

REF 90204

ANNUAL REPORT
IRON GATE SALMON AND STEELHEAD HATCHERY
1978-79^{a/}

by

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ABSTRACT

This report describes the operation of the hatchery from 1 July 1978 through 30 June 1979. 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 6,945 fall-run adult chinook salmon, Oncorhynchus tshawytscha, trapped which produced 9,428,515 eggs. Seventeen spring-run chinook were trapped but all died before spawning. The 499 adult coho salmon, O. kisutch, produced 422,010 eggs; and 2,079 steelhead, Salmo gairdneri produced 1,330,211 eggs.

A total of 3,351,200 fingerling chinook salmon, 87,000 yearling coho salmon, and 587,132 yearling steelhead was planted in fiscal year 1978-79. (The chinook salmon fingerlings were planted between 2 July and 5 July 1979, technically in the 1979-80 FY, but were raised from 1978 fall-run eggs and for clarity will be included in this report.)

The production of steelhead from Bogus Rearing Pond ranged from 10,850 in 1976 to 31,197 in 1973. The release of steelhead from Bogus Pond was 11,810 in 1979.

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INTRODUCTION

This report covers the 18th 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 13th 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 1 July 1978 through 30 June 1979.

Bogus Rearing Pond is located near the mouth of Bogus Creek, adjacent to the 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 1978-79.

PRODUCTION SUMMARY

Seventeen spring-run chinook were trapped in 1978, all of which died before spawning (Table 1). The spring-run chinook were trapped from 11 August to 4 September 1978. Five of these fish had LV fin clips. Fall-run chinook were taken from September 12 1978 to 15 November 1978 (Figure 1). Coho salmon started entering the trap on 6 October 1978 and continued until 12 December 1978. Steelhead trout were trapped from 11 August 1978 to 28 March 1978.

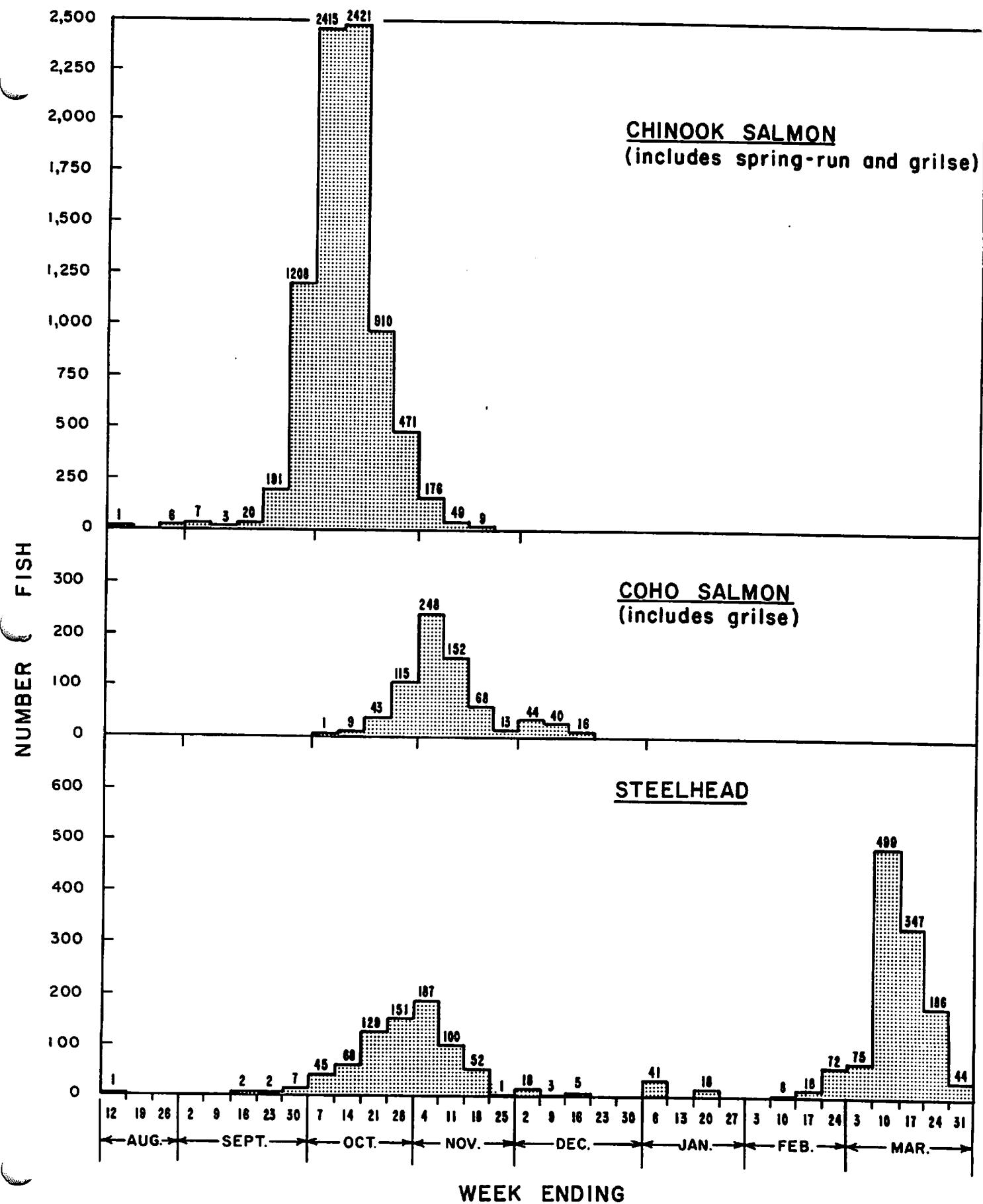


FIGURE 1. Weekly numbers of chinook salmon, coho salmon, and steelhead trapped at Iron Gate Salmon and Steelhead Hatchery, 1978-79 season.

TABLE 1. Production Summary, Iron Gate Salmon and Steelhead Hatchery, 1978-79

	Adults trapped	Females spawned	Number eggs taken	Number fingerlings planted	Number yearlings planted	Total pounds planted	Eyed eggs shipped	Fish on hand 6/30/79
<u>Chinook salmon, spring-run</u>								
1977 BY	17	0						
<u>Chinook salmon, fall-run</u>								
1977 BY								
1978	6,945	3,361	9,428,515	3,358,200		38,600		1,080,000
<u>Coho salmon</u>								
1977 BY					87,000	5,904		
1978 BY	499	211	422,010					100,000
<u>Steelhead</u>								
1978 BY					587,132	28,612		
1979 BY	2,079	690	1,330,211				175,010	195,000

CHINOOK SALMON MAINTENANCE PROGRAM

History of the 1978-79 Run

Spring Run, 1978 Brood Year

Seventeen spring-run chinook salmon were trapped in 1978; however, all fish died before spawning.

Fall Run, 1978 Brood Year

A total of 7,870 fall-run chinook salmon was trapped: 3,027 males; 3,918 females; and 925 grilse (56 cm or 22 inches FL). There were 3,361 females spawned, producing 9,428,515 eggs for an average of 2,805 eggs per female. Prespawning mortality was 557 females (14.2%). Seventeen lots of eggs were taken with an average fertility of 77%. Approximately 1,080,000 chinook salmon fingerlings were on hand as of 30 June 1979 for the fall 1979 planting season.

Planting 1977-78 Broodyear Chinook Salmon

There were 3,358,200 chinook salmon fingerling planted between 2 July and 5 July 1979 (Table 2). Even though this is technically in FY 1979-80, these fish were raised from 1978 fall-run eggs and have been included in this report for clarity and continuity. No chinook salmon eggs were shipped from the hatchery.

TABLE 2. Chinook Salmon Planting Data, Iron Gate Salmon and Steelhead Hatchery, 1978-79

Race and Brood Year	Date released	Average size	Number released	Release site	Mark
Fall run, 1978	7/2-5/79	87/1b	3,358,200	IGH	-

Marked Chinook Salmon Recovered

During 1978-79, five marked chinook salmon were trapped (Table 3). All were Iron Gate marks.

TABLE 3. Marked Chinook Salmon Recovered, Iron Gate Salmon and Steelhead Hatchery, 1978-79

Mark	Number trapped	Brood year	Race	Number released	Date released	Mean FL (cm)	Average size	Release site
LV	5	1974	SRKS	14,449	12/18/75	-	5/1b	IGH

COHO SALMON MAINTENANCE PROGRAM

History of the 1978 Run

The first coho salmon entered the trap on 6 October 1978 and the last on 12 December 1978. A total of 749 fish was trapped: 263 males, 236 females, and 250 grilse (56 cm or 22 inches FL). The 211 females spawned produced 422,010 eggs, for an average of 2,000 eggs per female. No eggs were shipped from the hatchery. Approximately 100,000 fingerlings were held for release as yearlings in 1980.

Planting 1977 Brood Year Coho Salmon

There were 87,000 coho salmon planted during the 1978-79 season (Table 4).

TABLE 4. Coho Salmon Planting Data, Iron Gate Salmon and Steelhead Hatchery, 1978-79

Date	Average size	Number released	Release site	Mark (Coded wire tag #)
3/14-16/79	14/lb	52,263	IGH	AD(6-59-40)
3/14-16/79	16/lb	34,737	IGH	-
Total		87,000		

STEELHEAD TROUT MAINTENANCE PROGRAM

History of the 1978-79 Run

Between 11 August 1978 and 31 December 1978, 812 steelhead entered the trap and were held for later spawning. An additional 1,267 steelhead were trapped between 17 January 1979 and 28 March 1979. The two groups were held and spawned separately.

The 160 fall-trapped females spawned produced 295,044 eggs, an average of 1,844 eggs per female. The 530 spring-trapped females spawned produced 1,035,167 eggs for an average of 1,953 eggs per female. This made a total of 1,330,211 eggs from 690 females. A total of 8,510 eyed steelhead eggs was shipped to Humboldt State University and 166,500 eyed steelhead eggs were shipped to Trinity River Hatchery. Approximately 195,000 steelhead fingerlings from the 1979 brood year were on hand June 30, 1979.

Planting 1978 Brood Year Steelhead

We planted 225,000 small steelhead yearlings and 362,132 larger yearlings in 1978-79 (Table 5). The smaller yearlings were surplus grade-offs not needed to fulfill planting commitments.

TABLE 5. Juvenile Steelhead Planting Data, Iron Gate Salmon and Steelhead Hatchery, 1978-79

Strain	Brood year	Date released	Average size	Number released	Release site	Mark
KR*	1978	4/4/79	25/lb	100,000	Mallard Cove	-
KR	1978	4/5/79	25/lb	125,000	Iron Gate Lake	-
KR	1978	4/16-17/79	13/lb	128,282	IGH	RV
KR	1978	4/16-17/79	24/lb	233,850	IGH	LV
Total				587,132		

*Klamath River

Marked Steelhead Trapped

A total of 80 marked steelhead was trapped this season (Table 6). Of these, 63 were Iron Gate marks and 17 were of undetermined origin.

TABLE 6. Marked Steelhead Recovered, Iron Gate Salmon and Steelhead Hatchery, 1978-79^{a/}

Mark	Number trapped	Brood year	Race	Number released	Date released	Mean FL (cm)	Average size	Release site
AD-LP	39	-	-	429,306	5/3/77	10.7	-	IGH
AD-RP	23	-	-	40,292	5/3/77	15.2	-	IGH
LV-RV	1	-	-	200,000	4/14/78	11.7	-	IGH
RP	9	-	-	-	-	-	-	-
LP	3	-	-	-	-	-	-	-
AD-LM	2	-	-	-	-	-	-	-
AD	2	-	-	-	-	-	-	-
RV	1	-	-	-	-	-	-	-
anchor tag (R12578)	1	-	-	-	8/23/77	32.0	-	lower Rogue R.
anchor tag (R14686)	1	-	-	-	8/26/77	33.5	-	lower Rogue R.

^{a/} Information supplied by L. E. Boydston, Associate Fishery Biologist, Rancho Cordova.

BOGUS REARING POND^{1/}

Releases of yearling steelhead reared in Bogus Pond since 1972 have ranged from 10,850 - 31,197 (Table 7). As of 30 June 1979, there were no steelhead in Bogus Pond.

PUBLIC RELATIONS

During the 1978-79 fiscal year, 5,058 people visited the hatchery, including 557 people in organized groups.

^{1/}

Data provided by Robert P. Caddell, Fish Habitat Supervisor, Yreka Screen Shop.

TABLE 7. Summary of Bogus Rearing Pond Steelhead Production
1972-73 through 1978-79^{a/}

Season	Number of fry stocked	Number yearlings released	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 3,960 3,960 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 Creek 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
1977-78	Pond used to rear coho	salmon. No estimate of numbers.	Ad-D
1978-79	123,868	11,810	Klamath R. @ Happy Camp

^{a/} Information supplied by Robert P. Caddell, Fish Habitat Supervisor, Yreka Screen Shop.

APPENDIX TABLE 1. Summary of Chinook Salmon Runs
Iron Gate Salmon and Steelhead Hatchery

Season	Fall-trapped spring run*		Fall run				Spring-trapped spring run		
	Adults	Grilse	Males	Females	Total Adults	Grilse	Total fall run	Adults	Grilse
1962-63	+ 1,339								
1963-64					1,723	443	2,171		
1964-65			337	1,651	2,488	110	2,598		
1965-66			111	224	365	313	678		
1966-67			1,129	1,610	2,739	325	3,064		
1967-68			350	1,275	2,125	562	2,687		
1968-69			646	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	2,639	7,395	10,284	219	10,503	10	0
1971-72	16	0	4,412	6,031	10,443	326	10,769	60	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
1978-79	17	0	3,027	3,918	6,945	925	7,870	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	Crilse	Total	Fall-trapped	Spring-trapped	Total
						early run	late run	
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			934
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
1978-79	263	236	499	250	749	812	1,267	2,079

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

APPENDIX 3. Fork Length (to nearest cm) of Measured Steelhead^{1/}

Steelhead at Iron Gate Hatchery were randomly sampled for fork length (FL). The sample totaled 1,244 fish. The fall-trapped steelhead sample totaled 250 fish: 23 males and 227 females. Fall-trapped males averaged 50.2 cm FL and the females, 47.7 cm FL.

The spring-trapped fish sampled totaled 994 fish: 464 males and 530 females. These males averaged 50.3 cm FL and the females, 49.9 cm FL.

^{1/} Information supplied by L. B. Boydston, Associate Fisheries Biologist, Rancho Cordova.

APPENDIX TABLE 4. IRON GATE SALMON AND STEELHEAD HATCHERY
 Weather, Water, and Fish Data
 1 July 1978 through 30 June 1979

Date	Temperature (Degree F)				Weather	Fish Trapped					
	Water		Air			Chinook salmon	Coho salmon	Steelhead trout			
	Maximum	Minimum	Maximum	Minimum	Adults	Grilse	Adults	Grilse	Adults	Grilse	
1	52	51	78	42	pty cloudy						
2	52	51	70	50	showers						
3	52	51	70	46	cloudy						
4	52	52	74	42	clear						
5	52	51	79	42	clear						
6	52	51	84	50	clear						
7	52	51	85	49	cloudy						
8	52	51	88	50	clear						
9	52	52	85	46	clear						
10	52	56	86	47	clear						
11	56	56	89	46	clear						
12	57	57	86	50	clear						
13	57	52	90	50	clear						
14	58	52	96	54	clear						
15	58	57	86	56	clear						
16	58	57	79	44	clear						
17	59	58	84	50	clear						
18	59	58	88	50	clear						
19	59	57	88	50	clear						
20	57	56	90	50	clear						
21	57	56	96	50	clear						
22	57	56	102	50	clear						
23	58	57	100	58	clear						
24	58	58	100	56	clear						
25	59	58	100	58	clear						
26	59	58	94	68	cloudy						
27	58	57	94	52	clear						
28	58	57	94	52	clear						
29	58	57	94	52	clear						
30	59	58	92	55	clear						
31	59	59	89	50	clear						
TOTALS											

Appendix Table 4 (cont.)

May	Temperature (Degree F)				Weather	Fish trapped				
	Water		Air			Chinook salmon	Otulso	Coho salmon	Grilse	Steelhead trout
	Maximum	Minimum	Maximum	Minimum		Adults	Adults	Adults	Steelhead trout	
1	49	47	74	44	sunny					
2	49	48	71	34	sunny					
3	49	49	70	30	sunny					
4	49	49	39	66	pty cloudy					
5	49	48	31	59	rain					
6	49	49	56	31	sunny					
7	49	48	62	28	sunny, windy					
8	50	48	70	38	overcast					
9	49	48	70	40	pty cloudy					
10	50	48	74	36	sunny					
11			62	23	sunny					
12	51	49	61	34	sunny					
13	50	49	66	38	cloudy					
14	50	48	76	48	cloudy					
15	51	49	62	40	sprinkles					
16	50	48	63	31	sunny					
17	50	41	66	43	cloudy					
18	50	49	66	46	cloudy					
19	50	49	60	40	rain					
20	50	50	60	40	overcast					
21	50	49	66	34	overcast					
22	50	49	72	36	overcast					
23	50	49	73	43	sunny					
24	50	49	80	53	pty cloudy					
25	50	49	78	48	pty cloudy					
26	49	49	76	48	sunny					
27	50	49	80	40	sunny					
28	51	49	82	40	sunny					
29					sunny					
30	51	50	66	46	high clouds					
31	52	50	74	36	sunny					
TOTALS						2,112	451	1,800	251	1,247

Appendix Table 4 (cont.)

June	Temperature (Degrees F)				Weather	Chinook salmon		Coho salmon		Fish trapped
	Water		Air			Adults	Grilse	Adults	Grilse	Steelhead trout
	Maximum	Minimum	Maximum	Minimum						
1	52	50	78	50	cloudy					
2	52	50	74	51	cloudy					
3	52	50	78	46	clear					
4	52	51	84	48	pty cloudy					
5	52	51	86	54	cloudy					
6	52	51	76	48	cloudy					
7	52	51	62	55	lt rain					
8	52	51	62	52	cloudy					
9	52	51	67	39	cloudy					
10	52	51	74	46	cloudy					
11	52	50	74	40	pty cloudy					
12	51	51	60	44	pty cloudy					
13	52	51	60	34	cloudy					
14	52	51	72	35	clear					
15	52	50	84	43	clear					
16	53	51	74	51	clear					
17	52	50	79	40	clear					
18	52	51	81	46	cloudy					
19	52	50	85	52	cloudy					
20	52	50	85	50	clear					
21	52	50	86	48	clear					
22	53	51	86	51	clear					
23	53	51	87	50	clear					
24	53	51	94	50	clear					
25	53	51	97	56	clear					
26	55	51	85	55	clear					
27	54	51	86	50	clear					
28	54	51	90	50	clear					
29	54	51	95	53	clear					
30	55	52	90	56	clear					
TOTALS						2,112	451	1,300	251	1,247

Appendix Table 4 (cont.)

March	Temperature (Degrees F)				Weather	Fish trapped				
	Water Maximum	Water Minimum	Air Maximum	Air Minimum		Chinook salmon Adults	Chinook salmon Grilse	Coho salmon Adults	Coho salmon Grilse	Steelhead trout
1	41	40	60	22	sunny					
2	42	41	62	22	sunny					
3	42	41	59	23	sunny					67
4	42	41	42	21	rain, snow					
5	42	41	46	22	sunny					
6	43	41	51	20	sunny					
7	43	41	56	25	sunny					
8	41	41	60	21	sunny					
9	42	41	62	24	sunny					64
10	43	42	64	29	sunny					
11	43	42	64	24	sunny					
12	42	42	63	23	sunny					
13	43	42	45	31	cloudy					
14	43	42	48	23	sunny					
15	43	42	54	34	rain					
16	43	42	54	34	cloudy					29
17	44	43	58	16	sunny					
18	44	43	54	26	cloudy					
19	43	43	56	34	cloudy					
20	44	43	56	28	cloudy					
21	45	43	52	36	cloudy					
22	45	44	56	34	partly cloudy					
23	44	44	60	32	sprinkles					
24	45	44	59	23	cloudy					11
25	45	44	55	42	rain					
26	46	44	60	32	rain					
27	45	44	52	30	windy, clear					
28	45	44	44	26	sunny					
29	45	44	48	38	rain					
30	45	45	50	34	cloudy					24
31	45	44	54	34	cloudy					
TOTALS					2,412	451	1,800	251	215	
Cumulative total										1,215

Appendix Table 1 (cont.)

April	Temperature (Degree F)				Weather	Fish trapped			
	Water		Air			Chinook salmon	Coho salmon	Steelhead trout	
	Maximum	Minimum	Maximum	Minimum	Adults	Orilso	Adults	Grilee	
1	45	44	57	31	rain				
2	46	45	43	21	cloudy				
3	48	44	50	36	cloudy				
4	46	45	68	22	sunny				
5	48	46	67	31	sunny				
6									32
7	47	45	52	24	windy, clear				
8	47	45	52	26	cloudy				
9	48	46	54	38	sunny				
10	46	45	58	22	sunny				
11	46	45	58	34	windy, cloudy				
12	47	46	53	32	pty cloudy				
13	46	46	69	24	sunny				
14	47	47	72	25	clear				
15	47	46	70	26	sunny				
16	47	46	70	36	sunny				
17	48	46	74	34	sunny				
18	47	46	76	38	sunny				
19	48	47	62	41	rain				
20	48	46	61	41	cloudy				
21	48	47	62	41	sunny				
22	48	47	79	39	sunny				
23	49	47	81	42	sunny				
24	49	47	70	41	cloudy				
25	44	43	47	43	rain				
26	44	43	49	38	cloudy				
27	50	49	62	30	sunny				
28	47	47	77	40	sunny				
29	48	47	78	46	sunny				
30									
TOTALS									
Cumulative total									
			2,412	451	1,800	251	32		
								1,247	

Appendix Table 4 (cont.)

January	Temperature (Degree F)				Weather	Fish trapped			
	Water		Air			Chinook salmon	Coho salmon	Steelhead trout	
	Maximum	Minimum	Maximum	Minimum	Adults	Grilse	Adults	Grilse	
1	39	39	34	32	cloudy				
2	39	39	36	30	cloudy				
3	39	39	34	27	rain				
4	39	39	37	32	sunny				
5	40	38	38	18	sunny				
6	38	38	43	18	sunny				2
7	39	39	40	20	cloudy				
8	39	39	40	20	cloudy				
9	39	39	46	23	cloudy				
10	40	39	44	20	sunny				
11	40	39	44	20	sunny				
12	38	38	50	16	sunny				
13	40	39	46	19	sunny				113
14	39	39	52	20	sunny				
15	39	39	50	22	rain				
16	39	39	57	37	cloudy				
17	38	37	59	27	cloudy				
18	39	39	53	32	cloudy				
19	39	39	52	33	cloudy				19
20	40	39	55	28	cloudy				
21	40	39	60	46	cloudy				
22	40	40	47	44	rain				
23	40	40	38	34	rain				
24	41	40	43	29	cloudy				
25	41	40	41	17	sunny				
26	41	40	49	30	cloudy				59
27	41	40	46	32	rain				
28	41	40	45	33	rain				
29	41	41	48	27	rain				
30	41	40	45	23	cloudy				100
31	41	40	44	18	sunny				
TOTALS						2,412	451	1,800	251
Cumulative total									293
									652

Appendix Table 4 (cont.)

February	Temperature (Degree F)				Weather	Chinook salmon		Coho salmon		Fish trapped
	Water		Air			Adults	Grilse	Adults	Grilse	Steelhead trout
	Maximum	Minimum	Maximum	Minimum						
1	41	40	46	18	sunny					
2	41	40	48	20	sunny					75
3	40	39	50	11	sunny					
4	41	40	49	16	sunny					
5	41	40	46	26	cloudy					
6	41	40	47	18	sunny					
7	41	40	50	17	sunny					
8	41	41	48	20	cloudy					
9	41	41	55	21	sunny					
10	41	40	57	19	cloudy					72
11	41	40	55	36	rain					
12	41	40	51	27	sunny					
13	41	40	46	40	rain					
14	41	40	54	34	sunny					
15	41	40	56	34	cloudy					
16	40	40	49	44	rain					
17	41	40	50	28	cloudy					53
18	40	39	52	32	cloudy					
19	40	39	49	43	rain					
20	41	40	52	25	sunny					
21	41	40	57	22	sunny					
22	41	40	61	23	sunny					
23	41	40	57	25	sunny					148
24	41	40	61	23	rain					
25	41	41	60	29	cloudy					
26	41	40	53	30	rain					
27	41	41	51	25	sunny					
28	41	40	53	24	overcast					
TOTALS										
Cumulative total						2,412	451	1,800	251	348

Appendix Table 4 (cont.)

November	Temperature (Degree F)				Weather	Fish trapped			
	Water		Air			Chinook salmon	Coho salmon	Steelhead trout	
	Maximum	Minimum	Maximum	Minimum	Adults	Grilse	Adults	Grilse	
1	54	53	60	43	rain				
2	53	53	62	30	pty cloudy				
3	53	53	65	34	pty cloudy				
4	53	53	70	28	sunny	1	1	183	37
5	53	52	70	28	sunny				
6	53	52	70	45	pty cloudy				
7	52	51	60	50	rain				
8	52	52	56	39	rain			175	25
9	52	52	54	36	cloudy				
10	52	52	49	23	hazy			165	18
11	52	51	48	20	foggy				
12	51	50	48	15	sunny				
13	51	50	48	13	sunny				
14	50	50	45	20	snow, rain			200	25
15	50	50	48	21	sunny				
16	50	49	50	22	cloudy				
17	50	50	55	21	cloudy			148	17
18	49	48	54	20	high clouds				
19	48	48	56	20	sunny				
20	48	48	57	24	sunny				
21	48	48	56	22	rain			110	6
22	48	48	49	38	rain clouds				
23	48	47	54	40	rain				
24	48	47	47	20	sunny			143	16
25	47	47	50	25	sunny				
26	47	47	49	20	sunny			68	3
27	47	46	50	25	sunny				
28	47	46	54	22	sunny				
29	46	46	50	22	rain				
30	46	46	45	34	rain				
TOTALS									
Cumulative total					2,412	451	1,201	153	183
							1,511	233	323

Appendix Table 4 (cont.)

December	Temperature (Degree F)					Weather	Fish trapped		
	Water		Air				Chinook salmon Adults	salmon Grilse	Steelhead trout
	Maximum	Minimum	Maximum	Minimum					
1	46	46	45	15	rain			99	8
2	46	46	45	40	rain			10	
3	46	45	50	38	rain				
4	45	45	41	23	cloudy				
5	44	43	42	28	cloudy		111	4	10
6	44	44	44	34	snow				
7	44	42	38	10	cloudy				
8	43	41	37	8	cloudy		59	4	9
9	41	42	42	6	sunny				
10	43	43	53	13	sunny				
11	43	42	40	13	sunny				
12	42	41	40	13	sunny		13		2
13	42	41	38	10	sunny				
14	42	41	42	20	sunny				
15	42	41	48	20	sunny				
16	42	41	47	21	sunny				
17	42	41	47	20	sunny		7		
18	41	40	44	30	sunny				
19	40	40	51	21	cloudy				
20	40	40	55	30	cloudy				
21	40	40	50	35	rain				
22	40	39	55	22	cloudy				
23	40	39	51	30	cloudy				
24	40	39	46	32	sunny				
25	49	39	51	39	cloudy				
26	49	39	51	36	sunny				
27	40	39	44	34	sunny				
28	40	39	46	30	ptly cloudy				
29	40	39	47	40	cloudy				
30	39	39	44	42	cloudy				
31	39	39	39	42	cloudy				
TOTALS									
Cumulative total						2,412	451	289	18
								1,800	251
									359

Appendix Table 4 (cont.)

September	Temperature (Degree F)				Weather	Fish trapped			
	Water		Air			Chinook salmon	Coho salmon	Steelhead trout	
	Maximum	Minimum	Maximum	Minimum	Adults	Grilse	Adults	Grilse	
1	56	54	84	40	sunny				
2	56	54	76	41	pty cloudy				
3	56	54	76	41	sunny				
4	56	55	89	46	sunny				
5	56	55	92	46	sunny				
6	56	55	86	47	sunny				
7	57	56	77	45	sunny				
8	57	55	32	47	sunny				
9	57	56	90	53	pty cloudy				
10	56	56	81	46	pty cloudy		1		
11	56	55	83	48	sunny				
12	55	55	75	43	pty cloudy	1			
13	56	56	58	44	pty cloudy				1
14	56	54	67	33	pty cloudy				
15	56	55	80	32	sunny				
16	55	55	82	34	sunny				
17	55	55	81	40	sunny	1	1		
18	56	55	66	50	rain				
19	56	54	70	38	sunny				
20	56	55	53	51	rain	4	1		2
21	56	54	62	32	rain	8	2		2
22	56	55	78	32	sunny	9	1		
23	56	55	77	31	sunny	5			
24	57	54	80	42	sunny	13	2		
25	56	55	81	40	sunny				
26	56	55	82	52	sunny	17			
27	56	55	82	39	sunny				
28	57	55	78	37	sunny	42	5		1
29	56	55	83	37	sunny	39	3		1
30	56	55	86	40	sunny	46	5		2
TOTALS						185	21		8
Cumulative Total						185	21		8

Appendix Table 4 (cont.)

October	Temperature (Degree F)				Weather	Chinook salmon		Coho salmon		Fish trapped
	Water		Air			Adults	Grilse	Adults	Grilse	Steelhead trout
	Maximum	Minimum	Maximum	Minimum						
1	57	55	83	40	sunny	21	3			
2	56	55	81	41	sunny	160	20			
3	55	55	90	42	sunny	95	12			
4	57	55	90	40	sunny	125	16			7
5	57	55	85	42	sunny	21	1			1
6	56	56	90	42	sunny	163	27			1
7	55	55	89	42	sunny	66				3
8	56	56	78	41	sunny	192	32			2
9	58	57	78	41	sunny	233	29			2
10	57	55	78	34	sunny	114	12	1	3	5
11	58	55	61	36	sunny					
12	58	58	57	40	rain					
13	55	51	56	35	rain					
14	58	57	80	40	rain	129	78	5	7	14
15	58	57	67	46	cloudy					
16	58	57	58	37	cloudy					
17	58	57	60	26	sunny	333	70			15
18	58	57	59	28	sunny					14
19	58	57	62	26	sunny	181	91	1	3	7
20	58	57	69	29	sunny					
21	58	57	70	28	sunny					
22	57	56	61	25	sunny					
23	57	56	67	24	sunny					
24	57	56	68	31	cloudy	66	30	96	3	28
25	57	56	62	21	cloudy					
26	56	56	59	23	cloudy					
27	56	56	59	28	sunny	24	5	75	13	24
28	55	54	61	21	sunny					
29	54	54	65	26	sunny					
30	54	54	65	27	pty cloudy					
31	54	54	70	26	sunny					
TOTALS						2,411	429			132
Cumulative total						2,226	450	310	80	140

APPENDIX TABLE 4. Iron Gate Salmon and Steelhead Hatchery
 Weather, Water, and Fish Data
 July 1, 1980 through June 30, 1981

July	Temperature (Degree F)				Weather	Fish trapped			
	Water		Air			Chinook salmon	Coho salmon	Steelhead trout	
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse		
1	57	55	90	45	pty cloudy				
2	56	55	84	51	pty cloudy				
3	57	55	82	50	hazy				
4	59	55	80	48	pty cloudy				
5	57	56	78	45	pty cloudy				
6	57	56	84	49	pty cloudy				
7	57	55	84	44	sunny				
8	57	55	82	52	overcast				
9	57	56	78	44	sunny				
10	58	57	80	44	sunny				
11	58	57	86	44	sunny				
12	61	58	86	45	sunny				
13	60	58	86	46	sunny				
14	61	53	81	52	cloudy				
15	56	53	91	50	sunny				
16	56	53	89	52	thin clouds				
17	56	53	90	50	sunny				
18	56	54	84	51	thin clouds				
19	57	54	94	49	sunny				
20	57	54	100	50	sunny				
21	56	54	102	54	sunny				
22	56	54	99	55	clear				
23	56	54	92	52	sunny				
24	55	54	90	52	sunny				
25	55	54	93	50	sunny				
26	57	54	98	58	sunny				
27									
28	55	55	100	50	sunny				
29	56	56	96	54	sunny				
30	56	55	94	55	sunny				
31									

Appendix Table II (cont.)

Temperature (Degree F)	Fish trapped	Chinook salmon	Coho salmon	Adults	Grilse	Weather	Maxiumum Miniumum	Maxiumum Miniumum	Maxiumum Miniumum	Water	At	Steelhead	August
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