

State of California  
The Resources Agency  
DEPARTMENT OF FISH AND GAME

ANNUAL REPORT  
FEATHER RIVER HATCHERY, 1987-88

by

Donald L. Schlichting  
Region 2, Inland Fisheries

Inland Fisheries  
Administrative Report No. 90-13

1990

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ABSTRACT

This report summarizes the operation of Feather River Hatchery and its annex from July 1, 1987 through June 30, 1988. Tables present water temperatures, numbers of chinook salmon, Oncorhynchus tshawytscha, and steelhead rainbow trout, O. mykiss, entering the Hatchery, number of eggs taken and received, and numbers of fish released.

We trapped 11,321 chinook salmon and 2,587 steelhead and planted or transferred 12,453,274 chinook fingerlings, 988,825 chinook yearlings, 1,330,000 steelhead fingerlings, and 298,920 steelhead yearlings.

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Department of Fish and Game, 1416 Ninth St., Sacramento,  
CA 95814

## INTRODUCTION

This report describes activities of the Feather River Hatchery and its annex during its 21st year of operation, July 1, 1987 through June 30, 1988. The Hatchery is located near the upper Thermalito Bridge in Oroville, Butte County. It 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. The Hatchery annex is located along Highway 99, 1 mile south of Oro Dam Boulevard West. Operating costs are shared by Department of Fish and Game (5/6) and Department of Water Resources (1/6).

## PRODUCTION SUMMARY

Personnel from Feather River Hatchery trapped 11,321 chinook salmon, Oncorhynchus tshawytscha, and 2,587 steelhead, O. mykiss, during the 1987-88 season (Table 1). Approximately 19,741,118 salmon eggs and 2,781,505 steelhead eggs were taken. We planted 13,442,099 salmon and 1,628,920 steelhead.

## MARKING PROGRAMS

Bay Delta personnel marked a total of 1,080,584 1987 brood year (BY) fall-run chinook salmon with an adipose clip (AD) and coded-wire nose tag (CWT). These marked chinook salmon were planted at Ryde, Courtland, Port Chicago, Miller Park, and Steamboat Slough (Table 2).

## CHINOOK SALMON MAINTENANCE PROGRAM

### History of the 1987-88 Runs

#### 1987 BY Spring Run

The fish ladder was opened September 2, 1987 to allow the spring-run chinook salmon to enter the Hatchery. We received 1,213 fish between September 2 and October 1 (Appendix Table 1). The spring-run were sexed on October 2. At that time we had on hand 489 males, 437 females, and 287 grilse. Of the 437 females, we successfully spawned 208 from October 2 through October 19. The spawning yielded 1,196,161 eggs, for an average of 5,751 eggs per female.

TABLE 1. Feather River Hatchery Production Summary, 1987-1988

Species brood year	Adults trapped or received	Females spawned	Eggs taken	Fingerlings planted	Yearlings	Estimate on hand
Chinook salmon Spring run 1986 BY	0	0	0	526,090	0	0
1987 BY	1,213	208	1,196,161	863,975	0	0
Chinook salmon Fall run 1986 BY	0	0	0	4,337,475	988,825	0
1987 BY	10,108	3,118	18,544,957	6,725,734		4,834,466
Steelhead 1987 BY	0	0	0		191,210	0
1988 BY	2,587	572	2,781,505	1,330,000		527,466
SH-N-87 BY	0	0	0		107,710 <sup>a/</sup>	0

a/ Received as fish from Nimbus

An estimated 874,818 fingerlings were transferred to the ponds, for an average egg to fingerling survival rate of 73%. Between March and May, we planted 863,975 spring-run 1987 BY chinook fingerlings and smolts. None remained on hand June 30.

#### 1987 BY Fall Run

The first fall-run chinook salmon adults entered the Hatchery on October 1, (Appendix Table 1). The season total was 10,108 fish. We spawned 3,118 females between October 2 and December 1 and took 18,544,957 eggs, for an average of 5,948 eggs per female. Fry production totaled 16,486,613 for an average egg to fry survival of 89%. We planted and transferred a total of 6,725,734 fall-run 1987 BY chinook fingerlings. An estimated 4,834,466 remained on hand as of June 30.

#### Recovery of Marked Chinook Salmon

All chinook salmon entering the Hatchery were examined for marks; a total of 1,016 was marked (Appendix Table 2).

#### Chinook Salmon Planting

We planted an estimated 12,453,274 chinook fingerlings and 988,825 chinook yearlings. (Tables 1 and 2).

#### STEELHEAD MAINTENANCE PROGRAM History of the 1987-88 Production

Steelhead were not counted until December 29. We trapped a total of 2,587 fish. Marks and measurements of steelhead were recorded by Region 2 personnel.

Out of the total run of 2,587 fish, there were 1,313 males and 1,274 females. We successfully spawned 572 females (Table 3), and took a total of 2,781,505 eggs (4,863 eggs/female). From these eggs, 2,568,209 fish were transferred to the ponds for an overall survival rate of 92.3%. We planted 1,330,000 as fingerlings and had an estimated 527,466 steelhead on hand June 30.

#### STEELHEAD PLANTING

We planted an estimated 1,628,920 steelhead during the 1987-88 season (Table 4).

#### VISITOR USE

During the 1987-88 fiscal year, an estimated 26,820 people visited the installation.

TABLE 2. Chinook Salmon Planting Summary, Feather River Hatchery, 1987-1988

Race	Month of release	Average size(G)	Number released	Mark	Release site
Spring run 1986 BY	July	16.5	367,540		Benicia/Mare Island
	August	20.0	158,550		Benicia/Mare Island
	Total			526,090	
Spring run 1987 BY	February	1.7	60,400		Chico Creek
	March	8.4	243,200		Benicia
	April	16.5	263,000		Berkeley
	May	14.0	297,375		Benicia/Berkeley
	Total			863,975	
Fall run 1986 BY	July	14.4	2,477,075		Benicia/Mare Island
	August	24.8	1,860,400		Benicia/Mare Island
	September	37.0	435,850		Benicia
	October	44.8	552,975		Feather River(Gridley)
	Total			5,326,300	
Fall run 1987 BY	February	3.6	2,408,000		Mokelumne Hatchery
	March	6.5	129,200		Benicia
	April	7.1	827,600		Benicia

TABLE 2. (Continued)

Race	Month of release	Average size(G)	Number released	Mark	Release site
Fall run 1987 BY	May	6.7	112,200	B6-14-02	Courtland
				B6-14-03	
	May	8.2	54,324	06-31-01	Ryde
	May	6.5	105,865	B6-14-06	Miller Park
				B6-14-07	
	May	6.5	108,586	B6-14-04	Courtland
				B6-14-05	
	May	8.4	55,550	B6-14-08	Port Chicago
	May	8.6	53,669	06-31-02	Ryde
	May	12.5	704,850		Benicia
	June	7.7	110,808	06-62-59	Courtland
				06-62-60	
		8.7	54,310	06-62-63	Ryde
		9.1	105,562	06-62-61	Miller Park
				06-62-62	
		8.7	105,660	06-62-50	Courtland
		9.9	105,527	06-31-05	Steam Boat Slough
				06-31-06	
		10.9	53,940	06-31-03	Ryde
		11.0	54,583	06-31-04	Port Chicago
	12.7	50,050		Tiburon	
	12.7	1,525,450		Mare Island/Benicia	
		<hr/>			
Total			6,725,734		

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TABLE 3. Steelhead Spawning Data, 1987-88

Date	Fish spawned	
	M	F
12/29/87	22	34
1/4/88	34	52
1/12/88	118	184
1/19/88	123	185
1/25/88	115	117
Total	412	572

TABLE 4. Steelhead Planting Summary, 1987-1988

Date	Strain	Release site	Average size(G)	Number released
March	Feather River	Chico Creek	.49	108,000
	Feather River	Dry Creek	.11	108,000
	Feather River	Feather River	.11	272,000
May	Feather River	Feather River	1.9	496,000
June	Feather River	Feather River	2.2	346,000
January	Nimbus	Feather River	126.0	107,710
March	Feather River	Feather River	130.0	191,210
			Total	1,628,920



APPENDIX TABLE 1. Weekly Adult Salmon and Steelhead Trapping Data For Feather River Hatchery, 1987-1988

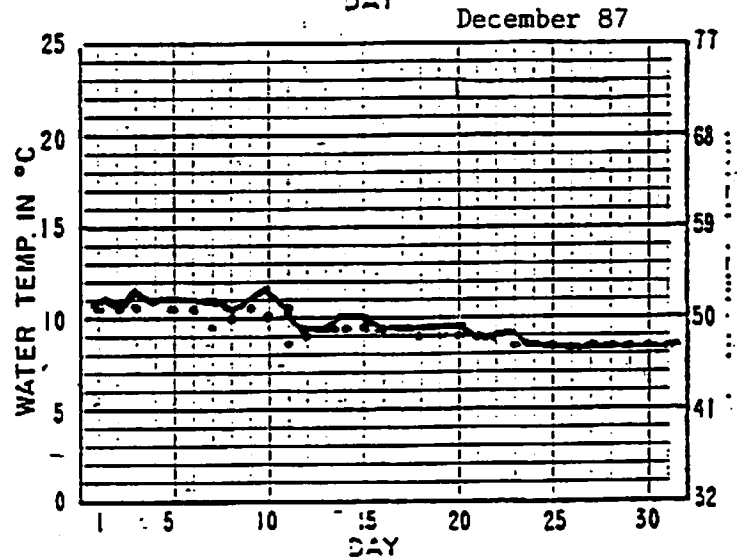
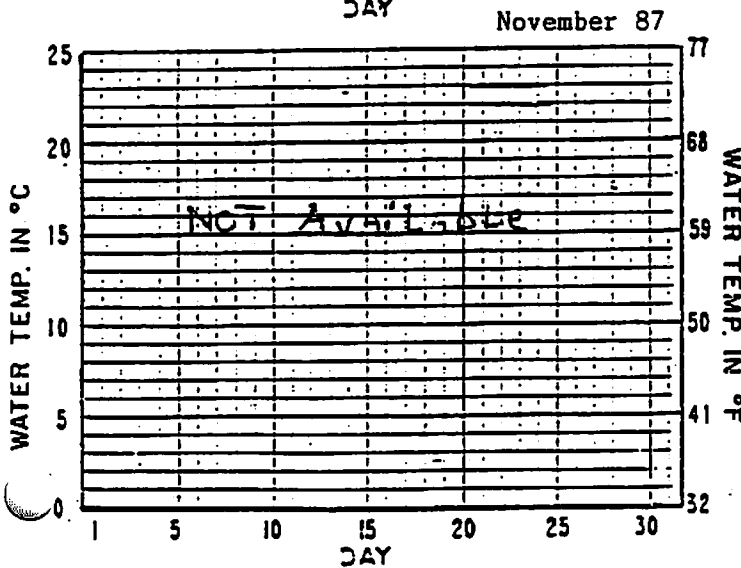
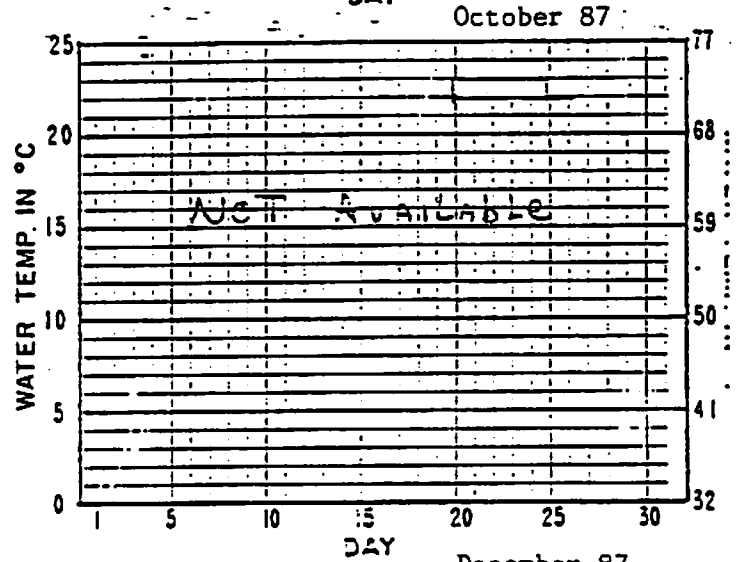
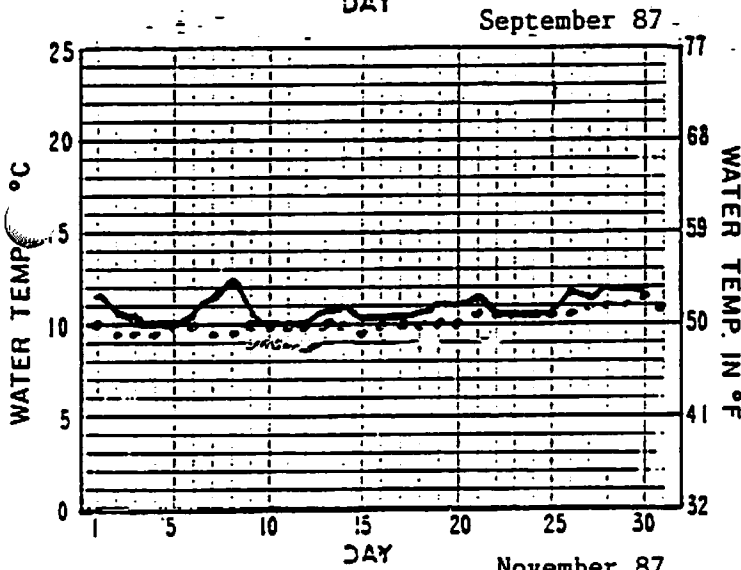
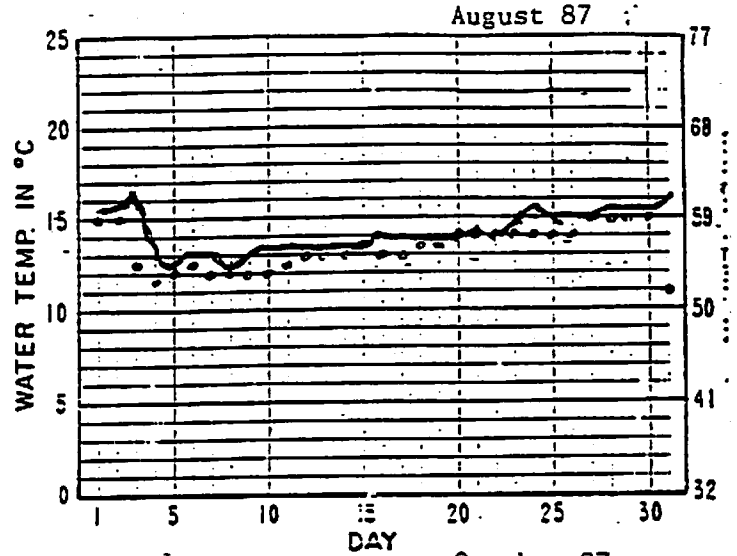
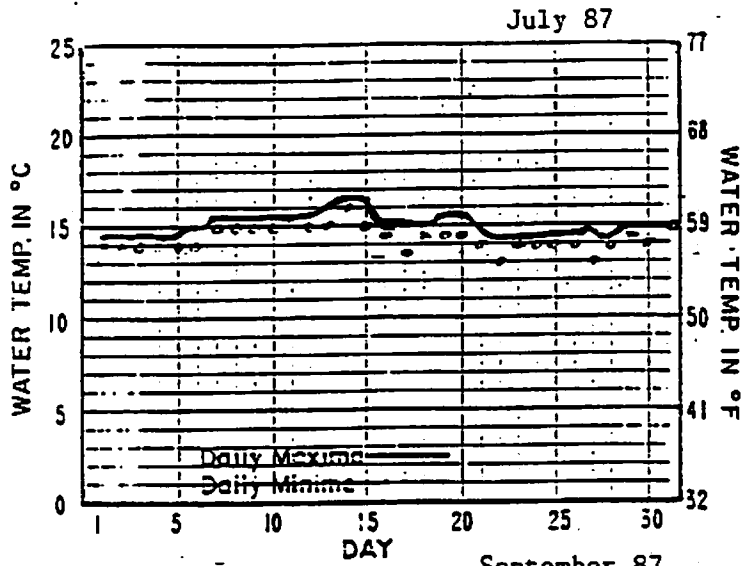
Week	<u>Chinook salmon</u> <u>fall run</u>		<u>Chinook salmon</u> <u>spring run</u>		<u>Steelhead trout</u>	
	Adults	Grilse	Adults	Grilse	Males	Females
Sept. 2 - Oct. 1			926	287		
Oct. 1	750	458				
Oct. 4-10	1,058	654				
Oct. 11-17	1,715	939				
Oct. 18-24	1,125	661				
Oct. 25 - 31	762	409				
Nov. 1-7	668	320				
Nov. 8-14	348	143				
Nov. 15-21	44	8				
Nov. 22-28	37	9				
Dec. 27 - Jan. 2					449	453
Jan. 3-9					278	269
Jan. 10-16					341	342
Jan. 17-23					196	148
Jan. 24-30					49	62
Season Totals	6,507	3,601	926	287	1,313	1,274

APPENDIX TABLE 2. Fork Lengths (to Nearest Centimeter) of Adipose Marked Chinook Salmon Trapped at Feather River Hatchery, 1987-1988

FL	Males	Females	FL	Males	Females
50	27		78	8	25
51	14		79	7	23
52	11		80	15	27
53	7		81	5	25
54	15		82	9	24
55	11		83	11	23
56	18		84	15	21
57	17		85	10	21
58	23	2	86	7	19
59	23		87	11	9
60	26	6	88	8	17
61	22	2	89	13	6
62	28	3	90	13	12
63	17		91	8	3
64	22		92	12	3
65	23	2	93	8	2
66	22	2	94	16	1
67	9	3	95	8	5
68	11	3	96	6	1
69	8	1	97	5	1
70	8	3	98	5	
71	6	5	99	2	1
72	4	11	100	3	1
73	4	17	101		
74	5	14	102	5	
75	7	18	103	1	
76	7	17	104	3	
77	7	16	105	1	
			106	2	
			107		
			108	1	
			109		
			110	1	
			Totals	621	395

APPENDIX FIGURE 1. Daily Water Temperatures for Feather River Salmon and Steelhead Hatchery from July 1, 1987 through June 30, 1988

DAILY WATER TEMPERATURES BY MONTH



APPENDIX FIGURE 1. (Cont.)

DAILY WATER TEMPERATURES BY MONTH

