BONNEVILLE POWER ADMINISTRATION

Restore McComas Meadows

Meadow Creek Watershed

Annual Report 2005 - 2006 July 2006 DOE/BP-00021728-1

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Restore McComas Meadows/Meadow Creek Watershed

Annual Report CY 2005

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

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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 Meadow Creek watershed are coordinated and cost shared with the Nez Perce National Forest.

The Nez Perce Tribe began watershed restoration projects within the Meadow Creek watershed of the South Fork Clearwater River in 1996. Progress has been made in restoring the watershed by excluding cattle from critical riparian areas through fencing, planting trees in riparian areas within the meadow and its tributaries, prioritizing culverts for replacement to accommodate fish passage, and decommissioning roads to reduce sediment input. During this contract period work was completed on two culvert replacement projects; Doe Creek and a tributary to Meadow Creek. Additionally construction was also completed for the ditch restoration project within McComas Meadows.

Monitoring for project effectiveness and trends in watershed conditions was also completed. Road decommissioning monitoring, as well as stream temperature, sediment, and discharge were completed.

Acknowledgements

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Haarr Excavation: Martin Haarr, owner
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

McComas Meadows lies within the Meadow Creek drainage of the South Fork Clearwater River. The project area lies within the Nez Perce Tribe ceded territory of 1855 and within the Nez Perce National Forest.

The watershed is approximately 27,000 acres in size, and is located 7 air miles southeast of the town of Grangeville. The watershed is important to steelhead, Chinook salmon, and Westslope cutthroat trout.

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

Sediment is listed as the primary limiting factor in the watershed. Existing sediment deposition levels are 20 to 40 % over base levels. Roads have been shown to be a major contributor of sediment to streams. There are approximately 193 miles of roads in the Meadow Creek watershed, and the road density is 4.6 miles per square mile, the highest road density in the South Fork Clearwater sub-basin. Through the Meadow Face EIS, 90 miles of road are slated for decommissioning.

McComas Meadows is a low elevation 700-acres meadow located within the Meadow Creek watershed. This area was historically a Nez Perce Tribe summer camp. Early settlement by homesteading resulted in grazing, agriculture, and water diversions. This USFS obtained this land in 1991, and has worked with the Nez Perce Tribe to restore this meadow.

Grazing practices have been present within the Meadow Creek drainage for decades. These practices have led to degraded and depleted riparian vegetation, especially within McComas Meadows. The depleted riparian vegetation has resulted in elevated temperatures that exceed temperature standards. McComas Meadows was fenced to exclude cattle in 1997. Since that time re-vegetation has been implemented and is on-going.

In addition to grazing within McComas Meadows, a ditch system was constructed on the upslope areas of the meadow. This ditch impedes hydrologic processes and contributes sediment to the stream within the meadow.

Work Elements

A : 165. Produce Environmental Compliance Documentation - Provide NEPA information to BPA for projects on Forest Service Lands

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

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

D : 175. Produce Design and/or Specifications - Design/cost estimate for 3 culverts on FS Land for FY06 contract

E : 184. Install Fish Passage Structure - Replace Storm Creek Culvert

F : 184. Install Fish Passage Structure - Replace Doe Creek Culvert #1

G : 184. Install Fish Passage Structure - Replace Tributary to Meadow Creek Culvert

H : 55. Upland Erosion and Sedimentation Control - Reduce/Prevent erosion on bare soil work sites in McComas Meadows.

I : 33. Decommission Road - Re-contour 900 Feet of old road in McComas Meadows

J : 18. Maintain Terrestrial Structure - Maintain Fence

K : 47. Plant Vegetation - Plant riparian vegetation

L : 22. Maintain Vegetation - Protect hawthorn trees within McComas Meadows

M : 157. Collect/Generate/Validate Field and Lab Data -Collect data on newly installed culverts.

N : 157. Collect/Generate/Validate Field and Lab Data -Collect data on roads that were removed in 2003 and 2004

O : 157. Collect/Generate/Validate Field and Lab Data -Stream Habitat Data Collection in Meadow Creek Watershed

P : 162. Analyze/Interpret Data - Meadow Creek Data Analysis

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

R : 132. Produce Annual Report - Annual Report

AC : 185. Produce Pisces Status Report - Quarterly status

Results

Coordination and Management

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 role in the project as well as the cost share for each agency.

Riparian Enhancement

Approximately 3,500 trees were planted including: Drummond willow, Red Osier dogwood, alder, and Douglas hawthorn. These trees were planted in the riparian zone of Meadow Creek with the majority of trees planted within McComas Meadows, where cattle grazing has been excluded since 1992. Trees are planted along the riparian zone to provide streambank stabilization, and large woody debris recruitment for shade, which reduces stream temperatures. Steel cages were erected around selected hawthorn trees to reduce the browsing impact by wildlife. Planting and protection are part of the implementation of native species restoration within McComas Meadows.

Exotic species reduction and native species restoration associated with the ditch obliteration has been rescheduled for the summer of 2006.

Figure 1. McComas Meadows riparian planting with protective gage.

Hydrologic Connectivity

Restoration of 3,130 feet of man-made ditch surrounding McComas Meadows was obliterated and natural drainage patterns were restored and 1,300 feet of existing road were obliterated and re-contoured. The ditch and road were constructed around the meadow approximately 50 years ago and cause ponding surface water, surface erosion, and mass failures which cause sediment to enter the stream and degrade fish habitat.

Figure 2. McComas ditch restoration before and after construction.

Fish Passage Barriers

Over 40 culverts were identified by the Nez Perce National Forest for replacement in the Meadow Face EIS. In partnership with the Nez Perce National Forest three culverts were selected for replacement in 2005. The Doe Creek and a tributary stream to Meadow Creek were replaced, the Storm Creek culvert was rescheduled for replacement in 2006. Design surveys were completed in the fall of 2004, and the final designs were completed during the winter. These projects were cost-shared with other partners, with the Idaho Office of Species Conservation (IOSC) contributing a total of $80,000 and the Nez Perce National Forest contributing $45,000. Pre-bid tours were conducted in May through June and the bids were subsequently reviewed and awarded for construction. The construction work was completed in August of 2005.

Figure 3. Outlet of the culvert at Doe Creek before and after replacement.

Road Decommissioning Monitoring

20 miles of road within the headwater drainages of the Meadow Creek watershed were decommissioned during the summers of 2003 and 2004. Monitoring of samples within this old road system was completed in the fall of 2005 and a final report was completed in the winter of 2005.

Riparian Protection

Maintenance of the five miles of riparian protection fence that protects McComas Meadows was completed in May 2005. All dilapidated sections of fence were repaired and take down fence sections at water gaps were put-up for the grazing season.

Monitoring

An automatic recording pressure transducer was installed in Meadow Creek at the southern end of McComas Meadows near the Camp 58 bridge. This data will be used to create a hydrograph for Meadow Creek.

All monitoring results are summarized in a separate report that will be submitted in March 2006.

Automatic temperature recorders were placed at six locations within the watershed. Graphs displaying water temperature variation within the watershed will be summarized in the monitoring report.

Additional monitoring data that was collected consists of: photopoints, canopy cover, large woody debris, cobble embeddedness, pebble counts, bank stability, and macroinvertebrates.

Discussion

More restoration work remains to be completed in this watershed. Additional information on culvert inventories will be completed in 2006 and a prioritization of culverts to be replaced will be completed by the Forest Service.

Further riparian plantings are warranted in the lower section of McComas Meadows 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. Natural regeneration of some native species, such as Douglas Hawthorn, is evident, but growth is stunted by wildlife browse. Protective cages will be installed to around these trees.

Monitoring and evaluation will continue in the following years for discharge measurements, temperature recorders, and measurement of physical habitat parameters. In addition the road obliteration monitoring program will continue as roads are decommissioned. Permanent monitoring sites are established within the 20 miles of road decommissioning project. The 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.

	Cost
Salary	$94,831
Fringe	$25,727
Computer Services	$2,150
Sub-contracts	$114,778
Communications	$200
Training	$118
Travel	$1,934
Vehicles	$7,171
Supplies	$2,987
Materials	$4,349
Rent	$683
Indirect Costs	$32,174
	$287,102