

# Informational Leaflet 129

## FRAZER LAKE SOCKEYE INVESTIGATIONS 1968

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March 28, 1969

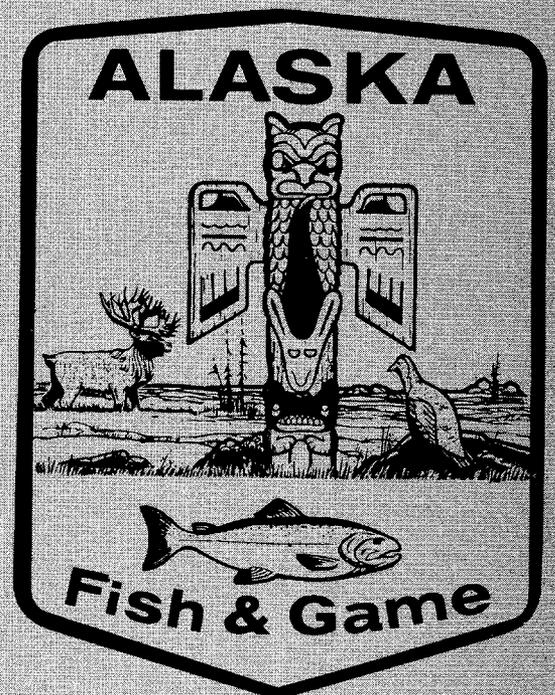
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FRAZER LAKE SOCKEYE INVESTIGATIONS <sup>1/</sup>

1968

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<sup>1/</sup> This investigation was financed by the P.L. 89-304 "Anadromous Fish Act" for the period commencing July 1, 1968, under sub-project AFC-8-3, Contract No. 14-17-0005-178.

## FRAZER LAKE SOCKEYE INVESTIGATIONS, 1968

### INTRODUCTION

Located on the southern end of Kodiak, Frazer Lake is the second largest lake on the Island. It is approximately eight miles long, a mile wide and drains into Olga Bay via Frazer River and Dog Salmon Creek. Twelve tributary streams drain into the lake providing many miles of salmon spawning area. However, due to a 30-foot fall, 0.8 miles below the lake outlet, this system has traditionally been without any known salmon population.

Between 1951 and 1956, in an attempt to establish a sockeye population, green eggs from Karluk Lake were transported into the Frazer system. Approximately 2,600,000 eggs were planted by this method. In 1956, the first progeny from these early plants returned to Frazer River. From a weir installed below the falls, six adult reds were captured and released upstream (Eaton, 1967). Following essentially this method, an additional 828 sockeye were released above the falls during the next five years.

In 1962, a fishway was installed to permit passage of salmon over the falls (Ziemer, 1962). Through this steppass, passage of nearly 60,000 sockeye between 1962 and 1968 has been accomplished. To further supplement the stock at Frazer, adult transplants from Red Lake have been conducted, eyed eggs have been planted and hatchery-reared fry have been released (Table 1).

To learn about sockeye survival, growth, age composition and the impact of the introduction of sockeyes into a large lake system, an extensive research program was initiated. Since 1965 all returning adults and all migrating smolts have been counted and sampled, stream surveys have been conducted and basic climatic and limnological data collected.

### METHODS OF ENUMERATION

#### Adult Trapping

Installed at the exit to the steppass is a screened-box trap, 4' x 8' x 2' through which all fish must pass on their upstream movement. Enumeration and sampling of adults is done from this facility. Following daily sampling in the morning, adults are counted and released upstream every hour or half hour depending upon the density of fish in the trap.

Table 1. Adult sockeye escapement, adults transplanted, eyed eggs planted and fry plants in the Frazer Lake system, 1956-1968.

Year	Escapement over falls	Transplants from Red Lake	Egg plants	Fry plants
1956	6	--	500,000	--
1957	165	--	--	--
1958	71	42	--	--
1959	62	--	--	--
1960	440	--	--	--
1961	273	600	--	87,000
1962	1,290	1,800	--	--
1963	2,357	9,500	--	--
1964	8,166	1,800	--	--
1965	5,074	4,000	830,000	--
1966	11,728	4,728	600,000	504,000
1967	14,500	7,334	1,190,000	--
1968	16,708	30	3,387,000	311,000

### Smolt Trapping

Approximately one-fourth mile below the lake outlet on Frazer River, a temporary smolt weir was constructed utilizing pre-built tripods and bipods placed in a V-formation. All fish migrating or moving downstream are channeled into a screened trap similar to the adult trap (Eaton, 1967, Fig. 7). Since smolt migrate primarily at night, gates in the weir are left open during the day to permit free passage of migrating adults. Smolt moving into the trap were either dipnetted and actually counted or were sub-sampled and counted. Sampling of smolts for length, weights and ages was done the following morning from fish detained from the previous night's migration.

## ADULT INVESTIGATIONS

### Return of Adults

Aerial stream surveys by Jack Lechner and Martin Eaton, area management biologists, revealed 15,000-20,000 sockeyes in the Frazer River by June 24, 1968. The first large concentration of sockeyes at the falls was noted on June 9 when approximately 200 were counted. A single sockeye ascended the ladder this year on May 13, but a continuous run did not begin until June 3. Between June 3 and August 26, 16,707 reds were counted. Table 2 presents the cumulative return of reds counted through the adult trap for the last four years. Generally as the number of fish increase each year, the earlier the majority of the adults ascend the ladder. This is probably due in part to the concentration of fish below the ladder. In addition to 16,708 sockeye enumerated, all other salmonids released upstream were counted. These data are found in appendix Table 12.

### Tagging Study

To learn about the behavior of adult sockeye and time needed to ascend the falls, a tagging program below the ladder was initiated. On June 24 and 25 between July 17 and 19, 263 sockeye were tagged. To be easily distinguishable from an already utilized inshore disc tag, yellow, spaghetti tags were used. To further separate each day's work, knots were placed in the tags as follows:

no knots - June 23 and 24	- 23 tagged
one knot - July 17	- 16 tagged
two knots - July 18	- 125 tagged
three knots - July 19	- 100 tagged

Table 2. Cumulative returns of adult sockeye ascending steep pass to Frazer Lake, 1965-1968.

Date	Percentage of return			
	Year			
	1965	1966	1967	1968
5/31	0	0	0	< 1
6/ 5	0	0	< 1	< 1
6/10	0	0	< 1	< 1
6/15	0	< 1	2	1
6/20	< 1	3	11	6
6/25	3	9	23	13
6/30	8	17	46	40
7/ 5	14	26	58	54
7/10	34	38	72	65
7/15	39	67	82	75
7/20	53	81	88	85
7/25	62	83	95	94
7/30	74	88	98	96
8/ 5	94	95	99	99
8/10	97	99	0	99
8/15	98	99	99	99
8/20	99	99	99	99
8/25	99	100	100	100
8/30	99			
9/ 5	99			
9/10	100			
Total Escapement	5,074	11,728	14,500	16,708

Tags were firmly inserted at the base of the dorsal fin on the fish's left side using a Floy tagging gun. Little or no shedding was expected. Recoveries of tags were recorded daily from the adult trap and from surveys of dead fish made below the falls (Table 3 and 4). Most of the tagged fish passed through the fish ladder within the first two weeks after tagging. Total recovery of the June tagged fish was 47 percent while July recoveries only reached 21 percent. Low recovery of July tagged fish above the falls is partially explained by the behavior of the salmon in late July. On July 30 and 31, approximately 4,000 (90%) of the remaining fish below the falls started a seaward movement down Frazer River. Extensive downstream surveys in August fail to account for most of these fish. Two tags from the July 18 tagging were recovered in Nancy Creek, approximately 1/2 mile below the falls and one tag was returned from an Olga Bay set netter suggesting that at least some of the salmon moved completely out of the Frazer River-Dog Salmon drainage.

#### Age, Length and Weight of Adults

Sample size for ascending adults was determined by taking eight percent of the adults enumerated the previous day. Following anesthetization in MS-222 (tricaine-methanesulfonate), fork length and sex were determined. Scales were also taken for age analysis. In addition, weights were taken from five males and five females in 20 mm length groups each week.

Males ranged from 38.2 to 73.5 cm. while females were 36.5 to 68.5 cm. (Table 5). Of the 1,234 fish sampled, 45.6 percent were males and 54.4 percent were females; essentially a 1:1 ratio.

Based on scale readings, ages for returning salmon were determined. Eighty-seven percent of the males and 89 percent of the females were either 2.2 or 2.3 (Table 6)\*. Males of age 2.2 averaged 59.1 cm. (23.3 inches) and averaged 2.3 kg (5.1 lbs.) while females of the same age averaged 57.6 cm. (22.6 inches) and 2.2 kg (4.8 lbs.) (Table 7). Although males were generally larger than females, average ocean growth increment between ages 2.1, 2.2 and 2.3 were similar for both sexes.

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\* A number preceding the period represents the number of freshwater annuli. A number after the period represents the number of saltwater annuli. Thus, a 2.2 fish is in its 5th year having 2 winters in freshwater and 2 winters in saltwater.

Table 3. Recovery of spaghetti tags in the adult trap, Frazer Lake, 1968.

Recoveries	Date tagged			
	June 23 - 24 (23 tagged)	July 17 (16 tagged)	July 18 (125 tagged)	July 19 (100 tagged)
Within 1 week	4	1	14	6
Within 2 weeks	1	0	8	6
Within 3 weeks	2	1	1	0
Within 4 weeks	2	0	0	0
Totals	9	2	23	12
Percentage of recovery	39	13	18	12

Table 4. Recovery of spaghetti tags from dead fish below the falls, Frazer Lake, 1968.

Recoveries	Date tagged			
	June 23 - 24	July 17	July 18	July 19
Within 1 week	1	0	4	6
Within 2 weeks	1	0	1	2
Within 3 weeks	0	0	0	0
Totals	2	0	5	8
Percentage of recovery	8	0	4	8

Table 5. Length frequency distribution of adult sockeye sampled at Frazer Lake, 1968.

Lengths (cm)	Male		Female	
	Sample size	Frequency percentage	Sample size	Frequency percentage
40.0	5	1	1	0
40.0 - 41.9	5	1	1	0
42.0 - 43.9	12	2	1	0
44.0 - 45.9	13	2	2	21
46.0 - 47.9	11	2	0	0
48.0 - 49.9	7	1	0	0
50.0 - 51.9	3	0	11	2
52.0 - 53.9	20	4	41	6
54.0 - 55.9	40	7	83	12
56.0 - 57.9	89	16	172	26
58.0 - 59.9	107	19	141	21
60.0 - 61.9	111	20	133	20
62.0 - 63.9	78	14	60	9
64.0 - 65.9	31	6	19	3
66.0 - 67.9	22	4	5	1
68.0 - 69.9	7	1	1	0
70.0 - 71.9	1	0	0	0
72.0 - 73.9	1	0	0	0
74.0	0	0	0	0
Total	563		671	

Table 6. Age-frequency of adult sockeye sampled at Frazer, 1968.

Age	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
1.1	1	< 1	1	< 1	2	< 1
1.2	10	3	24	6	34	4
1.3	11	3	10	2	21	3
2.1	22	6	9	2	31	4
2.2	247	65	265	67	512	66
2.3	84	22	86	22	170	22
3.1	1	< 1	-	-	1	< 1
3.2	2	1	1	< 1	3	< 1
3.3	-	-	-	-	-	-
Total	378	100	396	100	774	100

Table 7. Length-weight of adult sockeye by age, Frazer Lake, 1968.

Age	Males			Females		
	Mean length (cm)	Mean weight (kg)	Sample size	Mean length (cm)	Mean weight (kg)	Sample size
1.1	44.0	0.5	1	41.4	0.8	1
1.2	49.0	1.4	7	52.8	1.7	13
1.3	55.0	1.9	2	----	---	--
2.1	44.6	1.0	23	42.5	1.1	2
2.2	59.1	2.3	50	57.6	2.2	50
2.3	65.8	3.0	39	62.4	2.8	38

### Stream Surveys and Spawning Data

Between July 3 and August 24, foot surveys of the streams in the Frazer system were conducted to determine spawning patterns and utilization of spawning areas. Preliminary surveys early in July revealed fish at the mouths of all major streams. Surveys between July 24 and August 7 accounted for 4,000 fish while only 858 were counted on remaining surveys. Figure 1 shows the tributaries surveyed in the system and Table 8 presents the counts recorded by stream name or number.

Table 8. Counts made of adult sockeye on stream surveys in the Frazer system, July 24 - August 23, 1968.

Date	Stream	Live	Dead	Total
7/31	Dexter (Below falls)	13	35	48
8/10	Dexter	0	15	15
7/24	Nancy (Below falls)	74	443	517
8/11	Nancy	10	53	63
7/25	#16	3	0	3
8/11	#16	0	0	0
7/25	#14 and 14	0	0	0
8/1	#7	21	7	28
8/15	#7	1	2	3
7/31	Linda	136	558	694
8/11	Linda	79	114	193
8/2	Mid-Way	5	280	285
8/12	Mid-Way	48	20	68
8/1	Courts	2	6	8
8/15	Courts	0	1	1
8/5	Stumble	133	92	225
8/18	Stumble	4	11	15
8/7	Pinnell	1,663	533	2,196
8/23 <sup>1/</sup>	Pinnell	--	--	350-500

<sup>1/</sup> Counted from Super-Cub plane (entire stream flown).

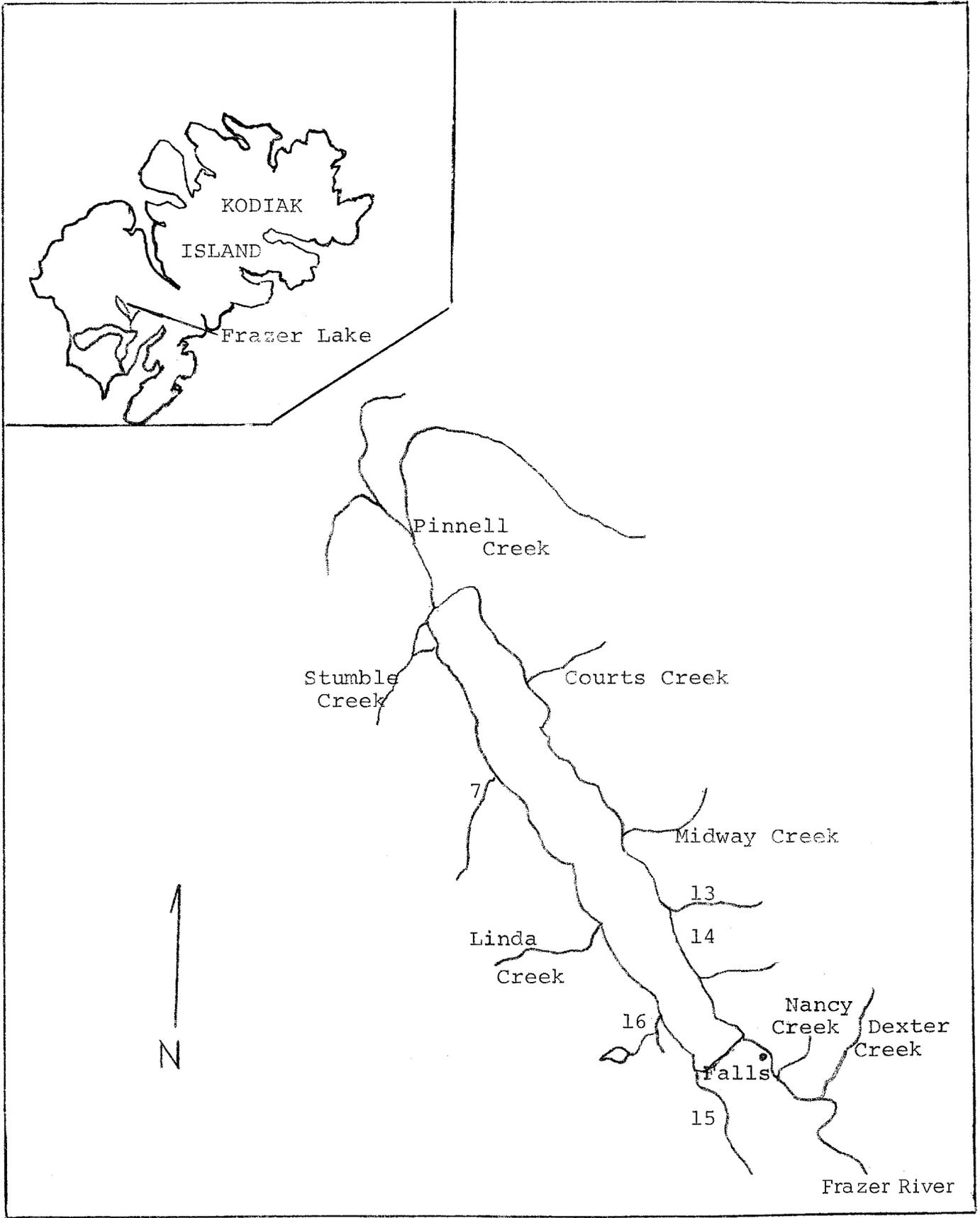


Figure 1. Frazer Lake and Tributaries, Kodiak Island, Alaska.

Utilization of streams in 1968 was similar to 1966 and 1967 (Eaton, 1968). Since the major spawning stream, Pinnell Creek, is extremely long with several branches, a complete foot survey has never been accomplished and survey counts from this creek are probably low. Good spawning area is available in these upper stretches and probably is utilized. In addition, while no complete lake shore surveys were conducted, beach spawners were noted along the beaches near Mid-Way and Pinnell Creeks.

Below the falls for the second year, large numbers of sockeyes were counted in Nancy and Dexter Creeks. Although these may be from a natural stock which never reach the falls or earlier planted fish unable to ascend the falls, limited tag recoveries this year suggest that sockeye consider these areas as alternate routes into Frazer or as secondary spawning grounds. Unlike 1967, no spawning by sockeye was noted in Frazer River immediately below the falls.

### Egg Deposition

Potential egg deposition and survival to smolts was calculated knowing the escapement for 1964 and the numbers of Age I, II, and III\* smolt migrating between 1966 and 1968. For the 1963 year class, Eaton (1968) estimated a percent survival of 0.79 percent from potential eggs to smolt. Using his same assumptions, a survival rate of 0.76 was calculated for the 1964 year class (Table 9).

Table 9. Potential egg deposition and smolt survival for the 1963 and 1964 Frazer Lake parent years.

Year Class	Female adults counted	Female adults transplanted	Estimated egg deposition	<u>No. of smolt counted</u> <u>age class</u>			Percent survival
				I	II	III	
1963	1,178	4,750	14,820,000	1,713	104,303	10,985	0.79
1964	4,083	900	12,457,500	28,765	58,264	8,619	0.76

Assuming an average fecundity of 2,500 (Meehan, 1966), potential egg deposition at Frazer from the 1968 escapement was 22,717,500 eggs. In addition, 3,386,880 eggs were artificially planted according to methods described by Eaton (1968). Using the average percent survival of 0.77 for 1963 and 1964, 201,000 smolts should be produced from the 1968 year class.

\* Roman numeral corresponds to the number of fresh water annuli or winters.

## SMOLT INVESTIGATIONS

Installation of the smolt weir was completed on May 12, 1968 and remained in place until its removal in late August. During the first two weeks of operation, less than 1 percent of the seasonal migration was counted. However, by June 20, 50 percent of the total run of 93,801 had been released and by July 10, 90 percent of the outmigration was completed (Table 10). The peak day's run occurred on June 19 and 20 when 22,000 smolt were counted. Most fish migrated between the hours of 2230 and 0100 but during the peak days nearly 14,000 smolt were enumerated between 1300 and 1800. Enumeration of all salmonids was kept and is presented in the appendix (Table 13).

Sampling procedures were similar to adult sampling. Sample size was determined by taking 2 percent of the smolts enumerated the previous day. After being anesthetized in MS-222, each fish was measured to the nearest millimeter. Scales were taken from each fish and placed on microscope slides labeled with the date and length. To gain information for length-weight relationships, body weight, accurate to the nearest tenth of a gram, was taken from five fish in each five millimeter size group each week. Also, to aid in aging, otoliths were taken from 200 fish throughout the summer.

### Age, Length and Weight of Smolt

Probably the most striking feature about the introduction of sockeye to the system is the growth obtained by the smolt in Frazer Lake. Unlike other systems on Kodiak, Afognak and the Peninsula (Foerster, 1968, Table 71), Frazer Lake smolt average significantly larger. One-year old migrants from other area lakes vary from 62 to 112 mm, two-year old smolts range from 79 to 142 mm and three checks from Karluk averaged 142 mm.

Based on scale and otolith analysis, one-check migrating smolts from Frazer Lake averaged 139 mm and 25.1 grams; two-check smolts averaged 158 mm and 37.2 grams; and three-check smolts averaged 188 mm and 61.2 grams. For further size reference, Table 14 in the appendix presents the average weights and standard deviations for each 5 mm size group for the 1968 smolt samples.

From the 2 percent daily sample, the number of smolts in each age class was calculated for the total daily run (Table 15 of the appendix). Of the 93,801 smolts counted, 7,743 or 8 percent were Age I, 77,437 or 82 percent were Age II, and 8,620 or 10 percent were Age III. Cumulative migration by age for 1968 is presented in Figure 2. Similar to other studies, (Foerster, 1968, Hartman, et al, 1967) the larger and older fish from each age class migrated earliest in the season.

Table 10. Percent cumulative seasonal migration of smolt from Frazer Lake, 1965-68.

Date	Year			
	1965	1966	1967	1968
5/31	5	1	1	1
6/ 5	5	1	8	5
6/10	9	24	24	15
6/15	13	31	41	25
6/20	19	51	51	50
6/25	25	75	60	59
6/30	31	79	72	81
7/ 5	40	81	80	83
7/10	45	86	88	91
7/15	54	89	93	93
7/20	59	94	95	94
7/25	61	97	97	94
7/30	66	97	99	94
8/ 5	74	98	99	94
8/10	74	98	99	94
8/15	74	99	99	95
8/20	84	100	100	98
8/25	91			100
8/30	96			
9/ 5	98			
9/10	100			

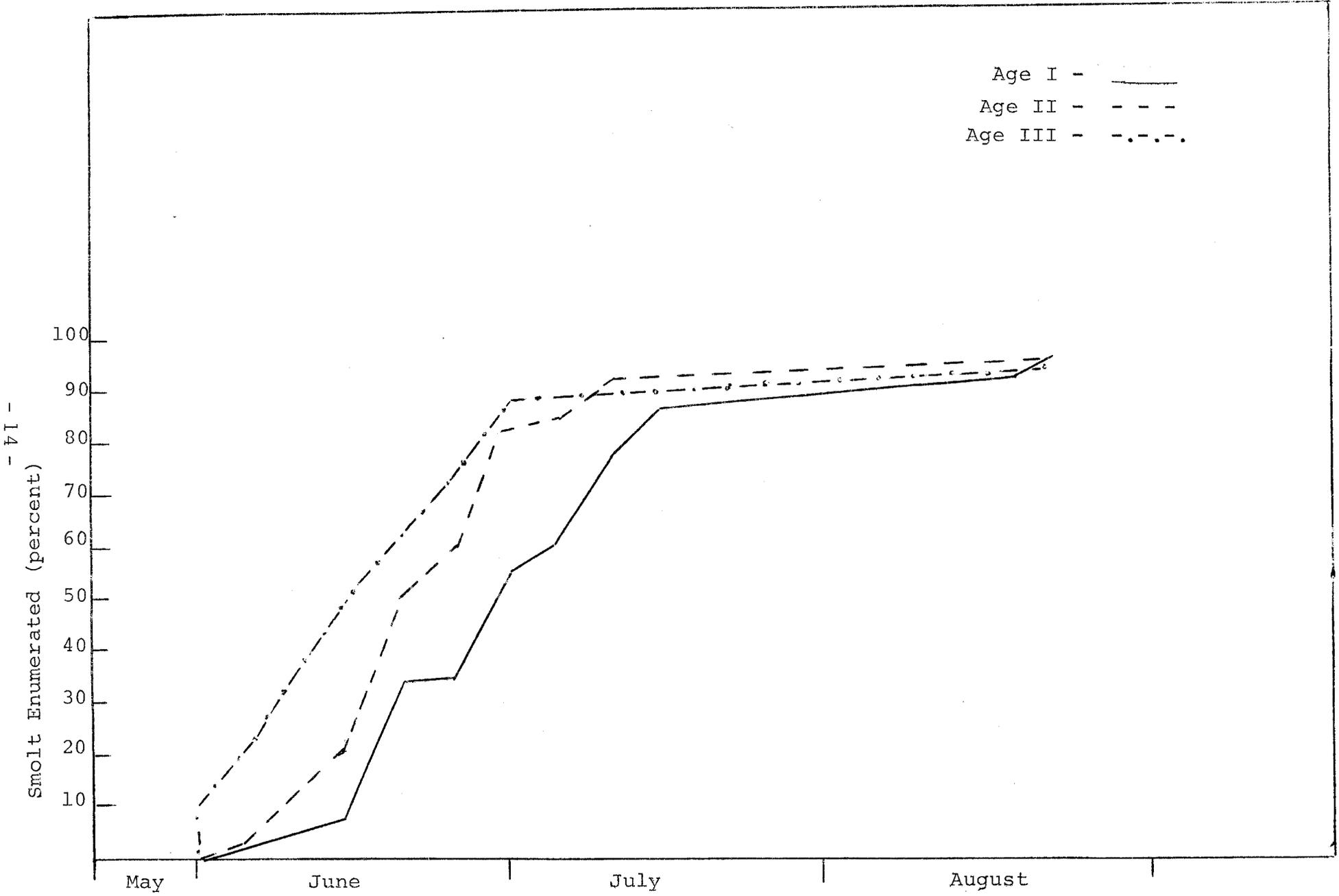


Figure 2. Cumulative migration of sockeye smolts by age in percent from Frazer Lake, 1968

## Smolt Migratory Behavior

Of greatest influence on the downstream migrational timing of smolt at Frazer is the smolt weir. Since fish were forced to enter a small opening in the trap, they were concentrated much more than normal. Hold up time, although not quantitatively studied, was noted by the presence of smolt in front of the weir. Comparing the cumulative seasonal migration patterns in Alaska (Hartman, et al, 1967), it is assumed that the Frazer run would be similar to Hartman's values if not hampered by the presence of the weir.

Probably the greatest migratory stimulus at Frazer is the photo-period. Based on the past three years of data collected at Frazer, smolt have started their migration in late May with a marked increase in numbers in June. In all three years, 50 percent of the run has been enumerated on June 20± one day (Figure 3). A similar conclusion concerning smolt migration was made by Bjornn et al, (1968) when considering smolt migration from Red Lake, Idaho. A second important factor controlling downstream movements is water temperature. In 1965, the last year of enumeration, 50 percent of the smolt were not counted until mid-July. Comparing average weekly temperatures, it is apparent that 1965 was a much colder year than 1966-68 (Table 11). Minor daily temperature changes, water levels, and weather patterns affect migratory behavior. Following clear, warming days or increases in water levels, more smolt were noted leaving the lake than on cloudy or rainy days in which water temperatures or water level was dropping. Foerster (1968) observed similar phenomena at Cultus Lake, British Columbia.

Table 11. Average weekly creek temperatures at Frazer, 1965-68.

Week	1965 <sup>1/</sup>	1966 <sup>1/</sup>	1967 <sup>1/</sup>	1968 <sup>2/</sup>
May 13-19	--	--	42	42
20-26	--	38	44	44
27-2	42	42	44	46
June 3-9	41	43	44	49
10-16	42	44	46	47
17-23	44	47	47	48
24-30	45	47	51	52
July 1-7	46	45	53	54
8-14	49	47	57	56
15-21	48	52	56	58
22-28	52	51	59	56
August 29-4	53	50	56	55
5-11	52	52	55	57
12-18	51	52	53	54
19-22	51	--	55	56

<sup>1/</sup> Temperatures taken 9 am daily

<sup>2/</sup> Temperatures taken 6 pm daily

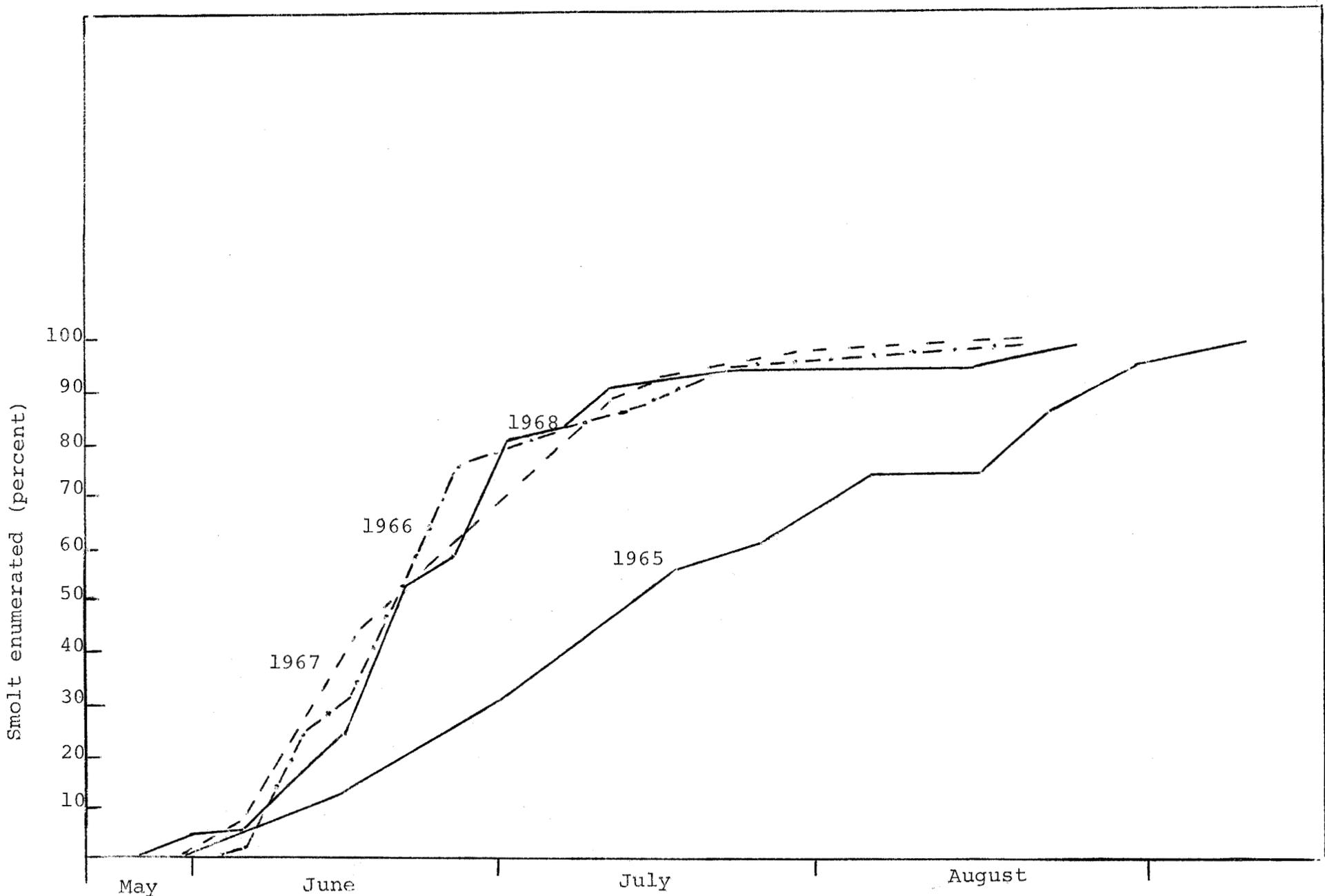


Figure 3. Cumulative migration of sockeye smolts in percent from Frazer Lake, 1965-1968

## SUMMARY

1. Enumeration at the fishpass started on May 13 and ended on August 26. During this time, 16,708 sockeye were counted.
2. To learn about the behavior of adult sockeye and the time necessary to ascend the steeppass, a tagging study was conducted. Recoveries of June tagged fish totaled 47 percent while July tag recoveries totaled 21 percent.
3. Returning adults were aged by counting winter checks on scales. Eighty-seven percent of the males and 89 percent of the females were either age 2.2 or 2.3.
4. Males were generally larger than females within age groups, but the average growth increment between ages 2.1, 2.2, and 2.3 was similar for both sexes.
5. Utilization of spawning areas was similar to past years. Spawning was concentrated in Pinnell, Stumble, Mid-Way and Linda Creeks.
6. Potential egg deposition and survival to smolts was calculated for the 1964 spawning stock. Using an average fecundity of 2,500 eggs, a survival of 0.76 percent was computed.
7. Enumeration at the smolt weir started on May 12 and ended on August 27. During this time, 93,801 sockeye smolt were released.
8. Of the 93,801 smolts counted, 8 percent were Age I, 82 percent Age II and 10 percent Age III.

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APPENDIX

Tables 12 - 15

Appendix Table 12. Number of various species of salmonids enumerated at the adult trap by month, Frazer Lake, 1968.

Species	Months			Total
	June	July	August	
Sockeye salmon	6,604	9,469	635	16,708
Chum salmon	404	89	0	493
Chinook salmon	0	3 <sup>1/</sup>	0	3
Dolly Varden char	3	294	0	297

<sup>1/</sup> The three returning Chinook salmon were jacks approximately 3-5 pounds each, presumably from the 1966 Frazer Chinook salmon fry plant.

Appendix Table 13. Number of various species of salmonids enumerated at the smolt weir by month, Frazer Lake, 1968.

Species	Months			Total
	June	July	August	
Sockeye smolt	75,696	12,824	5,281	93,801
Chum fry	390	7,410	374	8,174
Pink fry	48	279	0	327
Chinook smolt	67	150	44	261
Rainbow trout	19	29	2	50
Dolly Varden char	165	15	9	189

Appendix Table 14. Average weights in grams for each five millimeter size group from smolt sampled at Frazer Lake, 1968.

Length group (mm)	Sample size	Average weight (grams)	Variance	Standard deviation
95-99	1	9.0	-	-
100-104	-	-	-	-
105-109	-	-	-	-
110-114	-	-	-	-
115-119	1	14.9	-	-
120-124	2	16.2	-	-
125-129	2	18.8	-	-
130-134	14	22.0	5.3	2.3
135-139	28	24.3	9.7	3.0
140-144	37	27.5	4.0	2.0
145-149	54	29.4	6.5	2.5
150-154	62	32.0	3.7	1.8
155-159	52	34.6	4.3	2.1
160-164	37	36.9	23.8	4.8
165-169	23	39.7	12.1	3.5
170-174	25	47.2	21.0	4.6
175-179	31	52.9	11.7	3.4
180-184	51	57.9	24.5	4.9
185-189	55	60.2	35.6	5.9
190-194	44	62.8	30.5	5.5
195-199	23	67.6	77.4	8.7
200-204	21	75.2	33.9	5.8
205-209	3	83.3	27.4	5.2
210-214	6	86.7	57.0	7.5
214	2	86.7	-	-

Appendix Table 15. Number of smolt enumerated based on 2 percent daily sample at Frazer, 1968.

Date	Percent smolt sampled			Smolt enumerated			Total
	Age Class			Age Class			
	I	II	III	I	II	III	
5/25	-	14	86	-	36	224	260
5/26	-	-	-	-	-	4	4
5/27	-	-	100	-	-	80	80
5/28	-	-	100	-	-	57	57
5/29	-	33	67	-	63	207	270
5/30	-	25	75	-	50	152	202
5/31	-	-	100	-	-	322	322
6/ 1	-	17	83	-	52	253	305
6/ 2	-	100	-	-	75	-	75
6/ 3	-	85	15	-	27	5	32
6/ 4	-	80	20	-	368	92	460
6/ 5	6	77	17	158	2,030	448	2,636
6/ 6	-	62	38	-	210	128	338
6/ 7	-	90	10	-	573	63	636
6/ 8	3	74	23	65	1,610	501	2,176
6/ 9	8	83	9	50	518	57	625
6/10	2	86	12	121	5,200	726	6,047
6/11	-	80	20	-	2,805	700	3,505
6/12	5	86	9	238	4,090	428	4,756
6/13	-	-	-	9	100	10	119
6/14	-	-	-	10	180	17	207
6/15	-	100	-	-	726	-	726
6/16	10	90	-	11	90	-	101
6/17	20	80	-	76	304	-	380
6/18	8	84	8	50	521	50	621
6/19	11	84	6	846	6,459	384	7,689
6/20	7	88	5	1,007	12,658	719	14,384
6/21	-	-	-	-	285	72	357
6/22	-	80	20	-	198	50	248
6/23	-	93	7	-	688	52	740
6/24	-	92	8	-	6,332	551	6,883
6/25	17	83	-	41	198	-	239
6/26	8	92	-	54	625	-	679
6/27	1	91	8	38	3,509	309	3,856
6/28	7	87	6	242	3,011	208	3,461
6/29	3	92	5	153	4,700	256	5,109
6/30	16	78	6	1,138	5,550	427	7,115

Appendix table 15 (continued).

	<u>Percent smolt sampled</u>			<u>Smolt enumerated</u>			Total
	<u>Age class</u>			<u>Age class</u>			
	I	II	III	I	II	III	
7/ 1	18	80	2	342	1,518	38	1,898
7/ 2	10	90	-	16	90	-	106
7/ 3	-	-	-	-	-	-	0
7/ 4	-	100	-	-	328	-	328
7/ 5	-	-	-	-	186	-	186
7/ 6	-	-	-	371	1,000	-	1,371
7/ 7	50	50	-	352	352	-	704
7/ 8	11	84	5	195	1,487	88	1,770
7/ 9	9	85	6	122	1,147	81	1,350
7/10	12	82	6	196	1,337	97	1,630
7/11	-	-	-	9	24	-	33
7/12	19	75	6	245	967	77	1,289
7/13	-	-	-	59	59	-	118
7/14	50	50	-	434	435	-	869
7/15	29	71	-	97	236	-	333
7/16	25	62	13	94	233	49	376
7/17-8/15	25	62	13	284	704	147	1,135
8/16	-	-	-	88	280	16	384
8/17	23	73	4	340	1,080	60	1,480
8/18	23	73	4	188	593	32	813
8/19	-	-	-	-	56	-	56
8/20	-	100	-	-	278	-	278
8/21	-	83	17	-	388	80	468
8/22	-	72	28	-	503	196	699
8/23	-	75	25	-	250	84	334
8/24	-	-	-	-	-	-	0
8/25	-	75	25	-	66	22	88
Total				7,739	77,437	8,619	93,801
Percent				8	82	10	

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