

SPOKANE TRIBAL (GALBRAITH SPRGS) HATCHERY - O&M

9104600

SHORT DESCRIPTION:

Operate and maintain the Spokane Tribal Hatchery to provide a recreational kokanee fishery in Lake Roosevelt and Banks Lake. Operate facility in conjunction with Sherman Creek Hatchery.

SPONSOR/CONTRACTOR: Spokane Tribe

Spokane Tribe of Indians
Tim Peone, Hatchery Manager
Spokane Tribal Hatchery POB 100, Wellpinit, WA 99040
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SUB-CONTRACTORS:

General Contractors (2) for road construction and building improvements.

GOALS

GENERAL:

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

RESIDENT FISH:

Production, O&M

NPPC PROGRAM MEASURE:

10.8B.5

RELATION TO MEASURE:

Directly. Provides funds for the operation and maintenance of Spokane Tribal Hatchery.

BIOLOGICAL OPINION ID:

Long term O&M agreement

TARGET STOCK

Kokanee, rainbow trout

LIFE STAGE

MGMT CODE (see below)

S,A

BACKGROUND

STREAM AREA AFFECTED

Stream name:

Franklin D. Roosevelt Lake - Grand Coulee Dam Reservoir

Stream miles affected:

181 mi. - Includes Spokane And San Poil Riv.

Hydro project mitigated:

Grand Coulee Dam - BOR

LAND AREA INFORMATION

Subbasin:

Upper Columbia River

Land ownership:

Federal

Acres affected:

82,754 acres

HISTORY:

This restoration and enhancement project for Grand Coulee Reservoir (Upper Columbia River - Lake Roosevelt and Banks Lake) fisheries is the result of cooperative efforts between the BPA, Spokane and Colville Confederated Tribes, Upper Columbia United Tribes, Washington Department of Fish & Wildlife and National Park Service. Proposed in 1986 to restore and enhance kokanee salmon populations in Lake Roosevelt and Banks Lake by large-scale hatchery plants and restoring spawning runs in tributaries by outplanting reared fish for imprinting. Called for construction of two hatcheries: Spokane Tribal and Sherman Creek hatcheries. Sherman Creek used as egg collection & fry imprinting site. Spokane hatchery used as egg incubation, fingerling and yearling rearing and outplanting facility. Approved by NPPC and amended in 1987 Columbia Basin Fish & Wildlife Program. 1988 - Formation of Lake Roosevelt Hatcheries coordination Team comprised of BPA engineers, Tribal & State fisheries biologists and hatchery personnel from cooperative agencies to assist in design/operation of the two hatcheries. June

1990 - 25 year O&M Agreement signed between the BPA and Spokane Tribe for construction and O&M of the Spokane Tribal Hatchery. Construction completed in April 1991 and Spokane Tribal Hatchery officially opened June 7, 1991. Results from LRMP data collection 1989 to 1995 used for determining management strategies of each facility.

BIOLOGICAL RESULTS ACHIEVED:

Fish Production: 1991- 1,708,087 kokanee, 326,510 rainbow trout; 1992 - 2,121,058 kokanee, 508,195 rainbow trout; 1993 - 1,783,638 kokanee, 603,798 rainbow trout; 1994 - 1,747,373 kokanee, 454,124 rainbow trout, 1995 - 951,817 kokanee, 409,064 rainbow trout, and: 1996 - 252,880 kokanee, 696,591 rainbow trout. Overall products and milestones include the invariable increase in angling pressure and harvested kokanee and rainbow trout throughout the reservoir. The increasing pressure in turn is generating millions of dollars annually to the local economy as well as exhibiting the results of this on site mitigation program. Also, strong kokanee salmon runs have been established at 3 different sites throughout the reservoir.

PROJECT REPORTS AND PAPERS:

Monthly Progress Reports, 1990 to 1996. Annual Reports for 1994 through 1996.

ADAPTIVE MANAGEMENT IMPLICATIONS:

Its clear from this program that restoration and enhancement via large scale hatchery production is an effective mitigation measure for resident fish. However, implications associated with the success of hatchery produced fish includes predation and entrainment through the reservoir. These implications are manageable by releasing fish as yearlings (as opposed to fingerlings) after seasonal reservoir drawdowns to reduce predation and entrainment.

PURPOSE AND METHODS

SPECIFIC MEASUREABLE OBJECTIVES:

Production of 1 million yearling size kokanee salmon and 500,000 rainbow trout fingerlings. This in turn will increase the ability to meet the biological objective of 300,000 harvestable adult kokanee and 190,000 harvestable adult rainbow trout for harvest (assuming an estimated 30% survival of kokanee and 38% survival of rainbow trout planted). In order to accomplish the kokanee and rainbow trout production goals, an additional well was drilled in 1996 to provide an extra 2.5 cfs of water required. The well should be operational by the summer of 1997.

CRITICAL UNCERTAINTIES:

Adverse effects from reservoir operations on hatchery planted fish as well as general productivity of the system. The risks then would be the loss of fish released into Lake Roosevelt pre-annual drawdown. The need for excessive drawdown due to flood control rule controls in 1996 and presumptive forecast for 1997 will surely be a risk to the collapse of the entire Lake Roosevelt fishery.

BIOLOGICAL NEED:

Grand Coulee reservoir kokanee salmon and rainbow trout populations are limited by suitable natural spawning habitat and entrainment losses associated with hydropower operations. Primary and secondary productivity of the reservoir, as determined from past studies is sufficient to support the number of hatchery planted fish as well as natural populations of the other fish species.

HYPOTHESIS TO BE TESTED:

Restore and enhance kokanee salmon and rainbow trout populations in Grand Coulee Reservoir by large scale hatchery plants and restoring runs in tributaries by outplanting hatchery reared fish at appropriate times for imprinting.

ALTERNATIVE APPROACHES:

One alternative approach to aiding in the annual release of 1 million kokanee yearlings was the use of net pens throughout the reservoir. This proposal is currently in amendment form and should be included in the CBFWA 1998 prioritization process. No other approaches have been proposed or applied.

JUSTIFICATION FOR PLANNING:

NA - fish production primary focus.

METHODS:

Implemented in 1990, maintained since then through long term (25 yr) agreement with the BPA for providing funds for operation and maintenance. Methodology - State of the art design with modern fish production tools, ie - structural: 44 raceways (indoor/outdoor, 603 ft3 ea.), packed column aeration, direct oxygen injection capable, temporary aerators, gravity flow headbox supplied with water pumped from surface and well (2) water sources (approx. 7.5 cfs) , laboratory of moderate water analysis and fish necropsy, 4 full time employees and 1 seasonal.

PLANNED ACTIVITIES

SCHEDULE:

Planning Phase **Start** Spring & Fall **End** Spring & Fall **Subcontractor** NO

Task Semi-annual meeting of the Lake Roosevelt Hatcheries Coordination Team to review and plan hatchery operating procedures for the Spokane Tribal and Sherman Creek facilities. Includes members from the Spokane and Colville Confederated Tribes and the WDF&W.

Implementation Phase **Start** 11/96 **End** 1997 **Subcontractor** Yes

Task Increase kokanee salmon production to 1 million yearlings released annually. In order to do this the hatchery will require an additional 2.5 cfs of water. With the addition of a new well the hatchery would be near full capacity and therefore annual activities would become stable.

PROJECT COMPLETION DATE:

2015, via lease agreement and intergovernmental

CONSTRAINTS OR FACTORS THAT MAY CAUSE SCHEDULE OR BUDGET CHANGES:

Environmental factors may change fish release times. No reason to believe a budget change will be needed in FY'98.

OUTCOMES, MONITORING AND EVALUATION

SUMMARY OF EXPECTED OUTCOMES

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

Increase reservoir populations of kokanee salmon and rainbow trout which in turn will increase angling pressure, number harvested and generate millions of dollars annually for the local economy. Also, increase kokanee salmon runs in tributaries throughout the reservoir.

Present utilization and conservation potential of target population or area:

Presently, the target populations (kokanee and rainbow trout) are utilized by approximately 68 % of the sport anglers who fish Lake Roosevelt (Underwood and Shields, 1995). For more detailed information see Lake Roosevelt Monitoring Project (LRMP) prioritization process data update form, project #94-043. In terms of conservation potential, the Spokane Tribe, Colville Confederated Tribes and WDF&W are developing a steering group to increase the ability to co-manage the Lake Roosevelt fishery.

Assumed historic status of utilization and conservation potential:

Angling pressure, specifically those targeting kokanee and rainbow trout, has increased approximately two fold since the hatchery was constructed and began operating in 1990-1991. This basically followed our assumption that increasing kokanee and rainbow trout populations in Lake Roosevelt would increase angling opportunity and hence pressure. Past studies have been researched and findings taken into account in determining the appropriate level of artificial production to meet the biological objectives. Currently, ongoing research and monitoring of the reservoir (LRMP) makes annual recommendations for hatchery production.

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

Steady increase in kokanee and rainbow trout populations available for harvest (sport and subsistence-Tribes) in accordance with meeting the biological objectives while not having adverse effects on native and wild stocks of fishes in the lake.

Contribution toward long-term goal:

For 1998, release of 500,000 kokanee yearlings and transfer 500,000 rainbow trout juveniles to Lake Roosevelt Net Pen rearing operations. Eventually the hatchery should be able to increase the number of kokanee yearlings released by an additional 500,000 if net pen rearing is successful.

Indirect biological or environmental changes:

At this time we are unaware of any.

Physical products:

Up to 500,000 kokanee yearlings released annually, all marked with coded wire tags and adipose fin clips, 500,000 rainbow trout juveniles transferred to Lake Roosevelt Net Pen rearing operations and, 500,000 kokanee fry carried over for release as yearlings.

Environmental attributes affected by the project:

None.

Changes assumed or expected for affected environmental attributes:

None.

Measure of attribute changes:

None.

Assessment of effects on project outcomes of critical uncertainty:

NA - this is a responsibility of the LRMP, project #94-043.

Information products:

Monthly and Annual Reports.

Coordination outcomes:

Review of past hatchery operations and determining future production and operating plans.

MONITORING APPROACH

Effects of the Spokane Tribal Hatchery on the Lake Roosevelt fishery are being monitored by the LRMP. Annual reports are submitted to the BPA which reflect these outcomes.

Provisions to monitor population status or habitat quality:

Same as above. See LRMP prioritization process data form, project #94-043.

Data analysis and evaluation:

Facilitated through the LRMP, results of yearly production will be presented to the Lake Roosevelt Hatcheries Coordination Team.

Information feed back to management decisions:

Same as above.

Critical uncertainties affecting project's outcomes:

Through decisions made by the Lake Roosevelt Hatcheries Coordination Team.

EVALUATION

1 - Hands on experience. Utilization of the Lake Roosevelt fishery. 2. - Review findings presented in the LRMP Annual Reports. 3. - Information passed through the Lake Roosevelt Forum, a group of agencies and public who have a concern with the developments on Lake Roosevelt.

Incorporating new information regarding uncertainties:

Through the management agencies, Spokane Tribe, Colville Tribe and Washington Department of Wildlife. Facilitated through the Lake Roosevelt Hatcheries Coordination Team.

Increasing public awareness of F&W activities:

The Spokane Tribal Hatchery Project coordinates with the Lake Roosevelt Forum, LRMP, Lake Roosevelt Rainbow Habitat Improvement Project, Lake Roosevelt Rainbow Trout Net Pen Rearing Project, the Chief Joseph Kokanee Enhancement Project, the Sherman Creek Hatchery Project and the BPA to annually present a display of the protection, mitigation and enhancement efforts called for through the NPPC's Fish and Wildlife Program at the Spokane Bighorn Sportsman Show. Also, through quarterly meetings with the Lake Roosevelt Forum and public visitation to the hatchery.

RELATIONSHIPS

RELATED BPA PROJECT

RELATIONSHIP

9501100 Chief Joseph Kokanee Enhancement

Managed by CCT, measures entrainment of kokanee from Lake Roosevelt and genetic diversity of kokanee stocks in Lake Roosevelt and Rufus Woods Lake (Chief Joseph Impoundment).

9406100 Lake Roosevelt Rainbow Trout Net Pen Rearing Project

Grass roots foundation, annually holds 500,000 rainbow trout produced by Spokane Tribal Hatchery for planting in Lake Roosevelt after annual drawdown.

9404300 Lake Roosevelt Monitoring Project to Evaluate the Effectiveness of Lake Roosevelt Hatcheries

Managed by Spokane Tribe in cooperation with Colville Confederated Tribes (CCT) and WDF&W, serves as management program for operations of Spokane Tribal and Sherman Creek Hatcheries.

9104700 Sherman Creek Hatchery

Managed by Washington Department of Fish and Wildlife (WDF&W). Serves as kokanee salmon egg collection site and yearling acclimation/outplant facility.

OPPORTUNITIES FOR COOPERATION:

The Spokane Tribe has provided \$220,000.00 dollars (FY'97 figure) for building an adult kokanee salmon collection facility on the southeastern boundary of the reservoir (Little Falls Dam). The facility will be constructed in the spring of 1997 and will enable the Tribe to collect kokanee salmon eggs from migrating adults. This in conjunction with the Sherman Creek Hatchery should provide enough kokanee salmon eggs to meet the biological objectives of the cooperative programs on Grand Coulee Reservoir.

COSTS AND FTE

1997 Planned: \$420,000

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>
1998	\$680,000		100%	
1999	\$472,500		100%	

<u>FY</u>	<u>OBLIGATED</u>
1991	\$202,517
1992	\$326,189
1993	\$412,851

2000	\$496,125	100%	1994	\$480,059
2001	\$520,931	100%	1995	\$456,830
2002	\$546,977	100%	1996	\$681,839
			1997	\$415,312
			TOTAL:	\$2,975,597

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

<u>FY</u>	<u>OTHER FUNDING SOURCE</u>	<u>AMOUNT</u>	<u>IN-KIND VALUE</u>
1998	Spokane Tribe of Indians		\$220,000.00
1999	Spokane Tribe of Indians		\$220,000.00

OTHER NON-FINANCIAL SUPPORTERS:

None.

LONGER TERM COSTS:

Starting from a estimated \$546,977.00 operating budget in 2,002, the annual increase if forecasted at 5%.
Operation and Maintenance.

1997 OVERHEAD PERCENT: 22%

HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:

[Overhead % not provided so BPA appended older data.] Total direct project costs.

CONTRACTOR FTE: 4 full time, 1 seasonal.

SUBCONTRACTOR FTE: NA - none.