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STATE OF ALASKA

Bill Sheffield, Governor

Annual Performance Report for

STATUS OF IMPORTANT NATIVE CHINOOK SALMON STOCKS IN SOUTHEAST ALASKA

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RESEARCH PROJECT SEGMENT

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Study No: AFS-41 Study Title: A STUDY OF CHINOOK SALMON IN SOUTHEAST ALASKA

Segment No: AFS-41-11 Segment Title: Status of Important Native Chinook Salmon Stocks in Southeast Alaska

Cooperator: Paul D. Kissner

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ABSTRACT

The 1983 escapement of chinook salmon, Oncorhynchus tshawytscha (Walbaum), to various tributaries of the Taku River was, as projected, the lowest observed since 1972. Based on return of 2-ocean jacks from the 1978 and 1979 broods, the 1984 return of 6-year-old chinook will be very weak (70% will be females) and 5-year-olds very strong (70% will be males). The 1978 brood return will be the last year class that was severely affected by the Inklin River landslide.

Returns of chinook to the Stikine River in 1983 were also, as projected, the lowest observed since 1978. The 1984 return should be much improved because of a very strong return form the 1979 brood. Escapements were also disappointing in the Situk and Alsek Rivers.

Returns to other index systems, monitored annually, were near or above the improved escapement levels observed during the past several years.

Because of the extremely strong 2-ocean jack return (1979 brood) throughout southeastern Alaska in 1983 and the delay in opening the 1984 troll fishery until June 5, it appears that escapements should be much improved over the levels observed in 1983.

During 1983, a total of 2,352 Chickamin River chinook smolts, 4,710 Taku River chinook smolts, and 21,036 Unuk River age-0 chinook were adipose clipped and coded wire tagged to determine migration patterns, areas and timing of harvest, and exploitation rates.

Based on fishery and spawning ground expansion of coded wire tag returns from the 1975 and 1976 broods, survival of Taku chinook smolts tagged to harvest or adult return varied between 1% and 3.4%. Survival of young-of-the-year Taku chinook tagged to harvest or adult return of the 1976 brood was 0.3%. Exploitation of the 1975 brood was 16.9% and the 1976 brood exploitation rate was 31.1%.

A generalized migration pattern, which has been developed utilizing coded wire tag recoveries, indicates that most Taku River chinook leave Southeast and rear beyond the present limits of the troll fishery; returning through Icy Straits and northern southeast Alaska during their final year of life to return to the Taku River. The only exception was the recovery of four 1-ocean chinook from the 1979 brood that were immature when harvested in inside waters. Since no 2-ocean recoveries from this brood were made in sport or commercial fisheries in 1983, possibly they moved outside sometime between their first and second year of ocean residency.

KEY WORDS

Chinook, Oncorhynchus tshawytscha (Walbaum), escapement, juveniles, migration, status, Taku, Stikine, Alsek, Unuk, Chickamin, Southeast, Alaska.

BACKGROUND

The chinook salmon research project commenced in 1971 to determine the status of wild chinook salmon stocks of southeast Alaska origin. Major emphasis has been placed on monitoring population dynamics, i.e., terminal gill net harvests, escapement enumeration, and coded wire tagging and fishery and spawning ground recovery in major and medium producing chinook systems.

By the mid-1970's, it was apparent that chinook salmon populations were generally depressed throughout southeast Alaska and, during subsequent years, terminal gill net fisheries were either severely restricted or eliminated on the Taku, Stikine, and Alsek Rivers. Additional sport and commercial trolling restrictions have been made to protect maturing chinook during their spring spawning migration. These restrictive regulations have aided the rebuilding process and escapement levels have, in general, shown dramatic improvement.

RECOMMENDATIONS

Management

1. The restrictive troll and gill net regulations designed to protect maturing southeast Alaska chinook salmon returning to their rivers of origin should be continued. Southeast Alaska chinook salmon stocks are in the process of rebuilding, but continued restrictions will be necessary for at least several more years.

2. Drift gill net fisheries throughout Southeast should be monitored to determine the harvest of immature and mature chinook taken incidentally to the target species. Night closures should be made in areas where high incidental catches of immature chinook occur.

Research

1. Sampling of the commercial and sport harvest of chinook to recover coded wire tags should continue. Recovery of chinook tagged in the Taku, Stikine, Alsek, Unuk, Chickamin, and Situk Rivers will permit determination of marine migration patterns, areas and timing of harvest at various life history stages, and rates of harvest.

2. Length frequency and scale sampling of spawning chinook in the major and medium producing rivers should be conducted to determine the quality of the various escapements and to forecast future returns.

3. Continue to determine the current status of major and medium chinook salmon systems in Southeast through monitoring of escapements by aerial, ground, and/or weir enumeration. This is necessary to determine if the various closures designed to aid depressed Southeast chinook are effective.

OBJECTIVES

1. Determine the current status of the Taku River chinook salmon population.

2. Determine the current status of the Stikine River chinook salmon population.

3. Determine the current status of the Alsek River chinook salmon population.

4. Determine the current status of the Chickamin River chinook salmon population.

5. Determine the current status of the Unuk River chinook salmon population.

6. Determine the current status of the Situk River chinook salmon population.

7. Determine the current status of six medium producing chinook salmon systems in Southeast Alaska.

TECHNIQUES USED

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

Chinook salmon sampled in sport or commercial fisheries were measured from the tip of snout to fork of tail and samples from the spawning grounds were measured from mid-eye to fork of tail.

Scales were collected to determine the age of chinook salmon on the spawning grounds. Scales were taken from the preferred area at the posterior edge of the dorsal fin, two rows above the lateral line. Because of the high occurrence of regeneration in chinook scales, several additional scales were taken from each side of each fish near the preferred area and placed in a numbered coin envelope.

All escapement surveys were conducted on foot or from an Alouette II or Hughes 500D helicopter during the peak of spawning. The helicopter flew 6 to 15 meters above the riverbed at 8 to 16 kilometers per hour. The observer's door was removed and the helicopter usually hovered sideways with observations made out of the area where the door was.

Wherever possible, the sun was kept behind the helicopter and the observer wore polaroid sunglasses to eliminate severe reflection. Only 3- and 4-ocean chinook salmon ($\leq$ 660 mm in total length) were enumerated during aerial and foot surveys.

During foot surveys to collect age, length, and sex determination data on the spawning ground, as well as to recover coded wire tagged chinook, only dead or near dead fish were sampled. Chinook of all sizes and ages were randomly sampled.

From July 25 to August 23, a tripod weir was operated on the Nakina River, approximately 137 m above its junction with the Silver Salmon River. A carcass weir was also operated on the Tatsamenie River, approximately 91 m above the junction with Tatsatua Creek, from August 27 through September 3. Chinook spawning above the weirs were enumerated after they could no longer maintain station in the river and floated against the weir face. The structures were cleaned of carcasses at 8:00 a.m. and 7:00 p.m. daily. All species were enumerated and length data, scale samples, and sex determinations were collected from the chinook salmon. Chinook were also examined for adipose clips, which indicated the presence of a coded wire tag. Upriver surveys of the river were conducted daily to enumerate and sample spawned-out chinook salmon which had not floated downriver to the weirs. The survey area extended approximately 2.4 kilometers above the Nakina weir and 1 kilometer above the Tatsamenie River weir.

Gee minnow traps, baited with clusters of salmon roe, were used to capture juvenile salmonids in the rivers. From 50-100 traps were checked, the juveniles removed, and the traps rebaited on a daily basis. Salmon roe was disinfected prior to use by immersion in diluted betadyne, at a ratio of 1:90 (1 part betadyne per 90 parts water) for 15 minutes.

A beach seine 72 m long by 3.6 m deep and constructed of three panels of web was used to capture smolts in Taku Inlet. The two end panels were each 29.97 m long, of 13 mm square mesh, and the center panel was 14.99 m long, of 6 mm square mesh. In setting this seine, two people held one end on shore while the remainder of the net was set from a 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 captured 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 about 3 kilometers from the capture site,and released.

Juvenile chinook tagged in the rivers were transported from various capture sites to the tagging locations in live-boxes and, after tagging, were usually released above or below the trapping areas to reduce the number of recaptures.

Chinook salmon smolts and rearing juveniles were anesthetized with tricaine methanesulfonate (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.

The micro-wire tags were made of type 302 stainless steel wire and were 0.25 mm in diameter and 1.0 mm 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.

The micro-wire tags must be implanted in the cartilaginous wedge of the fish's snout in order to obtain maximum retention. 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 insure proper placement of the tag.

The micro-wire tags were magnetized by dropping the tagged fish head first through a ring magnet 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.

Chinook and coho smolts and rearing juveniles were sampled for age and growth determination. 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.

Scales were 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

The findings of this project are summarized in Tabels 1-24.

Table 1. Survey Areas, Peak Spawning Dates, and Spawner Distribution of Major Chinook Salmon Index Tributaries in Southeast Alaska.

Tributary	Spawning Peak Dates	Survey Area	Distribution	Remarks
Taku River				
Nakina	August 4	Grizzly Bar to canyon 3.2 km above confluence with Silver Salmon River.	Kissner (1982)	Large numbers of spawning pinks and schooled sockeye will be observed in this area.
Nahlin	July 22	Telegraph Trail Crossing to forks about 48 km upstream. Up each fork 1.6 km.	Kissner (1982)	Many sockeye in survey area.
Tatsamenie	August 23	Tatsatua Junction to Big Tatsamenie Lake.	Kissner (1982)	Sometimes semi-glacial. Survey should start by 10 a.m. Some sockeye in survey area.
Kowatua	August 15	Little Trapper Lake outlet to junction of small glacial stream that flows into Kowatua from south about 8 km below Little Trapper Lake.	Evenly distributed.	Glacial-survey should start by 8 a.m.. Some sockeye in survey area.
Tseta	August 1	Upper barrier (falls) down-river to start of canyon.	Densest spawning in upper 3.2 km.	Only chinook observed in this tributary.
Dudidontu	August 1	End of canyon upstream to 3.2 km past junction of Matsatu Creek. In some years, lower Matsatu has enough water to support chinook-survey lower 1.6 km of this tributary.	Evenly distributed.	Some sockeye sometimes present.

Table 1. (cont'd) Survey Areas, Peak Spawning Dates, and Spawner Distribution of Major Chinook Salmon Index Tributaries in Southeast Alaska.

Tributary	Peak Dates	Survey Area	Spawning Distribution	Remarks
Stikine River				
Little Tahltan	July 28	Confluence with mainstem Tahltan, up-river for about 16 km to area where 762 m contour crosses the river.	Densest spawning between Salon Lake outlet and Tahltan junction (Kissner, 1982).	Usually only chinook in this system. Can be semi-glacial. Survey before noon.
Mainstem Tahltan	August 4	Confluence with mainstem Stikine up-river to the canyon about 1.6 km upstream from junction of Little Tahltan River	Densest spawning below junction of of Little Tahltan River and above junc. of Beatty Cr.	Glacial. Survey should start by 9 a.m. to avoid glacial melt.
Beatty	August 1	Confluence with mainstem Tahltan up-river for about 8 km. Fish have been observed at least 16 km above survey area, but not in large numbers.	Evenly distributed.	A rock which was a partial barrier was removed in the fall of 1982 so more chinook may now move into the upper area.
Alsek River				
Klukshu	August 1	Confluence with Tatshenshini up-river to Klukshu Lake.	Evenly distributed.	Difficult to survey because of over-hanging trees. Many sockeye present.
Takhanne	August 1	Confluence with Tatshenshini up-river to falls.	Evenly distributed.	Survey in A.M.; windy in P.M.

Table 1. (cont'd) Survey Areas, Peak Spawning Dates, and Spawner Distribution of Major Chinook Salmon Index Tributaries in Southeast Alaska.

Tributary	Peak Dates	Survey Area	Spawning Distribution	Remarks
Blanchard	August 1	Confluence with Tatshenshini up-river to bridge.	Many chinook spawn up-river of bridge, but very difficult to observe. Survey to lake if clear.	Very glacial-survey by 9 a.m..
Unuk River				
Cripple Creek	August 4	Confluence with Unuk up-river for 3.2 km.	Evenly distributed.	Semi-glacial. Survey in early A.M. by foot-poor surveys by helicoptor.
Genes Lake	August 20	Confluence with Genes Lake up-river for about 6.5 km.	Evenly distributed.	Many sockeye in area. Survey by foot-poor surveys by helicoptor.
Euchelon	August 20	1.6 km below forks up left fork 1 km to barrier, right fork to barrier about 4.8 km up-stream.	Evenly distributed.	Some chinook will still be in holes below forks until late August.
Clear Creek	August 15	Confluence with Lake Creek up-river for 1.6 km.	Evenly distributed.	Some chinook just above narrow cut.
Lake Creek	August 15	Confluence with Clear Lake up-stream to falls.	Spawning on shallow riffles and in falls pool.	...
Sawmill	August 15	Falls to glacial water.	Falls pool area usually has 10-20 spawning chinook.	...

Table 1. (cont'd) Survey Areas, Peak Spawning Dates, and Spawner Distribution of Major Chinook Salmon Index Tributaries in Southeast Alaska.

Tributary	Peak Dates	Survey Area	Spawning Distribution	Remarks
Chickamin River				
South Fork	August 15	From junction of Chickamin branch up-river to junction of Barrier Cr.	Evenly distributed.	Many chums and pinks. Semi-glacial-survey by 10 a.m..
Barrier Creek	August 15	From junction of South Fork up-river to barrier 1.6 km upstream.	Evenly distributed.	Chums in survey area.
Butler Creek	August 6	All.	Evenly distributed.	Chums in Survey area.
Leduc	August 15	Mouth to barrier.	Evenly distributed.	Chums and pinks in survey area.
Indian	August 15	All.	Evenly distributed.	Chums and pinks in survey area.
King	Sept. 1	All.	Evenly distributed.	Chums and pinks in survey area.
Clear Falls	August 6	All.	Evenly distributed.	Chums and pinks in survey area.
Chilkat River				
Big Boulder	August 8	All.	Evenly distributed.	Only chinook in system.
Stonehouse	August 8	All.	Evenly distributed.	Only chinook in system.
Blossom River				
N/A	August 20	All.	Fairly evenly distributed. A bit higher percent of spawners in headwaters.	Many pinks and chums.

Table 1. (cont'd) Survey Areas, Peak Spawning Dates, and Spawner Distribution of Major Chinook Salmon Index Tributaries in Southeast Alaska.

Tributary	Peak Dates	Survey Area	Spawning Distribution	Remarks
Keta River				
N/A	August 20	All.	Fairly evenly distributed. A bit higher percent spawns in headwaters.	Many pinks and chums present.
King Salmon River (Admiralty Island)				
N/A	July 28	All.	Mostly in lower 4.8 km, but on years with large escapement, spawning occurs far upstream.	Many pinks and chums present.

Table 2. Peak Escapement Counts of Chinook Salmon in the Taku River Tributaries.

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 E	158	...	1,531	7,544
1981	5,110	560 G	839 E	74	258	2,945	9,786
1982	2,533	289 E	387 E	130	228	1,246	4,813
1983	968	171 E	236 E	117	179	391	2,062

G = water glacial
E = water clear
* = Counts of total river not conducted - comparison made from carcass weir enumeration

Table 3. 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 06	790	1.2 km below Hyland Ranch to 2.4 km below Saloon
1959	August 07	198	Fish in poor condition - survey too late
1960	August 05	346	.4 km below Hyland Ranch to 2 km below Saloon
1967	...	800	Canadian survey
1975	August 13	700	Many spawned-out
1976	August 07	400	Conditions fair
1977	July 30	800	Peak spawning
1978	July 26	632	Mostly schooled
1979	July 28 - Aug. 01	1,166	Peak spawning
1980	July 29	2,137	Peak spawning
1981	July 28	3,334	Peak spawning
1982	August 05	2,830	Peak spawning
1983	August 05	594	Peak spawning

Table 3. (cont'd.) Peak Escapement Counts of Chinook Salmon in the Tahltan and Little Tahltan Rivers.

Year	Date	Chinook	Remarks
	MAINSTEM TAHLTAN RIVER		
1965	...	85	Air lifted over slide
1966	...	318	Air lifted over slide
1975	August 13	2,908	Clear
1976	August 20	120	Late
1977	July 30 & Aug. 18	0	Glacial
1978	August 08	756	Glacial
1979	August 10	2,118	Partly glacial
1980	July 29	960	Very glacial
1981	August 04	1,852	Partly glacial
1982	August 05	1,690	Partly glacial
1983	August 05	453	Partly glacial
	BEATTY CREEK		
1980	July 29	122	Peak spawning
1981	August 04	558	Peak spawning
1982	July 28	567	Partly schooled
1983	August 05	83	Peak spawning

Table 4. Peak Escapement Counts of Chinook Salmon in Andrew Creek (Stikine River Drainage).

Year	Males	Females	Total	Method
1954			500	2A, 1F
1956			4,500	10A
1957			3,000	5A, 10F
1958			2,500	6A, 13F
1959			150	3A, 14F
1960			287	2A, 2F
1961			103	6A, 1F
1962			200	4A, 1F
1963			402	3A, 1F
1964			400	2A, 1H
1966			75	3A
1967			30	2A, 1F
1971			350	5A
1973			61	7A, 1F, 1H
1974			129	1A, 1F
1975			260	5A, 1F
1976	236	200	436	Weir
1977	276	172	448	Weir
1978	245	185	430	Weir
1979	270	163	433	Weir -48 below weir
1980	391	202	593	Weir
1981	426	251	677	Weir
1982	458	466	924	Weir -129 Below weir
1983	212	220	432	Weir

Table 5. Minimum Total Run of Chinook Salmon in the Stikine River Drainage.

Year	U. S. Gill Net Through Mid-June	Canadian Gill Net Comm & Food	Little Tahltan	Mainstem Tahltan	Beatty Creek	Andrew Creek	Total Run
1956	7,224	...	493	...	...	4,500	12,217
1957	5,703	...	199	...	...	3,000	8,902
1958	7,215	...	790	...	...	2,500	10,505
1959	8,410	...	198	...	...	150	8,758
1960	4,673	...	346	...	...	287	5,306
1961	5,222	...	...	...	...	103	5,325
1962	4,173	...	...	...	...	200	4,373
1963	203	...	...	...	...	402	605
1964	947	...	...	...	...	400	1,347
1965	1,683	...	...	85	...	...	1,768
1966	1,058	...	...	318	...	75	1,451
1967	3,466	...	800	...	...	30	4,296
1968	2,570	...	...	...	...	...	2,570
1969	1,965	...	...	...	...	...	1,965
1970	224	...	...	...	...	...	224
1971	2,078	...	...	...	...	350	2,428
1972	4,799	...	...	...	...	...	4,799
1973	5,649	...	...	...	...	61	5,710
1974	7,006	...	...	...	...	129	7,135
1975	1,534	1,024	700	2,908	...	260	6,604
1976	1,101	1,160	400	120	...	436	3,217
1977	274	162	800	0	...	448	1,684
1978	0	500	632	756	...	430	2,318
1979	0	1,625	1,166	2,118	...	481	5,390
1980	0	2,231	2,137	960	122	593	6,043
1981	0	1,322	3,334	1,852	558	677	7,743
1982	0	2,334	2,830	1,690	567	1,053	8,474
1983	0	1,733	594	453	83	432	3,295

Table 6. Chinook Escapement into Various Tributaries of the Unuk River System.

Location	1977	1978	1979	1980	1981	1982	1983
Cripple Creek	721	1,058	363	748	324	538	441
Genes Lake	339	369	101	158	112	329	337
Eulachon Creek	57	218	48	95	196	384	288
Clear Creek	34	85	14	28	54	24	24
Lake Creek	...	20	30	5	20	48	12
Sawmill	15	15	20	18	25	28	4
Totals	1,166	1,765	576	1,052	731	1,351	1,106

Table 7. Chinook Escapement into Various Tributaries of the Chickamin River.

Location	1975	1976	1977	1978	1979	1980	1981	1982	1983
South Fork	141	46	52	21	63	56	51	84	28
Barrier Creek	9	10	66	94	17	62	105	149	138
Butler Creek	66	15	30	4	29	104	51	37	91
Leduc	6	12	26	42	0	17	25	36	30
Indian	90	9	53	20	31	22	12	...	47
Above Indian	11	...	8	...	...	...	...	...	...
Humpy	7	...	0	...	...	...	...	...	...
King	30	...	...	...	...	...	105	165	212
El Paso	...	30	...	...	...	...	...	...	...
Clear Falls	...	...	...	...	...	...	31	33	10
Totals	360	122	235	181	140	261	380	504	556

Table 8. Peak Escapement Counts of Chinook Salmon in Southeast Alaska Rivers.

Year	Chinook	Method
	Unuk River	
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
1981	731	Helicopter, foot
1982	1,351	Helicopter, foot
1983	1,106	Helicopter, foot
	Chickamin River	
1961	336	Ground
1962	775	Air
1963	450	Air
1969	345	Air
1972	860	Air
1973	229	Helicopter
1974	176	Helicopter
1975	360	Helicopter
1976	122	Helicopter
1977	235	Helicopter
1978	181	Helicopter
1979	140	Helicopter
1980	261	Helicopter
1981	380	Helicopter, foot
1982	504	Helicopter, foot
1983	556	Helicopter, foot

Table 8. (cont'd) Peak Escapement Counts of Chinook Salmon in Southeast Alaska Rivers.

Year	Chinook	Method
	King Salmon River (Admiralty Island)	
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
1981	101	Foot, Helicopter
1982	259	Foot, Helicpoter
1983	208+egg take	Foot, Helicopter
	Blossom River	
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
1980	89	Helicopter
1981	159	Helicopter
1982	345	Helicopter
1983	589	Helicopter
	Keta River	
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

Table 8. (cont'd) Peak Escapement Counts of Chinook Salmon in Southeast Alaska Rivers.

Year	Chinook	Method
	Keta River Continued	
1957	500	Air
1961	44	Ground
1975	203	Helicopter
1976	84	Helicopter
1977	230	Helicopter
1978	392	Helicopter
1979	426	Helicopter
1980	192	Helicopter
1981	329	Helicopter
1982	754	Helicopter
1983	822	Helicopter
	Chilkat River (Big Boulder Creek)	
1960	316	Foot
1966	330	Foot
1967	150	Foot
1968	259	Foot
1970	176	Foot
1974	0	Foot
1975	21	Foot
1976	25	Foot, Helicopter
1977	25	Foot, Helicopter
1981	187	Foot, Helicopter
1982	56	Foot, Helicopter
1983	121	Foot, Helicopter
	Chilkat River (Stonehouse Creek)	
1981	69	Helicopter
1982	123	Helicopter
1983	126	Helicopter

Table 8. (cont'd) Peak Escapement Counts of Chinook Salmon in Southeast Alaska Rivers.

Year	Chinook	Method
	Situk River	
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
1981	807**	Weir
1982	510	Weir
1983	856	Weir

** Weir out part of the time.

Table 9. Comparison of Spawning Chinook Salmon Enumerated in the King Salmon River (Admiralty Island) by Helicopter and Weir, 1983. (3- and 4-Ocean Age Fish Only)

Aerial (Helicopter)	Weir count (large)
July 15 - Conditions excellent - 161 total, of which 33 below weir - estimated 200-300 chinook in river. All in holes.	144 above weir
July 20 - Conditions excellent - 300 total, of which 45 below weir - Chinook moving up on riffles, but most still in holes and hard to see because of pinks and chums.	201 above weir
July 22 - Conditions poor - holes dark from rain - 104 on riffles.	209 above weir
July 25 - Conditions good - high overcast - low water. 390 total, of which 30 below weir. 60% spawning.	215 above weir
July 28 - Conditions good - 95% on redds. 208 total, of which 25 below weir.	219+ weir removal on July 27.

Table 10. Timing of Die-off of Female Chinook Salmon at the Nakina Carcass Weir.

DATE	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
July 27	...	...	...	...	...	2	...	...	...	...	...
28	...	...	...	...	3	1	...	...	...	1	0
29	...	...	...	...	4	0	...	...	1	0	0
30	...	...	...	...	3	2	2	1	1	1	0
31	...	...	...	...	2	1	2	3	9	2	1
Aug. 1	...	...	...	...	8	1	0	1	5	3	1
2	...	...	...	...	12	5	0	1	2	8	0
3	5	...	...	...	13	7	0	4	16	8	1
4	5	...	...	...	35	9	5	8	18	14	3
5	3	...	...	...	40	11	4	8	25	19	1
6	5	1	...	...	53	11	2	14	34	24	11
7	10	2	1	...	69	12	6	27	43	38	12
8	17	8	1	28	141	16	3	30	78	45	19
9	17	8	1	29	113	17	10	40	63	59	21
10	37	6	1	41	126	26	10	30	80	41	10
11	37	13	3	46	135	17	9	63	104	48	17
12	36	16	8	43	57	27	18	64	91	51	21
13	42	26	2	36	89	17	20	63	114	50	33
14	44	21	5	14	53	5	26	68	99	46	30
15	54	52	1	39	70	6	15	63	90	37	18
16	30	38	7	29	39	4	22	34	74	44	20
17	49	70	8	23	35	3	25	56	35	46	30
18	31	33	5	20	18	3	25	21	29	13	8
19	57	64	5	14	12	2	10	36	17	28	18
20	33	28	8	19	2	0	19	12	20	20	11
21	54	20	3	5	9	1	13	3	13	11	4
22	36	14	3	15	2	0	14	4	5	6	3
23	15	...	3	2	1	1	12	0	...	5	3
24	...	...	4	...	...	0	2	...	...	0	...
TOTAL	617	420	69	403	1,144	207	274	654	1,066	668	296

Table 11. Timing of Die-off of Male Chinook Salmon at the Nakina Weir.

DATE	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
July 27	...	...	...	...	...	7	...	...	...	...	...
28	...	...	...	...	4	2	...	3	...	1	0
29	...	...	...	...	7	5	...	0	4	3	2
30	...	...	...	...	8	7	1	1	5	4	4
31	...	...	...	...	17	3	6	3	6	8	3
Aug. 1	...	...	...	...	14	15	9	4	4	14	3
2	...	...	...	...	28	20	3	7	11	15	7
3	4	...	1	...	38	32	9	7	11	21	3
4	8	...	1	...	56	59	9	11	18	36	18
5	15	...	1	...	94	54	14	23	43	36	28
6	41	27	2	...	134	85	17	35	61	49	41
7	55	18	8	...	155	100	33	59	80	79	70
8	86	28	6	63	213	152	46	69	85	99	96
9	95	29	13	78	147	142	55	90	93	95	118
10	116	66	16	146	194	243	74	119	98	107	135
11	94	101	20	114	204	208	109	139	121	102	171
12	133	89	35	152	187	274	109	145	91	101	178
13	141	159	27	84	188	233	130	139	104	114	177
14	133	177	64	27	116	227	212	106	82	96	191
15	138	183	63	34	126	246	195	123	71	124	163
16	92	206	60	46	89	222	212	89	64	132	177
17	116	202	87	36	78	212	197	125	64	106	130
18	83	168	81	24	38	214	207	75	49	78	120
19	123	147	73	29	44	138	219	87	45	93	123
20	72	123	69	19	24	108	186	51	21	54	95
21	100	65	62	10	20	94	146	43	24	46	73
22	46	54	60	19	8	84	131	26	10	30	67
23	22	...	57	4	9	107	109	9	...	18	26
24	...	...	58	...	...	51	28	...	...	8	...
TOTAL	1,713	1,842	864	885	2,240	3,344	2,466	1,588	1,265	1,669	2,219

Table 12. Length Frequency of Female Chinook Sampled at the Nakina Carcass Weir.

Mid-Eye to Fork (mm)	1956	1957	1958	1959	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
575	7	3	0	3	0	0	0	1	0	0	0	0	0	0	0
600	3	5	2	6	0	0	0	2	0	0	0	0	0	0	0
625	6	3	9	10	0	2	0	2	0	0	0	1	0	0	0
650	16	20	13	17	2	2	0	4	2	0	2	1	3	0	0
675	29	17	38	42	3	1	3	9	4	1	5	14	6	3	1
700	44	28	66	93	10	22	8	21	13	6	12	27	27	7	5
725	46	49	55	142	17	21	3	25	38	1	34	47	33	16	7
750	69	56	76	192	43	53	12	60	66	8	39	69	69	26	19
775	66	52	67	197	59	52	4	51	112	13	44	82	86	46	25
800	87	125	87	238	112	90	16	71	175	28	51	99	153	68	37
825	28	29	36	156	108	64	11	56	203	26	34	77	186	96	62
850	15	13	21	71	150	70	7	51	219	36	19	98	201	107	46
875	4	2	5	18	77	28	4	22	171	41	17	75	150	124	32
900	3	1	2	5	22	11	0	6	96	33	8	49	109	76	31
925	0	0	0	1	6	4	1	3	34	11	5	9	28	44	5
950	1	0	1	0	3	0	0	0	8	2	1	6	12	21	6
975	0	0	0	0	2	0	0	1	2	1	0	0	3	8	0
TOTAL	424	403	478	1,191	614	420	69	385	1,143	207	271	654	1,066	642	276

Table 13. Length Frequency of Male Chinook Sampled at the Nakina Carcass Weir.

Mid-Eye to Fork (mm)	1956	1957	1958	1959	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
200	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
225	3	1	3	3	1	0	1	0	0	0	0	0	0	0	0
250	34	26	46	20	7	10	1	3	2	1	1	6	1	7	2
275	141	96	162	132	24	100	31	7	54	36	24	35	14	64	37
300	235	168	289	328	114	274	73	27	290	462	134	102	52	270	163
325	362	305	301	275	108	254	80	16	432	853	267	175	51	330	288
350	82	66	262	120	97	143	52	10	343	616	180	107	42	161	201
375	57	64	192	41	68	41	32	12	142	239	65	39	32	22	66
400	83	144	202	61	71	56	63	15	46	86	48	18	23	15	53
425	129	131	215	98	99	68	81	28	44	36	94	25	35	19	119
450	330	365	207	111	120	110	76	32	50	63	188	47	39	27	167
475	146	141	271	132	94	107	72	57	35	100	204	64	45	41	180
500	140	165	262	170	100	94	57	57	41	150	288	99	62	27	210
525	103	113	202	148	91	68	46	71	32	162	208	88	40	22	156
550	138	136	145	182	93	55	28	69	28	147	168	86	42	40	109
575	46	60	86	99	78	44	31	52	21	97	97	80	54	29	77
600	36	30	70	100	49	49	18	39	15	102	81	60	41	23	64
625	56	77	68	71	38	31	14	35	24	33	34	52	38	27	23
650	22	30	89	90	39	36	14	34	22	18	36	59	44	29	16
675	17	26	69	86	27	25	9	28	33	14	36	49	40	18	16
700	44	43	67	87	35	42	9	34	48	8	40	48	55	39	16
725	21	16	35	68	34	37	10	32	52	9	58	48	57	44	17
750	24	18	29	66	37	45	9	22	67	10	53	49	59	29	16
775	46	56	29	62	28	21	12	26	62	4	37	30	39	39	21
800	19	27	27	58	27	23	12	16	50	5	34	43	46	39	16
825	19	24	22	81	28	21	8	21	26	10	22	20	29	40	15
850	11	8	29	66	35	16	13	13	48	13	22	27	39	35	20
875	7	7	12	68	39	21	5	14	42	10	8	25	47	39	18
900	1	0	9	37	49	17	13	11	57	11	7	27	57	46	25
925	0	0	3	14	35	16	7	12	46	20	14	25	49	40	23
950	0	0	2	4	24	8	7	11	46	9	7	28	49	39	16
975	0	0	0	1	22	11	3	6	41	20	8	27	45	49	27
TOTAL	2,353	2,343	3,405	2,879	1,711	1,843	887	810	2,239	3,344	2,463	1,588	1,266	1,649	2,177

Table 14. A Summary of Coded Wire Tag Releases of Taku River Chinook Salmon, 1977 to Date.

Data Code	Young-of-the-year Released	Smolts Released	Brood Year	$\bar{x}$ Size in mm	Capture Location	% Tag Retention
4-5-8		5,294	1977	79.7	Mainstem Taku, Tagged April-May, 1977 at Taku Lodge.	87.2
4-5-9		4,555	1975	79.7	Mainstem Taku, Tagged May, 1977 at Taku Lodge	87.2
4-5-10		53	1975	79.7	Mainstem Taku, Tagged May, 1977 at Taku Lodge	87.2
4-16-55	10,687		1979	68.7	Glacial Nakina River, Tagged at Inklin Jct., Oct. 1980	96.7
4-16-56	4,101		1979	68.4	Taku River, Tagged at Inklin Jct., Oct. 1980	96.7
4-16-57	1,498		1979	68.7	Glacial Nakina River, Tagged at Inklin Jct., Nov. 1980	96.7
4-16-58	5,594		1978	64.8	Mainstem Taku, Tagged at Tulsequah, Sept. 1979	82.4
4-16-59	1,066		1978	68.2	Glacial Nakina River, Tagged at Inklin Jct., Oct. 1979	82.4
4-16-60	4,821		1978	64.8	Mainstem Taku & Glacial Nakina Tagged at Inklin Jct. & Tulsequah, Oct. 1979	82.4

Table 14. (cont'd) A Summary of Coded Wire Tag Releases of Taku River Chinook Salmon, 1977 to Date.

Data Code	Young-of-the-Year Released	Smolts Released	Brood Year	$\bar{x}$ Size in mm	Capture Location	% Tag Retention
4-16-61		1,573	1978	84.3	Taku Inlet, Tagged at Juneau, May 1980	...
4-16-62		2,549	1977	66.2	Mainstem Taku, Tagged at Tulsequah, April 1979	91.7
4-16-63		3,517	1979	68.4	Glacial Nakina River, Tagged at Inklin Jct., Sept. 1980	96.7
4-17-8		5,092	1976	68.5	Nahlin River, Tagged Sept. 1977	...
4-17-9		3,402	1976	68.5	Nahlin River, Tagged Sept. 1977	...
4-17-10		4,358	1976	62.9	Mainstem Taku, Tagged at Tulsequah, Oct. 1977	...
4-17-11		4,468	1976	62.9	Mainstem Taku, Tagged at Tulsequah, Oct. 1977	...
4-17-12		4,796	1976	62.9	Mainstem Taku, Tagged at Tulsequah, Oct. 1977	...
4-17-13		6,134	1976	62.9	Mainstem Taku, Tagged at Tulsequah, Oct. 1977	...
4-17-14		2,123	1976	62.9	Mainstem Taku, Tagged at Tulsequah, Oct. 1977	...

Table 14. (cont'd) A Summary of Coded Wire Tag Releases of Taku River Chinook Salmon, 1977 to Date.

Data Code	Young-of-the-Year Released	Smolts Released	Brood Year	$\bar{x}$ Size in mm	Capture Location	% Tag Retention
4-17-21		4,778	1976	70.3	Mainstem Taku, Tagged at Tulsequah, April 1978	...
4-17-22		3,717	1976	70.3	Mainstem Taku, Tagged at Tulsequah, May 1978	...
4-17-23		666	1976	70.3	Mainstem Taku, Tagged at Tulsequah, May 1978	...
4-17-24		389	1976	70.3	Mainstem Taku, Tagged at Canyon Island, May 1978	...
4-17-28	31,376		1977	63.9	Mainstem Taku, Tagged at Tulsequah, Oct. 1978	...
4-17-30	7,740		1977	63.9	Mainstem Taku, Tagged at Tulsequah, Oct. 1978	...
4-19-20		3,531	1979	83.8	Taku Inlet Seining May & June 1981	96.2
4-19-59	8,881		1978	68.2	Glacial Nakina River, Tagged at Inklin Jct., Oct. 1979	82.4
4-19-60	10,590		1979	68.7	Glacial Nakina River, Tagged at Inklin Jct., Sept. 1980	96.7

Table 14. (cont'd) A Summary of Coded Wire Tag Releases of Taku River Chinook Salmon, 1977 to Date.

Data Code	Young-of-the-Year Released	Smolts Released	Brood Year	$\bar{x}$ Size in mm	Capture Location	% Tag Retention
4-19-61	9,983		1979	68.7	Glacial Nakina River, Tagged at Inklin Jct., Sept. 1980	96.7
4-20-1		1,633	1979	73.5	Tulsequah, May 1981	95.2
4-20-3		4,218	1979	67.7	Tulsequah, March through May 1981	95.2
4-20-56		4,710	1981	87.9	Taku Inlet	
4-21-15	5,252		1980	63.2	Glacial Nakina River Sept. 1981	95.5
4-21-16	9,995		1980	59.8	Mainstem Taku, Sept. & Oct. 1981	95.5
4-21-17	10,566		1980	59.8	Mainstem Taku, Oct. 1981	95.5
4-21-18	6,260		1980	59.8	Mainstem Taku, Oct. & Nov. 1981	95.5
4-21-20	10,539		1980	63.2	Glacial Nakina River, Sept. 1981	95.5

Table 15. A Summary of Coded Wire Tag Recovery of Taku River Chinook Salmon, 1978 to Date.

Data Code	Date	Age	Sex	Head Length (-) Fork Length (FL) Mideye-Fork (MF)	Recovery Type and Area	Random or Select	Expansion Factor
4-5-8	8-10-78	1.1	M	360 mm (MF)	Nakina-escapement	R	
	8-13-78	1.1	M	330 mm (MF)	Nakina-escapement	R	
	8-15-78	2.1	M	410 mm (MF)	Nakina-escapement	R	
	8-18-78	1.1	M	295 mm (MF)	Nakina-escapement	R	
	8-23-78	1.1	M	355 mm (MF)	Nakina-escapement	R	
	5-17-79	1.2	...	683 mm (FL)	Comm. Troll 513	R	
	7-12-79	1.2	...	659 mm (FL)	Comm. Gillnet 111	R	
	8-13-79	1.2	M	575 mm (MF)	Nakina-escapement	R	
	8-16-79	1.2	M	480 mm (MF)	Nakina-escapement	R	
	8-18-79	1.2	M	545 mm (MF)	Nakina-escapement	R	
	8-18-79	1.2	M	420 mm (MF)	Nakina-escapement	R	
	5-20-80	1.3	...	175 mm (-)	Comm. Troll 113, 114, 116	S	
	5-21-80	1.3	...	175 mm (-)	Comm. Troll 113, 114, 116	S	
	5-30-80	1.3	...	885 mm (FL)	Comm. Troll 113	R	
	6-10-80	1.3	...	780 mm (FL)	Comm. Troll 113, 114, 116	R	
	6-18-80	1.3	...	170 mm (-)	Comm. Troll 113, 114, 116	S	
	6-20-80	1.3	...	850 mm (FL)	Comm. Gillnet 111	R	
	6-26-80	1.3	...	853 mm (FL)	Comm. Gillnet 111	R	
	8-15-80	1.3	M	755 mm (MF)	Nakina-escapement	R	
	8-14-80	1.3	F	760 mm (MF)	Nakina-escapement	R	
	8-15-80	1.3	M	735 mm (MF)	Nakina-escapement	R	
	8-16-80	1.3	...	660 mm (MF)	Nakina-escapement	R	
	6-13-81	1.4	...	996 mm (FL)	Comm. Troll 109-50	R	
	5-20-81	1.4	...	900 mm (FL)	Comm. Troll 113 Deer Harbor	R	
	5-10-81	1.4	...	997 mm (FL)	Sport Fish 111, Breadline		
	8-03-81	1.4	...	...	Nahlin-escapement	R	
	8-18-81	1.4	F	790 mm (MF)	Nakina-escapement	R	
	8-14-81	1.4	F	865 mm (MF)	Nakina-escapement	R	
	8-19-81	1.4	F	855 mm (MF)	Nakina-escapement	R	
4-5-9	7-27-78	1.1	M	330 mm (MF)	Nakina-escapement	R	
	8-04-78	1.1	M	310 mm (MF)	Nakina-escapement	R	
	8-15-78	1.1	M	335 mm (MF)	Nakina-escapement	R	
	8-16-78	1.1	M	310 mm (MF)	Nakina-escapement	R	
	8-20-78	1.1	M	330 mm (MF)	Nakina-escapement	R	
	7-05-79	1.2	M	595 mm (FL)	Comm. Gillnet 111	R	
	7-05-79	1.2	M	579 mm (FL)	Comm. Gillnet 111	R	
	7-12-79	1.2	M	650 mm (FL)	Comm. Gillnet 111	R	
	8-12-79	1.2	M	535 mm (MF)	Nakina-escapement	R	

Table 15. (cont'd) A Summary of Coded Wire Tag Recovery of Taku River Chinook Salmon, 1978 to Date.

Data Code	Date	Age	Sex	Head Length (-) Fork Length (FL) Mideye-Fork (MF)	Recovery Type and Area	Random or Select	Expansion Factor
	08/15/79	1.2	M	515 mm (MF)	Nakina-escapement	R	
	08/16/79	1.2	M	570 mm (MF)	Nakina-escapement	R	
	08/18/79	1.2	M	420 mm (MF)	Nakina-escapement	R	
	05/20/80	1.3	M	853 mm (FL)	Comm. Troll 113,114,116	R	
	05/20/80	1.3	...	765 mm (FL)	Comm. Troll 114	S	
	05/21/80	1.3	...	175 mm (-)	Comm. Troll 113,114,116	S	
	06/18/80	1.3	...	790 mm (FL)	Comm. Gillnet 111	R	
	06/19/80	1.3	...	730 mm (FL)	Comm. Gillnet 111	R	
	05/10/81	1.4	...	914 mm (FL)	Sport Fish 111 Pt. Stephens		
	05/21/81	1.4	...	915 mm (FL)	Comm. Troll Deer Harbor Scow	R	
	08/03/81	1.4	...		Nahlin-escapement	R	
	08/13/81	1.4	F	870 mm (MF)	Nakina-escapement	R	
	08/07/81	1.4	F	890 mm (MF)	Nakina-escapement	R	
	08/08/81	1.4	F	860 mm (MF)	Nakina-escapement	R	
	08/12/81	1.4	M	780 mm (MF)	Nakina-escapement	R	
	08/11/81	1.4	F	815 mm (MF)	Nakina-escapement	R	
	08/11/81	1.4	M	895 mm (MF)	Nakina-escapement	R	
	08/05/81	1.4	F	850 mm (MF)	Nakina-escapement	R	
4-16-55	07/28/82	1.1	...	410 mm (FL)	Comm. Seine 112	R	
	08/03/82	1.1	...	390 mm (FL)	Comm. Seine Unknown	R	
	08/10/82	1.1	M	330 mm (MF)	Nakina-escapement	R	
	08/10/82	1.1	M	295 mm (MF)	Nakina-escapement	R	
	08/11/82	1.1	M	290 mm (MF)	Nakina-escapement	R	
	08/12/82	1.1	M	335 mm (MF)	Nakina-escapement	R	
	08/11/83	1.2	M	485 mm (MF)	Nakina-escapemrnt	R	
	08/14/83	1.2	M	500 mm (MF)	Nakina-escapement	R	
	08/14/83	1.2	M	550 mm (MF)	Nakina-escapement	R	
	08/15/83	1.2	M	450 mm (MF)	Nakina-escapement	R	
	08/16/83	1.2	M	490 mm (MF)	Nakina-escapement	R	
	08/17/83	1.2	M	445 mm (MF)	Nakina-escapement	R	
	08/18/83	1.2	M	450 mm (MF)	Nakina-escapement	R	
	08/18/83	1.2	M	520 mm (MF)	Nakina-escapement	R	
	08/18/83	1.2	M	510 mm (MF)	Nakina-escapement	R	
	08/19/83	1.2	M	400 mm (MF)	Nakina-escapement	R	
	08/21/83	1.2	M	450 mm (MF)	Nakina-escapement	R	
	08/22/83	1.2	M	355 mm (MF)	Nakina-escapement	R	
	08/11/83	1.2	M	625 mm (MF)	Little Tahltan - escapement	R	

Table 15. (cont'd) A Summary of Coded Wire Tag Recovery of Taku River Chinook Salmon, 1978 to Date.

Data Code	Date	Age	Sex	Head Length (-) Fork Length (FL) Mideye-Fork (MF)	Recovery Type and Area	Random or Select	Expansion Factor
4-16-56	08/15/82	1.1	M	305 mm (MF)	Nakina-escapement	R	
	09/04/83	1.2	M	535 mm (MF)	Tatsamenie-escapement	R	
4-16-57	08/04/83	1.2	M	585 mm (MF)	Nakina-escapement	R	
	08/10/83	1.2	M	495 mm (MF)	Nakina-escapement	R	
	08/13/83	1.2	M	555 mm (MF)	Nakina-escapement	R	
	08/13/83	1.2	M	490 mm (MF)	Nakina-escapement	R	
	08/16/83	1.2	M	455 mm (MF)	Nakina-escapement	R	
	08/18/83	1.2	M	450 mm (MF)	Nakina-escapement	R	
4-16-58	08/07/82	1.2	M	500 mm (MF)	Nakina-escapement	R	
	08/20/82	1.2	M	455 mm (MF)	Nakina-escapement	R	
	08/12/83	1.3	M	625 mm (MF)	Nakina-escapement	R	
	08/13/83	1.3	F	750 mm (MF)	Nakina-escapement	R	
4-16-60	07/29/83	1.3	...	171 mm (-)	Comm. Troll Landed Petersburg	S	
4-16-61	07/05/83	1.3	...	850 mm (FL)	Comm. Gillnet 111-32	R	
	08/09/83	1.3	...	610 mm (MF)	Nakina-escapement	R	
	08/09/83	1.3	...	580 mm (MF)	Nakina-escapement	R	
4-16-62	08/12/80	1.1	M	345 mm (MF)	Nakina-escapement	R	
	08/12/80	1.1	M	350 mm (MF)	Nakina-escapement	R	
	08/15/81	1.2	M	520 mm (MF)	Nakina-escapement	R	
	08/16/81	1.2	M	485 mm (MF)	Nakina-escapement	R	
	05/27/82	1.3	...	890 mm (FL)	Comm. Troll Unknown - landed Sitka	R	
	08/14/82	1.3	M	775 mm (MF)	Nakina-escapement	R	
	06/02/83	1.4	...	1,005 mm (FL)	Comm. Troll 113, 114,116,154,157, 181,189	R	
	06/05/83	1.4	...	917 mm (FL)	Comm. Troll 113-91	R	
4-16-63	08/13/83	1.2	M	485 mm (MF)	Nakina-escapement	R	
4-17-8	05/28/82	1.4	...	858 mm (FL)	Comm. Troll Unknown - landed Pelican	R	
	07/29/82	1.4	F	820 mm (MF)	Nahlin-escapement	R	
	08/04/82	1.4	F	925 mm (MF)	Nahlin-escapement	R	

Table 15. (cont'd) A Summary of Coded Wire Tag Recovery of Taku River Chinook Salmon, 1978 to Date.

Data Code	Date	Age	Sex	Head Length (-) Fork Length (FL) Mideye-Fork (MF)	Recovery Type and Area	Random or Select	Expansion Factor
4-17-9	09/04/80	1.2	...	156 mm (-)	Landed, Sitka	S	
	08/03/81	1.3	...	...	Nahlin-escapement	R	
	07/29/82	1.4	F	810 mm (MF)	Nahlin-escapement	R	
	08/04/82	1.4	F	880 mm (MF)	Nahlin-escapement	R	
4-17-10	05/16/80	1.2	...	610 mm (TL)	Sport Fish 111 Breadline		
	06/08/82	1.4		1,000 mm (FL)	Comm. Troll 104	R	
	08/16/82	1.4	F	865 mm (MF)	Nakina-escapement	R	
4-17-11	05/28/81	1.3	...	996 mm (FL)	Comm. Troll 508 Elfin Cove Scow	R	
	08/08/81	1.3	M	700 mm (MF)	Nakina-escapement	R	
4-17-13	06/05/81	1.3	...	875 mm (FL)	Comm. Troll 513 Elfin Cove Scow	R	
	05/09/82	1.4	...	965 mm (FL)	Sport Fish 111	S	
	05/27/82	1.4	...	812 mm (FL)	Comm. Troll 113	R	
4-17-21	08/11/79	1.1	M	310 mm (MF)	Nakina-escapement	R	
	08/13/79	1.1	M	310 mm (MF)	Nakina-escapement	R	
	08/20/79	1.1	M	310 mm (MF)	Nakina-escapement	R	
	08/15/80	1.2	M	520 mm (MF)	Nakina-escapement	R	
	05/21/81	1.3	...	880 mm (FL)	Comm. Troll 505 Deer Harbor Scow	R	
	05/27/81	1.3	...	835 mm (FL)	Comm. Troll 113, Lisianski to Surge	R	
	06/03/81	1.3	...	860 mm (FL)	Comm. Troll 116, Icy Point	R	
	07/29/81	1.3	M	760 mm (MF)	Nakina-escapement	R	
	05/31/82	1.4	...	979 mm (FL)	Comm. Troll Unknown - Landed in Hoonah	R	
	08/08/82	1.4	F	825 mm (MF)	Nakina-escapement	R	
	08/09/82	1.4	M	890 mm (MF)	Nakina-escapement	R	
	08/12/82	1.4	M	920 mm (MF)	Nakina-escapement	R	
	08/19/82	1.4	F	835 mm (MF)	Nakina-escapement	R	
	08/14/83	1.5	M	975 mm (MF)	Nakina-escapement	R	
4-17-22	08/12/80	1.2	M	565 mm (MF)	Nakina-escapement	R	
	04/14/81	1.3	...	864 mm (TL*)	Comm. Troll 114, Homeshore	S	
	06/04/81	1.3	...	748 mm (FL)	Comm. Troll 505 Deer Harbor Scow	R	
	05/02/81	1.3	...	813 mm (FL)	Sport Fish 111 Breadline		

Table 15. (cont'd) A Summary of Coded Wire Tag Recovery of Taku River Chinook Salmon, 1978 to Date.

Data Code	Date	Age	Sex	Head Length (-) Fork Length (FL) Mideye-Fork (MF)	Recovery Type and Area	Random or Select	Expansion Factor
	05/24/82	1.4	...	1,003 mm (FL)	Comm. Troll 110	R	
	06/14/82	1.4	...	950 mm (FL)	Comm. Gillnet 111	R	
	06/23/82	1.4	...	950 mm (FL)	Comm. Gillnet 111	R	
	08/10/82	1.4	F	930 mm (MF)	Nakina-escapement	R	
4-17-23	06/27/82	1.4	...	1,020 mm (FL)	Comm. Troll 113	R	
4-17-28	08/14/80	1.1	M	360 mm (MF)	Nakina-escapement	R	
	08/15/80	1.1	M	350 mm (MF)	Nakina-escapement	R	
	08/13/81	1.2	M	590 mm (MF)	Nakina-escapement	R	
	07/17/81	1.2	M	550 mm (MF)	Nakina-escapement	R	
	08/17/81	1.2	M	440 mm (MF)	Nakina-escapement	R	
	08/18/81	1.2	M	605 mm (MF)	Nakina-escapement	R	
	06/15/82	1.3	...	699 mm (FL)	Sport Fish 111	S	
	08/11/82	1.3	M	775 mm (MF)	Nakina-escapement	R	
4-17-30	08/10/80	1.1	M	355 mm (MF)	Nakina-escapement	R	
	06/27/81	1.2	...	...	Comm. Troll - Landed in Sitka	S	
	07/12/82	1.3	...	718 mm (FL)	Comm. Troll - Landed Excursion	R	
4-19-20	08/03/82	1.1	...	344 mm (FL)	Comm. Seine 109	R	
	09/05/82	1.1	...	387 mm (FL)	Sport Fish 111	S	
	08/07/82	1.1	M	285 mm (MF)	Nakina-escapement	R	
	08/17/82	1.1	M	370 mm (MF)	Nakina-escapement	R	
	06/22/83	1.2	M	600 mm (MF)	Canyon Island	R	
	08/11/83	1.2	M	520 mm (MF)	Nakina-escapement	R	
	08/12/83	1.2	M	475 mm (MF)	Nakina-escapement	R	
	08/15/83	1.2	M	480 mm (MF)	Nakina-escapement	R	
	08/16/83	1.2	M	450 mm (MF)	Nakina-escapement	R	
	08/16/83	1.2	M	500 mm (MF)	Nakina-escapement	R	
	08/17/83	1.2	M	500 mm (MF)	Nakina-escapement	R	
	08/17/83	1.2	M	480 mm (MF)	Nakina-escapement	R	
	08/18/83	1.2	M	500 mm (MF)	Nakina-escapement	R	
	08/19/83	1.2	M	465 mm (MF)	Nakina-escapement	R	
4-19-59	08/11/81	1.1	M	300 mm (MF)	Nakina-escapement	R	
	08/16/81	1.1	M	310 mm (MF)	Nakina-escapement	R	
	08/12/82	1.2	M	600 mm (MF)	Nakina-escapement	R	
	08/14/82	2.1	M	325 mm (MF)	Nakina-escapement	R	
	08/19/82	2.1	M	330 mm (MF)	Nakina-escapement	R	
	08/19/82	1.2	M	500 mm (MF)	Nakina-escapement	R	
	06/01/83	1.3	M	205 mm (-)	Comm. Troll - Landed in Pelican	S	

Table 15. (cont'd) A Summary of Coded Wire Tag Recovery of Taku River Chinook Salmon, 1978 to Date.

Data Code	Date	Age	Sex	Head Length (-) Fork Length (FL) Mideye-Fork (MF)	Recovery Type and Area	Random or Select	Expansion Factor
4-19-60	08/13/82	1.1	M	300 mm (MF)	Nakina-escapement	R	
	08/14/82	1.1	M	355 mm (MF)	Nakina-escapement	R	
	08/15/82	1.1	M	345 mm (MF)	Nakina-escapement	R	
	08/16/82	1.1	M	320 mm (MF)	Nakina-escapement	R	
	08/07/83	1.2	M	600 mm (MF)	Nakina-escapement	R	
	08/08/83	1.2	M	470 mm (MF)	Nakina-escapement	R	
	08/12/83	1.2	M	470 mm (MF)	Nakina-escapement	R	
	08/14/83	1.2	M	475 mm (MF)	Nakina-escapement	R	
	08/16/83	1.2	M	445 mm (MF)	Nakina-escapement	R	
	08/18/83	1.2	M	585 mm (MF)	Nakina-escapement	R	
	08/18/83	1.2	M	450 mm (MF)	Nakina-escapement	R	
	08/19/83	1.2	M	530 mm (MF)	Nakina-escapement	R	
4-19-61	08/13/82	1.1	M	345 mm (MF)	Nakina-escapement	R	
	08/23/82	1.1	M	330 mm (MF)	Nakina-escapement	R	
	08/23/82	1.1	M	315 mm (MF)	Nakina-escapement	R	
	07/06/83	1.2	M	552 mm (MF)	Nakina-sport	S	
	08/09/83	1.2	M	565 mm (MF)	Nakina-escapement	R	
	08/09/83	1.2	M	355 mm (MF)	Nakina-escapement	R	
	08/10/83	1.2	M	435 mm (MF)	Nakina-escapement	R	
	08/11/83	1.2	M	475 mm (MF)	Nakina-escapement	R	
	08/14/83	1.2	M	530 mm (MF)	Nakina-escapement	R	
	08/15/83	1.2	M	420 mm (MF)	Nakina-escapement	R	
	08/17/83	1.2	M	450 mm (MF)	Nakina-escapement	R	
	08/20/83	1.2	M	465 mm (MF)	Nakina-escapement	R	
	08/21/83	1.2	M	465 mm (MF)	Nakina-escapement	R	
	08/22/83	1.2	M	510 mm (MF)	Nakina-escapement	R	
	08/22/83	1.2	M	450 mm (MF)	Nakina-escapement	R	
4-20-01	06/06/82	1.1	M	331 mm (FL)	Sport Fish 111	S	
	08/19/82	1.1	M	290 mm (MF)	Nakina-escapement	R	
	08/19/82	1.1	M	355 mm (MF)	Nakina-escapement	R	
	08/13/83	1.2	M	490 mm (MF)	Nakina-escapement	R	
	08/21/83	1.2	M	440 mm (MF)	Nakina-escapement	R	
	08/22/83	1.2	M	420 mm (MF)	Nakina-escapement	R	
	09/01/83	1.2	M	510 mm (MF)	Tatsamenie-escapement	R	
4-20-03	08/01/82	1.1	M	340 mm (MF)	Nakina-escapement	R	
	08/02/82	1.1	...	393 mm (FL)	Comm. Seine 111	R	
	08/15/82	1.1	M	335 mm (MF)	Nakina-escapement	R	
	08/16/82	1.1	M	310 mm (MF)	Nakina-escapement	R	
	08/16/82	1.1	M	320 mm (MF)	Nakina-escapement	R	
	08/17/82	1.1	M	345 mm (MF)	Nakina-escapement	R	

Table 15. (cont'd) A Summary of Coded Wire Tag Recovery of Taku River Chinook Salmon, 1978 to Date.

Data Code	Date	Age	Sex	Head Length (-) Fork Length (FL) Mideye-Fork (MF)	Recovery Type and Area	Random or Select	Expansion Factor
	08/21/82	1.1	M	350 mm (MF)	Nakina-escapement	R	
	08/21/82	1.1	M	410 mm (MF)	Nakina-escapement	R	
	08/08/83	1.2	M	470 mm (MF)	Nakina-escapement	R	
	08/11/83	1.2	M	460 mm (MF)	Nakina-escapement	R	
	08/11/83	1.2	M	420 mm (MF)	Nakina-escapement	R	
	08/15/83	1.2	M	555 mm (MF)	Nakina-escapement	R	
	08/19/83	1.2	M	435 mm (MF)	Nakina-escapement	R	
	08/28/83	1.2	M	525 mm (MF)	Tatsamenie-escapement	R	
	09/02/83	1.2	M	580 mm (MF)	Tatsamenie-escapement	R	
4-21-16	08/12/83	1.1	M	360 mm (MF)	Nakina-escapement	R	
	09/04/83	1.1	M	380 mm (MF)	Tatsamenie-escapement	R	
4-21-17	08/09/83	1.1	M	320 mm (MF)	Nakina-escapement	R	
4-21-20	08/09/83	1.1	M	305 mm (MF)	Nakina-escapement	R	
	08/10/83	1.1	M	330 mm (MF)	Nakina-escapement	R	
	08/15/83	1.1	M	360 mm (MF)	Nakina-escapement	R	
ADIPOSE CLIP PLUS NO CODED WIRE TAG							
	08/06/78	1.1	M	335 mm (MF)	4-5-8 or 4-5-9 Nakina-escapement	R	
	08/10/78	1.1	M	355 mm (MF)	4-5-8 or 4-5-9 Nakina-escapement	R	
	08/10/78	1.1	M	...	Head missing, 4-5-8 or 4-5-9 Nakina-escapement	R	
	08/12/78	1.1	M	...	Head missing, 4-5-8 or 4-5-9 Nakina-escapement	R	
	08/24/78	1.1	M	380 mm (MF)	4-5-8 or 4-5-9 Nakina-escapement, tag lost	R	
	08/06/79	1.2	M	...	Head missing, 4-5-8 or 4-5-9 Nakina-escapement	R	
	08/18/79	1.2	M	545 mm (MF)	4-5-8 or 4-5-9 Nakina-escapement	R	
	08/20/79	1.2	M	470 mm (MF)	4-5-8 or 4-5-9 Nakina-escapement	R	

Table 15. (cont'd) A Summary of Coded Wire Tag Recovery of Taku River Chinook Salmon, 1978 to Date.

Data Code	Date	Age	Sex	Head Length (-) Fork Length (FL) Mideye-Fork (MF)	Recovery Type and Area	Random or Select	Expansion Factor
	08/20/79	1.2	M	470 mm (MF)	Nakina escapement 4-5-8 or 4-5-9 tag lost	R	
	08/14/80	1.1	M	325 mm (MF)	Nakina-escapement	R	
	08/14/80	1.3	...	700 mm (MF)	Nakina-escapement Tag lost 4-5-8 or 4-5-9	R	
	08/12/80	...	...	560 mm (MF)	Nakina-escapement	R	
	08/14/80	...	...	600 mm (MF)	Nakina-escapement	R	
	08/19/81	...	...	760 mm (MF)	Nakina-escapement	R	
	08/07/81	...	...	740 mm (MF)	Nakina-escapement	R	
	08/15/81	...	...	740 mm (MF)	Nakina-escapement	R	
	08/11/81	...	...	520 mm (MF)	Nakina-escapement	R	
	08/11/81	...	...	680 mm (MF)	Nakina-escapement	R	
	08/07/81	1.4	...	900 mm (MF)	Head missing, Nakina-escapement 4-5-8 or 4-5-9	R	
	08/08/82	1.2	M	550 mm (MF)	Nakina-escapement	R	
	08/05/82	1.4	...	895 mm (MF)	Nakina-escapement	R	
	08/04/82	1.4	...	≅870 mm (MF)	Nahlin-escapement, head missing	R	
	07/29/82	1.4	F	875 mm (MF)	Nahlin-escapement	R	
	08/09/83	1.2	M	460 mm (MF)	Nakina-escapement	R	
	08/20/83	1.2	M	490 mm (MF)	Nakina-escapement	R	

* (TL) = Total Length

Table 16. Actual and Expanded Recovery of 1975 Brood Taku River Chinook Salmon Coded Wire Tagged as Smolts.

Data Codes 4-5-8
4-5-9
4-5-10

Recovery Year	Unexpanded Fishery UF	Expanded Fishery EF	Unexpanded Spawning Ground USG	Expanded Spawning Ground ESP	Unexpanded Total UT	Expanded Total ET
1978	0	0	15	114	15	114
1979	5	11	12	72	17	83
1980	12	29	5	38	17	67
1981	5	10	11	64	16	74
Total	22	(50)	43	288	65	338
		57 (Expanded for 12.8% tag loss)				

3.41% Survival-smolt to adult
16.9% Exploitation

Basic assumptions for spawning ground expansions:

1) Nakina River equals 50% of Taku chinook escapement.
2) Marks equally distributed among races in fall mainstem tagging and spring smolt tagging.
3) Headwaters tagging (Nahlin and Glacial Nakina) spawning ground marks only distributed to that tributary.

Table 17. Actual and Expanded Recovery of 1976 Brood Taku River Chinook Salmon Coded Wire Tagged at Age Zero.

Data Codes 4-17-8
4-17-9
4-17-10
4-17-11
4-17-12
4-17-13
4-17-14

Recovery Year	Unexpanded Fishery UF	Expanded Fishery EF	Unexpanded Spawning Ground USG	Expanded Spawning Ground ESG	Unexpanded Total UT	Expanded Total ET
1979	0	0	0	0	0	0
1980	2	2	0	0	2	2
1981	2	12	2	33	4	45
1982	4	9	5	34	9	43
Total	8	23	7	67	15	90

.296 Survival-age zero to adult
25.6% Exploitation rate

Basic assumptions for spawning ground expansions:

1) Nakina River equals 50% of Taku chinook escapement.
2) Marks equally distributed among races in fall mainstem tagging and spring smolt tagging.
3) Headwaters tagging (Nahlin and Glacial Nakina) spawning ground marks only distributed to that tributary.

Table 18. Actual and Expanded Recovery of 1976 Brood Taku River Chinook Salmon Coded Wire Tagged as Smolts.

Data Codes 4-17-21
4-17-22
4-17-23
4-17-24

Recovery Year	Unexpanded Fishery UF	Expanded Fishery EF	Unexpanded Spawning Ground USG		Expanded Spawning Ground ESG	Unexpanded Total UT	Expanded Total ET
1979	0	0	3		18	3	18
1980	0	0	2		14	2	14
1981	6	23	1		6	7	29
1982	5	12	5		22	10	34
1983	0	0	1	(Pre)	1	1	1
Total	11	35	12		61	23	96

1% Survival-smolt to adult
36.5% Exploitation

Basic assumptions for spawning ground expansions:

1) Nakina River equals 50% of Taku chinook escapement.
2) Marks equally distributed among races in fall mainstem tagging and spring smolt tagging.
3) Headwaters tagging (Nahlin and Glacial Nakina) spawning ground marks only distributed to that tributary.

Table 19. A Summary of Coded Wire Tag Releases of Stikine River Chinook Salmon, 1978 to Date.

Data Code	Young-of-the-year Released	Smolts Released	Brood Year	$\bar{X}$ Size in mm	Capture Location	% Tag Retention
4-16-33	...	507	1976	73.9	Mainstem Stikine, tagged at river mouth by Coho Research, May 1980.	...
4-16-35	...	...	1976	...	Mainstem Stikine; at least one juvenile chinook tagged with a coho code.	...
4-16-54	6,677	...	1978	64.4	Mainstem Stikine, near Porcupine Mouth.	...
4-17-16	...	357	1976	73.9	Mainstem Stikine, near Iskut mouth.	...
4-17-17	...	420	1976	73.9	Same as above.	...
4-17-20	5,223	...	1977	63.6	Little Tahltan	...
4-17-25	2,819	...	1977	63.6	Same as above.	...
4-17-26	4,420	...	1979	63.1	Mainstem Stikine, near Porcupine Mouth.	96.5
4-17-27	4,536	...	1979	63.1	Same as above.	96.5
4-19-62	5,001	...	1979	63.1	Same as above.	96.5
4-19-63	8,865	...	1979	63.1	Same as above.	96.5
4-20-2	7,430	...	1979	63.1	Same as above.	96.5
4-20-4*						
4-20-5*						
11-16-25	17,487	...	1978	64.4	Same as above.	...
4-21-11	8,643	...	1980	57.8	Same as above.	93.0
4-21-12	10,083	...	1980	57.8	Same as above.	93.0
4-21-13	10,736	...	1980	57.8	Same as above	93.0
4-21-14	10,175	...	1980	57.8	Same as above.	93.0
4-21-46	3,451	...	1980	57.8	Same as above.	93.0

Table 20. A Summary of Coded Wire Tag Recovery of Stikine River Chinook Salmon, 1978 to Date.

Data Code	Date	Age	Sex	Length	Recovery Area	Gear	Random or Select	Expansion Factor
4-16-33	5-24-82	1.4	...	925(FL)[1/]	113	Troll	R	...
	7-28-82	1.4	...	...	Stikine River	Fishwheel	R	0
4-16-35	4-12-82	1.4	...	990(MF)[2/]	114	Hand Troll	R	...
4-16-54	8-11-83	1.3	F	810(MF)[3/]	Little Tahltan	Gaff	R	...
4-17-16	9-16-80	1.2	...	170 (-)	Landed Sitka	Troll	S	0
4-17-17	6-04-82	1.4	...	255 (-)	113	Troll	S	0
	6-04-82	1.4	...	830(FL)	110	Troll	R	...
4-17-20	8-11-83	1.4	M	965(MF)	Little Tahltan	Gaff	S	...
	8-11-83	1.4	F	820(MF)	Little Tahltan	Gaff	R	...
4-17-25	6-07-83	1.4	...	930(FL)	113	Troll	R	1.42
4-19-63	7-08-83	1.2	...	810(FL)	113	Troll	R	4.47
	7-18-83	1.2	...	688(FL)	109-10	Troll	R	1.79
4-20-2	8-11-83	1.2	M	420(MF)	Little Tahltan	Gaff	R	...
4-20-4*								
4-20-5*	10-1-82	1.2	...	...	Landed Sitka	...	S	0
11-16-25	3-21-83	1.3	...	820(FL)	109-10	Troll	R	1.56
	6-07-83	1.3	...	850(FL)	Cout	Troll	R	1.42
	7-07-83	1.3	...	770(FL)	113	Troll	R	4.47
	7-08-83	1.3	...	184 (-)	Landed Sitka	?	S	0
4-21-46	7-24-83	1.1	...	350(FL)	110-31	Seine	R	1.10

1/ Fork Length
2/ Mid-eye Fork
3/ Head Length

Table 21. Minnow Traps Checked, Chinook Smolts Tagged, Recaptures, and Tag Retention by Date on the Chickamin River, 1983.

Date	Minnow Traps Checked	Number Tagged	Recaptures		Cumulative Tagged Fish Released to Date	CWT Code
			Total	No. Tags Retained		
March 3	77					
March 4	86					
March 5	53					
March 9	100					
March 10	100	735			735	4-20-55
March 11	100	726	11	11	1,461	4-20-55
April 6	73					
April 7	73					
April 8	99					
April 9	99					
April 10	90	787	72	72	2,248	4-20-55
April 11	90	104	13	13	2,352	4-20-55

Date 12/15/82
$\underline{n}$ = 205
$\bar{x}$ length = 67.1 mm

Date = 04/11/83
$\underline{n}$ = 115
$\bar{x}$ length = 68.6 mm

Table 22. Seining and Coded Wire Tagging of Juvenile Chinook in Taku Inlet, May 13 and May 19 thru June 14, 1983.

Species	Number of Tagged Salmonids Retained	Origin
Chinook	1	Little Port Walter 3-63-3
Chinook	1	Taku River 4-21-15,2-check smolt
Chinook	1	Snettisham Hatchery
Coho	73	Salmon Creek Hatchery
Coho	7	Indian Lakes (Speel)
Coho	1	Snettisham Hatchery
Coho	4	No tags + adipose clip

Total days spent seining = 19
Total chinook smolts tagged and released = 4,710 - Code 4-20-56
Mean length = 87.9 mm F.L. n = 100
Tagged salmonids retained = 88

Table 23. Minnow Traps Checked, Juvenile Chinook Tagged, Recaptures, and Tag Retention by Date on the Unuk River, 1983.

Date	Minnow Traps Checked	Number Tagged	Recaptures		Data Code
			Total	# Tags Retained	
Oct. 05	36	...	...	...	...
06	48	...	...	...	...
07	48	...	...	...	...
08	54	403	0	0	4-20-57
09	54	1,034	0	0	4-20-57
10	54	980	9	9	4-20-57
11	54	1,006	20	18	4-20-57
12	77	530	51	49	4-20-57
13	77	925	99	97	4-20-57
14	77	871	119	118	4-20-57
15	0	...	...	...	...
16	76	...	...	...	...
17	0	709	172	169	4-20-57
18	76	645	87	86	...
19	69	544	63	63	4-20-57
20	76	557	78	78	4-20-57
21	28	797	64	62	4-20-57
22	62	494	39	38	4-20-57
23	0	...	...	...	...
24	62	1,110	2	2	4-20-58
25	58	526	6	6	4-20-58
26	75	...	...	...	...
27	90	...	...	...	...
28	45	773	5	5	4-20-58
29	49	622	2	2	4-20-58
30	41	...	...	...	...
31	0	255	0	0	4-20-58
Nov. 01	37	1,684	205	198	...
02	48	497	26	23	4-20-58
03	60	...	...	...	...
04	58	958	39	38	4-20-58
05	0	...	...	...	...
06	0	...	...	...	...
07	54	456	14	14	4-20-58
08	62	268	26	26	4-20-58
09	0	...	...	...	...
10	66	625	4	4	4-20-58
11	40	312	14	14	4-20-58
12	77	...	...	...	...
13	55	792	6	6	4-20-58

Table 23. (cont'd) Minnow Traps Checked, Juvenile Chinook Tagged, Recaptures, and Tag Retention by Date on the Unuk River, 1983.

Date	Minnow Traps Checked	Number Tagged	Recaptures		Data Code
			Total	# Tags Retained	
Nov.14	64	540	7	6	4-20-58
15	...	318	0	0	4-20-58
15	61	394	7	7	4-20-61
16	65	380	4	4	4-20-61
17	0	437	2	2	4-20-61
18	0	...	...	...	...
19	64	...	...	...	...
20	35	...	...	...	...
21	0	589	9	7	4-20-61

Table 24. Minnow Traps Checked, Juvenile Coho Tagged, Recaptures, and Tag Retention by Date on the Unuk River, 1983.

Date	Minnow Traps Checked	Number Tagged	Recaptures		Data Code
			Total	# Tags Retained	
Oct. 05	36	...	...	...	4-20-60
06	48	...	...	...	...
07	48	...	...	...	...
08	54	...	...	...	...
09	54	...	...	...	...
10	54	...	...	...	...
11	54	...	...	...	...
12	77	1,007	0	0	4-20-60
13	77	...	...	...	...
14	77	402	3	2	...
15	0	...	...	...	...
16	76	...	...	...	...
17	0	...	...	...	...
18	76	375	152	147	4-20-60
19	69	154	49	49	4-20-60
20	76	103	31	30	4-20-60
21	28	149	32	30	4-20-60
22	62	72	15	14	...
23	0	...	...	...	...
24	62	...	...	...	...
25	58	109	0	0	4-20-60
26	75	...	...	...	...
27	90	...	...	...	...
28	45	...	...	...	...
29	49	...	...	...	...
30	41	...	...	...	...
31	0	...	...	...	...
Nov. 01	37	...	...	...	...
02	48	665	38	38	4-20-60
03	60	...	...	...	...
04	58	538	8	8	4-20-60
05	0	...	...	...	...
06	0	...	...	...	...
07	54	218	0	0	4-20-60
08	62	349	19	19	4-20-60
09	0	...	...	...	...
10	66	308	3	3	4-20-60
11	40	214	16	16	4-20-60
12	77	...	...	...	...
13	55	325	6	4	4-20-60
14	64	237	12	12	4-20-60
15	61	305	8	5	4-20-60
16	65	183	1	1	4-20-60
17	0	208	1	1	4-20-60
				96.2%	

LITURATURE CITED

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