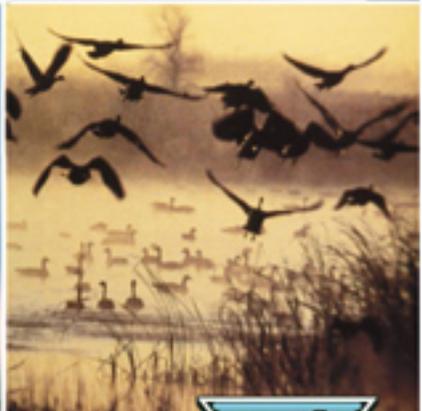
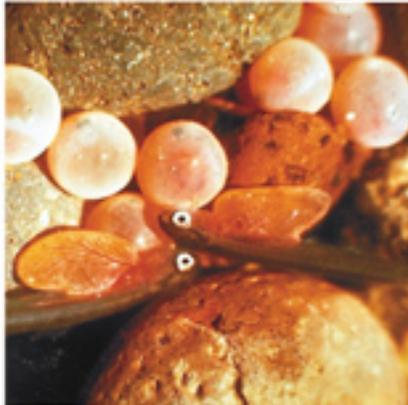


# Protect and Restore Mill Creek Watershed

Annual Report 2005 - 2006

July 2006

DOE/BP-00021711-1



This Document should be cited as follows:

*McRoberts, Heidi, "Protect and Restore Mill Creek Watershed", 2005-2006 Annual Report, Project No. 200003600, 11 electronic pages, (BPA Report DOE/BP-00021711-1)*

Bonneville Power Administration  
P.O. Box 3621  
Portland, OR 97208

This report was funded by the Bonneville Power Administration (BPA), U.S. Department of Energy, as part of BPA's program to protect, mitigate, and enhance fish and wildlife affected by the development and operation of hydroelectric facilities on the Columbia River and its tributaries. The views in this report are the author's and do not necessarily represent the views of BPA.

## **Protect & Restore Mill Creek Watershed**

Annual Report CY 2005

(2/28/05 - 2/28/06)

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

Project Number 200003600

Contract Number 21711

March 2006

## **Abstract**

The Nez Perce Tribe Department of Fisheries Resource Management, Watershed Division approaches watershed restoration with a ridge-top to ridge-top approach. The Nez Perce Tribe and the Nez Perce National Forest (NPNF) have formed a partnership in completing watershed restoration activities, and through this partnership, more work is accomplished by sharing funding and resources in our effort.

The Nez Perce Tribe began watershed restoration projects within the Mill Creek watershed of the South Fork Clearwater River in 2000. Progress has been made in restoring the watershed through excluding cattle from critical riparian areas through fencing. Starting in FY 2002, continuing into 2004, trees were planted in riparian areas in the meadow of the upper watershed. In addition, a complete inventory of culverts at road-stream crossings was completed. Culverts have been prioritized for replacement to accommodate fish passage throughout the watershed, and one high priority culvert was replaced in 2004. Maintenance to the previously built fence was also completed.

## **Acknowledgements**

Acknowledged below is a list of people who worked very hard on this project demonstrating great enthusiasm and commitment to make it a success.

**U.S. Forest Service, Nez Perce National Forest:** Joe Bonn, Engineer

**U.S. Forest Service, Nez Perce National Forest:** Jake Strohmeyer, Engineer

**U.S. Forest Service, Nez Perce National Forest:** Scott Russell, Fisheries Biologist

### **Nez Perce Tribe:**

Project Leader: Heidi McRoberts, Biologist III

Engineering Lead: Mark Johnson, Engineer

Culvert and Road Project Inspection: Bobby Hills, Biologist II

Monitoring and Evaluation Project Lead: Alison Tompkins, Biologist I

Habitat Monitoring Crew: Christa Sobotta, Technician I

Jess Brewer, Technician I

Mark VanderVelden, Biologist III

## **Background**

Mill Creek is located in the South Fork Clearwater River, within the Nez Perce Tribe ceded territory of 1855 and within the Nez Perce National Forest.

Mill Creek is a long linear watershed encompassing over 23,000 acres. It is of particular importance to steelhead and westslope cutthroat trout, and is considered a population stronghold for these species. Chinook salmon are also present within the watershed.

Management activities have negatively impacted aquatic processes within this drainage. Encroaching roads and grazing processes have degraded the stream/riparian processes.

The upper meadow of Mill Creek has been severely impacted by cattle grazing for several years. Grazing and the trampling of stream banks by cattle were a significant annual disturbance to riparian zones, which led to changes in riparian plant communities. Aerial photographs taken in 1927 indicated that 80% of the stream banks were lined with riparian hardwood shrubs. In the same photograph, taken in 1990, riparian shrubs lined only 5% of the stream banks. The riparian community consisted mostly of grasses and forbs in the first year of this project, 2000.

Roads have been constructed in the Mill Creek watershed, and the majority of these roads were constructed several decades ago. Road/stream crossing assessments revealed that passage for aquatic species through many of the structures is either not adequate or not functioning at all.

## **Work Elements**

A : 165. Produce Environmental Compliance Documentation - Provide NEPA Information to BPA

B : 119. Manage and Administer Projects - Management, Coordination and Communication

C : 118. Coordination - Prepare Partnering Agreements with the Nez Perce National Forest

D : 174. Produce Plan - Identify Culvert Restoration Projects

E : 175. Produce Design and/or Specifications - Approve final design and cost estimate for culverts

F : 184. Install Fish Passage Structure - Replace Camp Creek Culvert.

G : 18. Maintain Terrestrial Structure -Maintain Fence

H : 47. Plant Vegetation - Plant riparian vegetation

I : 157. Collect/Generate/Validate Field and Lab Data - Collect data on culverts installed in 2004 and 2005

J : 157. Collect/Generate/Validate Field and Lab Data -Stream Habitat Data Collection

K : 162. Analyze/Interpret Data - Mill Creek Data Analysis

L : 141. Produce Status Report - Quarterly Reports or Pisces formatted data in "stoplight" format

M : 132. Produce Annual Report - Annual Report

N : 185. Produce Pisces Status Report - Quarterly status reports

## **Results**

### **Coordination**

Coordination and pre-work meetings between the Nez Perce Tribe and the Nez Perce 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. Written agreements were signed between the Nez Perce Tribe and the Nez Perce National Forest to document each entities roles in the project as well as the cost share for each agency.

NEPA, ESA consultation, cultural resource surveys were completed in 2004/2005. Merton Creek and Hepner Creek were prioritized to be the top two remaining culverts for replacement.

### **Riparian Enhancement**

Approximately 1,600 trees were planted in the riparian zone of Mill Creek within the upper meadow that was fenced in 2000 to exclude cattle grazing. Tree species included drummond willow, alder, 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.

### **Fish Passage Barriers**

Inventory was completed on all culverts within the Mill Creek drainage that fall on Nez Perce National Forest lands. This inventory data was entered into a database and prioritized for future culvert replacement projects. One project was selected for passage improvement in 2005, the Camp Creek Culvert. Due to delays in project funding agreements this project has been rescheduled to occur in 2006. Field surveying and a preliminary design were completed in February 2006 for two additional culverts, Merton Creek and Hepner Creek.



*Figure 1. Hepner Creek before culvert replacement.*

### Riparian Protection

Maintenance of the 3 miles of riparian protection fence that surrounds the upper Mill Creek meadow was completed in June 2005. All dilapidated sections of fence were repaired.

### Monitoring

Stream discharge was collected at the established gauging station on Mill Creek. A hydrograph will be created using the rating curve for Mill Creek.

Automatic temperature loggers were deployed in June 2005 at three locations within the Mill 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 are two in a meadow in the upper watershed and one in the lower watershed. The automatic recorders were collected from the field in September 2005. Data was downloaded to a computer and summarized. Reports will be included in the 2005 monitoring report.

Physical monitoring parameters were collected in the upper meadow of Mill Creek. This data will be analyzed against previous year's data and reported in the 2005 monitoring report.

Fish data was collected through snorkel surveys by the BPA Project *Nez Perce Tribal Hatchery Monitoring and Evaluation* (83-350-03).

## **Discussion**

Additional restoration work remains to be completed in this watershed. During the FY2002, culvert inventories were completed and a prioritized for replacement. Implementation of culvert replacements began during field season 2004 with the replacement of Corral Creek.

Further riparian plantings are warranted since the riparian zone is virtually devoid of vegetation. Shade is needed to cool water temperatures and LWD recruitment will provide habitat for anadromous fish species.

Monitoring and evaluation will be increased in the following years with more discharge measurements, temperature recorders, and measurement of physical habitat parameters.

**Costs**

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

Salary & Wages	\$23,871.07
Fringe Benefits	\$7,425.77
Sub-contracts	\$25,000.00
Travel	\$0
Vehicles	\$7,385.36
Supplies	\$2,852.43
Rent	\$683.00
Indirect Costs	\$12,421.00
<b>TOTAL</b>	<b>\$79,638.63</b>