

October 18, 2004

Content Analysis Team
Attn: Roadless State Petitions
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Dear USFS Content Analysis Team:

As scientists with extensive expertise in conservation biology, forest ecology, stream ecology, and wildlife management, we would like to comment on Forest Service's proposed rule making change to replace the federal Roadless Conservation Rule adopted on January 12, 2001 with a petition process initiated by state governments. We are especially troubled by this administration's track record of ignoring the best available science in policy decisions affecting public lands and its deference to the states on forest management decisions of national importance. There is growing consensus among the scientific community that a strong roadless conservation rule is one of the cornerstones to sustainable public lands management, biodiversity conservation, and ecosystem health of the national forests. Therefore, we request that you reinstate the 2001 Roadless Conservation Rule that received very thoughtful input by scientists and the public. In addition, we would like to respond to concerns the proposed rule making change creates regarding the substantial impacts of roads on fish and wildlife populations, and the importance of roadless areas in maintaining healthy and productive terrestrial and aquatic ecosystems on our nation's public lands.

Ecological Impacts of Roads

More than 4 million miles of roads criss-cross the continental United States, eclipsing by 1 million miles the total length of the nation's streams¹. This extensive road system has made it possible to drive within a mile of more than 80% of all lands within the lower United States with only 3% of the nation more than 3 miles from the nearest road. While federal lands are the nation's best hope for maintaining relatively intact ecosystems, the extensive roads network on public lands already exceeds 400,000 miles,

¹ Ritters, K.H., and J.D. Wickham. 2003. How far to the nearest road? *Front Ecol. Environ* 2003; 1(3):125-129.

enough to circum-navigate the globe more than 16 times. This extensive road network has come at substantial ecological costs, including: (1) increased erosion, air and water pollution; (2) spread of invasive exotics; (3) significant road mortality and avoidance by wildlife; and (4) habitat fragmentation². Such impacts extend out to a quarter of a mile on either side of a road creating a “road-effect zone” that includes nearly one-fifth of the total surface area of the nation³. Significant road-related habitat fragmentation has been documented for every region of the conterminous United States⁴ and portions of Alaska⁵.

In general, when roads reach a certain density (miles of road per area of land) an ecological threshold (varies from species to species) is reached whereby sensitive wildlife begin to show signs of stress or avoidance of otherwise suitable habitat. Ecological thresholds related to roads have been noted for aquatic systems as well, particularly as road densities exceed 1 mile per square mile, which is the case for the vast majority of national forest lands and especially private lands. Roads disrupt hydrologic flow, alter streamside habitat, fragment aquatic habitat, and reduce water quality⁶.

Importance of Roadless Areas

Most roadless areas exist because their remoteness has temporarily insulated them from human development. Consequently, roadless areas contain irreplaceable reservoirs of wildlife habitat, and perform many valuable ecological services diminished by roads and other developments that degrade natural landscapes. Such wild areas also play an esteemed role in our national identity and history, with interest in their protection dating back at least to the early 1970s.

In the 1970s, the U.S. Forest Service, was directed by Congress to undertake a “Roadless Area Review and Evaluation” (RARE I and II) to identify lands suitable for future wilderness designations. While the mapping process is fraught with errors, the

² Conservation Biology. 2000. Special Section: Ecological Effects of Roads. Vol. 14(1).

³ Forman, R.T.T. 2000. Estimate of the area affected ecologically by the road system in the United States. Conservation Biology 14(1):31-35.

⁴ G.E. Heilman, Jr., J.R. Strittholt, N. C. Slosser, and D.A. DellaSala. 2002. Forest fragmentation of the conterminous United States: assessing forest intactness through road density and spatial characteristics. *Bioscience* 52(5):411-422.

⁵ J.R. Strittholt. In preparation. Tongass National Forest intactness assessment.

⁶ S.C. Trombulak, and C.A. Frissell. 2000. Review of ecological effects of roads on terrestrial and aquatic communities. Conservation Biology 14:18-30.

agency partitioned roadless lands into parcels of 5,000 acres or larger. A growing number of independent studies^{7,8,9,10} have documented the importance of not only these larger roadless areas but smaller parcels of 1,000 – 5,000 acres as well. This has been noted for several regions of the country, including the Rockies, Tongass National Forest, southern Appalachia, Northeastern Forests, Pacific Northwest, and Klamath-Siskiyou ecoregion of northwest California and southwest Oregon.

In general, roadless areas perform many ecosystem services often diminished by road building and associated uses, including: (1) relatively high levels of intact old-growth forests; (2) essential habitat for species of conservation concern (including threatened ones); (3) broad array of habitat types; (4) “buffer areas” from exotic species invasions and edge effects; (5) critical winter range for ungulates; (6) refugia for road sensitive species such as grizzly bears and wolves; (7) landscape and regional connectivity; and (8) strongholds for salmonids and other aquatic species. The inclusion of roadless areas in the nation’s network of protected areas is vital in contributing to fundamental tenets of conservation biology related to ecological representation and wildlife population viability¹¹ that have implications to the federal lands conservation, sustainable management, and compliance with the National Forest Management Act¹².

In particular, we note that in the eastern United States, very few areas larger than 5,000 acres remain in unroaded condition. Few intact forests east of the Mississippi remain as extensive fragmentation has degraded forests from clearcut logging,

⁷ Stritholt, J.R., and D.A. DellaSala. 2001. Importance of roadless areas in biodiversity conservation in forested ecosystems: a case study – Klamath-Siskiyou ecoregion, U.S.A. *Conservation Biology* 15(6):1742-1754.

⁸ DeVelice, R.L., and J.R. Martin. 2001. Assessing the extent to which roadless areas complement the conservation of biological diversity. *Ecological Applications* 11(4):1008-1018.

⁹ C.Loucks, N. Brown, A. Loucks, and K. Cesareo. 2003. USDA Forest Service roadless areas: potential biodiversity conservation reserves. *Conservation Ecology* 7 (2) www.ecologyandsociety.org/vol7/iss2/art5/index.html

¹⁰ Crist, M.R., B. Wilmer, and G.H. Aplet. In Review. Assessing the value of roadless areas in a conservation reserve strategy: An analysis of biodiversity and landscape connectivity in the Northern Rockies, USA. *Applied Ecology*.

¹¹ Noss, R.F., and A.Y. Cooperrider. 1994. Saving nature’s legacy: protecting and restoring biodiversity. Island Press, Washington, D.C.

¹² Noon, B.R., D. Murphy, S. R. Beissinger, M.L. Shaffer, and D. DellaSala. 2003. Conservation planning for US National Forests: conducting comprehensive biodiversity assessments. *BioScience* 53(12):1217-1220.

urbanization, and road building¹³. Nearly the entire eastern seaboard has been bisected by a maze of roads readily observable from satellite photos. The smaller unprotected roadless areas (1,000-5,000 acres) within the roaded matrix are critical to ecosystem health and wildlife population viability. When combined with strategic closure of roads (near roadless areas), the size and functionality of these smaller areas can begin to restore the health of public lands in this region.

Roadless Areas and Forest Health

Overall, the scientific literature shows that forests in areas without roads are less altered from historical conditions and present a lower fire risk than forests in intensively logged and roaded areas for three reasons: (1) timber management activities often increase fuel loads and reduce a forest's resistance to fire, along with its post-fire resilience, especially by removing large, fire-resistant old trees and replacing them with flammable tree plantations; (2) areas without roads have been less adversely affected by fire suppression than intensively managed lands; and (3) road building in intensively managed lands increases the risk of human-caused ignitions¹⁴.

Further, roaded and degraded forests often lack the natural resiliency to insect outbreaks, as logged areas tend to be deficient in the complex habitat features (e.g., "legacy components"¹⁵) required by many natural "enemies" of destructive insects. The oversimplification of forests through industrial-scale logging and road building has eliminated many of nature's checks and balances, making developed lands more prone to the kinds of outbreaks that managers are concerned about. According to the Forest Service's Draft Environmental Impact Statement for the 2000 Roadless Area Conservation Rule, approximately 58 million acres (all ownerships) of forests nationwide are at risk of fire. Of these, 12 million acres occur on the national forests. A much smaller percentage (~3%) of at risk forests are in roadless areas.

¹³ G.E. Heilman, Jr., J.R. Strittholt, N. C. Slosser, and D.A. DellaSala. 2002. Forest fragmentation of the conterminous United States: assessing forest intactness through road density and spatial characteristics. *Bioscience* 52(5):411-422.

¹⁴ DellaSala, D.A., and E. Frost. 2001. An ecologically based strategy for fire and fuels management in National Forest roadless areas. *Fire Management Today* 61(2):12-23.

¹⁵ Franklin, J.F., and J. Agee. 2003. Scientific issues and national forest fire policy: forging a science-based national forest fire policy. *Issues in Science and Technology* 20(1):59-66.

Economic Argument For Roadless Area Conservation

Recent economic analysis has demonstrated that protecting wilderness, roadless areas, National Parks, and National Monuments is not devastating to regional and local economies. Using measures of income, employment, and the location and extent of roadless areas and other protected areas, economists¹⁶ have demonstrated that environmental protection most often does not come at the expense of either income or employment growth in the western United States. As more studies of the economics of protected areas emerge, it is apparent that protection and sustainable management of national forests play an important role in the diversification of the economic engine of the West. Coupled with the value that these areas provide in ecological services, open spaces, and quality of life amenities, a strategy that truly protects roadless areas is an investment both in sound conservation and sustainable economics. The best policy for roadless areas therefore is to protect them from additional exploitation. Restoring fish runs and protecting watersheds, particularly those tied to county and state water municipalities, are prudent investments in the economic and biological future of the national forests.

Conclusions

A responsible roadless policy for the nation recognizes the importance of roadless area protections, road repair, road maintenance, and the closing and decommissioning of unstable and high-risk roads across the network of roads on federal lands. Existing forest roads will continue to provide for local forest management and access, but roadless areas need to be protected for their unique biological values. Continued maintenance needs of the federal roads network are a daunting task alone with maintenance costs in excess of \$8.4 billion. Thus, the Forest Service should exercise fiscal responsibility by focusing on maintaining the existing road network rather than building more roads in the few remaining roadless areas on the national forests.

While we recognize that there are some places in which locally governed policy is appropriate, we are concerned that the proposed directive will significantly reduce

¹⁶ Southwick Associates. 2000. Economic importance of national parks, monuments, wilderness, and unprotected roadless areas in the western United States. Unpublished report on file at the World Wildlife Fund, Ashland, Oregon office.

administrative protection for national forest roadless areas. Turning over roadless area management decisions to the States, which may not have the best interests of all the American people in mind, is contrary to why the national forests were established in the first place. Three decades of debate have failed to produce a local solution that limits roadless area losses, because those decisions have often been based on a lack of sound scientific understanding of the values that roadless areas provide for the nation as a whole. We expect that the nation's remaining federally owned forested roadless areas will be managed to the highest ecological standard, and will be protected from further degradation. We do not expect the proposed directive to provide that standard, and we request that it be rescinded.

Sincerely,

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