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Department of Fish and Game

ANNUAL REPORT
FEATHER RIVER SALMON AND STEELHEAD HATCHERY
FIFTH YEAR OF OPERATION 1971-72

by

Donald Schlichting
Region 2, Inland Fisheries

Anadromous Fisheries Branch
Administrative Report No. 73-11
July 1973

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ABSTRACT

This report describes the hatchery's ^{SCIA}ninth year of operation, July 1, 1971 to June 30, 1972. Tables present numbers of salmon and steelhead received, and eggs and fish produced. The appendix presents daily weather, water temperature, and fish trapping data for the fiscal year.

^{1/} Anadromous Fisheries Branch Administrative Report No. 73-11
July 1972

^{2/} Region 2, Inland Fisheries

INTRODUCTION

This is the ninth annual report of the Feather River Hatchery. It summarizes the activities from July 1, 1971 to June 30, 1972.

The hatchery is located near the upper Thermalito Bridge in Oroville, California, and was constructed by the California 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.

KING SALMON MAINTENANCE PROGRAM

Spring Run

The fish ladder was opened August 30, 1971, to allow spring-run king salmon to enter the hatchery. The total spring run, 484 fish, entered the hatchery the first two days, 454 on August 30, and 30 on August 31.

The spring-run adults were not handled or sexed until October 6. After sorting the fish we had 212 females; of these we successfully spawned 211 fish, yielding a total of 1,164,800 eggs. This was an average of 5.520 eggs per female.

Transferred to the ponds were 1,089,950 fish for a 93.6% hatch. Losses to Sacramento River Chinook Disease and gill bacteria were high and 32,000 were planted on March 6, 1972, at 800/lb in the Feather River. There were only 324,465 on hand at this time.

Fall Run (Feather River)

The first fall-run king salmon entered the hatchery on September 22, 1971. The last was received on December 31, 1971. The season total was 3,539 fish. A total of 1,420 females was spawned this season and 8,114,400 eggs were taken, averaging 5,714 eggs per female. Fry production amounted to 7,877,600, for a 97.1% hatch.

Due to a severe outbreak of gill bacteria and SRCD during the months of February, March and April, 5,069,160 fall-run king salmon fry were lost. A total of 1,435,350 fish were released in the Feather and Sacramento Rivers from January through June, 1972 (Appendix Table 1). Size at release ranged from 1,064 to 84.4/lb. A total of 1,373,090 were on hand June 30, 1972.

Fall Run (Nimbus)

We received 2,398,130 eyed eggs from Nimbus Hatchery between December 1, 1971 and February 29, 1972. Losses of resulting fingerlings due to a severe outbreak of virus and gill bacteria amounted to 1,150,730. The balance of 1,367,400 fish were planted from March 6 to June 22, 1972 (Appendix Table 1).

Spawning Channel

On July 1, 1971, there were still some 1970 brood year juvenile king salmon left in the spawning channel. These were progeny of adults placed in the channel in the fall of 1970. On July 29, the channel was seined, and these fish were forced out. They were not enumerated.

No adult salmon were placed in the spawning channel in the fall of 1971. We were putting in new plumbing at the time and the channel was unuseable.

A total of 400,000 artificially-produced king salmon fingerlings were planted in the channel on July 30, 1971 (Appendix Table 1). They averaged 200/lb when planted. They were allowed to migrate from the spawning channel at will. They were not enumerated as they left the channel.

KING SALMON MARKING PROGRAM

Three groups of marked 1970 brood year king salmon were released this year. The purpose was to compare hatchery return rates for November versus February releases, and to compare fishery contribution rates of hatchery released versus fish released at Rio Vista. A total of 179,540 marked king salmon was released as follows:

Date of release	Area released	Size at release	Number released	Mark
November 23, 1971	Feather River at Vance Avenue	7/lb	60,200	RP
February 3-10, 1972	Feather River at Vance Avenue	6/lb	49,820	An-LP and coded wire tag
February 1-2, 1972	Sacramento River at Rio Vista	6/lb	59,520	An-LP and coded wire tag
TOTAL			179,540	

Recovery of Marked King Salmon

All king salmon were examined for marks as they were sorted during spawning operations. All marked fish were measured to the nearest $\frac{1}{4}$ inch FL. A total of 371 marked fish, bearing 12 different combinations of fin clips, was observed. When it was possible we determined the brood year of the marked fish by their lengths. A total of 300 were determined to be Feather River Hatchery-reared fish. The rest presumably are strays (Appendix Tables 3 & 4).

STEELHEAD MAINTENANCE PROGRAM

Steelhead were not counted or held until December 25, 1971. Beginning December 25, 1971, all steelhead trapped were counted and examined for marks. The last steelhead entered the trap March 3, 1972. The total run from December 25 to March 3, was 288 fish: 160 males and 128 females.

We observed a total of 106 marked steelhead, bearing 13 different marks. No marked steelhead were measured, hence it was possible to determine brood year in most cases. Thirty-seven of the marked fish were Coleman Hatchery fish; and 11 were from Nimbus Hatchery. We could not determine the origin of the rest (Appendix Table 5).

Wild Steelhead (1972 BY)

A total of 98 wild steelhead females were spawned, for a total of 305,680 eggs. We went out to the ponds with 281,751 fry, for an egg-to-fry survival rate of 92.1%. We had an estimated 233,800 on hand June 30, 1972. All are being held to be released as yearlings.

Domestic Steelhead Spawning (1972 BY)

We took 1,988,400 eggs from 711 domestic steelhead females. We transferred 1,791,493 fry to the ponds, for an egg-to-fry survival rate of 90%. We had 1,300,253 on hand June 30, 1972.

After spawning we released 600 surplus domestic broodstock fish in the Feather River (Table 2). On June 30, 1972, we had 4,670 domestic broodstock fish on hand: 1,675 1967-1970 brood year fish, and 2,945 1971 brood year fish. All will be held to assure a steelhead egg supply for the following season.

Planting 1971 Brood Year Steelhead

A total of 1,057,750 1971 brood year steelhead were planted in the Feather River from August, 1971, through April, 1972. Size at release ranged from 125/lb to 7/lb. Most of these (973,050) were progeny of hatchery broodstock. Only 84,700 were progeny of wild stock entering the hatchery in 1971 (Appendix Table 2).

STEELHEAD MARKING PROGRAM

In the fall of 1971 30,400 steelhead from domestic broodstock were marked Ad LV RP and released in the Feather River. During the same period, 34,450 wild steelhead were marked Ad RV LP and released in the same area. The purpose of the program was to determine the return ratio of "wild" versus domestic strains of steelhead.

VISITOR USE

A total of 111,862 people visited Feather River Hatchery during the 1971-72 fiscal year. Among this number were various tour groups which were given a tour of the hatchery facilities by Fish and Game and Department of Water Resources employees.

SUMMARY

The fish ladder was opened on August 30, 1971. The first day, 454 spring-run king salmon (Oncorhynchus tshawytscha) entered the hatchery. On August 31, 1971, 30 more salmon entered the hatchery. These were considered spring-run fish. No more salmon entered the hatchery until September 22, 1971, when the fall run began. The last fall-run salmon was trapped December 31, 1971

The first steelhead trout (Salmo gairdnerii gairdnerii), entered the hatchery on December 25, 1971 and the last on March 1, 1972.

Several marking programs with king salmon to evaluate planting sites, times of release, and size at release and with steelhead to evaluate wild versus domestic fish were implemented this fiscal year.

Production data for fiscal year 1971-72 are presented in the following table:

Production Data, Feather River Hatchery, 1971-72 Season

		Fish trapped				Females spawned	Eggs taken or received	Fish planted		On hand June 30, 1972
		Grilse	Adult male	Adult female	Total			Fingerlings	Yearlings	
Spring run	1970 BY								233,000	0
king salmon	1971 BY	0	272	212	484	211	1,164,800	32,000	0	324,465
Fall run	1970 BY								1,715,790	0
king salmon	1971 BY	1,171	897	1,471	3,539	1,420	10,512,530*	2,802,750**	0	1,373,090
Wild	1971 BY							0	84,700	0
steelhead	1972 BY	0	160	128	288	98	305,680	0	0	233,800
Domestic	1971 BY							500,000	473,050	0
steelhead	1972 BY					711	1,988,400	0	0	1,300,253

* Includes 2,398,130 eyed eggs received from Nimbus Hatchery.

** Includes 1,367,400 fish from eggs shipped from Nimbus Hatchery.

APPENDIX

Table 1	King Salmon Planting Data 1971-72.
Table 2	Steelhead Planting Data 1971-72.
Table 3	Marked King Salmon Recovered at Feather River Hatchery, 1971-72 Season.
Table 4	Lengths of Marked King Salmon Recovered at Feather River Hatchery, 1971-72 Season.
Table 5	Marked Steelhead Recovered at Feather River Hatchery, 1971-72 Season.
Table 6-17	Feather River Salmon and Steelhead Hatchery, Weather, Water, and Fish Data, July, 1971 through June, 1972.

Appendix Table 1

King Salmon Planting Data 1971-72

Date	Area	Number	Size	Mark
<u>Fall Run, 1970 Brood Year</u>				
July 6-13, 1971	Sacramento River at Miller Park	245,000	35/lb	
July 30, 1971	Spawning Channel	400,000	200/lb	
October 21-28, 1971	Feather River	78,750	9/lb	
November 3, 1971	Feather River	60,200	7/lb	RP
November 5-24, 1971	Feather River	309,250	7/lb	
December 13-15, 1971	Feather River	103,250	7/lb	
February 1-2, 1972	Feather River	59,520	6/lb	AnLP+CWT
February 3-10, 1972	Sacramento River at Rio Vista	59,820	6/lb	AnLP+CWT
TOTAL		<u>1,315,790</u>		
<u>Spring Run, 1970 Brood Year</u>				
November 5-30, 1971	Feather River	20,200	7.6/lb	
December 15-20, 1971	Feather River	212,800	7/lb	
TOTAL		<u>233,000</u>		
<u>Fall Run, 1971 Brood Year (Feather River Stock)</u>				
January 3- March 21, 1972	Feather River	631,000	1,064/lb	
May 26-31, 1972	Feather River	150,150	53.6/lb	
June, 1972	Sacramento River at Rio Vista	<u>654,200</u>	84.4/lb	
TOTAL		1,435,350		
<u>Fall Run, 1971 Brood Year (Nimbus Stock)</u>				
March 6, 1972	Feather River	120,000	1,200/lb	
March 6, 1972	Feather River	108,000	1,200/lb	
June 16-22, 1972	Feather River	1,139,400*	235.7/lb	
TOTAL		<u>1,367,400</u>		
<u>Spring Run, 1971 Brood Year</u>				
March 6, 1972	Feather River	32,000	800/lb	
TOTAL		<u>32,000</u>		
GRAND TOTAL		<u>4,383,450</u>		

* Fish from eggs received from Nimbus Hatchery.

Appendix Table 2
Steelhead Planting Data 1971-72

Date	Place	Number	Size
<u>Domestic fingerlings 1971 BY</u>			
August 12, 1971	Feather River	500,000	125/lb
<u>Domestic yearlings 1971 BY</u>			
September 13, 1971	Feather River	122,000	80/lb
September 27-28, 1971	Feather River	154,500	60/lb
March 2-21, 1972	Feather River	117,500	12.9/lb
April 3-20, 1972	Feather River	79,050*	7.35/lb
<u>Wild yearlings 1971 BY</u>			
April 13-26, 1972	Feather River	84,700**	7/lb
<u>Domestic broodstock 67-70 BY</u>			
April 2-4, 1972	Feather River	600	2.5/lbs each

* Includes 30,400 marked Ad-LV-RP.

** Includes 34,450 marked Ad-RV-LP.

Appendix Table 3

Marked King Salmon Recovered at Feather River Hatchery
1971-72 Season

Mark	Brood year	Number recovered	Release data				Origin
			Area	Size	Date(s)	Number	
Ad	1969	8	American River at Nimbus	1,200/lb	4/70	250,000	Fall-run Nimbus Hatchery
Ad	1/	14	?	?	?	?	?
Ad-An	1967	72	Sacramento River at Rio Vista	6-inch	1/69	50,000	Fall run, Feather River Hatchery
Ad-LV	1969	1	Battle Creek	90/lb	5/70	327,000	Fall run, Coleman Nat'l. Fish Hatchery
Ad-RV	1969	23	Sacramento River at Rio Vista	90/lb	5/70	327,000	"
Ad-RV	1968	7	Sacramento River at Rio Vista	?	4-8/69	321,000	"
Ad-LP	?	2	These were large fish, and do not fit any known Central Valley releases.				
Ad-RP	1967	138 ^{2/}	Feather River	?	?	?	Fall run, Feather River Hatchery
An	?	2	These were large fish, and do not fit any known Central Valley releases.				
An-LP	1969	90	1/2 at Feather River 1/2 at Rio Vista				Fall run, Feather River Hatchery
An-RP	?	2	One adult and one jack. They do not fit any known California releases.				
LP	1969	7	May have been An-LP with regenerated anal fins.				
RV	1969	1	Does not fit any known California releases.				
RP	?	4	One grilse and three large adults. They do not fit any known California releases.				
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- ^{1/} Adult fish, brood year unknown. Could be Ad, 1968 Brood Year, released at Nimbus Hatchery, or Ad-An, 1967 Brood Year Feather River fish with regenerated anal fins.
^{2/} The smallest of these fish was 23"FL, which seems too small for a 4-year-old fish (See Table 2).

Appendix Table 4

Lengths of Marked King Salmon Recovered at
Feather River Hatchery, 1971-72 Season

<u>FL</u> (Inches)	<u>Ad</u>		<u>Ad-An</u>		<u>Ad-RV</u>		<u>Ad-RP</u>		<u>An-LP</u>		<u>LP</u>		<u>Miscellaneous marks</u>	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Length	Sex
10													<u>Ad-LV</u>	
11													21	M
12													<u>Ad-LP</u>	
13													37	F
14									1		1		38	F
15									5		-			
16									10		-		<u>An</u>	
17									9		2		35	F
18									19		1		38	F
19									19		-		<u>An-RP</u>	
20	1				1				14		-		17	M
21	1				1				8		1		37	F
22	-				1				3		-		<u>RV</u>	
23	2				2		1		-		1		20	M
24	2				8		1	1	2		1		<u>RP</u>	
25	2				4		-	-						
26	-				1		1	-					22	M
27	-				1		-	-					36	F
28	-				1		1	-					40	M
29	-				2		-	2					41	M
30	1				1		3	2						
31	-			2		4	-	5						
32	1	2	2	-		-	-	7						
33	-	2	-	3		1	-	13						
34	1	1	2	4		1	3	10						
35	-	1	-	8		-	5	13						
36	1	2	2	6		-	7	12						
37	1	1	2	7		-	10	6						
38			6	7		1	5	5						
39			4	3			13	2						
40			8	-			7	-						
41			4	-			2	1						
42			1	-										
43				1										
TOTALS	13	9	31	41	23	7	59	79	90		7			

Marked Steelhead Recovered at
Feather River Hatchery, 1971-72 Season

Mark	Brood year ¹ / ₂	Number recovered	Release data				Origin
			Area	Size	Date(s)	Number	
D	?	15	?	?	?	?	?
D-RV	?	4	?	?	?	?	?
D-RP	?	6	?	?	?	?	?
Ad	1967	6	Sacramento River at Clarksburg	6.1-8.6/lb	March, 1968	209,840	Nimbus Hatchery Mokelumne River Fish Installation
Ad	1968		Three Mile Slough- Brannon Island	6.7/lb	March, 1969	22,579	
Ad	1970		Feather River at Gridley Bar	8.0/lb	March, 1971	50,200	
Ad-LP	1969	2	Battle Creek	7.4/lb	Feb.-Apr., 1970	119,036	Feather River Hatchery Coleman National Fish Hatchery
Ad-LP	1970		"	8.6/lb	Feb.-Apr., 1971	213,698	"
Ad-RP	1969	35	Sacramento River at Rio Vista	7.7/lb	Feb.-Apr., 1970	118,186	"
Ad-RP	1970		"	7.9/lb	Feb.-Mar., 1971	211,653	"
Ad-LM	?	1	?	?	?	?	?
An-RP	?	1	?	?	?	?	?
RV	1968	8	Mokelumne River at New Hope Landing	6.8-9.4/lb	March, 1969	37,674	Mokelumne River Fish Installation
RV	1969		"	5.1/lb	March, 1970	42,840	"
RV	1970		"	4.7-6.7/lb	Jan.-Mar., 1971	46,420	"
RV	1970		Feather River at Gridley Bar	15/lb	March, 1971	49,900	Feather River Hatchery
RV-RP	?	1	?	?	?	?	?
LP	1969	3	Sacramento River at Clarksburg	8.5/lb	March, 1970	18,700	Nimbus Hatchery
LP	1970		"	7.5/lb	April, 1971	60,170	"
RP	1969	8	American and Sacramento Rivers	3.2/lb	June, July, 1970	12,780	Nimbus Hatchery
RP-LP	?	6	?	?	?	?	?

Appendix Table 6
Feather River Salmon & Steelhead Hatchery
Weather, Water and Fish Data
July, 1971

Date	<u>Temperatures (degrees F)</u>				Weather	<u>Fish Trapped</u>			
	<u>Air</u>		<u>Water</u>			<u>King Salmon</u>		<u>Steelhead</u>	
	Max.	Min.	Max.	Min.		<u>Fall Run</u>		<u>Spring Run</u>	
						Adults	Grilse	Adults	Grilse
1	92	61	54	53	Clear				
2	94	62	54	53	Clear				
3	95	60	53	52	Clear				
4	95	60	53	52	Clear				
5	94	67	55	53	Clear				
6	96	62	55	53	Clear				
7	95	62	54	54	Clear				
8	92	60	54	54	Clear				
9	89	60	54	53	Clear				
10	88	61	54	53	Clear				
11	93	68	55	54	Clear				
12	98	72	55	54	Clear				
13	102	72	56	54	Clear				
14	104	72	56	55	Clear				
15	103	68	57	55	Clear				
16	103	68	57	56	Clear				
17	104	71	57	56	Clear				
18	97	71	57	55	Clear				
19	100	73	56	54	Clear				
20	104	73	56	56	Clear				
21	104	74	58	55	Clear				
22	105	70	58	57	Clear				
23	102	77	58	57	Clear				
24	101	59	58	57	Clear				
25	97	61	58	57	Clear				
26	96	61	58	56	Clear				
27	100	64	56	55	Clear				
28	96	63	58	57	Clear				
29	95	61	59	58	Clear				
30	95	62	59	58	Clear				
31	106	66	59	58	Clear				

Appendix Table 7
Feather River Salmon and Steelhead Hatchery
Weather, Water and Fish Data
August, 1971

<u>Temperatures (degrees F)</u>						<u>Fish Trapped</u>			
<u>Date</u>	<u>Air</u>		<u>Water</u>		<u>Weather</u>				
	<u>Max.</u>	<u>Min.</u>	<u>Max.</u>	<u>Min.</u>		<u>King Salmon</u>		<u>Steelhead</u>	
						<u>Fall Run</u>	<u>Spring Run</u>		
						<u>Adults</u>	<u>Grilse</u>	<u>Adults</u>	<u>Grilse</u>
1	101	65	59	58	Clear				
2	105	66	59	59	Clear				
3	105	66	59	58	Clear				
4	106	66	59	59	Clear				
5	97	60	59	58	Clear				
6	95	67	60	59	Clear				
7	99	67	60	59	Clear				
8	98	66	60	59	Clear				
9	102	74	61	60	Clear				
10	107	74	60	58	Clear				
11	112	84	61	60	Clear				
12	104	70	61	59	Clear				
13	98	66	62	61	Clear				
14	97	66	62	61	Clear				
15	96	64	62	61	Clear				
16	97	62	62	60	Clear				
17	96	63	62	61	Clear				
18	95	60	62	61	Clear				
19	90	52	63	61	Clear				
20	86	56	63	62	Clear				
21	88	60	63	59	Clear				
22	90	60	59	58	Clear				
23	90	50	59	58	Clear				
24	94	65	59	58	Clear				
25	94	59	60	58	Clear				
26	88	62	60	58	Clear				
27	89	58	60	59	Clear				
28	88	53	61	59	Clear				
29	84	50	61	59	Clear				
30	78	58	61	60	Clear			454	
31	76	52	61	60	Clear			50	
						TOTAL		484	

Appendix Table 8
Feather River Salmon & Steelhead Hatchery
Weather, Water and Fish Data
September, 1971

<u>Temperatures (degrees F)</u>						<u>Fish Trapped</u>			
<u>Date</u>	<u>Air</u>		<u>Water</u>		<u>Weather</u>	<u>King Salmon</u>		<u>Steelhead</u>	
	<u>Max.</u>	<u>Min.</u>	<u>Max.</u>	<u>Min.</u>		<u>Fall Run</u>	<u>Spring Run</u>		
						<u>Adults</u>	<u>Grilse</u>		
1	84	58	56	52	Clear				
2	88	47	53	52	Cloudy				
3	86	52	54	53	Clear				
4	91	56	54	53	Clear				
5	96	56	54	53	Clear				
6	98	50	55	54	Clear				
7	92	60	56	54	Clear				
8	94	58	56	54	Clear				
9	96	56	56	55	Clear				
10	96	54	57	55	Clear				
11	90	53	56	55	Clear				
12	96	56	56	55	Clear				
13	101	60	58	54	Clear				
14	100	60	57	52	Clear				
15	100	70	53	51	Clear				
16	96	58	53	51	Clear				
17	94	66	56	52	Clear				
18	88	52	55	53	Clear				
19	86	56	54	52	Clear				
20	86	48	53	51	Clear				
21	86	50	54	52	Clear				
22	86	55	54	54	Clear	7			
23	86	52	55	54	Clear	10	2		
24	74	50	55	54	Clear				
25	68	50	55	54	Cloudy				
26	66	50	54	54	Cloudy				
27	88	44	56	54	Clear	7			
28	70	47	54	52	Cloudy	14	16		
29	56	42	54	52	Cloudy	4			
30	63	40	53	52	Cloudy	53	37		
Total						95	55		

Appendix Table 9
Feather River Salmon and Steelhead Hatchery
Weather, Water and Fish Data
October, 1971

Temperatures (degrees F)						Fish Trapped				
Date	Air		Water		Weather	King Salmon				Steelhead
	Max.	Min.	Max.	Min.		Fall Run		Spring Run		
						Adults	Grilse	Adults	Grilse	
1	68	40	54	53	Clear	24	22			
2	75	42	54	54	Clear	35	64			
3	85	45	55	54	Clear	36	44			
4	88	44	54	54	Clear	7	8			
5	86	50	54	52	Clear	37	33			
6	87	54	56	52	Clear	7	10			
7	87	54	56	54	Clear	50	27			
8	91	52	54	52	Clear	34	14			
9	89	52	54	52	Clear	8	10			
10	85	52	54	52	Clear	8	6			
11	86	49	54	52	Clear	23	28			
12	86	56	54	53	Clear	17	12			
13	85	54	54	54	Clear	101	49			
14	77	53	55	54	Clear	78	27			
15	60	44	55	54	Rain	69	25			
16	52	38	54	53	Cloudy	124	73			
17	58	36	53	52	Clear	82	55			
18	62	40	53	52	Cloudy	7	7			
19	65	45	54	53	Cloudy	60	10			
20	64	43	54	52	Cloudy	117	36			
21	59	48	54	52	Cloudy	81	36			
22	70	49	54	52	Clear	70	23			
23	70	47	54	52	Clear	74	40			
24	59	32	54	53	Clear	69	35			
25	68	35	54	53	Clear	29	8			
26	65	43	54	53	Cloudy	47	17			
27	58	40	54	53	Clear	89	22			
28	57	32	54	53	Clear	53	23			
29	54	30	54	53	Clear	43	21			
30	51	37	55	54	Clear	22	11			
31	64	32	53	53	Clear	54	21			
Total						1,555	817			

Appendix Table 10
Feather River Salmon Steelhead Hatchery
Weather, Water and Fish Data
November, 1971

<u>Temperatures (Degrees F)</u>						<u>Fish Trapped</u>			
<u>Date</u>	<u>Air</u>		<u>Water</u>		<u>Weather</u>	<u>King Salmon</u>		<u>Steelhead</u>	
	<u>Max.</u>	<u>Min.</u>	<u>Max.</u>	<u>Min.</u>		<u>Fall Run</u>			
						<u>Adults</u>	<u>Grilse</u>		
							<u>Adults</u>	<u>Grilse</u>	
1	62	37	53	52	Clear	56	22		
2	65	34	53	52	Clear	22	13		
3	72	35	53	52	Clear	7	0		
4	71	38	53	52	Clear	40	4		
5	70	38	53	52	Clear	34	10		
6	70	35	53	52	Clear	14	5		
7	54	40	52	52	Clear	17	7		
8	63	33	51	50	Cloudy	31	17		
9	66	40	52	51	Cloudy	13	9		
10	63	46	52	51	Cloudy	31	4		
11	52	45	52	51	Rain	0	0		
12	52	46	52	51	Rain	36	16		
13	54	42	52	51	Rain	15	6		
14	58	33	52	51	Clear	0	0		
15	56	37	52	51	Clear	34	7		
16	69	33	52	51	Clear	0	0		
17	70	43	52	51	Clear	5	9		
18	64	38	52	51	Clear	56	22		
19	72	37	53	52	Clear	14	6		
20	65	41	52	51	Clear	0	0		
21	48	37	52	51	Clear	0	0		
22	50	41	52	51	Clear	45	26		
23	49	40	52	51	Cloudy	16	10		
24	55	42	52	51	Clear	7	6		
25	51	35	51	50	Cloudy	0	0		
26	49	43	51	50	Rain	0	0		
27	50	45	51	50	Rain	0	0		
28	48	40	51	50	Clear	0	0		
29	55	41	51	51	Cloudy	33	16		
30	62	34	52	51	Clear	7	6		
Total						533	221		

Appendix Table 11
Feather River Salmon and Steelhead Hatchery
Weather, Water and Fish Data
December, 1971

Temperatures (degrees F)						Fish Trapped					
Date	Air		Water		Weather	King Salmon				Steelhead	
	Max.	Min.	Max.	Min.		Fall Run		Spring Run		M	F
						Adults	Grilse	Adults	Grilse		
1	52	33	52	51	Clear	0	0				
2	48	32	51	50	Rain	20	5				
3	50	28	51	50	Rain	3	6				
4	48	42	51	50	Clear	0	0				
5	51	40	51	50	Clear	0	0				
6	50	38	51	50	Clear	41	10				
7	48	32	50	50	Clear	0	0				
8	50	32	50	50	Clear	0	0				
9	42	34	50	50	Rain	0	0				
10	45	32	50	50	Cloudy	24	14				
11	46	32	50	50	Cloudy	0	0				
12	40	28	50	50	Rain	0	0				
13	50	28	50	50	Clear	22	6				
14	48	30	50	50	Rain	0	0				
15	50	34	50	50	Clear	0	0				
16	36	34	50	50	Clear	0	0				
17	45	32	50	50	Clear	15	11				
18	46	35	50	50	Cloudy	0	0				
19	40	28	50	49	Clear	0	0				
20	52	28	50	50	Clear	8	6				
21	42	38	50	50	Foggy	0	0				
22	42	38	50	50	Rain	0	0				
23	46	42	49	49	Cloudy	29	13				
24	46	40	49	49	Rain	0	0				
25	40	36	49	49	Rain	0	0			2	3
26	44	36	49	49	Cloudy	0	0			0	0
27	46	32	49	49	Rainy	7	4			2	2
28	48	34	48	48	Cloudy	0	0			9	5
29	48	29	48	48	Cloudy	0	0			0	0
30	48	29	48	48	Clear	9	3			13	9
31	58	30	47	47	Clear	7	0			0	0
Total						185	78			26	19

Appendix Table 12
Feather River Salmon at Steelhead Hatchery
Weather, Water and Fish Data
January, 1972

Date	<u>Temperatures (degrees F)</u>				Weather	<u>Fish Trapped</u>					
	<u>Air</u>		<u>Water</u>			<u>King Salmon</u>				<u>Steelhead</u>	
	Max.	Min.	Max.	Min.		<u>Fall Run</u>		<u>Spring Run</u>		M	F
						Adults	Grilse	Adults	Grilse		
1	52	32	47	47	Cold						
2	40	29	47	47	Clear						
3	48	28	47	47	Clear					5	3
4	49	28	46	45	Clear						
5	47	26	46	46	Clear					8	6
6	48	28	46	46	Clear						
7	52	28	46	46	Clear					6	3
8	54	28	46	46	Clear					11	6
9	48	26	46	46	Clear					4	2
10	34	32	46	45	Clear					6	2
11	34	29	45	45	Clear					12	7
12	34	30	45	45	Fog						
13	52	28	45	45	Fog						
14	52	28	46	46	Fog						
15	56	28	45	45	Fog						
16	48	36	45	45	Fog						
17	36	32	45	45	Fog					6	1
18	40	34	45	45	Fog						
19	41	38	45	45	Rain						
20	48	42	45	45	Rain						
21	48	45	45	45	Rain					5	8
22	52	38	45	45	Rain						
23	56	38	45	45	Rain						
24	48	32	45	45	Cloudy						
25	48	36	45	45	Cloudy					4	3
26	42	30	45	45	Rain-snow						
27	42	32	45	45	Cloudy					5	6
28	44	26	45	45	Cloudy						
29	56	30	45	45	Clear						
30	56	32	45	45	Clear						
31	46	30	45	44	Clear					2	7
						Total				74	54

Appendix Table 13
Feather River Salmon and Steelhead Hatchery
Weather, Water and Fish Data
February, 1972

Temperatures (degrees F)						Fish Trapped					
Date	Air		Water		Weather	King Salmon				Steelhead	
	Max.	Min.	Max.	Min.		Fall Run		Spring Run		M	F
						Adults	Grilse	Adults	Grilse		
1	56	36	45	44	Cloudy					9	2
2	50	29	45	45	Cloudy					2	6
3	50	32	45	45	Cloudy						
4	48	38	46	44	Rain						
5	46	42	45	45	Rain						
6	56	42	45	45	Rain						
7	56	40	45	44	Clear						
8	50	38	45	45	Cloudy						
9	60	32	45	45	Clear						
10	62	34	45	45	Clear						
11	62	40	45	45	Clear						
12	60	35	45	45	Clear					20	18
13	66	44	46	45	Clear						
14	54	46	46	45	Clear						
15	64	37	45	45	Clear						
16	65	38	45	45	Clear						
17	64	36	46	45	Clear						
18	63	39	46	46	Cloudy					8	6
19	58	40	46	46	Cloudy						
20	68	42	46	46	Clear						
21	56	43	47	46	Clear						
22	54	39	47	46	Cloudy					10	1
23	49	46	46	44	Cloudy						
24	48	45	44	44	Cloudy						
25	50	43	44	44	Rain						
26	62	43	45	44	Cloudy						
27	68	42	46	45	Cloudy						
28	58	50	46	46	Rain						
29	54	43	46	45	Cloudy						
						Total				49	33

20

Appendix Table 14
Feather River Salmon & Steelhead Hatchery
Weather, Water and Fish Data
March, 1972

Temperatures (degrees F)						Fish Trapped					
Date	Air		Water		Weather	King Salmon				Steelhead	
	Max.	Min.	Max.	Min.		Fall Run		Spring Run		M	F
						Adults	Grilse	Adults	Grilse		
1	56	40	45	45	Rain					11	22
2	60	49	46	45	Cloudy						
3	62	50	46	46	Clear						
4	68	50	46	46	Clear						
5	75	44	47	46	Clear						
6	72	51	47	46	Clear						
7	74	46	49	46	Clear						
8	68	47	48	47	Clear						
9	58	50	47	47	Cloudy						
10	61	50	48	47	Cloudy						
11	68	45	48	47	Clear						
12	64	51	47	47	Clear						
13	72	51	48	46	Clear						
14	72	44	49	47	Clear						
15	77	46	48	47	Clear						
16	84	46	50	47	Clear						
17	72	52	51	49	Clear						
18	71	46	51	50	Clear						
19	72	41	50	50	Cloudy						
20	68	42	51	49	Clear						
21	66	45	51	49	Cloudy						
22	54	39	50	49	Rain						
23	60	39	50	47	Clear						
24	56	44	49	48	Cloudy						
25	54	40	50	49	Cloudy						
26	54	30	50	50	Clear						
27	71	49	50	49	Clear						
28	68	52	50	49	Clear						
29	70	36	50	49	Clear						
30	72	40	50	49	Clear						
31	60	46	50	49	Cloudy						
						Total				11	22

Appendix Table 15
Feather River Salmon and Steelhead Hatchery
Weather, Water and Fish Data
April, 1972

<u>Temperatures (degrees F)</u>						<u>Fish Trapped</u>			
<u>Date</u>	<u>Air</u>		<u>Water</u>		<u>Weather</u>	<u>King Salmon</u>		<u>Steelhead</u>	
	<u>Max.</u>	<u>Min.</u>	<u>Max.</u>	<u>Min.</u>		<u>Fall Run</u>	<u>Spring Run</u>		
						<u>Adults</u>	<u>Grilse</u>		<u>Adults</u>
1	64	49	50	50	Cloudy				
2	72	46	50	49	Cloudy				
3	71	49	51	49	Cloudy				
4	59	50	51	49	Cloudy				
5	60	42	51	49	Cloudy				
6	60	45	50	49	Cloudy				
7	64	42	50	48	Clear				
8	62	39	50	49	Clear				
9	62	40	51	49	Clear				
10	60	43	51	49	Clear				
11	55	46	51	50	Rain				
12	51	34	50	50	Rain				
13	60	32	50	48	Cloudy				
14	68	38	50	48	Rain				
15	70	44	52	49	Clear				
16	68	42	52	49	Clear				
17	61	38	52	50	Clear				
18	68	46	52	51	Clear				
19	67	42	53	52	Clear				
20	70	42	53	52	Clear				
21	74	42	53	51	Clear				
22	73	46	53	51	Clear				
23	69	48	53	51	Clear				
24	60	47	53	50	Cloudy				
25	67	39	51	50	Clear				
26	78	46	53	51	Clear				
27	78	56	53	52	Clear				
28	66	46	53	51	Clear				
29	64	38	52	52	Clear				
30	75	39	53	52	Clear				

Appendix Table 16
Feather River Salmon & Steelhead Hatchery
Weather, Water and Fish Data
May, 1972

<u>Temperatures (degrees F)</u>						<u>Fish Trapped</u>				
<u>Date</u>	<u>Air</u>		<u>Water</u>		<u>Weather</u>	<u>King Salmon</u>				<u>Steelhead</u>
	<u>Max.</u>	<u>Min.</u>	<u>Max.</u>	<u>Min.</u>		<u>Fall Run</u>		<u>Spring Run</u>		
						<u>Adults</u>	<u>Grilse</u>	<u>Adults</u>	<u>Grilse</u>	
1	84	48	54	53	Clear					
2	69	50	53	52	Clear					
3	85	53	54	52	Clear					
4	71	47	54	53	Clear					
5	65	45	54	53	Clear					
6	62	46	53	53	Clear					
7	58	44	53	53	Clear					
8	63	39	53	51	Clear					
9	74	41	54	53	Clear					
10	78	45	54	53	Clear					
11	84	49	54	53	Clear					
12	90	51	54	54	Clear					
13	92	58	54	54	Clear					
14	90	62	55	54	Clear					
15	84	54	56	54	Clear					
16	73	49	55	54	Cloudy					
17	70	48	55	53	Clear					
18	70	47	55	54	Clear					
19	54	46	54	53	Cloudy					
20	48	44	54	53	Rain					
21	61	44	54	54	Cloudy					
22	73	44	54	53	Clear					
23	88	48	54	53	Clear					
24	81	44	55	53	Clear					
25	80	50	55	54	Clear					
26	83	60	55	53	Clear					
27	90	52	55	54	Clear					
28	88	53	55	54	Clear					
29	90	54	55	54	Clear					
30	88	56	56	54	Clear					
31	86	60	56	55	Clear					

Appendix Table 17
Feather River Salmon and Steelhead Hatchery
Weather, Water and Fish Data
June, 1972

<u>Temperatures (degrees F)</u>						<u>Fish Trapped</u>					
<u>Date</u>	<u>Air</u>		<u>Water</u>		<u>Weather</u>	<u>King Salmon</u>				<u>Steelhead</u>	
	<u>Max.</u>	<u>Min.</u>	<u>Max.</u>	<u>Min.</u>		<u>Fall Run</u>		<u>Spring Run</u>		<u>Male</u>	<u>Female</u>
						<u>Adults</u>	<u>Grilse</u>	<u>Adults</u>	<u>Grilse</u>		
1	92	49	56	55	Clear						
2	83	60	57	55	Clear						
3	88	52	57	56	Clear						
4	92	54	57	56	Clear						
5	96	63	57	56	Clear						
6	97	68	57	55	Cloudy						
7	84	50	57	56	Clear						
8	78	50	57	55	Rain						
9	68	50	57	56	Rain						
10	67	45	56	55	Clear						
11	73	46	57	55	Clear						
12	80	51	57	56	Clear						
13	94	62	58	56	Clear						
14	86	55	58	56	Clear						
15	86	54	58	57	Clear						
16	87	53	58	58	Clear						
17	92	52	59	57	Clear						
18	94	59	59	57	Clear						
19	86	57	59	56	Clear						
20	90	60	59	56	Clear						
21	91	55	60	59	Clear						
22	72	52	60	58	Clear						
23	69	50	58	57	Clear						
24	80	47	59	58	Clear						
25	89	52	59	56	Clear						
26	86	55	59	57	Clear						
27	90	54	62	58	Clear						
28	98	60	60	59	Clear						
29	101	59	61	60	Clear						
30	103	64	62	60	Clear						
GRAND TOTAL 1971-72 FY						2,368	1,171	484	0	160	128