

HANFORD K-BASIN FALL CHINOOK ACCLIMATION

9603201

SHORT DESCRIPTION:

Acclimate fall chinook above McNary Dam to increase natural production in the Hanford Reach and to provide in-place/in-kind mitigation for John Day Dam. Develop a master plan to utilize the Hanford K-Basins to implement restoration and mitigation objectives in the mid- and upper-Columbia basin for fall chinook, coho and sturgeon.

SPONSOR/CONTRACTOR: YIN

Yakama Indian Nation
Lynn Hatcher, Program Manager
Toppenish, WA 98948-0151
509/865-6262

yinfish@wolfenet.com

SUB-CONTRACTORS:

United States Fish and Wildlife Service Dan Herborn Nick Anderson

GOALS

GENERAL:

Supports a healthy Columbia basin, Maintains biological diversity, Maintains genetic integrity, Increases run sizes or populations, Program coordination or planning, Basinwide, Education

ANADROMOUS FISH:

Production, O&M, Research, M&E

RESIDENT FISH:

Production, O&M, Research, M&E

NPPC PROGRAM MEASURE:

7.4J1-5

RELATION TO MEASURE:

This project is moving lower hatchery fish upstream and acclimating them in ponds, which will allow these fish to recover from stress involved in transportation and to imprint. Section 7.4J.4 of the 1994 Columbia River Basin Fish and Wildlife Program states "Evaluate options for using K-Basins on the Hanford Nuclear Reservation for the artificial propagation of fall chinook salmon, coho salmon, and sturgeon."

OTHER PLANNING DOCUMENTS:

This project is specifically identified in Wy Kan Ush Me Kush Wit, under Subbasin Plans, Mid-Columbia River Mainstem, Recommended Actions For The Mid-Columbia Mainstem, (3a) Fall Chinook.

TARGET STOCK

Sturgeon
Coho
Upriver Bright/Fall Chinook

LIFE STAGE

Egg, yearling
Pre-smolt/smolt
Pre-smolt/smolt

MGMT CODE (see below)

S, W
S, E, W
S, W

AFFECTED STOCK

Competitors
Predators, Pathogens, Mutualists

BENEFIT OR DETRIMENT

Beneficial

BACKGROUND

STREAM AREA AFFECTED

Stream name:

Columbia River

Subbasin:

K-Basin, Hanford Reach

Stream miles affected:

51

Land ownership:

Federal

Hydro project mitigated:

McNary, John Day, The Dalles, Bonneville, Lower Granite, Little Goose, Lower Monumental, Ice Harbor

BIOLOGICAL RESULTS ACHIEVED:

A Master Plan will be completed during FY97 that will provide several alternatives for raising target species at the K-basins. Evaluation of adult returns from fall chinook releases from 1993-1996 has not yet been completed.

PROJECT REPORTS AND PAPERS:

Blodgett, J.1994. K-Basin Fall Chinook Acclimation Project Annual Report

ADAPTIVE MANAGEMENT IMPLICATIONS:

The John Day fall chinook are 100% CWT as required by NMFS for ESA conditions to monitor straying. Survival at all life stages can therefore be determined with statistical methods using data from dam sampling, dam counts, and ocean and river harvests. White sturgeon enhancement (provided for in Master Plan Development) via supplementation will be evaluated through mark/recapture programs.

PURPOSE AND METHODS

SPECIFIC MEASUREABLE OBJECTIVES:

Increase natural production of fall chinook in the Hanford Reach and allow in-place/in-kind mitigation for the construction of John Day Dam. The project goal is to return as adults 0.5 to 1.0 percent of fall chinook acclimated and released from net pens in the K-basins. White sturgeon have also been impacted in the mid-Columbia and Snake River Basins and will be a central focus of the master plan to use the K-basins to implement restoration. At this time no enhancement of white sturgeon has been implemented in the area above McNary Dam.

CRITICAL UNCERTAINTIES:

John Day fall chinook will be acclimated to increase survival. Data from coho in the Yakima River indicate survival can be substantially increased with acclimation versus direct stream release. As part of the master plan, the YIN intends to utilize the 350 white sturgeon broodstock presently on hand at Hanford to implement supplementation of the depressed mid-Columbia stocks. However, risks to native stocks will be minimized by using local populations of sturgeon to reintroduce back into the Columbia.

BIOLOGICAL NEED:

Fall chinook in the mid-Columbia are not in danger of extirpation, but the K-Basin acclimation proposal provides John Day mitigation reprogramming from the lower river to "in-place, in-kind" mitigation. White sturgeon are badly depressed in this region. The master plan developed under this project would seek to begin rebuilding white sturgeon populations using at least in part the established broodstock at Hanford. However, primary supplementation actions will be coordinated with the states of Washington and Oregon and the USFWS and use local wild broodstock collected from behind the dams on the mainstem Columbia and Snake Rivers.

HYPOTHESIS TO BE TESTED:

We will be testing the hypotheses that the K-basin purification pools located on the Hanford Nuclear Reservation can be used as artificial supplementation facilities for the outplanting of fall chinook, coho and sturgeon populations into selected areas of the Columbia Basin.

JUSTIFICATION FOR PLANNING:

The NPPC has determined that a master plan must be developed for all new fish rearing facilities before construction can begin.

METHODS:

700,000 to 1,000,000 fall chinook (John Day Mitigation fish) will be acclimated annually in net pens in the Hanford K-Basin ponds. This project supports the regional goal of reprogramming John Day fall chinook above McNary Dam. The long-term goal

is to have these fall chinook return as adults to the Hanford Reach to supplement natural production of fall chinook and to increase tribal harvest opportunity in Zone 6. The Department of Energy has offered the use of the K-Basin facilities to the Yakama Indian Nation and BPA. The YIN agreement with DOE provides opportunity to evaluate the K-Basin by development of a master plan for achieving artificial propagation and enhancement goals for salmon, white sturgeon, and other appropriate species.

PLANNED ACTIVITIES

SCHEDULE:

Planning Phase **Start** 7/1996 **End** 7/1997 **Subcontractor** Yes

Task Develop masterplan.

Implementation Phase **Start** 10/1997 **End** 7/1998 **Subcontractor**

Task Initiate construction actions pursuant to master plan.

O&M Phase **Start** 10/1997 **End** ongoing **Subcontractor**

Task Provide for the operations and maintenance of K-basins.

PROJECT COMPLETION DATE:

ongoing

OUTCOMES, MONITORING AND EVALUATION

SUMMARY OF EXPECTED OUTCOMES

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

Costs for this program will be jointly shared by BPA, Department of Energy and the Yakama Indian Nation. Benefits to fall chinook and white sturgeon are expected to occur within a few years. Full funding has not been defined and long term funding needs are yet to be determined and will be based on master plan development.

Present utilization and conservation potential of target population or area:

The Hanford Reach supports the largest fall chinook population in the Columbia Basin. The sturgeon populations which will be impacted have been reduced as a result of the installation of the hydro dams.

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

Sport fisheries and tribal subsistence, ceremonial and commercial fisheries will have increased harvest opportunities as a result of this action.

Physical products:

The goal is for up to 5 million fall chinook to be reared and released. The Master Plan product will describe the sturgeon and coho production potential of the facility.

MONITORING APPROACH

700,000 to 5,000,000 fall chinook (John Day Mitigation fish) will be acclimated annually in net pens in the Hanford K-Basin ponds. This project supports the regional goal of reprogramming John Day fall chinook above McNary Dam. The long-term goal is to have these fall chinook return as adults to the Hanford Reach to supplement natural production of fall chinook and to increase tribal harvest opportunity in Zone 6. The Department of Energy has offered the use of the K-Basin facilities to the Yakama Indian Nation and BPA. The YIN agreement with DOE provides opportunity to evaluate the K-Basin by development of a master plan for achieving artificial propagation and enhancement goals for salmon, white sturgeon, and other appropriate species.

EVALUATION

The number of adults that enter the fishery is one indicator of success. However, the ability of the project to increase runs and maintain the genetic diversity of the resource is also important. It is our intent to monitor the stocks for genetic change, if possible.

Incorporating new information regarding uncertainties:

Yes.

Increasing public awareness of F&W activities:

The purpose of this project is to provide additional opportunity for fishing groups to harvest fish. We will need to make sure that notification to the public is made to advertise the benefits of this project.

RELATIONSHIPS

RELATED BPA PROJECT

9604000 Coho Restoration Mid-columbia R Tributaries
 5509800
 9603202

RELATIONSHIP

Provides coho for reintroduction into Mid-Columbia Tributaries
 Partially implements FY97 Proposal # 5509800. See also
 9603202

OPPORTUNITIES FOR COOPERATION:

The DOE is funding maintenance of the K-Basin facilities and encourages their use in the Fish and Wildlife Program (J. Wagoner letter to R. Hardy, May 1, 1995). DOE has offered use of the K-Basin facilities to the YIN and BPA.

COSTS AND FTE

1997 Planned: \$358,400

FUTURE FUNDING NEEDS:

<u>FY</u>	<u>\$ NEED</u>	<u>% PLAN</u>	<u>% IMPLEMENT</u>	<u>% O AND M</u>
1998	\$394,240	10%	90%	90%
1999	\$421,120	5%	95%	95%
2000	\$446,880	5%	95%	95%
2001	\$477,120	5%	95%	95%
2002	\$507,000	5%	95%	95%

PAST OBLIGATIONS (incl. 1997 if done):

<u>FY</u>	<u>OBLIGATED</u>
1996	\$69,461
TOTAL:	\$69,461

Note: Data are past obligations, or amounts committed by year, not amounts billed. Does not include data for related projects.

1997 OVERHEAD PERCENT: 26.6%

HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:

The indirect rate applies to the total direct project costs.

CONTRACTOR FTE: 5

SUBCONTRACTOR FTE: There is one half of a man year for a subcontractor in 1998.