

REF 90203

ANNUAL REPORT
IRON GATE SALMON AND STEELHEAD HATCHERY AND BOGUS REARING POND
1977-78^{1/}

by

Curtis A. Hiser
Region 1, Inland Fisheries

ABSTRACT

This report describes the operation of the hatchery from July 1, 1977 through June 30, 1978. Tables present daily records of water temperatures and weather conditions, daily numbers of salmonids entering the hatchery, and total numbers of salmonids reared and released.

There were 4,313 fall-run adult chinook (king) salmon (Oncorhynchus tshawytscha) trapped, which produced 7,334,370 eggs. No spring-run chinook salmon were taken. The 251 adult coho (silver) salmon (O. kisutch) produced 449,260 eggs, and 4,411 steelhead (Salmo gairdneri gairdneri) produced 3,415,211 eggs.

About 2.4 million fingerling and 193,000 yearling chinook salmon, 35,000 fingerling and 151,000 yearling coho salmon, and 210,000 yearling steelhead were planted in FY 1977-78.

The production of steelhead from Bogus Rearing Pond ranged from 10,850 in 1976 to 31,197 in 1973.

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Anadromous Fisheries Branch Administrative Report No. 79-8.
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INTRODUCTION

This report covers the seventeenth year of operation of the trapping facilities at Iron Gate Hatchery. These facilities were completed by the Pacific Power and Light Company in February 1962, and have been operated by the Department of Fish and Game during the spring and fall of each year.

The hatchery was constructed by the Pacific Power and Light Company to compensate for spawning and nursery areas blocked by the Iron Gate Project. This is the thirteenth report since the hatchery was completed in February 1976. The Department of Fish and Game, under agreement with the Pacific Power and Light Company, began operation of the hatchery in March 1966. The trapping facilities and hatchery are located on the Klamath River 8 miles east of Hornbrook, Siskiyou County.

This report summarizes the numbers of fish trapped and spawned, production of eggs and fish, and water and weather conditions from July 1, 1977 through June 30, 1978.

Bogus Rearing Pond is located at the mouth of Bogus Creek, immediately downstream from Iron Gate Hatchery. It was constructed in 1972 and is usually used to rear wild steelhead which are rescued from drying streams in the Klamath River system in the late spring and early summer. This report contains a summary of the Bogus Pond production from its initial year through 1977-78.

PRODUCTION SUMMARY

No spring-run chinook salmon were trapped in 1977. Fall-run chinook salmon were taken from September 10 to November 8, 1977 (Figure 1). Coho salmon started entering the trap on October 5 and continued until December 19, 1977. Steelhead trout were trapped from September 26, 1977 to March 16, 1978.

Production data are summarized in Table 1.

TABLE 1. Production Summary, Iron Gate Salmon and Steelhead Hatchery, 1977-78

Adults trapped	Females spawned	Number eggs taken	Estimated number fingerlings planted	Estimated number yearlings planted	Total weight, pounds planted	Eyed eggs planted	Fish on hand June 30, 1978
<u>Chinook salmon, spring-run</u>							
1976 BY					192,972	21,675	
1977 BY	0						
<u>Chinook salmon, fall-run</u>							
1976 BY							
1977 BY	4,313	2,659	7,334,370	2,386,980			
<u>Coho salmon</u>							
1976 BY							
1977 BY	251	146	449,360	35,000	151,326	7,320	200,000
<u>Steelhead</u>							
1977 BY							
1978 BY	4,411	1,598	3,415,211	210,120	9,620	1,421,395	1,250,000

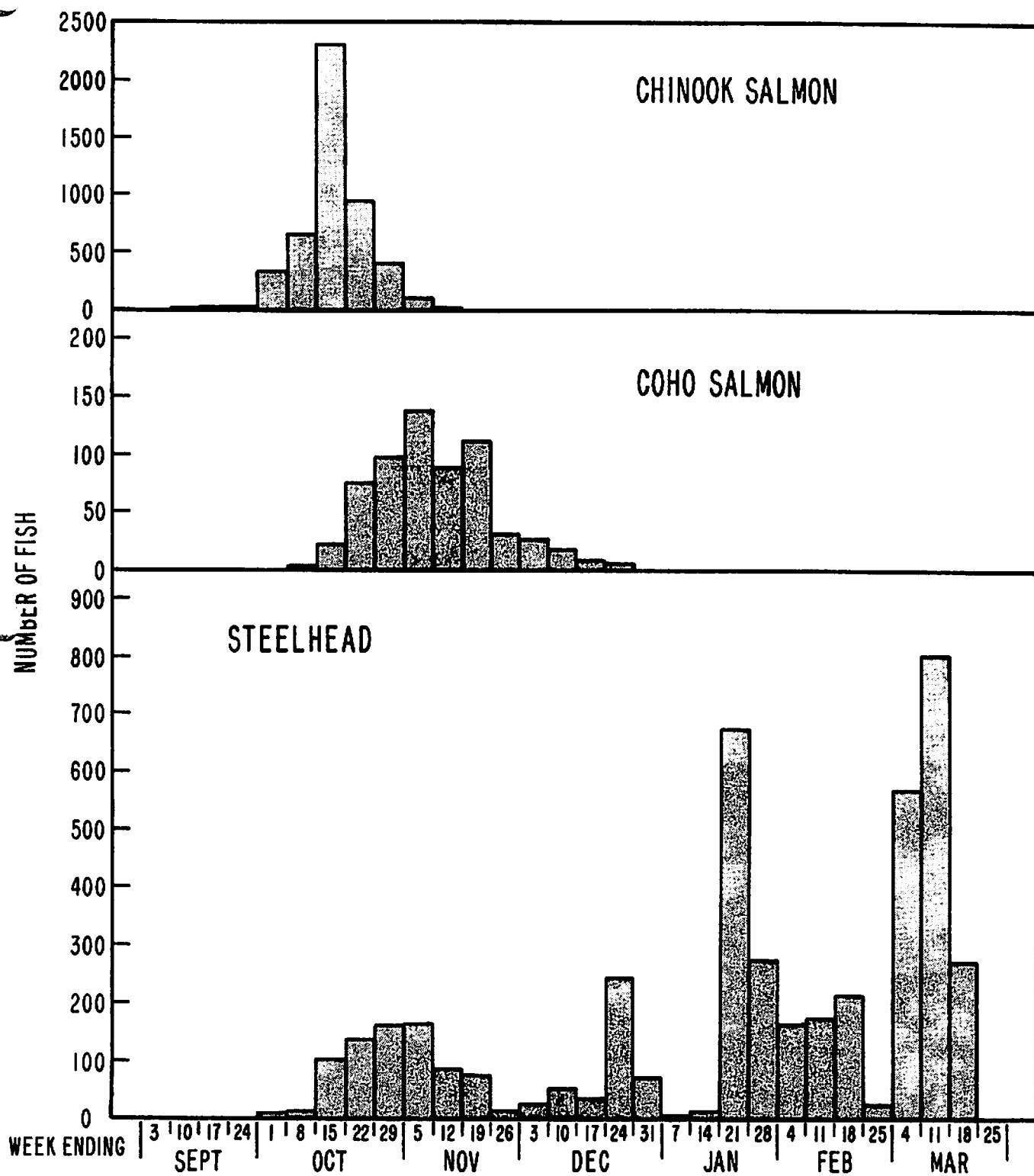


FIGURE 1. Weekly numbers of chinook salmon, coho salmon, and steelhead trapped at Iron Gate Salmon and Steelhead Hatchery, 1977-78 season.

CHINOOK SALMON MAINTENANCE PROGRAM

History of the 1977-78 Runs

Spring Run, 1977 Brood Year

No spring-run chinook salmon appeared at the trap in 1977.

Fall Run, 1977 Brood Year

A total of 4,833 fall-run chinook salmon was trapped: 1,514 males, 2,799 females, and 520 grilse (<56 cm [22 inches] FL). There were 2,659 females spawned, producing 7,334,370 eggs for an average of 2,758 eggs per female. Prespawning mortality was 102 females (3.8%). Nineteen lots of eggs were taken with an average fertility of 72%.

Planting 1976-77 Broodyear Chinook Salmon

There were 192,972 yearlings planted from December 7, 1977 to January 11, 1978 and 2,386,980 fingerlings planted from June 14 to June 21, 1978 (Table 2). Size at planting ranged from 8.8/lb for the yearlings to 90/lb for the fingerlings. No king salmon eggs were shipped from the hatchery.

TABLE 2. Chinook Salmon Planting Data, Iron Gate Salmon and Steelhead Hatchery, 1977-78

Race and brood year	Date released	Average size (No./lb)	Number released	Release site	Mark
Spring run, 1976	12/ 7/77	13	7,790	Hatchery outlet	LV
Fall run, 1976	1/11/78	8.8	185,182	Hatchery outlet	
Total yearlings			192,972		
Fall run, 1977	6/14/78	90	1,027,800	Hatchery outlet	
	6/15/78	90	601,020	Hatchery outlet	
	6/16/78	90	199,440	Hatchery outlet	
	6/20/78	90	349,200	Hatchery outlet	
	6/21/78	90	209,520	Hatchery outlet	
Total fingerlings			2,386,980		

Marked Chinook Salmon Recovered

During 1977-78, 12 marked chinook salmon were trapped (Table 3). Ten were Iron Gate marks and two (RP) of undetermined origin.

TABLE 3. Marked Chinook Salmon Recovered, Iron Gate Salmon and Steelhead Hatchery, 1977-78

Mark	Number trapped	Brood year	Race	Number released	Date released	Average size	Release site
LV	10	1974	Spring run	14,449	12/18/75	5/lb	Hatchery outlet
RP	2	?	?	?	?	?	?

COHO SALMON MAINTENANCE PROGRAM

History of the 1977 Run

The first coho salmon entered the trap on October 5, 1977 and the last on December 19, 1977. A total of 626 fish was trapped: 159 females, 92 males, and 375 grilse (< 56 cm [22 inches] FL). The 146 females spawned produced 449,360 eggs for an average of 3,078 eggs per female. Fertilization averaged 67%. Approximately 200,000 fingerlings were held for release as yearlings in 1979.

Planting 1976 Broodyear Coho Salmon

There were 186,326 coho salmon planted during the 1977-78 season (Table 4).

TABLE 4. Coho Salmon Planting Data, Iron Gate Salmon and Steelhead Hatchery, 1977-78

Date	Average size	Number	Release site
9/21/77	70/lb	35,000	Hatchery outlet
1/26/78	32/lb	73,600	Hatchery outlet
2/16/78	17/lb	77,726	Hatchery outlet
Total			186,326

STEELHEAD TROUT MAINTENANCE PROGRAM

History of the 1977-78 Run

Between October 26 and December 31, 1977, 1,214 steelhead entered the trap and were held for later spawning. An additional 3,197 steelhead were trapped between January 4 and March 16, 1978. The two groups were held and spawned separately.

The 381 early-trapped females spawned produced 807,978 eggs, an average of 2,120 eggs/female. The 1,217 late-trapped females spawned produced 2,607,233 eggs for an average of 2,142 eggs/female. This made a total of 3,415,211 eggs from 1,598 females. Approximately 1.25 million eyed eggs were shipped to Trinity River Hatchery and 173,720 eyed eggs to Mad River Hatchery.

Approximately 800,000 steelhead fingerlings from the 1978 brood year were on hand June 30, 1978.

Marked Steelhead Trapped

A total of 31 marked steelhead were trapped this season (Table 5).

TABLE 5. Number and Probable Origin of Marked Steelhead Recovered at Iron Gate Salmon and Steelhead Hatchery, 1977-78

Mark	Number trapped	Fork length (cm)	Probable release data					
			Brood	Year	Number	Date	Size	Release site
D	4	46,48,51,51		Probably not a mark.				
Ad	7	48,49,50,50,50, 50,51 53		?				
Ad-LV	1	45		?				
Ad-RM	2	50,57		?				
LP	7	38,39,45,46,47, 51,52	1974		29,630	4/6/76	2.8/lb	Trinity River Hatchery
LP-LM	1	36		?				
LP-RM	1	44		?				
RP	8	39,40,42,45,47, 47,51,57		?				

Also recovered were six steelhead which had been tagged as half-pounders in the lower Klamath River in 1976 and one fish which had been tagged in the lower Rogue River, Oregon, on August 18, 1977 (L. B. Boydston, CDFG, pers. comm.).

Planting 1977 Broodyear Steelhead

We planted 200,000 small steelhead yearlings and 10,120 larger yearlings in 1977-78 (Table 6). The larger yearlings were a test group from Trinity River Salmon and Steelhead Hatchery and were planted in Iron Gate Reservoir because the numbers involved were considered too few for an experimental marking program and Anadromous Fisheries Branch personnel did not wish to confuse ongoing research programs by releasing unmarked fish.

TABLE 6. Juvenile Steelhead Planting Data, Iron Gate Salmon and Steelhead Hatchery, 1977-78

Strain	Brood year	Date released	Average size (No./lb)	Number released	Release site	Mark
Klamath R.	1977	4/14/78	17	100,000	Klamath River-Iron Gate Hatchery	LV-RV
Klamath R.	1977	4/14/78	37	100,000	Klamath River-Iron Gate Hatchery	LV-RV
Total fingerlings			200,000			
Trinity R.	1977	3/21/78	9.2	10,120	Camp Creek- Iron Gate Reservoir	
Total yearlings			10,120			

Adult Steelhead Planted

We planted 988 adult steelhead--fish not needed to meet hatchery needs--in 10 Siskiyou County streams (Table 7).

TABLE 7. Adult Steelhead Planting Data, Iron Gate Salmon and Steelhead Hatchery, 1977-78

Stream	Tributary to:	Number of pairs
Seiad Creek	Klamath River	37
Rock Creek	Klamath River	72
Mill Creek	Indian Creek and Klamath River	54
Etna Creek	Scott River	34
Shackleford Creek	Scott River	25
Little Shasta River	Shasta River	69
Salmon River	Klamath River	65
Rail Creek	Scott River	35
Coon Creek	Klamath River	35
Cottonwood Creek	Klamath River	68
Total adult pairs		494

BOGUS REARING POND^{2/}

Releases of yearling steelhead reared in Bogus Pond since 1972 has ranged from 10,850-31,197 (Table 8). In 1977-78 the rearing pond was used to raise coho salmon.

The apparent heavy losses experienced from Bogus Pond results from a combination of factors including disease, predation by larger fish on smaller, and escape from the pond to the Klamath River.

PUBLIC RELATIONS

During the 1977-78 fiscal year, 8,132 people visited the hatchery, including 195 people in organized groups.

^{2/} Data provided by Robert P. Caddell, Fish Habitat Supervisor, Yreka Screen Shop.

TABLE 8. Summary of Bogus Rearing Pond Steelhead Production, 1972-73 through 1977-78

Season	Number of fry stocked	Number of yearlings released	Location	Mark
1972-73	196,553	17,929 7,860 5,408	Klamath R. @ Ager Br. Shasta R. @ Anderson Grade Br. Klamath R. @ Iron Gate Hatchery	
	Total	31,197		
1973-74	129,712	21,000 3,060 3,060 2,970	Bogus Creek Kidder Creek Scott River Mill Creek	
	Total	30,090		
1974-75	85,395	6,032 5,900 2,775 2,500	Mill Creel McAdams Creek Kidder Creek Klamath River	
	Total	17,207		
1975-76	131,200	3,300 2,800 2,750 2,000	Kidder Creek Mill Creek McAdams Creek Bogus Creek	
	Total	10,850		
1976-77	119,352	14,144	Klamath R. @ Iron Gate Hatchery	Ad-D
1977-78	Pond used to rear silver salmon. No estimate of numbers.			

Appendix Table 1. Summary of Chinook Salmon Runs, Iron Gate Salmon and Steelhead Hatchery

Season	Fall-trapped <u>spring run*</u>		Fall run				Spring-trapped <u>spring run*</u>		
	Adults	Grilse	Males	Females	Total adults	Grilse	Total fall run	Adults	Grilse
1962-63	+ .						1,339		
1963-64					1,723	448	2,171		
1964-65			837	1,651	2,488	110	2,598		
1965-66			141	224	365	313	678		
1966-67			1,129	1,610	2,739	325	3,064		
1967-68			850	1,275	2,125	562	2,687		
1968-69			946	1,690	2,636	72	2,708	50	6
1969-70	8	3	518	436	954	1,914	2,868	51	0
1970-71	2	0	2,889	7,395	10,284	219	10,503	10	0
1971-72	16	0	4,412	6,031	10,443	326	10,769	80	0
1972-73	97	4	1,126	1,897	3,023	476	3,499	49	0
1973-74	18	5	3,273	4,135	7,408	1,294	8,702	4	0
1974-75	19	8	4,024	5,371	9,395	410	9,805	0	0
1975-76	25	28	3,131	4,571	7,702	3,425	11,127	0	0
1976-77	13	0	4,604	7,991	12,595	1,130	13,725	0	0
1977-78	0	0	1,514	2,799	4,313	520	4,833	0	0

* Fall-trapped spring-run chinook salmon are the same brood year as the spring-trapped spring-run salmon of the preceding reporting period. Spring run not differentiated from fall run prior to 1968-69.

+ Blanks indicate data not available.

Appendix Table 2. Summary of Coho Salmon and Steelhead Trout Runs,
Iron Gate Salmon and Steelhead Hatchery

Season	Coho salmon					Steelhead*		
	Males	Females	adults	Grilse	Total	Fall-trapped early run	spring-trapped late run	Total
1963-64	81	95	176	14	190			1,542
1964-65	0	0	0	0	0			1,065
1965-66	2	0	2	0	2			227
1966-67	2	2	4	0	4			299
1967-68	27	24	51	28	79			984
1968-69	14	10	24	333	357			370
1969-70	84	118	202	749	951	381	813	1,194
1970-71	716	671	1,387	236	1,623	292	2,073	2,365
1971-72	74	52	126	21	147	174	3,583	3,757
1972-73	38	18	56	35	91	226	1,060	1,286
1973-74	201	212	413	428	841	665	1,200	1,865
1974-75	193	263	456	41	497	1,062	2,165	3,227
1975-76	45	37	82	478	560	423	1,100	1,523
1976-77	581	795	1,376	381	1,757	695	1,246	1,941
1977-78	92	159	251	375	626	3,197	1,214	4,411

* Fall-trapped steelhead not differentiated from spring-trapped prior to 1969-70.

Appendix Table 3. Fork Length (to nearest cm) of Measured Steelhead,
Iron Gate Salmon and Steelhead Hatchery,

1977-78 Season

Length	Number trapped			
	Early trap		Late trap	
	Males	Females	Males	Females
34				1
35				
36				1
37	1	1	2	2
38	2	1	2	4
39	3	1	1	3
40	9	2	1	10
41	11	7	6	9
42	7	3	12	20
43	18	20	16	34
44	23	29	28	63
45	36	36	38	76
46	40	51	44	123
47	39	54	40	78
48	54	51	55	100
49	48	37	63	112
50	36	34	44	64
51	37	27	47	54
52	33	37	40	52
53	19	26	37	50
54	13	18	26	26
55	12	18	22	29
56	8	13	17	16
57	8	10	23	20
58	10	7	15	12
59	10	2	9	6
60	4	1	6	2
61	3	1	2	2
62	3		5	
63			4	3
64			3	
65			2	
66			2	
67			1	
68			1	
69				
70				
Average	50.2	49.9	50.2	49.4

Appendix Table 4
 Iron Gate Salmon and Steelhead Hatchery
 Weather, Water, and Fish Data
 July 1, 1977 through June 30, 1978

July	Temperature (Degree F)				Weather	Fish Trapped				
	Water		Air			Chinook Salmon	Coho Salmon	Steelhead		
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adults	Grilse	
1	48	48	82	60	rain-cloudy					
2	49	48	82	42	clear					
3	49	47	76	42	clear					
4	49	47	67	51	cloudy					
5	49	47	71	38	clear					
6	50	47	82	40	clear					
7	49	47	90	45	clear					
8	49	47	86	51	clear					
9	50	47	84	50	clear					
10	50	47	85	42	clear					
11	50	47	92	48	clear					
12	50	47	82	52	clear					
13	52	46	86	41	clear					
14	50	47	90	47	clear					
15	51	47	94	47	clear					
16	50	47	95	52	clear					
17	50	47	92	50	clear					
18	51	48	86	52	clear					
19	50	48	89	52	clear					
20	50	48	92	52	clear					
21	51	47	90	52	pty cloudy					
22	51	47	95	52	clear					
23	51	47	95	55	clear					
24	51	47	94	54	clear					
25	50	48	90	54	clear					
26	51	47	93	48	clear					
27	50	47	93	48	clear					
28	51	47	91	46	clear					
29	50	48	94	46	clear					
30	50	48	98	50	clear					
31	51	48	102	52	clear					

Monthly Totals

Cumulative Totals

Appendix Table 4 (cont.)

August	Temperature (Degree F)				Weather	Fish Trapped					
	Water		Air			Chinook Salmon		Coho Salmon		Steelhead	
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adults	Grilse	Trout	
1	51	48	102	56	clear						
2	51	49	100	66	clear						
3	51	48	96	58	clear						
4	51	48	94	56	clear						
5	51	48	88	56	clear						
6	50	49	91	54	clear						
7	51	49	85	58	rain						
8	51	48	89	48	clear						
9	50	49	97	53	clear						
10	51	49	98	55	clear						
11	51	49	104	64	clear						
12	51	49	100	60	pty cloudy						
13	51	49	98	58	pty cloudy-smokey						
14	51	50	94	53	smokey-overcast						
15	51	49	94	52	clear						
16	51	49	98	51	clear						
17	51	49	98	58	pty cloudy						
18	51	50	94	55	clear						
19	51	49	98	52	clear						
20	51	49	85	56	rain						
21	51	49	98	52	clear						
22	51	49	85	56	rain						
23	51	50	90	50	clear						
24	51	49	74	56	cloudy						
25	51	50	68	50	rain						
26	51	50	70	46	cloudy						
27	51	50	78	53	pty cloudy						
28	51	49	83	58	pty cloudy						
29	51	49	80	46	clear						
30	52	49	78	48	clear						
31	51	49	85	42	clear						

Monthly Totals
Cumulative Totals

Appendix Table 4 (cont.)

September	Temperature (Degree F)					Weather	Fish Trapped				
	Water		Air				Chinook Salmon Adults	Salmon Grilse		Steelhead Trout	
	Maximum	Minimum	Maximum	Minimum				Grilse	Coho Salmon		
1	51	49	80	44	clear						
2	51	49	86	42	clear						
3	51	49	90	46	clear						
4	51	50	89	44	clear						
5	52	49	90	50	clear						
6	52	49	92	46	clear						
7	52	49	86	46	clear						
8	52	50	81	44	clear						
9	52	50	90	45	clear						
10	51	49	92	44	clear	1					
11	51	50	86	46	clear						
12	52	49	89	44	clear	1					
13	52	50	90	42	pty cloudy	1				1	
14	52	50	84	48	pty cloudy	1	1				
15	52	50	79	49	pty cloudy						
16	52	50	64	44	cloudy	1	1				
17	51	50	64	49	rain	1					
18	52	50	68	52	cloudy						
19	53	51	65	50	rain						
20	52	51	65	46	cloudy						
21	52	50	64	36	cloudy						
22	52	51	69	31	clear	3	2				
23	51	50	64	44	rain	3	4				
24	52	50	70	40	clear						
25	51	49	76	44	clear	2	1				
26	52	51	77	40	clear	18	4			2	
27	52	50	68	46	rain	12	3			1	
28	52	51	64	48	rain	44	6			2	
29	52	51	60	43	clear	134	12			1	
30	52	51	61	32	clear	71	9			4	
Monthly Totals						293	43			10	
Cumulative Totals						293	43			10	

Appendix Table 4 (cont.)

October	Temperature (Degree F)				Weather	Fish Trapped				
	Water		Air			Chinook Salmon		Coho Salmon		
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adults	Grilse	
1	52	51	62	34	clear	25	1	1	1	
2	53	51	69	33	clear	49	4	2	2	
3	52	51	72	35	clear	46	1	2	2	
4	53	51	74	38	clear	95	15	2	2	
5	53	51	76	38	rain	175	1	4	4	
6	53	51	75	40	clear	183	24	1	2	
7	53	51	74	39	clear	88	5			
8	53	51	69	39	clear	194	14	5		
9	54	51	70	30	clear	459	32	22		
10	54	51	74	32	clear	221	17	7		
11	54	52	78	34	clear	310	48	6		
12	54	52	78	34	clear	312	50	1		
13	55	52	79	38	clear	309	37	2		
14	54	52	74	36	clear	301	27	11		
15	54	52	77	34	clear	240	22	4		
16	55	52	78	38	clear	202	27	3		
17	55	53	80	34	clear	88	17	1		
18	55	53	78	34	clear	89	18	3		
19	55	53	80	40	pty cloudy	129	18	10		
20	55	53	64	34	clear	74	18	6		
21	55	54	64	28	cloudy			21		
22	55	54	66	29	pty cloudy			15		
23	55	54	58	42	cloudy	239	34	35		
24	55	53	66	36	rain	53	14	5		
25	56	54	54	50	clear	28	12	12		
26	55	55	58	32	cloudy	24	2	7		
27	55	54	60	34	cloudy			10		
28	55	51	56	38	shower			20		
29	55	52	56	39	pty cloudy	61	15	3		
30	55	54	54	38	pty cloudy			16		
31	55	54	58	35	pty cloudy			16		
Monthly Totals				3,994	473	66	24	47	79	
Cumulative Totals				4,287	516	66	203	499	509	

Appendix Table 4 (cont.)

November	Temperature (Degree F)					Weather	Fish Trapped						
	Water		Air				Chinook Adults	Salmon Grilse		Coho Adults		Steelhead Trout	
	Maximum	Minimum	Maximum	Minimum				Chinook Grilse	Coho Grilse	Steelhead Trout			
1	54	54	62	36	clear								
2	54	54	51	36	clear	19	1		10	14	37		
3	54	53	58	24	clear								
4	54	53	54	22	rain	7	1		27	17	48		
5	53	53	51	30	cloudy								
6	53	53	55	32	pty cloudy								
7	54	53	48	32	pty cloudy								
8	53	53	50	22	clear		2		20	45	52		
9	53	53	51	32	cloudy				10	14	37		
10	52	51	59	39	rain								
11	51	51	59	26	pty cloudy								
12	51	50	55	30	showers								
13	52	50	56	39	clear							1	
14	51	50	58	39	cloudy				34	27	44		
15	50	50	61	32	cloudy								
16	50	49	54	26	clear								
17	50	49	45	24	clear								
18	50	49	34	16	snow				27	23	35		
19	49	49	40	16	cloudy								
20	49	49	33	8	cloudy								
21	48	48	32	26	snow								
22	48	47	46	32	rain				21	10	11		
23	47	47	38	26	rain								
24	48	47	44	33	rain								
25	52	31	47	46	rain								
26	46	45	52	40	cloudy								
27	45	45	52	38	cloudy								
28	45	44	46	26	showers				18	9	27		
29	44	44	54	30	pty cloudy								
30	44	44	55	28	fog-clear								
Monthly Totals							26	4	167	159	291		
Cumulative Totals							4,313	520	233	362	800		

Appendix Table 4 (cont.)

December	Temperature (Degree F)				Weather	Fish Trapped			Steelhead Trout
	Water		Maximum	Minimum		Chinook Adults	Salmon Grilse	Coho Salmon Adults	
	Maximum	Minimum	Maximum	Minimum		Chinook Adults	Salmon Grilse	Coho Salmon Adults	
1	44	44	44	40	33	cloudy	cloudy		
2	44	44	40	33	rain	rain			
3	43	43	43	48	38				
4	43	43	50	40	showers				
5	43	43	52	22	clear				
6	43	43	50	28	rain				
7	43	43	47	32	cloudy				
8	43	43	44	18	clear				
9	43	43	42	20	cloudy				
10	42	42	42	20	clear				
11	42	42	46	32	rain				
12	42	42	44	30	cloudy				
13	42	42	45	28	rain				
14	42	42	50	40	rain				
15	42	42	40	36	showers				
16	42	42	42	28	rain				
17	42	42	40	32	rain				
18	42	41	40	25	snow showers				
19	41	41	33	20	clear				
20	41	41	40	17	cloudy				
21	41	40	50	30	windy				
22	40	39	49	30	cloudy				
23	39	38	54	33	cloudy				
24	39	38	54	33	cloudy				
25	38	38	50	30	clear				
26	38	37	44	25	rain				
27	38	38	47	34	rain				
28	38	37	49	31	clear				
29	38	37	48	32	cloudy				
30	38	37	46	21	cloudy				
31	37	37			clear				
Monthly Totals				18	13	18	13	14	
Cumulative Totals				520	251	4,313	520	1,214	

Appendix Table 4 (cont.)

January	Temperature (Degree F)					Weather	Fish Trapped					
	Water		Air				Chinook Salmon Adults	Salmon Grilse	Coho Salmon Adults		Steelhead Trout	
	Maximum	Minimum	Maximum	Minimum					Grilse			
1	37	37	36	21	cloudy							
2	37	37	36	28	cloudy							
3	37	37	52	32	cloudy						5	
4	38	37	48	28	cloudy							
5	38	37	48	34	cloudy							
6	37	37	49	30	pty cloudy							
7	37	37	50	24	pty cloudy							
8	37	37	56	38	rain							
9	37	37	44	40	rain							
10	37	37	48	37	cloudy						17	
11	38	37	42	28	showers							
12	38	37	47	30	cloudy							
13	38	37	53	30	rain							
14	38	38	48	36	rain							
15	38	38	42	30	rain							
16	38	38	50	32	cloudy						136	
17	39	39	50	34	cloudy							
18	39	39	49	35	cloudy							
19	40	39	50	32	cloudy						351	
20	40	40	51	31	pty cloudy						187	
21	40	40	44	29	rain							
22	40	40	43	26	pty cloudy							
23	40	40	43	20	clear						221	
24	40	39	46	18	clear							
25	40	39	50	24	clear							
26	40	39	54	26	clear						54	
27	40	39	50	28	pty cloudy							
28	40	39	54	25	clear							
29	40	39	54	23	clear							
30	40	39	51	20	clear							
31	40	39	49	22	clear						73	

Appendix Table 4 (cont.)

February	Temperature (Degree F)				Weather	Fish Trapped				Steelhead Trout	
	Water		Air			Chinook	Salmon	Coho	Salmon		
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adults	Grilse		
1	40	39	36	22	rain						
2	40	39	50	28	rain						
3	40	39	58	38	cloudy					93	
4	39	39	54	33	cloudy						
5	40	40	56	40	showers						
6	40	39	51	30	cloudy						
7	40	39	45	34	rain					86	
8	40	39	45	30	cloudy						
9	40	39	45	28	cloudy						
10	40	40	43	21	cloudy					89	
11	40	40	44	18	clear						
12	40	40	45	24	cloudy						
13	41	40	50	20	cloudy						
14	40	40	49	33	cloudy					180	
15	40	40	44	33	cloudy						
16	40	40	42	33	cloudy						
17	40	40	38	28	rain					36	
18	39	39	51	31	rain						
19	39	38	55	31	clear						
20	39	38	59	29	clear						
21	39	38	64	29	clear						
22	39	38	63	28	clear					20	
23	39	38	65	29	clear					5	
24	39	39	62	38	cloudy						
25	39	38	58	28	pty cloudy						
26	39	38	55	28	pty cloudy						
27	40	40	56	22	clear					107	
28	40	39	58	19	clear						
Monthly Totals										616	
Cumulative Totals						4,313	520	251	375	2,874	

Appendix Table 4 (cont.)

March	Temperature (Degree F)					Weather	Fish Trapped					
	Water		Air				Chinook Salmon Adults	Salmon Grilse	Coho Salmon		Steelhead Trout	
	Maximum	Minimum	Maximum	Minimum					Adults	Grilse		
1	40	39	58	18	clear							
2	40	40	52	36	rain						163	
3	40	40	58	35	cloudy							
4	40	39	54	32	rain							
5	42	40	50	36	rain						300	
6	41	40	60	30	clear							
7	41	39	56	39	rain						242	
8	43	43	42	40	rain							
9	43	43	58	36	clear						259	
10	43	42	58	29	clear							
11	44	41	58	32	cloudy							
12	45	42	44	32	cloudy						198	
13	45	41	48	32	showers						41	
14	43	42	53	21	clear						-20-	
15	45	44	61	22	clear							
16	45	44	68	25	clear						34	
17	45	44	72	34	clear							
18	45	44	72	32	clear							
19	45	44	73	31	clear							
20	45	39	74	32	clear							
21	46	45	66	40	rain							
22	46	45	66	44	cloudy							
23	46	42	56	38	cloudy							
24	46	44	60	30	pty cloudy							
25	45	44	70	34	clear							
26	46	43	72	35	clear							
27	46	44	70	36	clear							
28	46	44	75	34	clear							
29	46	45	61	38	cloudy							
30	46	45	64	44	cloudy							
31	46	45	58	41	cloudy							
Monthly Totals											1,537	
Cumulative Totals							4,313	520	251	375	4,411	

Appendix Table 4 (cont.)

April	Temperature (Degree F)				Weather	Fish Trapped				
	Water		Air			Chinook Salmon	Coho Salmon	Steelhead		
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adults	Grilse	
1	45	44	52	36	cloudy					
2	46	44	54	32	cloudy					
3	46	42	55	32	windy & cloudy					
4	46	44	50	32	cloudy					
5	46	44	47	32	rain					
6	46	44	46	32	cloudy					
7	46	45	50	26	pty cloudy					
8	46	45	58	26	clear					
9	46	45	76	30	clear					
10	46	45	80	34	clear					
11	46	44	75	35	clear					
12	47	45	67	36	clear					
13	48	46	61	30	cloudy					
14	47	43	60	32	cloudy					
15	49	46	54	38	rain					
16	50	45	48	30	overcast-cold showers					
17	50	45	55	28	cloudy					
18	51	46	60	30	pty cloudy					
19	50	44	58	34	rain					
20	50	46	51	30	cloudy					
21	50	46	55	28	cloudy					
22	51	47	58	36	cloudy					
23	50	49	66	30	cloudy					
24	50	48	62	40	cloudy					
25	50	49	63	42	cloudy					
26	50	49	54	44	cloudy					
27	50	49	63	42	clear					
28	50	49	64	36	clear-cloudy pm					
29	50	49	70	30	clear					
30	50	50	55	38	rain					
Monthly Totals										
Cumulative Totals										
						4,313	520	251	375	
									4,411	

Appendix Table 4 (cont.)

May	Temperature (Degree F)				Weather	Fish Trapped				Steelhead Trout	
	Water		Air			Chinook Salmon	Coho Salmon	Grilse	Grilse		
	Maximum	Minimum	Maximum	Minimum		Adults	Adults	Adults	Adults		
1	50	49	64	32	clear						
2	50	49	66	35	clear						
3	50	49	66	38	clear - windy						
4	50	49	54	32	cloudy - windy						
5	50	48	58	32	clear						
6	50	49	66	29	clear						
7	50	49	73	33	clear						
8	50	49	81	35	clear						
9	50	50	82	44	showers						
10	50	49	70	34	clear am-cloudy pm						
11	50	49	60	44	pty cloudy						
12	50	49	74	40	clear						
13	50	48	78	38	pty cloudy						
14	51	48	70	45	cloudy-rain						
15	51	49	56	34	cloudy-rain						
16	51	49	60	30	clear						
17	50	49	74	32	clear						
18	50	49	75	45	clear						
19	50	49	81	49	clear						
20	50	49	82	44	pty cloudy pm-clear am						
21	50	49	78	44	clear						
22	50	49	69	31	clear						
23	50	49	68	34	cloudy						
24	50	49	57	38	rain						
25	50	49	62	40	cloudy						
26	50	49	65	40	cloudy						
27	50	49	78	39	clear						
28	50	48	78	40	clear						
29	50	49	72	37	clear						
30	50	49	72	38	clear						
31	50	49	76	44	clear						
Monthly Totals						4,313	520	251	375	4,411	
Cumulative Totals											

