

Creating Green Jobs in Our Forests: *Investing in rural America to help forests adapt to climate change*

When people talk about creating “green jobs,” they’re often referring to work in the renewable energy sector, such as solar or wind energy. There are also **green** jobs in the woods, improving water quality, restoring habitat, and muting the effects of climate change. This fact sheet provides details about the number and kinds of **green** jobs that could be created restoring America’s rivers and streams and enhancing wildlife habitat in our nation’s forests.

The Problem. By last count, more than 375,000 miles of official roads and another 60,000 miles of unofficial roads criss-cross our forests and grasslands. Lined up end to end, these roads are the equivalent of 17 trips around the earth at the equator. Leftover from the era of big timber, the road system is often convoluted and unmanageable. Many of these roads are unmaintained and in serious disrepair, thus causing a host of problems for America’s rivers and streams, drinking water, and wildlife. In fact, the Forest Service estimates that about 126,000 miles that can be restored back to a natural state.¹



Top Right: Crew on work-site in California restoring roads. Above: Workers revegetating what was once an old road that’s been recontoured. Photos: David Burns

Creating Jobs, Finding a Solution. Investing in forest and watershed restoration projects by decommissioning unneeded roads would create good, **green**, family-wage jobs in rural America. According to a study by University of Oregon, **between 13-29 jobs would be created or retained and over \$2.1 million in total economic activity generated for every \$1 million invested on restoration.**² On the environmental benefits side, it is estimated that an investment of \$1 million could decommission 100 miles of roads – improving water quality and restoring habitat.³

A 2003 Wildlands CPR study found that it would cost approximately \$93 million per year for about 20 years to implement a national road “right-sizing” plan.⁴ That \$93 million would provide between 1,209 and 2,697 high-wage, high-skill **green** jobs.⁵ These projects would include both “shovel-ready” (e.g., heavy equipment operators) and “computer-ready” (e.g., engineers and GIS technicians) jobs. Such an investment would be good for the land and surrounding communities.

ON THE GROUND EXAMPLES

Olympic National Forest, WA. The Skokomish Watershed was hit hard by past logging leaving behind one of the most extensive road networks in the Northwest. Too little money for maintenance has resulted in roads breaking apart and an estimated 1,000 landslides have clogged the Skokomish River causing frequent flooding of homes and farms. Due to climate change, spring runoff from snowpack in the Pacific Northwest is now occurring 5-20 days earlier than it was midcentury, leading to a rise in springtime floods.⁶ To address erosion and sediment buildup, the Forest Service partnered with a local private company and non-profit to decommission and revegetate roads within the watershed. Removing roads and culverts slows sediment buildup, minimizes flooding during heavy rains, restores fish habitat, and creates jobs which, in a county that has over 10% unemployment, is crucial. The Skokomish watershed has been turned from a poster child for bad forestry to a poster child for collaborative forest restoration. Thus far, the project has thus far invested more than \$500,000 into construction and landscaping in the area, creating jobs, generating economic activity, and improving water quality.



The Legacy Roads and Trails Remediation Initiative. The Legacy Roads and Trails Initiative is an example of a successful program that is currently doing watershed improvement via road maintenance and decommissioning. This funding source was created three years ago in the Appropriations Act of 2008. It was established for the Forest Service to protect and restore clean water by reducing the impacts of roads. According to the Forest Service, within its first two years, the Legacy Roads and Trails Fund is projected to:

- Restore at least 1,147 miles of stream habitat;
- Improve 2,215 miles of road;
- Decommission and restore 2,194 miles of roads improving habitat and water quality;
- Maintain or improve 3,170 miles of trail; and
- Improve a minimum of 126,008 acres of habitat.⁷

Extrapolating from University of Oregon's research, two years of this investment (FY08 and FY09) totaling \$90 million could create or retain between **1,170 and 2,610 green jobs**.



Page 2: Restoration crew improving water quality and fish habitat on the Olympic National Forest in Washington by removing unneeded Forest Service roads. Photo: Steve Zugschwerdt. Above: Restoration work to improve wildlife habitat and prevent soil erosion on the Coronado National Forest in southern Arizona. Photo: Sky Island Alliance Top Right: Montana Conservation Corps revegetating removed road and landing. Photo: Adam Switalski.

Coronado National Forest, AZ. Using funds from the American Recovery and Reinvestment Act, the Coronado Forest has initiated two projects to restore to a natural state some 50 miles of unauthorized motorized routes. Many of these routes are the direct result of illegal off-road vehicle use and are causing excessive soil erosion and disrupting natural water flow across the land. The projects will help prevent future unauthorized use, return water drainage to a natural condition, and restore vegetative cover in denuded areas. Both of these projects are estimated to cost about \$300,000 which, applying University of Oregon’s research, would generate \$630,000 in economic activity. The Forest Service projects that it has roughly 60,000 unauthorized routes like this across the country that are damaging water quality and wildlife habitat.

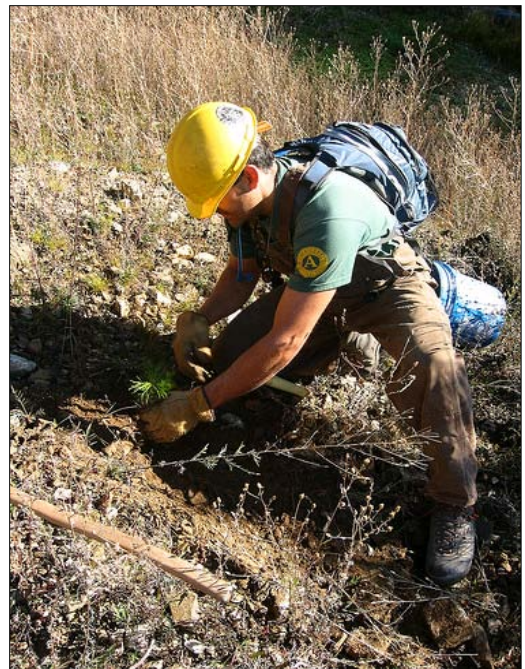
Creating Green Jobs Restoring the Land

America needs jobs, and investing in restoration work right-sizing the Forest Service’s road system will create good **green** employment in rural America. Such an investment would create jobs for:

- Hydrologists and engineers to perform the necessary forest-by-forest analysis to determine exactly which roads the agency no longer needs;
- GIS technicians and other scientists to complete the requisite environmental impact review; and
- Heavy equipment operators and surveyors to undertake the ground-level restoration work.

Here’s just a sample of the direct and indirect jobs that would be created by investing in right-sizing the Forest Service’s road system:

Heavy Equipment Operators • Road Crews • Bridge Builders • Welders • Carpenters • Hydrologists • Ecologists • Geologists • Geomorphologists • Construction Workers to Lay Concrete, Gravel, Asphalt • Labor-Intensive Work such as Tree-Planting, Reseeding, Invasive Weed Removal, Distributing Mulch • Iron Workers • Civil, Mechanical and Soil Bio-Engineers • Project Managers • Surveyors • Environmental and Safety Compliance Officers • Technicians • Pilots, Drivers, and Other Jobs in the Transportation Sector • Plant Nursery Growers • GIS Specialists • Machinists • Low Impact Loggers and Thinner



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¹U.S. Forest Service. (2001) National Forest System Road Management Strategy Environmental Assessment and Civil Rights Impact Analysis. In the Roads Strategy EA, the FS stated that they had 385,572 miles of system roads, plus 60,000 miles of unofficial roads. In the same document, the agency projects that, after decommissioning, the road system will stabilize at 260,000 - 300,000 miles annually. If you subtract their new proposed total from the 2001 designated system road total, it would add up to ~86,000 - 126,000 miles that they would need to remove, or about 32.67% of the system. Our calculations fall on the upper end of this range as we believe this to be a conservative range.

² Moseley, Cassandra and Max Nielsen-Pincus, Economic Impact and Job Creation from Forest and Watershed Restoration: A Preliminary Assessment. Briefing Paper #14. Ecosystem Workforce Program. Institute for a Sustainable Environment. University of Oregon. Winter 2009. The reasonableness of the range presented in Moseley's research is supported by numerous studies, which demonstrate job creation potential between 11 and 21 jobs per million dollars of restoration investment depending on the type of activity. See Baker, M. 2004. Socioeconomic Characteristics of the Natural Resources Restoration System in Humboldt County, California. Forest Community Research. Taylorsville, CA. (finding that approximately 210 fulltime private and public sector jobs were generated locally in Humboldt County, CA in 2002 as a result of a \$14.5 million investment [or 14.5 local, fulltime jobs per \$1 million invested] in aquatic, riparian, and road restoration). See also Hjerpe, E.E., and Y.-S. Kim. 2008. Economic Impacts of Southwestern National Forests Fuels Reductions. Journal of Forestry. 106:311-316 (finding that a near \$41 million investment fuels reduction in New Mexico created nearly 500 full-time jobs, with 337 directly supported by fuels reduction programs in communities surrounding national forests and an additional 151 jobs being spurred by indirect and induced economic activity. This translates to 12 jobs per \$1 million invested). See also Montana Department of Labor and Industry and Montana Department of Natural Resources. 2009. An Estimation of Montana's Restoration Economy. Available online at http://www.ourfactyourfuture.org/admin/uploadedPublications/3669_Restoration.pdf. (finding that 31.5 jobs – about 11 direct and 20 indirect jobs – are created for every \$1 million spent on mining reclamation work. Study also finds that \$1 million in restoration spending results in \$2.59 million in total economic activity.) See also USDA Forest Service. Forest Roads: A Synthesis of Scientific Information. 2000. Available online at <http://www.fs.fed.us/pnw/pubs/gtr509.pdf>. (shows that about 33 jobs economy wide are supported per \$1 million expenditure on building and maintaining roads and that the case can be made that removing existing roads and restoring the land underlying them would support roughly the same rate of employment). See also, Kerkvliet, Joe, PhD. The Economic Impacts of the 2008 Legacy Roads & Trails Remediation Initiative in Idaho and Montana. The Wilderness Society. 2009. (finding that \$1.8 million in contracts appropriated in 12 Montana counties created approximately 35 jobs [or about 19 jobs for every \$1 million]). Lastly, Oregon's Watershed Enhancement Board proposes a \$40 million increase in watershed restoration funding and anticipates this investment will create or retain over 600 jobs and generate at least \$72 million in total economic activity in Oregon.

³ Nationally, costs for road decommissioning vary from a few hundred dollars up to \$50,000 per mile with the average range typically \$5,000 to \$10,000 per mile. For the purposes of this fact sheet, we use \$10,000. USDA Forest Service Roadless Area Conservation Draft Environmental Impact Statement, Roads Specialist Report. November 2007.

⁴ Ihara, Daniel M., Ph.D., Hackett, Steven C., Ph.D., and Manning, John J., Reinvestment in Jobs, Communities and Forests: The Benefits and Costs of a National Program for Road Removal on U.S. Forest Service Lands, A Preliminary Analysis. 2003. Available online at <http://www.wildlandscpr.org/files/NFSRoadRmoval.pdf>

⁵ Moseley 2009.

⁶ Stewart, I.T., D.R. Cayan, and M.D. Dettinger, 2004. Changes in Snowmelt Runoff Timing in Western North America Under a 'Business as Usual' Climate Change Scenario. *Climatic Change* 62: 217-232.

⁷ Wildlands CPR. Forest Service Legacy Roads and Trails Remediation Initiative Projected Accomplishments 2008 and 2009. Available online at <http://www.wildlandscpr.org/files/2008-09%20accomplishments%20fact%20sheet.doc>. This is only the short list of deliverables that this funding is slated to accomplish.