

MONITORING AND EVALUATION OF YEARLING SNAKE RIVER FALL CHINOOK SALMON OUTPLANTED UPSTREAM OF LOWER GRANITE DAM

9801003

SHORT DESCRIPTION:

Monitoring and evaluation of returning adult fall chinook salmon outplanted as yearlings above Lower Granite Dam

SPONSOR/CONTRACTOR: LSRCP

U.S. Fish and Wildlife Service Lower Snake River Compensation Plan

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SUB-CONTRACTORS:

N/A

GOALS

GENERAL:

Adaptive management (research or M&E)

ANADROMOUS FISH:

Research, M&E

NPPC PROGRAM MEASURE:

7.3B.2

RELATION TO MEASURE:

Monitors and evaluates a high priority supplementation project

BIOLOGICAL OPINION ID:

Hatchery Biological Opinion X.A.3.

OTHER PLANNING DOCUMENTS:

National Marine Fisheries Service (1995) recommended implementing monitoring and evaluation plans for Snake River fall chinook salmon supplementation programs. 4.5.c-Snake River Salmon Recovery Plan; p.114-117 in "Salmon supplementation studies in Idaho rivers" by Bowles and leitzinger, 1991

TARGET STOCK

Snake River fall chinook salmon

LIFE STAGE

Adult

MGMT CODE (see below)

S;(L);W

BACKGROUND

STREAM AREA AFFECTED

Stream name:

Snake River; Clearwater River; Grande Ronde River; Imnaha River; other tributaries between Lower Granite and Hells Canyon dams

Stream miles affected:

N/A Monitoring and evaluation project

Hydro project mitigated:

four lower Snake River dams

LAND AREA INFORMATION

Subbasin:

Snake River

Land ownership:

private and public

Acres affected:

N/A Monitoring and evaluation project

Habitat types:

N/A Monitoring and evaluation project

HISTORY:

Project work will start during the adult migratory period beginning September, 1997. This data form was completed in February 1997. This project will include spawning surveys similar to those conducted from 1991-1996 as part of BPA project 9102900. About half of the effort in conducting spawning surveys will be funded by the Idaho Power Company

BIOLOGICAL RESULTS ACHIEVED:

N/A Field work begins in the fall of 1997

PROJECT REPORTS AND PAPERS:

N/A Field work begins in the fall of 1997

ADAPTIVE MANAGEMENT IMPLICATIONS:

N/A Field work begins in the fall of 1997

PURPOSE AND METHODS**SPECIFIC MEASUREABLE OBJECTIVES:**

Objective To monitor and evaluate the movements and spawning distribution of adult fall chinook salmon returning from test releases of yearling fall chinook salmon upstream of Lower Granite Dam.

CRITICAL UNCERTAINTIES:

Limited adult returns from releases impose the risk of not having enough fish to obtain useful results. Handling adult returns and implanting radio tags at Lower Granite Dam imposes a limited risk to individual fish.

BIOLOGICAL NEED:

The use of supplementation to help restore Snake River fall chinook salmon began in 1996 with test releases of yearling fish above Lower Granite Dam. Additional test releases of yearling fish are scheduled for 1997 and 1998 in the Snake and Clearwater rivers. To determine if supplementation is a viable recovery measure we need to know whether or not returning adult fish spawn in suitable areas.

HYPOTHESIS TO BE TESTED:

N/A: This monitoring and evaluation project does not involve testing

ALTERNATIVE APPROACHES:

We considered collecting spawned-out fish to determine distribution. This approach was rejected because the Snake River is too large and deep for this method.

JUSTIFICATION FOR PLANNING:

N/A: This project is primarily field oriented

METHODS:

We will tag between 30 and 200 fish per year, targeting half the number of returning adult outplants in any given year or release group. This should allow us to determine the spawning distribution of about one third of the returning adult outplants that are trapped at Lower Granite Dam. Trapping, and most of the tagging, will be carried out by NMFS in the course of normal fish counting operations.

Tagged fish will be tracked at and above Lower Granite Dam using fixed receivers and mobile tracking methods. Fixed receivers will be placed in the Snake River and near the mouths of tributaries. Additional receivers will be in place at Lower Granite Dam as part of project 9204101 and will provide information on fall-back. Weekly tracking will be conducted over Lower Granite Reservoir, the free-flowing Snake River, and portions of the major tributaries above Lower Granite Dam. Ground tracking will be conducted along roaded sections of the Snake and Clearwater rivers.

Redd surveys will be conducted to monitor overall spawning distribution. Weekly aerial redd surveys of the Snake, Grande

Ronde, Imnaha, and Clearwater rivers will be conducted in conjunction with tracking surveys. In addition, redd searches will be conducted in deep-water areas of the Snake River using underwater video cameras.

Tracking records for radio-tagged fish will be compiled to determine the movements and spawning location of individual fish. The annual spawning distribution of radio-tagged fish will be presented by river section for each release year, and release location. The annual redd distribution will be also be presented by river section. Once the full complement of age classes are represented for each release group, we will compare the percent distribution of returning adult outplants to: a) the overall redd distribution of fall chinook salmon, and b) the locations outplanted fish were released. These comparisons will show whether or not the majority of yearling outplants that return to spawn do so in suitable habitat near their release locations.

PLANNED ACTIVITIES

SCHEDULE:

Planning Phase **Start** 4/97 **End** 8/97 **Subcontractor**

Task Coordinate field activities and equipment loans with cooperators

Implementation Phase **Start** 6/97 **End** 8/97 **Subcontractor**

Task Install equipment for tracking and prepare data base

O&M Phase **Start** 1998 **End** 2001 **Subcontractor**

Task Repeat tasks 1 through 4 annually from 1998 until the five-year-old component of 1998 releases return in the fall of 2001

O&M Phase **Start** 1/98 **End** 3/98 **Subcontractor**

Task Compile data and prepare reports

O&M Phase **Start** 10/97 **End** 12/97 **Subcontractor**

Task Conduct redd surveys

O&M Phase **Start** 9/97 **End** 1/98 **Subcontractor**

Task Track tagged salmon

O&M Phase **Start** 9/97 **End** 12/98 **Subcontractor**

Task Radio-tag fall chinook salmon at Lower Granite Dam

PROJECT COMPLETION DATE:

9/2002

CONSTRAINTS OR FACTORS THAT MAY CAUSE SCHEDULE OR BUDGET CHANGES:

Contingent upon NMFS permit acquisition

OUTCOMES, MONITORING AND EVALUATION

SUMMARY OF EXPECTED OUTCOMES

Expected performance of target population or quality change in land area affected:

N/A Monitoring and evaluation project

Present utilization and conservation potential of target population or area:

N/A Monitoring and evaluation project

Assumed historic status of utilization and conservation potential:

N/A Monitoring and evaluation project

Long term expected utilization and conservation potential for target population or habitat:

N/A Monitoring and evaluation project

Contribution toward long-term goal:

The project will help assess the efficacy of supplementation as a mitigation measure for Snake River fall chinook salmon recovery and provide information for potential future recovery actions

Indirect biological or environmental changes:

N/A Monitoring and evaluation project

Environmental attributes affected by the project:

N/A Monitoring and evaluation project

Changes assumed or expected for affected environmental attributes:

N/A Monitoring and evaluation project

Measure of attribute changes:

N/A Monitoring and evaluation project

Assessment of effects on project outcomes of critical uncertainty:

N/A Monitoring and evaluation project

Information products:

This project monitors the spawning distribution of adult fall chinook salmon released as yearlings above Lower Granite Dam. Information from monitoring will help evaluate supplementation.

Coordination outcomes:

Coordination of this project with the University of Idaho will enhance data collection for project 9204101, and provided needed equipment for this project without the need for additional funding. Coordinating radio-tracking with the Nez Perce Tribe during ongoing redd surveys of the Clearwater River sub-basin will provide needed data for this project without the need for additional funding. Coordination with the National Biological Service will provide needed equipment for this project without the need for additional funding.

MONITORING APPROACH

This project should be measured by its ability to accurately determine the spawning distribution of returning adult fall chinook salmon released as yearlings above Lower Granite Dam.

Provisions to monitor population status or habitat quality:

N/A This is the monitoring component of the LSRCP Lyons Ferry Hatchery fall chinook salmon evaluation study.

Data analysis and evaluation:

Spawning distribution data will be compiled and categorized by release year and location.

Information feed back to management decisions:

Information about the distribution of adult returns from yearling outplants is part of the LSRCP Lyons Ferry Hatchery evaluation study.

Critical uncertainties affecting project's outcomes:

Improved mainstem survival would alleviate the uncertainty of enough adult returns.

EVALUATION

Success could be assessed by: a) the percentage of tagged fish that are actually tracked to their spawning locations, b) the collectio

n and summary of accurate redd counts, and c) the collection of fall-back information at Lower Granite Dam.

Incorporating new information regarding uncertainties:

The project biologist and cooperators meet regularly to compare project results and progress and discuss necessary adaptations

Increasing public awareness of F&W activities:

All opportunities to inform the public on project activities will be utilized.

RELATIONSHIPS

RELATED BPA PROJECT

8335000

9204101 Evaluate Adult Migration in Lwr Col. River and Tributaries

9406900 A Spawning Habitat Model to Aid Recovery Plans for Snake River Fall Chinook

9102900 Supplementation and Survival of Fall Chinook in Snake River

9403400 Assessing Summer and Fall Chinook Salmon Restoration-- Snake River Basin

RELATIONSHIP

Will provide information on use of the Clearwater River by spawning fall chinook salmon

Will provide more information on fall- back of fall chinook salmon at Lower Granite Dam

Will provide more information for comparisons between Snake and Columbia river fall chinook salmon habitat use

Will provide more information on the life history of fall chinook salmon in the Snake River basin

Will provide information on use of spawning habitat in the Snake River basin by fall chinook salmon

RELATED NON-BPA PROJECT

Lyons Ferry evaluation study/LSRCP

RELATIONSHIP

Lyons Ferry Fish Hatchery raises Snake River fall chinook salmon

OPPORTUNITIES FOR COOPERATION:

Used radio tags from project 9204101 will be obtained from the University of Idaho for use in this project. Telemetry receivers will be borrowed from the National Biological Service, Cook, Washington, and Washington Department of Fish and Wildlife, Dayton, Washington. Redd surveys will be carried out in cooperation with Idaho Power Company, U.S. Forest Service, and Nez Perce Tribe. Some of the duties of this project will be shared with the Washington Department of Fish and Wildlife and Nez Perce Tribe.

COSTS AND FTE

FUTURE FUNDING NEEDS:

PAST OBLIGATIONS (incl. 1997 if done):

<u>FY</u>	<u>\$ NEED</u>	<u>% PLAN</u>	<u>% IMPLEMENT</u>	<u>% O AND M</u>
1998	\$98,500	10%	10%	80%
1999	\$98,500	10%	10%	80%
2000	\$99,000	10%	10%	80%
2001	\$99,500	10%	10%	80%
2002	\$35,500	10%	10%	80%

OTHER NON-FINANCIAL SUPPORTERS:

Idaho Power Company, Boise, Idaho; U.S. Forest Service, Wallowa Whitman National Forest, Enterprise, Oregon

LONGER TERM COSTS:

N/A No long term costs expected

N/A No long term costs expected

1997 OVERHEAD PERCENT: N/A Zero overhead

SUBCONTRACTOR FTE: N/A no subcontractors
