Bonneville Power Administration

Fish and Wildlife Program FY99 Proposal Form

Section 1. General administrative information

Sherman Creek Hatchery O&M.

Bonneville project number, if an ongoing project 9104700

Business name of agency, institution or organization requesting funding
Washington Department of Fish and Wildlife

Business acronym (if appropriate) WDFW

Proposal contact person or principal investigator:
Name John Kerwin
Mailing Address 600 Capitol Way N.
City, ST Zip Olympia, WA 98501-1001
Phone 360-902-2623
Fax 360-902-2943
Email address KERWIJEK@WDFW.WA.GOV

Subcontractors. List one subcontractor per row; to add more rows, press Alt-R from within this table

Organization	Mailing Address	City, ST Zip	Contact Name

NPPC Program Measure Number(s) which this project addresses.
10.8B.5

NMFS Biological Opinion Number(s) which this project addresses.

Other planning document references.

If the project type is “Watershed” (see Section 2), reference any demonstrable support from affected agencies, tribes, local watershed groups, and public and/or private landowners, and cite available documentation.

Subbasin.

Short description.
The enhancement of recreational and subsistence fisheries in Lake Roosevelt is the primary purpose of the Sherman Creek Hatchery. This facility is one of two kokanee/rainbow trout facilities provided to partially mitigate for the loss of anadromous fish habitat due to the construction of Grand Coulee Dam. As a part of this project, the Washington Department of Fish and Wildlife, BPA, Spokane Tribe of Indians and the Colville Confederated Tribe work collectively towards a goal of fishery enhancement in Lake Roosevelt. The role of the Sherman Creek Hatchery in this program is to: {a} establish a kokanee broodstock for future egg requirements; {b} create and enhance the kokanee fishery within Lake Roosevelt and {c} assist in rearing rainbow trout through the use of net pen operations in Lake Roosevelt.

Section 2. Key words

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
–	Anadromous fish	–	Construction	–	Watershed
XX–	Resident fish	–	O & M	–	Biodiversity/genetics
–	Wildlife	–XX	Production	–	Population dynamics
–	Oceans/estuaries	–	Research	–	Ecosystems
–	Climate	–	Monitoring/eval.	–	Flow/survival
–	Other	–	Resource mgmt	–	Fish disease
		–	Planning/admin.	–	Supplementation
		–	Enforcement	–	Wildlife habitat en-
		–	Acquisitions	XX	hancement/restoration

Other keywords.

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship
9104600	Spokane Tribal Hatchery	Symbiotic
9500900	Lake Roosevelt Net Pens	SCH provides fish to the net pens
8806300	Lake Roosevelt Fisheries Monitoring Program	Provides monitoring and evaluation of SCH program

Section 4. Objectives, tasks and schedules

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Acclimate 225,000 kokanee yearlings	a	Rear and release 225,000 kokanee from the Sherman Creek Hatchery (March - July)
2	Acclimate 70,000 kokanee yearlings in net pens in Lake Roosevelt	a	Rear and release 70,000 kokanee yearlings from net pens (Oct-June)
3	Rear 120,000 rainbow trout fingerlings	a	Rear and transfer to net pens in Lake Roosevelt 120,000 rainbow trout annually.
4	Capture returning adult and sub-adult kokanee at Sherman Creek Hatchery	a	Utilizing a variety of capture techniques (hatchery trap, electrofishing, seines, floating traps, etc.) Capture
		b	Collect biological information from returning fish relative to age composition, size and survival.
5	Provide technical assistance to volunteer net pen projects	a	Through active participation with cooperators work with volunteers to establish necessary rearing guidelines for net pen operations in Lake Roosevelt.

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %

1	03/99	07/1999	45 %
2	11/98	06/1999	15 %
3	07/99	10/1999	20 %
4	09/98	11/1998	10 %
5	10/98	09/1999	10 %
			TOTAL 100 %

Schedule constraints.
Hydropower operations have continued to cause survival problems for resident fish in Lake Roosevelt.

Completion date.
NA

Section 5. Budget

FY99 budget by line item

Item	Note	FY99
Personnel		72,665
Fringe benefits		19,967
Supplies, materials, non-expendable property		36,809
Operations & maintenance	If necessary	12,000
Capital acquisitions or improvements (e.g. land, buildings, major equip.)	On-station residence replacement - costs include engineering and project inspection at a remote building location - one time only cost.	150,000
PIT tags	# of tags:	0
Travel		2,380
Indirect costs		25,665
Subcontracts		0
Other		0
TOTAL		$ 319,486

Outyear costs

Outyear costs	FY2000	FY01	FY02	FY03
Total budget	$ 174,571	$ 179,808	$ 185,202	$ 190,758
O&M as % of total	83.00 %	83.00 %	83.00 %	83.00 %

Section 6. Abstract

The role of the Sherman Creek Hatchery is to {1} establish a kokanee broodstock: {2} create and enhance the kokanee fishery within Lake Roosevelt and {3} assist in rainbow trout rearing for net pens on Lake Roosevelt and enhance the rainbow trout recreational fishery. The hatchery is one of two resident fish facilities constructed to provide partial mitigation for the loss of anadromous fish habitat due to the construction of Grand Coulee Dam in 1941. The BPA, Spokane Tribe of Indians, Colville Confederated Tribes, Upper Columbia United Tribes Fisheries Research Center, and WDFW work conjunctively towards the fishery enhancement on Lake Roosevelt and Banks Lake. These members form the Lake Roosevelt Hatchery Coordination Team that provides program objectives, direction and oversight for the program at the Sherman Creek and Spokane Tribal hatcheries.

Section 7. Project description

a. Technical and/or scientific background.

The Sherman Creek Hatchery is located immediately adjacent to Lake Roosevelt at the mouth of Sherman Creek, three miles west of Kettle Falls, Washington. The hatchery was constructed by the Bonneville Power Administration (BPA). Annual operations and maintenance are performed by the Washington Department of Fish and Wildlife (WDFW) with funding provided by BPA. The hatchery was initiated in part by the Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program. The Sherman Creek Hatchery works conductively with the Spokane Tribal Hatchery towards a common goal of resident fish enhancement in Lake Roosevelt and Banks Lake. The combined production goals of the Sherman Creek (SCH) and Spokane Tribal (STH) hatcheries were initially established at 13 million kokanee (8 million for Lake Roosevelt and 5 million for Banks Lake) and 500,000 catchable rainbow trout for net pen rearing on Lake Roosevelt. The vast majority of the labor for the net pen projects on Lake Roosevelt comes from volunteer groups coordinated by the Lake Roosevelt Development Association.

This is an ongoing project whose operation started in April 1992. The program goals have changed since its inception as new data has been collected and analyzed. The Annual Production Goal (APG) are goals set forth for the operation of the Sherman Creek

Hatchery during the coming year. They are agreed upon by the Lake Roosevelt Hatchery Coordination Team (LRHCT) and are used to define objectives and provide direction.

The SCH was designed to rear and acclimate 1.7 million kokanee fry during the spring and to trap available adult kokanee during the fall. Since the inception of the SCH program, the APG has been modified to better achieve program goals. These changes in rearing strategies have been the result of recommendations through the LRHCT. Currently, the APG for the SCH is as follows:

1) Acclimate a maximum of 225,000 kokanee yearlings annually
2) Rear approximately 75,000 kokanee yearlings for transfer to net pens in Lake Roosevelt.
3) Rear approximately 120,000 rainbow trout for transfer to net pens in Lake Roosevelt.
4) Capture returning adult kokanee for broodstock and biological analysis through a variety of methods.
5) Provide technical assistance to volunteer cooperative net pen projects on Lake Roosevelt.

b. Proposal objectives.

The objectives for the SCH program are to rear, acclimate, outplant, trap and spawn kokanee salmon and rainbow trout to meet the respective year's APG. The purpose of this program is to create a return of locally adapted adult kokanee to Sherman Creek for future broodstock acquisition and enhance the recreational fisheries within Lake Roosevelt.

The following is a listing of the annual program objectives:

1) Yearling juvenile kokanee acclimation - acclimate a maximum of 225,000 kokanee yearlings with fish transferred in in March at approximately 25 fish per pound (fpp) and released the following July at approximately 10 fpp.
2) Rear and acclimate approximately 75,000 kokanee yearlings for transfer to net pens in Lake Roosevelt. This aspect of the project helps maximize efforts in assisting kokanee to utilize the upper reaches of Lake Roosevelt and to minimize entrainment losses. It also enables the fish to be reared to a larger size thus minimizing losses to predation. Fish are transferred to the SCH in October at approximately 35 fpp. They are then transferred to the net pens later in the fall at approximately 15 fpp.

3) Rear approximately 120,000 rainbow trout fingerlings for transfer into the Lake Roosevelt net pens. The fish are received from the STH during July at approximately 50 fpp and transferred to net pens the ensuing fall at approximately 15 fpp. The use of SCH for this aspect of the program enables the STH to rear additional yearling kokanee for future transfers.

4) Fish health services are provided to both facilities by WDFW fish health specialists. Disease prevention and treatments are per the Co-Manager's Fish Health Policy.

5) Fish marking and tagging is coordinated between agencies along with recovery of tags and biological information such as age class composition, length weight relationships and other necessary biological information.

6) Release of fish into Lake Roosevelt is as late in the calendar year as possible in an effort to minimize first year entrainment losses, predation and to maximize survival.

7) Capture returning adult kokanee for broodstock and biological analysis through a variety of methods. Improvements have been made to the fish ladder entrance however we have observed large numbers of milling returning adult and sub-adult kokanee in Sherman Creek Bay. Additional efforts to capture these fish will include the use of floating fish traps and electrofishing.

Because predation, by otters, on captured adult kokanee has been a problem in the net pens, captured adult kokanee may be moved to the Colville State Fish Hatchery and held in indoor tanks supplied with pathogen free well water.

85) Provide technical assistance to volunteer cooperative net pen projects on Lake Roosevelt as the needs arise. This includes rearing criteria, fish health and other assistance as the needed.

9) Develop and publish an annual report on the previous federal fiscal year activities of the SCH program.

c. Rationale and significance to Regional Programs.

The operations and maintenance of the Sherman Creek Hatchery (SCH) are cost-effective and consistent with the Northwest Power Act and the Northwest Power Planning Council's Fish and Wildlife Program and produce resident fish for release into Lake Roosevelt and Banks Lake for off-site mitigation recreational fishery enhancement and

protection of resident fish impacted by the construction of Columbia River mainstem hydroelectric dams.

The SCH and Spokane Tribal Hatchery (STH) are operated conjunctively in an effort to maximize the attributes of each facility while optimizing production. The STH is the primary incubation, hatching and early rearing facility while the SCH serves as a acclimation and release facility up to program limitations. Annual production goals (APG) are agreed to by the, Lake Roosevelt Hatchery Coordination Team (LRHCT), a regionally unique forum whose participants include the Spokane Tribe of Indians, Colville Confederated Tribes and WDFW. Other participants have included the Upper Columbia United Tribes research center (UCUT), who has participated in much of the program evaluation and monitoring, National Park Service, BPA and the Lake Roosevelt Development Association (a group of volunteers who provide the vast majority of the labor to the net pens on Lake Roosevelt). Funding for the STH and the net pens volunteer coordinator are provided by BPA. Funding for the bulk of the fish feed provided to the net pens is provided by WDFW. Rainbow trout eggs are provided by WDFW to the STH, kokanee eggs are provided by WDFW and other reciprocating agencies.

d. Project history

The SCH is one of two kokanee facilities provided to partially mitigate for the loss of anadromous fish passage and habitat due to the construction of Columbia River mainstem dams. As a part of this program, the BPA, Spokane Tribe of Indians, Colville Confederated Tribes and WDFW have worked collectively towards the goal of fishery enhancement on Lake Roosevelt and Banks Lake. The Project No 9104700 and NPPC Program Number 10.8B.2 have remained consistent since the inception of this project. The SCH became operational in April 1992 with first releases later that year. The facility has released fish annually since that time.

The SCH was designed to rear and acclimate 1.7 million kokanee fry during the spring and to trap available adult kokanee during the fall. Since the inception of the SCH program, the APG has been modified to better achieve program goals. These changes in rearing strategies have been the result of recommendations promulgated by members of the LRHCT and approved through the LRHCT in conjunction with BPA. The project publishes an annual report on progress that has been made in achieving program goals and objectives.

e. Methods.

Fish culture operations at the SCH conform to WDFW fish culture practices and procedures for the species being reared. Flow and density indices that are specific to the

species being reared are used to produce the best product possible. The more conservative of the two indices determines the rearing capacity of a specific facility or vessel.

Fish disease prevention and control is based upon a preventative health program concept. This is accomplished through the implementation of a program that involves routine facility visits which monitor the health of the stocks being reared. A strong disease control policy (Co-Managers Fish Disease Policy) carefully scrutinizes fish and egg transfers so as to prevent disease transmission. The SCH attempts to prevent disease through an integrated fish health management program plan which includes improving rearing conditions, improving diets and feeding practices. This strategy helps reduce operating costs but also adds costs by requiring more ponds to produce the same number of fish.

Stock transfer guidelines and hatchery spawning practice guidelines were developed by the Agency in the 1980's. As scientific knowledge has advanced, these guidelines have been modified to reflect that new knowledge.

Safety program compliance meets current Washington Department of Labor and Industries standards.

f. Facilities and equipment.

The SCH was finished and became operational in April 1992. The facility consists of three cement raceways, water intake and associated pipeline, facility support building, necessary infrastructure (i.e.: domestic water supply, access roads and electrical distribution, etc.), fish ladder, water discharge line, two net pens (kokanee acclimation) and one on-station hatchery residence (a mobile home placed on the site).

The computer currently in use at the facility meets WDFW minimum criteria at the date of this paper.

g. References.

Combs, Mitch. 1992. Sherman Creek Hatchery Annual Report April 1, 1992 - September 30, 1992. Project Number 94-49, U.S. Department of Energy, Bonneville Power Administration, Portland, Oregon.

Combs, Mitch. 1993. Sherman Creek Hatchery Annual Report October 1, 1992 - September 30, 1993. Project Number 94-49, U.S. Department of Energy, Bonneville Power Administration, Portland, Oregon.

Combs, Mitch. 1994. Sherman Creek Hatchery Annual Report October 1, 1993 - September 30, 1994. Project Number 94-49, U.S. Department of Energy, Bonneville Power Administration, Portland, Oregon.

Combs, Mitch. 1995. Sherman Creek Hatchery Annual Report October 1, 1994 - February 28, 1995. Project Number 94-49, U.S. Department of Energy, Bonneville Power Administration, Portland, Oregon.

Combs, Mitch. 1995. Sherman Creek Hatchery Annual Report March 1, 1995 - September 30, 1996. Project Number 94-49. Contract Number 95BI40364, U.S. Department of Energy, Bonneville Power Administration, Portland, Oregon.

Combs, Mitch. 1996. Sherman Creek Hatchery Annual Report October 1, 1995 - September 30, 1996. Project Number 94-49. Contract Number 95BI40364, U.S. Department of Energy, Bonneville Power Administration, Portland, Oregon.

Section 8. Relationships to other projects

Section 9. Key personnel

Project Manager: John Kerwin, Division Manager 0.8 FTE
Washington Department of Fish and Wildlife
600 Capital Way N
Olympia, WA 98501-1091
E-mail: KERWIJEK@WDFW.WA.GOV

This position provides all aspects of project management including supervision, planning, coordination, budgetary support, cross-governmental, inter- and intra-agency coordination of hatchery production at SCH.

Mitch Combs, Fish Hatchery Specialist 3 1.0 FTE
Sherman Creek Hatchery
3825 Mellenberger Road
Kettle Falls, WA 99141

This position provides all on-site hatchery operations and maintenance for the daily operations of SCH. The position is responsible for ensuring the quality of fish produced and that annual production goals are met in a cost efficient manner and safe manner. Additional responsibilities include extensive work with public groups, providing technical assistance to volunteer organizations and coordination with Spokane Tribal Hatchery staff to facilitate the movement of fish and/or eggs between the respective facilities.

Steve Roberts, Fish Health Specialist 0.8 FTE
Washington Department of Fish and Wildlife
600 Capital Way N
Olympia, WA 98501-1091

This position is responsible for all aspects of fish health including the diagnosis of any diseases and prescribing treatments and appropriate therapeutants. Utilizing a pro-active approach to fish health the incumbent makes routine fish health visits to the facilities to inspect fish health.

Section 10. Information/technology transfer

Information is distributed through the publication of annual reports, community involvement by staff in: local events; thru providing technical assistance to local volunteer groups and facility tours by groups and individuals. Information is also distributed through coordination with project participants through a locally unique coordination forum organized around this project. That forum, entitled the Lake Roosevelt Hatchery Coordination Team (LRHCT) is comprised of representatives from WDFW, Colville Confederated Tribes and Spokane Tribe of Indians. Other participants include BPA, National Park Service and the Lake Roosevelt Development Association (representing volunteers on the Lake Roosevelt Net Pen Project).