Protect and Restore Lolo Creek Watershed

Annual Report
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Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208

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Annual Report

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Prepared by:

Heidi McRoberts

Nez Perce Tribe Fisheries/Watershed Program
P.O. Box 365
Lapwai, Idaho 83540

Prepared for:

U.S. Department of Energy
Bonneville Power Administration
Division of Fish and Wildlife
P.O. Box 3621,
Portland, OR 97208-3621

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ABSTRACT

The Nez Perce Tribe Department of Fisheries Resource Management, Watershed Division approaches watershed restoration with a ridge-top to ridge-top approach. Watershed restoration projects within the Lolo Creek watershed are coordinated with the Clearwater National Forest and Potlatch Corporation.

The Nez Perce Tribe began watershed restoration projects within the Lolo Creek watershed of the Clearwater River in 1996. Progress has been made in restoring the watershed by excluding cattle from critical riparian areas through fencing, stabilizing streambanks, decommissioning roads, and upgrading culverts. During the years 2000-2003, trees were planted in riparian areas of headwater streams to Lolo Creek. Inventory of culverts is an on-going practice, being completed by sub-drainage, and are being prioritized for replacement to accommodate fish passage and 100-year flow events throughout the watershed. Tribal crews completed maintenance to the previously built fence.

Background

The Lolo Creek Watershed, located within the Clearwater River subbasin, is 79,377 acres and is located on a matrix of Clearwater National Forest, Idaho Department of Lands, Potlatch Corporation, and private property. This watershed is located within the 1855 treaty territory of the Nez Perce Tribe, and it provides habitat for Spring Chinook, steelhead trout, and resident fish.

Management activities have affected aquatic processes within this drainage. Encroaching roads, undersized culverts, and grazing processes have degraded the stream/riparian processes.

The Lolo Creek Watershed restoration project began in 1996 through the Early Action Watershed Program to enhance fish habitat, reduce sediment delivery, and protect riparian areas from excessive grazing. In 1997, a Challenge Cost-Share Agreement was developed between the Nez Perce Tribe (NPT) and the Clearwater National Forest (CNF). Since 1997, the Nez Perce Tribal Fisheries/Watershed Program, in cooperation with the Clearwater National Forest, has obliterated approximately 50 miles of road. Obliteration included restoring natural drainage patterns, erosion control, re-vegetation, and fertilization. Additional obliteration is planned for the Lolo Creek watershed in 2004. About fifteen miles of fence were constructed within the Lolo Creek watershed, to protect riparian and culturally significant areas from negative impacts from cattle grazing. Two cattle guards were installed within the fence line, where it crossed roads. In addition, two off-site watering systems were developed in the uplands of Musselshell Creek, a tributary to Lolo Creek.

Objectives & Tasks

The objectives of this project address watershed concerns that are limiting to anadromous fish habitat. Anadromous fish that are targeted for restoration within the Lolo Creek watershed include: spring Chinook salmon, fall Chinook salmon, Coho salmon, and steelhead. Approximately half of the watershed is managed by the US Forest Service, Clearwater National Forest (CNF), so coordination with them is critical to the success of the project. Coordination with private land managers also includes Potlatch Corporation. Coordination with these two entities is an on-going effort at the pre-work, planning, and implementation stages.

On-the-ground objectives include:

1. Restore and enhance critical riparian and in-stream habitat as it creates fish and wildlife habitat.
   a. Gather/obtain trees and native materials to be planted within critical riparian areas and used for bioengineering projects
   b. Plant riparian vegetation to enhance stream shading and streambank stability.
   c. Maintain all previously constructed riparian protection fences.

2. Restore hydrologic connectivity and fish passage within the Lolo Creek Watershed.
   a. Inventory culverts within the sub-watershed (Jim Brown Creek) for hydrologic or fish passage problems.
   b. Survey & design project areas for natural stream simulation and the passage of all aquatic species within Lolo and Jim Brown Creek watershed.

3. Alleviate sediment input to the stream and reduce risk from sediment related mass wasting and surface erosion related to road sources.
   a. Identify roads that are candidates for obliteration (decommissioning).

4 Monitor and evaluate success of implementation projects.
   a. Implement Lolo Creek Restoration Effectiveness Monitoring Plan to determine trend in habitat conditions as a result of restoration projects.

Results

Coordination

Coordination meetings between the Nez Perce Tribe and the Clearwater National Forest were held prior to field season to organize activities that would be completed and protocols that would be used to complete those activities. In addition, coordination between Nez Perce Tribe and Potlatch Corporation for culvert replacements was conducted during a field visit prior to implementation.

The Nez Perce Tribe Cultural Resource program was sub-contracted to perform cultural/heritage surveys of four road/stream crossings within the Jim Brown Creek drainage, a tributary to Lolo Creek.

Riparian Enhancement

Approximately 3,000 trees were planted in the riparian zone of Jim Brown Creek, where cattle grazing has been excluded since 1999. Tree species included drummond willow, sandbar willow, scouler willow, and red osier dogwood. Trees were planted along the riparian zone to provide streambank stabilization, and large woody debris recruitment for shade, which reduces stream temperatures.

Figure 1. Willow plantings on streambanks of Jim Brown Creek, a tributary to Lolo Creek.

Hydrologic Connectivity/Fish Passage Barriers

Inventory was completed on fourteen culverts within the Jim Brown Creek drainage. Culverts were prioritized for replacement. Three culvert sites were chosen for implementation in 2003. One additional stream-crossing site that was not inventoried was chosen for restoration. The stream-crossing sites are located in the Burnt Creek and Bat Creek tributaries to Jim Brown Creek. Personnel within the NPT Fisheries/Watershed Division completed surveys and designs for the four stream-crossing sites. Permits, NEPA, and ESA consultation was also completed for these projects.

Figure 2. Log culvert located on Burnt Creek, a tributary to Jim Brown Creek. This site chosen for removal of culvert in field season 2003

Road Decommissioning

A list of roads that need to be surveyed for current condition was complied. Roads were delineated between those slated for decommissioning and those for long-term storage. Approximately 20 miles of roads are slated for decommissioning and 15 miles of road for long-term storage.

Riparian Protection

Maintenance of the15-miles of riparian protection fence that protects Jim Brown and Musselshell Creeks was completed in May 2003. All dilapidated sections of fence were repaired and take down fence sections at water gaps were put-up for the grazing season.

Monitoring

Due to delayed renewal of this contract during the field season of 2002, limited project monitoring occurred. The majority of monitoring was completed by using photo points.

In addition, Nez Perce Tribal staff implemented the Road Obliteration Effectiveness Monitoring Plan on the Clearwater National Forest. The purpose of the plan is to evaluate the road obliteration projects. Data collected included but was not limited to: longitudinal profiles, cross-sections, and vegetation surveys. This data will provide vegetation establishment rates, potential surface erosion, and changes in stream channel morphology, plus other natural factors.

Discussion

Additional restoration work remains to be completed in this watershed. During the FY2002, culvert inventories were initiated and a prioritization of inventoried culverts to be replaced was completed. Implementation of culvert replacement is scheduled to begin during field season 2003. Additional inventory of culverts throughout the Lolo Creek watershed will continue during the 2003 field season.

Further riparian plantings are warranted in the Jim Brown and Musselshell Creek drainages to augment the previous years planting. Vegetation density and diversity are not at the desired/recommended levels. Shade is needed to cool water temperatures and LWD recruitment will provide habitat for anadromous fish species.

Monitoring and evaluation will continue in the following years with increased intensity with temperature recorders, and measurement of physical habitat parameters. In addition, the road obliteration monitoring program will continue as roads are decommissioned. Monitoring sites will be revisited on one, two, five and ten year intervals.

Costs

The following table is a break down of the rounded expenditures for each portion of project.

Tasks	**Cost**
Planning & Design	86,000
Construction & Implementation	50,000
Operation & Maintenance	25,000
Monitoring & Evaluation	20,000
	$181,000