



# Restoration in Action:

The First Five Years of the  
Legacy Roads and Trails Program

APRIL 2013



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*"I am honored to have helped to create the Forest Service Legacy Roads and Trails Program. I have watched the work across the nation, especially in the Skokomish Valley in the Sixth Congressional District. This work has helped restore watersheds and improve water quality and fish habitat, and at the same time provided jobs that are desperately needed in our rural communities. This is a great program and one that I am proud to have sponsored. A lot more restoration work is needed, so I hope this program will continue to help the Forest Service get the job done."*

— The Honorable Norm Dicks  
U.S. Representative for Washington's 6th Congressional District, 1977 – 2012

We thank USDA Forest Service staff for their assistance in providing data and images, and Marlies Wierenga, Dave Heller, and Dan Funsch for their dedication, long hours, and hard work.



# EXECUTIVE SUMMARY

**The Legacy Roads and Trails Remediation Program** (Legacy Roads and Trails) is a cornerstone of watershed restoration in our National Forests. Created to fix environmental problems resulting from the Forest Service's extensive road and trail system, Legacy Roads and Trails has reduced stream pollution, restored fish and wildlife habitat, created jobs, and improved essential roads to ensure safe access. Legacy Roads and Trails has been a success from the start; it is smartly and efficiently managed, and achieves on-the-ground results in real time.

Since its inception in 2008, Congress has appropriated \$270 million to Legacy Roads and Trails. With these funds, the Forest Service has:

- ✓ **Decommissioned 4,510 miles of unneeded roads** to reconnect habitat and greatly reduce the delivery of sediment to streams;
- ✓ **Maintained and/or storm-proofed 12,053 miles of needed roads** to increase their ability to stand-up during powerful storms and ensure safe access;
- ✓ **Restored fish passage at 823 sites** to provide fish and other aquatic species access to more than 1,000 miles of upstream habitat;
- ✓ **Upgraded or fixed 3,215 miles of trails** to guarantee recreationists can safely use the areas they love;
- ✓ **Created or maintained an average of 810-1,296 jobs** annually; and
- ✓ **Reduced annual road maintenance costs** by approximately \$3 million per year.

Legacy Roads and Trails was created specifically to provide crucial resources to fix and storm-proof the roads we need, and to reclaim unneeded roads causing the most damage. The Legacy Roads and Trails program is a proven tool that:

- **Restores clean water** and healthy fisheries, and reconnects fragmented wildlife habitat;
- **Saves taxpayer money** and creates high-wage jobs;
- **Ensures safe and reliable access** for recreation and resource management; and
- **Enjoys broad support** by a wide variety of partners.

This report highlights Legacy Roads and Trails accomplishments during its first five years. It provides a general accounting of appropriated funds and spotlights a sampling of projects from across the country. As illustrated here, Legacy Roads and Trails is a mission-critical program for the Forest Service that deserves continued investment.



Photo credit: USFS



Photo credit: USFWS



Photo credit: USFS

# OVERVIEW OF THE LEGACY ROADS AND TRAILS PROGRAM

**T**he National Forest System stretches from Florida to Alaska and consists of 155 individual National Forests and Grasslands. Forest Service lands are crisscrossed by an astounding 374,000 miles of road – more than eight times as many road miles as the national highway system. Many of these roads are often referred to as legacy roads – that is, roads left on the landscape after decades of intensive logging. Some of these old roads are used today for recreational access and resource management while many others sit unneeded, unused and under-maintained – a growing ecological and fiscal liability.

**Legacy Roads and Trails was created in FY 2008 to restore watersheds damaged by decaying roads.** It funds decommissioning of unneeded roads, critical repair and maintenance on the roads and trails we do need, and projects to restore fish passage where streams cross underneath roads. Legacy Roads and Trails reduces environmental harm and long-term costs, while creating high-wage jobs and securing safe and reliable access to our national forests.

With growth in outdoor recreation, hikers, hunters, fishermen, bikers, and campers rely on a small portion of the road system to access recreational destinations. This access is not assured, however, as roads continue to crumble, creating unsafe conditions or even blocking



Photo credit: Wildlands CPR

*Culverts are placed in road beds so that streams can flow under the roads. Many are damaged or too small and need to be replaced.*



Photo credit: USFS

*Roads that encroach on stream channels damage aquatic habitats and processes.*

access entirely. The public rightfully expects that important recreational roads will be maintained; the Forest Service also needs access for resource management, including restoration and fire control. A safe and durable transportation system -- sized, located, and maintained appropriately to reduce risks to people, water, and forest resources -- is essential.

## Comparing Road Mileages





# The Challenge of Legacy Roads in National Forests

In the past, many logging roads were designed for temporary use, and often they were not well-planned or well-constructed. Roads were placed in floodplains, along steep slopes, and through wildlife habitat. Sometimes roads were densely stacked - in parallel lines - one atop the next. Once logging was complete, the roads were typically left on the landscape.

Historically, the Forest Service had funds to build and maintain roads, but as timber harvests declined, so too did road maintenance funding. At this point in time, the Forest Service is able to maintain or improve only about 20% of its road system in any given year. The bulk of that funding goes towards passenger vehicle roads, which are most important for access.

## *The consequences of unmaintained roads are surprisingly severe and far-reaching:*



**Decaying roads** break apart and dump sediment into streams polluting water, endangering fish, and reducing fishing opportunities.



**Road-related sediment** degrades drinking water and increases municipal water treatment costs.



**Roads fragment habitat** and reduce the vitality of deer and elk herds and related hunting opportunities.



**Roads help spread non-native pests, pathogens and weeds.**



**Collapsing roads cut-off access** to trailheads, campgrounds and other popular recreational destinations.



**Under-maintained roads fail**, costing taxpayers millions in mitigation and restoration costs.

When roads are not maintained or under-maintained, culverts become clogged with debris, landslides occur, bridges weaken, and roads wash out. Large amounts of sediment pour into what used to be clear mountain streams, suffocating fish and burying stream channels. Hazards, such as washouts, pose serious safety risks to those driving on forest roads, at times even making access impossible.



Photo credit: Dave Heller



Photo credit: USFS



Photo credit: USFS

*"If we don't fix our roads we're going to drink our roads."*

Congressman Norm Dicks

Representing Washington's 6th District, May 2007

# A Unique Solution – The Legacy Roads and Trails Program

The Legacy Roads and Trails idea was conceived by a coalition of conservation and recreation organizations, state agencies, and tribes in Washington State called the Washington Watershed Restoration Initiative. Driven by the serious road-related water quality problems plaguing Washington's national forests, the Coalition campaigned for a targeted fund to address the forest road system, earning a broad array of support from organizations across the country. Once established, Legacy Roads and Trails quickly became a cornerstone of the Forest Service's restoration program, reducing road impacts on water quality and fish, and better aligning the road system to current management needs and capacity.

Legacy Roads and Trails works because it is targeted, results-oriented, and collaborative. The program delivers funds to address road problems in real time, which enables the Forest Service to efficiently plan, design, and implement restoration treatments. It is an essential tool for implementing updated and improved national forest transportation plans and watershed restoration initiatives. It is also a successful tool for leveraging non-federal funds resulting in more robust projects and enhanced community engagement. And because funds primarily go to actual work on the ground, Legacy Roads and Trails creates high wage jobs for contractors, including those who specialize in stream restoration, environmental design, and heavy equipment operation.

For all these reasons, Legacy Roads and Trails enjoys broad support from tribes, watershed councils, state agencies, conservation groups, anglers, hunters, hikers, backcountry equestrians, utilities, municipal water suppliers, dam operators, conservation districts, unions, and more (see list on inside back cover).



Photo credit: Wildlands CPR

Photo monitoring has shown that wildlife such as mule deer use reclaimed roads more often than gated roads.

*“Western Governors urge Congress and the Administration to fund and implement a sustainable roads program.”*

— Western Governors' Association  
Policy Resolution 08-3

## An Effective and Dynamic Program

Monitoring is an important component of Legacy Roads and Trails for assessing how well projects are working and for applying lessons learned to improve future projects.

Recent results show:

- ✓ **Sediment delivery to streams is significantly reduced** at studied sites:<sup>a</sup>
  - 80% reduction of sediment after storms at 9 decommissioned sites.
  - 67% reduction of sediment after storms at 4 storm-proofed sites.
  - *Study locations: MT, ID, OR, WA, CA, UT*
- ✓ **Fish are accessing previously unavailable habitat**, at nearly all studied sites where barriers were removed.<sup>b</sup>
  - *Study locations: OR and WA*
- ✓ **Black bears are frequenting areas** where roads were decommissioned in significantly higher numbers than areas where roads had gates or barriers.<sup>c</sup>
  - *Study location: Clearwater National Forest, ID*
- ✓ **Roads that were 'storm-proofed' had fewer landslides** than roads that did not receive maintenance when damage from two large storms was compared.<sup>d</sup>
  - *Study location: Siuslaw National Forest, OR*

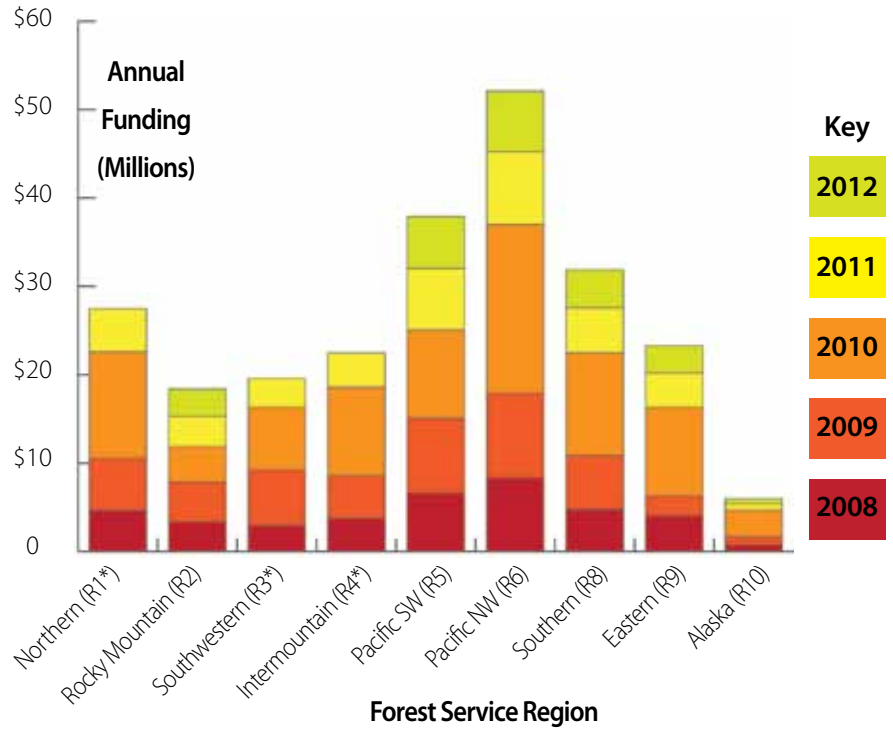
Monitoring is providing important feedback to improve future projects. For example, monitoring results are being used in the development of a new Forest Service technical guide which will provide staff with information to quickly determine the maximum spacing of road drainage features without increasing storm-damage risk. This helps save staff time and construction expenses.<sup>e</sup>

# FUNDING HISTORY

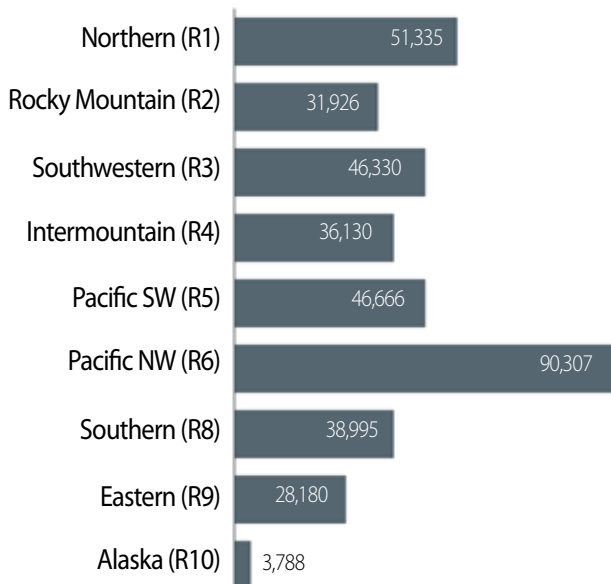
**L**egacy Roads and Trails is funded as part of overall Forest Service appropriations as determined annually by Congress. Over the past five years, Congress has appropriated a total of \$270 million to this program.

Fiscal Year	Funds Appropriated (millions dollars)
2008	\$ 40
2009	\$ 50
2010	\$ 90
2011	\$ 45
2012	\$ 45

## Regional Legacy Roads and Trails Allocations, FY 2008 – FY 2012



## Miles of System Roads by Forest Service Region



\* In FY 2012, Congress created a pilot budget program in Regions 1, 3 and 4 called Integrated Resource Restoration (IRR) and merged Legacy Roads and Trails funds into it. Thus this graph does not include the FY12 allocations for those regions.



Photo credit: USFS

Funding is used for projects that often require skilled contractors.



# The Power of Leveraging

Direct Legacy Roads and Trails dollars are only part of the funding story. In many places, the Forest Service successfully leverages Legacy Roads and Trails money with a variety of other funding sources, dramatically increasing the on-the-ground and economic benefits of the program. Some examples of leveraged funding sources include:

- Secure Rural Schools (federal);
- Emergency Relief for Federally Owned Roads (federal funding in transportation bill);
- Federal Stimulus (federal);
- Salmon Recovery Funds (federal/state);
- Watershed Restoration Grants (state/private);
- Clean Water Grants (federal/state); and
- Bonneville Power Administration (federal).

Legacy Roads and Trails also enhances other national and regional Forest Service efforts by providing funding to implement the roads portion of those initiatives. Examples include:

- **Watershed Condition Framework** – Legacy Roads and Trails can be used to fund road and trail related watershed restoration projects in priority watersheds.
- **Travel Analysis Process** – By the end of 2015, every National Forest and Grassland will have a completed Travel Analysis Report that will guide future transportation planning projects, including road reclamation and storm-proofing. Legacy Roads and Trails will provide critical funding for implementing these projects.
- **Collaborative Forest Landscape Restoration Program** - Under this program, restoration projects are developed and implemented collaboratively. Legacy Roads and Trails can provide required matching funds.

## Watershed Health and Roads

In 2010, using the newly developed Watershed Condition Framework, the Forest Service assessed 15,065 sub-watersheds across the National Forest System, and found that **67% of them are negatively affected by roads.**

Each forest identified two priority sub-watersheds for focused restoration investment over the next few years. The agency created Watershed Restoration Action Plans (Action

Plans) outlining the key projects for each priority subwatershed.

In the initial set of 284 Action Plans, the Forest Service identified more than \$350 million in “essential restoration projects.” Of that, \$110 million, or 31%, is needed to fix high-priority road and trail problems.

Legacy Roads and Trails is crucial for implementing the road work identified in these Action Plans.



Photo credit: USFS

*\$110 million is needed to fix the first round of high-priority road and trail problems. This addresses only 2% of the sub-watersheds in the National Forest System.*



Photo credit: USFS

*Rainfall during storms is collected and directed through culverts that often lead directly to streams. This can foul stream water.*



# NATIONAL ACCOMPLISHMENTS

**L**egacy Roads and Trails accomplishments begin with numbers – for example, miles of roads reclaimed or maintained. But the achievements go far beyond these numbers to reach the ultimate objective – watershed restoration and sustainable transportation. Replacing nearly one thousand blocked culverts means fish can now access habitat that was unreachable a few years ago. Improving and maintaining more than ten thousand miles of roads means the access to popular trails, camping sites, and fishing holes is safer. Reclaiming more than 4,000 miles of roads means wildlife can migrate more freely and rivers and streams run with cleaner, colder water. These accomplishments are significant and the beginning of an essential national investment to correct environmental and infrastructure problems created over the past century.



Photos: USFS

Recently ripped road as part of a larger road reclamation project.

## Outcomes

### ✓ Restored Fish and Wildlife Habitat

Legacy Roads and Trails projects have resulted in:

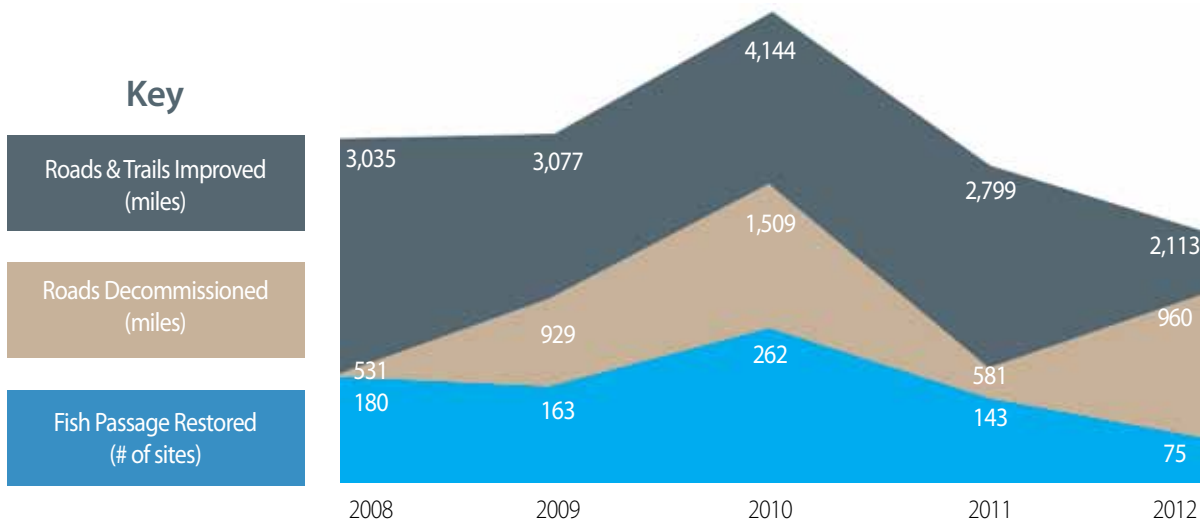
- 1,030 miles of stream habitat restored or enhanced;
- 243 acres of lake habitat restored or enhanced;
- 177,233 acres of terrestrial habitat restored or enhanced;
- 27,193 acres of water or soil resources protected, maintained, or improved;
- 2,114 acres treated for noxious weeds and invasive plants; and
- 823 stream crossings fixed to allow fish to swim upstream.



Photos: USFS

Small culverts are replaced with larger bottomless culverts. The streambed is re-created making it easier for fish to move up and down stream.

## Roads Decommissioned, Trails Improved, Fish Passage Restored<sup>9</sup>



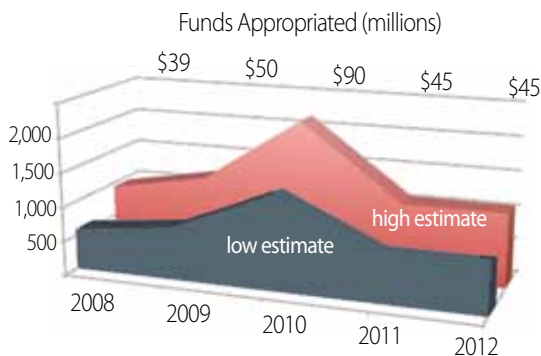
**Note:**  
This figure is not to scale.

## Outcomes, cont'd

### ✓ More Jobs

A 2011 University of Oregon study found that every \$1 million invested in watershed restoration work creates 15-24 jobs.<sup>h</sup> With \$270 million appropriated so far, the Legacy Roads and Trails Program has averaged \$54 million per year, creating or maintaining between 810 and 1,296 high wage jobs per year for heavy equipment operators and a variety of restoration specialists.

### An estimate of jobs created nationally as a result of the LRT program, 2008-2012



### ✓ Taxpayer Savings

Regular maintenance, improvements, and storm-proofing reduce storm damage to roads, saving taxpayer money. Moreover, reclaiming unneeded roads eliminates future maintenance and environmental costs.

The Forest Service estimates that Legacy Roads and Trails work has saved:

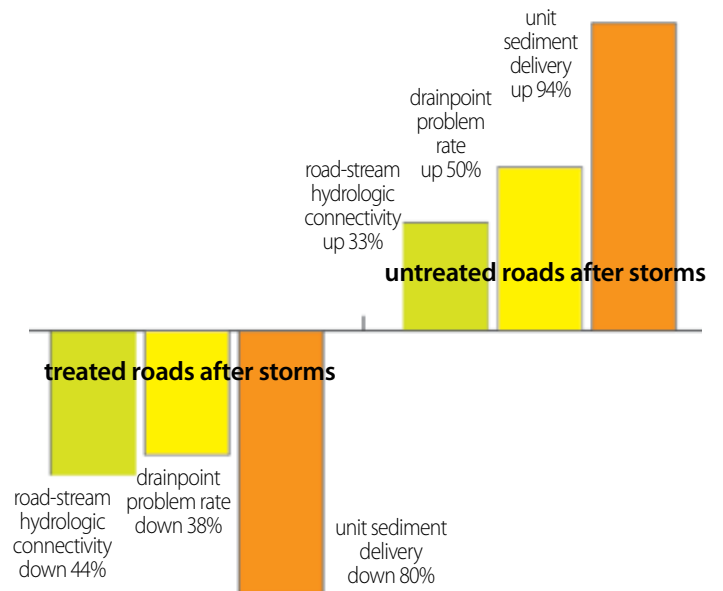
- ~\$3 million per year in annual road maintenance, and
- ~\$17 million from the deferred maintenance backlog.<sup>i</sup>



Photo credit: REI

### ✓ Clean Water and Healthy Streams

Initial Forest Service monitoring shows that Legacy Roads and Trails treatments are highly effective at reducing hydrologic impacts. The Rocky Mountain Research Station is in the middle of a multi-year analysis of the responses of treated and untreated roads to large storms. The study assessed 60 km of decommissioned roads and found significant benefits, as displayed in the figure below.



### Definition of Terms

**A hydrologically connected road** means that the road is part of the stream network. Rainfall is intercepted by road surfaces and cut slopes, and delivered to the stream, instead of infiltrating naturally.

**A drain point** is a location where water collects and drains from a road. Poorly placed or ineffective drain points can lead to road failures.

**Unit sediment delivery** refers to the amount of sediment delivered to a stream per length of road per year.

### ✓ Consistent and Safe Access

Legacy Roads and Trails helps maintain needed roads and trails for both resource management and recreational access. With these funds, the Forest Service has:

- Constructed (or reconstructed) 123 bridges;
- Maintained or improved 3,215 miles of system trails;
- Improved 3,634 miles of roads; and
- Maintained 8,418 miles of roads.

# REGIONAL ACCOMPLISHMENTS

This section highlights Legacy Roads and Trails projects in five Forest Service regions: Northern Region, Southwestern Region, Pacific Southwest Region, Pacific Northwest Region, and the Eastern Region. The types of regional projects and the accomplishments vary considerably due to differences in priorities and severity of road-related issues.



## Legacy Roads and Trails Accomplishments by Forest Service Region, FY 2008 – FY 2012

Region and % of system road miles	Totals	Region and % of system road miles	Totals
<b>Northern (1)*</b> 14%		<b>Pacific NW (6)</b> 24%	
Roads decommissioned (miles)	990	Roads decommissioned (miles)	825
Roads/trails improved or maintained (miles)	2,451	Roads/trails improved or maintained (miles)	4,837
Culverts fixed (number)	161	Culverts fixed (number)	67
<b>Rocky Mountain (2)</b> 9%		<b>Southern (8)</b> 10%	
Roads decommissioned (miles)	716	Roads decommissioned (miles)	368
Roads/trails improved or maintained (miles)	899	Roads/trails improved or maintained (miles)	1,854
Culverts fixed (number)	61	Culverts fixed (number)	46
<b>Southwestern (3)*</b> 12%		<b>Eastern (9)</b> 7%	
Roads decommissioned (miles)	139	Roads decommissioned (miles)	145
Roads/trails improved or maintained (miles)	541	Roads/trails improved or maintained (miles)	961
Culverts fixed (number)	13	Culverts fixed (number)	101
<b>Intermountain (4)*</b> 10%		<b>Alaska (10)</b> 1%	
Roads decommissioned (miles)	1,156	Roads decommissioned (miles)	71
Roads/trails improved or maintained (miles)	720	Roads/trails improved or maintained (miles)	662
Culverts fixed (number)	66	Culverts fixed (number)	300
<b>Pacific SW (5)</b> 12%		<b>TOTALS</b>	
Roads decommissioned (miles)	100	Roads decommissioned (miles)	<b>4,510</b>
Roads/trails improved or maintained (miles)	2,342	Roads/trails improved or maintained (miles)	<b>15,267</b>
Culverts fixed (number)	8	Culverts fixed (number)	<b>823</b>

\*In FY 2012, Congress created a pilot program in Regions 1, 3 and 4 called Integrated Resource Restoration (IRR) and merged Legacy Roads and Trails funds into it. Regional totals here include IRR accomplishments from FY 2012.



# NORTHERN REGION – REGION 1

## Featured Project: Yakus Road and White/White Road Decommissioning

Forest: Clearwater, Idaho

River basin: Lower and Upper Lolo Creek

Year: 2011

For thousands of generations, the Nez Perce (“Numipu” – the real people) have hunted, fished, and gathered across a vast landscape in the intermountain West, including Clearwater country. Although they ceded much land through treaties, the Nez Perce maintained their rights to hunt and fish. The Forest Service now manages many of those ancestral lands, but they have been altered by a variety of past land management activities including wide-scale logging and mining. Steelhead trout, bull trout, and Chinook salmon once thrived, but now struggle to survive.

Roads are a major environmental problem across this landscape. The high road density coupled with poorly designed stream crossings, inadequate maintenance, and erodible soils has led to widespread damage.



*Photo credit: USFS.*

*High road densities have led to widespread damage.*



*Photo credit: USFS.*

*Stream crossing restored to its natural condition.*

The Nez Perce-Clearwater National Forest and the Nez Perce Tribe run an award-winning partnership to restore watersheds, fish habitat, and water quality on the ceded lands. Legacy Roads and Trails is part of the watershed restoration program and provides important matching money to support this 6.5 million per year partnership. For the past 20 years, the Forest Service and Nez Perce Tribe have worked together to decommission more than 1,000 miles of unneeded roads and replace more than 100 culverts to restore access to fish habitat. They have also implemented in-stream restoration projects and improved maintenance on needed roads. The projects highlighted here, Yakus and White/White, provide an excellent illustration of this work.

## Project Treatments:

- ✓ Decommissioned 24 miles of roads
- ✓ Stabilized and stored 4 miles of roads
- ✓ Restored stream crossings
- ✓ Recontoured fill slopes
- ✓ Constructed cross-drains
- ✓ Revegetated with native brush

## Funding:

\$70,000 Legacy Roads and Trails  
\$100,000 Nez Perce Tribe  
\$35,000 other Forest Service funds



Photo credit: USFS

Reconstructing stream channel.

## Outcomes:

- ✓ Improved habitat for steelhead trout, west slope cutthroat trout and Chinook salmon
- ✓ Reduced sediment delivery
- ✓ Restored surface and subsurface water flows
- ✓ Reduced road maintenance costs (enabling limited maintenance dollars to be spent elsewhere)



Photo credit: USFS

A plugged culvert backs up water along the road. Plugged culverts like this are prone to blow out delivering damaging slugs of sediment to streams.



Photo credit: USFS

Excess sediment in a stream can suffocate fish eggs.



Photo credit: USFS

Healthy stream channel two years after project completion.

## Major Partners:

Nez Perce Tribe  
Bonneville Power Administration

*"We must be patient but persistent...thinking back to when this partnership program began and I looked over the landscape in the Clearwater Basin - the maze of roads and obstacles for fish...I asked myself how are we going to get there?"*

*One mile at a time we chipped away understanding it will be years before we restore all of the Clearwater - from ridge top to ridge top. I keep in mind the stories from my grandparents...of how they fished, hunted and gathered and how they drank the water from these streams "the blood of life" while observing Grizzly Bears fishing the streams.... Yes there is hope, one mile at a time we've made progress."*

Ira Jones, Watershed Division Director,  
Nez Perce Tribe



# ROCKY MOUNTAIN REGION – REGION 2

## Featured Project: Shoshone South Zone Wilderness Trail Improvements

**Forest:** Shoshone, Wyoming  
**River basin:** Multiple River Basins  
**Year:** 2009

The Fitzpatrick and Popo Agie Wilderness areas within the Shoshone National Forest offer some of the most majestic and wildest scenery anywhere in this country. Rugged peaks, alpine lakes, deep and narrow valleys, sheer granite walls, and perennial snowfields define these remarkable places. A network of trails used by backcountry horsemen and hikers serve as the primary access to and through the Fitzpatrick and Popo Agie areas.

Many of the trails traverse delicate wetlands. In some places, trail managers build timbered paths elevated above wet areas, called puncheons, to protect wetlands. The puncheons on several important recreational trails in the South Zone of the Shoshone National Forest had deteriorated to such a degree that trail users, including horses, were breaking through the tread posing a severe safety hazard. In addition, trail users were bypassing the puncheons and creating a braiding effect in the wetlands and through small stream crossings.



*Photo credit: USFS*

*Deteriorated puncheon prior to replacement.*



*Photo credit: Sara Domek*

*Popo Agie Wilderness in the Shoshone National Forest.*

In this project, the Forest Service addressed the highest priority safety and resource issues by repairing or replacing fourteen trail puncheon sections. The rugged and remote country presented logistical challenges, especially on those trail segments located within the Wilderness boundaries, where motorized equipment is prohibited. To address them, conservation corps crew members, local outfitters, and volunteers helped transport materials on horseback and construct the puncheons.



## Project Treatments:

- ✓ Rebuilt 490 lineal feet of severely deteriorated puncheons on the following trails: Middle Fork, Sheep Bridge, Stough Creek Lakes, Pinto Park, Glacier, Wolf Creek, and Yellowstone

## Outcomes:

- ✓ Ensured safe access across wet areas for at least 50 years
- ✓ Restored wetland habitat
- ✓ Created lasting partnerships for trail stewardship with local user groups
- ✓ Reduced annual and long-term maintenance costs

## Funding:

\$50,000 Legacy Roads and Trails

\$29,270 Other partnership funds



Photo credit: Shoshone National Forest

Final constructed puncheon bridge replacement.



Photo credit: USFS

Due to remoteness, materials were transported far into the backcountry using stock.



Photo credit: USFS

Project volunteers proudly show the fruits of their labor. Volunteer labor was an essential component of this project given the remote and rugged country in which the trails were located.

## Major Partners:

Lazy TX Outfitters

Diamond 4 Ranch

Sierra Club

National Outdoor Leadership School

Backcountry Horsemen of America

Wilderness Volunteers

Wilderness Ventures

Wyoming Conservation Corps

*"At the field level, this project displays the continued value of leveraging partnership funding and services through the Legacy Roads and Trails Program and furthers three of the focus areas - Restore and Adapt Recreation Settings, Forge Strategic Partnerships, and Promote Citizen Stewardship - identified in A Framework for Sustainable Recreation."*

**Chris Spurl**  
Regional Landscape Architect and Recreation Planner,  
Rocky Mountain Regional Office

# SOUTHWESTERN REGION – REGION 3

## Featured Project: Valle Vidal Road Decommissioning

Forest: Carson, New Mexico

River basin: Comanche Creek/Rio Costilla

Year: 2009

Comanche Creek is a 27,262 acre watershed in north central New Mexico. The creek is a tributary to the Rio Costilla that eventually empties into the Rio Grande River. It provides valuable habitat for the Rio Grande cutthroat trout, which is New Mexico's state fish and a candidate for protection under the Endangered Species Act. The largest elk population in New Mexico roams the upper portion of the Rio Costilla watershed and the area is a prized location for hunting, fishing, hiking and bird watching.

When the Valle Vidal management unit was donated to the Forest Service, it contained more than 400 miles of roads in the upper watershed. The area had been logged using "jammer roads" spaced just 150 feet apart across the hillsides with no regard to watershed and water quality impacts. Although the Forest Service determined most of these old logging roads were no longer needed and closed them to public motorized use, the impacts remained. The roads persisted as a chronic source of accelerated sediment delivery into the stream system, adversely affecting trout habitat.



*Photo credit: George Long, USFS*

*Roads often turn into streams during storms because the hard road surface cannot absorb the rainwater.*



*Photo credit: George Long, USFS*

*The headwaters to Comanche Creek flow from the forested hills through meadows to the valley bottoms.*

The Comanche Creek area is a focal point for a variety of restoration efforts by the Forest Service and multiple partners. The goal of this featured project is to restore watershed conditions and improve native Rio Grande cutthroat trout habitat by reducing or eliminating the flow of road-borne sediments to Comanche Creek.



## Project Treatments:

- ✓ Decommissioned more than 10 miles of road
- ✓ Restored original slopes, vegetation, and drainages

## Outcomes:

- ✓ Improved habitat conditions for native Rio Grande cutthroat trout
- ✓ Improved big game habitat for deer, bear and elk - protecting the quality of this “once in a lifetime” elk hunting area, which contributes more than half a million dollars annually to local economies
- ✓ Reduced sediment into the creek

## Funding:

\$15,000 Legacy Roads and Trails

\$20,000 partners

## Major Partners:

Quivira Coalition

New Mexico Department of Game and Fish

The Rocky Mountain Elk Foundation



Photo credit: George Long, USFS

*Comanche Creek with successful riparian restoration visible. Photo credit: George Long, USFS*



Photo credit: George Long, USFS

*Many roads in the Valle Vidal collect rainwater for many hundreds of feet. The collected water then dumps over the edge of the road at the lowest point. These drainpoints can weaken and collapse sections of the road.*



Photo credit: George Long, USFS

*Ripping up the old road bed and re-establishing the hillslope allows water to infiltrate.*

*“Water is New Mexico’s most precious resource, yet clean water is becoming increasingly scarce. Its abundance or scarcity is critically important to all residents of the state. Thanks to the Legacy Roads and Trails Program, New Mexico’s rivers run a little clearer and cleaner.”*

**Rachel Conn, Projects Director, Amigos Bravos**



# PACIFIC SOUTHWEST REGION – REGION 5

## Featured Project: Canyon Creek Road Improvements

Forest: Shasta-Trinity, California  
River basin: Trinity River  
Year: 2008-2012

Located in Northern California, the Lower Canyon Creek sub-watershed is just over 38,400 acres and contains Soldier and Conner Creeks. These creeks flow into the nationally designated Wild and Scenic Trinity River, which provides critical habitat for threatened coho salmon and steelhead trout. Local communities rely on the river as an important water source for drinking, irrigation, and recreation.



*Photo credit: USFS*

*Canyon Creek sub-watershed was a contributor of sediment to the Trinity River.*



*Photo credit: USFS*

*Threatened coho salmon and steelhead depend on cool and clear water for survival.*

Though important to fish and people, the Trinity River is impaired due to excessive sediment loads and temperatures. Several studies identified the Soldier Creek sub-watershed as a significant contributor of sediment to the Trinity River. That sediment threatens the survival and development of salmon and steelhead eggs, and increases the costs of drinking water treatment. When the Eagle Fire swept through the area in 2008, the need to address sediment runoff became urgent.

In 2009, the Shasta-Trinity National Forest developed a multi-year road action plan in collaboration with key partners. Two partners, the Trinity County Resource Conservation District and Trinity River Restoration Project, secured 50% of the total funding for Canyon Creek watershed restoration work, including work on Soldier and Conner Creeks. Total collective funding for watershed restoration in the Canyon Creek area was approximately \$2.5 million.

## Project Treatments:

- ✓ Improved 47 miles of road drainage after wildfire
- ✓ Storm-proofed 54 miles of road
- ✓ Decommissioned 4.6 miles of road
- ✓ Removed 5 in-stream barriers
- ✓ Treated 96 stream crossings

## Outcomes:

- ✓ Improved roughly 16 miles of in-stream habitat
- ✓ Restored 25 acres of watershed
- ✓ Improved water quality for coho, steelhead trout, and community water supplies
- ✓ Reduced risk of flood damage
- ✓ Improved water quality and channel continuity

## Funding:

\$692,000 Legacy Roads and Trails

\$1,858,000 Ten Partners and other funds



Photo credit: USFS

*Restoration work often requires the use of heavy equipment and skilled operators.*



Photo credit: USFS

*Small culverts easily become blocked during a storm, forcing water over the roadway where it picks up more sediment.*



Photo credit: USFS

*Decommissioned road and restored stream crossing.*

## Major Partners:

USFS Region 5 Trinity County Resource Conservation District  
Trinity River Restoration Program  
US Fish & Wildlife Service

CA Dept. of Fish & Game  
Trinity Co. Dept. of Transportation  
National Oceanic and Atmospheric Administration

National Association of Counties  
National Fish & Wildlife Foundation  
California Coastal Conservancy  
Lan Mark Forestry

*"The Shasta Trinity National Forest Legacy Roads and Trails projects focus on addressing road issues throughout entire watersheds. The Legacy funding provides the seed money that brings multiple partners to the table to continue efforts for a much more effective holistic watershed restoration approach. It's amazing how much more we can get done when we all work together. All restoration programs have to start somewhere, for us the Lower Canyon Creek Restoration Program all started with the Legacy funding."*

*- Christine Mai, Watershed Program Manager, Shasta Trinity National Forest.*



# PACIFIC NORTHWEST REGION – REGION 6

## Featured Project: Jack Creek Road Relocation

Forest: Okanagon-Wenatchee,  
Washington  
River basin: Teanaway River  
Year: 2010-2012

Teanaway Ridge sits on the east side of the Cascade Mountains in the Okanagon-Wenatchee National Forest. Popular with recreationists, the area boasts views of the entire Stuart Range, including beautiful Mt. Stuart. Jack Creek Road (FS 9738) provides a scenic drive along Teanaway Ridge, and is used to access numerous public recreation opportunities, and private lands. Thirteen miles long, the road also winds through a valley bottom where it runs close to the creek and important habitat for Chinook salmon and threatened steelhead trout.

While the road clearly provides important access, the road segment that traverses the floodplain has caused problems for years by severely constricting the natural



Photo credit: Mid-Columbia Fisheries Enhancement Group

*Roads can be a type of dam, preventing creeks from moving around on their floodplains.*



Photo credit: USFS

*Jack Creek helps support meadow habitats in the valley bottom.*

movement of the stream. To make matters more complex, the road cuts across both Forest Service and private land so any solution had to involve both the public and the agency.

The Forest Service and local landholders had a serious challenge: To provide continued recreational and private land access while also addressing the needs of fish and wildlife. The solution required the cooperation of many partners and included: decommissioning the most problematic part of the road and relocating it onto an elevated terrace; extensive stream and floodplain restoration on private lands; and staged implementation with both government and non-government contractors working in concert.



## Project Treatments:

- ✓ Relocated nearly one mile of road to a stable upslope location
- ✓ Obliterated and fully recontoured the valley bottom road
- ✓ Restored creek channel and placed large woody debris
- ✓ Restored riparian areas with plantings of native vegetation
- ✓ Restored the floodplain

## Outcomes:

- ✓ Two miles of Jack Creek restored to natural conditions
- ✓ Improved cover and spawning habitat for steelhead trout and Chinook salmon
- ✓ Improved water flows
- ✓ Improved capability to absorb floods without road damage or lost access

## Funding:

\$226,800 Legacy Roads and Trails plus other Forest Service funds  
\$166,000 Partners



Photo credit: Mid-Columbia Fisheries Enhancement Group

*Volunteers plant native trees and shrubs in the footprint of the decommissioned road.*



Photo credit: USFS

*When roads are adjacent to streams, streamside plants cannot grow and shade the creek. This results in warmer water and lack of cover, both of which harm salmon.*



Photo credit: USFS

*Moving the road, ripping up the old road bed, planting vegetation and placing large woody debris improves the creek for native fish.*

## Major Partners:

Mid-Columbia Fisheries  
Enhancement Group  
Salmon Recovery Funding Board

US Fish and Wildlife Service  
Partners Program  
National Forest Foundation

Overlake Fly-fishing Club  
Yakima Tributary Habitat Access Project  
American Forest Land Company, LLC  
Local volunteers

*“Funding from Legacy Roads and Trails allowed the Cle Elum Ranger District to analyze the effects of road relocation, and to contract with a local firm to move 0.9 miles of road off the banks of Jack Creek. The investment and commitment shown by the Forest Service helped to persuade other funding agencies to support additional restoration work, leading ultimately to in-channel enhancement and floodplain reconnection along nearly two miles of the stream.”*

Rebecca Wassell  
Yakima Basin Program Manager,  
Mid-Columbia Fisheries Enhancement Group

# EASTERN REGION – REGION 9

## Featured Project: Fish Passage Restoration and Storm-Proofing

**Forest:** Green Mountain – Finger Lakes, Vermont and New York

**River basin:** Multiple river basins

**Year:** 2008-2013

The Green Mountain and Finger Lakes National Forests are located within a day's drive for more than 70 million people, offering a wealth of recreation opportunities. In Vermont, the headwaters of many of the state's rivers flow from the National Forest, supplying communities with drinking water and providing habitat for native fish.

Communities located lower in the watersheds recognize the importance of restoration work in these upper areas, not only for recreation and wildlife but also flood protection. Forest Service assessments showed the potential for severe damage and road failures during major



*Photo credit: USFS*

*It is not unusual for culverts to become plugged during a storm, forcing water to break through a road bed. The purpose of this project was to redesign culverts to prevent this type of mass failure.*



*Photo credit: USFS*

*The headwaters of many of Vermont's rivers originate in the National Forest.*

storms, especially at road/stream crossings. Those assessments also determined that native brook trout and Atlantic salmon were blocked from accessing good habitat at more than 60% of the stream crossings. Beginning in 2008, the Forest Service restored fish passage and storm-proofed roads and stream crossings based on the results of the earlier assessments. The Forest Service used a new design tool called "stream simulation" to effectively determine how large the crossings should be to accommodate flood waters and debris during major storms.

In August 2011, Tropical Storm Irene hit the Northeast leaving many communities isolated by destroyed roads, bridges, and culverts. However, most of the treated sites in the National Forest suffered little damage and safely passed huge volumes of water, gravel, and trees without major impacts to downstream communities.



## Project Treatments:

- ✓ Fixed 32 road-stream crossings
- ✓ Replaced 15 culverts
- ✓ Removed 10 culverts
- ✓ Replaced 3 pipes
- ✓ Replaced 4 bridges

## Outcomes:

- ✓ Restored access to 49 miles of stream habitat for brook trout and Atlantic salmon
- ✓ Reduced risk of catastrophic road damage during heavy storms
- ✓ Ensured safe access to communities and recreational areas

## Funding:

\$995,000 - Legacy Roads and Trails

\$3.1 million – other federal funding sources



Photo credit: USFS

*The Forest Service removed an old culvert and replaced it with a bottomless arch culvert to improve fish passage.*



Photo credit: USFS

*Culverts were too small for large storm flows, and blocked fish from moving upstream.*



Photo credit: USFS

*Improved design included natural streambed and larger culvert for high volumes of water.*

## Major Partners:

White River Partnership

Trout Unlimited

Vermont Department of Fish and Wildlife

US Fish and Wildlife Service

Natural Resource Conservation Service

Local communities and watershed groups

*"It has become quite clear to us in recent years that restoring fish passage, by replacing under-sized culverts, is a fiscally responsible public investment and also an investment that benefits our fish populations and reduces the potential for increased flooding and erosion in our communities."*

Steve Roy  
Natural Resources Staff Officer,  
Green Mountain & Finger Lakes NF



# CONCLUSION

In 2008, conservationists, Forest Service staff, water quality specialists and others lauded the creation of Legacy Roads and Trails for its extraordinary potential as an innovative tool for funding watershed restoration and long-term transportation needs. Five years and thousands of accomplishments later, it is clear the program has lived up to expectations. Legacy Roads and Trails is cleaning up our water, restoring fish and wildlife habitat, creating high-wage jobs, reducing long-term costs, and improving access.

While Legacy Roads and Trails is making a difference, a significant amount of work remains, reaching far beyond the capacity of the current program. Legacy Roads and Trails projects to date have treated less than 5% of the road system, and deferred maintenance continues to grow. It took more than a century to create the legacy of roads in our national forests. Likewise, it will take time and investment to fix, reclaim and rework that road system to meet 21st century transportation, fiscal, and ecological demands.

Big challenges call for big solutions. Road management is a continuing challenge for the Forest Service and an important ingredient in the agency's restoration agenda. A healthy, robust, and effective Legacy Roads and Trails program remains a vital tool for achieving Forest Service restoration objectives across the nation.



Photo credit: USFS



Photo credit: USFS



Photo credit: USFS



Photo credit: USFS

# ENDNOTES

- a Nelson, Nathan, Tom Black, Charles Luce and Richard Cissel. 2012. Legacy Roads and Trails Monitoring Project Update 2012. USDA Forest Service, Rocky Mountain Research Station. Available: [http://www.fs.fed.us/GRAIP/downloads/case\\_studies/2012LegacyRoadsMonitoringProjectUpdate.pdf](http://www.fs.fed.us/GRAIP/downloads/case_studies/2012LegacyRoadsMonitoringProjectUpdate.pdf)
- b Robertson, Greg, Brian Bair and David Heller. 2011. Pacific Northwest Region Aquatic Organism Passage-Stream Simulation Effectiveness Monitoring Report. USDA Forest Service Pacific Northwest Region and TEAMS Enterprise Unit. Portland Oregon.
- c Switalski, Adam and Cara Nelson. Efficacy of Road Removal for restoring wildlife habitat: Black Bear in the Northern Rocky Mountains, USA. *Biological Conservation* 44 (2011) 2666-2673. Available: <http://www.wildlandscpr.org/files/Switalski%20and%20Nelson%202011.%20%20Efficacy%20of%20road%20removal%20for%20restoring%20wildlife%20habitat.pdf>
- d Ellis-Sugai, Barbara. USDA Forest Service Memo. Impact of the January 2012 flood event on Siuslaw National Forest Roads. September 5, 2012.
- e Cissel, R., T. Black, C. Luce, N. Nelson, and B. Staab. May 2010. Erosion sensitivity index for gullies, hillslope, and road segment length for storm damage risk reduction treatments. To be included in "Storm Damage Risk Reduction Guide for Low-Volume Roads" in development, San Dimas Technology and Development Center, USDA Forest Service.
- f USDA Forest Service. Region 6 estimate from Performance Accountability System data compiled in December 2012. It should be noted that not all regions report these values consistently. Data is highly variable and may be subject to errors.
- g USDA Forest Service. Washington Office. Performance Accountability System data compiled in January 2013.
- h Nielsen-Pincus, Max and Cassandra Moseley. Economic and Employment Impacts of Forest and Watershed Restoration in Oregon. Ecosystem Workforce Program. Working Paper Number 24. Spring 2010. Available: <http://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/downloads/WP24.pdf>
- i USDA Forest Service Region 6 estimate from December 2012. Based on an annual estimated maintenance cost for passenger car roads of \$900-\$2200 per mile and for high clearance vehicle roads of \$1-\$950 per mile. Maintenance includes work such as blading, culvert cleaning, brushing, removal of danger trees, etc. Deferred maintenance savings was approximated using the FY 2012 Presidents Budget deferred maintenance cost estimates.



Photo credit: Wildlands CPR

Reclaimed road on the Clearwater National Forest, ID.



Photo credit: USFS



# PARTNERS

*The Wilderness Society and Wildlands CPR wish to thank the vast array of groups\* that have supported Legacy Roads and Trails and have partnered on projects over the last five years!*

## Northern Region (R1)

**Montana, North Dakota, Northern Idaho, portions of South Dakota and Wyoming**

### Project Partners

Bonneville Power Administration  
Columbia River Intertribal Fish Commission  
Federal Highway Administration  
Idaho Office of Species Conservation  
Idaho Transportation Department  
Lincoln County Resource Advisory Council  
Montana Fish, Wildlife, and Parks  
National Fish and Wildlife Foundation  
Nez Perce Tribe  
North Idaho RAC  
Trout Unlimited  
University of Great Falls  
U.S. Fish and Wildlife Service  
Western Pacific Power Company  
Wildlands CPR

### Program Supporters

American Rivers\*\*  
American Whitewater\*\*  
Avista Corporation  
Back Country Horsemen of Montana  
Centennial Valley Association  
Clark Fork Coalition  
Defenders of Wildlife\*\*  
Great Burn Study Group  
Greater Yellowstone Coalition  
Ironworkers Local #14  
Jefferson River Watershed Council  
Lewis & Clark Chapter Montana Trout Unlimited  
Missoula Area Central Labor Council AFL-CIO  
Montana Association of Conservation Districts  
Montana Audubon  
Montanans for Quiet Recreation  
Montana Laborers #1686  
Montana Smart Growth Coalition  
Montana Wilderness Association  
Pacific Rivers Council  
Rattlesnake Creek Watershed Group  
Ruby Watershed Council/Ruby Valley Cons. District  
Sierra Club\*\*  
Swan Ecosystem Center  
Swan View Coalition  
The Wilderness Society\*\*  
Watershed Consulting LLC  
Western Environmental Law Center\*\*  
Western MT Building and Construction Trades Council  
Wildlands CPR\*\*  
Yaak Valley Forest Council  
Yellowstone Valley Audubon Society

## Rocky Mountain Region (R2)

**Colorado, South Dakota, Kansas, Nebraska, portions of Wyoming**

### Project Partners

Biodiversity Conservation Alliance  
Colorado Department of Fish and Wildlife  
Coors Brewing Company  
Federal Highway Grants  
Friends of Mount Evans Volunteers  
Gunnison Energy Company  
Laramie Rivers Conservation District  
Norbeck Society (SD)  
Roaring Fork Outdoor Volunteers  
Rocky Mountain Elk Foundation  
South Dakota Game and Fish  
Trout Unlimited  
U.S. Environmental Protection Agency  
U.S. Fish and Wildlife Service  
Western Colorado Conservation Corps  
Wyoming Conservation Corps  
Wyoming Department of Environmental Quality  
Wyoming Department of Fish and Wildlife  
Wildland Restoration Volunteers  
Youth Corp

### Program Supporters

American Whitewater\*\*  
Audubon Society - Fort Collins Chapter  
Biodiversity Conservation Alliance  
Central Colorado Wilderness Coalition  
Colorado Mountain Club  
Colorado Watershed Assembly  
Conservation Colorado  
Front Range CO BLM Resource Advisory Council  
Great Old Broads for Wilderness  
High Country Citizens' Alliance  
National Wildlife Federation  
Quiet Use Coalition  
Rocky Mountain Recreation Initiative  
San Juan Citizens' Alliance  
San Luis Valley Ecosystem Council  
Sheep Mountain Alliance  
Sierra Club\*\*  
The Wilderness Society\*\*  
Trout Unlimited\*\*  
Western Colorado Congress  
Western Resource Advocates  
Wilderness Workshop



Photo credit: USFS

## Southwest Region (R3) Arizona and New Mexico

### Project Partners

American Conservation Experience  
Amigos Bravos  
Angostura Homeowner's Association  
Arizona Department of Environment Quality  
Arizona Department of Water Resources  
Arizona State Parks  
Arizona Trail Association  
Backcountry Horsemen of America  
Boy Scouts of America  
City of Sedona (AZ)  
Coconino Rural Environmental Corps (AZ)  
Flagstaff Biking Organization (AZ)  
Friends of Madera Canyon (AZ)  
Friends of Sabino Canyon (AZ)  
Friends of the Forest (AZ)  
Grand Canyon Wildlands Council (AZ)  
Green Valley Hiking Club (AZ)  
Holloman Air Force Base (NM)  
Mount Lemmon Water District (AZ)  
Munds Park Trail Stewards (AZ)  
New Mexico Environment Department  
New Mexico Game and Fish  
NM School for the Blind & Visually Impaired (NM)  
Quivira Coalition (NM)  
Rocky Mountain Elk Foundation  
Southern Arizona Hiking Club  
Southern Arizona Rescue Association  
Student Conservation Association  
The Wellness Coalition (NM)  
Town of Eager (AZ)  
Town of Red River (NM)  
WildEarth Guardians  
Williams Production Company, LLC  
XTO Energy, Inc.  
Youth Conservation Corps

### Program Supporters

Acoustic Ecology Institute (NM)  
Albuquerque Wildlife Federation (NM)  
Amigos Bravos (NM)  
Archaeology Southwest  
Arizona Wilderness Coalition  
Arizona Zoological Society  
Bird's Eye View  
Center for Biological Diversity\*\*  
Grand Canyon Wildlands Council  
Great Old Broads for Wilderness\*\*  
New Mexico Wilderness Alliance  
NM Trout  
New Mexico Wildlife Federation  
Public Employees for Envr. Responsibility (AZ)  
Sierra Club - Grand Canyon Chapter (AZ)  
Sierra Club - Northern Group (NM)  
Sierra Club - Southern Chapter (NM)  
Sierra Club - Rio Grande Chapter (NM)  
Sky Island Alliance (AZ)  
Southwest Environmental Center  
The Wilderness Society\*\*  
Upper Gila Watershed Alliance (NM)  
Western Environmental Law Center\*\*  
White Mountain Conservation League (AZ)  
WildEarth Guardians  
Wildlife Habitat of New Mexico



Photo credit: USFS

## Intermountain Region (R4) Utah, Nevada, Southern Idaho, portions of Wyoming

### Project Partners

National Fish and Wildlife Foundation  
Nez Perce Tribe  
Northwest Youth Corp  
Southwest Idaho Resource Advisory Committee  
State of Utah - Utah State Lands and Forestry  
Trout Unlimited  
U.S. Fish and Wildlife Service  
Youth Conservation Corp

### Program Supporters

Backcountry Horsemen - Idaho  
Backcountry Hunters and Anglers - Idaho Chapter  
Bear River Watershed Council  
Framing our Communities  
Grand Canyon Trust  
Greater Yellowstone Coalition  
Hells Canyon Preservation Council  
Idaho Rivers United  
Lands Council  
Mark Agee Excavation  
National Backcountry Hunters and Anglers\*\*  
Nez Perce Tribe  
Sierra Club - Idaho Chapter  
The Wilderness Society\*\*  
Trout Unlimited\*\*  
Wildlands CPR\*\*  
Wild Utah Project  
Winter Wildlands Alliance\*\*

## Pacific Southwest Region (R5) California

### Project Partners

Backcountry California Conservation Corps  
Backcountry Horsemen of America  
California Conservation Corps  
California Conservation Crew  
California State Department of Parks and Rec.  
Friends of the Inyo  
Karuk Tribe  
Student Conservation Association  
Trinity County Resource Conservation District  
Trinity River Restoration Program  
Tuolumne County Community Development Dept.  
U.S. Army Corps of Engineers  
United States Marine Corps  
Watershed Research and Training Center

### Program Supporters

California Wilderness Coalition  
California Wilderness Project  
Californians for Western Wilderness  
Center for Biological Diversity\*\*  
Center for Sierra Nevada Conservation  
Central Sierra Environmental Resource Center  
Defenders of Wildlife\*\*  
Desert Protective Council  
Environmental Protection Information Center  
Forest Forever  
Forest Issues Group  
Friends of Hope Valley  
Friends of the Inyo  
Friends of the River  
High Sierra Hikers Association  
Klamath Forest Alliance  
Klamath-Siskiyou Wildlands Center  
Los Padres ForestWatch  
Native Habitats  
Northcoast Environmental Center  
Public Employees for Envr. Responsibility\*\*  
Sierra Club\*\*  
Sierra Forest Legacy  
Snowlands Network  
The Wilderness Society\*\*  
Trout Unlimited\*\*  
Western Watersheds\*\*  
Wilderness Guides Council



## Pacific Northwest Region (R6) Oregon and Washington

### Project Partners

Applegate Partnership & Watershed Council (OR)  
 America Forest Land Company, LLC  
 Association of Northwest Steelheaders  
 Bureau of Land Management  
 Bureau of Reclamation  
 City of Portland Water Bureau (OR)  
 Clackamas County (OR)  
 Confederated Tribes of the Warm Springs  
 Ecotrust  
 Federal Highways Administration  
 Freshwater Trust  
 Grant Soil and Water Conservation District (OR)  
 Methow Salmon Recovery Foundation (WA)  
 Mid-Columbia Fisheries Enhancement Group (WA)  
 Middle Fork Willamette Watershed Council (OR)  
 National Marine Fisheries Service  
 Native Fish Society  
 National Forest Foundation  
 Okanogan County Conservation District (WA)  
 Oregon Department of Fish and Wildlife  
 Oregon Watershed Enhancement Bureau  
 Overlake Fly-fishing Club  
 Pacific Watershed Associates  
 Partnership of Umpqua Rivers (OR)  
 Rogue-Umpqua Resource Advisory Council (OR)  
 Salmon Recovery Funding Board  
 Sandy River Watershed Council (OR)  
 Skokomish Tribes  
 Skokomish Watershed Action Team (WA)  
 South Umpqua Rural Community Partnership (OR)  
 The Nature Conservancy  
 The Wilderness Society  
 U.S. Army Corps of Engineers  
 U.S. Environmental Protection Agency  
 U.S. Fish and Wildlife Service  
 Washington Department of Ecology  
 Washington Watershed Restoration Initiative  
 Washington Salmon Recovery Funding Board  
 Whole Watershed Joint Venture  
 Yakama Indian Nation  
 Yakima Tributary Habitat Access Project

### Program Supporters - Oregon

American Rivers\*\*  
 Association of Northwest Steelheaders  
 Audubon Society of Portland  
 BARK - WWRI  
 Cascadia Wildlands Project  
 Center for Biological Diversity  
 Central Oregon Land Watch  
 Clackamas County Board of Commissioners  
 Clackamas River Basin Council  
 Clackamas River Water Providers  
 Coast Range Association  
 Columbia Gorge Institute  
 Friends of the Kalmiopsis  
 Geos Institute\*\*  
 Hells Canyon Preservation Council  
 Klamath Forest Alliance  
 Klamath-Siskiyou Wildlands Center  
 Lower Columbia Canoe Club  
 Middle Fork Willamette Watershed Council  
 Native Fish Society  
 Northwest Environmental Advocates  
 Northwest Environmental Defense Center  
 Northwest Sportfishing Industry Association  
 Oregon Department of Fish and Wildlife  
 Oregon Environmental Council  
 Oregon Kayak and Canoe Club  
 Oregon Trout  
 Oregon Wild  
 Pacific Coast Federation of Fishermen's Associations  
 Pacific Rivers Council  
 Portland State University  
 Sandy River Basin Watershed Council  
 Siskiyou Project  
 The Freshwater Trust  
 The Wilderness Society\*\*  
 Trout Unlimited - Oregon Council  
 Tualatin Riverkeeper  
 Waterwatch  
 Wild Fish Conservancy  
 Wild Salmon Center  
 Wildlands CPR\*\*

### Program Supporters - Washington

Alpine Lakes Protection Society - WWRI  
 American Rivers - WWRI\*\*  
 American Whitewater - WWRI\*\*  
 Association of Northwest Steelheaders  
 Audubon Society - Pilchuck  
 Conservation Northwest - WWRI  
 Earthjustice\*\*  
 Gifford Pinchot Task Force - WWRI  
 Great Old Broads for Wilderness - Cascade Chapter  
 Lands Council  
 Mason County Conservation District  
 North Cascades Conservation Council - WWRI  
 Northwest Environmental Advocates  
 Olympic Coast Alliance  
 Olympic Forest Coalition - WWRI  
 Pacific Rivers Council - WWRI  
 Pilchuck Audubon Society - WWRI  
 Sierra Club - WA State Chapter - WWRI  
 The Mountaineers - WWRI\*\*  
 The Wilderness Society - WWRI\*\*  
 Trout Unlimited - WWRI\*\*  
 Upper Columbia United Tribes - WWRI  
 Washington Department of Ecology - WWRI  
 Washington Department of Fish and Wildlife - WWRI  
 Washington Department of Natural Resources - WWRI  
 Washington Trails Association - WWRI  
 Washington Wilderness Coalition (WA Wild)  
 Western Lands Project  
 Wild Fish Conservancy  
 Wildlands CPR\*\*



Photo credit: USFS



Photo credit: USFS



Photo credit: Neil Shader

### Southeast Region (R8)

Tennessee, Florida, Arkansas, Kentucky, North Carolina, South Carolina, and other southern states

#### Project Partners

FourCorps Order of the Arrow  
 Arkansas Game & Fish Commission  
 Arkansas Wildlife Federation  
 Bog Research Inc., LA  
 Boy Scouts of America, Conroe, TX  
 Center for Aquatic Technology, VA  
 City of Fort Smith, Arkansas  
 Coweeta Hydrologic Lab  
 Eastern Brook Trout Joint Venture  
 National Wild Turkey Federation  
 Oklahoma Department of Wildlife Conservation  
 Progress Energy  
 Rocky Mountain Elk Foundation  
 Southeast Aquatic Resource Partners  
 Student Conservation Association, Houston, TX  
 Trout Unlimited  
 U.S. Environmental Protection Agency  
 Watershed Conservation Resource Center (AR)

#### Program Supporters

American Sportfishing Association (VA)  
 Ouachita Watch League (TN)  
 Wild Virginia (VA)

### Northeast Region (R9)

Vermont, New Hampshire, West Virginia, Minnesota, Wisconsin, Pennsylvania, Missouri, Ohio, and Indiana

#### Project Partners

Alger County Road Commission  
 AmeriCorps Crew  
 Camp Pasquaney, Student Conservation Association – New Hampshire Corps  
 Crawford County Highway Department  
 Ducks Unlimited  
 Itasca County Highway Department  
 Leech Lake Band of Ojibwe  
 Minnesota Conservation Corps  
 Minnesota Department of Natural Resources  
 Natural Resource Conservation Service  
 New Hampshire Fish and Game  
 Ohio Division of Natural Resources  
 Oscoda County Road Commission  
 Ozark Trail Association  
 Student Conservation Association New Hampshire Conservation Crew/AmeriCorps  
 Town of Rochester  
 Trout Unlimited  
 U.S. Army Corps of Engineers  
 U.S. Fish and Wildlife Service  
 Vermont Department of Fish and Wildlife  
 Wexford County Road Commission  
 White River Partnership  
 Wisconsin Department of Natural Resources  
 Wisconsin Department of Transportation

#### Program Supporters

Appalachian Mountain Club (MA)  
 Natural Resources Council of Maine  
 Friends of Blackwater (WV)

### Alaska Region (R10)

#### Project Partners

Alaska Department of Fish and Game  
 Alaska Fly Fishers  
 Kenai River Management Area  
 Kenai River Sport Fishing Association  
 Streamwatch  
 Trout Unlimited

### National Supporters

Access Fund  
 American Canoe Association  
 American Hiking Society  
 American Whitewater  
 American Rivers  
 Backcountry Horsemen of America - National  
 Backcountry Hunters and Anglers - National  
 Center for Biological Diversity  
 Defenders of Wildlife  
 EarthJustice  
 Endangered Species Coalition  
 Great Old Broads for Wilderness  
 International Mountain Biking Association  
 Izaak Walton League of America  
 Natural Resources Defense Council  
 Outdoor Alliance  
 Outdoor Industry Association  
 Pew Environment Group  
 Sierra Club  
 The Mountaineers  
 The National Center for Conservation Science and Policy  
 The Wilderness Society  
 Trout Unlimited  
 Western Environmental Law Center  
 Wildlands CPR  
 Winter Wildlands Alliance  
 Backcountry Horsemen of America  
 Public Employees for Environmental Responsibility



Photo credit: USFS

*\*The project partners lists are incomplete due to limited data availability. We apologize to any partners who were left off these lists.  
 \*\*Denotes groups that are also national program supporters.*



# **Restoration in Action:** The First Five Years of the Legacy Roads and Trails Program

**APRIL 2013**

