Protect and Restore Lolo Creek Watershed

Annual Report
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Annual Report CY 2003

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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. Fencing to exclude cattle for stream banks, stream bank stabilization, decommissioning roads, and upgrading culverts are the primary focuses of this project. Riparian enhancement through planning of riparian trees continues. Culvert inventory is on-going and will be completed in 2004 for the entire Lolo Creek drainage. High priority culverts are being replaced and passage blocking log culverts are being removed. 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 over 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. Riparian planting, in excess of 5,000 native trees, have been planted along the stream banks of the tributaries of Lolo Creek, which will increase shade, reduce temperature and sediment input, and increase large woody debris recruitment.

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.

1. Coordinate with agencies/landowners on pre-work, surveys, planning and logistics.
   a. Coordinate with CNF and Potlatch Corporation on pre-work, planning, and logistics through written agreements.
   b. Consult with the CNF, ACOE, BPA, USFWS, and NMFS on any NEPA, ESA consultation, or permits needed.
   c. Conduct surveys and consult with SHPO and NPT on any cultural/historic sites.
   d. Conduct pre-work surveys for TES plants and weeds.
   e. Develop protection, avoidance, and/or abatement plans for TES plants, weeds, and heritage resources, if needed.
   f. Attend meetings regarding project logistics.

2. Restore and enhance critical riparian and in-stream habitat as it creates fish and wildlife habitat.
   a. Coordinate with the Potlatch Corporation to identify and survey unstable stream banks for restoration.
   b. Gather/obtain trees and native materials to be planted within critical riparian areas and used for bioengineering projects.
   c. Plant riparian vegetation and/or install bioengineering material to enhance stream shading and stream bank stability.

3. Restore hydrologic connectivity and fish passage within the Lolo Creek Watershed.
   a. Inventory culverts in the Lolo Creek drainage using the developed national protocol.
   b. Survey & design road/stream crossings to simulate natural stream conditions and accommodate passage of all aquatic species.
   c. Coordinate with Potlatch Corporation on logistics and construction equipment for stream/road crossing upgrades.
   d. Restore four stream/road crossings to simulate natural stream conditions and accommodate passage of all aquatic species.

4. Alleviate sediment input to the stream and reduce risk from sediment related mass wasting and surface erosion related to road sources.
   a. Inventory road system to determine level of treatment (obliteration/decommissioning) required to alleviate sediment input and reduce the risk of mass wasting.

b. Map locations of roads using a GPS unit.
c. Prioritize roads for decommissioning, in cooperation with the Clearwater National Forest.

5. Maintain all previously completed projects.
   a. Maintain two off-site water developments.
   b. Perform maintenance on 14 miles of riparian fence.

6. Monitor and evaluate success of implementation projects.
   a. Implement project effectiveness monitoring to determine trends in habitat conditions and biological species as a result of restoration projects.
   b. Implement Road Obliteration Effectiveness Monitoring Plan.

7. Improve communicaion and information sharing among entities working in the Clearwater River on fisheries related issues.
   a. On an annual basis, supply information to the publicly available databases administered by the Idaho StreamNet Project Leader.

8. Reporting to BPA
   a. Complete quarterly and annual reprots based onthis contract year.
   b. Provide applicable RPA data for the FCRPS Biological Opinion.
   c. Provide project specific information to BPA on an “as needed” basis for accounting purposes.

Results

Coordination

Coordination and pre-work 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. Written agreements were signed between the Nez Perce Tribe and both the Clearwater National Forest and Potlatch Corporation.

The Nez Perce Tribe Cultural Resource program was sub-contracted to perform cultural/heritage surveys of two stream bank stabilization sites within the Jim Brown Creek drainage, a tributary to Lolo Creek. Streambank stabilization activities will be implemented in summer 2004.

A meeting with NOAA Fisheries took place on July 11, 2003 to discuss the Biological Assessment for ESA Consultation for Burnt Creek restoration, Burnt Creek culvert, and Bat Creek Ford. All issues were resolved and NOAA signed off on the BA. Army COE issued a permit for these projects in July**.**

NEPA and ESA Consultation were completed in May for the stream bank stabilization project on Jim Brown Creek.

Riparian Enhancement

Approximately 2,000 trees were planted in the riparian zone of Jim Brown Creek, where cattle grazing has been excluded since 1999. Tree species included alder, hawthorn, scouler willow, and sandbar willow.

Trees were planted along the riparian zone to provide streambank stabilization, and large woody debris recruitment for shade, which reduces stream temperatures.

Willow poles were collected on February 12 & 17, 2004 for use in stream bank stabilization that will be implemented in summer 2004.

Hydrologic Connectivity/Fish Passage Barriers

Inventory was completed on thirty culverts within the Lolo Creek drainage within the Clearwater National Forest. Two culvert sites, Cedar Creek and Nevada Creek, were chosen for replacement in 2004. Design surveys were completed in the fall of 2003, and the designs were completed during the winter. The culvert replacements will be cost-shared with Idaho Resource Advisory Committee (RAC) funding. The RAC will contribute $45,000 for the culvert replacement on Nevada Creek. Pre-bid tours were taken on May 11, and bids were reviewed on May 24. A contractor was selected.

Four stream/road crossing were restored to simulate natural stream conditions and accommodate passage of all aquatic species. Three sites were located

within the Burnt Creek drainage, which is a tributary to Jim Brown Creek, a main tributary to Lolo Creek. All three sites had failing log culverts located at stream/road crossings. At two of the sites the logs and fill were removed from the stream channel. A natural stream channel was created at these locations (Figure 1). The logs were used for grade control and dispersed within the floodplain for nutrient input. The third site the logs and fill was removed and an aquatic species passage designed culvert was installed. The culvert was also designed to pass the 100-year flood event. The fourth site was an old log bridge crossing. The banks had been caved in from cattle grazing. A ford was designed for aquatic species passage, light vehicle traffic, and the 100-year flood event. Large woody debris was used for bank protection and to create a cattle exclosure both upstream and downstream. All sites were covered with straw and seed to reduce noxious weed recruitment and for erosion control.

Figure 1. Burnt Creek before and after log culvert removal. Stream was restored to its natural channel.

Road Decommissioning

25 miles of road were inventoried using the Clearwater Forest protocol. The roads were walked to assess the level of treatment required to alleviate sediment input and reduce the risk of mass wasting. The data collected will be put into a database to prioritize projects.

Seven road segments were prioritized and prepared for contracting for decommissioning during the summer of 2004. The seven road segments total 3.3 miles of road that will be decommissioned.

Riparian Protection

Maintenance of the15-miles of riparian protection fence that protects Jim Brown and Musselshell Creeks was completed in May 2004. All dilapidated sections of fence were repaired and take down fence sections at water gaps were put-up for the grazing season.

Monitoring

Automatic temperature loggers were deployed June 11 and June 12 to September 25, 2003 at three locations within the Lolo Creek watershed. The temperature loggers were placed at the same location as they have been in past years to accommodate repetition in data collection. These locations were in Jim Brown Creek at the confluence with Musselshell Creek, in Musselshell Creek at the confluence with Jim Brown Creek, and in Jim Brown Creek at the top of the lower third of the Jim Brown Creek watershed.

During the summer season, water temperatures reached 22.90 degrees Celsius and 21.70 degrees Celsius at locations in Jim Brown Creek and Musselshell Creek, respectively, on July 19, 2003. Both are major tributaries to Lolo Creek.

Snorkel surveys were performed in Jim Brown Creek, a tributary to Lolo Creek. Additional snorkel surveys were performed in the main stem Lolo Creek by the BPA Project *Nez Perce Tribal Hatchery Monitoring and Evaluation* (83-350-03).

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

Watershed restoration work remains to be completed in the Lolo Creek drainage. Culvert inventories will be completed for the entire watershed in 2004 and a prioritization of all culverts will be completed, which will provide an outlook of culvert work in future years.

Road inventories completed during this year will give direction for the need of road decommissioning in the Lolo Creek drainage.

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 focus on temperature recorders, and measurement of physical habitat parameters. In addition, the road obliteration and culvert monitoring program will continue as projects are completed. 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 the project.

Salary	$84,140
Fringe Benefits	$28,573
Computer Services	$2,359
Sub-contracts	$86,906
Training	$1,285
Travel	$1,394
Vehicles	$8,457
Supplies	$5,030
Materials	$3,017
Rent	$683
Equipment	$6,655
Equipment Lease	$4,000
Indirect Costs	$28,895
TOTAL	**$261,394**