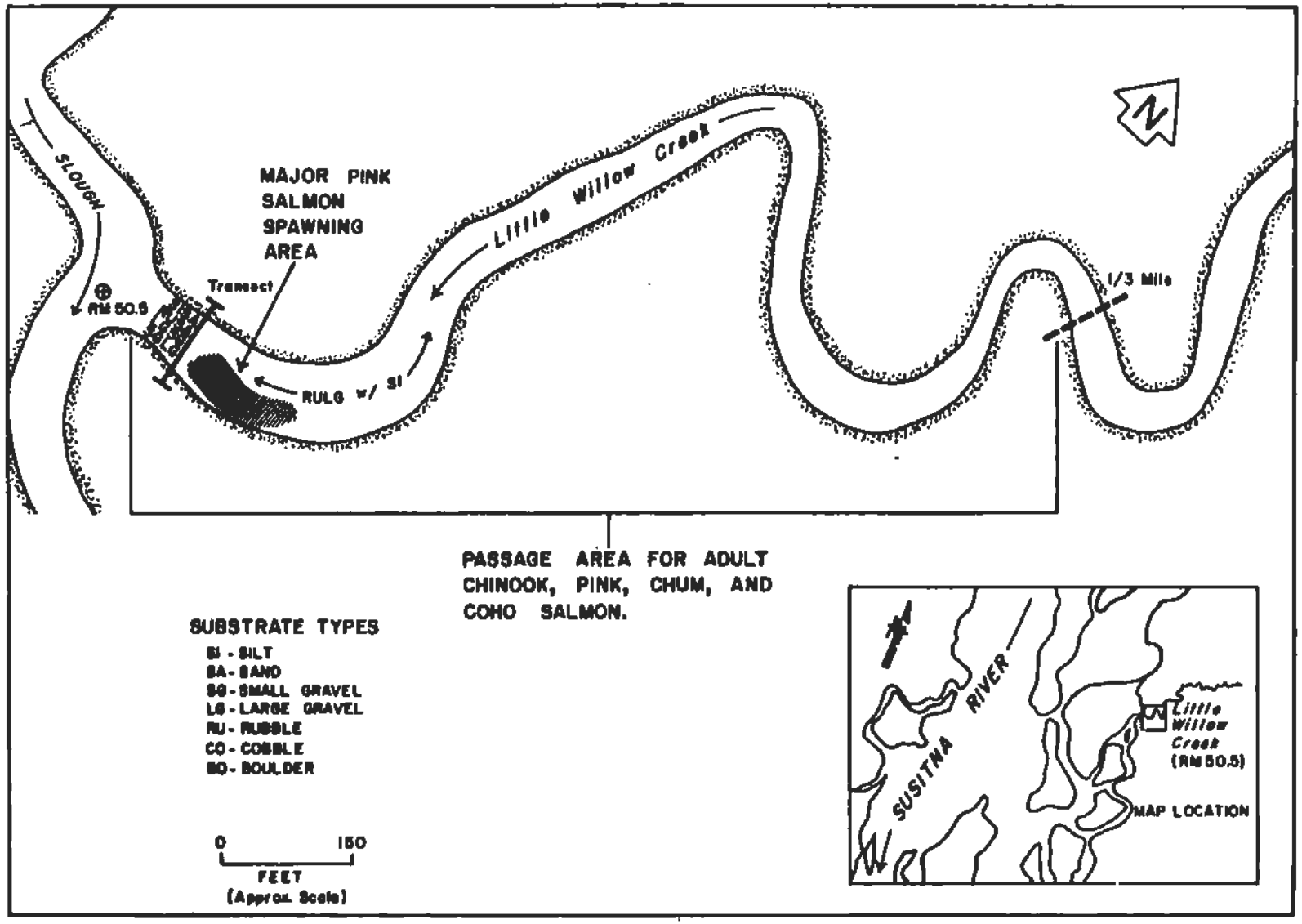
LITTLE WILLOW CREEK (RM 50.5)

Interface Reach Habitat Description

The interface reach of Little Willow Creek is approximately 70 feet wide with depths less than 2.5 feet. At high discharges widths up to 90 feet and depths up to four feet were measured (Appendix Table E-1). Streambed substrates in this area are generally rubble and large gravel with intermittent pockets of silt-sand (Appendix Figure B-7). Creek water is generally clear. At a mainstem discharge of 110,600 cfs on August 26 the creek water was turbid so it was difficult to determine the extent of mainstem backwater effects. However, due to high creek flow we estimate they were minimal or nonexistant. A slough just below the mouth carried mainstem water on both dates when habitat data was collected in interface reaches.

Adult Salmon Use

Pink salmon spawning was observed in the interface reach of Little Willow Creek in 1984 (Appendix Figure B-7). Habitat data collected at transects in the interface reach revealed a streambed substrate composition consisting mainly of rubbles and large gravels which are considered to be suitable salmon spawning substrates (ADF&G, 1983b).



Appendix Figure B-7. Little Willow Creek (RM 50.5) interface reach with transect, substrates and adult salmon usage indicated.

The interface reach is a passage area for chinook, sockeye, pink, chum and coho salmon spawning on upstream habitats (Appendix Table D-1).

GRAYS CREEK (RM 59.5)

Interface Reach Habitat Description

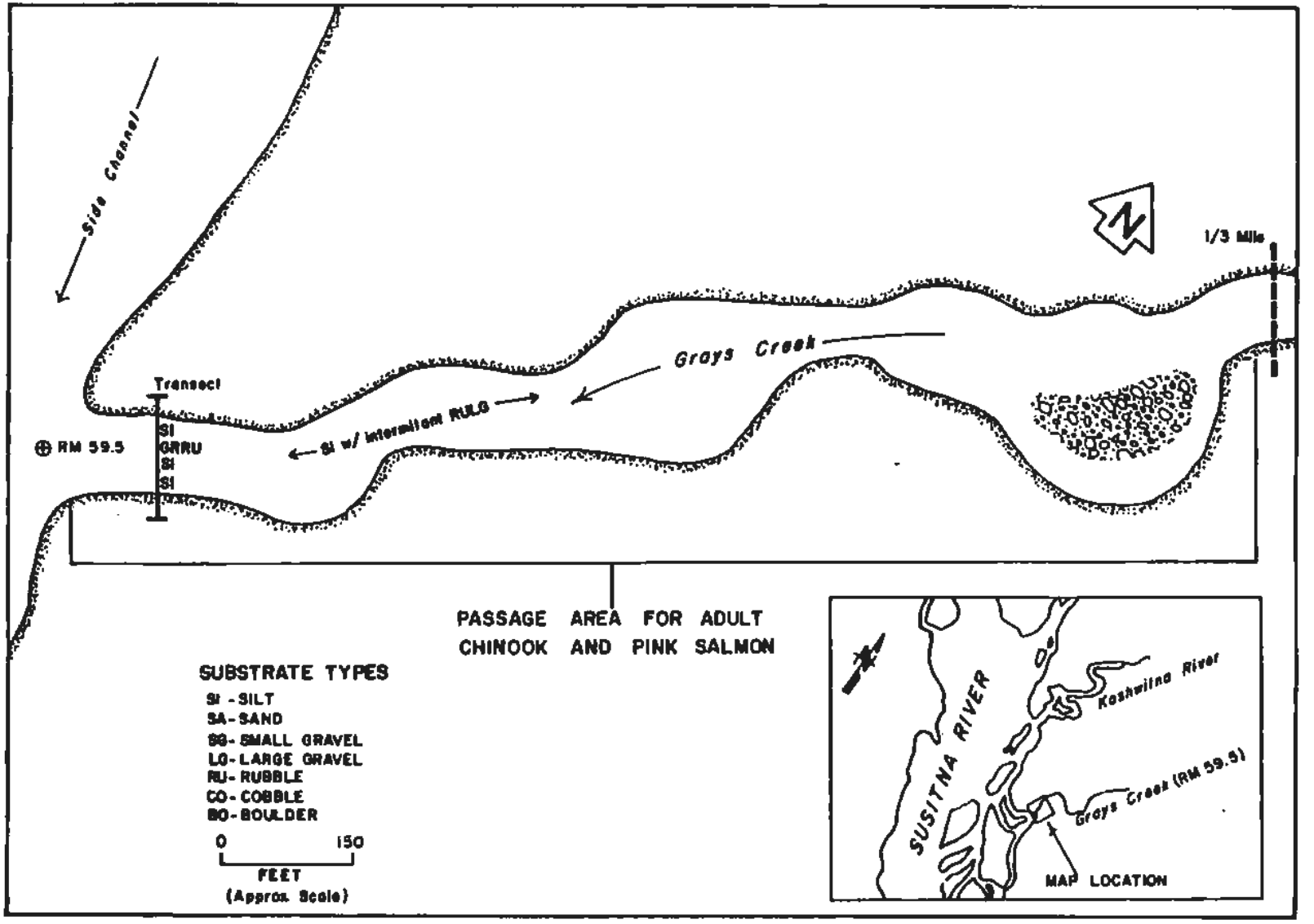
At its interface, Grays Creek is typically 60 feet wide and less than five feet deep with tannin stained water (Appendix Table E-1). At higher flows, widths of 75 feet and depths up to six feet were measured. Visibility is usually poor. Streambed substrates are primarily silt-sand with a few areas of gravel-rubble (Appendix Figure B-8). There were no mainstem backwater effects in the interface reach at mainstem discharges of 46,920 cfs on August 13, 1984 or 110,600 cfs on August 26.

Adult Salmon Use

Salmon spawning did not occur in the interface reach of Grays Creek between July 21 and October 17, 1984. A cross-section transect revealed a streambed composition mainly of silts and sands indicating unsuitable salmon spawning habitat (Appendix Figure B-8) (ADF&G, 1983b). The interface reach is a passage area for chinook and pink salmon spawning in upstream habitats (Appendix Table D-1).

KASHWITNA RIVER (RM 61.0)

Interface Reach Habitat Description



Appendix Figure B-8. Grays Creek (RM 59.5) interface reach with transect, substrates and adult salmon usage indicated.

The interface reach of the Kashwitna River is typically over 100 feet across and over six feet deep. Visibility was poor due to depth and backwater effects until late September when water levels decreased. Streambed substrates are primarily rubble-cobble (Appendix Figure B-9). High velocities combined with depths of over six feet precluded transect measurements being taken in this river mouth. At mainstem discharges of 110,600 cfs on August 26 and 46,920 cfs on August 13 as measured at Sunshine, there were no backwater effects from the mainstem into the river mouth.

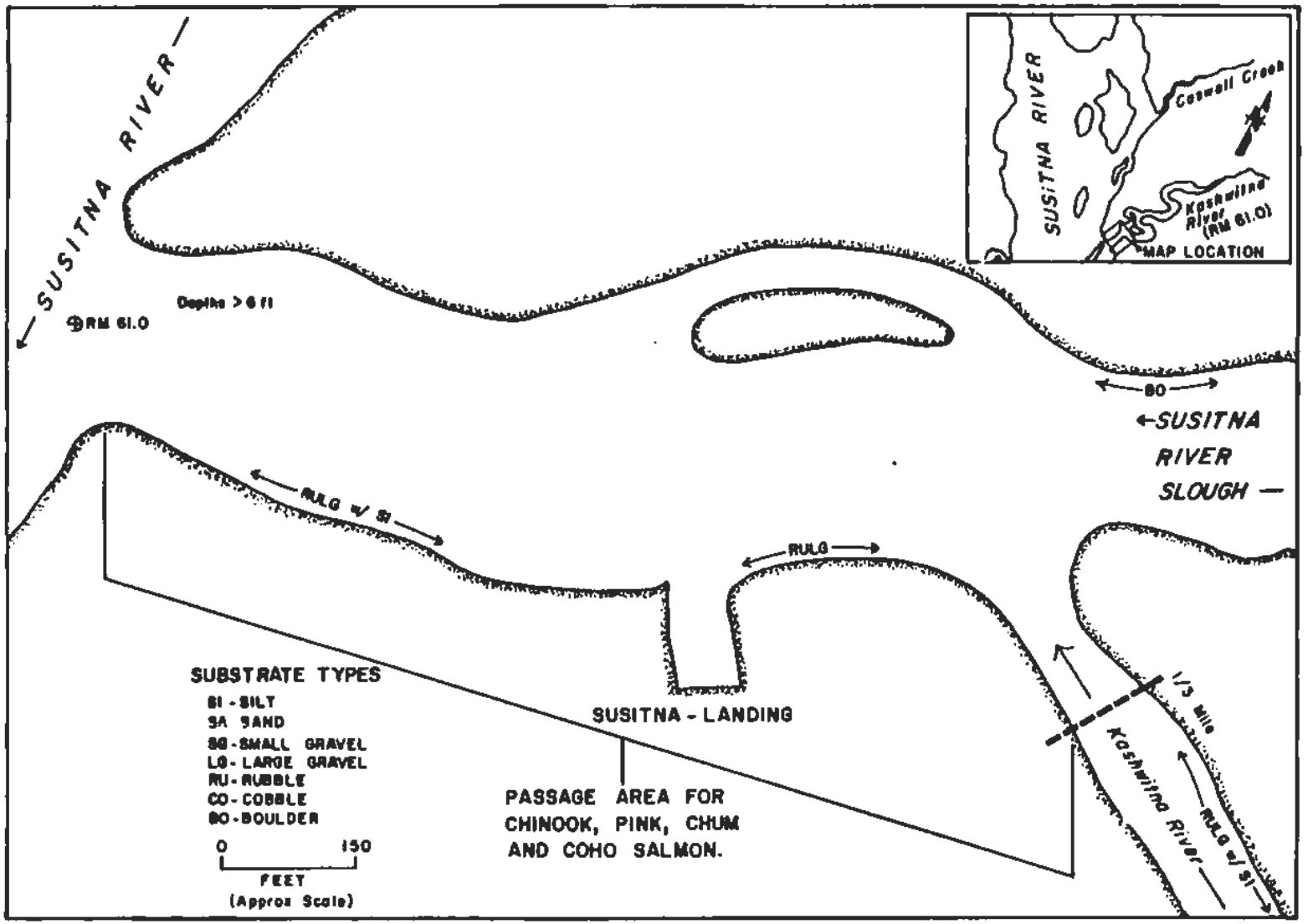
Adult Salmon Use

Salmon spawning activity was not observed in the interface reach of the Kashwitna River between July 21 and October 17, 1984. Habitat observations revealed a streambed composition mainly of rubble-cobble which is within the range considered suitable for salmon spawning habitat (ADF&G, 1983b). Spawning may have occurred in this reach however, high velocities and depths of over six feet precluded observations. The interface reach is a known passage area for chinook, pink, chum and coho salmon spawning in upstream habitats (ADF&G, 1984).

CASWELL CREEK (RM 64.0)

Interface Reach Habitat Description

The interface reach of Caswell Creek is an average of 70 feet wide and three feet deep (Appendix Table E-1). Substrates are primarily large gravel and rubble with one to three inches of silt overlaying (Appendix



Appendix Figure B-9. Kashwitna River (RM 61.0) interface reach with substrates and adult salmon usage indicated.

Figure B-10). At Susitna River discharges of 48,900 cfs on August 15, 1984 and 83,380 cfs on August 27 there were no mainstem backwater effects in the stream interface reach.

Adult Salmon Use

Pink and chum salmon were observed spawning in the interface reach of Caswell Creek in 1984 (Appendix Figure B-10). A cross-section transect revealed a streambed substrate composition mainly of large gravels and rubbles which are considered to be suitable salmon spawning substrates (ADF&G, 1983b). The interface reach is a passage area for chinook, sockeye, pink, chum and coho salmon spawning in upstream habitats (Appendix Table D-1).

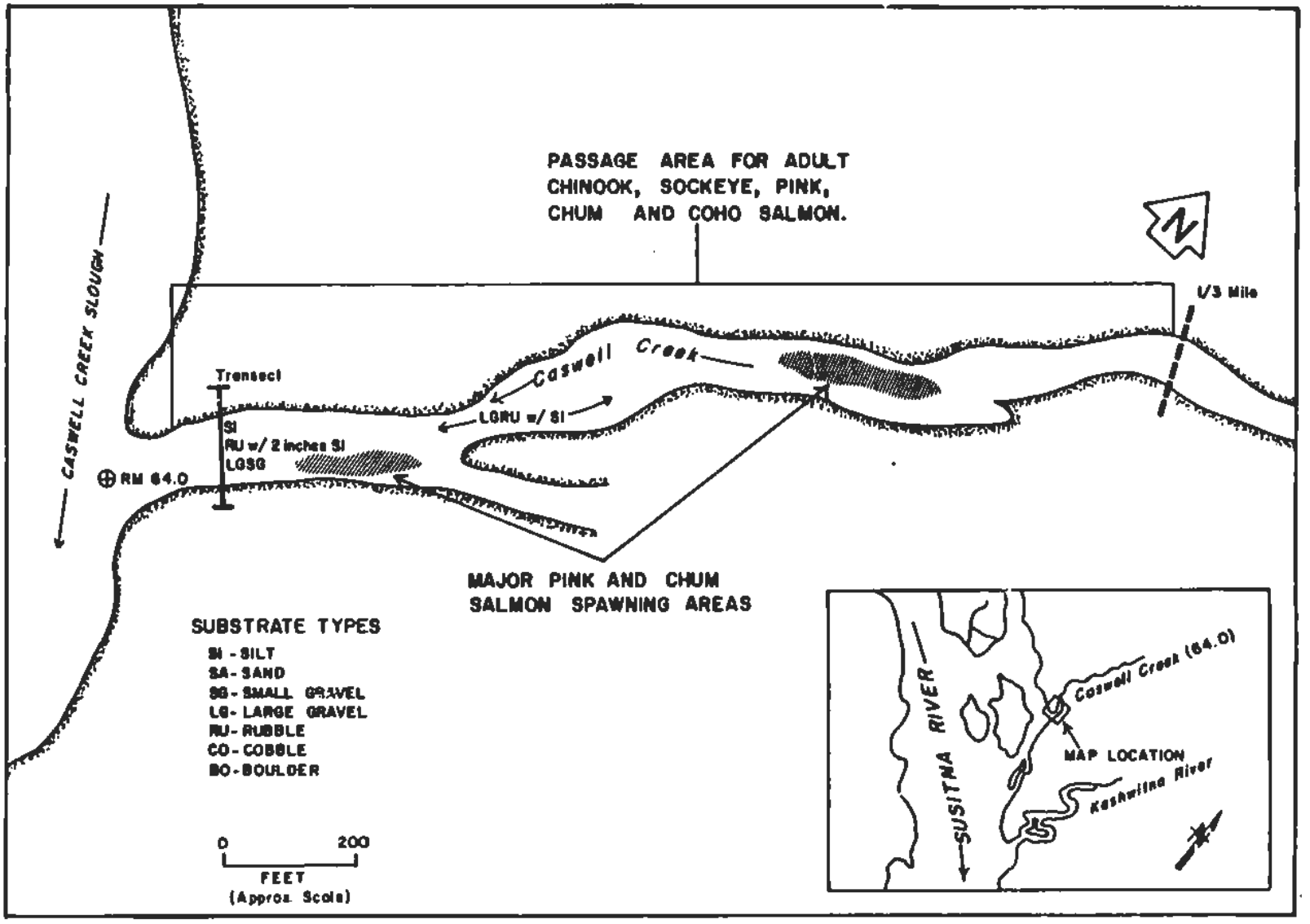
SHEEP CREEK (RM 66.1)

Interface Reach Habitat Description

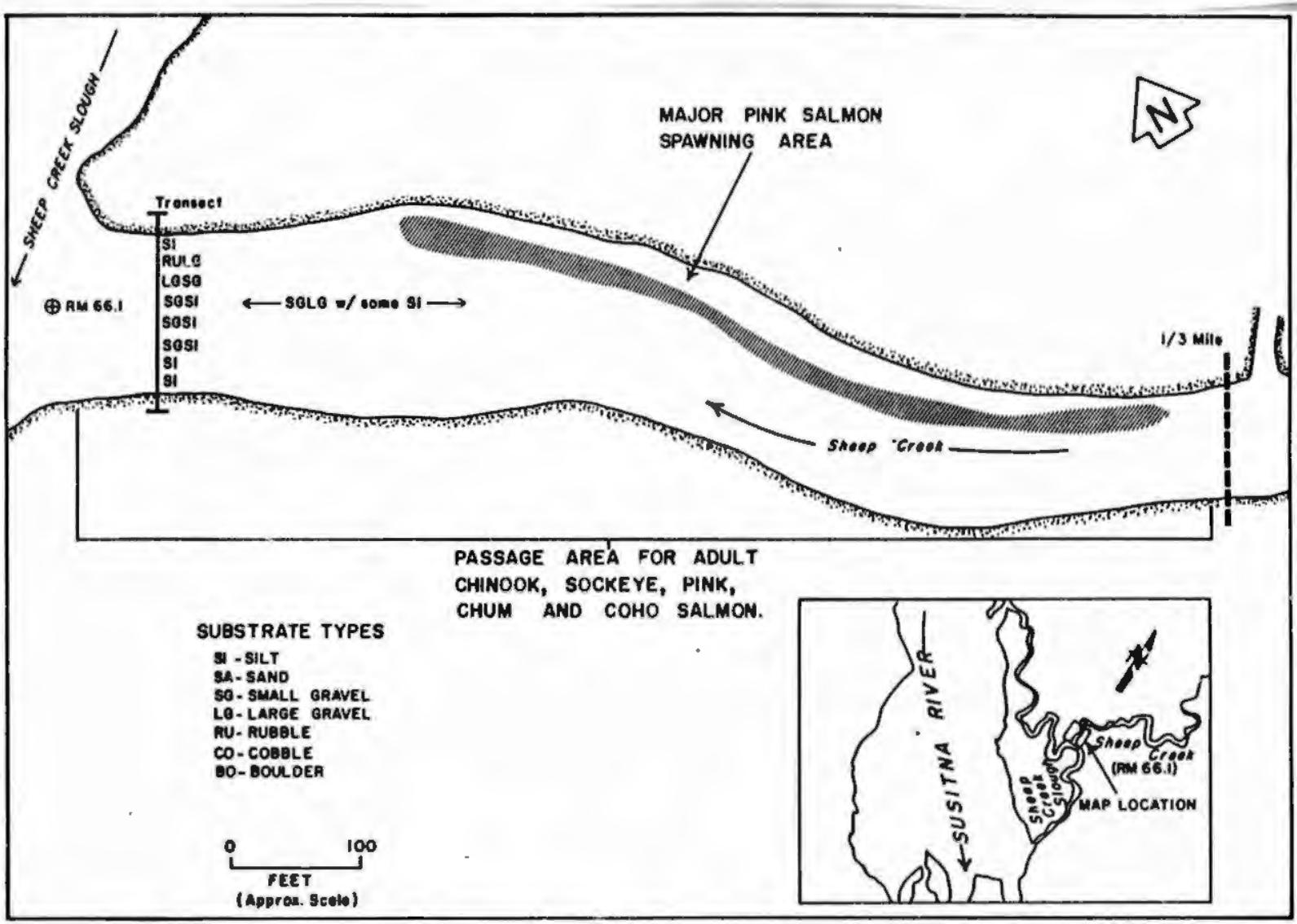
In the interface reach Sheep Creek is up to 150 feet wide, six feet deep with clear water (Appendix Table E-1). Streambed substrates are primarily small gravel-large gravel with some silt (Appendix Figure B-11). There were no mainstem backwater effects in the stream interface at mainstem discharges of 83,380 cfs on August 17, 1984.

Adult Salmon Use

Pink salmon were observed spawning in the interface reach of Sheep Creek in 1984 (Figure B-11). A cross-section transect revealed a streambed



Appendix Figure B-10. Caswell Creek (RM 64.0) interface reach with transect, substrates and adult salmon usage indicated.



Appendix Figure B-11. Sheep creek (RM 66.1) interface reach with transect, substrates and adult salmon usage indicated.

composition mainly of small gravels and large gravels which are considered to be suitable salmon spawning substrate (ADF&G, 1983b). The interface reach is a passage area for chinook, sockeye, chum and coho salmon spawning in upstream habitats (ADF&G, 1984).

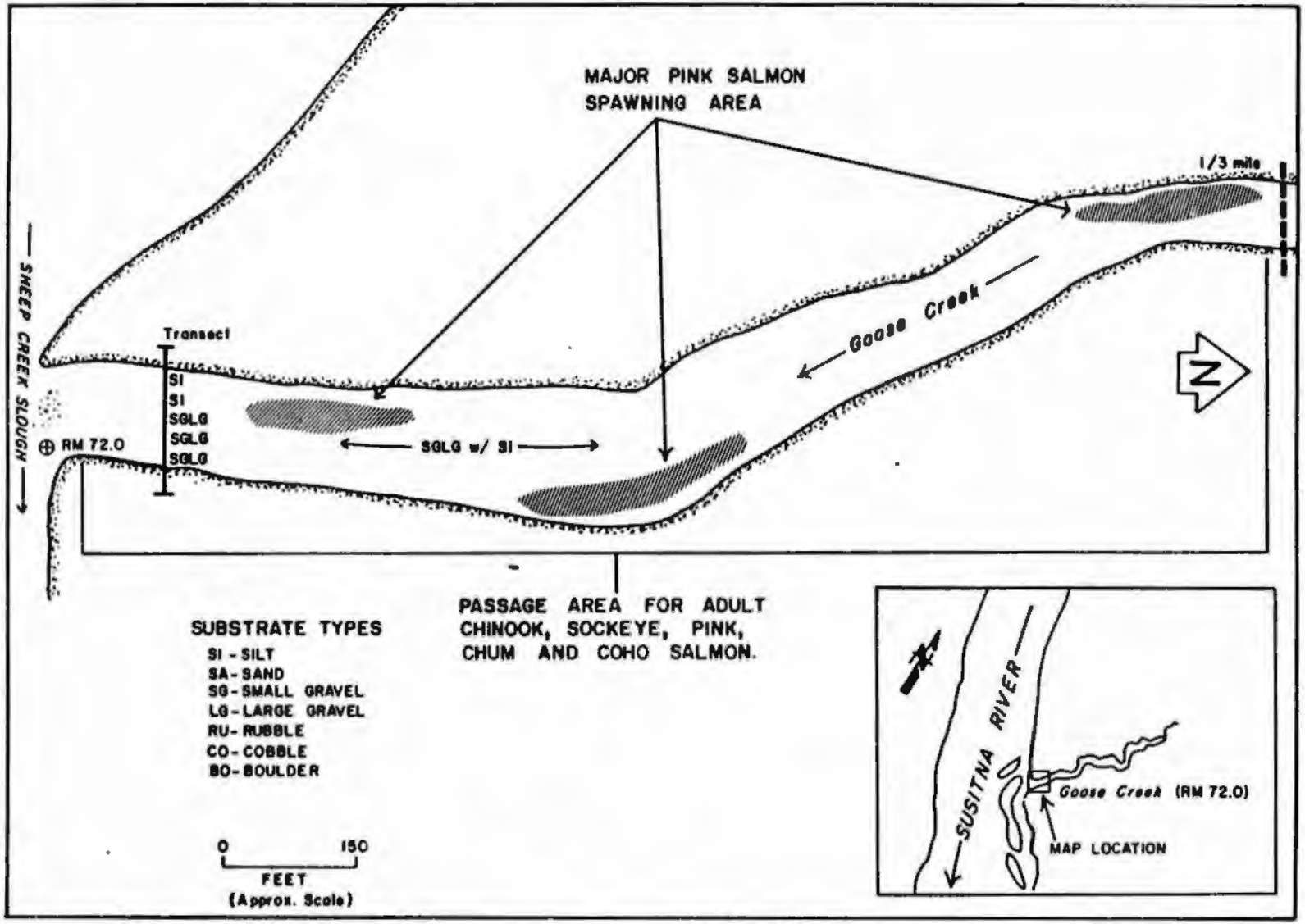
GOOSE CREEK (RM 72.0)

Interface Reach Habitat Description

The interface reach of Goose Creek is an average of 50 feet wide increasing to 80 feet wide with depths up to three feet at high discharges (Appendix Table E-1). Substrates are small gravel-large gravel with up to two inches of silt overlaying in some areas (Appendix Figure B-12). Creek water is clear and there were no mainstem backwater effects at discharges of 48,900 cfs on August 15, 1984 and 83,380 cfs on August 27.

Adult Salmon Use

Pink salmon were observed spawning in the interface reach of Goose Creek in 1984 (Appendix Figure B-12). A cross section transect revealed a streambed substrate composition mainly of small gravel and large gravels which are considered to be suitable salmon spawning substates (ADF&G, 1983b). The interface reach is a passage area for chinook, sockeye, pink, chum and coho spawning in upstream habitats (Appendix Table D-1).



Appendix Figure B-12. Goose Creek (RM 72.0) interface reach with transect, substrates and adult salmon usage indicated.

MONTANA CREEK (RM 77.0)

Interface Reach Habitat Description

The interface reach in Montana Creek is up to 60 feet wide and 2.5 feet deep with clear water (Appendix Table E-1). Streambed substrates range from small gravel to cobble with rubble and large gravel predominating (Appendix Figure B-13). The slough Montana Creek empties into is sometimes turbid with mainstem flow. At mainstem discharges of 48,900 (August 15, 1984) and 83,380 cfs (August 27) there were no mainstem backwater effects observed in the stream interface reach.

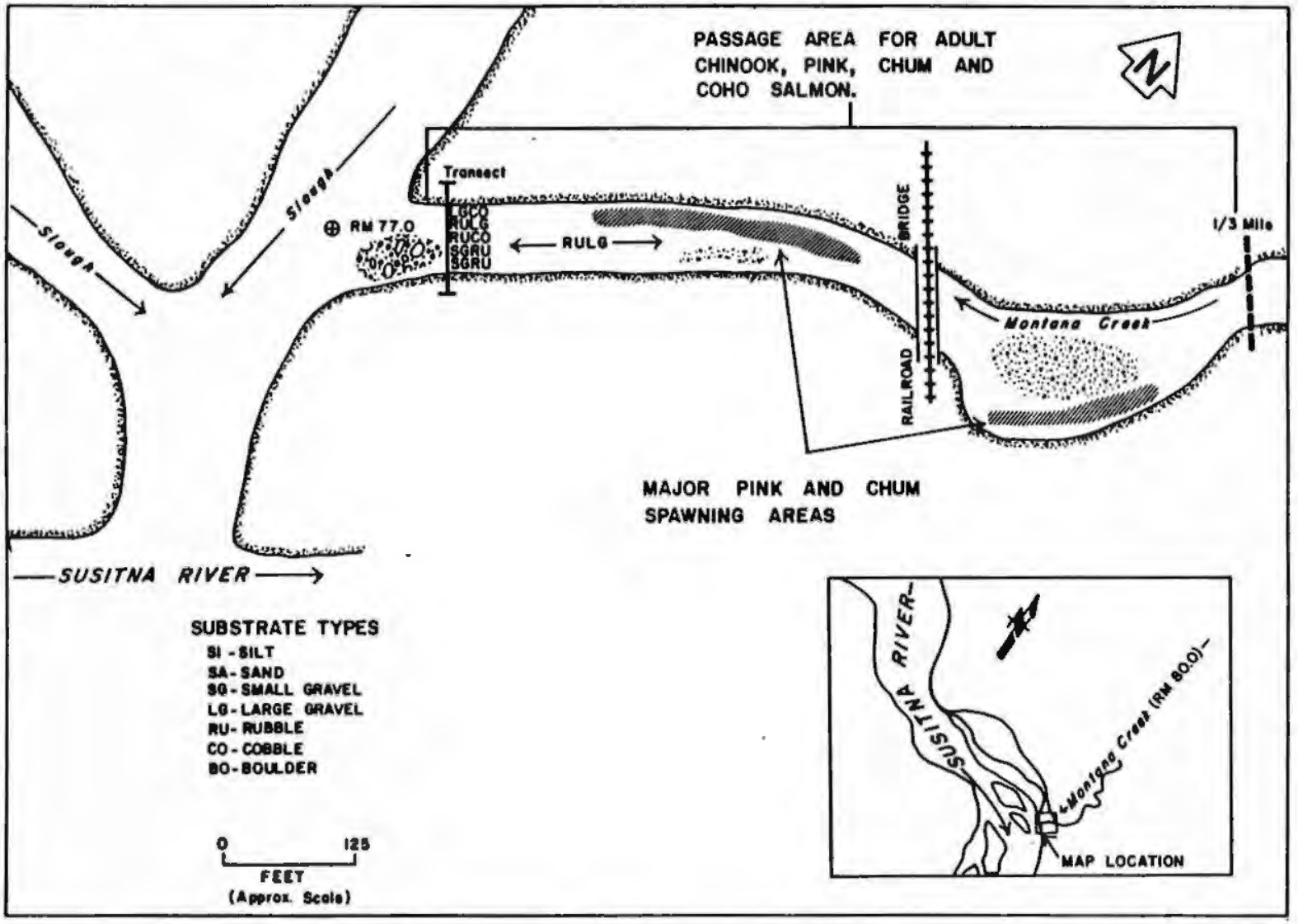
Adult Salmon Use

The interface reach of Montana Creek was used for spawning by pink and chum salmon in 1984 (Appendix Figure B-13). A cross-section transect revealed a streambed composition mainly of rubbles and large gravels which are considered to be suitable salmon spawning substrates (ADF&G, 1983). The interface reach is a passage area for chinook and coho salmon spawning in upstream habitats (Appendix Table D-1).

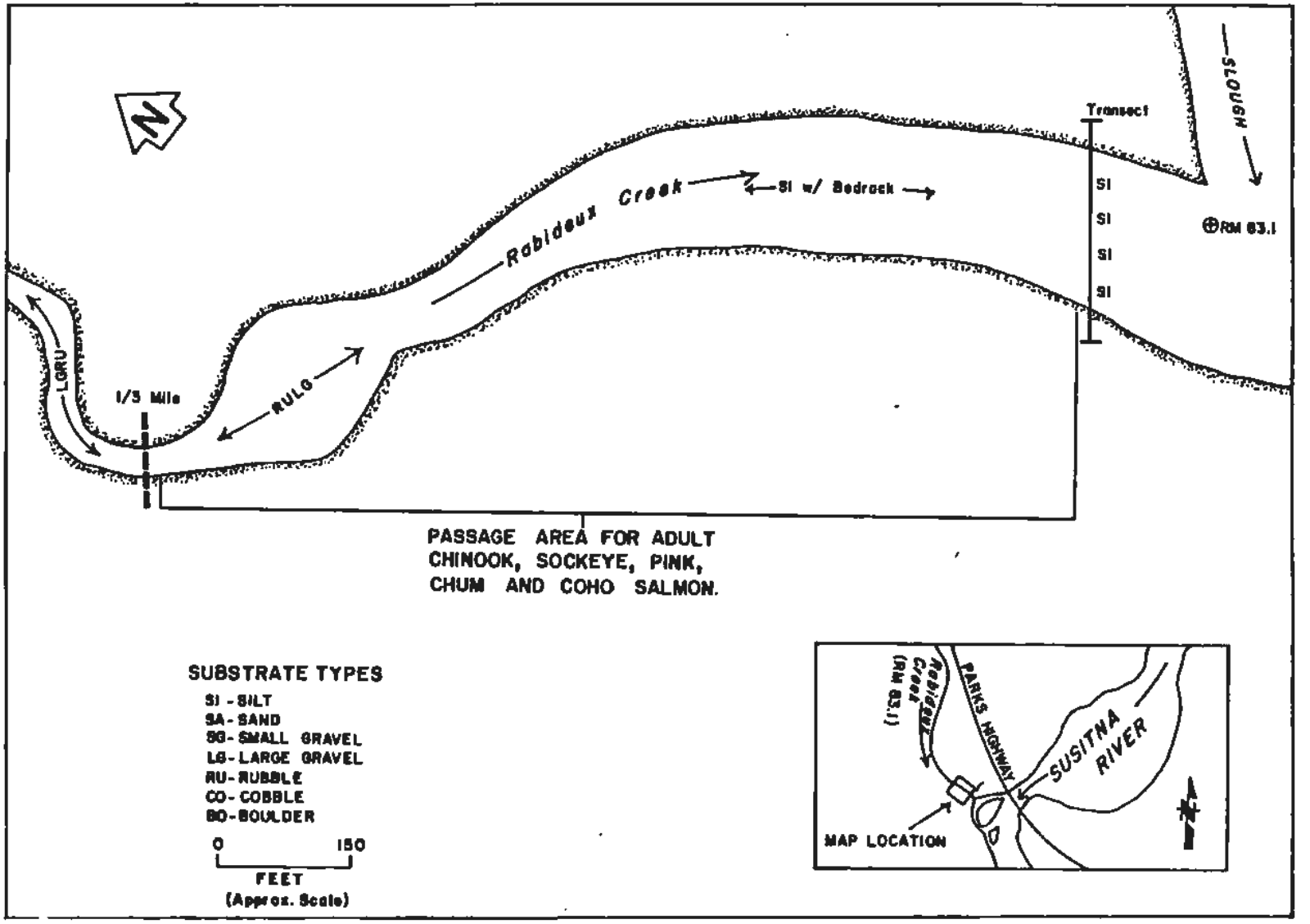
RABIDEUX CREEK (RM 83.1)

Interface Reach Habitat Description

The interface reach of Rabideux Creek is approximately 140 feet wide and up to six and a half feet deep (Appendix Table E-1). Visibility is generally fair to poor and water is tannin stained. Above the first third mile, the creek narrows and clears. In the first third mile,



Appendix Figure B-13 Montana Creek (RM 77.0) interface reach with transect, substrates and adult salmon



Appendix Figure B-14. Rabideux Creek (RM 83.1) interface reach with transect, substrates and adult salmon usage indicated.

substrates are primarily silt with some very large boulders and bedrock (Appendix Figure B-14). Above the first third mile, the substrates become gravel to cobble size. At mainstem discharges of 42,780 (August 16, 1984) and 83,380 cfs (August 27) there were no mainstem backwater effects in the interface reach.

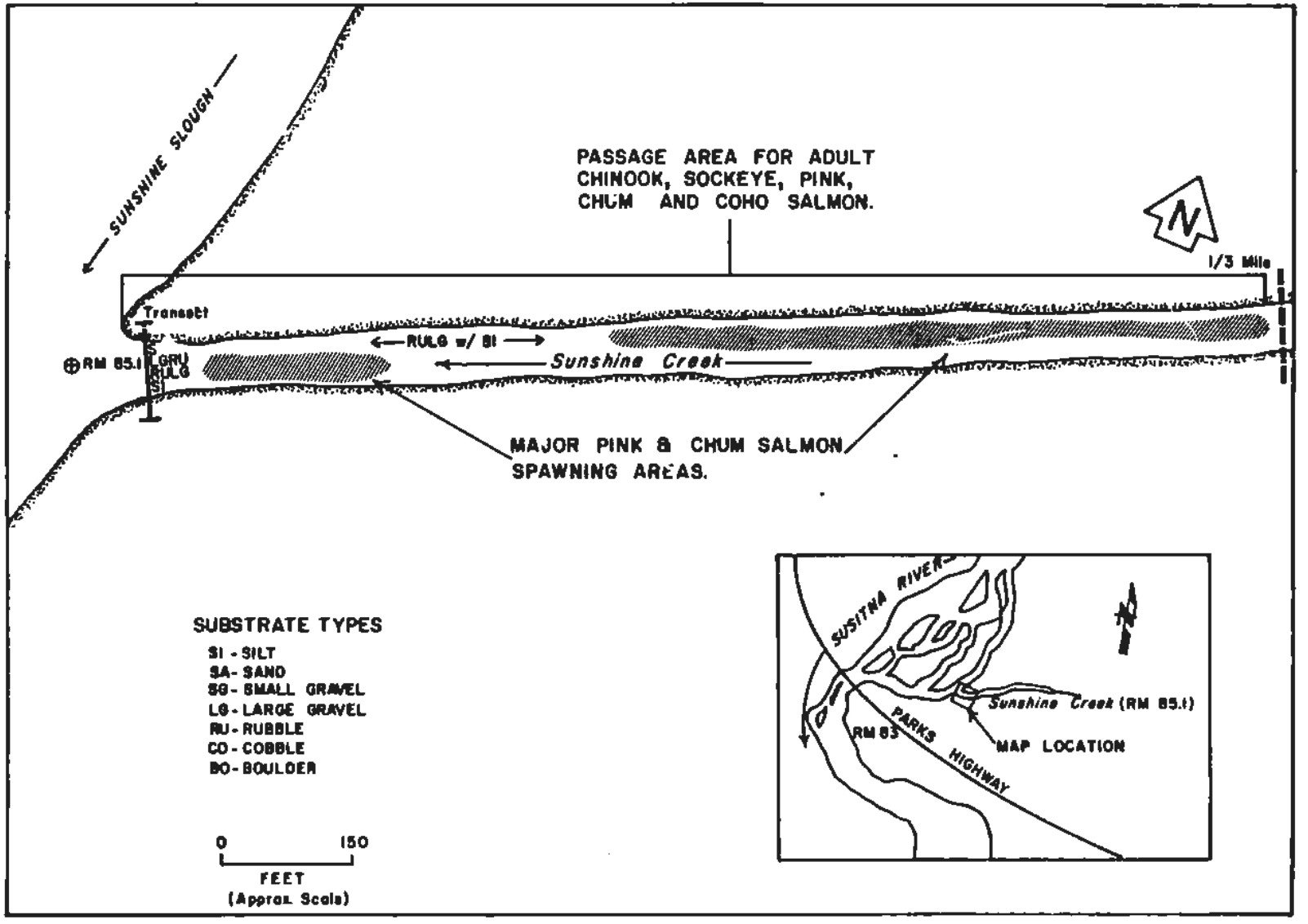
Adult Salmon Use

Salmon spawning did not occur in the interface reach of Rabideux Creek between July 21 and October 17, 1984. A cross-section transect revealed a streambed substrate composition mainly of silts with bedrock indicating unsuitable salmon spawning habitat (Appendix Figure B-14) (ADF&G, 1983b). The interface reach is a passage area for chinook, sockeye, pink, chum and coho salmon spawning in upstream habitats (Appendix Table D-1).

SUNSHINE CREEK (RM 85.1)

Interface Reach Habitat Description

Sunshine Creek is approximately 45 feet across and less than three feet deep in the mouth area with clear water (Appendix Table E-1). Streambed substrates are rubble-large gravel with up to three inches of silt in some areas (Appendix Figure B-15). The slough which Sunshine Creek enters carries mainstem water much of the time. At mainstem discharges of 42,780 cfs (August 16, 1984) and 83,380 cfs (August 17) there were no backwater effects in the interface reach.



Appendix Figure B-15. Sunshine Creek (RM 85.1) interface reach with transect, substrates and adult salmon usage indicated.

Adult Salmon Use

Sunshine Creek interface reach was used for spawning by pink and chum salmon in 1984 (Appendix Figure B-15). One cross section transect revealed a streambed composition mainly of rubbles and large gravels which are considered to be suitable salmon spawning substrates (ADF&G, 1983b). The interface reach is a passage area for chinook, sockeye, pink, chum and coho spawning in upstream habitats (Appendix Table D-1).

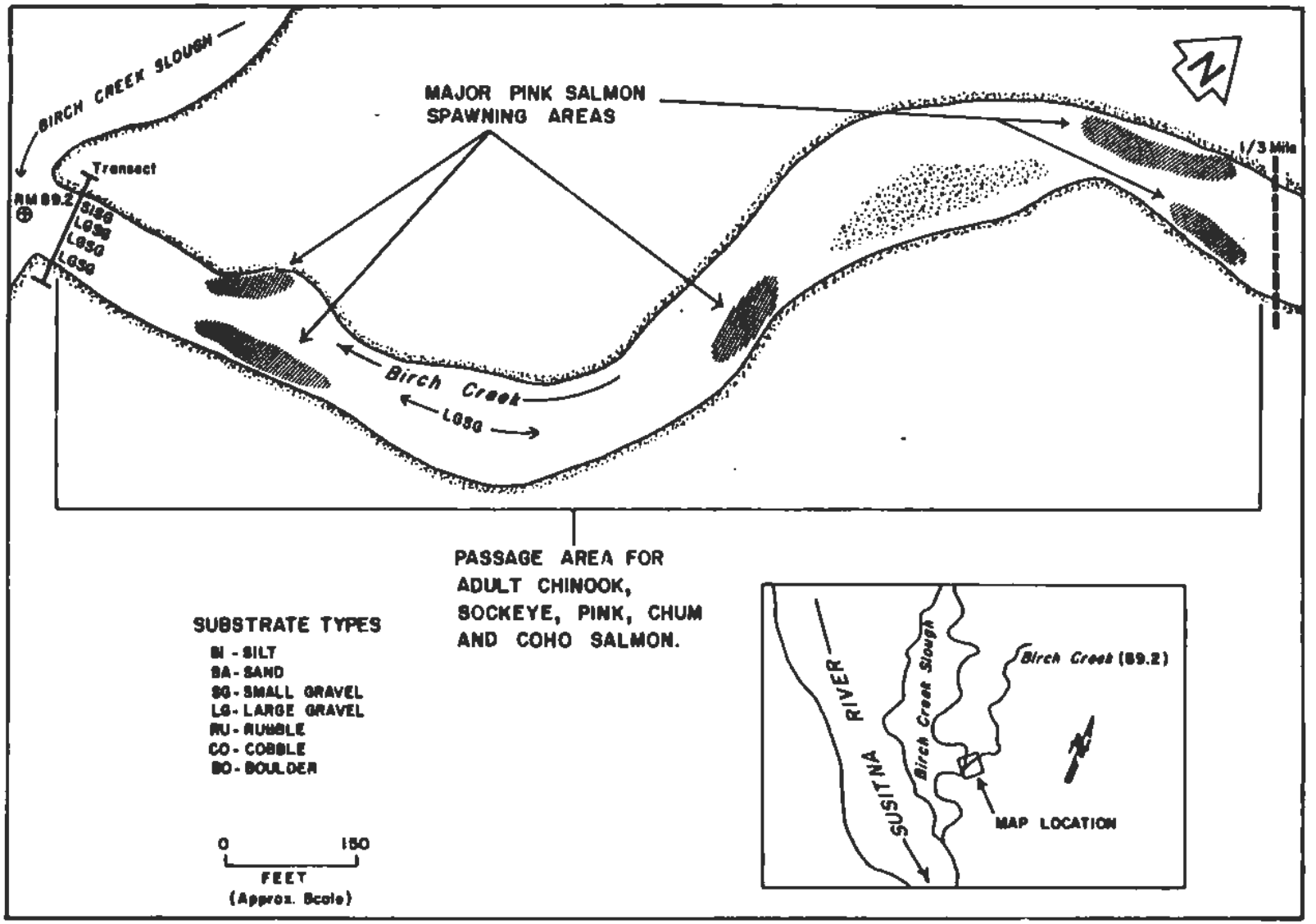
BIRCH CREEK (RM 89.2)

Interface Reach Habitat Description

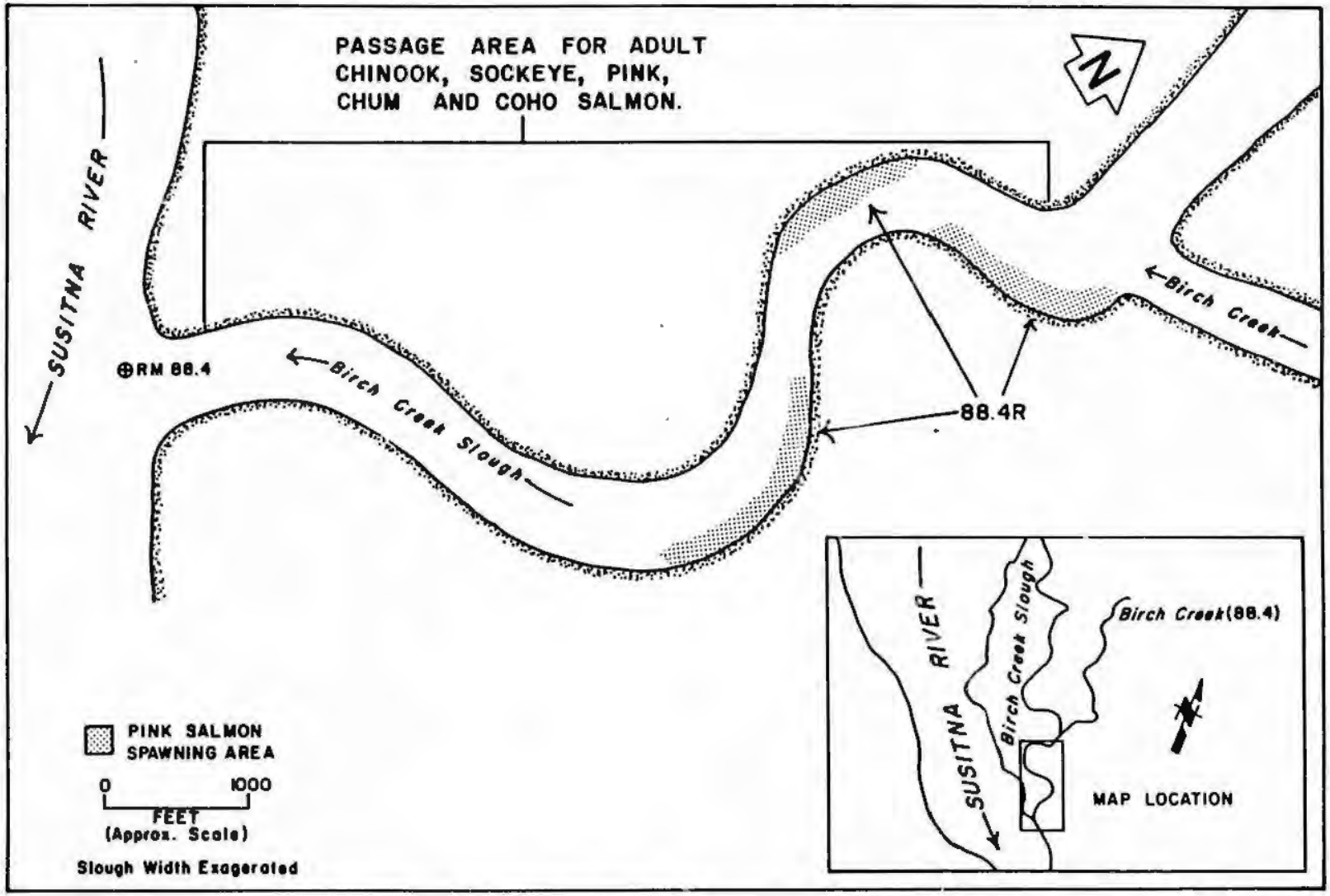
Birch Creek interface reach is less than 60 feet across and less than two feet deep (Appendix Table E-1). Water is clear and streambed substrates are primarily small gravel and large gravel with a thin silt layer (Appendix Figure B-16). The slough at the stream mouth carries clear water and no mainstem backwater influence was observed in the interface reach at mainstem discharges of 42,780 (August 16, 1984) and 83,380 cfs (August 27, 1984) (Appendix Figure B-17).

Adult Salmon Use

Pink salmon were observed spawning in the interface reach of Birch Creek and in the slough below the stream confluence in 1984 (Appendix Figure B-16 and B-17). A cross-section transect revealed a streambed substrate composition of small gravel and large gravel which indicates suitable salmon spawning habitat (ADF&G, 1983b). The interface reach is a passage



Appendix Figure B-16. Birch Creek (RM 89.2) interface reach with transect, substrates and adult salmon usage indicated.



Appendix Figure B-17. Birch Creek Slough (RM 88.4) with pink salmon spawning areas indicated.

area for chinook, sockeye, pink, chum and coho salmon spawning in upstream habitats (Appendix Table D-1).

TRAPPER CREEK (RM 91.5)

Interface Reach Habitat Description

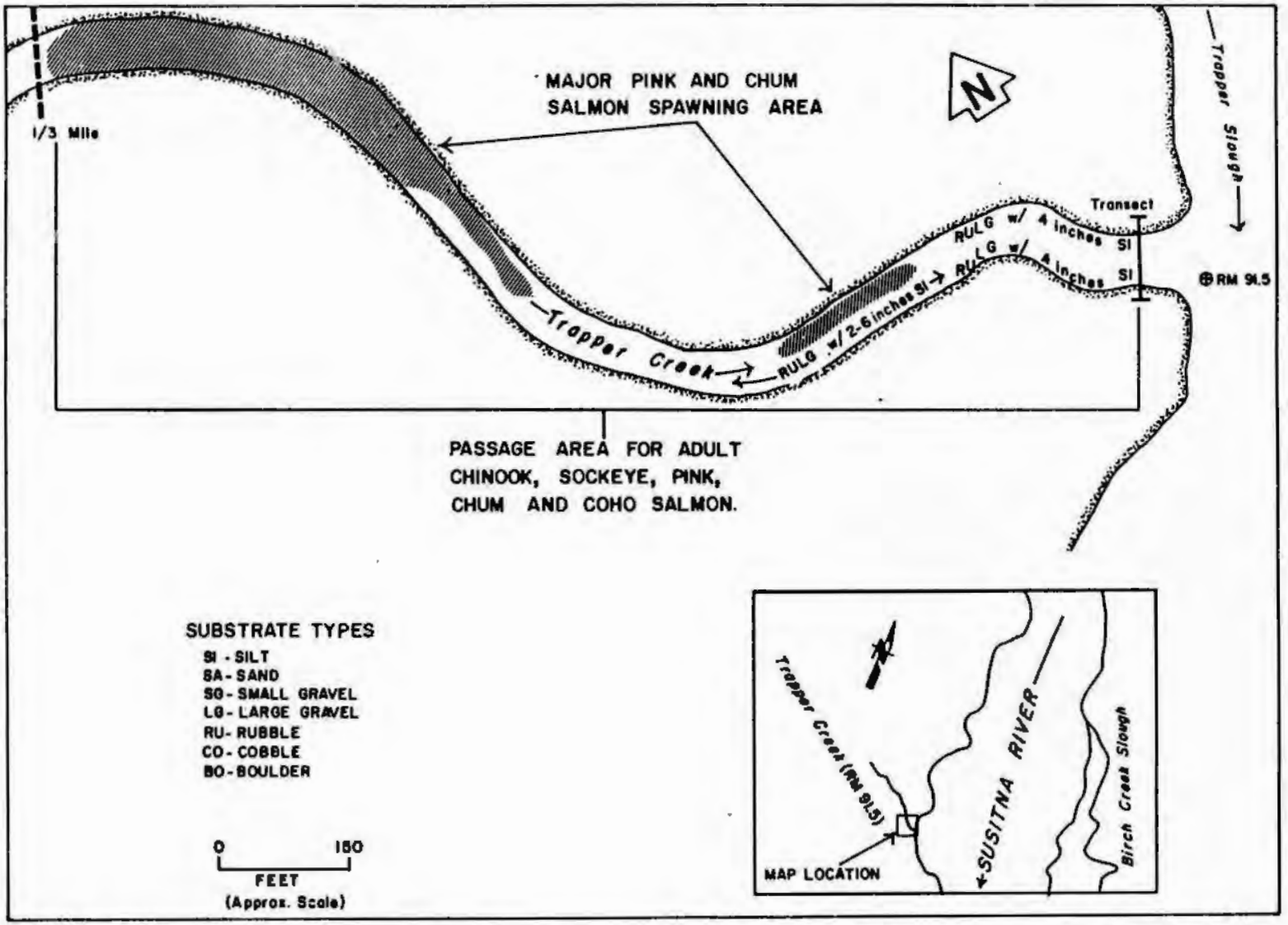
The Trapper Creek interface reach is generally 30 feet across and less than two feet deep with clear water (Appendix Table E-1). Streambed substrates are primarily rubble and small gravel with between two ard six inches of overlaying silt (Appendix Figure B-18). During mainstem discharges of 42,700 cfs (August 16, 1984) and 83,380 cfs (August 27, 1984) it was noted that although it was flowing through the slough at the streams mouth, mainstem water was not backed up into the interface reach.

Adult Salmon Use

Pink and chum salmon were observed spawning in the Trapper Creek interface reach in 1984 (Appendix Figure B-18). A cross-sectior transect revealed a streambed composition mainly of rubbles and large gravels, which are considered to be suitable salmon spawning substrates (ADF&G, 1983b). The interface reach is a passage area for chinook, sockeye, pink, chum and coho salmon spawning in upstream habitats (Appendix Table D-1).

CACHE CREEK (RM 95.8)

Interface Reach Habitat Description

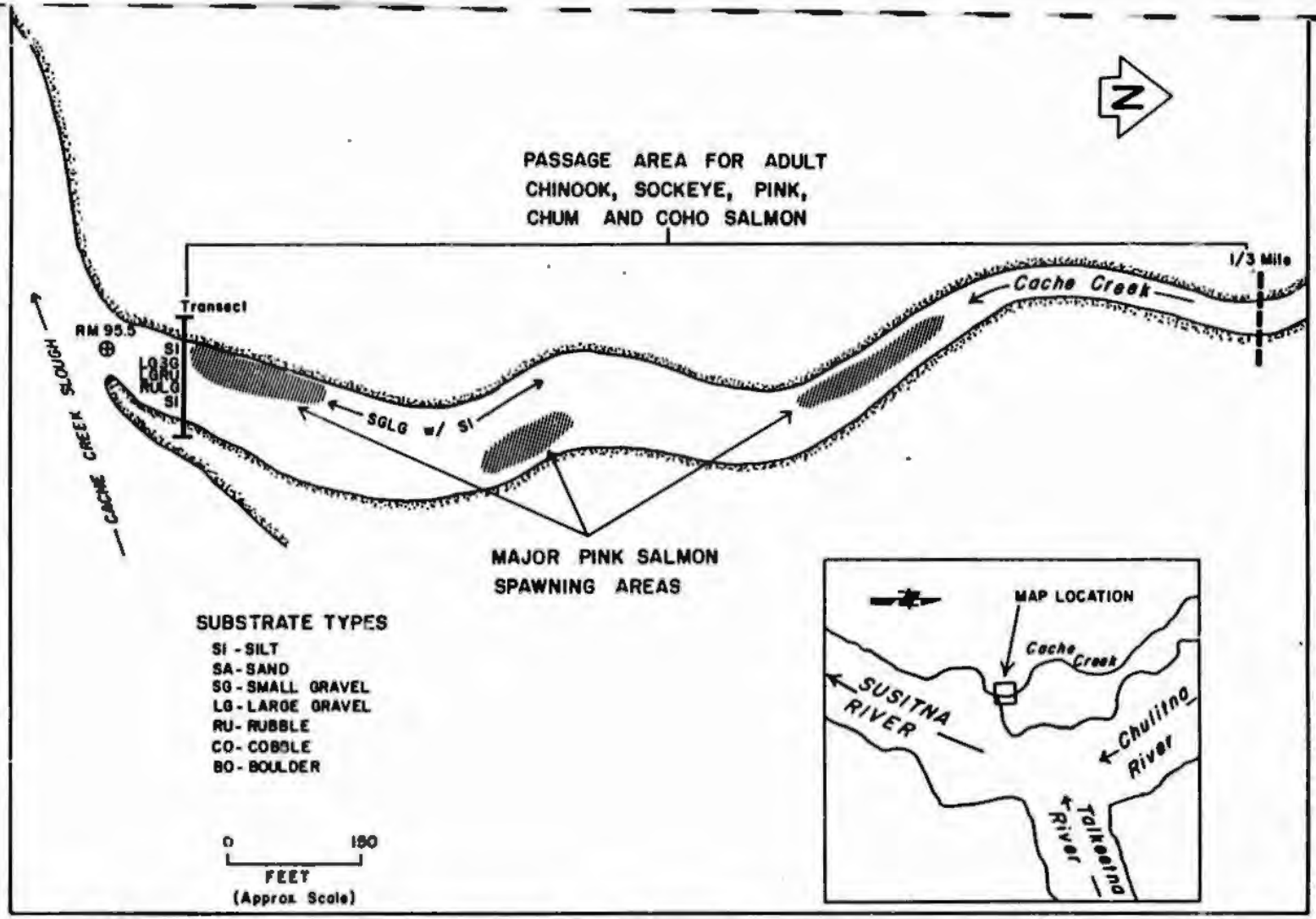


Appendix Figure B-18. Trapper Creek (RM 91.5) interface reach with transect, substrates and adult salmon usage indicated.

In the interface reach, Cache Creek is approximately 45 feet across and less than two feet deep with clear water (Appendix Table E-1). Streambed substrates in the first third mile are primarily small gravel and rubble with one half inch to two inches of silt overlaying (Appendix Figure B-19). There were no mainstem backwater effects in the interface reach at a mainstem discharge of 42,780 cfs (August 16, 1984) . At a discharge of 83,380 cfs August 7 Susitna water from the slough at the mouth backed up into the stream interface approximately ten feet.

Adult Salmon Use

Pink salmon were observed spawning in the Cache Creek interface reach in 1984 (Appendix Figure B-19). A cross section transect revealed a streambed composition mainly of small gravels and large gravels which are considered to be suitable salmon spawning substrates (ADF&G, 1983b). The interface reach is a passage area for chinook, pink, chum and coho salmon spawning in upstream habitats (ADF&G, 1984) (Appendix Table D-1).



Appendix Figure B-19. Cache Creek (RM 95.5) interface reach with transect, substrates and adult salmon usage indicated.

APPENDIX C

Survey counts of adult salmon in sloughs between Susitna RM 28.0 and 98.6 in 1984.

Appendix Table C-1. Survey counts of adult salmon in sloughs between Susitna RM 28.0 and RM 98.6 in 1984.

Slough	River Mile	Date	Survey Conditions	Percent Surveyed	Adult Salmon Enumerated														
					Chinook			Sockeye			Pink			Chum			Coho		
					Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total
CASWELL CREEK SLOUGH MOUTH	62.2	10 / 9	G	100	0	0	0	0	0	0	0	0	0	2	6	8	0	0	0
CASWELL CREEK SLOUGH	63.0	10 / 9	F	100	0	0	0	0	0	0	0	0	0	0	45	45	0	0	0
CASWELL CREEK SLOUGH	63.0	10 /11	G	100	0	0	0	0	0	0	0	0	0	4	0	4	0	0	0
CHUM SLOUGH	68.3	8 /16	G	100	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0
CHUM SLOUGH	68.3	8 /25	G	22	0	0	0	0	0	0	0	1	1	0	3	3	0	0	0
GOOSE CREEK SLOUGH	74.0	10 / 1	G	100	0	0	0	0	0	0	0	0	0	0	0	0	3	1	4
GOOSE CREEK SLOUGH	74.0	10 / 8	F	100	0	0	0	0	0	0	0	0	0	0	16	16	0	0	0
MID-CHAN N GOOSE SL	73.9	10 /10	P	100	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0
SW OF CIRCULAR	74.4	9 /25	G	100	0	0	0	0	0	0	0	0	0	0	34	34	0	0	0
CIRCULAR SLOUGH	75.3	9 /18	G	100	0	0	0	[illegible]	0	0	0	0	0	0	0	0	0	0	0
CIRCULAR SLOUGH	75.3	9 /29	G	50	0	0	0	0	0	0	0	2	2	68	21	89	0	0	0
WEST OF CIRCULAR	75.7	9 /25	G	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N OF CIRCULAR	77.0	9 /25	G	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WHITEFISH SLOUGH	78.8	8 /16	P	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WHITEFISH SLOUGH	78.8	8 /25	P	15	0	0	0	0	0	0	0	2	2	0	1	1	0	0	0
WHITEFISH SLOUGH	78.8	9 /18	G	22	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
WHITEFISH SLOUGH	78.8	9 /28	E	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAUNA SLOUGH	79.3	9 /18	G	100	0	0	0	0	0	0	0	0	0	0	18	18	4	0	4
SAUNA SLOUGH	79.0	10 / 8	F	100	0	0	0	0	0	0	0	0	0	0	7	7	0	0	0
DEAD CHUK SLOUGH	83.0	9 /26	P	50	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
DEAD CHUK SLOUGH	83.0	9 /18	G	5	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0
SUNSET SLOUGH	85.5	9 /21	G	100	0	0	0	0	0	0	4	10	14	62	111	173	0	0	0
SUNSET SLOUGH	85.5	9 /28	E	100	0	0	0	0	0	0	0	10	10	58	107	165	5	0	5
NORTH SUNSET SLOUGH	87.5	9 /21	G	60	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5
BIRCH CAMP AREA	88.5	10 /11	G	100	0	0	0	0	0	0	0	0	0	23	0	23	0	0	0
BIRCH CREEK SLOUGH	89.2	7 /23	E	22	126	0	126	375	0	375	411	26	437	3	0	3	0	0	0
BIRCH CREEK SLOUGH	89.2	7 /29	P	?	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BIRCH CREEK SLOUGH	89.2	8 / 2	G	?	3	1	4	230	0	230	3298	6	3304	0	0	0	0	0	0
BIRCH CREEK SLOUGH	89.2	8 / 9	G	?	9	4	13	93	0	93	9917	17	9917	1061	5	1066	234	0	234
BIRCH CREEK SLOUGH	89.2	8 /16	G	22	0	0	0	4	0	4	6480	50	6510	470	6	476	75	0	75
BIRCH CREEK SLOUGH	89.2	8 /23	G	17	11	6	17	22	0	22	1128	222	1350	302	24	326	112	0	112
BIRCH CREEK SLOUGH	89.2	8 /31	P	22	0	4	4	0	0	0	338	169	507	151	24	175	117	2	119
BIRCH CREEK SLOUGH	89.2	9 / 9	P	17	0	0	0	0	0	0	218	141	359	137	19	156	77	2	79
BIRCH CREEK SLOUGH	89.2	9 /18	G	?	0	0	0	0	0	0	0	153	161	15	102	117	38	2	40
BIRCH CREEK SLOUGH	89.2	9 /25	E	22	0	0	0	0	0	0	4	11	15	12	48	60	0	0	0
BIRCH CREEK SLOUGH	89.2	10 / 1	G	22	0	0	0	0	0	0	0	0	0	0	538	538	10	6	16
MIDRIVER W BANK	91.5	9 /28	G	100	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0
TRAPPER CREEK SLOUGH	90.3	9 /26	E	100	0	0	0	0	0	0	0	2	2	10	131	141	1	1	2
TRAPPER CREEK SLOUGH	90.3	10 / 1	F	15	0	0	0	0	0	0	0	0	0	1	148	149	23	1	24
TRAPPER CREEK SLOUGH	90.3	10 / 2	G	100	0	0	0	0	0	0	0	0	0	6	117	123	60	5	65
TRAPPER CREEK SLOUGH	90.3	10 / 4	G	100	0	0	0	0	0	0	0	0	0	0	0	0	23	0	23
TRAPPER CREEK SLOUGH	90.3	10 / 9	G	100	0	0	0	0	0	0	0	0	0	10	48	58	0	0	0
TRAPPER CREEK SLOUGH	90.3	10 /11	P	100	0	0	0	0	0	0	0	0	0	0	12	12	0	0	0
MUSHER SLOUGH	95.2	9 /28	E	100	0	0	0	0	0	0	0	0	0	13	71	84	0	0	0
MUSHER SLOUGH	95.2	9 /29	G	39	0	0	0	0	0	0	0	0	0	12	0	12	0	0	0
LOGJAM SLOUGH	96.0	9 / 3	G	100	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
CACHE CREEK SLOUGH	98.5	9 /27	E	100	0	0	0	0	0	0	0	2	2	42	118	160	0	0	0
PERIDULA SLOUGH	98.6	9 /14	G	100	0	0	0	4	0	4	0	0	0	439	0	439	2	0	2
CHULITNA MOUTH AREA	98.9	10 / 9	B	100	0	0	0	0	0	0	67	4	71	126	0	126	0	0	0
CHULITNA MOUTH AREA	98.9	10 /10	G	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX D

Index counts of adult salmon in streams between Susitna RM 28.0 and 98.6 in 1984.

Appendix Table D-1. Index counts of adult salmon in streams between Susitna RM 28.0 and 98.6 in 1984.

Stream	River Mile	Survey Methods	Date	Survey Condition	Adult Salmon Enumerated														
					Chinook			Sockeye			Pink			Chum			Coho		
					Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total
FISH CREEK	31.2	N	09/18	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FISH CREEK	31.2	N	09/20	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FISH CREEK	31.2	N	09/27	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FISH CREEK	31.2	N	10/06	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FISH CREEK	31.2	F	07/31	S	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0
FISH CREEK	31.2	F	08/08	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FISH CREEK	31.2	F	08/17	FS	0	0	0	75	1	76	0	0	0	0	0	0	0	0	0
FISH CREEK	31.2	F	08/25	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NO NAME CREEK	31.7	F	07/29	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NO NAME CREEK	31.7	F	08/01	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NO NAME CREEK	31.7	F	08/07	FS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NO NAME CREEK	31.7	F	08/16	PF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WHITSOL CREEK	35.2	N	09/18	S	0	0	0	4	0	0	0	0	0	0	0	0	55	0	55
WHITSOL CREEK	35.2	N	09/27	S	0	0	0	0	0	0	0	0	0	0	0	0	107	0	107
WHITSOL CREEK	35.2	N	10/06	S	0	0	0	0	0	0	0	0	0	0	0	0	17	1	18
WHITSOL CREEK	35.2	F	07/31	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WHITSOL CREEK	35.2	F	08/09	BE	0	0	0	20	0	20	0	0	0	0	0	0	0	0	0
WHITSOL CREEK	35.2	F	08/19	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WHITSOL CREEK	35.2	F	08/25	F	0	0	0	0	0	0	0	0	0	0	0	0	69	0	69
WHITSOL CREEK	35.2	F	09/20	F	0	0	0	0	0	0	0	0	0	0	0	0	35	0	35
ROLLY CREEK	39.0	F	07/30	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROLLY CREEK	39.0	F	08/07	WP	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROLLY CREEK	39.0	F	08/16	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROLLY CREEK	39.0	F	09/07	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROLLY CREEK	39.0	F	09/24	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WILLOW CREEK	49.1	N	10/06	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WILLOW CREEK	49.1	F	07/27	F	0	0	0	0	0	0	121	0	121	0	0	0	0	0	0
WILLOW CREEK	49.1	F	08/06	BE	0	0	0	174	0	174	8516	15	8531	332	0	332	109	0	109
WILLOW CREEK	49.1	F	08/12	S	0	0	0	217	3	220	2134	37	2167	29	3	32	345	4	349
WILLOW CREEK	49.1	F	08/22	BE	0	0	0	0	*	0	1200	483	1771	0	3	3	1224	2	1226
WILLOW CREEK	49.1	F	08/30	F	0	0	0	0	0	0	142	14	156	1	0	1	95	1	96
WILLOW CREEK	49.1	F	09/09	E	0	0	0	0	0	0	14	11	25	1	1	2	20	5	25
WILLOW CREEK	49.1	F	09/18	S	0	0	0	0	0	0	0	0	0	0	1	1	28	7	35
WILLOW CREEK	49.1	F	09/25	E	0	0	0	0	0	0	0	20	20	0	2	2	0	3	3
LITTLE WILLOW CREEK	50.5	N	09/20	S	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0
LITTLE WILLOW CREEK	50.5	N	10/06	S	0	0	0	0	0	0	0	0	0	0	1	1	2	2	4
LITTLE WILLOW CREEK	50.5	F	07/27	P	1	0	1	0	0	0	109	0	109	11	0	11	3	0	3
LITTLE WILLOW CREEK	50.5	F	08/03	BE	0	4	4	10	0	10	748	0	748	33	1	34	5	0	5
LITTLE WILLOW CREEK	50.5	F	08/11	F	0	0	0	0	0	0	144	20	156	2	2	4	2	0	2
LITTLE WILLOW CREEK	50.5	F	08/21	E	0	0	0	12	1	13	404	414	820	1	0	1	1	1	4
LITTLE WILLOW CREEK	50.5	F	08/29	S	0	0	0	0	0	0	17	6	23	0	0	0	10	0	10
LITTLE WILLOW CREEK	50.5	F	09/08	E	0	0	0	0	0	0	6	29	35	2	0	2	0	0	0
LITTLE WILLOW CREEK	50.5	F	09/26	E	0	0	0	0	0	0	0	33	33	0	5	5	0	0	0

Appendix Table D-1 (Continued).

Stream	River Mile	Survey Methods	Date	Survey Condition	Adult Salmon Enumerated														
					Chinook			Sockeye			Pink			Chum			Coho		
					Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total
GRAYS CREEK	59.5	N	10/06	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAYS CREEK	59.5	F	07/27	FS	9	0	9	0	0	0	20	0	20	0	0	0	0	0	0
GRAYS CREEK	59.5	F	08/02	FS	10	3	13	0	0	0	0	0	0	0	0	0	0	0	0
GRAYS CREEK	59.5	F	08/10	FS	13	11	24	0	0	0	0	0	0	0	0	0	0	0	0
GRAYS CREEK	59.5	F	08/20	S	1	27	28	0	0	0	1	0	1	0	0	0	0	0	0
GRAYS CREEK	59.5	F	08/28	F	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0
GRAYS CREEK	59.5	F	09/11	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAYS CREEK	59.5	F	09/20	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAYS CREEK	59.5	F	09/27	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	61.0	N	09/10	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	61.0	F	07/26	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	61.0	F	08/02	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	61.0	F	08/10	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	61.0	F	08/20	F	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0
[illegible]	61.0	F	08/28	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[illegible]	61.0	F	09/27	E	0	0	0	0	0	0	0	0	0	3	171	172	0	33	33
CASWELL CREEK	64.0	F	07/26	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CASWELL CREEK	64.0	F	07/30	F	1	0	1	1	0	1	61	0	61	0	0	0	0	0	0
CASWELL CREEK	64.0	F	08/06	F	1	1	2	0	0	0	62	0	62	91	0	91	99	0	99
CASWELL CREEK	64.0	F	08/13	F	0	0	0	0	0	0	121	0	126	72	1	73	102	0	102
CASWELL CREEK	64.0	F	08/20	F	0	0	0	0	0	0	97	7	94	29	2	31	45	0	45
CASWELL CREEK	64.0	F	08/28	S	0	0	0	0	0	0	31	9	40	37	2	39	42	0	42
CASWELL CREEK	64.0	F	09/06	S	0	0	0	0	0	0	60	13	73	48	8	56	82	1	83
CASWELL CREEK	64.0	F	09/13	S	0	0	0	0	0	0	0	15	15	0	14	14	30	0	30
CASWELL CREEK	64.0	F	09/21	S	0	0	0	0	0	0	0	7	7	0	17	17	23	0	23
SHEEP CREEK	66.1	F	07/26	FS	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
SHEEP CREEK	66.1	F	07/30	F	0	0	0	12	0	12	0	0	0	10	0	10	0	0	0
SHEEP CREEK	66.1	F	08/06	F	0	0	0	0	0	0	129	9	138	149	3	151	0	0	0
SHEEP CREEK	66.1	F	08/13	F	0	0	0	0	0	0	255	9	264	101	0	101	21	0	21
SHEEP CREEK	66.1	F	08/20	F	0	0	0	0	0	0	0	7	7	8	3	11	0	0	0
SHEEP CREEK	66.1	F	08/28	F	0	0	0	0	0	0	4	8	12	11	2	13	3	0	3
SHEEP CREEK	66.1	F	09/06	F	0	0	0	0	0	0	31	10	21	14	3	17	7	1	8
SHEEP CREEK	66.1	F	09/13	S	0	0	0	0	0	0	0	6	6	0	2	2	24	1	25
SHEEP CREEK	66.1	F	09/21	S	0	0	0	0	0	0	0	2	2	0	4	4	15	1	16
GOOSE CREEK	72.0	N	09/14	S	0	0	0	0	0	0	0	11	11	11	4	15	18	1	19
GOOSE CREEK	72.0	N	09/22	S	0	0	0	0	0	0	0	5	5	0	3	3	17	2	19
GOOSE CREEK	72.0	F	07/27	FS	3	0	3	74	0	74	0	0	0	120	0	120	0	0	0
GOOSE CREEK	72.0	F	07/31	F	4	1	5	0	0	0	313	3	316	84	0	84	0	0	0
GOOSE CREEK	72.0	F	08/07	S	1	1	2	0	1	1	248	14	262	124	15	139	13	0	13
GOOSE CREEK	72.0	F	08/14	S	0	0	0	3	0	3	302	14	326	279	5	303	21	0	21
GOOSE CREEK	72.0	F	08/21	S	0	0	0	0	0	0	14	20	44	9	11	20	18	0	18
GOOSE CREEK	72.0	F	08/29	S	0	0	0	0	0	0	12	23	35	15	18	33	26	0	26
GOOSE CREEK	72.0	F	09/07	E	0	0	0	0	0	0	10	25	35	15	14	29	45	0	45

Appendix Table D-1 (Continued).

Stream	River Mile	Survey Methods	Date	Survey Condition	Adult Salmon Enumerated														
					Chinook			Sockeye			Pink			Chum			Coho		
					Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total
MONTANA CREEK	77.0	F	07/23	F	2300	0	2300	0	0	0	0	0	0	0	0	0	0	0	0
MONTANA CREEK	77.0	F	07/27	FD	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
MONTANA CREEK	77.0	F	07/31	P	14	14	28	0	0	0	37	2	39	11	2	13	0	0	0
MONTANA CREEK	77.0	F	08/07	S	0	3	3	0	0	0	331	1	332	61	0	61	15	0	15
MONTANA CREEK	77.0	F	08/14	F	4	6	10	0	0	0	416	33	449	61	0	61	24	0	24
MONTANA CREEK	77.0	F	08/21	S	0	2	2	0	0	0	29	20	48	27	1	28	10	0	10
MONTANA CREEK	77.0	F	08/29	P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MONTANA CREEK	77.0	F	08/29	P	0	0	0	0	0	0	25	2	27	0	1	1	4	0	4
MONTANA CREEK	77.0	F	09/07	S	0	0	0	0	0	0	18	6	24	6	0	6	19	2	21
MONTANA CREEK	77.0	F	09/14	S	0	0	0	0	0	0	0	1	1	0	2	2	61	0	61
MONTANA CREEK	77.0	F	09/23	S	0	0	0	0	0	0	0	0	0	0	2	2	30	7	37
RABIDEAUX CREEK	83.1	M	09/26	S	0	0	0	0	1	1	0	0	0	0	0	0	9	12	21
RABIDEAUX CREEK	83.1	F	07/07	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RABIDEAUX CREEK	83.1	F	07/25	ED	591	6	597	0	0	0	0	0	0	0	0	0	0	0	0
RABIDEAUX CREEK	83.1	F	07/29	P	0	0	0	0	0	0	0	0	0	13	0	13	0	0	0
RABIDEAUX CREEK	83.1	F	08/02	F	2	0	2	0	0	0	3	0	3	2	0	2	0	0	0
RABIDEAUX CREEK	83.1	F	08/03	E	560	60	620	0	0	0	16	0	16	0	0	0	0	0	0
RABIDEAUX CREEK	83.1	F	08/10	F	0	0	0	0	0	0	39	2	41	0	0	0	0	0	0
RABIDEAUX CREEK	83.1	F	08/17	F	0	0	0	0	0	0	89	2	91	0	0	0	0	0	0
RABIDEAUX CREEK	83.1	F	08/24	P	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
RABIDEAUX CREEK	83.1	F	09/01	P	0	0	0	0	0	0	0	2	2	0	2	2	2	0	2
RABIDEAUX CREEK	83.1	F	09/10	S	0	0	0	0	0	0	0	0	0	0	3	3	1	0	1
RABIDEAUX CREEK	83.1	F	09/17	F	0	0	0	0	0	0	0	2	2	0	4	4	3	0	3
RABIDEAUX CREEK	83.1	F	09/20	F	0	0	0	0	0	0	0	0	0	0	2	2	3	0	3
RABIDEAUX CREEK	83.1	F	10/01	S	0	0	0	0	0	0	0	0	0	0	0	0	480	0	480
ANSHER CREEK	84.1	F	09/20	F	0	0	0	0	0	0	0	0	0	0	0	0	25	0	25
ANSHER CREEK	84.1	F	09/20	S	0	0	0	0	0	0	0	0	0	0	0	0	60	0	60
ANSHER CREEK	84.1	F	09/29	E	0	0	0	0	0	0	0	0	0	0	0	0	19	1	20
QUESTION CREEK	84.1	F	09/20	F	0	0	0	0	0	0	0	0	0	0	0	0	33	0	33
QUESTION CREEK	84.1	F	09/20	S	0	0	0	0	0	0	0	0	0	0	0	0	320	0	320
QUESTION CREEK	84.1	F	09/29	E	0	0	0	0	0	0	0	0	0	0	0	0	67	1	68
SUNSHINE CREEK	85.1	M	09/26	S	0	0	0	0	0	0	0	0	0	2	20	22	3	0	3
SUNSHINE CREEK	85.1	F	07/07	E	10	4	14	38	1	39	0	0	0	0	0	0	0	6	6
SUNSHINE CREEK	85.1	F	07/29	F	4	0	4	26	0	26	1600	3	1611	4	0	4	0	0	0
SUNSHINE CREEK	85.1	F	08/03	F	0	1	1	71	0	71	461	2	463	49	0	49	3	0	3
SUNSHINE CREEK	85.1	F	08/10	F	0	0	0	2	0	2	937	22	959	0	0	0	30	0	30
SUNSHINE CREEK	85.1	F	08/17	S	0	0	0	0	0	0	540	36	576	0	0	0	35	0	35
SUNSHINE CREEK	85.1	F	08/24	S	0	0	0	0	0	0	14	3	17	2	2	4	32	0	32
SUNSHINE CREEK	85.1	F	09/01	S	0	0	0	0	0	0	2	2	4	0	2	2	84	0	84
SUNSHINE CREEK	85.1	F	09/10	F	0	0	0	0	0	0	0	1	1	0	5	5	0	0	0
SUNSHINE CREEK	85.1	F	09/17	S	0	0	0	0	0	0	0	7	7	1	6	7	2	1	3
SUNSHINE CREEK	85.1	F	09/20	F	0	0	0	0	0	0	0	0	0	0	0	0	34	0	34

Appendix Table D-1 (Continued).

Stream	River mile	Survey Methods	Date	Survey Condition	Adult Salmon Enumerated														
					Chinook			Sockeye			Pink			Chum			Coho		
					Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total	Live	Dead	Total
BIRCH CREEK	99.2	F	07/23	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BIRCH CREEK	99.2	F	07/29	E	9	0	9	174	0	174	153	0	153	0	0	0	0	0	0
BIRCH CREEK	99.2	F	08/02	E	10	0	10	66	0	66	119	0	119	0	0	0	0	0	0
BIRCH CREEK	99.2	F	08/09	E	20	7	27	2	0	2	1598	42	1637	0	0	0	0	0	0
BIRCH CREEK	99.2	F	08/16	E	4	5	9	0	0	0	980	35	1015	0	0	0	0	0	0
BIRCH CREEK	99.2	F	08/23	E	0	1	1	10	1	11	73	38	131	21	0	39	12	0	12
BIRCH CREEK	99.2	F	09/02	F	0	1	1	0	1	1	131	30	151	53	10	63	53	0	53
BIRCH CREEK	99.2	F	09/09	E	0	0	0	0	0	0	131	24	155	31	14	35	32	0	32
BIRCH CREEK	99.2	F	09/16	E	0	0	0	0	0	0	12	98	110	2	57	59	17	0	17
BIRCH CREEK	99.2	F	09/25	E	0	0	0	0	0	0	1	10	11	22	47	69	4	0	4
BIRCH CREEK	99.2	F	09/28	E	0	0	0	0	0	0	0	0	0	0	0	0	234	0	234
TRAPPER CREEK	91.5	F	07/23	E	15	0	15	0	0	0	0	0	0	0	0	0	0	0	0
TRAPPER CREEK	91.5	F	07/28	F	1	0	1	15	0	15	236	0	236	5	0	5	0	0	0
TRAPPER CREEK	91.5	F	08/01	F	0	0	0	0	0	0	39	0	39	0	0	0	0	0	0
TRAPPER CREEK	91.5	F	08/10	F	0	1	1	0	0	0	332	3	335	51	0	51	2	0	2
TRAPPER CREEK	91.5	F	08/15	F	0	3	3	200	0	200	245	7	252	41	0	41	4	0	4
TRAPPER CREEK	91.5	F	08/22	F	0	0	0	2	0	2	31	4	35	30	1	31	24	0	24
TRAPPER CREEK	91.5	F	08/30	F	0	0	0	0	0	0	0	6	6	6	3	3	0	0	0
TRAPPER CREEK	91.5	F	09/08	E	0	0	0	0	0	0	29	23	52	18	8	26	29	2	31
TRAPPER CREEK	91.5	F	09/15	E	0	0	0	0	0	0	1	14	18	3	16	19	23	0	23
TRAPPER CREEK	91.5	F	09/24	E	0	0	0	0	0	0	0	2	2	2	25	27	3	0	3
CACHE CREEK	95.5	F	07/22	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CACHE CREEK	95.5	F	07/29	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CACHE CREEK	95.5	F	08/01	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CACHE CREEK	95.5	F	08/08	E	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CACHE CREEK	95.5	F	08/15	E	0	0	0	12	0	12	17	0	17	30	0	30	0	0	0
CACHE CREEK	95.5	F	08/22	E	0	0	0	0	0	0	17	0	17	3	0	3	1	0	1
CACHE CREEK	95.5	F	08/30	F	0	0	0	0	0	0	11	4	15	0	1	1	3	0	3
CACHE CREEK	95.5	F	09/08	E	0	0	0	0	0	0	4	13	19	0	39	39	9	0	9
CACHE CREEK	95.5	F	09/15	E	0	0	0	0	0	0	0	2	2	0	85	85	23	0	23
CACHE CREEK	95.5	F	09/24	E	0	0	0	0	0	0	0	0	0	0	44	44	1	0	1

APPENDIX E

Habitat data collected at stream interface reaches between Susitna RM 28.0 and 98.6 in 1984.

Appendix Table E-1. Habitat data collected at stream interface reaches between Susitna RM 28.0 and RM 98.6 in 1984.

Moose Creek (RM 31.7)
Location in tributary: 225 ft from mouth at mixing zone

Mainstem Q: 43,320 cfs at Sunshine Station (RM 83.9)				8/14/84
Note	Distance	Depth	Substrate	Comments
LWE	9.50	0.00	SISA	
	13.00	0.62	SISA	
	20.00	1.94	SISA	
	30.00	2.36	SISA	
	40.00	2.90	SISA	
	50.00	2.82	SISA	
RWE	58.50	0.00	SISA	

Mainstem Q: 110,600 at Sunshine Station (RM 83.9)				8/26/84
Note	Distance	Depth	Substrate	Comments
LWE	-4.3	0.0	SISA	
	0.0	2.0	SISA	
	10.0	4.5	SISA	
	20.0	6.3	SISA	
	30.0	6.7	SISA	
	40.0	7.3	SISA	
	50.0	7.3	SISA	
	60.0	5.6	SISA	
	70.0	3.5	SISA	
	80.0	2.7	SISA	
RWE	90.0	0.0	SISA	

Whitsol Creek (RM 35.2)
Transect 1
Location in tributary: 30 ft above mouth

Mainstem Q: 43,320 cfs at Sunshine Station				8/14/84
Note	Distance	Depth	Substrate	Comments
LWE	16.00	0.00	SISA	
	20.00	1.44	SISA	
	25.00	1.88	SISA	
	30.00	1.82	SISA	
	35.00	1.98	SISA	
RWE	40.00	0.00	SISA	

Mainstem Q: 87,370 cfs at Sunshine Station (RM 83.9)				8/25/84
Note	Distance	Depth	Substrate	Comments
LWE	5.0	0.0	SISA	
	10.0	0.6	SISA	
	16.0	4.3	SISA	
	20.0	5.2	SISA	
	25.0	5.4	SISA	
	30.0	5.4	SISA	
	35.0	5.3	SISA	
	40.0	1.4	SISA	
RWE	41.7	0.0	SISA	

Fish Creek (RM 31.2)
Transect 1
Location in tributary: 100 ft up from south

Mainstem Q: 43,320 cfs at Sunshine Station (RM 83.9) 8/14/84

Note	Distance	Depth	Substrate	Comments
LWE	17.70	0.00	SISA	
	20.00	0.34	SISA	
	30.00	1.40	SISA	
	40.00	3.09	SISA	
	50.00	4.92	SISA	
	60.00	6.34	SISA	
	70.00	4.67	SISA	
	80.00	3.16	SISA	
	90.00	2.25	SISA	
	100.00	0.86	SISA	
RWE	106.00	0.00	SISA	

Mainstem Q: 87,370 cfs at Sunshine Station (RM 83.9) 8/25/84

Note	Distance	Depth	Substrate	Comments
LWE	-2.5	1.5	SISA	
	0.0	2.8	SISA	
	10.0	3.7	SISA	
	17.7	4.0	SISA	
	20.0	4.9	SISA	
	30.0	6.6	SISA	
	40.0	8.7	SISA	
	50.0	9.7	SISA	
	60.0	- 8.3	SISA	
	70.0	6.8	SISA	
	80.0	6.0	SISA	
	90.0	4.7	SISA	
	106.0	3.8	SISA	
RWE	113.0	0.0	SISA	

Fish Creek (RM 31.2)
Transect 2
Location in tributary: 450 ft up from transect 1

Mainstem Q: 43,320 cfs at Sunshine Station (RM 83.9) 8/14/84

Note	Distance	Depth	Substrate	Comments
LWE	14.00	0.00	SISA	
	20.00	0.88	SISA	
	30.00	2.46	SISA	
	40.00	4.26	SISA	
	50.00	5.40	SISA	
	60.00	5.25	SISA	
	70.00	5.09	SISA	
	80.00	4.52	SISA	
	90.00	3.80	SISA	
	100.00	2.44	SISA	
	110.00	1.58	SISA	
	120.00	1.10	SISA	
RWE	134.00	0.00	SISA	

Mainstem Q: 87,370 cfs at Sunshine Station (RM 83.9) 8/25/84

Note	Distance	Depth	Substrate	Comments
LWE	-0.5	0.0	SISA	
	0.0	2.0	SISA	
	10.0	3.0	SISA	
	14.0	3.7	SISA	
	20.0	4.4	SISA	
	30.0	6.1	SISA	
	40.0	8.3	SISA	
	50.0	8.8	SISA	
	60.0	9.0	SISA	
	70.0	8.6	SISA	
	80.0	8.3	SISA	
	90.0	7.6	SISA	
	110.0	6.2	SISA	
	120.0	4.8	SISA	
	134.0	3.8	SISA	
	140.0	2.8	SISA	
RWE	145.5	0.0	SISA	

Appendix Table E-1 (Continued).

Whitsol Creek (RM 35.2)
Transect 2
Location in tributary: 50 ft up from transect 1

Mainstem Q: 43,320 cfs at Sunshine Station (RM 83.9) 8/14/84

Note	Distance	Depth	Substrate	Comments
LWE	7.00	0.00	SISA	
	20.00	0.96	SISA	
	40.00	1.30	SISA	
	60.00	1.52	SISA	
	80.00	1.76	SISA	
	100.00	1.98	SISA	
	120.00	1.80	SISA	
	140.00	1.20	SISA	
RWE	152.00	0.00	SIGA	

Mainstem Q: 87,370 cfs at Sunshine Station (RM 83.9) 8/25/84

Note	Distance	Depth	Substrate	Comments
LWE	-9.0	0.0	SISA	
	9.0	2.3	SISA	
	7.0	3.4	SISA	
	10.0	3.8	SISA	
	20.0	4.6	SISA	
	40.0	5.0	SISA	
	60.0	5.2	SISA	
	80.0	5.3	SISA	
	100.0	5.5	SPSA	
	120.0	5.5	SISA	
	140.0	4.7	SISA	
	152.0	3.5	SISA	
	160.0	2.1	SISA	
RWE	165.0	0.0	SISA	

Rolly Creek (RM 39.0)

Transect 1
Location in tributary: 75 ft up from mouth
Mainstem Q: 43,320 cfs at Sunshine Station (RM 83.9) 8/14/84

Note	Distance	Depth	Substrate	Comments
LWE	2.60	0.00	SISA	
	10.00	2.00	SISA	
	20.00	3.12	SISA	
	30.00	5.56	SISA	
	40.00	5.28	SISA	
	50.00	1.94	SISA	
	60.00	3.73	SISA	
	70.00	2.62	SISA	
RWE	72.00	1.39	COBO	

Transect 2
Location in tributary: 100 ft above transect 1
Mainstem Q: 43,320 cfs at Sunshine Station (RM 83.9) 8/14/84

Note	Distance	Depth	Substrate	Comments
LWE	2.0	0.0	SISA	
	10.0	1.4	SISA	
	20.0	2.7	SISA	
	30.0	4.9	SISA	
	40.0	4.9	SISA	
	50.0	4.0	SISA	
	60.0	2.9	SISA	
	70.0	1.0	SISA	
RWE	74.4	0.0	COBO	

Willow Creek (RM 49.1)
Location in tributary: 75 ft up from mouth

Mainstem Q: 46,920 cfs at Sunshine Station (RM 83.9) 8/13/84

Note	Distance	Depth	Substrate	Comments
LWE	1.50	1.40	SI	
	10.00	4.99	SI	
	15.00	6.51	CORU	
	25.00	4.68	SGSA	
	30.00	3.50	SASI	
	35.00	2.58	SASI	
RWE	47.50	0.00	SASI	

Mainstem Q: 110,600 cfs at Sunshine Station (RM 83.9) 8/26/84

Note	Distance	Depth	Substrate	Comments
LWE	-6.0	0.0	SI	
	0.0	1.5	SI	
	5.0	7.6	SI	
	10.0	8.0	SI	
	15.0	8.7	CORU	
	20.0	8.0	SGSA	
	25.0	7.0	SGSI	
	30.0	5.4	SGSI	
	35.0	4.3	SGSI	
	40.0	3.3	SGSI	
	47.5	1.0	SGSI	
	50.0	1.7	SGSI	
	55.0	0.5	SGSI	
	60.0	0.5	SI	
	65.0	1.2	SI	
	70.0	0.7	SISA	
	75.0	1.8	SA	
	85.0	0.9	SA	
RWE	91.6	0.0	SA	

Little Willow Creek (RM 50.5)
Location in tributary: 50 ft up from mouth

Mainstem Q: 46,920 cfs at Sunshine Station (RM 83.9) 8/13/84

Note	Distance	Depth	Substrate	Comments
LWE	2.50	0.26	SISA	
	10.00	1.02	SISA	
	13.00	1.26	RUSA	
	15.00	2.06	RUSA	
	18.00	2.34	RUSA	
	26.00	1.84	LGSG	
	40.00	1.61	LGSG	thin silt layer
	56.00	1.30	SGSA	
	65.00	0.64	SGLS	thin silt layer
RWE	72.00	0.00	SGLS	thin silt layer

Mainstem Q: 110,600 cfs at Sunshine Station (RM 83.9) 8/26/84

Note	Distance	Depth	Substrate	Comments
LWE	0.50	0.00	SI	Tributary water turbid.
	2.00	1.82	SISA	
	10.00	2.94	SISA	
	13.00	3.26	RUSA	
	15.00	2.50	RUSA	
	18.00	3.98	RUSA	
	26.00	3.12	LGSG	
	40.00	3.06	LGSG	
	56.00	3.02	SGSA	
	65.00	2.20	SGLG	
	72.00	1.42	SGLG	
	80.00	1.10	SA	
	88.60	0.61	SASG	
RWE	91.60	0.00	SASG	

Appendix Table E-1 (Continued).

Grays Creek (RM 59.5)
Location in tributary: 150 ft up from mouth

Mainstem Q: 46,920 cfs at Sunshine Station (RM 83.9) 8/13/84

Note	Distance	Depth	Substrate	Comments
LWE	10.00	2.13	SI	
	25.00	3.48	SI	
	40.00	4.63	GRRU	
	60.00	3.20	SI	
RWE	70.00	1.31	SI	

Mainstem Q: 110,600 cfs at Sunshine Station (RM 83.9) 8/26/84

Note	Distance	Depth	Substrate	Comments
LWE	6.5	0.0	SI	
	10.0	4.2	SI	
	25.0	5.1	SI	
	40.0	6.4	GRRU	
	60.0	4.8	SI	
	70.0	2.6	SI	
	75.0	1.8	SI	
RWE	82.0	0.0	SI	

Caswell Creek (RM 64.0)
Location in tributary: 75 ft up from mouth

Mainstem Q: 48,900 cfs at Sunshine Station (RM 83.9) 8/15/84

Note	Distance	Depth	Substrate	Comments
LWE	20.50	0.00	SI	
	25.00	3.04	SI	
	30.00	4.00	SI	
	40.00	3.53	SI	
	50.00	2.95	RU	silt layer 2 inches thick
	60.00	3.13	RU	silt layer 2 inches thick
	70.00	3.28	RU	silt layer 2 inches thick
	77.00	1.90	RU	silt layer 2 inches thick
RWE	83.00	0.00	LBSS	

Mainstem Q: 83,380 cfs at Sunshine Station (RM 83.9) 8/27/84

Note	Distance	Depth	Substrate	Comments
LWE	18.3	0.0	SI	
	25.0	4.1	SI	
	30.0	5.0	SI	
	40.0	3.9	SI	
	50.0	3.2	RU	silt layer 2 inches thick
	60.0	4.0	RU	silt layer 2 inches thick
	70.0	4.6	RU	silt layer 2 inches thick
RWE	87.0	0.0	RU	silt layer 2 inches thick

Sheep Creek (RM 66.1)
Location in tributary: 100 ft up from mouth

Mainstem Q: 48,900 cfs at Sunshine Station (RM 83.9) 8/15/84

Note	Distance	Depth	Substrate	Comments
LWE	6.50	0.00	SI	
	25.00	3.39	RUL6	silt layer 1 inch thick
	45.00	5.15	LGSG	
	65.00	5.58	SGSI	
	85.00	5.00	SGSI	
	105.00	4.63	SGSI	
	125.00	3.02	SI	
	145.00	1.50	SI	
RWE	150.00	0.00	SI	

Mainstem Q: 83,380 cfs at Sunshine Station (RM 83.9) 8/27/84

Note	Distance	Depth	Substrate	Comments
LWE	4.9	0	SI	
	25	3.69	RUL6	silt layer 1 inch thick
	45	5.37	LGSG	
	65	5.01	SGSI	
	85	5.27	SGSI	
	105	4.79	SGSI	
	125	3.31	SI	
	145	1.79	SI	
RWE	151.7	0	SI	

Goose Creek (RM 72.0)
Location in tributary: 50 ft up from mouth

Mainstem Q: 48,900 cfs at Sunshine Station (RM 83.9) 8/15/84

Note	Distance	Depth	Substrate	Comments
LWE	3.60	0.00	SI	
	10.00	1.62	SI	
	20.00	2.00	SGL6	silt layer 2 inches thick
	30.00	1.71	SGL6	silt layer 2 inches thick
	40.00	1.31	SGL6	silt layer 1 inch thick
RWE	50.00	1.20	SGL6	silt layer 1 inch thick

Mainstem Q: 83,380 cfs at Sunshine Station (RM 83.9) 8/27/84

Note	Distance	Depth	Substrate	Comments
LWE	2.3	0	SI	
	10	1.94	SI	
	20	2.66	SGL6	silt layer 2 inches thick
	30	2.91	SGL6	silt layer 2 inches thick
	40	1.63	SGL6	silt layer 1 inch thick
	50	1.75	SGL6	silt layer 1 inch thick
	60	1.06	SGL6	silt layer 1 inch thick
	70	1.01	SGL6	silt layer 1 inch thick
	80	0.24	SGL6	silt layer 1 inch thick
RWE	85.6	0	SGL6	silt layer 1 inch thick

Appendix Table E-1 (Continued).

Montana Creek (RM 77.0)
Location in tributary: 50 ft up from mouth

Mainstem Q: 48,900 cfs at Sunshine Station (RM 83.9) 8/15/84

Note	Distance	Depth	Substrate	Comments
LWE	16.80	0.00	LGCO	
	20.00	1.41	LGCO	
	30.00	1.82	RULG	
	40.00	1.84	RUCO	
	50.00	1.62	SGRU	
	60.00	1.10	SGLG	
RWE	69.30	0.00	SGRU	

Mainstem Q: 83,380 cfs at Sunshine Station (RM 83.9) 8/27/84

Note	Distance	Depth	Substrate	Comments
LWE	14.4	0	LGCO	
	20	1.81	LGCO	
	30	2.07	RULG	
	40	2.11	RUCO	
	50	1.95	SGRU	
	60	1.47	SGLG	
RWE	72.2	0	SGRU	

Rabideux Creek (RM 83.1)
Location in tributary: 50 ft up from mouth

Mainstem Q: 42,700 cfs at Sunshine Station (RM 83.9) 8/16/84

Note	Distance	Depth	Substrate	Comments
LWE	22.10	0.00	SI	
	30.00	1.32	SI	
	50.00	3.38	SI	
	70.00	4.97	SI	
	90.00	5.85	SI	
	110.00	5.85	SI	
	130.00	2.32	SI	
	150.00	1.36	SI	
RWE	163.10	0.00	SI	

Mainstem Q: 83,380 cfs at Sunshine Station (RM 83.9) 8/27/84

Note	Distance	Depth	Substrate	Comments
LWE	18.4	0.0	SI	
	30.0	1.5	SI	
	50.0	3.5	SI	
	70.0	5.1	SI	
	90.0	6.1	SI	
	110.0	6.2	SI	
	130.0	2.8	SI	
	150.0	1.4	SI	
RWE	171.2	0.0	SI	

Trapper Creek (RM 91.5)
Location in tributary: 50 ft up from mouth

Mainstem Q: 42,780 cfs at Sunshine Station (RM 83.9) 8/16/84

Note	Distance	Depth	Substrate	Comments
LWE	9.50	0.00	RUBB	silt layer 6 inches thick
	15.00	1.77	RUBB	silt layer 6 inches thick
	20.00	1.59	RUBB	silt layer 6 inches thick
	25.00	0.80	RUBB	silt layer 6 inches thick
	30.00	0.48	RUBB	silt layer 4 inches thick
RWE	35.00	0.00	RUBB	silt layer 4 inches thick

Mainstem Q: 83,380 cfs at Sunshine Station (RM 83.9) 8/27/84

Note	Distance	Depth	Substrate	Comments
LWE	6.90	0.00	RUBB	silt layer 6 inches thick
	15.00	1.93	RUBB	silt layer 6 inches thick
	20.00	1.87	RUBB	silt layer 6 inches thick
	25.00	0.84	RUBB	silt layer 6 inches thick
	30.00	0.64	RUBB	silt layer 4 inches thick
RWE	37.70	0.00	RUBB	silt layer 4 inches thick

Cache Creek (RM 95.5)
Location in tributary: 50 ft up from mouth

Mainstem Q:42,780 cfs at Sunshine Station (RM 83.9) 8/16/84

Note	Distance	Depth	Substrate	Comments
LWE	2.60	0.00	SI	
	10.00	1.26	LGSG	
	20.00	1.25	LGRU	thin silt layer
	30.00	1.36	LGRU	thin silt layer
	40.00	0.91	RUBB	
RWE	45.10	0.00	SI	

Mainstem Q: 83,380 at Sunshine Station (RM 83.9) 8/27/84

Note	Distance	Depth	Substrate	Comments
LWE	3.60	0.00	SI	
	10.00	1.83	LGSG	
	20.00	1.60	LGRU	thin silt layer
	30.00	1.82	LGRU	thin silt layer
	40.00	1.35	RUBB	
RWE	47.10	0.00	SI	

Appendix Table E-1 (Continued).

Sunshine Creek (RM 85.1)
Location in tributary: 25 ft up from mouth

Mainstem Q: 42,780 cfs at Sunshine Station (RM 83.9) 8/16/84

Note	Distance	Depth	Substrate	Comments
LWE	3.70	0.00	SI	
	10.00	1.85	SI	
	20.00	2.70	LGRU	silt layer 3 inches thick
	30.00	2.66	RUL8	
	40.00	1.90	RUL6	
RWE	48.00	0.00	SI	

Mainstem Q: 83,380 cfs at Sunshine Station (RM 83.9) 8/27/84

Note	Distance	Depth	Substrate	Comments
LWE	2.40	0.00	SI	
	10.00	1.91	SI	
	20.00	2.97	LGRU	silt layer 3 inches thick
	30.00	2.89	RUL6	
	40.00	2.16	RUL6	
RWE	51.20	0.00	SI	

Birch Creek (RM 89.2)
Location in tributary: 25 ft up from mouth

Mainstem Q: 42,780 cfs at Sunshine Station (RM 83.9) 8/16/84

Note	Distance	Depth	Substrate	Comments
LWE	4.90	0.00	SIS8	
	10.00	0.73	L6S6	thin silt layer
	20.00	1.04	L6S6	thin silt layer
	30.00	0.91	L6S6	thin silt layer
	40.00	1.17	L6S6	thin silt layer
	50.00	1.05	L6S6	thin silt layer
RWE	61.40	0.00	L6S6	thin silt layer

Mainstem Q: 83,380 cfs at Sunshine Station (RM 83.9) 8/27/84

Note	Distance	Depth	Substrate	Comments
LWE	2.80	0.00	SIS6	
	10.00	0.99	L6S6	thin silt layer
	20.00	1.21	L6S6	thin silt layer
	30.00	1.12	L6S6	thin silt layer
	40.00	1.37	L6S6	thin silt layer
	50.00	1.29	L6S6	thin silt layer
RWE	63.40	0.00	L6S6	thin silt layer