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ANNUAL REPORT
FEATHER RIVER HATCHERY 1983-84

by

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Region 2, Inland Fisheries

Inland Fisheries
Administrative Report No. 87-2

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ABSTRACT

This report summarizes the operation of Feather River Hatchery from July 1, 1983 through June 30, 1984. Tables present temperatures and weather data, numbers of chinook salmon, Oncorhynchus tshawytscha, and steelhead rainbow trout, Salmo gairdneri, entering the hatchery, numbers of eggs taken and received, and numbers of fish released.

We trapped 9,411 chinook salmon and 783 steelhead and planted or transferred 5,881,564 chinook fingerlings, 1,648,925 chinook yearlings, 385,886 steelhead fingerlings and 326,245 steelhead yearlings.

INTRODUCTION

This report describes activities of the Feather River Hatchery during its 17th year of operation July, 1, 1983 through June 30, 1984. The hatchery is located near the upper Thermalito Bridge in Oroville, Butte County. It was constructed by the Department of Water Resources as part of the California Water Project to compensate for loss of spawning area above Oroville Dam. It is operated by the Department of Fish and Game with funds provided by the Department of Water Resources.

PRODUCTION SUMMARY

Personnel from the Feather River Hatchery trapped 9,411 chinook salmon, Oncorhynchus tshawytscha, and 783 steelhead, Salmo gairdneri, during the 1983-84 season (Table 1). A total of 16,706,688 salmon eggs and 1,557,524 steelhead eggs was taken and received. We planted 7,530,489 salmon and 712,131 steelhead.

CHINOOK SALMON MAINTENANCE PROGRAM

History of the 1983-84 Runs

1983 BY Spring Run

The fish ladder was opened September 1 to allow the spring-run chinook salmon adults to enter the hatchery. We received 1,712 spring-run fish between September 1 and September 29 (Appendix Table 2). The spring-run adults were sexed on September 29. At the time we had 724 males, 916 females, and 72 grilse. Of the 916 females we successfully spawned 866 from September 29 through October 31. The spawning yielded 3,567,868 eggs, for an average of 4,120 eggs per female.

An estimated 3,101,911 fingerlings were transferred to the ponds, for an average egg to fingerling survival rate of 86.9%. An estimated 435,408 remained on hand June 30, 1984 for planting as yearlings the following season.

1983 BY Fall Run

The first fall run chinook salmon adults entered the hatchery on October 3 (Appendix Table 2). The season total was 7,669 fish. We spawned 3,260 females between October 3 and December 12 and took 13,138,820 eggs for an average of 4,030 eggs per female. A total of 2,395,052 eggs was transferred to Nimbus and Coleman Hatcheries. Fry production from the 10,743,768 eggs remaining totaled about 9,393,487, for an average egg to fry survival rate of 87.4%. We lost about 3,356,656 fish to bird predation. Between January 1 and June 30 we planted a total of 2,870,035 fall run 1983 BY fingerlings. An estimated 3,166,796 remained on hand as of June 30.

Recovery of Marked Chinook Salmon

All chinook salmon entering the hatchery were examined for marks. We received a total of 635 marked fish (Appendix Table 1).

Chinook Salmon Planting

We planted 5,881,564 fingerling and 1,648,925 yearling chinook salmon this year (Table 1 and 2).

STEELHEAD MAINTENANCE PROGRAM

History of the 1983-84 Production

Steelhead were not counted or held until October 28. From that date through March 5 we received a total of 783 fish. Marks and measurements of steelhead were recorded by Region 2 personnel.

Of the total run of 783 fish, 369 were males and 414 were females. We successfully spawned 411 females (Table 3). A total of 1,557,524 eggs was taken. Of these, 1,420,551 fish were transferred to the ponds for an overall survival rate of 91%. Losses to bird predation amounted to 304,311 fish. On June 30 we had an estimated 899,607 1984 BY steelhead on hand.

Steelhead Planting

We planted an estimated 712,131 steelhead during the 1983-84 season (Table 4).

VISITOR USE

During the 1983-84 fiscal year 28,782 people visited the installation.

Table 1. Feather River Hatchery Production Summary, 1983-84

Species brood year	Adults trapped or received	Females spawned	Eggs taken or received	Fish planted		Numbers on hand
				fingerlings	yearlings	
Chinook salmon spring run						
1982 BY	0	0	0	0	336,809	0
1983 BY	1,712	866	3,567,868	2,142,429	0	3,435,408
Chinook salmon fall run						
1982 BY	0	0	0	869,100	1,312,116	0
1983 BY	7,699	3,260	13,138,820 ^{a/}	2,870,035	0	3,166,796
Steelhead						
1983 BY	0	0	0	119,253	326,245	0
1984 BY	783	411	1,557,524	266,633	0	899,607

^{a/} Of these, 1,424,240 eggs were transferred to Nimbus Hatchery and 970,812 were transferred to Coleman National Fish Hatchery.

TABLE 2. Chinook Salmon Planting Summary, Feather River Hatchery 1983-84

Race	Month of release	Average size (G)	Number released	Release site
Spring run 1982 BY	September	52.0	<u>336,809</u>	Feather R. at Hatchery
		Total	336,809	
Spring run 1983 BY	February	1.7	212,520	Chico Creek
	February	1.8	199,956	Butte Creek
	February	1.5	302,733	Antelope Creek
	February	0.7	261,120	Feather R. at Hatchery
	March	7.4	51,000	Vallejo
	May	7.2	142,400	Vallejo
	May	9.1	157,400	Vallejo
	June	12.0	104,000	Vallejo
	June	10.5	133,000	Vallejo
	June	11.4	259,050	Vallejo
	June	5.6	2,000	Sacramento R. at Glenn-Colusa
	June	17.9	156,250	Vallejo
	June	0.3	<u>161,000</u>	Feather River
		Total	2,142,429	
Fall run 1982 BY	July	7.5	599,700	Vallejo
	July	7.7	49,300	Tiburon
	July	8.0	48,600	Vallejo
	August	11.2	36,00	Rio Vista
	August	9.3	48,000	Tiburon
	August	16.0	44,800	Vallejo
	September	9.9	42,700	Vallejo
	October	32.0	309,650	Feather R. at Hatchery
	October	32.0	23,200	Tiburon
	October	40.7	780,216	Feather R. at Hatchery
	October	30.0	21,000	Tiburon
	October	30.0	42,050	Feather R. at Hatchery
	October	45.0	<u>136,000</u>	Feather R. at Hatchery
		Total	2,181,216	

TABLE 2. Chinook Salmon Planting Summary, Feather River Hatchery 1983-84
(continued)

Race	Month of release	Average size (G)	Number released	Release site
Fall run 1983 BY	January	0.3	648,000	Feather R. at Hatchery
	March	0.3	214,200	Feather R. at Hatchery
	April	5.6	25,380	Clifton Forbay
	April	3.0	222,000	Mokelumne Hatchery
	May	3.4	1,293,255	Mokelumne Hatchery
	June	6.0	66,600	Courtland
	June	5.6	59,250	Mokelumne R. at Whimpy's
	June	5.0	61,600	Sacramento R. at Koket
	June	5.0	62,300	Mokelumne R. at Guisti
	June	4.3	67,600	Old River
	June	7.8	42,750	Vallejo
	June	6.0	44,100	Port Chicago
	June	12.0	63,000	Vallejo
	Total		2,870,035	
Grand Total			7,530,489	

TABLE 3. Steelhead Spawning Data

Date <u>1983-84</u>	Fish Spawned	
	<u>M</u>	<u>F</u>
1-3-84	36	62
1-9-84	26	44
1-17-84	21	43
1-23-84	30	58
1-30-84	22	58
2-6-84	9	40
2-14-84	15	46
2-21-84	7	32
2-27-84	8	21
3-5-84	1	7
<hr/>		
Totals	175	411

TABLE 4. Steelhead Planting Summary 1983-84

Date	Strain	Release ^{1/} site	Average size (G)	Number released
1983				
July	Feather R.	Hatchery	0.3	74,738
1984				
January	Feather R.	Yuba City	112.0	44,515
March	Feather R.	Yuba City	186.0	41,570
March	Feather R.	Boyds Pump	149.0	33,425
April	Feather R.	Hatchery	149.0	251,250
April	Feather R.	Hatchery	0.2	159,181
June	Feather R.	Hatchery	0.6	107,452
Total				712,131

^{1/} All releases were made into the Feather River.

Appendix Table 1

Fork Lengths (to Nearest Centimeter) of Marked Chinook Salmon
Trapped at Feather River Hatchery, 1983-84

FL	AD		FL	AD	
	M	F		M	F
39	7	1	71	9	8
40	3		72	3	18
41	7		73	9	15
42	7		74	7	16
43	8		75	8	7
44	12		76	11	12
45	5		77	11	8
46	12		78	11	6
47	13		79	21	6
48	15		80	10	4
49	7		81	11	3
50	6		82	13	3
51	10		83	9	3
52	6		84	6	3
53	7		85	7	2
54	4	1	86	9	5
55	5	2	87	3	2
56	3		88	3	1
57	3	4	89	4	1
58	5	3	90	6	2
59	2	5	91	1	
60	4	7	92	4	
61	7	5	93		
62	8	9	94	1	
63	3	14	95	3	
64	5	6	96		
65	5	11	97	2	
66	7	7	98		
67	8	3	99	1	
68	8	8	100	1	
69	3	7	101	1	
70	11	15	102	1	
			Totals	402	233

APPENDIX TABLE 2. Feather River Salmon and Steelhead
Hatchery Weather, Water and Fish Data Report, 1983-84

July 1983	Temperature (C°)					Fish trapped					
	Air		Water		Weather	Chinook salmon				Steelhead	
	Maximum	Minimum	Maximum	Minimum		Fall run		Spring run		M	F
						Adults	Grilse	Adults	Grilse		
1	29.9	15.6	14.4	13.9	Cloudy						
2	22.2	16.7	13.9	13.3	Clear						
3	29.9	16.7	15.6	13.9	Clear						
4	27.2	15.6	15.0	14.4	Clear						
5	31.1	16.1	15.6	14.4	Clear						
6	36.7	16.7	15.0	13.9	Clear						
7	30.0	12.8	13.9	13.3	Pt. Cloudy						
8	26.7	16.7	14.4	13.3	Clear						
9	30.0	15.6	15.0	14.4	Clear						
10	31.1	16.7	16.1	15.0	Clear						
11	34.4	20.0	16.1	15.0	Clear						
12	39.4	17.8	15.0	14.4	Clear						
13	38.9	17.8	15.0	14.4	Clear						
14	40.0	16.7	15.0	14.4	Clear						
15	38.9	17.8	15.6	15.0	Clear						
16	35.6	15.6	15.6	14.4	Clear						
17	31.1	14.4	15.6	14.4	Clear						
18	27.8	15.6	15.0	13.9	Clear						
19	27.2	12.2	15.0	14.4	Clear						
20	31.1	12.8	15.0	14.4	Clear						
21	31.7	14.4	15.6	15.0	Clear						
22	32.2	13.3	15.6	15.0	Clear						
23	33.9	13.3	15.6	15.0	Clear						
24	33.9	16.7	16.1	15.0	Cloudy						
25	31.1	14.4	15.6	15.0	Clear						
26	32.2	14.4	16.1	15.0	Clear						
27	32.2	14.4	16.1	15.6	Clear						
28	33.3	12.2	16.1	15.6	Clear						
29	35.6	13.3.	16.1	15.6	Clear						
30	36.7	16.1	16.7	15.6	Clear						
31			16.7	15.6	Clear						

Appendix Table 2 (Continued)

August 1983	Temperature (C°)					Fish trapped					
	Air		Water		Weather	Chinook salmon				Steelhead	
	Maximum	Minimum	Maximum	Minimum		Fall run		Spring run		M	F
						Adults	Grilse	Adults	Grilse		
1	35.6	17.8	16.7	16.1	Clear						
2	36.7	17.2	16.7	16.1	Clear						
3	35.6	16.1	16.7	16.1	Clear						
4	35.6	13.9	16.1	16.1	Clear						
5	36.7	13.3	16.7	16.1	Clear						
6	40.0	22.2	17.2	16.7	Clear						
7	38.9	21.1	17.2	16.7	Clear						
8	32.2	17.8	17.2	16.1	Clear						
9	34.4	17.8	16.1	15.6	Clear						
10	33.9	17.8	15.6	14.4	Pt. Cloudy						
11	32.2	14.4	15.6	15.0	Clear						
12	35.6	16.7	16.1	15.0	Clear						
13	36.7	15.6	16.1	15.6	Clear						
14	37.8	18.3	16.1	15.0	Clear						
15	40.0	16.1	16.1	15.0	Clear						
16	38.9	22.2	16.1	15.6	Clear						
17	38.3	18.9	16.1	15.6	Clear						
18	37.2	16.7	15.6	14.4	Clear						
19	32.2	18.3	14.4	13.9	Cloudy						
20	31.1	7.8	14.4	13.9	Pt. Cloudy						
21	30.0	8.9	15.0	13.9	Rain						
22	30.6	15.6	14.4	13.9	Clear						
23	29.4	15.0	15.6	13.9	Clear						
24	30.0	13.9	15.6	15.0	Clear						
25	30.6	14.4	15.6	14.4	Clear						
26	30.6	12.8	15.6	15.0	Clear						
27	31.1	18.9	15.6	15.0	Pt. Cloudy						
28	31.1	18.9	15.6	15.0	Cloudy						
29	30.0	17.2.	15.6	14.4	Clear						
30	30.6	16.7	15.0	13.3	Clear						
31	31.1	13.9	13.9	13.3	Clear						

Appendix Table 2 (Continued)

Fish trapped													
September 1983	Temperature (C)					Chinook salmon						Steelhead	
	Air		Water		Weather	Fall run		Spring run		M	F		
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adults	Grilse				
1	25.6	16.1	13.3	12.8	Clear								
2	29.4	15.6	13.3	12.8	Clear								
3	31.1	15.6	13.3	12.2	Clear								
4	35.6	13.9	12.8	12.2	Clear								
5	31.1	20.0	12.8	12.2	Clear								
6	24.4	18.3	12.8	12.8	Clear								
7	31.7	20.0	12.2	12.2	Clear								
8	27.8	13.9	12.8	12.2	Clear								
9	29.4	16.7	12.8	12.2	Clear								
10	31.1	10.6	12.8	12.2	Clear								
11	34.4	14.4	12.2	12.2	Clear								
12	36.7	17.2	12.8	12.2	Clear								
13	38.3	18.9	12.8	12.2	Clear								
14	37.2	16.1	12.8	12.8	Clear								
15	37.8	15.6	12.8	12.2	Clear								
16	37.2	13.9	12.2	12.2	Clear								
17	33.9	13.3	12.8	12.2	Clear								
18	33.3	12.8	12.2	12.2	Clear								
19	32.2	14.4	12.8	12.2	Clear								
20	33.3	12.8	13.3	12.8	Clear								
21	27.8	14.4	12.8	11.7	Clear								
22	26.7	16.7	11.7	11.7	Rain								
23	33.9	10.6	11.7	11.1	Rain								
24	25.6	13.3	11.7	11.1	Clear								
25	25.6	13.3	12.2	11.7	Clear								
26	30.0	15.6	12.2	12.2	Clear								
27	28.9	15.0	12.2	12.2	Cloudy								
28	30.0	13.9	12.2	12.2									
29	27.2	13.3	12.2	11.7	Rain			1,640	72				
30	27.8	12.2	12.2	11.7	Clear								
Total								1,640	72				

Appendix Table 2 (Continued)

October 1983	Temperature (C°)					Fish trapped					
	Air		Water		Weather	Chinook salmon		Steelhead			
	Maximum	Minimum	Maximum	Minimum		Fall run	Spring run	M	F		
						Adults	Grilse			Adults	Grilse
1	27.2	12.2	11.7	11.7	Clear						
2	24.4	12.8	12.2	11.1	Clear						
3	30.3	12.8	12.2	11.1	Clear	537	62				
4	28.3	12.2	12.2	11.7	Clear						
5	28.3	14.4	12.2	11.7	Clear						
6	29.4	12.8	12.2	11.7	Clear	401	78				
7	28.9	13.9	12.2	11.7	Clear						
8	29.4	12.8	11.7	11.1	Clear						
9	26.1	15.6	11.7	11.1	Clear						
10	23.9	11.7	11.7	11.1	Clear						
11	26.7	9.4	11.1	11.1	Cloudy	528	119				
12	29.4	11.1	11.1	11.1	Clear						
13	27.8	11.1	11.7	11.1	Clear	282	96				
14	21.7	7.8	11.7	11.7	Clear	93	7				
15	23.9	7.8	12.2	11.7	Clear						
16	23.9	6.7	12.2	11.7	Clear						
17	22.8	10.0	12.2	11.1	Clear	572	234				
18	26.7	10.0	11.7	11.1	Clear						
19	22.2	10.0	11.7	11.1	Clear	111	25				
20	26.7	12.2	11.7	11.7	Clear	508	214				
21	26.7	11.1	12.2	11.7	Clear						
22	27.8	11.1	12.2	11.7	Clear						
23	24.4	14.4	12.2	11.7	Rain						
24	28.9	11.1	12.8	11.7	Clear	415	198				
25	28.9	11.7	12.2	11.7	Clear						
26	28.3	11.1	12.2	11.7	Clear						
27	28.9	11.1	12.2	11.7	Clear	325	112				
28	29.4	10.6	12.2	11.7	Clear	101	12			7	13
29	27.8	11.7	12.2	11.7	Rain						
30	23.9	14.4	11.7	11.7	Rain						
31			11.7	11.7	Rain	431	170			15	26
Total						4,304	1,327			22	39
Cumulative total						4,304	1,327	1,640	72	22	39

Appendix Table 2 (Continued)

November 1983	Temperature (C°)					Fish trapped					
	Air		Water		Weather	Chinook salmon				Steelhead	
	Maximum	Minimum	Maximum	Minimum		Fall run		Spring run		M	F
						Adults	Grilse	Adults	Grilse		
1	20.0	9.1	12.2	11.7	Cloudy						
2	21.7	11.1	12.2	11.7	Pt. Cloudy						
3	22.8	12.2	12.2	12.2	Cloudy	310	110			9	19
4	21.1	12.2	12.2	12.2	Pt. Cloudy						
5	20.0	14.4	12.2	11.7	Rain						
6	20.0	11.1	12.2	12.2	Cloudy						
7	22.2	5.0	12.2	12.2	Clear	270	63			7	14
8	14.1	2.8	12.2	11.7	Cloudy						
9	16.7	6.1	12.2	12.2	Rain						
10	20.0	8.9	12.2	12.2	Rain	341	56				
11	15.6	9.4	12.2	12.2	Rain						
12	18.3	10.0	12.2	12.2	Rain						
13	16.1	8.3	12.2	12.2	Rain						
14	13.3	5.6	12.2	11.7	Clear	410	45			51	60
15	17.8	5.6	12.2	11.7	Cloudy						
16	16.7	6.1	11.7	11.7	Rain						
17	15.6	11.7	11.7	11.7	Rain	112	8			30	22
18	15.6	6.7	13.3	11.7	Pt. Cloudy						
19	15.6	5.6	12.8	10.6	Rain						
20	15.6	5.6	10.6	10.6	Rain						
21	10.0	3.3	10.6	10.6	Clear	86	6			11	11
22	8.9	3.3	10.6	10.6	Rain						
23	14.4	1.7	10.6	10.6	Rain						
24	12.2	6.1	11.7	10.6	Rain						
25	12.8	3.8	12.2	11.7	Clear						
26	13.9	2.2	12.2	11.1	Clear						
27	16.1	2.2	11.1	10.6	Clear						
28	14.4	3.3	10.6	10.0	Clear	130	7			22	13
29	15.0	5.0	10.0	10.0	Clear						
30	15.6	5.6	10.0	10.0	Cloudy						
Total						1,659	295			130	139
Cumulative total						5,963	1,622	1,640	72	152	178

Appendix Table 2 (Continued)

December 1983	Temperature (C°)					Fish trapped					
	Air		Water		Weather	Chinook salmon				Steelhead	
	Maximum	Minimum	Maximum	Minimum		Fall run		Spring run		M	F
						Adults	Grilse	Adults	Grilse		
1	14.4	5.0	10.0	10.0	Cloudy						
2	13.9	5.6	10.0	9.4	Cloudy						
3	13.9	8.9	10.0	9.4	Rain						
4	10.6	3.3	10.0	9.4	Clear						
5	11.7	3.3	10.0	10.0	Cloudy	109	5			26	22
6	15.0	2.2	10.0	9.4	Rain						
7	11.7	7.2	10.0	9.4	Cloudy						
8	14.4	8.9	9.4	9.4	Rain						
9	15.6	9.4	9.4	8.9	Rain						
10	13.3	7.8	10.0	8.9	Rain						
11	13.9	7.2	10.6	9.4	Rain						
12	13.9	5.6	10.0	9.4	Cloudy					16	14
13	11.1	5.6	10.0	10.0	Cloudy						
14	11.1	10.0	10.0	8.9	Cloudy						
15	11.7	11.1	8.9	8.9	Cloudy						
16	11.1	10.6	8.9	8.9	Rain						
17	11.7	10.0	8.9	8.3	Fog						
18	15.6	8.9	8.9	8.9	Clear						
19	15.6	7.2	8.9	8.9	Cloudy					20	18
20	13.9	5.6	8.9	8.9	Clear						
21	12.2	1.1	8.9	8.9	Clear						
22	10.0	1.1	8.9	8.3	Cloudy						
23	8.3	0.6	9.4	8.9	Rain						
24	15.6	1.1	9.4	9.4	Rain						
25	14.4	3.9	9.4	9.4	Rain						
26	14.4	4.4	10.0	9.4							
27	14.4	8.3	10.0	10.0	Rain					54	49
28	11.7	2.8	10.0	10.0	Cloudy						
29	12.2	8.9	10.0	9.4	Cloudy						
30	12.2	8.3	9.4	9.4	Rain						
31	12.2	5.0	9.4	9.4	Fog						
Total						109	5			116	103
Cumulative total						6,072	1,627	1,640	72	268	281

Appendix Table 2 (Continued)

Fish trapped												
January 1984	Temperature (C)					Chinook salmon				Steelhead		
	Air		Water		Fall run		Spring run					
	Maximum	Minimum	Maximum	Minimum	Weather	Adults	Grilse	Adults	Grilse	M	F	
1	15.6	3.9	9.4	8.9	Clear							
2	15.6	2.2	8.9	8.3	Fog							
3	13.9	1.7	8.3	8.3	Fog					63	68	
4	14.4	2.2	8.3	8.3	Fog							
5	8.3	2.2	8.3	8.3	Fog							
6	6.4	4.4	8.3	7.8	Fog							
7	5.0	4.4	8.3	7.8	Fog							
8			7.8	7.8	Fog							
9	5.0	5.0	7.8	7.8	Fog							
10	5.0	5.0	7.8	7.8	Rain					11	41	
11	5.0	2.2	8.3	7.8	Clear							
12	17.2	2.2	8.3	8.3	Clear							
13	16.1	- 1.1	8.3	7.8	Clear							
14	16.7	1.1	8.3	7.8	Rain							
15	9.4	3.3	7.8	7.8	Clear							
16	11.7	2.8	7.8	7.8	Clear							
17	14.4	- 0.6	8.3	7.8	Clear					8	12	
18	14.4	1.1	8.3	7.8	Cloudy							
19	12.2	0.0	8.3	7.8	Clear							
20	14.4	0.0	7.8	7.8	Clear							
21	11.1	0.0	7.8	7.8	Clear							
22	15.6	3.3	7.8	7.8	Cloudy							
23	16.7	3.3	7.8	7.8	Clear					11	6	
24	17.8	4.4	7.8	7.8	Clear							
25			7.8	7.8	Clear							
26	21.1	1.7	7.8	7.8	Clear							
27	20.6	8.9	8.3	7.8	Clear							
28	20.0	5.0	8.3	8.3	Clear							
29	18.3	2.2	7.8	7.8	Clear					3	1	
30	18.3	2.2	7.8	7.8	Clear							
31			7.8	7.2	Clear							
Total											96	128
Cumulative total						6072	1627	1640	72	364	409	

Appendix Table 2 (Continued)

February 1984	Temperature (C°)					Chinook salmon				Fish trapped	
	Air		Water		Weather	Fall run		Spring run		Steelhead	
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adults	Grilse	M	F
1	21.7	3.3	7.8	7.8	Pt. Cloudy						
2	19.4	3.3	7.8	7.8	Clear						
3	16.1	2.2	7.8	7.8	Clear						
4	18.9	4.4	7.8	7.8	Clear						
5	20.0	4.4	7.8	7.8	Clear						
6	18.3	3.9	7.8	7.2	Clear					3	1
7	20.0	5.0	7.8	7.8	Pt. Cloudy						
8	21.1	4.4	7.8	7.8	Pt. Cloudy						
9	17.8	6.7	7.8	7.8	Rain						
10	14.4	1.1	7.8	7.8	Rain						
11	10.0	5.6	7.8	7.8	Rain						
12	11.1	6.1	7.8	7.8	Rain						
13			7.8	7.8	Rain						
14			7.8	7.2	Cloudy						
15	14.4	0.6	7.8	7.8	Rain						
16	14.4	5.0	7.8	7.8	Pt. Cloudy						
17	15.0	0.0	7.8	7.8	Pt. Cloudy						
18	15.6	2.8	7.8	7.8	Cloudy						
19	16.7	3.9	7.8	7.8	Cloudy						
20	19.4	4.4	7.8	7.8	Rain						
21	14.4	7.2	7.8	7.8	Pt. Cloudy						
22	15.6	6.7	7.8	7.2	Clear						
23	16.7	1.7	7.8	7.8	Cloudy						
24	13.3	5.0	7.8	7.8	Cloudy						
25	15.0	5.0	7.8	7.8	Clear						
26	15.6	5.0	7.8	7.8	Clear						
27	17.2	1.1	7.8	7.2	Clear					1	2
28	20.6	6.7	7.8	7.8	Cloudy						
29	19.4	3.9	7.8	7.8	Cloudy						
Total										4	3
Cumulative total						6,072	1,627	1,640	72	368	412

Appendix Table 2 (Continued)

						Fish trapped					
Temperature (C°)						Chinook salmon					
March 1984	Air		Water		Weather	Fall run		Spring run		Steelhead	
	Maximum	Minimum	Maximum	Minimum		Adults	Grilse	Adults	Grilse	M	F
1			7.8	7.2	Clear						
2			7.8	7.2	Clear						
3	21.1	5.0	7.8	7.2	Clear						
4	23.9	5.6	7.8	7.2	Clear						
5	23.9	6.1	7.8	7.2	Clear					1	2
6	23.9	8.3	7.8	7.2	Clear						
7	22.2	10.0	7.8	7.2	Clear						
8	23.9	10.0	7.8	7.8	Pt. Cloudy						
9	23.3	10.0	7.8	7.8	Cloudy						
10	23.9	7.2	7.8	7.2	Pt. Cloudy						
11	22.8	6.1	7.2	7.2	Cloudy						
12	21.1	8.9	7.8	7.2	Clear						
13	21.7	11.1	7.8	7.8	Rain						
14	16.1	10.6	7.8	7.2	Rain						
15	15.6	5.6	7.8	7.2	Pt. Cloudy						
16	16.7	5.6	7.8	7.8	Rain						
17	16.7	4.4	7.8	7.8	Clear						
18	16.7	4.4	7.8	7.8	Clear						
19	22.2	7.2	7.8	7.8	Clear						
20	28.3	10.0	7.8	7.2	Pt. Cloudy						
21	16.1	5.0	7.8	7.2	Clear						
22	19.4	3.9	7.8	5.6	Clear						
23	23.9	7.2	7.8	7.8	Cloudy						
24	24.4	7.2	7.8	7.8	Pt. Cloudy						
25	23.3	7.2	7.8	7.8	Clear						
26	22.2	8.3	7.8	7.8	Clear						
27	23.9	6.1	9.4	7.8	Clear						
28	23.3	8.3	10.6	9.4	Clear						
29	25.6	4.4	10.6	10.0	Clear						
30	26.1	4.4	11.1	10.6	Pt. Cloudy						
31			10.6	10.0	Rain						
<hr/>											
Total										1	2
Cumulative total						6,072	1,627	1,640	72	369	414

Appendix Table 2 (Continued)

April 1984	Temperature (C°)					Fish trapped					
	Air		Water		Weather	Chinook salmon				Steelhead M F	
	Maximum	Minimum	Maximum	Minimum		Fall run		Spring run			
						Adults	Grilse	Adults	Grilse		
1	12.8	3.9	10.0	10.0	Pt. Cloudy						
2	22.8	9.4	10.6	10.0	Clear						
3	20.0	6.7	10.6	10.0	Clear						
4	21.1	5.6	10.6	10.6	Cloudy						
5			10.6	10.0	Cloudy						
6			10.6	10.0	Cloudy						
7	21.1	5.6	10.6	10.6	Pt. Cloudy						
8	17.8	5.0	11.1	10.6	Rain						
9	17.8	5.0	11.1	10.6	Cloudy						
10	17.2	6.7	10.6	10.6	Rain						
11	17.2	3.3	10.6	9.4	Clear						
12	20.0	5.6	10.6	10.0	Pt. Cloudy						
13	20.0	6.1	11.1	10.6	Clear						
14	20.0	5.6	11.1	10.6	Clear						
15	21.1	6.1	11.7	11.1	Clear						
16	21.1	7.2	11.7	11.1	Pt. Cloudy						
17	27.2	8.3	11.7	11.1	Clear						
18	23.9	7.2	11.1	10.6	Rain						
19	23.3	5.0	10.6	10.6	Clear						
20	18.3	10.0	10.6	10.6	Clear						
21	19.4	6.1	11.1	10.6	Clear						
22	27.2	1.7	11.1	11.1	Clear						
23	28.3	11.7	12.2	11.7	Clear						
24	22.2	8.9	11.7	11.7	Clear						
25	21.1	4.4	12.2	11.7	Clear						
26	12.2	3.9	12.2	11.7	Clear						
27	16.7	6.7	12.2	12.2	Clear						
28	18.3	2.8	12.2	11.7	Clear						
29	23.3	2.2	12.2	11.7	Clear						
30	20.0	3.3	12.2	11.7	Cloudy						

Appendix Table 2 (Continued)

May 1984	Temperature (C°)					Fish trapped					
	Air		Water		Weather	Chinook salmon				Steelhead M F	
	Maximum	Minimum	Maximum	Minimum		Fall run		Spring run			
						Adults	Grilse	Adults	Grilse		
1	18.3	3.9	11.7	11.7	Rain						
2	16.1	2.8	11.7	10.6	Cloudy						
3	22.2	14.4	11.7	10.6	Pt. Cloudy						
4	22.2	12.8	11.7	11.1	Clear						
5	22.2	6.1	12.2	11.1	Clear						
6	21.1	5.0	11.7	11.7	Clear						
7	26.1	9.4	12.2	11.7	Clear						
8	26.7	7.8	12.8	12.2	Clear						
9	31.1	7.2	12.8	12.2	Clear						
10			12.8	12.2	Clear						
11	28.9	10.0	12.8	12.2	Clear						
12	30.0	13.9	12.8	12.2	Clear						
13	32.8	12.8	13.3	12.2	Clear						
14	32.2	13.3	13.3	12.2	Pt. Cloudy						
15	22.2	12.8	13.3	12.2	Pt. Cloudy						
16	16.7	13.3	12.8	12.8	Pt. Cloudy						
17	25.0	14.4	13.3	12.8	Clear						
18	29.4	13.3	13.3	12.8	Clear						
19	33.3	10.6	13.3	12.8	Clear						
20	32.8	11.7	13.3	12.8	Clear						
21	32.2	8.9	13.9	12.8	Clear						
22	35.0	9.4	13.9	13.3	Clear						
23	34.3	12.8	13.9	13.3	Clear						
24	33.3	12.2	13.9	13.3	Clear						
25	33.3	12.8	13.8	12.8	Clear						
26	37.8	20.0	13.9	13.3	Clear						
27			14.4	13.9	Clear						
28			14.4	13.9	Clear						
29			13.9	13.9	Clear						
30			14.4	13.9	Clear						
31			14.4	13.9	Clear						

Appendix Table 2 (Continued)

June 1984	Temperature (C°)					Fish trapped					
	Air		Water		Weather	Chinook salmon				Steelhead	
	Maximum	Minimum	Maximum	Minimum		Fall run		Spring run		M	F
						Adults	Gilse	Adults	Gilse		
1			14.4	13.3	Clear						
2	35.0	14.4	15.0	13.9							
3	31.7	13.9	15.0	13.9							
4	26.7	14.4	14.4	13.9	Rain						
5	18.9	12.2	13.9	13.3							
6	25.6	12.2	14.4	13.3	Rain						
7	27.2	10.0	14.4	12.8	Clear						
8	27.8	11.7	14.4	13.9	Clear						
9	31.1	11.7	14.4	14.4	Clear						
10			15.0	14.4	Clear						
11	31.1	11.7	15.0	14.4	Clear						
12	31.1	11.7	14.4	14.4	Clear						
13	25.6	11.7	14.4	14.4	Clear						
14	28.9	13.3	15.0	14.4	Cloudy						
15	25.6	16.7	15.0	14.4	Clear						
16	35.6	17.8	15.0	15.0	Clear						
17	35.0	18.9	15.0	15.0	Clear						
18	33.3	17.2	15.6	15.0	Clear						
19			15.6	15.0	Clear						
20	37.2	13.3	15.6	15.0	Clear						
21	30.0	13.3	15.6	15.0	Clear						
22	32.2	13.3	16.1	15.6	Clear						
23	33.3	14.4	15.6	15.0	Clear						
24	35.6	13.9	15.6	15.0	Clear						
25	37.8	16.7	16.1	15.6	Clear						
26	38.3	16.1	16.1	15.6	Clear						
27	37.8	17.8	16.7	16.1	Clear						
28	39.4	19.4	16.7	16.1	Clear						
29	38.3	14.4	16.1	15.6	Clear						
30	35.6	16.7	16.7	16.1	Clear						