United States Department of Agriculture
Forest Service

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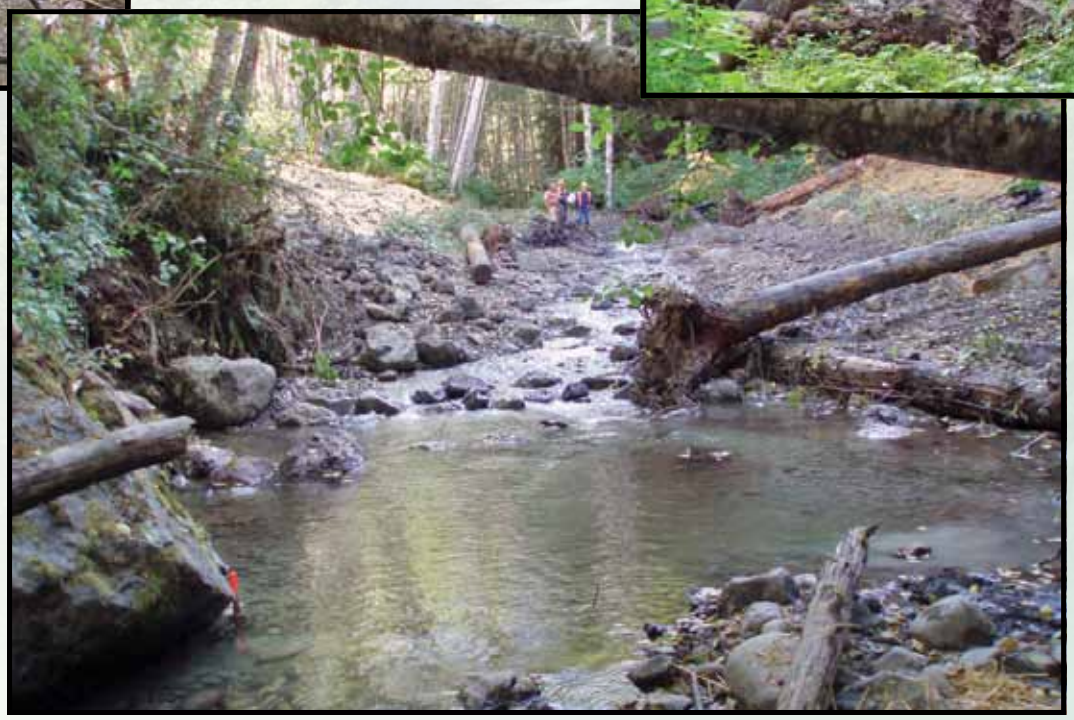
FY 2009 Legacy Roads and Trails Accomplishment Report

Pacific Northwest Region



Highlights

- Successfully delivered the largest Regional road restoration program in the last 20 years. This was accomplished in addition to significant work demands in other programs.
- Maximized program benefits by focusing road projects in Priority Watersheds and ensuring integration with other restoration work.
- Expanded internal and external collaboration and partnerships.
- Saved significant time and funding by continuing the streamlining of project consultation and permitting.

Background

Legacy Roads and Trails (LRT) provides nation-wide funding to enable the Forest Service (FS) to make its transportation network more responsive to today's environmental and access needs. In particular, LRT funding is directed towards *"urgently needed road decommissioning, road and trail repair and maintenance……and removal of fish passage barriers, especially in areas where Forest Service roads may be contributing to water quality problems in streams and water bodies which support threatened, endangered or sensitive species or community water sources."* (FY 2009, Department of Interior, environment and related agencies Appropriations Act). This work is an essential component of the Forest Service's renewed focus on forest restoration and water resources. LRT funding first became available in Fiscal Year (FY) 2008 when Congress appropriated $40 million. In FY 2009, this was increased to $50 million.

The Pacific Northwest Region (Region) received $9.5 million in FY 2009. This has enabled continuation of an aggressive effort to eliminate the substantial maintenance backlog on the Region's 92,000 mile road network. Much of this network was built 30-50 years ago to meet different management objectives and environmental standards than exist today. The Region is using its Aquatic Restoration Strategy (ARS) to guide allocation of these funds to ensure completion of the most important work in the highest priority watersheds. A major challenge in 2009 was the implementation of an expanded program of LRT work while also meeting significant work demands in other priority programs.

Program Design and Implementation

The Region's primary emphasis this year was completion of remaining, critical restoration work in priority watersheds. The program of work was designed to:

- Ensure that a full range of road restoration treatments were implemented in many watersheds across the Region;
- Integrate LRT work into an ambitious, total Regional program of work;
- Balance Regional and Forest priorities;
- Manage Forest workforce capacity limitations; and
- Enable increased planning to build projects for the future.

By work category, FY 2009 LRT funding was allocated as follows: road/trail improvement and deferred maintenance (34%); fish and aquatic organism passage (22%); road decommissioning (32%); out-year planning (10%); and monitoring/evaluation (2%). The mix of funds between National Forests in Oregon and Washington was approximately 60% and 40%, respectively.

Accomplishments

- **17 road-stream crossings reconstructed to improve fish and other aquatic organism passage.**
- **440 miles of roads improved ("storm damage risk reduction") and 464 miles maintained to increase durability and stability during storm events.**
- **227 miles of road decommissioned, including 39 miles of unauthorized road**
- **3 miles of trail reconstructed and 10 trail-stream crossings replaced.**

SALMON RIVER WATERSHED RESTORATION - *Every member of the Sandy River Partnership made important contributions toward completion of priority restoration work in this watershed.*

Mt. Hood National Forest, Oregon **Sandy River Basin**

A group called the Sandy River Partnership is working collaboratively to identify, prioritize, plan, and complete restoration work in this basin. The group includes the Sandy River Watershed Council, USDA Forest Service, Association of Northwest Steelheaders, Native Fish Society, City of Portland Water Bureau, Clackamas County, The Nature Conservancy, Oregon Department of Fish and Wildlife, USDI Bureau of Land Management, Freshwater Trust, and others. The Salmon River is rated as the highest priority watershed for restoration in this basin. On average, it produces more than 20% of the salmon in the entire Sandy Basin.

FY 2009 projects in the Salmon River Watershed mark the completion of more than 5 years of carefully planned restoration work that has been guided by a strategic Watershed Action Plan developed by the Sandy River Partnership. The work benefits an array of fish species (ESA-listed Spring Chinook and Coho salmon and Steelhead, Cutthroat and Rainbow trout and lamprey) and ensures continued high-quality water and fish habitat in this very important tributary to the Sandy River. Completion of priority work in the Salmon River watershed complements removal of Marmot Dam on the Sandy River by Portland General Electric in 2007 and numerous other restoration projects in the basin.

In FY 2009, all high priority restoration work on National Forest System lands in this watershed was completed. In this year's capstone effort, 30 miles of road were decommissioned/closed with Legacy Roads and Trails funding. This included removal of more than 230 culverts, excavation of road fill, and reconstruction of stream channels at numerous road-stream crossings. In addition, 4 side channels (1.9 miles) were re-connected to the main stream as part of stream restoration work. Monitoring of this year's work was supported by students from Sandy and David Douglas High Schools and the Reynolds Learning Academy, all located in the Portland, OR, metropolitan area.

Decommissioning of 30 miles of road in 2009 was a major part in the completion of priority restoration work in the Salmon River watershed. A collaboratively developed Watershed Action Plan was used to identify and schedule the most important work. Contributions from a wide range of partners were essential in the completion of this effort.

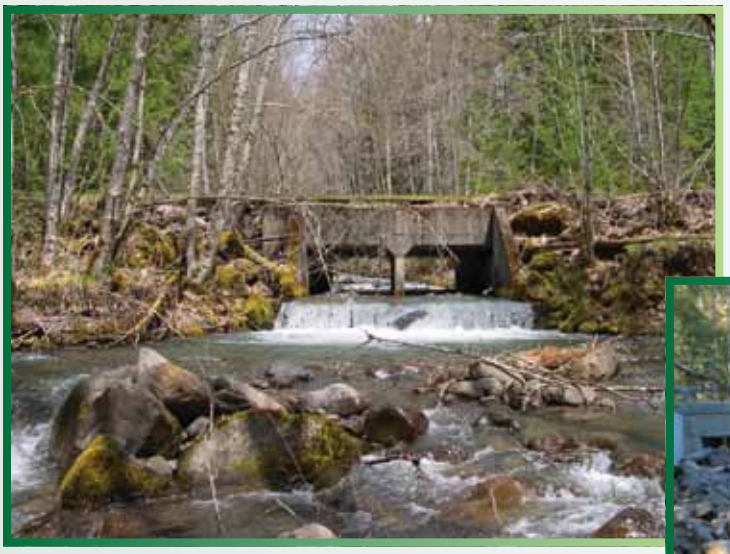
2009 Feature Projects

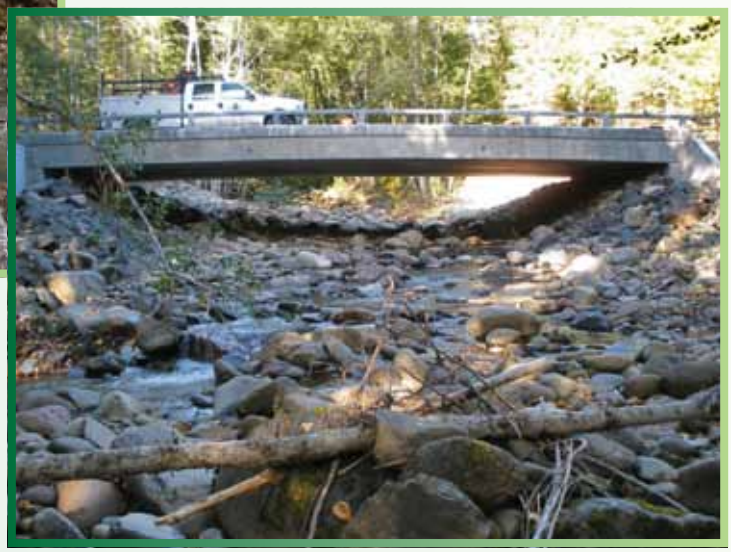
Buck Creek Fish Passage – Completing this project required many people working together to leverage their time, expertise, and money.

Willamette National Forest, Oregon **Willamette River Basin**

An undersized, road-stream crossing stood between nearly 3.5 miles of excellent spawning and rearing habitat and a number of important fish species. These include ESA-listed Spring Chinook salmon and Bull trout; a variety of other species including Steelhead, Coho salmon, resident fish species; and other aquatic organisms. The crossing is located on a major, two-lane, paved highway which, prior to replacement, had been overtopped several times during flood events. A committed group of partners, including the Middle Fork Willamette Watershed Council, Oregon Department of Fish and Wildlife, Oregon Watershed Enhancement Board, US Fish and Wildlife Service, and the USDA Forest Service came together to complete the project. Legacy Roads and Trails provided 35% of the funding and partners contributed the remainder.

The project was complex and required a sophisticated design. A 17-foot, double-box, concrete culvert was replaced with a 65-foot, pre-stressed concrete bridge. In addition, the stream channel through the project area was reconstructed to simulate natural conditions. This project is a great example of what can be done when a group of partners works together to get an important job done.





Replacement of a double-box culvert and concrete apron with a bridge ensures that unobstructed fish passage is provided and that natural, stream channel conditions are provided during a wide range of flows. This cooperative project provides access to 3.5 miles of habitat for a number of fish species and other aquatic organisms.

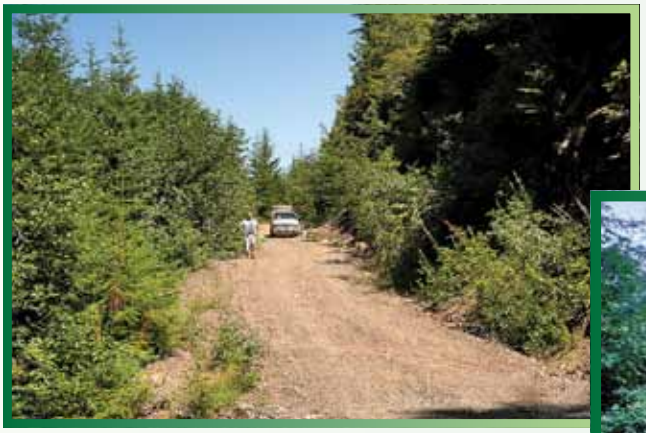
Church Creek *– An integrated mix of road treatments were used to solve this environmental and maintenance headache.*

Olympic National Forest, Washington **Puget Sound River Basin**

For many years, chronic surface erosion and landslides from the Church Creek road has adversely affected downstream water quality and aquatic habitat in the Skokomish River. The road, located on steep, highly erosive terrain, had been rated by Forest personnel as a "high risk" to aquatic resources and required substantial maintenance to remain passable.

To address these problems, a combination of restoration treatments were selected to meet environmental and transportation needs on 6.7 miles of this road. The upper 2.1 miles, located on the steepest terrain, was decommissioned and left in a condition to mimic natural drainage patterns. Treatments included removal of all culverts and associated fills, installation of drainage swales and cross ditches, reconstruction of stream channels, pullback of unstable sidecast material, and outsloping of the road's running surface. The middle 2.2 miles, located on flatter terrain, was closed; treatments focused on managing road drainage to prevent diversion onto adjacent roads and hillslopes and removal of unstable sidecast material, with part of the road prism retained for future access. The lower 2.4 miles was left open and given a lighter, Storm Damage Risk Reduction (SDRR) treatment. This included pull back of unstable sidecast material, increasing the number and size of cross drains, and rocking and blading of the road's running surface. All erosion control treatments included control of invasive plant species, use of weed-free mulch and seed, and planting native vegetation.

This project is part of a comprehensive restoration program for the Skokomish River Watershed. In FY 2009, 6.9 miles of road were decommissioned, 12.4 miles were closed, 16.0 miles received SDRR treatments, and 1 site was treated to restore fish passage in the Skokomish River Watershed. In addition, Legacy Roads and Trails funded the planning of an additional 60 miles of road decommissioning, closure, and conversion to trails.



The Skokomish River project and work of the Watershed Action Team was selected as one of three case studies for the 2009, World Forestry Congress in Buenos Aires, Brazil. These photos show just one of their many projects. Here, more than 4 miles of road were decommissioned or closed on the steepest, most erodible terrain.

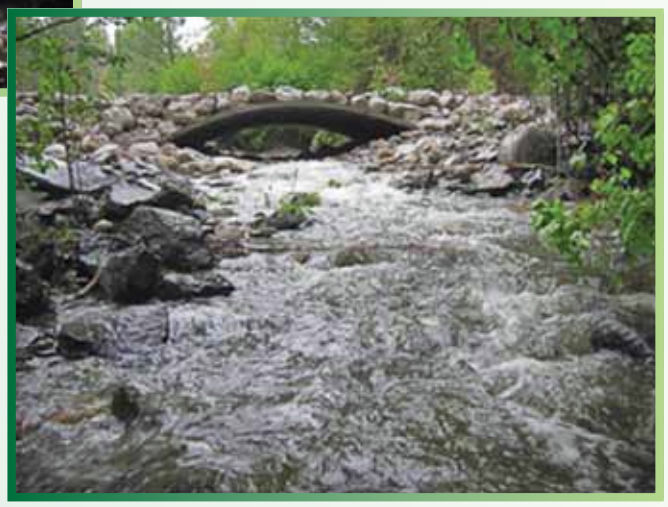
2009 Feature Projects

Granite-Boulder Creek Fish Passage – *Through a multi-year effort, partners achieve their objective of restoring fish passage.*

Malheur National Forest, Oregon **John Day River Basin**

This project completes the removal of all major fish passage barriers in the Granite-Boulder Creek Watershed. Work has been focused in this high priority watershed following the completion of a Watershed Action Plan in FY 2008. This year, replacement of a pair of undersized culverts with a 26-foot wide, open-bottom arch restored access to more than 5 miles of high quality spawning and rearing habitat for ESA-listed Steelhead and Bull trout. Non-listed Spring Chinook salmon, Red Band trout, and lamprey will also benefit from the restored passage. The project was funded in cooperation with the Oregon Watershed Enhancement Board and included Legacy Roads and Trails funds as part of the Whole Watershed Restoration Initiative (http://www.ecotrust.org/wwri/).

This work is part of a cooperative, fish habitat and water quality restoration effort in the Granite–Boulder Creek Watershed. Within the last 5 years, replacement of 4 other road-stream crossings has restored access to another 3.0 miles of fish habitat. Other road treatments have included removal of a failing bridge and closure of 1.5 miles of Forest Service road. Further downstream, the Confederated Tribes of the Warm Springs and Grant County Soil and Water Conservation District have cooperated to install a new irrigation diversion structure. This new installation improves upstream fish passage and provides safe, downstream passage by addition of a self-cleaning screen, which prevents fish from being entrained in the diverted irrigation water.



Replacement of this road-stream crossing completes a cooperative effort to restore full fish passage in the Granite Boulder watershed. Major partners have included the Oregon Watershed Enhancement Board, the Confederated Tribes of the Warm Springs and Grant County Soil and Water Conservation District.

Regional Partnerships and Leveraging of Funds

Partnerships remain a centerpiece of LRT. They provide important contributions to all phases of this important restoration effort. Continued support and interaction with the Washington Watershed Restoration Initiative has helped to expand the scale of LRT nationally and regionally. Strong cooperation between the FS, Bureau of Land Mangement (BLM), the US Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), and the Army Corps of Engineers (ACOE) helped maximize the amount of restoration work accomplished. For example, a programmatic Aquatic Restoration Biological Opinion (ARBO) resulted in major savings of time and money by streamlining consultation and permitting for the full range of road restoration work. Continuation of the Whole Watershed Restoration Initiative, a partnership involving the Oregon Watershed Enhancement Board, NMFS, Ecotrust, and the BLM, leveraged more than $1.5 million of additional funding and helped to expand resources and collaboration for priority watershed restoration. A wide variety of other partners were also very important in the successful planning and delivery of the ambitious, FY 2009 program of work.

Monitoring

Effectiveness monitoring helps to improve the quality of LRT projects. Two Region-wide studies were initiated in FY 2008 and were continued in FY 2009 to assess the effectiveness of selected LRT projects. One focuses on quantifying treatment-related changes in water routing and erosion/sediment delivery to streams on treated road segments. The other is intended to assess fish and aquatic organism passage at reconstructed road-stream crossings.

To evaluate water routing and sediment changes associated with road treatments, the Region and the Rocky Mountain Research Station are using detailed, field-based inventories and robust, environmental models to compare road impacts before and after restoration treatments at selected project and control sites. So far, evaluations have been initiated at 20 sites. Data analysis from one site on the Olympic National Forest has been completed and results indicate that decommissioning treatments reduced sediment delivery by 81%, completely eliminated the risk of culvert failure, and removed 4,000 cubic yards of earthen fill from "high-risk" sites adjacent to streams.

The second study is designed to answer two primary questions: 1.) Is passage for all expected species/life stages of fish being provided at treated road-stream crossings?; and 2.) After treatment, are stream channel characteristics similar to those found in the natural channel? To date, 25 sites on seven National Forests have been evaluated. Initial results indicate that all sites appear to be successfully providing fish passage. In addition, 100% of the sites met or exceeded high flow channel width and 80% simulated stream channel characteristics. The Region is now working with the San Dimas Technology and Development Center and others to develop a nation-wide protocol for these types of assessments.

The Future

There is growing excitement about completing forest restoration work that improves water quality and aquatic habitat, while providing a more durable and sustainable transportation system. Continued Legacy Roads and Trails funding is providing important resources to support planning and delivery of a meaningful, large-scale program of work focused on restoring whole watersheds in priority areas. Sustained funding is also allowing development of a multi-year program which will ensure more effective planning and enable implementation of a fully integrated suite of projects.

Expanded internal and external partnerships continue to play a pivotal role in the success of Legacy Roads and Trails. Completion of restoration work at the watershed scale requires active involvement of communities, Tribal governments, Federal and State agencies, County governments, land owners and a wide variety of other interests. Sustained funding is allowing development of a more predictable program. This in turn will allow more time and resources for involvement and support for the growing number of partners. The result will be a stronger program that better reflects the interests of the environment and the needs of stakeholders.

Over the long term, success of this important work will be reflected in:

- the number of healthy watersheds providing high quality water and aquatic habitat;
- the durability and sustainability of the transportation network;
- the number of local communities and partners actively engaged in planning and executing these restoration treatments; and
- the number of jobs that LRT work supports.

The Region looks forward to sharing the results of our FY 2010 program of work and for your continued interest and support.