

NEZ PERCE TRIBAL HATCHERY

8335000

SHORT DESCRIPTION:

Design and construct and implement hatchery supplementation facilities for the Nez Perce Tribe to assist in recovery and restoration of spring/summer, and fall chinook in the Clearwater subbasin.

SPONSOR/CONTRACTOR: NPT

Nez Perce Tribe
R. Ed Larson, Director, Production Services
P.O. Box 365, Lapwai, ID 83540
208/843-7320

SUB-CONTRACTORS:

Valley Helicopter; R. H. Sampsel; Consultant. Sprenke & Ralston; Well Drilling Contractor; Genetic Samples; Aerial Photo Reconnaissance

GOALS

GENERAL:

Supports a healthy Columbia basin, Maintains biological diversity, Maintains genetic integrity, Increases run sizes or populations, Adaptive management (research or M&E), Program coordination or planning, Project should be integrated with NMFS recovery plan for Snake River basin fall chinook

WATERSHED:

Coordination

ANADROMOUS FISH:

Production

WILDLIFE:

Research, M&E

NPPC PROGRAM MEASURE:

7.4M.1;7.4M.2; 7.4M.3;7.5B7.4F;7.3B;7.3B.7

RELATION TO MEASURE:

NPTH is a conservation, supplementation facility designed to recover and restore anadromous fish runs in natural habitats including listed Snake River fall chinook and non-listed spring chinook . Two genetic resource assessments , a monitoring and evaluation plan, and a broodstock management document have been developed to guide the project following implementation. Habitat and population baseline data have been collected for three years to address carrying capacity issues for supplementation which will integrate natural and artificial production. Supplementation techniques include release of fish at various life stages into habitats following enhanced survival during incubation and early rearing. Rearing techniques pursue a "Natures" approach to mimic natural rearing for timing, size, and conditioning; e.g., incubation time and temperatures, substrate, subsurface feeding, physical conditioning, predator response, low density rearing, scattered releases and flow constraints in hydrosystem passage timing. Releases are scoped on the basis of estimated carrying capacity in relation to improved or enhanced habitats. Genetic considerations integrate natural and hatchery spawners and production to avoid inadvertent domestic selection developing non-beneficial genetic factors. Overall adaptive management profile utilizes IHOT guidelines for production ,design, and operations.

BIOLOGICAL OPINION ID:

Endangered Species Act Section 7 Biological Opinion on 1995-1998 Hatchery Operations in the Columbia River Basin, Consultation Number 383

OTHER PLANNING DOCUMENTS:

March 1995, National Marine Fisheries Service Snake River Salmon Recovery Plan, Sections 4,.1.a-d;4.3.a,b;4.4.a-c;4.7.d
Wy Kan Ush Me Wa Kush Wit, Volume 2, Section 2, pp. 102-112

TARGET STOCK

North Lapwai Valley, lower Clearwater River,
Snake River fall chinook

LIFE STAGE

adult, egg, fingerling, age 0+ smolts

MGMT CODE (see below)

(L)

Cherrylane, lower Clearwater River, Snake River fall chinook	adult, egg, fingerling, age 0+ smolts	(L)
Lukes Gulch, lower S.F. Clearwater River, early Snake River fall chinook	adult, egg, fingerling, age 0+ smolts	(L)
Cedar Flats, lower Selway River, early Snake River fall chinook	adult, egg, fingerling, age 0+ smolts	(L)
lower White Sands Creek, Lochsa River spring chinook	adults, eggs, parr outplants	S; W
Warm Springs Creek, Lochsa River spring chinook	adults, eggs, parr outplants	S; W
Boulder Creek, Lochsa River spring chinook	adults, eggs, parr outplant	S; W
Meadow Creek, Selway River spring chinook	adults, eggs, presmolts	S; W
Mill Creek, S.F. Clearwater River spring chinook	adult, egg, fingerling, presmolt	S; W
Newsome Creek, S.F. Clearwater River spring chinook	adult, egg, fingerling, presmolt	S; W
Lolo Creek, Yoosa/Camp Spring Chinook	adult, egg, fingerling, presmolt	S; W

AFFECTED STOCK

Bull trout, cutthroat trout

BENEFIT OR DETRIMENT

Beneficial

BACKGROUND

Stream name:

Mainstem Clearwater River; S.F. Clearwater River; M. F. Clearwater River; Selway River; Lochsa River; Lolo Creek; Newsome Creek, Mill Creek; Boulder Creek; Warm Springs Creek; Meadow Creek; Eldorado Creek; Johns Creek; Ten Mile Creek; Fish Creek; Brushy Fork Creek

Subbasin:

Clearwater river

Stream miles affected:

Mainstem Clearwater River, 60+; S.F. Clearwater River, 60+; M. F. Clearwater River, 20+; Selway River, 20+; Lochsa River, 60+; Lolo Creek, 60+; Newsome Creek, 30+; Mill Creek, 15+; Boulder Creek, 10+; Warm Springs Creek, 5+; Meadow Creek, 50+; Eldorado Creek, 30+; Johns Creek, 30+; Ten Mile Creek, 15+; Fish Creek, 30+; Brushy Fork Creek, 20+

Land ownership:

Public and private

HISTORY:

Nez Perce Tribe proposed project to Columbia River Basin Fish and Wildlife Program. Amended to Program in 1983. Current planning and predesign initiated in 1987. State and Federal coordination resolved. NEPA process in progress with ROD targeted for 1997. Final design to begin 1997; continue until completed. Facilities to consist of two Central Incubation and Rearing Facilities (CIRF) and six satellite facilities, outplanting to "treatment" streams matched to "control" streams for testing supplementation, and one "experimental" stream to explore tests. Monitoring and evaluation implemented in 1993 to establish habitat and population base lines. Master Plan, Genetic Risk & Resource documents (2), Monitoring and Evaluation Plan, Supplement to the Master Plan, Broodstock Management Plan, multiple water evaluation reports, temperature, and flow data gathering, Preliminary Design Memorandums, Cultural Resource Surveys as background for developing the project. Land leases established at Cherrylane facility. Sweetwater Springs acquisition from IDFG being negotiated. USFS special use permits being finalized for satellite facility sites and weirs.

BIOLOGICAL RESULTS ACHIEVED:

1993: Broodstock development begun using "surplus" hatchery production outplanted to Meadow Creek, Selway River 1993-94 to study and evaluate supplementation strategies. Adult returns expected to begin 1996-98.

1993-95: Juvenile monitoring shows initial survival following releases for two consecutive years.

PROJECT REPORTS AND PAPERS:

- 1984: Feasibility Study by CH2-M Hill.
- 1992: Master Plan Nez Perce Tribal Hatchery
- 1992: Genetic Risk Assessment Nez Perce Tribal Hatchery Master Plan.
- 1994: Draft Monitoring & Evaluation Plan
- 1994: Nez Perce Tribal Hatchery Predesign Study.
- 1995: Selway Genetic Resource Assessment
- 1995: Supplement to Master Plan
- 1997: Broodstock Management Plan, Kincaid, NBS. (in progress).
- 1996: Final Monitoring and Evaluation Plan (completed).
- 1996-7: NEPA Environmental Assessment and Record of Decision (in progress).

ADAPTIVE MANAGEMENT IMPLICATIONS:

Recovery of weak spring chinook stocks in Lolo, Newsome, Mill, Meadow, Boulder, Warm Spring, and White Sand Creeks.
Recovery of fall chinook in lower mainstem Clearwater River, as a listed ESA stock.

PURPOSE AND METHODS

SPECIFIC MEASUREABLE OBJECTIVES:

- Juvenile survival following release evaluated within the stream and at Snake River dams.
- Adult spring chinook natural spawning returns to Lolo Creek >162; Mill Creek >46; Newsome Creek >51; Boulder Creek >60; Warm Spring Creek >14; Meadow Creek > 244; Totals >577.
- Adult spring chinook hatchery broodstock returns to Lolo Creek >136; Mill Creek >36; Newsome Creek >68; Boulder Creek >67; Warm Spring Creek >16; Meadow Creek > 323 Totals >646.
- Available spring chinook harvest >284 fish.
- Adult fall chinook natural spawning returns to lower and upper mainstem Clearwater River >4,625
- Adult fall chinook hatchery broodstock returns to Cherrylane Clearwater River >1,598
- Available fall chinook harvest >1,151 fish.

CRITICAL UNCERTAINTIES:

- Supplementation success as planned may not be effective.
- Bureaucratic process cannot be activated in a timely manner to provide facilities for hatchery production as needed to prevent extinction of listed stocks.

BIOLOGICAL NEED:

- Recover weak populations rapidly, 2-4 generations (8-16 years) to population sizes supporting ESA delisting.
- Prevent loss of biodiversity and inbreeding depression due to small population size.
- Develop population sizes capable of sustaining Tribal and Non-Tribal Harvests.

HYPOTHESIS TO BE TESTED:

- * Mimicking natural rearing conditions during early life stages enhances post release survival in the supplementation process
- * Supplementation technology can recover weak populations through introduction of parr, presmolts, smolts into natural streams.
- * Modification of hatchery environment to mimic life stages of natural fish during incubation and rearing will enhance supplementation responses.

ALTERNATIVE APPROACHES:

- ALTERNATIVE 1: USE OF EXISTING PRODUCTION HATCHERIES; a) the Tribe is not a legal signatory participant to LSRCP/USFWS program; b) mitigation requirements not being met by existing hatcheries, c) existing facilities cannot meet biological design criteria required for NPTH, d) existing facilities are not meeting IHOT guidelines.
- ALTERNATIVE 2: NATURAL HABITAT ENHANCEMENT AND RESTORATION: a) natural production survival from spawning adult to smolt is not great enough to counter act the smolt to adult mortality caused during passage through the lower

river hydropower systems and in ocean mortality, b) only artificial enhanced survival through use of hatchery and supplementation offers short term hope of counter acting excessive smolt to adult mortality, and c) smolt to adult survival through the lower river hydrosystem must be increased at least two fold to prevent population decline and four fold to rebuild populations naturally.

JUSTIFICATION FOR PLANNING:

N/A, project focuses on supplementation production implementation even though coordination must occur.

METHODS:

Supplementation using one or more of the following products; adults, gametes, eggs, fry, parr, presmolt, sub-yearling smolts, and yearling smolts.

Captive broodstock may become necessary in the event populations decline to near extinction levels.

PLANNED ACTIVITIES

SCHEDULE:

Planning Phase **Start** 1995 **End** 1997 **Subcontractor** BPA

Task 1996-97: Complete project DEIS, ROD, and Biological Assessment; Final Design, Begin Phased Construction of facilities.
 1998: Cherrylane Central Incubation and Rearing Facility completed and operational. Cedar Flats and Yoosa/Camp Creek satellite design and construction in preparation for 1998 adult returns.
 1998 through 2001: Design and construct Sweetwater Springs CIRF facility and satellites at Newsome Creek, Mill Creek, Luke's Gulch as needed.

Implementation Phase **Start** 1997 **End** 1998 **Subcontractor** BPA

Task Final Design for Cherrylane and Sweetwater Springs Central Incubation and Satellite facilities; Yoosa/Camp, Cedar Flats, Newsome, Mill, & North Lapwai Valley.

O&M Phase **Start** 1997 **End** 2002 **Subcontractor** BPA

Task Nez Perce Tribal Hatchery Central Incubation and Sweetwater Springs Central Incubation facilities and satellites; Yoosa/Camp, Cedar Flats, Newsome, Mill, & North Lapwai Valley.

PROJECT COMPLETION DATE:

Date of completion related to success of failure to recover salmon species and stocks.

CONSTRAINTS OR FACTORS THAT MAY CAUSE SCHEDULE OR BUDGET CHANGES:

Extinction of existing species and populations if supplementation is not undertaken within the next year.
 Supplementation may not be able to compensate for smolt to adult mortality occurring in the hydrosystem.
 Involuntary change of genetic traits promoting natural survival.

OUTCOMES, MONITORING AND EVALUATION

SUMMARY OF EXPECTED OUTCOMES

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

- 1,600 - 3,200 spring chinook adult recovery to tributary streams annually by year 2,015.
- 2,500 - 5,000 fall chinook adults recovery to lower mainstem Clearwater River by year 2,015.
- 2,000 - 4,000 summer chinook adults restored to M.F. Clearwater, Lochsa, & Selway Rives annually by year 2,015.

Present utilization and conservation potential of target population or area:

Less than 250 spring chinook natural spawners, less than 200 fall chinook natural spawners.

Assumed historic status of utilization and conservation potential:

Greater than 5,000 spring chinook natural spawners and greater than 5,000 fall chinook natural spawners.

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

Rebuild and maintain natural spawning populations through supplementation in order to provide harvestable abundances from each species and stock.

Contribution toward long-term goal:

Spring, Summer, Fall chinook for the purpose of delisting and providing harvest.

Indirect biological or environmental changes:

Improved habitat protection and enhancement, flow regimes to support emigration of juveniles and immigration of adults, improved juvenile and adult hydro-passage facilities.

Physical products:

NA

Environmental attributes affected by the project:

Protection of riparian habitat in relation to stopping logging and or mining in this area.

Changes assumed or expected for affected environmental attributes:

NA

Measure of attribute changes:

NA

Assessment of effects on project outcomes of critical uncertainty:

Monitoring and evaluation measures juvenile and adult survival changes over time.

Information products:

Juvenile post release survival is measured using parr density counts, PIT tag recoveries traps and dams, adult counts at weirs and on the spawning grounds.

Coordination outcomes:

1983 - 1994: Feasibility, site evaluations, Master Plan development, Genetic Risk Assessment, Monitoring and Evaluation Plan, Cultural resource assessments.

FY95-97: Complete NEPA analysis; develop draft hatchery operating manual; monitor key parameters at satellite sites; monitor watershed activities; refine production goals; complete preliminary facility design; refine harvest management plan.

MONITORING APPROACH

Supplementation using one or more of the following products; adults, gametes, eggs, fry, parr, presmolt, sub-yearling smolts, and yearling smolts.

Provisions to monitor population status or habitat quality:

M&E population base line data gathered for each stream; established treatment and control streams, and a detailed monitoring and evaluation plan.

Data analysis and evaluation:

Annual reports and recommendations collated over time with other projects studying supplementation.

Information feed back to management decisions:

Adaptive management responses to modify supplementation & production actions.

Critical uncertainties affecting project's outcomes:

Idaho Salmon Supplementation studies, NMFS recovery plan.

EVALUATION

Through monitoring and evaluation of project in comparison with Yakima Hatchery and other supplementation programs.

Incorporating new information regarding uncertainties:

Reports and recommendations in review with NPPC, CBFWA, U.S. v. OREGON PAC.

Increasing public awareness of F&W activities:

Through publication of annual reports at BPA, community involvement, interaction with state and federal fisheries production programs.

RELATIONSHIPS

RELATED BPA PROJECT

RELATIONSHIP

9205200 BPA Lands Support for Nez Perce Tribal Hatchery - BPA

9005200 Perf/Stock Prod. Impacts of Hatchery Suppl. USFWS

8909803 Salmon Suppl. Studies in Idaho Rivers, Shone-Bannock TRB

8909802 Salmon Suppl. Studies in Idaho Rivers, NPT

8909801 Salmon Suppl. Studies in ID Rivers, USFWS

8909800 Eval. Suppl. Salmon/Clearwater Rv. IDFG

8812600 Technical Support IDFG

LSRCP Hatcheries, spring chinook broodstock in the Clearwater subbasin Clearwater Anadromous Fish Hatchery, IDFG; Dworshak National Hatchery, USFWS. Kooskia National Hatchery, USFWS. IPC Mitigation Rapid River Hatchery, spring chinook broodstock, Salmon River subbasin. Lyons Ferry Hatchery, fall chinook broodstock donor. BPA & USFS funded habitat restoration projects in Lolo, Eldorado, Newsome, and Mill Creeks where NPTH production is planned.

RELATED NON-BPA PROJECT

RELATIONSHIP

Lookingglass Hatchery, LSRCP, USFWS Rapid River spring chinook broodstock, Clearwater Anadromous Fish Hatchery, IDFG

Broodstock and interim juvenile production

Dworshak/Kooskia National Fish Hatchery Complex, USFWS

Broodstock and interim juvenile production

OPPORTUNITIES FOR COOPERATION:

State and/or Federal hatcheries will furnish broodstock from hatcheries when populations are abundant. State and Federal agencies can provide short term support to fish production as necessary.

COSTS AND FTE

COSTS AND FTE

1997 Planned: \$1,860,000
1996 Unobligated: \$2,499,047
1997 Planned: \$0

FUTURE FUNDING NEEDS:

<u>FY</u>	<u>\$ NEED</u>	<u>% PLAN</u>	<u>% IMPLEMENT</u>	<u>% O AND M</u>
1998	\$8,000,000	20%	68%	13%
1999	\$6,000,000	13%	70%	17%
2000	\$3,000,000	17%	50%	33%
2001	\$3,000,000	17%	50%	33%
2002	\$2,500,000	5%	50%	45%

PAST OBLIGATIONS (incl. 1997 if done):

<u>FY</u>	<u>OBLIGATED</u>
1983	\$129,000
1984	\$32,000
1987	\$109,927
1988	\$211,675
1989	\$77,271
1990	\$480,000
1991	\$188,002
1992	\$93,975
1993	\$505,256
1994	\$600,000
1995	\$969,714
1996	\$840,953
1997	\$1,226,973

TOTAL: \$5,464,746

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

OTHER NON-FINANCIAL SUPPORTERS:

Pulp and Paper Workers Resource Council, Idaho Salmon and Steelhead Unlimited, Wallowa County Commissioners.

LONGER TERM COSTS: EXPECT A 25 YEAR COST OF AT LEAST \$1,200,000 PLUS INFLATION FOR O&M A

NPTH is a supplementation project intended to rebuild natural populations in conjunction with the NMFS Recovery Plan and to fulfill Tribal needs for recovery and restoration. While NMFS is doing research on "natures" approaches to production, this project has been moving in that direction since its beginning. For example, it has looked at mimicking natural production through temperature controlled incubation, naturalized habitats for early and final rearing, velocity conditioning and predator avoidance response conditioning, and low density rearing. All for the purpose of meeting the needs of the fish and not for the convenience of man in order to enhance post release survival and establish strong natural reproducing populations capable of with standing harvest.

1997 OVERHEAD PERCENT: 29.5%

HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:

Total except administrative portions affected by tax exemptions.

CONTRACTOR FTE:

Estimate 15 full time to cover planning, production operations, and monitoring and evaluation, 11 seasonal (part time).

SUBCONTRACTOR FTE: Estimate 7, part time unknown.