4 Provide adequate Forest Service staff to support project partnerships.

A small investment in staffing can help the USFS leverage outside resources to implement and monitor projects. Through partnerships with other landowners and organizations such as tribes and salmon recovery groups, the USFS can cooperatively fund restoration. But the USFS needs additional staff for design and environmental review. In the past, insufficient USFS staffing has deterred potential partners from working with it on project design, environmental review and contract compliance. Adequate staffing for partnership programs can leverage the public investment in road-based watershed restoration.

5 Dedicate adequate monitoring funds to measure success.

The USFS needs to allocate adequate resources for environmental monitoring and reporting. Monitoring and evaluation are crucial not only to identify where roads are causing continued harm to aquatic resources but to: (1) document and guide the proper execution of projects, (2) evaluate whether the intended environmental benefits actually are being realized, and; (3) ensure that successful techniques are used.

Monitoring and evaluation reports are critical to provide accountability for taxpayer investments, and the cost is low relative to project work. Two percent of funding for road-related projects is suggested and should be equally divided between project implementation monitoring by forest staff, and ecological and economic effectiveness monitoring by the Pacific Northwest Research Station.

6 Strategically re-deploy expert federal agency staff.

A national program is needed to bring in federal agency staff for detail assignments that focus on project implementation. This could be a pilot project similar to the approach the USFS used for post-fire timber remediation and sale preparation work. The program would still depend primarily on local knowledge, but outside expert staff could provide critical support to overall project management. The benefits would be two-fold: locally developed projects would receive outside expert review, while agency personnel from throughout the ranks of the federal resource agencies would gain first-hand experience organizing and executing a large-scale restoration program.

If you need this publication in an alternate format, please call the Water Quality Program at 360-407-6600. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

This document was prepared by:

Washington State Department of Ecology
Jay Manning, director, 360-407-7001
Stephen Bernath, senior policy analyst, 360-407-6459

Washington State Department of Fish and Wildlife
Jeffrey P. Koenings, PhD., director, 360-902-2225
Bridget Moran, Environmental Resource Policy Lead, 360-902-2589

Olympic Forest Coalition
Bonnie Phillips, executive director, 360-456-8793

Public Employees For Environmental Responsibility
Sue Gunn, PhD., Washington state director, 360-528-2110

Pacific Rivers Council
Mary Scurlock, senior policy analyst, 503-228-3555

American Whitewater
Thomas O'Keefe, PhD., Pacific Northwest stewardship director, 425-417-9012

The Wilderness Society
Mike Anderson, senior resource analyst, 206-624-6430

Cascade Chapter, Sierra Club
Mark Lawler, national forests committee chair, 425-707-5142

Alpine Lakes Protection Society
Don Parks, president, 425-891-2025

North Cascades Conservation Council
Marc Bardsley, president, 206-545-1702

Pilchuck Audubon Society
Kathy Johnson, forest practices chair, 360-659-7252

Washington Wilderness Coalition
Tom Uniack, conservation director, 206-633-1992

Suiattle River wash out of 2006 in Washington's Mount Baker-Snoqualmie National Forest.

- *Legacy of failing national forest roads threatens endangered salmon.*
- *Prolonged underfunding increases erosion and road failures and the problem grows daily.*
- *USFS estimates that fixes will cost an estimated $300 million in today's dollars.*
- *This means $30 million annually is needed to meet agreed timeline with Washington State.*

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Watershed Restoration Initiative for Washington State National Forests

The problem

Prolonged under-funding of road maintenance and restoration in Washington state's national forests has created a backlog that is growing daily.

Muddy water from failing and washed-out forest roads harms endangered and dwindling runs of salmon that need cold, clear water to thrive and reproduce. Muddy water harms the gills of salmon and trout. Fish eggs smother when silt settles into clean gravel beds.

Deteriorating, unmaintained and poorly designed national forest roads contribute sediment-laden runoff into forest streams, making them wider, shallower and more susceptible to warming by the sun.

Storms further degrade stream habitat from already failing national forest road systems. As time passes, the price tag on fixing these harmful roads goes up.

These conditions occur today on thousands of miles of national forest roads in Washington state due to lack of federal investment in necessary repairs and maintenance. The situation deteriorates daily.

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In Western Washington, headwaters from the Mount Baker-Snoqualmie and the Olympic national forests flow into an already ailing Puget Sound. If we are serious about saving Puget Sound, we must pay attention to the top of the watersheds that feed it.

The Washington Department of Ecology (Ecology) is delegated to implement the federal Clean Water Act. Ecology has a long-term relationship with the USDA Forest Service (USFS) regarding non-point source pollution from forest management practices.

Washington's forest practices rules aim to prevent harm to water quality and salmon. The rules govern most private and state lands. The rules (WAC 222-24-051) preserve trees in streamside areas to provide shade, keep waters cool, and provide the woody debris that builds in-stream salmon habitat. They also require road construction and maintenance to help prevent stream siltation and road runoff. The forest practices rules also aim to improve fish passage.

Under an agreement signed in 2000 between Ecology and the USFS, these same forest practice rules govern national forests.

The agreement focuses on developing an inventory of USFS roads and setting a timeline to improve them enough to prevent harm from polluted water and excess sediment.

How much money will it take to make USFS roads safe for fish and water quality?

The USFS has concluded that, if the needed road work begins now, it will cost an estimated $300 million to bring Washington's national forests into compliance with today's standards.

Currently, the federal budget provides the USFS with only $3 million annually to address this problem. Prolonged under-funding has created a maintenance backlog that grows by at least $8 million each year. This staggering backlog does not include the cost to repair roads that fail because of neglect, and does not account for inflation.

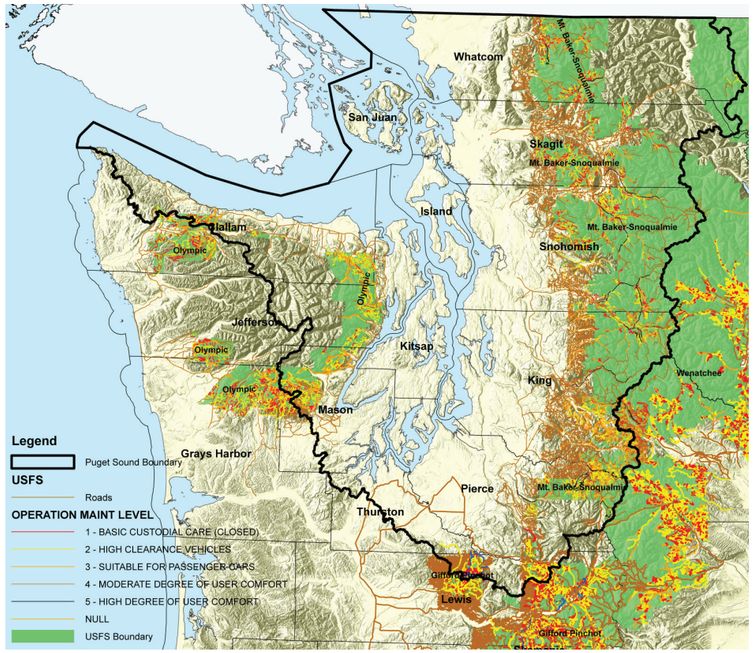
The cost to fix failing forest roads is increasing every day. Our national forests are lagging behind large private and state forest landowners that are on target to meet road maintenance obligations by 2016.

The federal government's under-funding of USFS roads also affects forest users. A deteriorating road network that is well beyond the capacity of the Forest Service to maintain cannot reliably provide quality recreational experiences.

Washington state's storms in November 2006 showed that while private and state forests saw limited damage, poorly maintained USFS lands suffered more than $30 million in road damage.

Addressing water quality issues on USFS lands now can help minimize long-term maintenance costs for roads that are important to maintain.

Climate change will further challenge the integrity of the USFS road network in Washington. A regional model now predicts that although average annual rainfall will not change significantly, winter rainfall will increase and become more intense. The model also predicts a shift of the snow zone, which could contribute to flooding when heavy rain and warm temperatures occur during periods of snow accumulation.



National forest roads inside the black border threaten an already ailing Puget Sound. Red and yellow areas indicate roads with the highest risk of failure. *(USDA Forest Service data)*

Steps to the solution

1 Increase funding in 2008 to meet the need.

Forest Service roads are a huge, neglected problem. The Forest Service estimates the cost to be $300 million, excluding inflation or the cost to repair damage to roads that fail. This translates into $30 million per year for the next 10 years to cover the costs of road repair and closure. This investment would pay for environmental review, project and monitoring design and implementation, and other necessary activities. This admittedly large investment is necessary to give national forests in Washington a fighting chance to meet the road maintenance timeline that state and large private owners will meet – a deadline that the USFS committed to in 2000.

Washington's administrative code sets the time frame. "All roads in the planning area must be in compliance with the current rules by July 1, 2016." (WAC 222-24-051 *http://www.dnr.wa.gov/forestpractices/rules/wac222-24.pdf*)

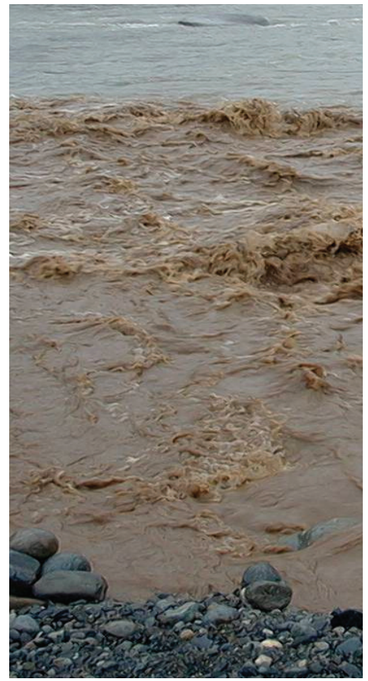
FY 2008 funds - $30 million - would be targeted to road-related watershed restoration in those portions of the Olympic and Mount Baker-Snoqualmie National Forests that drain to Puget Sound.

Skykomish River near Gold Bar, after a road-induced landslide. Muddy water harms the gills of trout and endangered salmon. When silt settles, fish eggs are smothered.

2 Prioritize the work: target projects to get the "biggest bang for the buck."

Identify priority basins within each national forest -- and priority sub-basins within these basins -- where work will begin to reduce road-related water quality impacts. Priority should be given to basins and sub-basins that have:

- Significant populations of threatened, endangered or sensitive aquatic species and high habitat value for conservation and recovery.
- Sensitive geologies.
- Opportunities to attain water quality objectives in whole watersheds with limited investment and treatment of relatively few road miles.
- Complementary restoration activities, including fish passage improvement already occurring in high value watersheds or connected mainstem rivers and estuaries.



- High current or planned public or commercial road use.
- Opportunities to partner with other landowners, tribes, salmon recovery groups and other organizations.

Within priority areas, well-designed projects would restore and protect water quality, including maintenance of ground and surface water within their natural drainage areas. Priority projects would:

- Re-route road runoff that cannot be eliminated to minimize or eliminate direct delivery of sediment to streams.
- Decommission high-risk, unstable, and unneeded roads.
- Replace or remove stream-crossing structures to enable unimpeded passage of fish, other aquatic biota, wood and gravel.
- Renovate road drainage features to minimize the need for future active maintenance and the likelihood of system failures.

3 Use more field-based information to inventory, assess and develop projects.

The USFS needs an updated and accurate inventory of its current road system to make good decisions about which roads go and which ones stay. For the USFS to develop effective site-level prescriptions for removing or improving specific roads, it must have field based information

Forests should build on information already available in Access and Travel Management Plans, Watershed Analyses, and Roads Analyses to make initial decisions about geographical priorities and targeting of resources.