

State of California
The Resources Agency
DEPARTMENT OF FISH AND GAME

FINAL REPORT
EVALUATE SALMON PRODUCTION
AT IRON GATE HATCHERY
PROJECT (5.11)

by

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1990

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A. Abstract:

Slightly over 102,300 1988 brood year (BY) fall chinook salmon presmolts at Iron Gate Hatchery (IGH) were tagged with a coded-wire-tag (CWT) and marked with an adipose fin clip. Subsequent quality control tests showed that 92,602 of these were properly fin clipped and tagged. These fish were released along with over 3,000,000 untagged presmolts in the Klamath River at the hatchery.

B. Introduction:

The numbers of chinook salmon spawners returning to IGH, and the corresponding egg take have reached record or near-record levels during the last few years. The result has been a growing number of early (presmolt) releases from the hatchery. These releases are necessary because rearing ponds fill to beyond their carrying capacity before the June target release time for smolts. To date, none of the fish in these early releases have been marked, because of a lack of funds and personnel. Without tag return information for these presmolt releases we cannot fully assess the contribution of IGH to the fisheries and spawning escapement. Also, the presence of large numbers of unmarked presmolts severely hampers ongoing evaluations of naturally produced chinook salmon stocks in the Klamath River basin.

C. Description of Study Area:

The Klamath River system drains approximately 12,000 sq. mi. of northwestern California and southern Oregon. It is the second most important fall chinook salmon producer in California. Major chinook salmon spawning tributaries are the Trinity River, Salmon River, Scott River, Shasta River and Bogus Creek. Natural reproduction is augmented by two hatcheries, IGH at the foot of Iron Gate Dam on the Klamath River, and the Trinity River Hatchery, located at the base of Lewiston Dam on the Trinity River. Salmon rearing ponds are operated by local organizations on several smaller tributaries that historically had spawning runs of chinook salmon. Since 1978, the numbers of fall chinook salmon returning to the Klamath system have ranged from a low of about 53,800 adults in 1984 to a high of about 236,700 in 1986.

IGH was constructed by Pacific Power and Light Company in 1966 to mitigate for salmon and steelhead spawning and nursery areas lost due to the construction of Iron Gate Dam. It is operated by the California Department of Fish and Game with mitigation goals of 6 million fall chinook smolts, 200,000 steelhead yearlings, and 75,000 yearling coho salmon. In addition, the hatchery has enhancement goal of 900,000 yearling fall chinook salmon.

D. Methods and Materials:

Temporary personnel under the supervision of permanent California Department of Fish and Game, Klamath River Project personnel coded-wire tagged (CWT) and fin clipped a portion of the 1988 BY fall chinook salmon released as presmolts in 1989 from IGH. Future tag recoveries will be made during ongoing investigations of the ocean and inriver fisheries, at Project weirs on selected Klamath River tributaries, and at the two basin hatcheries. (These activities are not part of this project). Tag recovery data for fish taken in areas outside California will be obtained from other agencies collecting CWT fish.

E. Results and Discussion:

A total of 102,324 presmolt fall chinook salmon of the 1988 BY produced at IGH were marked by removal of the adipose fin and tagged with a CWT. Of this total, 461 died before being planted, 5,902 (5.8%) had a poor fin clip, and 3,259 apparently shed their tag before being planted, giving a total release of 92,602 fish that were properly fin clipped and tagged. These fish were planted along with 3,253,599 similar-sized unmarked chinook in the Klamath River at IGH on April 24, 1989. Their contributions to the various fisheries and spawning escapements will be monitored over their life.

At time of their release, these fish numbered 269/lb and appeared to be in good condition.

F. Summary and Conclusions:

About 92,600 effectively marked/tagged 1988 BY fall chinook presmolts along with over 3,500,000 unmarked fish were released into the Klamath River at IGH.

G. Summary of Expenditure:

Salaries, including benefits	\$ 1,226
Travel and transportation	442
Supplies, including tags	3,600
Overhead	1,190
Equipment (2 tagging machines and detector)	<u>28,100</u>
Total	\$34,558

H. Supplemental Data: Not applicable to this project.

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Date:

3/16/90