

SHERMAN CREEK HATCHERY - O&M

9104700

SHORT DESCRIPTION:

Establish a kokanee broodstock for future egg requirements; create and enhance the kokanee fishery within Lake Roosevelt and assist in rainbow trout rearing through the use of net pen operations on Lake Roosevelt.

SPONSOR/CONTRACTOR: WDFW

Washington Department of Fish and Wildlife
John Kerwin, Division Manager
600 Capitol Way North, Olympia, WA 98501-1091
360/902-2623

SUB-CONTRACTORS:

None

GOALS

GENERAL:

Supports a healthy Columbia basin, Maintains biological diversity, Program coordination or planning, Education

WATERSHED:

Coordination

RESIDENT FISH:

Production, O&M

NPPC PROGRAM MEASURE:

10.8B.5

RELATION TO MEASURE:

The Sherman Creek Hatchery is operated as a kokanee imprinting and egg taking location to provide a source of locally adapted kokanee eggs for Lake Roosevelt and Banks Lake. Hatchery coordination decisions that affect the Spokane Tribal Hatchery and the Sherman Creek Hatchery are reached through coordination meetings with the Washington Department of Fish and Wildlife, Spokane and Colville Indian tribes.

BIOLOGICAL OPINION ID:

Long term O&M agreement

TARGET STOCK

Spokane stock Rainbow
Lake Whatcom/Kokanee

LIFE STAGE

MGMT CODE (see below)

A, RSH, RSL
A, RSH, RSL

AFFECTED STOCK

Bald Eagles

BENEFIT OR DETRIMENT

Beneficial

BACKGROUND

Stream name:

Columbia River

Subbasin:

Lake Roosevelt

Land ownership:

Public

HISTORY:

The Sherman Creek Hatchery is one of two kokanee facilities provided to partially mitigate for loss of anadromous fish habitat due to the construction of Chief Joseph and Grand Coulee Dams. As a part of this program, the BPA, Spokane Tribe of Indians, Colville Confederated Tribe and the Washington Department of Fish and Wildlife work collectively towards the goal of the fishery enhancement on Lake Roosevelt and Banks Lake.

The Sherman Creek Hatchery (SCH) was designed to rear 1.7 million kokanee fry for acclimation and imprinting during the spring and early summer. Additionally, it was designed to trap all available returning adult kokanee during the fall for

broodstock operations and evaluations. Since the initiation of this program, the operations of the SCH have been modified to better achieve program goals. These strategic changes have been the result of recommendations through the Lake Roosevelt Hatcheries Coordination Team (LRHCT) and were implemented to enhance imprinting, improve survival and operate the facilities more effectively. The primary change has been to replace the kokanee fingerling program with a kokanee yearling program and to rear rainbow trout which enable the Spokane Tribal Hatchery (STH) to rear additional yearling kokanee.

BIOLOGICAL RESULTS ACHIEVED:

Since the start of operations in April 1992 the following numbers of fish have been released in to Lake Roosevelt from the SCH:
1992 - 976,925 fingerling and 45,714 yearling kokanee
1993 - 902,749 fingerling and 85,321 yearling kokanee
1994 - 946,762 fingerling and 126,159 yearling kokanee
1995 - 275,609 yearling kokanee
1996 - 286,253 yearling kokanee

Additionally, the SCH reared 10,000 kokanee captive broodstock during 1993 and assists the STH and Lake Roosevelt Development Association production of 100,000+ catchable rainbow trout annually at the Kettle Falls Net Pen site. Since July 1995 the SCH has reared approximately 110,000 rainbow trout annually for stocking into net pens on Lake Roosevelt. This aspect of the SCH program is done to assist the STH (project # 91-47) meet its rearing program obligations. During 1995 the SCH collected 970 adult kokanee. Observations made during adult kokanee collections indicated that additional numbers of adult kokanee were present in the vicinity of Sherman Creek. During 1996 the SCH collected 970 adult kokanee. This number is believed to be less than one-third of the total numbers of kokanee observed returning to the Sherman Creek Cove area in 1996. Difficulties in getting fish to enter the hatchery trap have precluded the trapping of adult kokanee. The fish captured during the fall of 1996 were done so using a variety of methods including boat electro-fishing, backpack electrofishing, floating Oneida traps and the hatchery barrier trap.

PROJECT REPORTS AND PAPERS:

Monthly reports and an annual report entitled "Sherman Creek Annual Report" are submitted detailing work accomplished during that specific funding period is prepared and submitted.

ADAPTIVE MANAGEMENT IMPLICATIONS:

Major hatchery programming changes are discussed among the participating members of the Lake Roosevelt Hatchery Coordination Team. This team, comprised of one voting member each from the Colville Confederated Tribe, the Spokane Tribe and the Washington Department of Fish and Wildlife who work together to coordinate hatchery programs between the SCH and the STH.

PURPOSE AND METHODS

SPECIFIC MEASUREABLE OBJECTIVES:

Acclimate and imprint approximately 225,000 kokanee yearlings at the SCH and approximately 70,000 kokanee yearlings in the Kettle Falls Net Pen site. Rear approximately 110,000 rainbow trout fingerlings at the SCH to supply net pen rearing on Lake Roosevelt. Capture all available returning adult and jack kokanee through the utilization of the hatchery ladder and trap, Oneida floating traps and electrofishing in Sherman Creek Bay.

CRITICAL UNCERTAINTIES:

One area of uncertainty is that the hydraulic operation of the Lake Roosevelt will not provide sufficient water retention time to allow sufficient food production for released kokanee to develop. This was one reason the program was shifted from a fingerling to a yearling release strategy.

BIOLOGICAL NEED:

The SCH and STH are operated in tandem to enhance the fishery of Lake Roosevelt as partial mitigation for the loss of anadromous fish habitat due to the construction of Chief Joseph and Grand Coulee Dams.

HYPOTHESIS TO BE TESTED:

NA

ALTERNATIVE APPROACHES:

NA

JUSTIFICATION FOR PLANNING:

NA

METHODS:

Utilize standard fish culture methods for kokanee rearing and enhance imprinting through the use of chemical treatments to the water during rearing and fall return periods. Coordination with Projects 88-063 and 94-043 is also an integral part of this program.

PLANNED ACTIVITIES

SCHEDULE:

Planning Phase **Start** 10/96 **End** Ongoing **Subcontractor**

Task Kokanee rearing at SCH occurs March through July and at the Kettle Falls net pen site October through June. Rainbow trout are reared July through October. Adult kokanee returns start in September and continue through November. Imprinting chemical treatments to the water occur during the rearing phase and immediately prior and during adult returns. This schedule is anticipated to remain fairly constant for out-years. Planning is an on-going function of the operation and maintenance of this program.

Implementation Phase **Start** 10/96 **End** Ongoing **Subcontractor**

Task See Task above

O&M Phase **Start** 1991 **End** Ongoing **Subcontractor**

Task Kokanee rearing at SCH occurs March through July and at the Kettle Falls net pen site October through June. Rainbow trout are reared July through October. Adult kokanee returns start in September and continue through November. Imprinting chemical treatments to the water occur during the rearing phase and immediately prior and during adult returns. This schedule is anticipated to remain fairly constant for out-years.

PROJECT COMPLETION DATE:

NA

OUTCOMES, MONITORING AND EVALUATION

SUMMARY OF EXPECTED OUTCOMES

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

Changes at the SCH in the release size of the kokanee have shown promising results. Tag return data indicates that the kokanee catch by recreational anglers has increased. It was estimated that jack returns to the Sherman Creek Bay during the fall of 1995 may have been as high as several thousand fish. Returns of adult fish to Sherman Creek Bay during 1996 were estimated to be approximately three times the number of fish actually captured. Adult capture concerns at the SCH are being addressed through changes in adult capture methodology.

Present utilization and conservation potential of target population or area:

NA

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:

Enhance imprinting of Project # 91-046 kokanee, improve survival and subsequent returns to the hatchery facility.

Indirect biological or environmental changes:

Concerns have been expressed about interactions between hatchery origin rainbow trout and wild rainbow trout spawning in tributaries upstream of Sherman Creek on Lake Roosevelt. Fish pathogens introduced as a result of hatchery fish introductions are not identified as a concern since all fish are imported into the hatcheries as eggs and come from pathogen specific certified free broodstocks with long histories of annual pathogen inspections.

Physical products:

Fish are marked and tagged at the STH prior to transportation for imprinting to the SCH.

Environmental attributes affected by the project:

Water from Sherman Creek is diverted into the Sherman Creek Hatchery and discharged back into Sherman Creek at a point downstream of the hatchery. This is done in accordance with the water right for this facility.

Changes assumed or expected for affected environmental attributes:

The development of the SCH facility resulted in minor land use changes at the location and was done in accordance with state and national environmental laws and policies.

Measure of attribute changes:

NA

Assessment of effects on project outcomes of critical uncertainty:

Project outcome(s) are the joint responsibility of the SCH and the Lake Roosevelt monitoring program. Program cooperation between contractors will result in assessment of hatchery releases via marked fish and their harvest in recreational fisheries and returns to the hatchery.

Information products:

See 101K above.

Coordination outcomes:

Major hatchery programming decisions are reached through a decision process involving the Lake Roosevelt Hatchery Coordination Committee. This committee is comprised of one voting representative from each of the following: the Washington Department of Fish and Wildlife; the Colville Confederated Tribe; and the Spokane Indian Tribe.

MONITORING APPROACH

Utilize standard kokanee fish culture methods and enhance imprinting through the use of chemical treatments to the water during rearing and fall return periods. Coordination with Projects 88-063 and 94-043 is also an integral part of this program.

Provisions to monitor population status or habitat quality:

Coordination with Projects 88-063 and 94-043. Also, major hatchery programming decisions are reached through the consensus of the Lake Roosevelt Hatchery Coordination Committee.

Data analysis and evaluation:

Data will be analyzed in accordance with standard evaluation criteria for projects of this nature and in accordance with the Lake R

oosevelt Monitoring Project scope of work.

Information feed back to management decisions:

Fish Management biologists are involved in planning and implementation of this project to ensure coordination.

Critical uncertainties affecting project's outcomes:

It is not possible to provide an adequate answer to this question at this time. This success of this project is related to a large degree on water flows within the basin. Because those flows change due to annual precipitation patterns it is not possible to predict project outcomes.

EVALUATION

Increase in recreational harvest, angler days and angler satisfaction along with adequate returns to the Sherman Creek Hatchery would be the most certain measures of success.

Incorporating new information regarding uncertainties:

New information would be disseminated to participants through contacts with other entities. Project coordination is handled by the three participating natural resource co-managers who maintain close contact with additional natural resource constituents and groups.

Increasing public awareness of F&W activities:

Participation in regional and local events by hatchery staff and information disseminated at the hatchery visitor center has been extremely useful in educating local and visiting individuals and groups.

RELATIONSHIPS

RELATED BPA PROJECT

9104700 Provides the fish to the Sherman Creek Hatchery

RELATIONSHIP

This project M and E is covered by Project # 88-063 and # 94-043.

OPPORTUNITIES FOR COOPERATION:

Both the Sherman Creek hatchery (SCH) and Spokane Tribal Hatchery (STH) are operated under the guidance of the Lake Roosevelt Hatchery Coordination Team. This group has provided a unique forum for the parties to discuss concepts and make decisions regarding these hatchery programs.

COSTS AND FTE

1997 Planned: \$178,000

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	\$185,000			100%	1991	\$30,805
1999	\$244,000			100%	1992	\$66,965
2000	\$210,000			100%	1993	\$180,315
2001	\$215,000			100%	1994	\$118,417
2002	\$226,000			100%	1995	\$114,682
					1996	\$171,066
					1997	\$173,561

TOTAL: \$855,811

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

OTHER NON-FINANCIAL SUPPORTERS:

National Park Service, Bureau of Reclamation, US Forest Service, Lake Roosevelt Development Association, Lake Roosevelt Forum, Washington Department of Transportation, British Columbia Ministry of Environment, US Fish and Wildlife Service, Columbia Navigation Corp., additional WDFW staff from other programs (i.e. - Enforcement, Wildlife Management, etc.), Stevens and Ferry County Conservation Districts, numerous individual volunteers who have donated time and support to volunteer net pen projects, Hunter School District Future Farmers of America, and Eastern Washington Biology Club.

LONGER TERM COSTS:

Costs are expected to be incurred annually beyond 2002 with an expected increase of approximately 5 % annually. These costs are for the normal operation and maintenance of the SCH.

1997 OVERHEAD PERCENT:

The current negotiated administrative overhead is 19.0 % of costs less fish feed and capital purchases.

HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:

See above.

CONTRACTOR FTE: 1.91 FTE's

SUBCONTRACTOR FTE: 0.0 FTE's
