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ANNUAL REPORT
MERCED RIVER FISH FACILITY ANNUAL REPORT 1980-81

by

SIDNEY D. POE
REGION 4 INLAND FISHERIES

Anadromous Fisheries Branch
Administrative Report No. 82-23

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ABSTRACT

This report summarizes the operation of the Merced River Fish Facility from 1 July 1980 to 30 June 1981. The facility was constructed to rehabilitate the fall run chinook salmon, Oncorhynchus tshawytscha, in the Merced River.

No 1979 brood year salmon yearlings were produced.

In the fall of 1980, 157 adult chinook salmon entered the facility and were trapped and artificially spawned. A total of 449,424 green eggs was obtained from 103 females. No natural spawning occurred in the channel during the season.

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INTRODUCTION

The Merced River Fish Facility is located immediately downstream from Crocker-Huffman Dam on the Merced River (a tributary to the San Joaquin River) about 15 miles northeast of Merced. It is the terminal point for salmon migrating up the Merced River.

The facility was built by the Merced Irrigation District (MID) with Davis-Grunsky Act Funds. Operations began in the fall of 1970.

The facility is comprised of a 4,372 ft-long spawning channel (the Reuben E. Schmidt Spawning Channel), three 275 x 30 ft-rearing ponds and one 275 x 30-ft effluent settling basin. In addition to the channel and ponds, we are operating a temporary hatchery shed with six double stacks of Heath incubator trays, capable of incubating and hatching approximately 900,000 chinook salmon eggs. Four temporary nursery tanks (3 ft x 6 ft) adjoin the hatchery building. The tanks each have a capacity of approximately 40,000 "swim-up" size chinook salmon. The adult salmon trapping facility is located in the fish ladder of the channel. The trap consists of a "fyke" trap entrance, two basket hoists, anesthetic tank, sorting table and holding pen.

The installation is operated by the California Department of Fish and Game, with operating assistance and partial funding of maintenance costs provided by MID.

Spawning Channel Program

1980-81 Season

The first adult chinook salmon entered the trap on 3 November 1980 and the last one on 7 December 1980. Of the 157 adult chinook salmon trapped, 106 were females and 51 males (including 8 "jacks"--fish under 23.9 inches total length).

The egg take of 449,424 eggs was obtained during seven spawnings. One-hundred three females had an average fecundity of 4,363 eggs per female. The following is a summary of the season's spawning activities.

Egg Take Record, 1980

<u>Date</u>	<u>Number of females spawned</u>	<u>Number of eggs taken</u>
11-10-80	15	71,440
11-14-80	17	82,248
11-18-80	11	45,000
11-21-80	16	70,680
11-25-80	16	69,300
12-1-80	12	55,860
12-8-80	16	54,896
TOTAL	103	449,424

All of the eggs taken during the season were incubated and hatched at the facilities.

Carcass Recovery and Redd Counts

No natural spawning took place in the channel during the season.

CHINOOK SALMON REARING POND PROGRAM

1979 Brood Year

No 1979 brood year yearlings were reared or planted.

1980 Brood Year

Approximately 380,000 eggs hatched from the fall 1980 egg take. Approximately 300,000 1980 brood year advanced fingerlings are being reared to yearling size. Five groups of yearling salmon were fin-clipped and tagged with coded wire tags and will be released at several sites within the San Joaquin River drainages in the fall of 1981.

Construction at Merced River Fish Facilities

During the summer of 1980, a permanent adult salmon trapping facility was installed in the facilities' fishway by Elk Grove Screen Shop crew. The new trap consists of a "fyke" trap entrance, two basket hoists, anesthetic tank and holding pen.

A new 8-inch PVC gravity flow pipeline was installed to supply water to a temporary hatchery and nursery facilities for rearing swim-up juvenile salmon. The new pipeline taps into the 24-inch main water supply pipe for the rearing ponds.

Water Temperature

Water temperatures were recorded twice daily at the facilities with a pocket thermometer.

Water Temperatures (C°) Merced River Fish Facilities -- 1980-81 Season

<u>MONTH (1980)</u>	<u>MAX.</u>	<u>MIN.</u>	<u>MONTH (1981)</u>	<u>MAX.</u>	<u>MIN.</u>
July	19.4	13.9	January	12.2	10.6
August	15.6	13.9	February	12.8	11.7
September	*	*	March	14.4	12.2
October	*	*	April	14.4	12.2
November	12.8	11.7	May	13.3	12.2
December	11.7	10.0	June	17.8	13.3

* No temperatures recorded in September and October 1980, due to shutdown for construction.