

UPPER SNAKE RIVER SUBBASIN

ProjectID: 199201000

Habitat Restoration/Enhancement Fort Hall Reservation

Sponsor: SBT

Province: Upper Snake

Subbasin: Upper Snake

FY03 Request: \$175,000

5YR Estimate: \$923,500

Short Description: Provide conditions to maintain a self-perpetuating Tribal subsistence and trophy trout fishery through implementation of habitat restoration, enhancement and protection activities on the Fort Hall Indian Reservation.

ISRP Preliminary Comments and Responses:

Note: ISRP Comments are underlined

A response is needed. Despite our previous positive comments on the project for FY00, this proposal does not seem strong – past results were summarized, but not clearly. Why have deep pools in Clear Creek recently filled with sediment?

Initial restoration work on the Fort Hall Reservation, Clear Creek specifically (1992-1993) involved placement of instream structures and excavation of sediment using heavy equipment. Excavation of sediment created deep pools and decreased overall fine sediment in treatment areas of Clear Creek. Clear Creek is a spring fed low gradient stream with little capacity to entrain and transport fine sediment or scour deep holes behind structures. Sediment transport is limited to bedload movement. Over the past ten years holes that were excavated have slowly filled with sediment. Initially, depth cover created by excavation of sediment created a dramatic increase (>2,000%) in fish density (see Proposal Figure 2). Fish density has since decreased but remains approximately 250% greater than pre project levels. Instream structures continue to provide juvenile and adult cover, increase suitable spawning areas and maintain limited pool habitat. Efforts have been and are currently being pursued to eliminate fine sediment input into Clear Creek (see Objective 3 below).

Is there a watershed assessment that shows where actions are needed and what prescriptions are needed for individual stream reaches?

Waterbody assessments have been completed by the Idaho Department of Environmental Quality as part of development of Total Maximum Daily Loads for the Portneuf and Blackfoot Rivers. Much of the Portneuf and Blackfoot Watersheds is divided between Tribal, private, BLM, USFS and State Lands. Other major watersheds on or near the Fort Hall Reservation include Ross Fork and Bannock Creeks. The majority of Ross Fork and Bannock Creeks lie within the Fort Hall Reservation. The Resident Fisheries Program has not completed watershed assessments for Ross Fork Creek, Bannock Creek or the Bottoms. Although watershed assessments have not been completed in Ross Fork Creek, Bannock Creek and the Bottoms, major limiting factors are known. These watersheds

would likely benefit from watershed assessments. Additional funding would be necessary to develop watershed assessments.

Over the past ten years restoration actions and prescriptions have been focused on protecting and restoring outstanding resource waters on the Fort Hall Reservation. Because funding is limited, the focus has been on protecting and restoring stream reaches that maintain diverse native assemblages of species (Upper Ross Fork Creek, West Fork Bannock Creek) or are associated with springs and wetland areas (Spring Creek, Clear Creek, Big Jimmy Creek, Wood Creek). In addition, protection efforts have been implemented at the request of landowners and resource users when warranted (where benefits to fish could be realized) and in areas where fisheries personnel could gain access. Prescriptions for restoration/enhancement have been based on site visits to overgrazed stream reaches and reaches affected by flooding and drafting of American Falls Reservoir. As managers in a politically driven environment we have been limited in our prescriptive actions to exclosure fencing and in some cases streambank restoration. Past attempts to develop and implement sound livestock allotment management plans have not been successful because of lack of compliance. The Resident Fisheries Department is currently working with the Tribal Land Use Department and NRCS in surveying rangelands for development of a Range Management Plan. In addition, The Resident Fisheries Program is working with Tribal Water Quality staff develop water quality standards for the Fort Hall Reservation.

If not, the response should address those items and provide a three-year implementation work plan that describes what project staff are going to do, where, and why the sites were selected. The proposal was not detailed enough. See the programmatic section of this report.

Objectives and Tasks 2003-2005

Objective 1: Baseline and trend data collection at project locations.

Task 1.1: Measure stream habitat variables in project locations for pre and post treatment evaluation. Variables to be evaluated will include, but not be limited to: stream cross-section profiles, substrate composition, instream vegetation composition, water temperature, discharge, bank vegetation composition/stability, pool:riffle ratio, riparian vegetation composition and canopy density.

2003: *Clear Creek 200 and 300 series, Diggee Creek (Downstream of Fisher Feedlot; Lower Diggee Creek)*

2004: *Spring Creek, (Between Baker and Sheepskin Bridge; Mid Spring Creek)*

2005: *Big Jimmy Creek 200 series, Spring Creek (Between Shoemaker and Broncho Bridge; Upper Spring Creek)*

pH, DO, specific conductance, total dissolved solids.

2003: Big Jimmy, Clear Cr., Diggie Cr., Gibson Drain, Jeff Cabin Cr., Jimmy Drinks, North Canal, Portneuf, Ross Fork Cr. (2), Spring Cr. (3), Bannock Cr.

2004: Big Jimmy, Clear Cr., Diggie Cr., Gibson Drain, Jeff Cabin Cr., Jimmy Drinks, North Canal, Portneuf, Ross Fork Cr. (2), Spring Cr. (3), Bannock Cr.

2005: Big Jimmy, Clear Cr., Diggie Cr., Gibson Drain, Jeff Cabin Cr., Jimmy Drinks, North Canal, Portneuf, Ross Fork Cr. (2), Spring Cr. (3), Bannock Cr.

Task 1.2: Obtain fish compositions, population estimates and trends for all streams that will be affected by habitat restoration efforts (exclosure fencing and/or sloping).

2003: *Clear Creek 200 and 300 series, Diggie Creek (Downstream of Fisher Feedlot; Lower Diggie Creek), Spring Creek (fry counts at head end)*

2004: *Clear Creek 200 and 300 series, Ross Fork Creek, Spring Creek, (Between Baker and Sheepskin Bridge; Mid Spring Creek), Spring Creek (fry counts at head end)*

2005: *Clear Creek 200 and 300 series, West Fork Bannock Creek, Spring Creek (Between Shoemaker and Broncho Bridge; Upper Spring Creek), Spring Creek (fry counts at head end)*

Obtain invertebrate compositions and abundance for restoration sites that will and have been effected by habitat restoration efforts.

2003: *Diggie Creek (Downstream of Fisher Feedlot; Lower Diggie Creek)*

2004: *Clear Creek 200 and 300 series, Spring Creek, (Between Baker and Sheepskin Bridge; Mid Spring Creek)*

2005: *Big Jimmy Creek 200 series, Spring Creek (Between Shoemaker and Broncho Bridge; Upper Spring Creek)*

Objective 2: Evaluate habitat improvement structures and install new structures to increase existing juvenile and adult salmonid habitat.

Task 2.1: Evaluate instream structures installed in previous years to determine which methods most effectively increased salmonid biomass, usable habitat and bank stability. Analysis of variance (ANOVA) will be used to compare pre and post treatment stream width, maximum water depth, mean water depth, maximum silt depth and mean wetted silt depth. ANOVA will also be used to compare changes in substrate pertaining to usable spawning gravel after structure placement. Species diversity indices will be used to quantify aquatic invertebrate community health. Fish populations will be sampled during spring or fall to determine which type of habitat had the greatest success increasing numbers and biomass of wild trout.

2003: All Streams

2004: All Streams

2005: All Streams

Task 2.2: Implement streambank restoration projects on Bottoms streams using the following techniques, (1) The toe/waterline of areas of downcut streambank is first lined with evergreen trees or other suitable revetments. (2) Streambanks are then sloped to an angle less than 45 degrees using hand tools. (3) If necessary, bare slopes are seeded with native grasses and given an initial watering. (4) Willow poles approximately two meters in length and one inch in diameter are planted along the length of sloped bank to a depth of at least 1.5 meters. (5) Jack and rail fencing is erected along the restored streambank. (6) If necessary, rock barbs are placed in the stream to divert flow away from erosive areas.

Site selection criteria will include (1) Importance as spawning, nursery and rearing area for salmonids, (2) Access (3) Severity of riparian damage.

2003: 5 sites on Diggie Creek (Downstream of Fisher Feedlot; Lower Diggie Creek)

2004: 5 sites on Spring Creek (Between Baker and Sheepskin Bridge; Mid Spring Creek)

2005: 5 sites on Spring Creek (Between Shoemaker and Broncho Bridge; Upper Spring Creek)

Task 2.3: Maintain bank and channel treatments.

2003: All Streams (35 Sites)

2004: All Streams (40 Sites)

2005: All Streams (45 Sites)

Objective 3: Protect and restore upland riparian habitats of Reservation streams with fencing.

Task 3.1: Erect fences to protect riparian areas and critical spawning habitats. Erect fence to protect bank revegetation where banks have been sloped.

Site selection criteria will include (1) Importance as spawning, nursery and rearing area for native salmonids, (2) Access (3) Severity of riparian damage.

2003: Upper Portneuf River (Chesterfield Reservoir) (2 km) 5 sites on Diggie Creek (Downstream of Fisher Feedlot; Lower Diggie Creek) (approximately 0.5 km)

2004: Bannock Creek Springs and Moonshine Creek (2 km) 5 sites on Spring Creek (Between Baker and Sheepskin Bridge; Mid Spring Creek) (approximately 0.5 km)

2005: Clear Creek 300 series (2 km) (Between Shoemaker and Broncho Bridge; Upper Spring Creek) (approximately 0.5 km)

Task 3.2: Maintain fences on an as needed basis. Enclosures will remain in place as long as necessary, until changing grazing leases or restored riparian vegetation warrant removal.

2003: Approximately 25 km jack and rail and 4 km barbed wire

2004: Approximately 27 km jack and rail and 4 km barbed wire

2005: Approximately 29 km jack and rail and 4 km barbed wire

When will this project be completed?

This project will be completed when all streams on the Fort Hall Reservation are restored to a nearly historic normative condition characterized by productive and diverse native assemblages of species. Realistically, this can not be accomplished in the near future without significantly expanding the scope and monetary obligations of the BPA. Restoration of springs associated with wetlands and streams currently occupied by native Yellowstone cutthroat trout will be completed in six years.

From Table 2 of the proposal and from the presentation it seems that most of the rehabilitation work has occurred on Bottoms streams instead of in other Reservation streams where more native fishes are found. Why?

Rehabilitation work in the form of bank sloping, revegetation and instream structures has occurred primarily on low gradient Bottoms streams. Bottoms streams maintain important historical, cultural and subsistence fisheries for Shoshone-Bannock Tribal Members. Physical manipulation of streambanks (sloping) has been limited to Bottoms streams because, (1) Recovery of banks from overgrazing in spring streams on the Bottoms is much slower than upland sites; low gradient and lack of spring flooding decrease the rate of aggradation of sediment and wetland plant regrowth (2) Recovery of upland streams has proven to be relatively rapid (<10 years) when grazing impacts are removed via fencing alone. More stream miles (approximately 2:1 ratio) of upland habitat have been restored with fencing alone than lowland with fencing, sloping and revegetation combined. In addition, upland fencing projects have been located in areas of extant pure or nearly pure (90%) populations of native Yellowstone cutthroat trout or at sensitive spring habitats.