BONNEVILLE POWER ADMINISTRATION

Protect and Restore Lolo Creek Watershed

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Protect & Restore Lolo Creek Watershed

Annual Report CY 2004

(6/1/04 - 2/28/05)

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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 planting of riparian trees and streambank bioengineering was completed. Culvert inventory was completed in 2004 on US Forest Service and Potlatch Corporation lands in the Lolo Creek drainage. Two high priority culverts were replaced, and are now accessible for fish species. Four miles of road was decommissioned. 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 55 miles of road. Obliteration included restoring natural drainage patterns, erosion control, re-vegetation, and fertilization. Four miles of road was decommissioned within the Lolo Creek watershed in 2004. About fifteen miles of fence were constructed and maintained 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. Objective: Coordinate with agencies/landowners on pre-work, surveys, planning, and logistics of implementation activities.

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 pre-work surveys for TES plants.

d. Develop protection, avoidance, and/or abatement plans for TES plants, weeds, and heritage resources, if needed.

2. Objective: 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 streambanks 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 streambank stability.

3. Objective: Restore hydrologic connectivity and fish passage within the Lolo Creek watershed.

a. Inventory culverts on Clearwater National Forest and Potlatch Corporation lands (i.e. road/stream crossings, approx 20 sites) in the Lolo Creek drainage using the developed national protocol.

b. Survey and design road/stream crossings to simulate natural stream conditions and accommodate passage of all aquatic species.

c. Coordinate with the USFS on logistics and construction equipment for stream/road crossing upgrades.

d. Restore two stream/road crossings to simulate natural stream conditions and accommodate passage of all aquatic species.

4. Objective. 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 (25 miles) to determine level of treatment (obliteration/ decommissioning) required to alleviate sediment input and reduce the risk of mass wasting.

b. Prioritize roads for decommissioning, in cooperation with the Clearwater National Forest (CNF).

c. Decommission up to 10 miles of road within the Lolo Creek watershed.

5. Objective: Maintain all previously completed projects.

a. Maintain two off-site water developments.

b. Perform maintenance on 14 miles of riparian fence.

6. Objective: Monitor and evaluate success of implementation projects (i.e. re-vegetation, streambank stabilization, culvert replacements).

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. Objective: Improve communication 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 database/s administered by the Idaho StreamNet Project Leader.

8. Objective: Reporting to BPA

a. Complete quarterly reports based on this contract year, as they become due.

b. Write and post Annual report on BPA website

c. Provide applicable RPA data for the FCRPS Biological Opinion. The due date will be confirmed by BPA's project manager, but is expected to be around Feb 29, 2005.

d. Provide project specific information to BPA on an “as needed” basis for accounting purposes.

9. Objective: Project Coordination and Development

a. Attend Intra and Inter Governmental Meetings.

b. Seek funding sources for extension of implementation work and related restoration projects.

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

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.

Streambank bioengineering was completed on two reaches of Jim Brown Creek. This work was completed cooperatively with the Youth Conservation Corps of the Forest Service. Methods of implementation included brush mattresses, tree revetments, and pole planting.

Figure 1. Implementation of Streambank Bioengineering on Jim Brown Creek.

Figure 2. Streambank Bioengineering on Jim Brown Creek, three years after implementation.

Hydrologic Connectivity/Fish Passage Barriers

Inventory was completed on all culverts within the Lolo Creek drainage that fall on Clearwater National Forest or Potlatch Corporation lands. 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 Nevada Creek culvert replacement was cost-shared with Idaho Resource Advisory Committee (RAC) funding. The RAC contributed $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 sub-contractor was selected in the previous contract, and the culvert was replaced in July 2004. This project covered costs of inspection of the culvert installations.

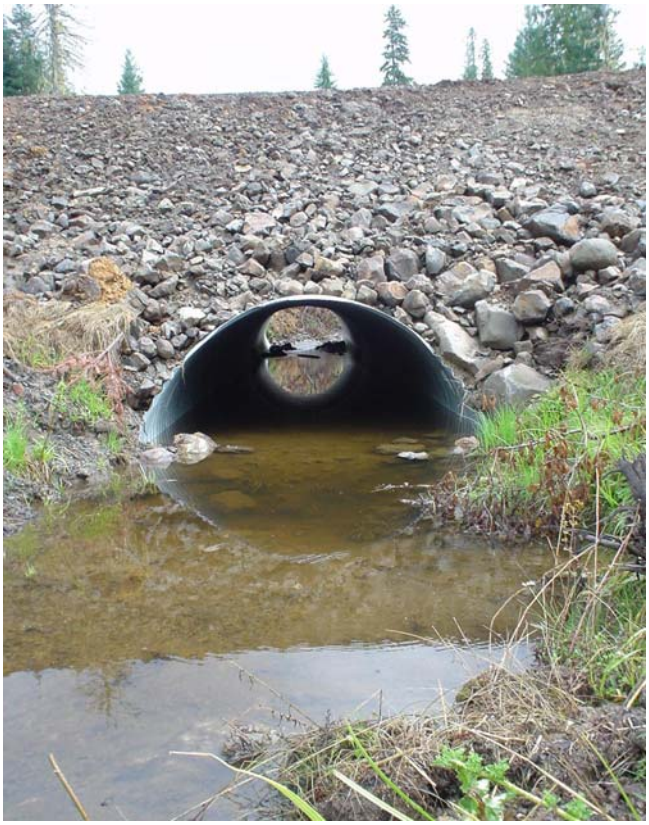

Figure 3. Nevada Creek culvert outlet.

In addition to Nevada Creek, the Cedar Creek culvert was replaced with BPA funds, in which the sub-contract was awarded in the previous contract. Both culverts were designed to pass the 100-year flood event, to simulate natural stream conditions, and to be passable by all aquatic species.

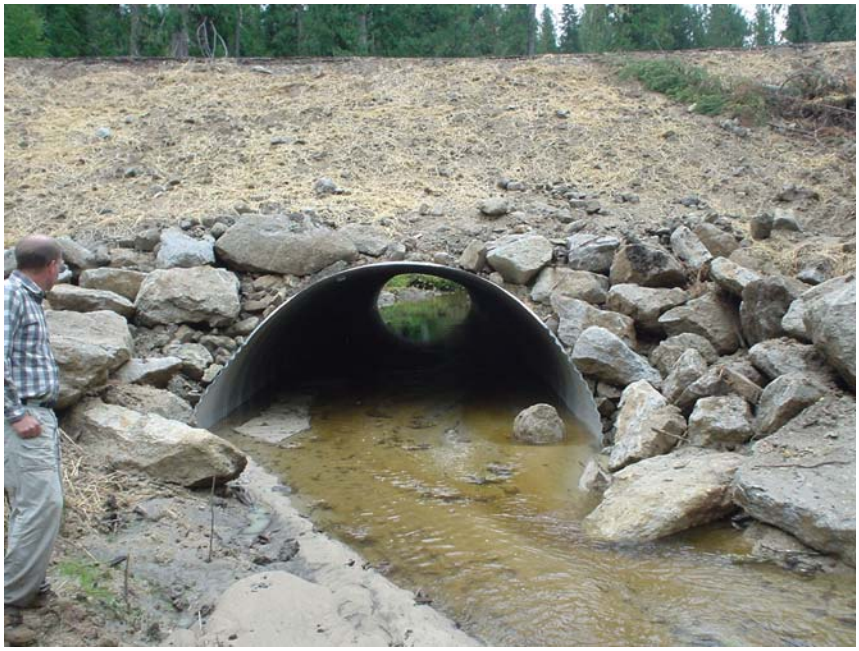

Figure 4. New inlet of Cedar Creek.

Figure 5. New outlet of Cedar Creek.

Road Decommissioning

Seven road segments were prioritized and prepared for contracting for decommissioning during the summer of 2004. The seven road segments totaled 3.3 miles of road that were decommissioned in the Lolo Creek drainage on Forest Service lands.

Figure 6. Decommissioned road in Lolo Creek.

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 in June 2004 and retrieved in September 2004 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.

Results will be reported in the 2004 Lolo Creek monitoring report.

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
More watershed restoration work remains to be completed in the Lolo Creek drainage. Culvert inventories were completed for the watershed in 2004 and a prioritization of all culverts will be completed in 2005, 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.