

STATE OF ALASKA

*Jay S. Hammond, Governor*

Annual Performance Report for

STATUS OF IMPORTANT NATIVE  
CHINOOK SALMON STOCKS IN  
SOUTHEASTERN ALASKA

by

*Paul D. Kissner  
and  
Michael R. Bethers*

ALASKA DEPARTMENT OF FISH AND GAME  
*Ronald O. Skoog, Commissioner*

SPORT FISH DIVISION  
*Rupert E. Andrews, Director*

## TABLE OF CONTENTS

	Page
PROJECT NO. AFS-41 A STUDY OF CHINOOK SALMON IN SOUTHEASTERN ALASKA	
Segment No. AFS-41-9 Status of Important Native Chinook Salmon Stocks in Southeastern Alaska By: Paul D. Kissner and Michael R. Bethers	
Abstract . . . . .	1
Background . . . . .	2
Recommendations . . . . .	2
Management . . . . .	2
Research . . . . .	2
Objectives . . . . .	3
Techniques Used . . . . .	3
Findings . . . . .	5
Taku River Studies . . . . .	5
Stikine River Studies . . . . .	14
Unuk River Studies . . . . .	19
Escapements in Other Areas of Southeast Alaska . . . . .	19
Literature Cited . . . . .	27

## LIST OF TABLES

Table 1.	Peak aerial escapement counts of chinook salmon in the Taku River tributaries, 1951-1980 . . . . .	6
Table 2.	Number and age of male and female salmon sampled at the Nakina carcass weir, by year . . . . .	8
Table 3.	Length frequency by age of male chinook salmon sampled at the Nakina carcass weir, 1980 . . . . .	9
Table 4.	Length frequency by age of female chinook salmon sampled at the Nakina carcass weir, 1980 . . . . .	10
Table 5.	Juvenile chinook salmon tagged by brood year and tag code in the Taku River system, 1980 . . . . .	11
Table 6.	Daily record of traps checked and juvenile chinook tagged on the Nakina and Taku Rivers, fall, 1980 . . . . .	12
Table 7.	Length frequency of 1979 brood chinook salmon juveniles minnow trapped in the Taku River system, 1980 . . . . .	15
Table 8.	A summary of coded wire tagged chinook salmon recovered at the Nakina carcass weir, 1980 . . . . .	16
Table 9.	A summary of coded wire tagged Taku River chinook salmon recovered during 1980 . . . . .	17
Table 10.	Peak escapement counts of chinook salmon in the Tahltan and Little Tahltan Rivers . . . . .	18
Table 11.	Juvenile chinook salmon tagged by code, on the Stikine River, 1980 . . . . .	20
Table 12.	Minnow traps checked, young-of-the-year chinook tagged, mortalities, recaptures and tag retention by date on the Stikine River, 1980 . . . . .	21
Table 13.	Length frequency in mm of young-of-the-year chinook salmon captured in minnow traps in the Stikine River, fall, 1980 . . . . .	22

TABLE OF CONTENTS (Cont'd.)

	Page
Table 14. A summary of tagged Stikine River chinook salmon recovered from southeast Alaskan fisheries in 1980 . . . . .	23
Table 15. Minnow trap catches of chinook salmon smolts captured in the Unuk River, March 27-28, 1980 . . . . .	23
Table 16. Peak escapement counts of chinook salmon in southeast Alaska rivers through 1980 . . . . .	24

APPENDIX

Table 1. A summary of coded wire tagging and recovery of Taku River chinook salmon tagged by the Chinook Salmon Project, 1977 to date . . . . .	28
Table 2. A summary of coded wire tagging and recovery of Stikine River chinook salmon tagged by the Chinook Salmon Project, 1978 to date . . . . .	35

## RESEARCH PROJECT SEGMENT

State: ALASKA Name: Sport Fish Investigations  
of Alaska

Project No.: AFS-41 Project Title: A STUDY OF CHINOOK SALMON  
IN SOUTHEASTERN ALASKA

Segment No.: AFS-41-9 Segment Title: Status of Important Native  
Chinook Salmon Stocks in  
Southeastern Alaska

Cooperators: Paul D. Kissner and Michael R. Bethers

Period Covered: July 1, 1980 to June 30, 1981

## ABSTRACT

The chinook salmon, Oncorhynchus tshawytscha (Walbaum), research project was initiated in 1971 to determine the status of important chinook salmon stocks and methods of enhancing depleted populations in southeastern Alaska. The major emphasis during the last several years has been to determine the migration routes and areas of harvest of southeastern chinook through coded wire tagging of juveniles and monitoring the adult chinook salmon escapements.

The Taku Inlet drift gill net fishery was monitored to determine the incidental catch of chinook salmon. An estimated 704 large mature and 552 precocious male and immature chinook salmon were harvested during the first three fishing periods.

The escapement of 7,544 chinook enumerated into various tributaries of the Taku River was the largest escapement recorded since 1958. From age class data collected at the Nakina carcass weir, it appears that the 1981 run should have a strong return of 4-ocean chinook from the 1975 brood and a below average return of 3-ocean chinook from the 1976 brood. Returns in 1982 and 1983 should be well below average based on the return of 1-ocean jacks in 1980 and the low densities of juvenile chinook encountered during tagging operations in the fall of 1979 and the spring of 1980.

During 1980, a total of 72,201 chinook salmon smolts and rearing juveniles were captured and coded wire tagged; 41,949 from the Taku River and 30,252 from the Stikine River.

Escapement information on chinook salmon in the Stikine, Unuk, Chickamin, Situk, Keta, Blossom, and King Salmon Rivers is presented.

## BACKGROUND

Stocks of wild chinook salmon are at low levels along much of the Pacific Coast. In some areas, depressed population levels are partially associated with losses of habitat. Such habitat losses include impoundments on the Columbia and Sacramento Rivers which have destroyed both spawning areas and juvenile rearing habitat.

Even though many chinook salmon systems north of the Columbia River have not suffered substantial loss of habitat or water quality, these stocks of chinook salmon have declined. The primary cause is believed to be over-harvest. The chinook is the only salmon species which is subjected to sport, commercial troll and net fisheries for 3 or 4 years while rearing at sea, and, in addition, is often subjected to net fisheries near their river of origin and sport fisheries on or near their spawning grounds.

In an attempt to rebuild the depleted southeastern Alaska spring chinook stocks, the gill net fisheries which have operated near the mouths of the Alsek, Taku, and Stikine Rivers have been eliminated or severely restricted to protect the returning spawning runs. In many areas, sport and commercial troll closures or reductions in bag limits have also been made to protect maturing native stocks of chinook salmon. Although these closures and restrictions have increased escapements, further restrictions on the harvest of immature chinook may be necessary to rebuild these stocks. Coded wire tagging and recovery of wild southeastern chinook will allow us to determine migration routes and areas of harvest. This data will provide information necessary for better management of these stocks.

## RECOMMENDATIONS

### Management

1. The restrictive regulations designed to protect maturing Alaskan chinook salmon returning to their rivers of origin should be continued. Southeast Alaska chinook salmon stocks are still at a low level and continued restrictions are necessary to rebuild these stocks.
2. The drift gill net fisheries throughout Southeast should be monitored to determine if large numbers of immature chinook are being taken incidental to the target species. Night closures should be made in areas with high incidental catches of chinook salmon.
3. The incidental catch of chinook salmon in sunken gill nets which are targeting on grey cod, Gadus macrocephalus Tilesius, should be monitored.

### Research

1. Coded wire tagging of chinook salmon smolts and juveniles should continue on the Taku and Stikine Rivers. Emphasis should center on capturing juveniles in the upriver areas in the fall by minnow traps, and possibly weirs, and in the estuary in the spring by beach seine.

2. Continue sampling the sport and commercial catch of chinook salmon to recover coded wire tags. Recovery of tags will permit determination of marine migration patterns and areas of harvest at various life history stages of important native chinook salmon stocks.
3. Continue to determine the current status of major and medium chinook salmon systems in Southeast through monitoring of escapements by aerial, ground, or weir enumeration.
4. Sport caught chinook salmon less than 28" total length (T.L.) should be sampled from May 1 through June 15 throughout Southeast to determine maturity. This would permit determination of the percentage of precocious males harvested by area.

#### OBJECTIVES

1. Determine the catch and escapement of Taku River chinook salmon.
2. Determine the catch and escapement of Stikine River chinook salmon.
3. Determine the catch and escapement of Unuk River chinook salmon.
4. Determine the escapement of chinook salmon in other important spawning rivers of southeast Alaska.

#### TECHNIQUES USED

Commercial chinook salmon harvest data were taken from statistical runs which were compiled by the Division of Commercial Fisheries from individual fish tickets.

Mid-eye to fork of tail measurements were taken from chinook salmon sampled on the spawning grounds.

During August, a tripod weir was operated on the Nakina River, approximately 137 m (150 yd) above its junction with the Silver Salmon River. Chinook spawning above the weir were enumerated after they could no longer maintain station in the river and floated against the weir face. The structure was cleaned of carcasses at 10 a.m. and 7 p.m. daily. All species were enumerated and length data, scale samples, and sex determinations were collected from the chinook salmon. Upriver surveys of both banks of the river were conducted every other day to enumerate and sample spawned-out chinook salmon which had not floated downriver to the weir. The survey area extended approximately 2.4 km (1.5 mi) above the weir.

All escapement surveys were conducted by foot or by "Alouette II," "Hughes 500," or "Hiller 12E" helicopters. Only 3 and 4-ocean chinook salmon ( $\geq 660$  mm or 26" in total length) were enumerated during aerial and foot surveys.

Gee minnow traps, baited with clusters of salmon roe, were used to capture juvenile salmonids in the rivers, and a beach seine was used in Taku Inlet. Salmon roe was disinfected prior to use by immersion in dilute betadine 1:90 (1 part betadine per 90 parts water) for 15 minutes.

The beach seine used in Taku Inlet was 250 ft (72 m) long by 12 ft (3.6 m) deep and constructed of three panels of web. The two end panels were each 100 ft (29.97 m) long, of 1/2 in (20 mm) square mesh, and the center panel was 50 ft (14.99 m) long, of 1/4 in (6.25 mm) square mesh. In setting this seine, two people held one end on shore while the remainder of the net was set from a 24 ft (7.2 m) inboard jet powered aluminum boat. Four people were required to purse the net onto the beach, hold it open, and remove the catch.

Juvenile salmon taken by beach seine in Taku Inlet were transported in circulating live tanks to Juneau for tagging. Tagged smolts were held overnight, transported to an area several miles from the capture site, and released.

Juvenile chinook tagged in the rivers were transported from various capture sites to the tagging locations in liveboxes and, after tagging, they were released approximately 1/2 mile below the trapping areas to reduce the number of recaptures.

Chinook salmon smolts and rearing juveniles were anesthetized with MS 222, marked by removal of the adipose fin, and micro-wire tagged with a Northwest Marine Technology, Inc. (NMT) tag injector. The tagging unit was modified to function under remote conditions by conversion to a 24 volt battery system (Koerner, 1977).

The micro-wire tags were made of type 302 stainless steel wire and were 0.25 mm (0.0098 in) in diameter and 1.0 mm (0.0394 in) in length. A code, based on the binary system, was etched into the surface of each wire to identify the agency tagging and the specific treatment of the individual.

To obtain maximum retention of the micro-wire tags they must be implanted in the cartilaginous wedge in the fish's snout. Thus, several fish were sampled daily to insure proper tag placement. The fish's skull was bisected by a vertical incision through the dorsal median plane to the oral cavity. The tag was then readily observed in the snout. If the tag was improperly placed, adjustments in the depth of the head mold were made and several more fish were checked to ensure proper placement of the tag.

The micro-wire tags were magnetized by dropping the tagged fish head-first through a ring magnet and into a bucket of water. The fish were then passed through a NMT field sampling detector to check for the presence of a magnetized tag.

Samples of chinook salmon smolts and rearing juveniles were collected for age and growth determinations. Fish were measured from the tip of the snout to the fork of the tail to the nearest millimeter and several scales were taken from the preferred area at the posterior edge of the dorsal fin, two rows above the lateral line.

Scales were collected to determine the age of chinook salmon harvested in various sport and commercial fisheries in Southeast, as well as on the spawning grounds. Scales were taken from the preferred area. Because of the high occurrence of regeneration in chinook salmon scales, several scales were taken from each side of each fish and placed in a numbered coin envelope.

These scales were later examined under a binocular microscope and the first complete scale was cleansed in detergent and mounted on a numbered gum card. The scales were pressed in cellulose acetate and analyzed on a 3-M Consultant 114 microfiche reader.

## FINDINGS

### Taku River Studies

#### Drift Gill Net Fishery in Taku Inlet:

The May through mid-June drift gill net fishery in Taku Inlet, which harvests maturing chinook salmon, was closed during 1980, as during the past 4 years. The drift gill net fishery now opens on the third Monday in June and 137 mm to 140 mm (5 3/8" to 5 1/2") stretched measure nylon mesh gillnets are utilized to harvest primarily sockeye salmon, Oncorhynchus nerka (Walbaum).

Concern for the high incidental harvest of immature chinook salmon during the 1973 sockeye salmon fishery led to the annual monitoring of the Taku Inlet drift gill net fishery (Kissner, 1973-1980). The majority of the incidental harvest occurs during the hours of darkness and night closures should be made in years when the catch of immature chinook is high (Kissner, 1979).

Apportioning the preliminary catch figures indicates that 704 large mature spawners and 552 precocious males and immature chinook were harvested during the first three gill net periods. Thus, the catch of immatures was not a problem during 1980. However, the catch of large spawners increased as the opening week (statistical week 25) shifted back towards June 15. Managers should take the variation in open dates in statistical week 25 into consideration when planning their strategies for the first sockeye opening. Additional protection should be given to the chinook salmon by moving the upper fishing boundary further from the mouth of the river to protect late returning spawners.

The Canadian commercial gill net fishery which operates in the Taku River near Tulsequah, British Columbia is known to have harvested 233 mature chinook in 1980. An additional 100 were taken for subsistence uses.

#### Escapement:

The 1980 escapement of 7,544 chinook salmon enumerated into the various tributaries of the Taku River was the largest escapement recorded since 1958 (Table 1). In the Nakina River, which is the major clearwater spawning tributary of the Taku, 4,500 3 and 4-ocean chinook salmon were

Table 1. Peak aerial escapement counts of chinook salmon in the Taku River tributaries, 1951-1980.

Year	Nakina	Kowatua	Tatsamenie	Dudidontu	Tseta	Nahlin	Total
1951	5,000	...	...	400	100	1,000	6,500
1952	9,000	...	...	...	...	...	9,000
1953	7,500	...	...	...	...	...	7,500
1954	6,000	...	...	...	...	...	6,000
1955	3,000	...	...	...	...	...	3,000
1956	1,380	...	...	...	...	...	1,380
1957	1,500*	...	...	...	...	...	1,500
1958	2,500*	...	...	4,500	...	2,500	9,500
1959	4,000*	...	...	...	...	...	4,000
1960	Poor	...	...	...	...	...	Poor
1961	Poor	...	...	...	...	...	Poor
1962	...	...	...	25	81	216	322
1963	...	...	...	...	...	...	...
1964	...	...	...	...	...	...	...
1965	3,050	200 G	50 G	100	18	37	3,455
1966	...	14 G	150 G	267	150	300	881
1967	...	250 G	...	600	350	300	1,500
1968	...	1,100 E	800 E	640	230	450	3,220
1969	...	3,300 E	800 E	...	...	...	4,100
1970	...	1,200 E	530 E	10	25	26	1,791
1971	...	1,400 E	320 E	165	...	473	2,358
1972	1,000	130 G	170 G	103	80	280	1,763
1973	2,000	100 G	200 G	200	...	300	2,800
1974	1,800	235 G	120 G	20	4	900	3,079
1975	1,800	...	...	15	...	274	2,089
1976	3,000	341 G	620 E	40	...	725	4,726
1977	3,850	580 G	573 E	18	...	650	5,671
1978	1,620	490 G	550 E	...	21	624	3,305
1979	2,110	430 G	750 E	9	...	857	4,156
1980	4,500	450 G	905	158	...	1,531	7,544

G = water glacial

E = water clear

\* = Counts of total river not conducted--comparison made from carcass weir enumeration

observed. This compares favorably with the 1951-1959 average escapement of 4,431 chinook; however, it must be remembered that during that time an intensive gill net and troll fishery occurred in and near Taku Inlet targeting on these spawning salmon and harvested from 7,500 to 25,000 annually.

Based on age class data collected at the Nakina carcass weir in 1980 (Tables 2-4), it appears that the 1981 run to the Taku River should have a strong return of 4-ocean chinook salmon from the 1975 brood and a below average return of 3-ocean chinook salmon from the 1976 brood. Based on the return of 1-ocean jacks in 1980 and the low densities of juvenile chinook captured during tagging operations in the fall of 1979 and the spring of 1980, it appears that returns in 1982 and 1983 will be well below average.

#### Juvenile Chinook Studies:

Beach seining in Taku Inlet during May and early June of 1979 indicated that large numbers of chinook smolts could be captured for coded wire tagging (Kissner, 1980). Consequently, during the spring of 1980, chinook smolts were beach seined in the estuary rather than minnow trapped in Taku River, as had been conducted during the spring of each of the three previous years.

Beach seining was conducted at Alice's Restaurant and Joe Whiting Beach, approximately 13.5 mi (21.7 km) by water from Juneau.

During mid-May to mid-June, 1,573 chinook smolts, averaging 84.3 mm (F.L.), were captured by beach seine, tagged, and released (Table 5). In addition, large numbers of sockeye smolts (peak catch over 6,000 per day) and coho smolts were incidentally captured but not tagged.

The density of chinook smolts in the estuary during May and early June in 1980 was much lower than that experienced during the spring of 1979. This correlates with the low densities of the same brood year captured during tagging operations in the mainstem Taku River during September and October of 1979. We feel that the major reason for the apparent weakness in the 1978 brood was the decreased productivity of the mainstem Taku rearing areas caused by the Inklin landslide during December, 1978. Observations indicated that many of the productive braided areas on King Salmon Flats were silted in and trapping the young-of-the-year in these areas during the fall of 1979 indicated that few chinook salmon were utilizing this important area for rearing.

Visual observations and minnow trapping conducted during September through mid-November 1980 in the King Salmon Flats area indicated that the siltation problem had been greatly reduced and that juvenile chinook were again utilizing the area in good numbers.

Minnow trapping and coded wire tagging of young-of-the-year chinook from the 1979 brood year was conducted on the glacial Nakina and mainstem Taku Rivers from September 4 to November 12, 1980. A total of 32,758 juvenile chinook were captured and coded wire tagged in the glacial Nakina from Inklin Junction to Canoe Landing and an additional 7,618 juvenile chinook were captured and tagged in the mainstem Taku River in the vicinity of King Salmon Flats (Tables 5 and 6).

Table 2. Number and age of male and female salmon sampled at the Nakina carcass weir, by year.

AGE	1956	1957	1958	1959	1973	1974	1975	1976*	1977	1978	1979	1980
<u>MALE</u>												
1.1	754	699	1,335	838	336	730	228	64	1,145	2,277	675	486
1.2	1,201	1,249	2,404	1,132	853	718	505	412	434	915	1,353	542
1.3	312	242	561	611	273	267	90	236	283	56	359	388
1.4	86	110	123	298	242	124	63	95	368	88	74	172
1.5	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>7</u>	<u>3</u>	<u>1</u>	<u>4</u>	<u>7</u>	<u>8</u>	<u>2</u>	<u>0</u>
TOTAL	2,353	2,300	4,423	2,879	1,711	1,842	887	811	2,237	3,344	2,463	1,588
<u>FEMALE</u>												
1.2	8	0	0	3	0	0	0	0	0	0	0	0
1.3	287	274	469	778	210	197	38	206	298	36	200	258
1.4	129	122	175	410	404	223	31	179	834	164	67	396
1.5	<u>0</u>	<u>11</u>	<u>7</u>	<u>4</u>	<u>0</u>							
TOTAL	424	396	644	1,191	614	420	69	385	1,143	207	271	654

\* Partial weir at Grizzly Bar.

Table 3. Length frequency by age of male chinook salmon sampled at the Nakina carcass weir, 1980.

Length* (mm)	1.1	1.2	1.3	1.4
250 - 274	6			
275 - 299	35			
300 - 324	102			
325 - 349	175			
350 - 374	104	3		
375 - 399	33	6		
400 - 424	8	10		
425 - 449	8	17		
450 - 474	2	45		
475 - 499	4	60		
500 - 524	9	90		
525 - 549		88		
550 - 574		70	16	
575 - 599		67	13	
600 - 624		43	17	
625 - 649		28	24	
650 - 674		14	45	
675 - 699		1	48	
700 - 724			46	2
725 - 749			42	6
750 - 774			49	0
775 - 799			30	0
800 - 824			38	5
825 - 849			11	9
850 - 874			9	18
875 - 899				25
900 - 924				27
925 - 949				25
950 - 974				28
975 - 999				14
1000 -1024				10
1025 -1049				3
TOTAL	486	542	388	172

\* Mid-eye to fork at tail.

Table 4. Length frequency by age of female chinook salmon sampled at the Nakina carcass weir, 1980.

Length* (mm)	Age 1.3	Age 1.4
675 - 699	16	
700 - 724	27	
725 - 749	44	3
750 - 774	66	3
775 - 799	56	26
800 - 824	32	67
825 - 849	8	69
850 - 874	3	95
875 - 899	0	75
900 - 924	6	43
925 - 949		9
950 - 974		6
975 - 999		
TOTAL	258	396

\* Mid-eye to fork at tail.

Table 5. Juvenile chinook salmon tagged by brood year and tag code in the Taku River system, 1980.

Code	Chinook Tagged	Brood Year	Location Tagged	Dates
4-16-61	1,573	1978	Taku Inlet	5/27-6/2
4-19-60	10,590	1979	Nakina R.	9/6-9/13
4-19-61	9,983	1979	Nakina R.	9/14-9/26
4-16-55	10,687	1979	Nakina R.	9/27-10/31
4-16-57	1,498	1979	Nakina R.	10/31-11/2
4-16-56	4,101	1979	Taku R.	10/1-11/8
4-16-63	<u>3,517</u>	1979	Taku R.	11/9-11/12
TOTAL	41,949			

Table 6. Daily record of traps checked and juvenile chinook tagged on the Nakina and Taku Rivers, fall, 1980.

Date	Traps Checked	Fish Tagged and Released	Recaptures	C.W.T.* Code
<u>Nakina River</u>				
Sept. 4	45	...	...	...
5	45	...	...	...
6	45	1,738	...	4-19-60
7	45	1,527	...	4-19-60
8	50	1,103	1	4-19-60
9	53	1,337	...	4-19-60
10	60	1,210	7	4-19-60
11	70	1,225	6	4-19-60
12	70	1,369	4	4-19-60
13	75	1,081	...	4-19-60
		110	2	4-19-61
14	75	1,302	2	4-19-61
15	Flood	1,009	...	4-19-61
16	Flood	100	...	4-19-61
20	40	683	1	4-19-61
21	78	1,790	4	4-19-61
22	79	1,379	3	4-19-61
23	79	1,255	3	4-19-61
24	90	984	4	4-19-61
25	81	761	1	4-19-61
26	81	610	...	4-19-61
		353	1	4-16-55
27	86	797	4	4-16-55
28	86	...	...	...
29	86	611	...	4-16-55
30	...	...	...	...
Oct. 15	40	445	1	4-16-55
16	60	665	...	4-16-55
17-21	Flood			
22	59	564	1	4-16-55
23	63	439	...	4-16-55
24	83	848	...	4-16-55
25	99	956	...	4-16-55
26	104	775	...	4-16-55
27	102	595	...	4-16-55
28	123	1,124	1	4-16-55
29	118	829	...	4-16-55
30	115	1,070	...	4-16-55
31	93	616	...	4-16-55
		120	...	4-16-57
Nov. 1	83	653	...	4-16-57
2	73	725	...	4-16-57
TOTALS	2,634	32,758	46	

Table 6. (Cont'd.) Daily record of traps checked and juvenile chinook tagged on the Nakina and Taku Rivers, fall, 1980.

Date	Traps Checked	Fish Tagged and Released	Recaptures	C.W.T.* Code
<u>Taku River</u>				
Oct. 1	48	603	6	4-16-56
2	...	595	9	4-16-56
Nov. 4	50	...	...	...
5	60	974	30	4-16-56
6	75	698	11	4-16-56
7	83	585	19	4-16-56
8	83	646	...	4-16-56
		355	15	4-16-63
9	83	714	25	4-16-63
10	83	804	20	4-16-63
11	83	863	19	4-16-63
12	...	<u>781</u>	<u>23</u>	4-16-63
TOTALS	648	7,618	177	

\* Coded wire tag.

Juvenile chinook captured in the glacial Nakina averaged 68.7 mm (F.L.) and in the mainstem Taku River they averaged 68.4 mm (F.L.) (Table 7).

#### Recovery of Coded Wire Tags:

A total of 25 coded wire tagged chinook salmon were recovered from the Taku River during 1980. Eleven of these recoveries were made at the Nakina River carcass weir, 13 were retrieved in the commercial fisheries, and one in the Juneau sport fishery (Tables 8 and 9).

All commercial recoveries have been made early in the season as mature fish were returning to the Taku River to spawn. No recoveries of immature Taku River chinook salmon have been made to date. Based on the 16 recoveries to date, it appears that Taku River chinook rear in the marine environment where they are not available to the fisheries; perhaps far offshore beyond the troll fisheries.

#### Stikine River Studies

##### Drift Gill Net Fishery in the Stikine River:

The spring chinook drift gill net fishery at the mouth of the Stikine River was first closed by the Alaska Board of Fisheries in 1978 in an attempt to rebuild this depressed stock. The spring fishery remains closed at this time.

The Canadian commercial gill net fishery harvested 1,488 mature chinook salmon and an additional 587 (estimated) were taken for subsistence uses.

##### Escapement:

The 1980 escapement into the Tahltan and Little Tahltan Rivers, the major chinook salmon spawning tributaries of the Stikine River, was 3,097 3 and 4-ocean chinook (Table 10).

A record 2,137 chinook were observed in the Little Tahltan River; however, high water may have drawn spawners from the mainstem Tahltan which has always been the major spawning tributary. The mainstem Tahltan remained high and glacial throughout the period of spawning and chinook could only be observed on very shallow riffles. Probably many more chinook spawned in the mainstem than were observed.

Indications of increased escapement to the Stikine were also observed on the U.S. side of the border at Andrews Creek, where a Fisheries Rehabilitation, Enhancement and Development Division (F.R.E.D.) weir enumerated over 590 spawning chinook. This does not compare with the several thousand observed in some years during the early 1960's, but it is the best escapement recorded during the past 5 years.

The 1981 return to the Stikine River should have a strong return of 6-year-old chinook from the 1975 brood and a very weak return of 5-year-old chinook from the 1976 brood, based on parent year escapement estimates.

Table 7. Length frequency of 1979 brood chinook salmon juveniles minnow trapped in the Taku River system, 1980.

Fork Length (mm)	Minnow Trapped Sept. 6 to Nov. 2 TAKU MAINSTEM	Minnow Trapped Oct. 1 to Nov. 12 NAKINA
51	...	1
52	4	...
53	2	2
54	1	2
55	2	3
56	3	6
57	...	8
58	3	14
59	4	31
60	13	41
61	6	42
62	9	50
63	7	72
64	14	67
65	14	78
66	6	77
67	15	67
68	14	86
69	6	74
70	11	57
71	6	50
72	10	49
73	4	51
74	3	57
75	7	38
76	5	25
77	2	18
78	4	37
79	2	26
80	4	20
81	1	9
82	2	10
83	4	9
84	2	5
85	4	7
86	...	2
87	...	1
88	...	...
89	...	2
90	4	1
91	1	...
92	...	1
93	...	1
94	...	3
95	...	1
$\bar{x} \pm$	68.4 mm	68.7
n =	200	1,201

Table 8. A summary of coded wire tagged chinook salmon recovered at the Nakina carcass weir, 1980.

Date	C.W.T Code	Brood Year	Ref. No.	Area	Gear	Port	Fork Length
8-15-80	4-5-8	1975	...	Nakina carcass weir			755
8-10-80	4-17-30	1977	...	Nakina carcass weir			355
8-12-80	4-16-62	1977	...	Nakina carcass weir			345
8-12-80	4-16-62	1977	...	Nakina carcass weir			350
8-12-80	4-17-22	1976	...	Nakina carcass weir			565
8-12-80	No tag	...	...	Nakina carcass weir			560
8-14-80	4-17-28	1977	...	Nakina carcass weir			360
8-14-80	4-5-8	1975	...	Nakina carcass weir			760
8-14-80	No tag	...	...	Nakina carcass weir			600
8-14-80	Pin lost 4-5-8 or 4-5-9	1975	...	Nakina carcass weir			700
8-14-80	No tag	...	...	Nakina carcass weir			325
8-15-80	4-17-21	1976	...	Nakina carcass weir			520
8-15-80	4-5-8	1975	...	Nakina carcass weir			735
8-15-80	4-17-28	1977	...	Nakina carcass weir			350
8-16-80	4-5-8	1975	...	Nakina carcass weir			660

Table 9. A summary of coded wire tagged Taku River chinook salmon recovered during 1980.

Date	C.W.T. Code	Brood Year	Ref. No.	Area	Gear	Port	Fork Length
5-16-80	4-17-10	1976	...	Breadline	Sport	Juneau	610 (TL)
5-20-80	4-5-8	1975	15050	*113, 114 or 116	Troll	Pelican	...
5-20-80	4-5-9	1975	4697	114	Troll	Excursion In.	765
5-20-80	4-5-9	1975	17028	*113, 114 or 116	Troll	Juneau	853
5-21-80	4-5-8	1975	15082	*113, 114 or 116	Troll	Pelican	...
5-21-80	4-5-9	1975	15086	*113, 114 or 116	Troll	Pelican	...
5-30-80	4-5-8	1975	15305	113	Troll	Pelican	885
6-10-80	4-5-8	1975	15384	*113, 114 or 116	Troll	Pelican	780
6-18-80	4-5-8	1975	15566	*113, 114 or 116	...	Pelican	...
6-18-80	4-5-9	1975	17142	111	Gillnet	Juneau	790
6-19-80	4-5-9	1975	17162	111	Gillnet	Juneau	730
6-20-80	4-5-8	1975	17168	111	Gillnet	Juneau	850
6-26-80	4-5-8	1975	17210	111	Gillnet	Juneau	853
9-4-80	4-17-9	1976	19478	*113	...	Sitka	...

\* Area not confirmed.

Table 10. Peak escapement counts of chinook salmon in the Tahltan and Little Tahltan Rivers.

Year	Date	Chinook	Remarks
LITTLE TAHLTAN RIVER			
1956	August 11	334 jacks 493 adults	Hyland Ranch to Tahltan River
1957	July 21	199	Too early--fish schooled
1958	August 6	790	3/4 mile below Hyland to 1 1/2 miles below Saloon
1959	August 7	198	Fish in poor condition--survey too late
1960	August 5	346	1/4 mile below Hyland Ranch to a mile or two below Saloon
1967		800	Canadian survey
1975	August 13	700	Many spawned-out
1976	August 7	400	Conditions fair
1977	July 30	800	Peak spawning
1978	July 26	632	Mostly schooled
1979	July 28 - August 1	1,166	Peak spawning
1980	July 29	2,137	Peak spawning
MAINSTEM TAHLTAN RIVER			
1975	August 13	2,908	Clear
1976	August 20	120	Late
1977	July 30 & August 18	0	Glacial
1978	August 8	756	Glacial
1979	August 10	2,118	Partly glacial
1980	July 29	960	Very glacial

#### Juvenile Chinook Studies:

Fall field operations to capture and coded wire tag young-of-the-year chinook salmon on the mainstem Stikine River began on September 19 and were completed on November 8 (Table 11). Juvenile chinook were captured in the mainstem between the confluence of Jack Wilson Creek and the Porcupine River, as during 1979 (Kissner, 1980).

Flooding occurred more than normal during the fall of 1980, but between floods, daily catches were usually about 1,000 chinook in 90-100 minnow traps.

A total of 30,252 juvenile chinook averaging 63.1 mm (F.L.) were captured, adipose clipped, coded wire tagged, and released (Tables 12 and 13).

#### Recovery of Coded Wire Tags:

The first two chinook salmon tagged as smolts on the Stikine River were recovered during 1980 from the commercial fisheries (Table 14).

#### Unuk River Studies

The Unuk River was minnow trapped on March 27-28, 1980 to determine if sufficient densities of chinook smolts were available for coded wire tagging. The river conditions were near optimum for capturing smolts; the water was extremely clear and 38°F.

A total of 65 minnow trap sets, each of 24 hour duration, captured 343 chinook, 599 coho and 439 Dolly Varden, Salvelinus malma (Walbaum), (Table 15).

The density of chinook smolts was higher than observed during two previous minnow trapping surveys, but was not of the magnitude to launch a large scale tagging program.

#### Escapements in Other Areas of Southeast Alaska

A summary of escapement estimates for those chinook systems monitored annually is presented in Table 16. Spawning escapements were below average in all systems surveyed, except in the Chickamin River.

Table 11. Juvenile chinook salmon (1979 brood) tagged, by code, on the Stikine River, 1980.

Code	Chinook Tagged	Brood Year	Dates
4-17-26	4,420	1979	9/27-9/30
4-17-27	4,536	1979	9/30-10/18
4-19-62	5,001	1979	9/19-9/26
4-19-63	8,865	1979	10/18-10/29
4-20-2	<u>7,430</u>	1979	11/1-11/8
TOTAL	30,252		

Table 12. Minnow traps checked, young-of-the-year chinook tagged, mortalities, recaptures and tag retention by date on the Stikine River, 1980.

Date	Minnow Traps Checked	No. Tagged	Mortalities		Recaptures		Grand Total To Date
			Total	No. Tags Retained	Total	No. Tags Retained	
9/19/80	50	172	...	...	...	...	172
9/20/80	60	407	...	...	...	...	579
9/21/80	92	574	...	...	...	...	1,153
9/22/80	97	0	...	...	...	...	1,153
9/23/80	101	652	6	Not	...	...	1,799
9/24/80	107	1,046	1	Checked	...	...	2,844
9/25/80	88	1,300	...	...	...	...	4,144
9/26/80	102	863	6	6	6	6	5,001
9/27/80	85	1,341	3	3	24	20	6,339
9/28/80	85	1,000	...	...	3	3	7,339
9/29/80	92	1,198	...	...	14	13	8,537
9/30/80	0	1,907	18	18	16	16	10,426
10/1/80	66	914	21	21	11	10	11,319
10/2/80	0	0	53	52	...	...	11,266
10/13/80	37	0	...	...	...	...	11,266
10/14/80	64	936	1	1	6	5	12,201
10/15/80	80	0	...	...	...	...	12,201
10/16/80	72	1,618	1	1	6	6	13,818
10/17/80	108	0	...	...	...	...	13,818
10/18/80	0	1,147	1	...	10	10	14,946
10/20/80	50	299	...	...	39	38	15,263
10/22/80	105	937	...	...	32	32	16,200
10/23/80	125	1,342	4	4	7	6	17,538
10/24/80	75	0	...	...	...	...	17,538
10/25/80	100	1,063	4	4	5	4	18,597
10/26/80	125	906	1	1	37	36	19,502
10/27/80	109	1,237	5	5	111	106	20,734
10/28/80	82	1,782	...	...	89	87	22,516
10/29/80	0	306	...	...	18	17	22,822
10/30/80	53	0	...	...	...	...	22,822
10/31/80	85	0	...	...	...	...	22,822
11/1/80	114	681	...	...	22	19	23,503
11/2/80	120	1,019	1	1	146	141	24,521
11/3/80	131	866	...	...	135	134	25,387
11/4/80	118	1,571	...	...	71	69	26,958
11/5/80	122	500	3	3	73	67	27,455
11/6/80	100	1,002	2	2	75	73	28,455
11/7/80	120	1,178	2	2	107	105	29,631
11/8/80	0	621	...	...	15	15	30,252
TOTALS	3,120	30,385	133	124	1,078	1,038	30,252

% tag retention based on recaptures = 96.49%  $\approx$  96.5%

Table 13. Length frequency in mm of young-of-the-year chinook salmon captured in minnow traps in the Stikine River, fall, 1980.

Fork Length (mm)	n
49	8
50	3
51	4
52	7
53	8
54	19
55	21
56	18
57	18
58	37
59	46
60	32
61	34
62	37
63	48
64	38
65	34
66	24
67	19
68	30
69	31
70	22
71	15
72	15
73	9
74	10
75	9
76	6
77	2
78	1
79	4
80	2
81	1
82	0
83	0
84	1
85	2

n = 615

$\bar{x}$  = 63.1 mm fork length

Table 14. A summary of tagged Stikine River chinook salmon recovered from southeast Alaskan fisheries in 1980.

Date	C.W.T Code	Brood Year	Ref. No.	Area	Gear	Port	Fork Length
8-18-80	4-17-17	1976	13160	103, 104	Troll	Port Alexander	686 mm
9-16-80	4-17-16	1976	20806	...	...	Sitka	...

Table 15. Minnow trap catches of chinook salmon smolts captured in the Unuk River, March 27-28, 1980.

	KS	SS	DV	CT
<u>Station #1</u> In log jams and roots 10 traps in Lower River	30	14	11	...
<u>Station #2</u> In log jams and good root wad hole 10 traps	71	83	72	3
<u>Station #3</u> Side channel 11 traps, 39°F	41	35	15	...
Mainstem 4 traps	12	52	32	...
<u>Station #4</u> Side channel 10 traps	68	212	74	...
<u>Station #5</u> 10 traps	72	59	82	...
<u>Station #6</u> Across from Gene's Lake Creek 10 traps	<u>49</u>	<u>144</u>	<u>153</u>	<u>...</u>
TOTAL	343	599	439	3

Table 16. Peak escapement counts of chinook salmon in southeast Alaska rivers through 1980.

Year	Chinook	Method
<u>Unuk River</u>		
1961	673	Foot
1962	331	Air
1963	1,070	Air
1968	650	Air
1969	475	Air
1972	885	Air
1973	182	Air
1975	55	Helicopter
1976	198	Helicopter
1977	1,166	Helicopter, weir-foot
1978	1,765	Helicopter, weir-foot
1979	576	Helicopter, weir-foot
1980	1,052	Helicopter, weir-foot
<u>Chickamin River</u>		
1961	336	Ground
1962	775	Air
1963	450	Air
1969	345	Air
1972	860	Air
1973	229	Helicopter
1974	176	Helicopter
1975	351	Helicopter
1976	122	Helicopter
1977	235	Helicopter
1978	181	Helicopter
1979	140	Helicopter
1980	261	Helicopter
<u>King Salmon River (Admiralty Island)</u>		
1957	200	Foot
1961	117	Foot
1971	94	Foot
1972	90	Foot
1973	211	Foot
1974	104	Foot
1975	42	Foot
1976	65	Foot, Helicopter
1977	134	Foot, Helicopter
1978	57	Foot, Helicopter
1979	88	Foot, Helicopter
1980	70	Foot, Helicopter

Table 16. (Cont'd.) Peak escapement counts of chinook salmon in southeast Alaska rivers through 1980.

Year	Chinook	Method
<u>Blossom River</u>		
1961	68	Ground
1963	825	Air
1972	700	Air
1974	166	Helicopter
1975	153	Helicopter
1976	68	Helicopter
1977	112	Helicopter
1978	143	Helicopter
1979	54	Helicopter
<u>Keta River</u>		
1948	500	Foot
1950	210	Foot
1951	120	Foot
1952	462	Foot
1953	156	Foot
1954	300	Air
1955	1,000*	Air
1956	1,500*	Air
1957	500*	Air
1961	44	Ground
1975	203	Helicopter
1976	84	Helicopter
1977	230	Helicopter
1978	392	Helicopter
1979	426	Helicopter
1980	192	Helicopter

\* Probably chum salmon

Table 16. (Cont'd.) Peak escapement counts of chinook salmon in southeast Alaska rivers through 1980.

Year	Chinook	Method
<u>Situk River</u>		
1928	1,224	Weir
1929	3,559	Weir
1930	1,455	Weir
1931	2,967	Weir
1932	1,978	Weir
1933	...	...
1934	1,486	Weir
1935	638**	Weir
1936	816	Weir
1937	1,290**	Weir
1938	2,668**	Weir
1939	2,117	Weir
1940	903	Weir
1941	2,594	Weir
1942	2,543	Weir
1943	3,546**	Weir
1944	2,906	Weir
1945	1,458	Weir
1946	4,284	Weir
1947	5,077	Weir
1948	3,744	Weir
1949	1,978	Weir
1950	2,011	Weir
1951	2,780	Weir
1952	1,459	Weir
1953	1,040	Weir
1954	2,101	Weir
1955	1,571	Weir
1971	964	Weir
1972	400	Float
1973	510	Float
1974	702	Float
1975	1,180	Float
1976	1,933	Weir
1977	1,872	Weir
1978	1,103	Weir
1979	1,754	Weir
1980	1,125**	Weir

\*\* Weir out part of the time.

LITERATURE CITED

- Kissner, Paul D., Jr. 1973. A study of chinook salmon in southeast Alaska. Alaska Dept. of Fish and Game. Annual report 1972-1973, Project F-9-5, 14(AFS-41).
- \_\_\_\_\_. 1974. A study of chinook salmon in southeast Alaska. Alaska Dept. of Fish and Game. Annual report 1973-1974, Project F-9-6, 15(AFS-41).
- \_\_\_\_\_. 1975. A study of chinook salmon in southeast Alaska. Alaska Dept. of Fish and Game. Annual report 1974-1975, Project F-9-7, 16(AFS-41).
- \_\_\_\_\_. 1976. A study of chinook salmon in southeast Alaska. Alaska Dept. of Fish and Game. Annual report 1975-1976, Project F-9-8, 17(AFS-41).
- \_\_\_\_\_. 1977. A study of chinook salmon in southeast Alaska. Alaska Dept. of Fish and Game. Annual report 1976-1977, Project F-9-9, 18(AFS-41).
- \_\_\_\_\_. 1978. A study of chinook salmon in southeast Alaska. Alaska Dept. of Fish and Game. Annual report 1977-1978, Project F-9-10, 19(AFS-41).
- \_\_\_\_\_. 1979. A study of chinook salmon in southeast Alaska. Alaska Dept. of Fish and Game. Annual report 1978-1979, Project F-9-11, 20 (AFS-41).
- \_\_\_\_\_. 1980. A study of chinook salmon in southeast Alaska. Alaska Dept. of Fish and Game. Annual report 1979-1980, Project F-9-12, 21(AFS-41).
- Koerner, J. F. 1977. The use of the coded wire tag injector under remote field conditions. Alaska Dept. of Fish and Game Informational Leaflet #172, 24 pp.

Prepared by:

Approved by:

Paul D. Kissner  
Fishery Biologist

Rupert E. Andrews, Director  
Sport Fish Division

Mike Bethers  
Fishery Biologist

Mark C. Warner, Ph.D.  
Sport Fish Research Chief

## APPENDIX

Table 1. A summary of coded wire tagging and recovery of Taku River chinook salmon tagged by the Chinook Salmon Project, 1977 to date.

<u>DATE</u>	<u>AGE</u>	<u>HEAD LENGTH (-) FORK LENGTH (FL) MIDEYE-FORK (MF)</u>	<u>RECOVERY TYPE AND AREA</u>
DATA 4-5-8		5,294 Smolt 1975 Brood 79.7 mm	Mainstem Taku, Tagged April-May, 1977 at Taku Lodge
08-10-78	1.1	360 mm (MF)	Weir, Nakina
08-13-78	1.1	330 mm (MF)	Weir, Nakina
08-15-78	1.1	410 mm (MF)	Weir, Nakina
08-18-78	1.1	295 mm (MF)	Weir, Nakina
08-23-78	1.1	355 mm (MF)	Weir, Nakina
05-17-79	1.2	683 mm (FL)	Comm. Dist. Troll, 113
07-12-79	1.2	659 mm (FL)	Comm. Dist. Gillnet, 111
08-13-79	1.2	575 mm (MF)	Weir, Nakina
08-16-79	1.2	480 mm (MF)	Weir, Nakina
08-18-79	1.2	545 mm (MF)	Weir, Nakina
08-18-79	1.2	420 mm (MF)	Weir, Nakina
05-20-80	1.3	175 mm (-)	Comm. Troll, 113, 114, 116
05-21-80	1.3	175 mm (-)	Comm. Troll, 113, 114, 116
05-30-80	1.3	855 mm (FL)	Comm. Dist. Troll, 113
06-10-80	1.3	780 mm (FL)	Comm. Troll, 113, 114, 116
06-18-80	1.3	170 mm (-)	Comm. Troll, 113, 114, 116
06-20-80	1.3	850 mm (FL)	Comm. Dist. Gillnet, 111
06-26-80	1.3	853 mm (FL)	Comm. Dist. Gillnet, 111
08-15-80	1.3	755 mm (MF)	Weir, Nakina
08-14-80	1.3	760 mm (MF)	Weir, Nakina
08-15-80	1.3	735 mm (MF)	Weir, Nakina
08-16-80	1.3	660 mm (MF)	Weir, Nakina

Table 1. (Cont'd.) A summary of coded wire tagging and recovery of Taku River chinook salmon tagged by the Chinook Salmon Project, 1977 to date.

DATA 4-5-9		4,555 Smolt 1975 Brood 79.7 mm	Mainstem Taku, Tagged May, 1977 at Taku Lodge
<u>DATE</u>	<u>AGE</u>	<u>HEAD LENGTH (-)</u> <u>FORK LENGTH (FL)</u> <u>MIDEYE-FORK (MF)</u>	<u>RECOVERY</u> <u>TYPE AND AREA</u>
07-27-78	1.1	330 mm (MF)	Weir, Nakina
08-04-78	1.1	310 mm (MF)	Weir, Nakina
08-15-78	1.1	335 mm (MF)	Weir, Nakina
08-16-78	1.1	310 mm (MF)	Weir, Nakina
08-20-78	1.1	330 mm (MF)	Weir, Nakina
07-05-79	1.2	595 mm (FL)	Comm. Dist. Gillnet, 111
07-05-79	1.2	579 mm (FL)	Comm. Dist. Gillnet, 111
07-12-79	1.2	650 mm (FL)	Comm. Dist. Gillnet, 111
08-12-79	1.2	535 mm (MF)	Weir, Nakina
08-15-79	1.2	515 mm (MF)	Weir, Nakina
08-16-79	1.2	570 mm (MF)	Weir, Nakina
08-18-79	1.2	420 mm (MF)	Weir, Nakina
05-20-80	1.3	853 mm (FL)	Comm. Troll, 113, 114, 116
05-20-80	1.3	765 mm (FL)	Comm. Dist. Troll, 114
05-21-80	1.3	175 mm (-)	Comm. Troll, 113, 114, 116
06-18-80	1.3	790 mm (FL)	Comm. Dist. Gillnet, 111
06-19-80	1.3	730 mm (FL)	Comm. Dist. Gillnet, 111
DATA 4-5-10		53 Smolt 1975 Brood 79.7 mm	Mainstem Taku, Tagged May, 1977 at Taku Lodge
DATA 4-16-55		10,687 Rearing Fish 1979 Brood 68.7 mm	Nakina River, Tagged at Inklin Jct., Oct. 1980
DATA 4-16-56		4,101 Rearing Fish 1979 Brood 68.7 mm	Taku River, Tagged at Inklin Jct., Oct. 1980

Table 1. (Cont'd.) A summary of coded wire tagging and recovery of Taku River chinook salmon tagged by the Chinook Salmon Project, 1977 to date.

DATA 4-16-57		1,498 Rearing Fish 1979 Brood 68.7 mm	Nakina River, Tagged at Inklin Jct., Nov. 1980
DATA 4-16-58		5,594 Rearing Fish 1978 Brood 64.8 mm	Mainstem Taku, Tagged at Tulsequah, Sept. 1979
DATA 4-16-59		1,066 Rearing Fish 1978 Brood 64.8 mm	Nakina River, Tagged at Inklin Jct., Oct. 1979
DATA 4-16-60		4,821 Rearing Fish 1978 Brood 68.2 mm	Mainstem Taku & Nakina Tagged at Inklin Jct. & Tulsequah, Oct. 1979
DATA 4-16-61		1,573 Smolt 1978 Brood 84.3 mm	Taku Inlet, Tagged at Juneau, May 1980
DATA 4-16-62		2,549 Smolt 1977 Brood 66.2 mm	Mainstem Taku, Tagged Tagged at Tulsequah, May 1979
		HEAD LENGTH (-) FORK LENGTH (FL) MIDEYE-FORK (MF)	RECOVERY TYPE AND AREA
	<u>DATE</u>	<u>AGE</u>	
	08-12-80	1.1	Weir, Nakina
	08-12-80	1.1	Weir, Nakina
DATA 4-16-63		3,517 Rearing Fish 1979 Brood 68.7 mm	Nakina River, Tagged at Inklin Jct., Sept. 1980

Table 1. (Cont'd.) A summary of coded wire tagging and recovery of Taku River chinook salmon tagged by the Chinook Salmon Project, 1977 to date.

DATA 4-17-8		5,092 Rearing Fish 1976 Brood 68.5 mm	Nahlin River, Tagged Sept. 1977
DATA 4-17-9		3,402 Rearing Fish 1976 Brood 68.5 mm	Nahlin River, Tagged Sept. 1977
<u>DATE</u>	<u>AGE</u>	<u>HEAD LENGTH (-)</u> <u>FORK LENGTH (FL)</u> <u>MIDEYE-FORK (MF)</u>	<u>RECOVERY</u> <u>TYPE AND AREA</u>
09-04-80	1.2	156 mm (-)	Landed, Sitka
DATA 4-17-10		4,358 Rearing Fish 1976 Brood 62.8 mm	Mainstem Taku, Tagged at Tulsequah, Oct. 1977
DATA 4-17-11		4,468 Rearing Fish 1976 Brood 62.8 mm	Mainstem Taku, Tagged at Tulsequah, Oct. 1977
DATA 4-17-12		4,796 Rearing Fish 1976 Brood 62.8 mm	Mainstem Taku, Tagged at Tulsequah, Oct. 1977
DATA 4-17-13		6,134 Rearing Fish 1976 Brood 62.8 mm	Mainstem Taku, Tagged at Tulsequah, Oct. 1977
DATA 4-17-14		2,123 Rearing Fish 1976 Brood	Mainstem Taku, Tagged at Tulsequah, Oct. 1977

Table 1. (Cont'd.) A summary of coded wire tagging and recovery of Taku River chinook salmon tagged by the Chinook Salmon Project, 1977 to date.

DATA 4-17-21		4,788 Smolt 1976 Brood 70.3 mm	Mainstem Taku, Tagged at Tulsequah, April 1978
<u>DATE</u>	<u>AGE</u>	<u>HEAD LENGTH (-) FORK LENGTH (FL) MIDEYE-FORK (MF)</u>	<u>RECOVERY TYPE AND AREA</u>
08-11-79	1.1	310 mm (MF)	Weir, Nakina
08-13-79	1.1	310 mm (MF)	Weir, Nakina
08-20-79	1.1	310 mm (MF)	Weir, Nakina
08-15-80	1.2	520 mm (MF)	Weir, Nakina
DATA 4-17-22		3,717 Smolt 1976 Brood 70.3 mm	Mainstem Taku, Tagged at Tulsequah, May 1978
<u>DATE</u>	<u>AGE</u>	<u>HEAD LENGTH (-) FORK LENGTH (FL) MIDEYE-FORK (MF)</u>	<u>RECOVERY TYPE AND AREA</u>
08-12-80	1.2	565 mm (MF)	Weir, Nakina
DATA 4-17-23		666 Smolt 1976 Brood 70.3 mm	Mainstem Taku, Tagged at Tulsequah, May 1978
DATA 4-17-24		389 Smolt 1976 Brood 70.3 mm	Mainstem Taku, Tagged at Canyon Island, May 1978
DATA 4-17-28		31,376 Rearing Fish 1977 Brood 63.9 mm	Mainstem Taku, Tagged at Tulsequah, Oct. 1978
<u>DATE</u>	<u>AGE</u>	<u>HEAD LENGTH (-) FORK LENGTH (FL) MIDEYE-FORK (MF)</u>	<u>RECOVERY TYPE AND AREA</u>
08-14-80	1.1	360 mm (MF)	Weir, Nakina
08-15-80	1.1	350 mm (MF)	Weir, Nakina

Table 1. (Cont'd.) A summary of coded wire tagging and recovery of Taku River chinook salmon tagged by the Chinook Salmon Project, 1977 to date.

DATA 4-17-30		7,740 Rearing Fish 1977 Brood 63.9 mm	Mainstem Taku, Tagged at Tulsequah, Oct. 1978
<u>DATE</u>	<u>AGE</u>	<u>HEAD LENGTH (-) FORK LENGTH (FL) MIDEYE-FORK (MF)</u>	<u>RECOVERY TYPE AND AREA</u>
08-10-80	1.1	355 mm (MF)	Weir, Nakina
DATA 4-19-59		8,881 Rearing Fish 1978 Brood 68.2 mm	Nakina River, Tagged at Inklin Jct., Oct. 1979
DATA 4-19-60		10,590 Rearing Fish 1979 Brood 68.7 mm	Nakina River, Tagged at Inklin Jct., Sept. 1980
DATA 4-19-61		9,983 Rearing Fish 1979 Brood 68.7 mm	Nakina River, Tagged at Inklin Jct., Sept. 1980

Table 1. (Cont'd.) A summary of coded wire tagging and recovery of Taku River chinook salmon tagged by the Chinook Salmon Project, 1977 to date.

---

Adipose Clip and no C.W.T.      Recoveries only from Taku River drainage

---

<u>DATE</u>	<u>AGE</u>	<u>MIDEYE-FORK (MF)</u>	<u>RECOVERY TYPE AND AREA</u>
08-06-78	1.1	335 mm (MF)	No tag, weir, Nakina
08-10-78	1.1	355 mm (MF)	No tag, weir, Nakina
08-10-78	1.1	...	Head missing, weir, Nakina
08-12-78	1.1	...	Head missing, weir, Nakina
08-24-78	1.1	380 mm (MF)	Tag lost, weir, Nakina
08-06-79	1.2	...	Head missing, weir, Nakina
08-18-79	1.2	545 mm (MF)	No tag, weir, Nakina
08-20-79	1.2	470 mm (MF)	Tag lost, weir, Nakina
08-14-80	1.1	325 mm (MF)	No tag, weir, Nakina
08-12-80	...	560 mm (MF)	No tag, weir, Nakina
08-14-80	...	600 mm (MF)	No tag, weir, Nakina

---

Table 2. A summary of coded wire tagging and recovery of Stikine River chinook salmon tagged by the Chinook Salmon Project, 1978 to date.

DATA 4-16-33		507 Smolt 1976 Brood 73.9 mm	Mainstem Stikine, Tagged at River mouth by Coho Research, May 1978
DATA 4-16-54		6,677 Rearing Fish 1978 Brood 64.4 mm	Mainstem Stikine, Tagged near Porcupine River mouth, Oct. 1979
DATA 4-17-16		357 Smolt 1976 Brood 73.9 mm	Mainstem Stikine, Tagged near Iskut River mouth, May 1978
<u>DATE</u>	<u>AGE</u>	<u>FORK LENGTH (FL)</u>	<u>RECOVERY TYPE AND AREA</u>
09-16-80	1.2	170 mm (FL)	Comm. Dist., Troll landed Sitka
DATA 4-17-17		420 Smolt 1976 Brood 73.9 mm	Mainstem Stikine, Tagged near Iskut River mouth
<u>DATE</u>	<u>AGE</u>	<u>FORK LENGTH (FL)</u>	<u>RECOVERY TYPE AND AREA</u>
08-18-80	1.2	686 mm (FL)	Comm. Dist., Troll 103, 104
DATA 4-17-20		5,223 Rearing Fish 1977 Brood 63.6 mm	Little Tahltan, Tagged Sept. 1978
DATA 4-17-25		2,819 Rearing Fish 1977 Brood 63.6 mm	Little Tahltan, Tagged Sept. 1978
DATA 4-17-26		4,423 Rearing Fish 1979 Brood 63.1 mm	Stikine River, Tagged near Porcupine River, Sept. 1980

Table 2. (Cont'd.) A summary of coded wire tagging and recovery of Stikine River chinook salmon tagged by the Chinook Salmon Project, 1978 to date.

DATA 4-17-27	4,631 Rearing Fish 1979 Brood 63.1 mm	Stikine River, Tagged near Porcupine River, Oct. 1980
DATA 4-19-62	5,014 Rearing Fish 1979 Brood 63.1 mm	Stikine River, Tagged near Porcupine River, Sept. 1980
DATA 4-19-63	8,879 Rearing Fish 1979 Brood 63.1 mm	Stikine River, Tagged near Porcupine River, Sept. 1980
DATA 4-20-4	9,910 Rearing Fish 1978 Brood 64.4 mm	Mainstem Stikine, Tagged near Porcupine River mouth, Sept. 1979
DATA 4-20-5	7,577 Rearing Fish 1978 Brood 64.4 mm	Mainstem Stikine, Tagged near Porcupine River mouth, Oct. 1979