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MOKELUMNE RIVER FISH INSTALLATION
ANNUAL REPORT FOR 1983-84 SEASON

by

Philo F. Jewett
Region 2, Inland Fisheries

Anadromous Fisheries Branch
Administrative Report No. 84-03

1984

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ABSTRACT

This report describes the operation of the Mokelumne River Fish Installation from July 1, 1983 through June 30, 1984. The Installation consists of a hatchery, rearing ponds, and spawning channel for chinook (king) salmon, Oncorhynchus tshawytscha, and steelhead trout, Salmo gairdneri.

We received 1,518,955 fingerlings from the Feather River Hatchery. Due to a planned construction project, no adults were allowed to use the spawning channels this season. We released 877,900 salmon fingerlings and yearlings during the 1983-84 season.

There were 150,000 eyed steelhead trout eggs (1984 BY) received from the Nimbus Hatchery. We released 28,132 steelhead yearlings in the Mokelumne River, and 20,000 in Lake Merced in San Francisco, on a catchable trout basis.

^{1/} Anadromous Fisheries Branch Administrative Report No. 84-03.
Submitted August 16, 1984.

INTRODUCTION

This is the 21st annual report of the Mokelumne River Fish Installation.

It covers the period of operation from July 1, 1983, through June 30, 1984.

Copies of previous annual reports are available upon request from the Anadromous Fisheries Branch, Rancho Cordova.

The Mokelumne River Fish Installation is located on the south bank of the Mokelumne River at the base of Camanche Dam in San Joaquin County. Camanche Dam is presently the upper limit of anadromous fish migration in the river. The Mokelumne River enters the San Joaquin about 98 km (61 miles) downstream from the dam.

The Installation was constructed to compensate for the loss of fall-run chinook salmon and steelhead trout spawning and rearing areas inundated by Camanche Dam. It is operated by the California Department of Fish and Game. The East Bay Municipal Utility District paid construction costs and also pays the annual operation and maintenance cost for the mitigation portion.

The Installation is made up of two parts: (1) a spawning channel for natural spawning and rearing of fall-run chinook salmon and (2) hatchery and rearing pond facilities for artificial spawning of salmon and steelhead. A detailed description of the original facility appears in the first annual report (Groh 1965).

During the spring of 1979 the first loop of the spawning channel was modified to two two-hundred fifty foot and two five-hundred foot rearing ponds to accommodate the Salmon Enhancement Program. The operational cost of this portion was funded by the Salmon Stamp Project. This section can rear one million yearling chinook salmon each year.

WATER TEMPERATURES

Water temperatures were recorded continuously. Maximum and minimum recorded temperatures were 15.6°C (60°F) and 7.2°C (45°F), respectively (Appendix Table 1).

DISEASE

There were no significant mortalities caused by disease this season.

PUBLIC RELATIONS

During the 1983-84 season an estimated 15,500 persons visited the facility. Tours were conducted for special interest groups and talks were given to sportsman and civic organizations.

PRODUCTION SUMMARY

1,518,955 chinook salmon fingerlings and 150,000 steelhead eggs were received for rearing (Table 1).

Production Summary, Mokelumne River Fish Installation, 1983-84.

Species	Number of adults received	Number of eggs received	Number of fingerlings received	Number of fingerlings planted	Number of yearlings planted	On hand 6/30/84
Chinook	4,573	-0-	1,518,955	472,950	404,950	1,184,050
Steelhead	-0-	150,000	-0-	-0-	48,132	145,380

CHINOOK SALMON MAINTENANCE

A total of 4,573 adult salmon entered the Installation from October 6, 1983 to December 14, 1983. There were 494 males, 2,888 male grilse, and 1,191 females. This is the largest number of adults that have ever entered this facility. Of the total number of salmon entering the facility, 63.2% (2,888) were male grilse, and 8.8% (404) were female grilse. The past five year average for male grilse is 36%. Seven males, 13 grilse, and 14 females, with the adipose fin removed, were recovered.

PRODUCTION

On July 1, 1983 we had 1,142,501 Feather River fingerlings (1982 BY) on hand. We received 1,518,955 fingerlings (1983 BY) from the Feather River Hatchery. On June 30, 1984 we had 1,184,050 Feather River (1983 BY) fingerlings on hand.

Planting 1983-84 Chinook Salmon

We planted 362,700 fingerlings (1982 BY), 110,250 fingerlings (1983 BY), and 404,950 yearlings (1982 BY) for a total of 877,900 chinook salmon (Table 2).

Production Summary, Mokelumne River Fish Installation, 1983-84.

Date	Area	Number	Size/lb	Mark
Oct. '83	Rio Vista	367,500	7	
Oct. '83	Rio Vista	337,500	15	
Oct. '83	Mokelumne River	10,010	7	
Nov. '83	Rio Vista	27,440	7	
Nov. '83	Rio Vista	25,200	15	
June '84	Thornton	15,250	90	
June '84	Thornton	95,000	90	AD-CWT 06-48-22 & 23

Chinook Salmon Tagging Program

Two groups of 1983 BY AD-CWT marked fish were released during the 1983-84 season. These groups were released in the Mokelumne River near Thornton on June 20 and 22, 1984. These fish were scheduled to be released at Rio Vista and Carquinez, however, they were inadvertently mixed and all were released in the Mokelumne River.

STEELHEAD PROGRAM

On July 1, 1983 we had 29,740 from the 1982 BY and 74,500 from the 1983 BY on hand. In February 1984 we received 150,000 eyed eggs (1984 BY) from the Nimbus Hatchery. We released 17,612 fish from the 1982 BY, and 10,520 fish from the 1983 BY into the Mokelumne River on a catchable trout basis. In addition, we released 20,000 1983 BY in Lake Merced in San Francisco. On June 30, 1984 we had 37,080 (1983 BY) and 108,300 (1984 BY) fish on hand.

REFERENCES

Groh, F. H. 1965. Annual report Mokelumne River Fish Installation
January 1, 1964 to June 30, 1965. Calif. Dept. Fish and Game, Inland
Fisheries Admin. Rep. 65-21. 28 p.

APPENDIX TABLE 1

Water Temperatures
Mokelumne River Fish Installation, 1983 - 1984

Date	Water temperature (°C)		Date	Water temperature (°C)		Date	Water temperature (°C)	
	Max.	Min.		Max.	Min.		Max.	Min.
July			Aug.			Sept.		
1	14.4	15.0	1	15.6	14.4	1	15.6	14.4
2	15.0	15.0	2	15.0	14.4	2	15.6	14.4
3	15.0	15.0	3	15.6	14.4	3	15.6	15.0
4	15.0	15.0	4	15.6	14.4	4	15.6	15.6
5	15.0	15.0	5	15.6	14.4	5	15.6	15.0
6	15.0	14.4	6	15.6	14.4	6	15.6	15.0
7	14.9	13.9	7	15.6	14.4	7	15.6	14.4
8	15.0	13.9	8	15.6	14.4	8	15.6	14.4
9	15.0	13.9	9	15.6	14.4	9	15.6	14.4
10	15.0	13.9	10	15.6	14.4	10	15.6	14.4
11	15.6	14.4	11	15.6	14.4	11	15.6	14.4
12	15.6	14.4	12	15.6	14.4	12	15.6	14.4
13	15.6	14.4	13	15.6	14.4	13	15.6	14.4
14	15.6	14.4	14	15.6	14.4	14	15.6	14.4
15	15.6	14.4	15	15.6	14.4	15	15.6	14.4
16	15.6	14.4	16	15.6	14.4	16	15.6	14.4
17	15.0	14.4	17	15.6	14.4	17	15.6	14.4
18	15.0	14.4	18	15.6	14.4	18	15.6	14.4
19	15.0	14.4	19	15.6	14.4	19	15.6	14.4
20	15.6	14.4	20	15.6	14.4	20	15.6	14.4
21	15.6	14.4	21	15.6	14.4	21	15.6	14.4
22	15.6	14.4	22	15.6	14.4	22	15.6	14.4
23	15.6	14.4	23	15.6	14.4	23	15.6	14.4
24	15.6	14.4	24	15.6	14.4	24	15.6	14.4
25	15.6	14.4	25	15.6	14.4	25	15.6	14.4
26	15.6	14.4	26	15.6	14.4	26	15.6	14.4
27	15.6	14.4	27	15.6	14.4	27	15.6	14.4
28	15.6	14.4	28	15.6	14.4	28	14.4	13.9
28	15.6	14.4	29	15.6	14.4	29	14.4	13.9
30	15.6	14.4	30	15.6	14.4	30	14.4	13.9
31	15.6	14.4	31	15.6	14.4			

APPENDIX TABLE 1

Water Temperatures
Mokelumne River Fish Installation, 1963 - 1964

Water temperature (°C)			Water temperature (°C)			Water temperature (°C)		
Date	Max.	Min.	Date	Max.	Min.	Date	Max.	Min.
Oct.			Nov.			Dec.		
1	14.4	13.9	1	14.4	13.3	1	11.1	10.6
2	14.4	13.9	2	14.4	13.3	2	11.1	10.6
3	14.4	13.9	3	14.4	13.3	3	11.1	10.6
4	14.4	13.9	4	14.4	13.3	4	11.1	10.6
5	14.4	13.9	5	14.4	13.3	5	11.1	10.6
6	14.4	13.9	6	14.4	13.3	6	11.1	10.6
7	14.4	14.4	7	14.4	13.3	7	11.1	10.6
8	15.0	15.0	8	14.4	13.3	8	11.1	10.6
9	15.0	14.4	9	14.4	13.3	9	11.1	10.6
10	15.0	15.0	10	14.4	13.3	10	11.1	10.6
11	15.0	15.0	11	14.4	13.3	11	11.1	10.6
12	14.4	13.9	12	14.4	13.3	11	11.1	10.6
13	14.4	13.9	13	14.4	13.3	13	11.1	10.6
14	14.4	13.9	14	14.4	13.3	14	11.1	10.6
15	14.4	13.9	15	14.4	13.3	15	10.6	9.4
16	14.4	13.9	16	14.4	13.3	16	10.6	10.0
17	14.4	13.9	17	14.4	13.3	17	10.0	9.4
18	14.4	13.9	18	14.4	13.9	18	10.0	9.4
19	14.4	13.9	19	13.9	13.9	19	9.4	9.4
20	14.4	13.3	20	13.9	13.9	20	9.4	9.4
21	14.4	13.3	21	13.9	13.9	21	10.0	9.4
22	14.4	13.3	22	13.9	13.9	22	9.4	9.4
23	14.4	13.3	23	14.4	13.3	23	9.4	9.4
24	14.4	13.3	24	14.4	13.3	24	10.0	9.4
25	14.4	13.3	25	13.9	13.9	25	10.0	9.4
26	14.4	13.3	26	13.9	13.9	26	10.0	9.4
27	14.4	13.3	27	14.4	14.4	27	9.4	9.4
28	14.4	13.3	28	13.9	13.9	28	10.0	9.4
29	14.4	13.3	29	13.9	13.9	29	10.0	9.4
30	14.4	13.3	30	11.1	10.6	30	10.0	9.4
31	14.4	13.3				31	10.0	9.4

APPENDIX TABLE 1

Water Temperatures
Mokelumne River Fish Installation, 1983 - 1984

Date	Water temperature (°C)		Date	Water temperature (°C)		Date	temperature (°C)	
	Max.	Min.		Max.	Min.		Max.	Min.
Jan.			Feb.			Mar.		
1	10.0	9.4	1	7.8	7.2	1	7.8	7.2
2	10.0	9.4	2	7.8	7.2	2	7.8	7.2
3	10.0	9.4	3	7.8	7.2	3	7.8	7.2
4	8.9	8.9	4	7.8	7.2	4	7.8	7.2
5	8.9	8.9	5	7.8	7.2	5	7.8	7.2
6	8.9	8.9	6	7.8	7.2	6	7.8	7.2
7	8.9	8.9	7	7.8	7.2	7	7.8	7.2
8	8.9	8.9	8	7.8	7.2	8	7.8	7.2
9	8.9	8.9	9	7.8	7.8	9	7.8	7.2
10	8.9	8.9	10	7.8	7.8	10	7.8	7.2
11	8.9	8.9	11	7.8	7.8	11	7.8	7.2
12	8.3	7.8	12	7.8	7.8	12	7.8	7.8
13	8.3	7.8	13	7.2	7.2	13	7.8	7.8
14	8.3	7.8	14	7.8	7.8	14	7.8	7.8
15	8.3	7.8	15	7.8	7.2	15	7.8	7.8
16	8.3	7.8	16	7.8	7.2	16	7.8	7.8
17	8.3	7.8	17	7.8	7.2	17	7.8	7.8
18	7.8	7.8	18	7.8	7.2	18	8.3	7.8
19	7.8	7.8	19	7.8	7.2	19	8.3	7.8
20	7.8	7.8	20	7.8	7.2	20	8.3	7.8
21	7.8	7.8	21	7.8	7.2	21	8.3	7.8
22	7.8	7.8	22	7.8	7.2	22	8.3	7.8
23	7.8	7.8	23	7.8	7.2	23	8.3	7.8
24	7.8	7.8	24	7.8	7.2	24	8.3	7.8
25	7.8	7.2	25	7.8	7.2	25	8.3	7.8
26	7.8	7.2	26	7.3	7.2	26	8.3	7.8
27	7.8	7.2	27	7.8	7.2	27	8.9	8.3
28	7.8	7.2	28	7.8	7.2	28	8.9	8.3
29	7.8	7.2				29	8.3	8.3
30	7.8	7.2				30	8.3	8.3
31	7.8	7.2				31	8.3	8.3

APPENDIX TABLE 1

Water Temperatures
Mokelumne River Fish Installation, 1983 - 1984

Water temperature (°C)			Water temperature (°C)			Water temperature (°C)		
Date	Max.	Min.	Date	Max.	Min.	Date	Max.	Min.
April			May			June		
1	8.9	8.3	1	10.0	9.4	1	11.1	10.0
2	8.9	8.3	2	9.4	9.4	2	11.1	10.0
3	8.9	8.3	3	9.4	9.4	3	11.1	10.0
4	8.9	8.3	4	9.4	9.4	4	11.1	10.0
5	8.9	8.3	5	9.4	9.4	5	11.1	10.0
6	8.9	8.3	6	9.4	9.4	6	11.1	10.0
7	8.9	8.3	7	10.0	9.4	7	11.1	10.0
8	8.9	8.3	8	9.4	9.4	8	11.1	10.0
9	8.9	8.3	9	10.0	9.4	9	11.1	10.0
10	8.9	8.3	10	10.0	9.4	10	11.1	10.0
11	8.9	8.3	11	10.6	9.4	11	11.1	10.0
12	8.9	8.3	12	10.6	9.4	12	11.1	10.0
13	9.4	8.9	13	10.6	9.4	13	11.1	10.0
14	9.4	8.9	14	10.0	9.4	14	11.1	10.6
15	9.4	8.9	15	10.0	10.0	15	11.1	10.6
16	9.4	8.9	16	10.0	10.0	16	11.1	10.6
17	9.4	8.9	17	10.0	10.0	17	11.1	10.6
18	9.4	8.9	18	10.0	10.0	18	11.7	10.6
19	9.4	8.9	19	10.0	10.0	19	11.7	10.6
20	9.4	8.9	20	10.6	10.0	20	11.7	10.6
21	9.4	8.9	21	10.0	10.0	21	11.7	10.6
22	9.4	8.9	22	10.0	10.0	22	11.7	10.6
23	9.4	8.9	23	10.6	10.0	23	11.7	10.6
24	9.4	8.9	24	10.6	10.0	24	11.7	10.6
25	9.4	8.9	25	10.6	10.0	25	11.7	10.6
26	9.4	8.9	26	10.6	10.0	26	11.7	10.6
27	9.4	8.9	27	11.1	10.6	27	11.7	11.1
28	10.0	9.4	28	11.1	10.6	28	11.7	11.1
29	10.0	9.4	29	11.1	10.6	29	11.7	11.1
30	10.0	9.4	30	11.1	10.0	30	11.7	11.1
			31	11.1	10.0			