

COLVILLE TRIBAL FISH HATCHERY

8503800

SHORT DESCRIPTION:

Produce 22,679 kg (50,000 lbs.) of resident fish that include brook trout, rainbow trout and lahontan cutthroat trout. All the fish will be released into reservation waters, including boundary waters in an effort to provide a successful subsistence/recreational fishery for Colville Tribal members as well as a successful non-member sport fishery as partial mitigation for anadromous fish losses above Chief Joseph and Grand Coulee Dams.

SPONSOR/CONTRACTOR: CCT

Colville Confederated Tribes

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SUB-CONTRACTORS:

NA- The Colville Tribe is the sole contractor for this project.

GOALS

GENERAL:

Increases run sizes or populations

RESIDENT FISH:

Production, O&M

NPPC PROGRAM MEASURE:

10.8B.6

RELATION TO MEASURE:

The Colville Tribal Fish Hatchery is the hatchery that was constructed to satisfy program measure 10.8B.6

BIOLOGICAL OPINION ID:

Long term O&M agreement- BPA has given this project a non-discretionary funding status.

TARGET STOCK

Rainbow trout, brook trout, cutthroat trout

LIFE STAGE

Sub-yearlings and yearlings

MGMT CODE (see below)

RSL

AFFECTED STOCK

Fish eating birds and mammals such as eagles, osprey, heron, loons, mink, bear and raccoon

BENEFIT OR DETRIMENT

The project has a beneficial effect for these species by supplying an increased forage base.

BACKGROUND

STREAM AREA AFFECTED

Stream name:

Lakes and Streams of the Colville Reservation

Stream miles affected:

142.1 Miles

Hydro project mitigated:

Chief Joseph and Grand Coulee Dams

LAND AREA INFORMATION

Subbasin:

Upper Columbia River (Colville Indian Reservation)

Land ownership:

Tribal, Trust and Fee

Acres affected:

Approximately 6,500 surface acres

Habitat types:

NA- This project does not involve habitat protection or enhancements.

HISTORY:

The Colville Tribal Fish Hatchery is located in the blocked area above Chief Joseph and Grand Coulee Dam and is a resident fish substitution measure as partial mitigation for anadromous fish losses due to the Federal hydropower system. This project is a long-term O&M project (25 year agreement between BPA and Colville Tribe) and was previously funded under O&M agreement # DE-MS79-88BP92434. Bonneville Power Administration has given this project a non-discretionary funding status.

BIOLOGICAL RESULTS ACHIEVED:

This program has met the production goal (22,679 kg) for every year of operation. •

The stocking efforts from the hatchery have at least maintained the CPUE and condition factor of fish caught in the sport and subsistence fishery since the termination of the USFWS stocking efforts (Winthrop National Fish Hatchery). The brook trout fishery in Twin Lakes and Owhi Lake have improved substantially since the first stocking from the Colville Tribal Fish Hatchery as has the lahontan cutthroat trout fishery in Omak Lake. Condition factors, CPUE's and average fish size for the 1996 fishing season are currently being analyzed and will be presented in an annual summary report.

The development of the rainbow trout broodstock program has yet to be realized partly due to the Tribes cautious approach to utilizing the SanPoil River stock (genetic and disease precautions). The Tribe is however gaining knowledge of current broodstock potential from other reservation sources as well as the SanPoil River stock (i.e. adult spawning escapement).

PROJECT REPORTS AND PAPERS:

An Annual Operating Plan is developed for each year of operation detailing goals and objectives, production and outplanting plans, broodstock development activities, monitoring activities, projected hatchery operations, annual operating budget and water quality and quantity criteria to be supplied at the hatchery. An annual production/operations report is completed each year detailing the past years operation and the progress towards the goal. This reporting was not required until FY-96, however the Tribe believed it was an important component to the program and provided the annual reports of the programs progress towards it's stated goals and objectives even if it was not required. In addition to the above reporting requirements the Tribe will now begin to submit quarterly reports as to the programs progress and activities.

ADAPTIVE MANAGEMENT IMPLICATIONS:

Artificial stocking efforts can and do contribute to creel catches of resident fish, particularly in closed lake systems subject to substantial fishing pressure and limited natural production capabilities. Monitoring and evaluation of the projects direction toward stated goals and objectives should be a part of all hatchery production programs beginning during the initial planning and scoping process. The goal of hatchery programs should not be to produce only a given amount for fish, but to provide a fish that will satisfy specific management objectives, such as CPUE's, high quality fish in the creel, low mortality during hatchery rearing, good conversion to creel, good post release survival and contribution to the natural production component (in some circumstances).

PURPOSE AND METHODS

SPECIFIC MEASUREABLE OBJECTIVES:

- (1) Produce 22,679 kg of resident fish
- (2) CPUE 1.0 fish/Hr. of greater (subsistence fishery)
- (3) CPUE .8-1.0 fish/Hr. or greater (sport fishery)
- (4) Rainbow trout C values greater than 5,500 X 10⁻⁷
- (5) Brook trout C values greater than 5,500 X 10⁻⁷
- (6) lahontan cutthroat trout C values greater than 4,500 X 10⁻⁷
- (7) Increase natural production for rainbow trout by 15% by the year 2010
- (8) Increase natural production of brook trout by 10% by the year 2010
- (9) Obtain 130,000 rainbow trout eggs from reservation brood source by 2000
- (10) Continue the experimental otolith marking program (M&E)
- (11) Perform otolith recovery efforts (M&E)
- (12) Develop and utilize a pre-release fish condition index (M&E)
- (13) Provide rearing conditions that lessen the occurrence of bacterial, viral and parasitic infestations.
- (14) Monitor and enumerate adult adfluvial rainbow trout in selected tributaries as well as other spring spawning stocks within the reservation.

CRITICAL UNCERTAINTIES:

Major structural hatchery facility failure (eg. Pump failures, raceway failures, water source reductions etc.).

Major disease outbreak during the hatchery rearing period.

Collange of the current or future free-ranging brood stock sources

Substantial reduction in the quantity or quality current spawning or rearing habitats.
Funding no longer is available for the hatchery O&M

BIOLOGICAL NEED:

The Colville Tribe was and still is a fishing culture and relied heavily upon the salmon resources of the Columbia River. The Construction of Grand Coulee Dam completely blocked the historic migrations of anadromous fish to this area, therefore the residents of the area, including the Tribes are completely reliant upon resident fish to support their fisheries. This project partially mitigates for the loss of anadromous fish in the blocked area. The freshwater environment that remains can not supply the demand for fish and fishing opportunities or the biomass to compensate for the loss of anadromous fish via natural production. Artificial production and increased natural production (supplementation) can provide substantial numbers of fish and fishing opportunities to partially mitigating for anadromous fish losses.

HYPOTHESIS TO BE TESTED:

Current hatchery production of 22,697 kg of resident fish utilizing free-ranging brood sources and natural recruitment will maintain a successful Tribal subsistence and non-tribal recreational fishery long term provided that current habitat quality and quantity are maintained or improved.

ALTERNATIVE APPROACHES:

NA

JUSTIFICATION FOR PLANNING:

NA- This is an on the ground activity.

METHODS:

Culture techniques standard for the profession with the water source being single pass. Contribution to the hatchery will be analyzed using standard angler creel surveys. Otoliths will be collected during the creel surveys and with standard horizontal gillnet surveys. Statistical analysis will be used to determine significance of contribution to the fishery of various groups of fish (statistical method undetermined at this time). All fish will be resident salmonids (brook trout, lahontan cutthroat trout and rainbow trout). For more detail on hatchery operations, otolith marking, creel census and species number/distribution refer to the Colville Tribal Hatchery Annual Operating Plan # 88BI92434.

PLANNED ACTIVITIES

SCHEDULE:

PROJECT COMPLETION DATE:

2014 with an option to 2039

CONSTRAINTS OR FACTORS THAT MAY CAUSE SCHEDULE OR BUDGET CHANGES:

Major facility failure, brood stock failure or disease outbreaks

OUTCOMES, MONITORING AND EVALUATION

SUMMARY OF EXPECTED OUTCOMES

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

(See Measurable Objectives section)

Present utilization and conservation potential of target population or area:

An definition of utilization and conservation is needed in order to answer B, C and D

Assumed historic status of utilization and conservation potential:

NA

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

NA

Contribution toward long-term goal:

The majority of the fish distributed, appx 1.3 million trout, are intended to provide a "carry-over" fishery. Fish from this program are intended to be capable of contributing to the natural production component of the reservation fish populations. Contribution to the natural production component will be achieved by producing and releasing fish of sufficient quality and quantity to survive to spawning maturity, to spawn in existing and future available habitat while meeting other program objectives. Hatchery stocking efforts and operational procedures will help enhance broodstock sources for all three species reared at the hatchery by stocking high quality fish and allowing natural selection to influence the population over time. The broodstock sources will be of natural lake origin (i.e. not on-station captive brood).

Indirect biological or environmental changes:

A high quality subsistence and sport fishery could potentially reduce the angler pressure upon weaker stocks located in adjacent locations and increasing their potential for recovery

Physical products:

22,679 kg of resident fish including brook trout, lahontan cutthroat trout and rainbow trout.

Environmental attributes affected by the project:

NA- This project will not affect any of the types of environmental attributes described in this question.

Changes assumed or expected for affected environmental attributes:

NA- This project will not affect any of the types of environmental attributes described in this question.

Measure of attribute changes:

NA- This project doesn't address habitat protection or enhancement.

Assessment of effects on project outcomes of critical uncertainty:

The assessment of effects to the project due to the realization one or more identified critical uncertainties should be simple as the amount of fish produced at the hatchery will be substantially less than the identified objective.

Information products:

The project will produce a comprehensive evaluation and monitoring of the hatcheries contribution to the subsistence and recreational fishery on the Colville Reservation including CPUE, fish condition factor, average fish size, hatchery/natural production component to the fishery, evaluation of otolith marking as a potential mass marking methodology, brood stock populations status of brook trout, lahontan cutthroat trout and development of a free-ranging rainbow trout brood stock population. The annual evaluation of the reservation fishery will be utilized to help identify potential changes to the hatchery operations, species type/number/size/condition, stock performance and stocking rate.

MONITORING APPROACH

The measurement of the projects biological outcomes should be fairly straight forward. The project has defined goals and objectives and time frames to accomplish the most of them. If the annual reports and data indicate a positive direction towards attainment of the project goals and objectives and these are consistent with those in the region and with the Colville Tribes, then it should be considered a positive measure of program accomplishment.

Provisions to monitor population status or habitat quality:

Routine fish health monitoring of brood stocks and fish reared at the hatchery, creel census surveys, gill netting surveys, electrofishing surveys, limnological monitoring of selected reservation lakes, surveys of free-ranging brood stock status annually.

Data analysis and evaluation:

Through an annual report that will be reviewed by the Tribe, BPA and any other interested party. The hatchery O&M agreement has provisions for annual operations review if warranted.

Information feed back to management decisions:

Through the process defined in the O&M agreement between BPA and The Tribe.

EVALUATION

Determine if the project is advancing toward it's stated goals and objectives in the time frame identified. If not how can the project be modified and improved.

Incorporating new information regarding uncertainties:

Through the O&M Agreement

Increasing public awareness of F&W activities:

People within the region, including Colville Tribal members experiencing a high quality fishery in a area that has lost it's major fishery resource in the past 50 years (anadromous fish) will have a substantial positive contribution towards public awareness of not only the regions effort to protect, mitigate and enhance fish and wildlife but provide an example of a successful effort.

RELATIONSHIPS

RELATED BPA PROJECT

RELATIONSHIP

The relationship between these two projects involves the population status of the adult adfluvial rainbow population in the SanPoil river basin. The adfluvial rainbow population is potential stock for developing a rainbow trout brood stock for the reservation. The adfluvial rainbow stock could possibly become the rainbow brood population if the stock is capable of withstanding the removal of family units on a regular basis without jeopardizing it's long-term viability.

RELATED NON-BPA PROJECT

RELATIONSHIP

This project provides the creel census personnel necessary to monitor the reservation fishery. This data is utilized to monitor the hatchery programs direction towards meeting it's goals and objectives.

COSTS AND FTE

1997 Planned: \$350,000

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>	<u>FY</u>	<u>OBLIGATED</u>
1998	\$355,000			100%	1985	\$94,777
1999	\$360,000			100%	1986	\$340,492
2000	\$365,000			100%	1987	\$49,571
2001	\$370,000			100%	1988	\$3,499,437
2002	\$0			100%	1989	\$390,072
					1990	\$278,926

1991	\$303,668
1992	\$293,382
1993	\$311,972
1994	\$286,477
1995	\$299,491
1996	\$346,961
1997	\$350,000

TOTAL: \$6,845,226

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

LONGER TERM COSTS:

The project will incur costs at least through 2014 and potentially through 2039 (See BPA/Tribal O&M agreement). Projected costs during this period is difficult to estimate, however for this exercise costs would expect in increase at approximately the inflation rate for most years with higher operations and maintenance costs incurred approximately every 10th year for major equipment replacement.

1997 OVERHEAD PERCENT:

Indirect costs vary annually depending upon the outcomes of the negotiations between the Tribes and the Federal Solicitors Office. Typically costs have ranged from 28% to close to 50%. Currently the Tribal indirect cost for this project is 48.8%

HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:

The 48.8% indirect cost applies only to the salary portion of the negotiated budget.

CONTRACTOR FTE: 4 FTE's

SUBCONTRACTOR FTE: None