Restore McComas Meadows

Meadow Creek Watershed

Annual Report
2002 - 2003

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Restore McComas Meadows/Meadow Creek Watershed

Annual Report

August 1, 2002 - July 31, 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 Meadow Creek watershed are coordinated 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. During years 2000-2003, trees were planted in riparian areas within the meadow and its tributaries. Culverts have been prioritized for replacement to accommodate fish passage throughout the watershed. Designs for replacement are being coordinated with the Nez Perce National Forest. Twenty miles of road were contracted for decommissioning. Tribal crews completed maintenance to the previously built fence.

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.

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 Meadow Creek watershed include: spring Chinook salmon, coho salmon, and steelhead trout. Since the majority of the watershed is managed by the US Forest Service, Nez Perce National Forest (NPNF), coordination with them is critical to the success of the project. Coordination with the NPNF is an on-going effort at the pre-work, planning, and implementation stages.

On-the-ground objectives include:

1. Restore meadow and riparian plant communities to enhance fish and wildlife habitat.
   a. Obtain materials and supplies including seed and plants to implement restoration plan.
   b. Initiate exotic species reduction and native species restoration.
   c. Plant vegetation.

2. Restore hydrologic connectivity within the McComas Meadows reach of Meadow Creek.
   a. Survey & design for tributary restoration/ditch re-contouring.

3. Alleviate sediment input to the stream and reduce risk from sediment related mass wasting and surface erosion related to road sources.
   a. Coordinate with NPNF on treatment prescriptions for identified roads.
   b. Survey 20 miles of roads identified for treatment.
   c. Obliterate/treat 20 miles of identified and surveyed roads.

4. Restore fish passage.
   a. Survey and complete design for culvert replacements.

5. Maintain cattle exclosure fences surrounding McComas Meadows and Farris Creek.
   a. Repair any damaged or destroyed sections of fence.

6. Monitor and evaluate success of implementation projects and determine future needs based on these results.
   a. Implement McComas Meadows/Meadow 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 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.

Wildlife Habitat Institute was sub-contracted to complete an inventory and analysis of soils and vegetation within McComas Meadows. Nez Perce National Forest was sub-contracted to cooperatively implement 20 miles of road obliteration in the Meadow Creek watershed. TerraGraphics Environmental Engineering was sub-contracted to complete design surveys for tributary/ditch re-contouring within McComas Meadows. CRITFC was contracted to assist with technical analysis of resource planning associated with this project.

Riparian Enhancement

Approximately 3,000 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 1997. Tree species included drummond willow, red osier, and dogwood. Trees are planted along the riparian zone to provide streambank stabilization, and large woody debris recruitment for shade, which reduces stream temperatures.

Recent years plantings are having good success. Rooted vegetation is hearty and pole cuttings seem to be successful when planted in streambanks (Figure 1), but not successful when planted on terraces adjacent to the stream.

Figure 1. Pole plantings on streambanks of Meadow Creek, SF Clearwater River within McComas Meadows.

Wildlife Habitat Institute delivered a report titled *An Analysis of Soils, Vegetation, and Revegetation Options at McComas Meadows*. The findings in this report will guide meadow and riparian vegetation restoration and weed control for McComas Meadows in the coming years.

Hydrologic Connectivity

A field review was conducted on July 24, 2003 to determine sites for restoration of the ditch within McComas Meadows. Heidi McRoberts visited the sites with sub-contractor, Terra Graphics Environmental Engineers. The survey and design was sub-contracted, but will not be complete until winter 2003.

Fish Passage Barriers

Over 40 culverts were identified for replacement in the Meadow Face EIS. Nez Perce Tribe and the Nez Perce National Forest selected three culverts for design during this project year. The culverts are Storm Creek, Doe Creek, and a culvert on an unnamed tributary to Alder Creek.

Figure 2. Drop at outlet of culvert at Doe Creek. Passage barriers exist at culverts when outlets are not in contact with the stream bottom.

Road Decommissioning

20 miles of road within the headwater drainages of the Meadow Creek watershed were surveyed and staked in the fall of 2002. A contract was prepared over the winter of 2002-2003. It was awarded to S&S Contracting in the summer 2003.

Riparian Protection

Maintenance of the 5 miles of riparian protection fence that surrounds McComas Meadow and Farris Creek was completed in May 2003. All dilapidated sections of fence were repaired and cheater bars were installed at gates for easier pedestrian access.

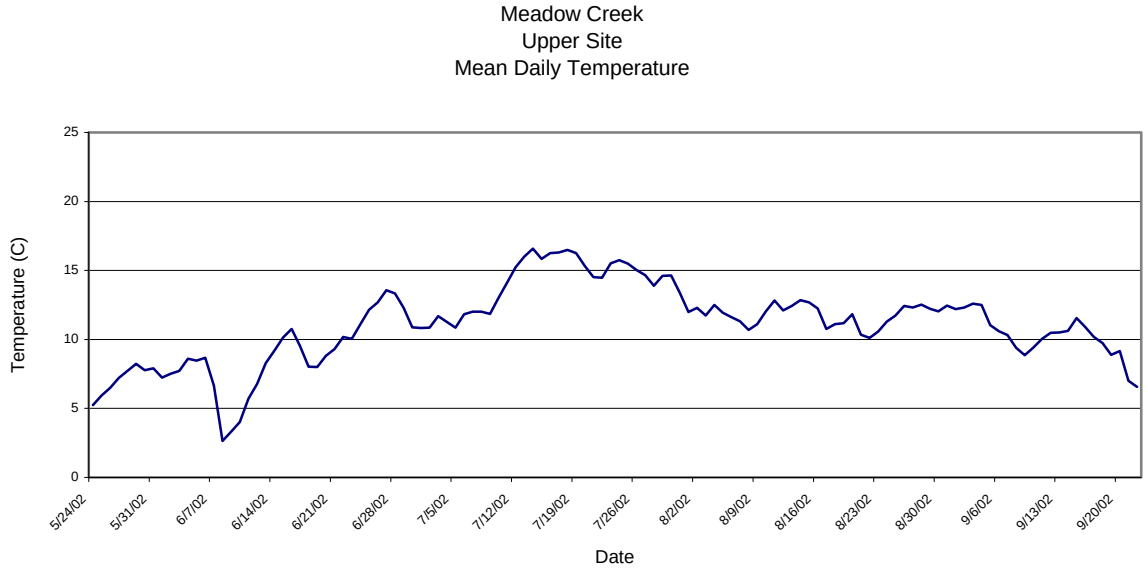
Monitoring

Stream discharge measurements were collected at the established gaging station on Meadow Creek. Measurements were recorded on March 17, 2003, April 4, 2003, April 18, 2003 and July 7, 2003. An automatic recording pressure

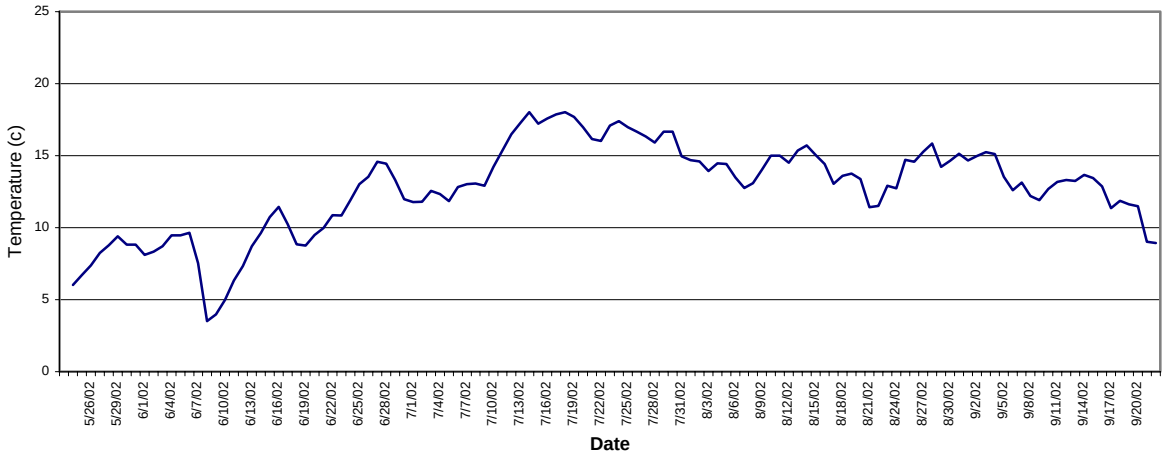
transducer was installed in Meadow Creek at the southern end of McComas Meadows at the Camp 58 bridge.

Fish data was collected through snorkel surveys during July 2003. Three reaches were surveyed; these are the same reaches where all monitoring data is collected within McComas Meadows. Results are summarized in a separate report.

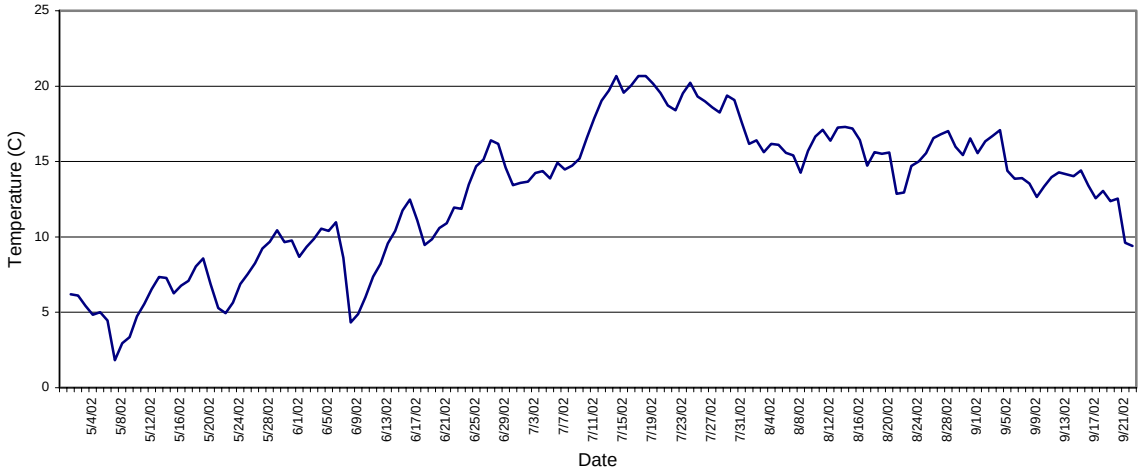
Automatic temperature recorders were placed at four locations within the watershed. The following three graphs displays how the water temperature increases as one moves down the watershed. Mean daily temperatures increase by over five degrees in the warmest days of the summer months.



McComas Meadows/Meadow Creek
Top of Meadow
Mean Daily Temperature



Meadow Creek/McComas Meadows
Camp 58



Discussion

Additional restoration work remains to be completed in this watershed. During the FY2002, culvert inventories were completed and a prioritization of culverts to be replaced. Implementation of culvert replacement is scheduled to begin during field season 2004; contracts will be prepared in FY 2003. Culverts are expensive to replace, so the three priority culverts will likely take several years to complete.

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.

Monitoring and evaluation will continue in the following years with more 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 each portion of project.

Tasks	**Cost**
Planning & Design	$100,000
Construction & Implementation	$140,000
Operation & Maintenance	$8,000
Monitoring & Evaluation	$20,000
	$268,000