ANNUAL PROJECT REPORT

FISH RESEARCH PROJECT
OREGON

PROJECT TITLE: Evaluation of Lower Snake River Compensation Plan Facilities in Oregon

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INTRODUCTION

As part of the Lower Snake River Compensation Plan (LSRCP) the Oregon Department of Fish and Wildlife has completed construction of Lookingglass Hatchery to rear spring chinook and is in the process of constructing Irrigon Hatchery to rear summer steelhead. New facilities at Wallowa Hatchery to hatch and rear summer steelhead and ponds on Big Canyon Creek, Little Sheep Creek, and the Imnaha River for advanced rearing of chinook and steelhead will be completed in the near future. Losses of spring chinook and summer steelhead in the Grande Ronde and Imnaha river systems will be compensated for by hatchery production at these facilities. We are evaluating the production and release of salmon and steelhead from LSRCP facilities in Oregon to assure achievement of the long-term objectives of the plan.

This project began on 29 September 1983, and this report includes a review of our activities through 31 December 1983. Subsequent annual progress reports from this project will cover activities for an entire calendar year.

LONG-TERM OBJECTIVES OF LSRCP FOR OREGON

1. Establish for each designated stock an annual supply of brood fish that can provide an egg source capable of meeting compensation goals for spring chinook and summer steelhead in the Grande Ronde and Imnaha systems.
2. Restore and maintain natural spawning populations of spring chinook and summer steelhead in the Grande Ronde and Imnaha systems.
3. Re-establish sport fisheries for spring chinook and summer steelhead in the mainstem Snake River and tributaries.
4. Minimize the effects of hatchery releases on stocks of resident game fish.
5. Determine total survival (catch and escapement) for compensated stocks of salmon and steelhead.

6. Determine if the total return of adult spring chinook and summer steelhead resulting from LSRCP activities in Oregon meets the compensation goals for Oregon.
7. Continue technical oversight of program to make recommendations that will ensure consistency of operation with inter-agency agreements on principles, procedures, and goals for LSRCP hatchery operations.

PROJECT GOAL

Our goal is to develop and recommend hatchery practices for the LSRCP hatchery production facilities in Oregon that will meet the mitigation requirements and management objectives for production of spring chinook salmon and summer steelhead lost as a result of the lower Snake River dams.

PHASE I--PLANNING

Objectives for 1983

We planned to develop a detailed evaluation proposal and work plan to meet the long-term objectives.

Accomplishments in 1983

A project biologist was hired in mid-December, and we began the process of developing a detailed proposal and work plan for 1984 through 1988. We began a review of pertinent literature and a summary of stock history and release-return information for Lookingglass and Wallowa hatcheries.

PHASE II--FIELD STUDIES

Objectives for 1983

We planned to coded-wire tag groups of Imnaha, Lookingglass, and Carson stock spring chinook at Lookingglass Hatchery to document stock characteristics and to estimate catch, escapement, and total survival.

Accomplishments in 1983

We coded-wire tagged four groups of 1982 brood spring chinook during September at Lookingglass Hatchery. Two groups of Carson stock were tagged: 51,896 had been incubated in well water at a temperature of 56°F, and 52,846 had been incubated in creek water at 44°F. We tagged 26,317 Imnaha stock chinook and 44,149 Lookingglass stock chinook that had been incubatedd in creek water.

All four tag groups were scheduled for release in the spring of 1984. However, cold temperatures caused severe icing problems at Lookingglass Hatchery that required the release of all 1982 brood Carson stock on 22 December 1983. The fish incubated at 56°F were released at an average size of 25 fish/lb, and the group incubated at 44°F were released at 35 fish/lb. A portion of the untagged Carson fish were lost during the ice-up; however, the exact number that died is not known at this time. The Lookingglass and Imnaha fish were not released and are scheduled for release in the spring of 1984. Standard hatchery monitoring of the tagged fish for growth, condition, and disease was conducted through the rearing cycle.

PLANS FOR 1984

We plan to complete a detailed 5-year project proposal and workplan. The exact nature of the work that we do during 1984 depends on the project proposal and work plan. We plan to complete a summary of the stock history of chinook and steelhead at Lookingglass and Wallowa hatcheries and a summary of the existing coded-wire tag information for summer steelhead at Wallowa Hatchery. We plan to collect and summarize existing life history information for chinook and steelhead in the Grande Ronde and Imnaha river systems.

The difficulties encountered during this winter showed that year-round rearing of large numbers of juvenile spring chinook at Lookingglass Hatchery will be difficult; therefore it will be necessary to make releases during the

fall. We plan to make fall and spring releases of coded-wire tagged chinook to determine how time of release affects survival. We plan to release Carson stock chinook at Lookingglass Hatchery in September and November and in April 1985 (70,000 fish each release); and Imnaha stock chinook in the Imnaha River in fall 1984 and spring 1985 (one group of 50,000 fish each release).

We also plan to release approximately 1 million Carson stock presmolts into the Grande Ronde system in the summer of 1984. We will mark groups of these presmolts to evaluate the contribution of adults to areas above Lower Granite Dam.