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State of California The Resources Agency DEPARTMENT OF FISH AND GAME

ANNUAL REPORT FEATHER RIVER HATCHERY 1977-78

BY

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Anadromous Fisheries Branch

Administrative Report No. 82-35

1982

ANNUAL REPORT FEATHER RIVER HATCHERY, 1977-78-1/

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Donald L. Schlichting Region 2, Inland Fisheries

ABSTRACT

This report summarizes the operation of Feather River Hatchery from 1 July 1977 through 30 June 1978. Tables present temperature and weather data, numbers of chinook salmon, <u>Oncorhynchus tshawytscha</u>, and steelhead <u>Salmo gairdneri</u>, entering the hatchery, numbers of eggs taken and received, and numbers of fish released.

We trapped 9,130 chinook salmon and 131 steelhead and planted or transferred 6,394,648 chinook fingerlings, 815,601 chinook yearlings, and 221,700 steelhead yearlings. No steelhead were planted as fingerlings this year.

1/ Anadromous Fisheries Branch Administrative Report No. 82-35 Submitted June 1980.

INTRODUCTION

This report describes activities of Feather River Hatchery during its 11th year of operation, 1 July 1977 through 30 June 1978. The hatchery is located near the upper Thermalito bridge in Oroville, California; it was constructed by the California Department of Water Resources as part of the California Water Project to compensate for the 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 Feather River Hatchery trapped 9,130 chinook salmon, <u>Oncorhynchus tshawytscha</u>, and 131 steelhead, <u>Salmo gairdneri</u>, during the 1977-78 season Table 1). Approximately 23,019,619 salmon and 224,086 steelhead eggs were taken. We planted or transferred an estimated 6,672,311 Feather River strain salmon and 221,700 steelhead. An additional 3,518 chinook salmon were imported from the Sacramento River and yielded 6,366,428 eggs. We received 983,766 eggs from Sacramento River chinook from Coleman Hatchery and 260,610 Mad River strain steelhead eggs. We transferred 487,250 Sacramento River strain chinook salmon to the Mokelumne River facility and planted 50,688 fry in the Feather River.

MARKING PROGRAMS

Personnel from Anadromous Fisheries Branch marked 71,540 spring run chinook salmon of the 1976 brood year (BY) and 71,900 fall run chinook salmon from the 1976 BY, to compare returns of the two stocks. An additional 571,872 chinook salmon 1977 fall run BY were marked adipose clip (AD) and tagged with coded wire tags (CWT) to compare three planting sites; Port Chicago, Discovery Park, and Feather River.

CHINOOK SALMON MAINTENANCE PROGRAM

HISTORY OF THE 1977-78 RUNS

1977 BY Spring Run

The fish ladder was opened on 24 August 1977 to allow spring run chinook salmon to enter the hatchery. The ladder was closed on 30 August 1977 because of high temperatures in the Feather River caused by drought conditions. The 121 fish trapped were transferred to a converted sewer pond on Department of Water Resources property. The water feeding the sewer pond was drawn from the Oroville-Wyandotte irrigation ditch which drew water from a low level on the 'ake. This water was much cooler, 11° C, compared to the water in the river (about 19° C). The adults were moved back to the hatchery, when river temperatures had dropped, on 16 September 1977. The river was then 10° C. We lost only two fish during the operation. The fish ladder was reopened on 16 September 1977, and 73 more spring run adults entered the hatchery, bringing the total of the 1977 adult run to 194 fish: 78 males and 116 females. Hatchery personnel successfully spawned 95 females between 30 September 1977 and 31 October 1977, for a total of 593,286 eggs, or average of 6,245 eggs

An estimated 232,142 fingerlings were transferred to the ponds, for an average fertility rate of 39%. The poor fertility rate was due primarily to crowding and water temperature fluctuation during one point in the incubation in October, when temperatures rose briefly to almost 16° C. An estimated 218,272 fish remained on hand 30 June 1977. These were to be planted as yearlings the following season.

1977 BY Fall Run

The first fall run entered the hatchery on 1 October 1977 and the last entered on 5 December 1977. The season total was 8,787 fish. We spawned 3,982 females from 1 October through 5 December 1977, and took 22,086,963 eggs, for an average of 5,547 eggs per female. Fry production totaled 15,224,435, for an average fertility rate of 69%. The reason for the poor fertility rate was high water temperatures in October because the Department of Water Resources lost the ability to control river temperatures. It should be noted that on 10 September 1977 the Department of Water Resources opened a cone valve in the bottom of the Oroville Dam and dropped the river temperatures in mid September and early October to about 11° C. As the water in Oroville Reservoir lowered, temperatures tended to rise and reached as high as 16° C. in the last half of October 1977. We installed a recirculation system for the warm water that is taken from Thermalito Irrigation District annually. The recirculation system did not work too well and caused problems with gill bacteria. Gill bacteria losses and Infectious Hematopoietic Necrosis (IHN) losses combined, amounted to about 6,536,179. Between 8 February 1978 and 22 June 1978 we planted 2,605,232 fall run 1977 BY fry and transferred another 3,234,468 fall run 1977 BY fry to Coleman Hatchery. An estimated 2,848,556 fall run chinook salmon remained on hand on 30 June 1978.

1977 BY Fall Run Red Bluff

Because of high water temperatures on the upper Sacramento River in the fall of 1977, we received a total of 3,518 fall run adults from the Red Bluff Diversion Dam. Between 12 September 1977 and 4 October 1977 hatchery personnel successfully spawned 1,122 females and took a total of 6,366,428 eggs for an average of 5,674 eggs per female. We also received a total of 983,766 Sacramento River fall run eggs from Coleman Hatchery. We encountered the same problems with these eggs and fish that we did with the Feather River 1977 BY fall run crop. An additional reason for poor egg survival was the fact that the adult fish had to be transported in tank trucks from Red Bluff to Oroville. A total of 4,438,648 fish were put in the ponds, an average fertility rate of 69.7%. From the total of 4,438,648 fry that went to the ponds, 487,250 were transferred to Mokelumne River Installation, we planted an estimated 50,688, and about 856,390 remained on hand 30 June 1978.

1978 BY Late Fall Run

add Trend

The first late run fall run chinook salmon was received on 4 January 1978 and the last entered the hatchery on 24 February 1978. The season total was 149 fish. We successfully spawned 59 females and took a total of 339,370 eggs, for an average of 5,752 eggs per female. A total of 241,978 survived, for a total fertility rate of 71%. We shipped 17,010 to Mokelumne Hatchery and had 224,968 fish on hand 30 June 1978.

Species brood	Adults trapped or	Females	Eggs taken or	Fish pl or trans	sferred	Estimated number
year	received	spawned	received	fingerlings	yearlings	on hand
Chinook sa						
spring run 1976 BY		•	•	•	160.000	•
1977 BY	0 194	0 95	0 593,286	0 0	160,330 0	0 218,272
Chinook sa fall run	lmon					
1976 BY	0	0	0	0,	655,271	0
1977 BY	8,787	3,982	22,086,963	5,839,700 1		2,848,556
Chinook sa late fall	run			. /		
1978 BY	149	59	339,370	17,0101/	0	224,968
Chinook sa fall run Red Bluff 1977 BY	3,518	1,122	7,350,194.2/	537,938 4/	0	856,390
Steelhead summer run Nimbus 1977 BY	0	0	0	0	99,320	0
Steelhead Feather Ri 1977 BY 1978 BY	iver 131	_ 0 58	0 224,086	0 0	122,380 0	0 147,006
Steelhead Mad River 1978 BY	o	0	260,610	0	0	220,470

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TABLE 1. Feather River Hatchery Production Summary, 1977-78

a/ Includes 3,234,468 shipped to Coleman Hatchery. b/ Shipped to Mokelumne River Hatchery. c/ Includes 983,766 eggs received from Coleman Hatchery. d/ Includes 487,250 shipped to Mokelumne River Hatchery.

TABLE 2.	Chinook Salmon	Planting Summ	ary, K	her River	Hatchery, 1	1 977- 78

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Brood year	Race	Month of release	Average size (G)	Number released	Mark	Release site
1976	Spring run	Oct. 1977	49.7	50,660	•. •	Feather River at Boyds Pump
		Nov. 1977	56	24,180		Feather River at Boyds Pump
		Dec. 1977	74.6	38,700	AD & CWT	Feather River at Yuba City
		Jan. 1978	89.6	46,790	AD & CWT	Feather River at Yuba City
			Total	160,330		
1976	Fall run	Sept. 1977	37.3	25,650		Sacramento R. at Rio Vista
		Oct. 1977	63.9	145,540		Feather River at Yuba City
	•	Nov. 1977	63.9	303,950		Feather River at Yuba City
		Dec. 1977	85.1	57,000	AD & CWT	Feather River at Yuba City
		Dec. 1977	85.1	89,481		Feather River at Yuba City
		Jan. 1978	89.6	14,900	AD & CWT	Feather River at Yuba City
		Jan. 1978	89.6	18,750		Feather River at Yuba City
			Total	655,271		្រុំ
1977	Fall run	Feb. 1978	•33	217,600		Feather River at hatchery
		Apr. 1978	3.54	100,489		Sacramento R. at Rio Vista
		May 1978	3.7	744,240		Sacramento R. at Rio Vista
		June 1978	7.9	199,920	AD & CWT	Port Chicago
		June 1978	7.9	180,992	AD & CWT	Sacramento R. at Discovery Park
		June 1978	7.9	190,960	AD & CWT	Feather River at hatchery
		June 1978	7.7	150,500		Tiburon
		June 1978	7.2	820,540		Sacramento R. at Rio Vista
			Total	2,605,232		
1977	Fall run	Feb. 1978	.32	50,688		Feather River at hatchery
	Red Bluff	May 1978	6.6	93,800		Mokelumne Installation
		June 1978	6.3 Total	<u>393,450</u> 537,938		Mokelumne Installation

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RECOVERY OF MARKED CHINOOK SALMON

All chinook salmon entering the hatchery were examined for marks. We observed a total of 20 marked fish (Appendix Table 1).

CHINOOK SALMON PLANTING

We planted or transferred an estimated 6,394,648 fingerlings and 815,601 yearling chinook salmon this season (Tables 1 and 2).

STEELHEAD MAINTENANCE PROGRAM

HISTORY OF 1977-78 PRODUCTION

1978 BY

Steelhead were not counted or held until 19 December 1977. From 19 December 1977 through 2 March 1978, a total of 131 fish entered the hatchery. None was marked. We successfully spawned 58 females (Table 3) and took 224,086 eggs. An estimated 155,307 fry were transferred to the ponds, for a survival rate of 69%. No fish were planted this season. A total of 147,006 remained on hand 30 June 1978.

TABLE 3. Steelhead Spawning Data

	Fish spawned		Fish	spawned
Date	<u>M</u> <u>F</u>	Date	M	<u>F</u>
9 Jan. 1978	58	8 Feb. 1978	5	5
16 Jan. 1978	59	17 Feb. 1978	6	9
26 Jan. 1978	8 16	24 Feb. 1978	1	3
1 Feb. 1978	7 5	2 Mar. 1978	4	3

1978 BY Mad River

A total of 260,610 eyed eggs was received from Mad River Hatchery in March 1978. On 30 June 1978 we had 220,470 fish on hand.

1977 BY Summer Run Nimbus

As part of an on going attempt to establish a summer run in the Feather River, we planted a total of 99,320 yearlings in January and February 1978. (Table 4).

TABLE 4. Steelhead Planting Summary, 1977-78

Date	Average size (g)	Number released	Release site
Nimbus			
January	89	68,050	Sacramento River at Garcia Bend
February 1978	_ 63	31,270	Sacramento River at Garcia Bend
Feather	•		
January 1978	96	26,230	Feather River at Yuba City
February 1978	62	96,150	Feather River at Yuba City

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1977 BY Steelhead

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We planted an estimated 122,380 Feather River 1977 BY steelhead this season (Table 4).

VISITOR USE

During the 1977-78 fiscal year 87,706 people visited the installation.

Appendix Table 1

FL (inches)	AD M F	LV M F	RVLP M F	LVLP M F	RPLV M F
20 21 22 23	1		1 1		
23 24 25 26 27 28 29		1	1	2 2 1 1	
30 31 32	l			22 11	l
33	1				

Fork Lengths (to Nearest Inch) of Marked Chinook Salmon Trapped at Feather River Hatchery, 1977-78

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Appendix ble 2

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Feather River Salmon and Steelhead Hatchery Weather, Water, and Fish Data Report, 1977-78

								P	ish trapped	L	
		Temperatu	re (C*)	•				k salmon			Lhead
July	EA .	.r	Wat				run		ng run		
1977	Maximum	Minimum	Maximum	Minimum	Weather	Adults	Grilse	Adults	Grilse	M	F
•			16 7	16.1	(1) ee m						
1			16.7	16.1	Clear Clear						
č			17.2 16.7	16.1	Clear						
2 3 4			16.1		Clear						
4			16.7	15.6 15.6	Clear						
5 6			16.1		Clear						
0			14.4	13.3 13.3	Clear						
7 8			14.4	13.3	Clear		•				
0			13.9	12.8	Clear						
9 10			13.3	12.8	Clear						
11			13.3	12.8	Clear						
12			13.3	12.8	Clear						
13	33.0	13.5	15.0	13.3	Clear						
13 14	36.0	16.0	15.0	13.9	Clear						
15	40.0	20.0	15.0	13.9	Clear						
15 16	41.0	18.0	15.6	15.0	Clear						
17	39.0	15.5	16.1	15.6	Clear						
18	35.5	17.5	16.1	15.0	Clear						
19	34.0	15.0	15.6	15.6	Clear						
20	36.0	14.0	15.6	15.6	Clear						
21	16.0	13.5	16.1	15.6	Clear						
22	35.0	13.0	16.1	16.1	Clear						
	30.0	14.0	16.1	15.6	Clear						
23 24	29.0	12.0	15.6	15.6	Clear						
25	33.0	14.0	15.6	15.0	Clear						
26	36.0	15.0	15.0	13.9	Clear						
27	38.0	13.5	15.6	14.4	Clear						
28	37.0	17.0	15.6	13.9	Clear						
29	40.0	18.5	15.6	13.3	Clear						
30	42.5	14.5	16.1	15.0	Clear						
31	40.0	20.0	15.6	15.1	Clear						

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·			(••)			Fish trapped Chinook salmon ⁸	Steelhead
4		Temperator	LT V / Vater	PT		Spring run	
1 <i>9</i> 77	Maximum	Minimum	Naximum	Minimum	Weather	Grilse Adults Grilse	e, M
F	39.5	24.0	16.7	15.6	Clear		
1 01	38.5	18.0	• •	16.1	Clear		
(*	36.0		16.7	16.1	Clear		
)- 4	35.0	15.0	16.7	16.1	Clear		
. 1 0	30.0	15.0	16.7	16.1	Clear		
v,0	27.0	13.0	16.7	16.1			
	27.0	13.0	16.1	15.6	Clear		
.8	18.0	13.0	17.2	15.0	Clear		
6	34.0	14.0	16.7	15.6	Clear		
Ň	35.0	15.5	17.2	16.7	Clear		
H	36.5	16.5	17.2	16.7	Clear		
ន	36.0	15.0	17.2	16.7	Clear		
13	33.0	15.5		16.7	Clear		
1	33.0	0.41	17.8	16.7	Clear		
15	39.0	15.5	18.3	16.7	Clear		
16	37.0	17.0	1 8.3	17.3	Clear		
17	25.0	17.5	18.3	17.2	Clear		
18	34.0	15.5	17.8	17.2	Clear		
19	<u>3</u> 4.0	17.0	17. 8	17.2	Clear		
8	34.2	15.0	18.3	17.8	Clear		
ส	36.0	17.0	17.8	17.8	Clear		
82	38.5	17.0	18.9	17.2	Clear		
23 23	35.0	17.0	18.9	17.8 1	Clear		
24	33.0	16.0	18.9	17.8	Cloudy	ł	
5 2	26.0	0.71	18.3	17.2	Cloudy	20	
26	29.5	13.0	17.8	17.8	Cloudy	64	
27	36.0	18.0	18.9	17.8	Clear		
28	38.0	0.71	18.9	18.3	Clear		
2 9	37.5	15.5	20.0	18.9	Clear	-	
000	36.0	16.0	20.0	19.4	Clear	ε.	
31	35.0	13.5	20.0	19.4	Clear		
						101	
Total						TZT	
Cumulative	total					TZT	
					``		Ň

Appendix Table 2 (Continued)

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kiinaa	Steelhead		M																															
tinued)	Flsh trapped Chinook selmon	run Sprin	Adults Grilse Adults Grilse																			Ē										13	Iot	
Appendix Table (Continued)			Weather	Clear	Clear	Clear		Clear	Clear	Clear				Clear	Clear	Clear	Cloudy		Cloudy	Rain	Clear	Clear		Jeat	Clear	Clear	Clear	Clear	Rain.	Cloudy	Clear			
Appendix		ter	Minimum	20.0	20.0	0.00		19.4	19.4	18.3	19.4	19.4	19.4	4.01	17.2	13.3	11.7	9.0I		1.1	11.1	12.2	2.21			13.3	11.7	11.7	12.8	12.8	ז.ע			
	ure (C*)	Wa	Maximum	20.0	20.0	4.01 4.01	+ C	20.0	20.0	20.0	20.0	20.0	20.05	20.0	19.4	17.2	13.3	12.8	12.2	8.ਤੋ.	16.7	15.0	13.9				13.9	13.9	15.0	15.0	12.8			
	Temperature (C°		Minimum	0.41	13.5	16.0		21.0	19.0	17.0	14.0	13.0	12.5	14.0	15.5	0.LL	13.0	12.5	12.5	14.0	11.5	10.0	2.6		2.54	9 01	0.41	16.2	16.0	10.0	8.0			
		A	Maxtoum	31.5	33.0	36.0	0, 10	0.05	0.01	0.04	37.0	33.0	32.0 25	32.0	31.0	23.0	18.5	16.0	21.5	24.0	20.5	26.0	21.8			0.02	28.0	23.0	23.0	22.5	25.0		tatat	1022
		September	1977	Ч	Q	m -	t u			.8	6	10	ਸ	क्ष	13	14	ب تا ک	16	ΤŢ	18	19	80	เร	88	נא	1 K	50	27	28	29	30	Mata1		~ + + ~ ~ · · · · · · · · · · · · · · ·

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Appendix Table ? (Continued)

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Appendix Table 2 (Continued)

		Temperatu	re (C*)				Chinoo	Fi k salmon	sh trapped	Stee	lhead
October	L A	lr	Wat	er		Fall	run	Spri	ng run		
1977	Maximum	Minimum	Maximum	Minimum	Weather	Adults	Grilse	Adults	Grilse	M	F
_			10.0	30.0	A2		•				
1 2 3 4	28.2	11.8	13.9	10.0	Clear	13	1				
2	30.5	12.0	15.6	12.2	Clear						
3	32.0	14.0	15.6	12.8	Clear						
4	32.0	10.0	15.6	11.1	Clear						
5 6	26.0	11.0	11.7	10.6	Clear						
6	25.5	10.8	12.2	9.4	Clear		- 0				
7 8	27.0	9.0	12.8	11.1	Clear	392	18				
8	29.0	12.0	13.3	10.6	Clear						
9	30.5	10.0	13.9	11.1	Clear						
10	31.5	13.0	15.6	11.1	Clear						
11	32.0	15.0	15.1	15.0	Clear	195	30				
12	31.0	14.0	15.0	11.7	Clear						
13	32.0	12.0	11.7	10.6	Clear	294	46				
14	30.0	13.0	10.6	10.0	Clear						
15	29.3	10.5	10.6	10.6	Clear						
16	28.0	8.0	10.6	10.0	Clear						
17	18.0	16.0	12.8	9.4	Clear	45	10				
18	22.0	10.0	12.8	10.6	Clear	-					
19	25.0	8.5	11.1	10.0	Clear						
20	18.0	8.0	14.4	9.4	Clear						
21	25.0	9.8	14.4	10.6	Clear	1013	38				
22	19.0	11.0	14.4	10.6			3-				
	21.0	13.5	13.9	12.2							
23 24	26.0	13.0	12.2	11.7	Clear	608	75				
25	27.0	14.0	13.9	<u>11.7</u>	Clear						
25 26	-,		13.3	<u>n.7</u>	Cloudy						
27			12.8	10.6	Cloudy	848	81				
28			13.3	10.6	Clear	0.0					
29			13.3	12.2	Clear						
30			13.3	12.2	Clear						
31			13.9	<u>11.1</u>	Clear						
-											
Total				+		3408	299				
Cumulative t	otal			· • • • • • •		3408	299	192			

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Matter Fail r In Minimun Weather Mail radiu 11.1 Clear 1012 12.2 Clear 1012 11.7 Clear 1012 11.7 Clear 1012 11.7 Clear 1012 11.7 Clear 109 11.7 Clear 193 11.7 Clear 848 11.7 Clear 193 11.7 Clear 193 12.8 Clear 493 13.9 Clear 252 13.9 Clear 252 13.9 Clear 255 13.9 Clear 109 13.12.2 Clear 109			Temperature (C*)	re (C*)					Chinook salmén	Steelhead
All the second	November	A1	.r 111-11	Wat	er 11-1	Uaathau	Fall	אויי ו	5 B I	
20.5 14.4 11.1 Clear 10.2 68 150.5 14.4 11.1 Clear 10.2 68 150.5 15.0 10.0 13.3 11.1 Clear 10.2 68 150.5 15.0 10.0 13.3 11.1 Clear 846 44 150.0 17.0 13.3 11.1 Clear 846 44 150.0 17.0 13.3 11.1 Clear 846 44 150.0 13.9 12.2 Clear 846 44 46 22.0 5.5 14.4 13.3 Clear 252 57 14 20.0 9.0 14.4 13.9 Clear 252 27 46 8 20.0 9.0 14.4 13.9 Clear 252 14 13.9 Clear 252 25 <th>11/1</th> <th>AMETYON</th> <th>IMATHTA</th> <th>Instruct</th> <th>TONOTTATA</th> <th>19110 D24</th> <th>as Think</th> <th>DOTTIN</th> <th>1</th> <th></th>	11/1	AMETYON	IMATHTA	Instruct	TONOTTATA	19110 D24	as Think	DOTTIN	1	
20.5 16.0 14.4 12.2 Clear 15.0 17.0 13.3 11.7 Clear 19.5 17.0 13.3 11.7 Clear 19.5 17.0 13.3 11.7 Clear 19.5 17.0 13.3 11.7 Clear 18.0 17.0 13.3 11.7 Clear 22.0 5.0 14.4 13.9 12.8 Clear 22.0 5.0 14.4 13.9 12.8 Clear 493 22.0 9.0 14.4 13.9 Clear 292 29 22.0 9.5 14.4 13.9 Clear 292 29 20.0 9.0 14.4 13.9 Clear 292 29 22.0 5.5 14.4 13.9 Clear 49 40 22.0 14.4 13.9 Clear 292 25 29 22.0 13.9 13.9 Clear 293 20 20 20 20 20 20 20	Ч			14.4L	1.11	Clear	2101	68		
20.5 16.0 14.4 11.7 Clear 848 44 15.0 17.0 13.3 11.7 Clear 848 44 16.0 17.0 13.3 11.7 Clear 848 44 16.0 17.0 13.3 11.7 Clear 848 44 18.0 17.0 13.9 12.2 11.7 Clear 625 25 21.0 5.0 13.9 12.8 Clear 493 4 22.0 5.5 14.4 13.9 Clear 252 4 22.0 5.5 14.4 13.9 Clear 252 5 5 14 4 22.0 5.5 14.4 13.9 Clear 252 25 <t< td=""><td>0</td><td></td><td></td><td>14.4</td><td>12.2</td><td>Clear</td><td></td><td>1</td><td></td><td></td></t<>	0			14.4	12.2	Clear		1		
15.0 10.0 13.9 11.7 Clear 04.0 44 16.0 4.0 13.3 11.7 Clear 04.0 44 19.5 17.0 13.3 11.7 Clear 04.0 44 19.5 17.0 13.3 11.7 Clear 625 25 21.0 5.0 13.9 12.8 Clear 6.9 14 22.0 5.5 14.4 13.3 Clear 6.9 14 22.0 5.5 14.4 13.3 Clear 25.2 25 25 22.0 5.5 14.4 13.3 Clear 25.2 25 </td <td>m</td> <td>20.5</td> <td>16.0</td> <td>14.4</td> <td>11.7</td> <td>Clear</td> <td></td> <td>-</td> <td></td> <td></td>	m	20.5	16.0	14.4	11.7	Clear		-		
16.0 4.0 13.3 11.7 19.5 17.0 13.3 11.7 18.0 17.0 13.3 11.7 18.0 17.0 13.3 11.7 22.0 5.0 13.9 12.8 0 22.0 5.0 13.9 12.8 0 20.0 9.0 14.4 13.3 0 0 20.0 9.5 13.9 13.9 0 0 0 20.0 9.5 13.9 13.9 0). 4	15.0	10.0	13.9	11.7	Clear	848	77		
19.5 17.0 13.3 11.7 18.0 17.0 13.9 12.2 22.0 5.0 14.4 12.8 Clear 20.0 9.5 14.4 12.8 Clear 493 20.0 9.5 14.4 12.8 Clear 493 20.0 9.5 14.4 13.9 Clear 293 14 20.0 9.5 14.4 13.9 Clear 293 14 20.0 9.5 14.4 13.9 Clear 293 294 4 20.0 13.9 13.9 13.9 Clear 297 14 4 21.0 13.9 13.9 Clear 199 13.9 Clear 297 14 4 25.0 6.0 13.9 13.9 Clear 109 10 <	5	16.0	0.4	13.3	1.1					
18.0 17.0 13.9 12.8 625 23.0 55.0 13.9 12.8 625 25.0 13.9 12.8 625 25.0 13.9 12.8 625 25.0 13.9 12.8 62 25.2 25.2 25.2 25.2 14.4 13.3 610ear 25.2 14.4 13.9 610ear 15.6 15.6 15.6<	.'9	19.5	17.0	13.3	11.7					
21.0 5.0 13.9 12.8 Clear 493 14 22.0 5.5 14.4 13.3 Clear 493 14 22.0 5.5 14.4 13.3 Clear 292 14 22.0 5.5 14.4 13.3 Clear 292 14 22.0 5.5 14.4 13.9 Clear 292 14 22.5 6.0 14.4 13.9 Clear 292 14 22.5 6.0 14.4 13.9 Clear 297 14 22.5 6.0 14.4 13.9 Clear 297 14 13.9 23.5 13.9 13.9 13.9 Clear 597 14 13.9 26.0 14.0 13.9 13.9 Clear 109 10 10 27.0 13.9 13.9 13.9 Clear 109 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 <td>~</td> <td>18.0</td> <td>17.0</td> <td>13.9</td> <td>12.2</td> <td></td> <td>625</td> <td>25</td> <td></td> <td></td>	~	18.0	17.0	13.9	12.2		625	25		
22.0 5.5 14.4 12.8 Clear 493 20.0 9.0 14.4 13.3 Clear 252 20.0 9.5 13.9 13.3 Clear 252 20.0 9.5 13.9 13.3 Clear 252 20.0 9.5 14.4 13.9 Clear 252 20.0 9.5 14.4 13.9 Clear 252 20.5 5.5 14.4 13.9 Clear 252 21.0 5.5 14.4 13.9 Clear 257 22.5 5.0 13.9 13.9 Clear 257 25.0 8.0 13.9 13.9 Clear 264 25.0 8.0 13.9 Clear 264 8 26.0 13.9 13.9 Clear 264 8 27.0 14.0 13.9 13.9 Clear 264 8 12.0 13.9 13.9 Clear 264 8 10 12.0 13.9 13.9	œ	21.0	5.0	13.9	12.8	Clear	ł	•		
20.0 9.0 14.4 13.3 Clear 27.5 27.4 20.0 9.5 13.9 13.9 Clear 27.5 27.4 27.5 20.0 9.5 14.4 13.9 Clear 27.5 27.4 27.5 20.0 9.5 14.4 13.9 Clear 27.5 27.4 27.5 22.5 6.0 14.4 13.9 Clear 597 31.4 27.5 22.5 6.0 13.9 13.9 Clear 597 31.4 22.5 13.9 13.9 Clear 14.6 8 8 22.5 13.9 13.9 Clear 10.6 10.6 10.6 10.6 14.0 2.0 13.9 13.9 Clear 10.6	6	22.0	5.0	14.41	12.8	Clear	493	14		
20.0 9.5 13.9 13.3 Clear 22.5 6.0 14.4 13.9 13.3 Clear 22.5 6.0 14.4 13.9 13.3 Clear 597 31.4 22.5 6.0 14.4 13.9 Clear 597 31.4 22.5 6.0 14.4 13.9 Clear 597 31.4 25.0 8.0 13.9 13.9 Clear 464 8 14.6 8 10.9 25.0 13.9 13.9 13.9 13.9 13.9 Clear 464 8 10.9 10.9 10.9 10.6 10.9	, D	20.0	0.6	14.4	13.3	Clear	252	-1		
20.5 9.0 14.4 13.9 Clear 22.5 6.0 14.4 13.9 Clear 25.0 6.5 14.4 13.9 Clear 25.0 6.5 14.4 13.9 Clear 27.0 6.5 13.9 13.9 Clear 27.0 8.0 13.9 13.9 Clear 27.0 8.0 13.9 13.9 Clear 27.0 13.9 13.9 Clear 597 31 28.0 8.0 13.9 Clear 109 8 10 12.0 9.0 13.9 13.9 Clear 284 8 13.0 11.0 9.0 13.9 Clear 109 10 10 13.0 13.3 13.3 13.3 Clear 284 8 10 13.0 13.0 13.9 Clear 10 10 10 10 13.0 13.0 12.2 13.3 13.3 13.4 10.4 10 10 13.0 16	Π	20.0	9.5	13.9	13.3	Clear	•			
21.0 5.5 14.4 13.9 Clear 22.5 6.0 14.4 13.9 Clear 26.0 6.5 13.9 13.9 Clear 25.0 8.0 13.9 13.9 Clear 25.0 8.0 13.9 13.9 Clear 18.0 3.5 13.9 13.9 Clear 18.0 2.0 13.9 13.9 Clear 18.0 4.0 13.9 13.9 Clear 10.0 4.0 13.9 13.3 Clear 13.0 11.8 13.3 Clear 13.0 11.8 13.3 Clear 13.0 12.8 12.2 Clear 13.0 12.8 12.2 Clear 13.0 12.8 12.2 Clear 13.0 12.8 12.2 Clear 14.0 12.8 12.2 Clear 16.5 4.0 12.8 12.2 Clear 16.5 4.0 12.8 12.2 Clear 16.5 4.0 12.8 12.2 Clear 16.5 14.0 12.8 12.2 Clear 17.0 6.0 12.8 12.2 Clear 18.0 12.8 12.2 Clear 18.0 12.8 12.2 Clear 18.0 12.8 12.2 Clear 19.0 12.8 12.2 Clear 10.0 12.8 12.2 Cl	ା ମ	20.5	0.6	4.4	13.9	Clear				
22.5 6.0 14.4 13.9 Clear 597 31 25.0 6.5 13.9 13.9 Clear 597 31 25.0 6.0 14.4 13.9 Clear 597 31 25.0 6.0 13.9 13.9 Clear 597 31 26.0 6.5 13.9 13.9 Clear 109 10 18.0 13.9 13.9 Clear 284 8 10 12.0 9.0 13.9 13.3 Clear 284 8 10 13.0 11.6 13.3 13.3 Clear 28 10 <	13	21.0	5.5	4.41	13.9	Clear				
26.0 6.5 13.9 13.9 13.9 597 31 25.0 8.0 13.9 13.9 13.9 597 31 25.0 8.0 13.9 13.9 0 13.9 5 13.9 5 13.9 5 13.9 5 13.9 5 13.9 5 13.9 5 13.9 5 13.9 5 13.9 5 13.9 5 10.0 4,64 8 8 10.9 <td></td> <td>22.5</td> <td>0.0</td> <td>4.41</td> <td>13.9</td> <td>Clear</td> <td></td> <td></td> <td></td> <td></td>		22.5	0.0	4.41	13.9	Clear				
25.0 8.0 13.9 13.9 13.9 13.9 13.9 13.9 13.9 13.9	15	26.0	6.5	13.9	13.9	Clear	297	31		
18.0 3.5 13.9 13.9 13.9 14.0 2.0 13.9 13.9 14.0 109 10 12.0 8.0 13.9 13.9 13.9 13.9 13.9 109 10 109 10 109 10 109 10 109 10 10 109 10 109 10 109 10 109 10 109 10 109 10 109 10 109 10 109 10 109 10 109 10 10 10 109 10<	16	25.0	8.0	13.9	13.9	Clear	, ,			
14.0 2.0 13.9 13.9 13.9 13.9 10.0 12.0 8.0 13.9 13.9 13.9 13.9 10.0 10.0 4.0 13.9 13.9 13.9 13.9 10.0 10.0 9.0 13.9 13.3 Rain 284 8 10.0 9.0 13.3 13.3 Clear 28 8 10 113.0 111.8 13.3 13.3 Clear 28 8 10 17.0 5.5 13.3 12.8 Clear 10 ⁴ 8 10 18.5 9.0 12.8 Clear 10 ⁴ 10 10 10 18.5 9.0 12.8 12.2 Clear 10 ⁴ 2 10 17.0 6.0 12.8 12.2 Clear 10 ⁴ 2 10 16.5 4.0 12.8 12.2 Clear 10 ⁴ 2 10 ⁴ 16.5 4.0 12.8 12.2 Clear 10 ⁴ 10 ⁴ 10 ⁴	17	18.0	3.5	13.9	13.9	Clear	494	æ		
12.0 8.0 13.9 13.9 13.9 13.9 10.0 10.0 4.0 13.9 13.3 8min 284 8 10.0 9.0 13.3 13.3 13.3 8min 284 8 10.0 9.0 13.3 13.3 13.3 13.3 13.4 10.0 113.0 11.8 13.3 13.3 13.3 13.3 13.4 10.0 13.0 11.8 13.3 13.3 12.6 13.3 13.3 13.4 13.0 11.8 13.3 12.8 12.2 13.3 13.4 10.4 18.5 9.0 12.2 12.2 12.6 10.6 10.4 2 14.0 12.8 12.2 12.6 12.6 12.6 16.6 14.0 16.5 4.0 12.8 12.2 12.6 16.6 16.6 16.6 16.5 4.0 12.8 12.2 16.6 16.6 16.6 16.6 16.5 4.0 12.8 12.2 16.6 16.6	18	14°0	2.0	13.9	13.9	Clear	109	9		
10.0 4.0 13.9 13.3 Rain 284 8 10.0 9.0 13.3 13.3 Rain 284 8 13.0 11.8 13.3 13.3 Clear 284 8 13.0 11.8 13.3 13.3 Clear 284 8 13.0 11.8 13.3 13.3 Clear 284 8 17.0 5.5 13.3 12.8 Clear 104 2 18.5 9.0 12.8 12.2 Clear 104 2 21.0 6.0 12.8 12.2 Clear 104 2 17.0 6.0 12.8 12.2 Clear 14.0 12.8 12.2 19.0 12.8 12.2 Clear 104 2 14.0 14.0 12.8 12.2 Clear 14.0 12.8 12.2 14.0 12.8 12.2 Clear 14.0 12.4 14.0 14.0 12.8 12.2 Clear 14.0 14.0 <t< td=""><td>19</td><td>0.SI</td><td>8.0</td><td>13.9</td><td>13.9</td><td>Clear</td><td>•</td><td></td><td></td><td></td></t<>	19	0.SI	8.0	13.9	13.9	Clear	•			
10.0 9.0 13.3 13.3 Clear 284 8 13.0 11.8 13.3 13.3 Clear 284 8 17.0 5.5 13.3 13.3 Clear 200 12.8 13.3 13.3 Clear 17.0 5.5 13.3 12.8 Clear 21.0 6.0 12.8 12.2 Clear 21.0 6.0 12.8 12.2 Clear 21.0 6.0 12.8 12.2 Clear 114.0 4.0 12.8 12.2 Clear 114.0 4.0 12.8 12.2 Clear 114.0 12.8 12.2 Clear 12.8 12.2 Clear 114.0 12.8 12.2 Clear 12.8 12.2 12.8 12.8	20	10.0	0.4	13.9	13.3	Rain				
13.0 11.8 13.3 12.6 Clear 10.4 2 10.4 2 11.0 12.2 Clear 10.4 11.2 11.0 12.6 Clear 11.0 12.6 Clear 11.0 12.6 Clear 11.0 11.0 12.6 Clear 11.0 11.0 12.6 11.0	21	10.0	0.0	13.3	13.3	Clear	284	8		
17.0 5.5 13.3 12.8 Clear 10 ⁴ 2 18.5 9.0 12.8 Clear 10 ⁴ 2 18.0 4.0 12.2 Clear 10 ⁴ 2 21.0 6.0 12.2 Clear 10 ⁴ 2 17.0 6.0 12.2 Clear 10 ⁴ 2 19.0 6.0 12.8 12.2 Clear 10 ⁴ 2 19.0 6.0 12.8 12.2 Clear 10 ⁴ 10	22	13.0	11.8	13.3	13. 3	Clear				
18.5 9.0 12.8 12.2 Clear 18.0 4.0 12.8 12.2 Clear 21.0 6.0 12.8 12.2 Clear 17.0 6.0 12.8 12.2 Clear 19.0 6.0 12.8 12.2 Clear 19.0 4.0 12.8 12.2 Clear 14.0 4.0 12.8 12.2 Clear 14.0 12.8 12.2 Clear 14.0 2.12.8 12.2 Clear 14.0 2.12.8 12.2 Clear 214 20 2.1 2.3 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1	23	0.71	5.5	13.3	12.8	Clear	101	S		
18.0 4.0 12.2 12.2 Clear 21.0 6.0 12.8 12.2 Clear 17.0 6.0 12.8 12.2 Clear 19.0 6.0 12.8 12.2 Clear 16.5 4.0 12.8 12.2 Clear 14.0 4.0 12.8 12.2 Clear 14.0 4.0 12.8 12.2 Clear 14.0 2.4 12.8 12.2 Clear	24	18.5	0.6	12.8	12.2	Clear				
21.0 6.0 12.8 12.2 Clear 17.0 6.0 12.8 12.2 Clear 19.0 6.0 12.8 12.2 Clear 16.5 4.0 12.8 12.2 Clear 14.0 4.0 12.8 12.2 Clear 14.0 4.0 12.8 12.2 Clear	25 25	18.0	0.4	12.2	12.2	Clear				
17.0 6.0 12.8 12.2 Clear 19.0 6.0 12.8 12.2 Clear 16.5 4.0 12.8 12.2 Clear 14.0 4.0 12.8 12.2 Clear 14.0 4.0 12.8 12.2 Clear 4788 214	26	21.0	6.0	12.8 1	12.2	Clear				
19.0 6.0 12.8 12.2 Clear 16.5 4.0 12.8 12.2 Clear 14.0 4.0 12.8 12.2 Clear 4788 214	27	0.71	6.0	12,8	12.2	Clear				
16.5 4.0 12.8 12.2 Clear 14.0 4.0 12.8 12.2 Clear 4788 214	28	19.0	6.0	12.8	12.2	Clear				
14.0 4.0 12.8 12.2 Clear 4788 214	29	16.5	0. 4	12.8	12.2	Clear				
4788 214 -+1 +2+21 	<u>So</u>	14.0	0.4	12.8	12.2	Clear				
	Tota						KH44	211		
		1.1.1								

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Appendix Table (Continued)

		_ .					<i>.</i>		rapped:		
-		Temperatu	ire (C ⁻)			12-33	Chinook s			Stee	lhead
December 1977	Ai Maximum	Minimum	Wat Maximum	Minimum	Weather	Fall Adults	Grilse		drilse	М	F
<u> 1711</u>	PAAThum	FILLIL MULL	MOALINUM	57441440400	"COULCE			THICL OF			
1	14.0	5.5	12.8	12.2	Clear						
2 3 4 5 6 7 8 9 10	10.0	7.0	12.2	12.2	Clear						
3	9.0	7.0	12.2	12.2	Clear						
<u> </u>	11.0	9.5	12.2	12.2							
5	12.5	9.0	12.2	12.2	Foggy	78					
6	11.0	9.5	12.2	12.2	Foggy						
7			12.2	12.2	Foggy						
ė			12.2	12.2	Foggy						
9			12.2	11.7	Clear						
10			11.7	11.7	Clear						
11			11.7	11.7	Clear						
12			11.7	11.i	Clear						
13	13.0	6.0	11.1	11.1	Clear						
14	12.9	1.5	11.1	11.1	Rain						
15	-	-	11.1	11.1	Clear						
16	15.0	9.0	11.1	11.1	Rain						
17	11.5	9.5	11.1	11.1							
18	12.0	11.9	11.1	10.6							
19	17.0	6.9	10.6	10.6	Clear					9	7
20	·	•	10.6	10.0	Clear					-	
21			10.0	9.4	Rain						
22			10.0	9.4	Rain						
23			9.4	9.4	Clear					15	7
24			10.0	9.4	Clear				•		·
22 23 24 25 26			10.0	10.0							
26			10.0	10.0							
27			10.0	10.0	Rain	. '					
27 28			10.0	10.0	Rain						
29			10.0	9.4	Cloudy					9	7
30			10.0	9.4	Clear					-	•
31			10.0	10.0							
Total						78	·····	•		33	21
Cumulative	total					8274	513	194		33	21

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6	Steelhead		64, W									5					57 57		2							5		4							20	
	Fish trapped salmon	륀	Adults Grilse																																101	
	F1. Chimook salmon	1~1	Gr11se				-1																											F	514	
ntinued)		Late fail	Adulta				97																		ſ	62	·							76	8350	
Appendix Table & (Continued)			Weather	Rain	Rain	Rain	Rein	Rain	Rain	Clear	Rain	Rain	Clear	Rain	Kain	RAID Dolo	Rain Poto		ne.u Refn	Rain	Cloudy	Clear	Clear	Clear	Clear	Clear	Clear	Fog	Pog	Bog	Fog	Pt. Cloudy	Cloudy			
Append1		.er	Minimu	4.0	4.0	4.6	4.6	8.3	7.8	7.8	7.8	ۍ. د		5 0	0 0 0 0	, ,	, a 0 a				4.6	10.01	10.0	10.0	10.0	4.6	4.6	8.9	8.9 6.9	6. 0	6 ,9	6. 8	8.9			
	are (C*)	Wat	Maximum	0.01	4.0	4. 0	4.0	4.6	8. 3	7.8	8.3 .3	0 .0	6 .0	6,0 6,0	0 2-1	2 (4 -	*				10.01	10.0	10.0I	10.0	10.0	0.0L	† .0	4.6	8.0 0.0	0.0	0,0	8.0 0.0	6.9			
	Temperature (C*)		Miniaum					0.11	6.0	0.0	0.1	6.0	9.5	0.11										-	4. v	4. 2.	0.4	0.4	5.	0 I	4, V	0.9 9	6.0			
			Maximum					14.0	15.0	14.0	15.0	0.51	15.0	13.0										I	0. 6	14.0	12.0	0.41	13.0	14.0	0.7	6.5	7.0		total	
(Line		January	1978	ſ	Q	m	4	5	9	6 0	œ	σ	91	3	4:	51		27	25	18	10	20	21	2	5 3	54	52	26	27	50	53	8	31	Total	ative	

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Appendix Table 2 (Continued)

Appendix Table 2 (Continued)

		Temperatures	res (C*)			Chin	F Chinook salmon	Fish trapped n		Steelhead
February	FV	Air	Wat	er		Late fall run		ng run		
1978	Maximum	Minimum	Maximum	Minimum	Weather	Adults Grilse	Adu	Grilse	×	ſs.
Г	0.6	8.0	8.9	8.9		23			4	7
	15.0	6.0	8.9	8.9		•				•
ŝ	15.0	6.5	8.3 .3							
4	12.0	9.5	8. 9	8.3						
ŝ			8.3	8.3						•
oر.	0.41	0.11	8.9	8.3	Rain					
2	14.0	6.5	8.9	8.3	Rain					
8	12.5	8.5	8.9	8.9	Rain	Ś				Ч
6	13.0	4.5	8.9	8.9	Clear					•
01	10.0	0.4	8.9	8.9	Clear					•
Ħ	12.5	6.0	8.9	8.3	Clear					
ឌ	8.0	7.0	8.3	8. <u>3</u>	Rain					
13	0'TT	3.0	8.3	8.3	Cloudy					
14	12.5	5.0	8 . 3	8 . 3	Clear					
1 5	13.5	6.0	8.9	8.3	Clear					
1 6	10.0	5.0	8.3	8. 3	Cloudy					
77 71	0.11	6.0	8 . 3	8. 3	Cloudy	23				01
18	21.5	6 •0	8.9	8.3 .3	Clear					
19	17.5	6.5	8.9	8. 3	Clear					
S	16.0	7.0	8.9	8. 3	Clear					
21	20.0	7.0	8.9	8.9	Clear					
82	23.0	10.0	8.9	8. 9	Clear					
23	14.5	10.0	8.9	8.9	Clear					
54	13.5	10.0	4.0	8.9	Clear	ដ			~	
5 2	16.0	6.0	9.4	6.8						
26	15.6		10.0	4.6						
27	16.0	10.0	10.0	4.6						
28	0.41	10.0	4.6	8.9						
Potal						64	•		ſ	- 01
Virmin at the tate	10404						101		, L	
BA TABTNENO	1000						×~-		5	3

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Appendix Table (Continued)

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d Steelhead	۹ ۲			CJ CJ																				•									2	69 69
Fish trapped Chinook salmon	Fall run Spring run Adulte Aniles Adulte Aniles	STININ BOTTIN																				-												B422 514 194
	Uaathan	JOHADOM	Cloudy	Rain	Clear			Clear	Clear	Rain	Clear	Clear	Rain	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Clear	Rain	Rain	Cloudy	Cloudy	Clear	Clear	Clear	Clear	Clear	Clear	Rain		
	er Mintenn	INTERNE	8.9	4.6	8.9	8. 9	8.3	8.3	8.3	8.9	8.9	8. 9	8.9	8. 9	4.6	8.9	8.9	8. 3	8. 9	8.9	8.9	8.9	4.0	4.6	ۍ م م		4.6	4.6	10.0	10.0	9. 4	10.0		
re (C*)	Water Kevinn Wi	MULL AND	4.6	4.0	4.6	4.6	10.0	8.3	8.9	8.9	8.9	8. 9	8.9 0	4.0	4.6	4.6	8.9	8. 9	8.9	4.6	† •6	4.6	10.0	10.0	10.0 a	0.01	0.01	10.6	10. 6	10.6	10.0	0.01		
Temperature (C*	AIr Minimu	UNDITIT'S	10.0	10.0	0.11	7.0	0.6	12.5	6.5	10.0	12.0	9.5	0.01	6.0	0.0	10.0	7.0	10.0	4 2	6.0		13.0	0.11	0.st	0,0	10.5	10.01	10.5	र.म र	₽.5				
	A Movimin	INGT YOU	11.5	17.0	15.0	15.5	17.0	18. 5	20.0	18.0	25.0	21.0	25.0	15.0	15.0	0.41	18.0	18.0	14.5	14.5		19.0	13.0	18.0	18.0	23.0	23.0	25.5	24.0	24.0				total
	March 1 c78	1210	ч	ଷ	ന	4	ŝ	. ' 0.	7	8	6	5	ส	ង	13	74	15	16	17	18	19	20	21	8	53	25	50	27	28	29	30	31		Cumulative

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		-	(I	Mish trappe	
A		Temperatu	$\frac{\operatorname{tre}\left(U^{2}\right)}{\operatorname{tre}\left(U^{2}\right)}$					k salmor		Steelhead
April	A			er		Fall			ng run	
1978	Maximum	Minimum	Maximum	Minimum	Weather	Adults	Grilse	Adults	Grilse	·····
1			10.0	9.4	Rain					
2			10.0	9.4						
2 3 4			10.0	10.0	Clear					
4			10.0	9.4	Rain					
5	27.5	4.5	10.0	9.4	Clear					
6		-	10.0	10.0	Rain					
7			10.0	10.0	Clear					
5 6 7 8 9 10			10.6	10.0	Clear					
9			11.1	10.6	Clear					
10			11.1	10.6	Clear					
ш			11.1	11.1	Clear					
12 13 14 15 16	26.0	5.0	11.1	10.6	Clear					
13			11.1	10.6	Cloudy					
14			10.6	10.0	Cloudy					
15			10.0	10.0	Rain					
16			10.0	10.0						
17 18			10.6	10.0	Clear					
18			11.1	10.6	Clear					
19	26.5	4.5	11.1	11.1	Rain					
20			11.1	10.6	Rain					
21			10.6	9.4	Clear					
22			11.1	10.6						
23			11.7	11.1	Clear					
24			11.7	11.1	Rain					
25 26			11.1	10.6	Rain					
20	28.0	4.0	11.1	10.6	Clear					
27			11.1	11.1	Clear					
28			11.7	11.1	Clear	·				
29			11.7	11.1	Clear					
30			11.7	11.1	Rain					

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lum	Steelhead M F	
itinued)	Fish trapped Chinook salmon Fall run Spring run Adults Grilse Adults Grilse	
Appendix Table (Continued)	Veather	Clear Clear
Appendix	ser Mintaum	๚๚๚๚๚๚๚๚๚๚๚๚๚๚๚๚๚๚๚๚๚๚๚๚๚๚๚๚ ๚๚๚๚๚๚๚๚๚
	Temperature (C°) r Vater Minimum Maximum M	๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛
	Temperat Air Minimum	6.5 4.0 8.0
v	A3 Max1mum	28.5 36.0 35.0
(Lines	May 1978	ィ <i>ぁぁ</i> ょってのっぷれぷぷれぷぷいぷぷぷぷぷぷぷぷぷぷぷぷぷ

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								F	ish trapped	1	•
		Temperatu	ire (C*)					k salmon		Stee	lhead
June		lr	Wat			Fall			ng run		
1978	Maximum	Miniaum	Maximum	Minimum	Weather	Adults	Grilse	Adults	Grilse	<u> </u>	F
1			15.0	13.9	Clear						
2			13.9	13.3	Clear						
3			13.9	13.9	Clear						
Ĩ,			14.4	13.3	Clear						
5			15.0	13.9	Clear						
6			14.4	14.4	Clear						
7	36.0	12.0	14.4	13.9	Clear						
1 2 3 4 5 6 7 8	-		14.4	13.3	Clear						
9			13.9	13.9	Clear						
10			13.9	13.3	Clear						
11			13.9 14.4	13.3	Clear						
12			13.9	12.8	Clear						
13 14			14.4	13.3	Clear						
14	28.5		14.4	13.9	Clear						
15 16	26.0	13.5	14.4	13.9	Clear						
16	26.0	13.5	14.4	13.9	Clear						
17	26.0	13.5	14.4	13.9	Cloudy						
18	28.0	12.0	14.4	13.9	Clear						
19	28.0	15.0	14.4	13.9 14.4	Clear						
20	27.0	13.0	14.4	14.4	Clear						
21	27.0	16.0	15.0	14.4	Clear						
22	28.0	13.0	15.0	14.4	Clear						
23 24	28.5	12.0	14.4	13.9	Clear						
24	32.0	14.0	14.4	13.9							
25 26	29.0	11.0	15.0	14.4							
	28.0	15.0	15.0	13.9	Clear						
27	30.5	12.0	15.0	14.4	Clear						
28	26.0	13.0	15.0	14.4	Clear						
29	29.0	14.0	15.0	15.0	Clear						
30	29.0	13.0	15.6	15.0	Clear						

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