

TRAVEL MANAGEMENT

ISSUE STATEMENT

The National Forests of the Sierra Nevada region provide outdoor recreation opportunities for literally millions of visitors and local residents each year. These federal lands are also pivotally important for providing clean water and air, as well as critical habitat for myriad wildlife species. A major challenge to the future ability of our National Forests to provide environmental benefits and recreation services is the amount of motorized use and the sheer extent and decaying condition of the Forest Service road system. National Forests in California contain over 47,000 miles of roads – more than the length of the entire U.S. Interstate Highway System and over 10,000 miles of unclassified or non-system routes. Primarily a byproduct from the era of big timber, the overall road system in the National Forests of the Sierra Nevada region is convoluted and unmanageable. Road management on the region's National Forest lands has not responded to the changing recreational needs of our nation, and road-related impacts are leading to a host of environmental problems.

Although roads provide important services to society, their presence can also negatively influence the hydrology, geomorphology, and ecosystem processes on National Forest lands. A wealth of scientific literature exists describing the negative impacts of roads on the landscape (Wilcove et al. 1986; Noss 1987; Lehmkuhl and Ruggiero 1991; Noss and Cooperrider 1994; Franklin and Fites-Kaufmann 1996; Trombulak and Frissell 2000; Gucinski, et al. 2001; Forman et al. 2002; Havlick 2002; Sherwood et al. 2002; Gaines et al. 2003; Switalski et al. 2004; Wyoming Game and Fish Department 2004; Coffin 2007; Dietz 2007; Peters 2009; PRC 2012). Fragmented habitats, polluted waters, failed culverts, and eroded road beds are just a few of many road-related impacts that undermine the natural capacity of our forests to provide clean water and valuable wildlife habitat. Roads also indirectly affect forest ecosystems by allowing for

increased human intrusion into sensitive areas of the forest landscape, resulting in easier access for poaching of rare plants and animals, human ignited wildfires, illegal waste disposal, and introduction of exotic species (Noss and Cooperrider 1994; Trombulak and Frissell 2000; Coffin 2007).

Roads have both direct and indirect ecological affects on terrestrial and aquatic ecosystems by changing the dynamics of populations of plants and animals, altering flows of materials in the landscape, introducing exotic elements, and changing the levels of available resources such as water, light and nutrients (Coffin 2007). The road networks on National Forest lands render vast areas of the landscape as “road-affected,” with only small patches of isolated habitat uninfluenced by road networks (Coffin 2007). Roads are a significant cause of habitat fragmentation in Sierran forest ecosystems (Franklin and Fites-Kaufmann 1996). Habitat fragmentation alters the distribution of wildlife species across the landscape and affects many life functions such as feeding, courtship, breeding, and migration. In fact, fragmentation from roads and other human infrastructure has been identified as one of the greatest threats to biological diversity worldwide (Wilcox and Murphy 1985, Noss 1987, Wilcove 1987, Noss and Cooperrider 1994). Global warming further compounds the threats of habitat fragmentation and biodiversity loss. As animals migrate due to changing climate, landscape connectivity will be increasingly important to best ensure the survival of many species (Hansen et al. 2001; Holman et al. 2005; Welch 2006; Kettunen et al. 2007). This is especially relevant for forests located along the dramatic elevational gradients in the Sierra Nevada.

The presence of roads on the landscape affects the abiotic components of landscapes (i.e., hydrology, sediment transport, water and air chemistry, and microclimate as well as levels of noise, wind, and light adjacent to roadsides) and impacts the biotic components by altering the morphology of stream and river channels (Coffin 2007). Road networks interact with stream networks, increasing the stream

drainage density, the overall peak flow in the stream drainage, and the incidence of debris flows in the drainage basin (Jones et al. 2000). The nearly impervious nature of the often unpaved and under-maintained National Forest road systems causes runoff generation even in mild rainfall events, leading to chronic sedimentation into waterways (Luce 2002), negatively affecting sensitive aquatic habitat and stressing municipal water systems. Excessive road densities directly affect water quality and aquatic values and have been correlated with reductions in pool frequency within a channel, increased sedimentation, and warmer water temperatures (Lee et al. 1998; Coffin 2007).

In a speech delivered on August 14, 2009, Secretary of Agriculture Vilsack stated that “restoration, for me, means managing forest lands first and foremost to protect our water resources while making our forests far more resilient to climate change... In many of our forests, restoration will also include efforts to improve or decommission roads, to replace and improve culverts, and to rehabilitate streams and wetlands.” Reclaiming unneeded and environmentally problematic roads is the first step towards restoring fully functioning, healthy watersheds.

“Right-sizing”¹ the road system is also a prudent fiscal choice. Over the long-term it will save millions, if not billions, of taxpayer dollars in reduced maintenance and mitigation costs while simultaneously creating high-wage, high-skill rural jobs through decommissioning or closing surplus or ecologically harmful roads. Simply in terms of fiscal stewardship, eliminating unnecessary road segments and reducing the huge costs of road maintenance would increase the opportunity for federal dollars to be spent on more productive, beneficial projects. The existing road system is far more expensive than the agency can afford, with a

maintenance backlog of well over 1.1 billion dollars in California’s National Forests.

Two policies, known as the *Roads Rule* and the *Travel Management Rule* (36 CFR 212), in tandem provide a sound framework to begin to address the sheer volume of decaying and unnecessary roads and consequent environmental damage. However, neither policy has resulted in a serious streamlining of the road system or the reining in of the ever-expanding motorized footprint. Forest managers in the Sierra Nevada have not met the requirements set forth in the Travel Management Rule, and, instead, are designating extensive motorized systems without first conducting an analysis to determine which roads are environmentally problematic and/or unnecessary, and which roads are affordable given reasonable budget projections over time.

To preserve our outdoor heritage – water, wildlife, forest vegetation, and outdoor recreation – it is imperative to gain control of the Forest Service road system. Right-sizing the transportation system can best be achieved by ensuring the integration of the travel management planning required by regulation (36 CFR 212) with upcoming forest plan revisions. Conducting the appropriate inventories and needs assessments are the first steps in the planning process. An evaluation of land allocations, desired conditions, and management objectives (the elements of the forest plan) will be critical to establishing the requirements and need for the road system. Achieving a well maintained and properly sized road system also depends on the Forest Service leadership establishing a timeline for road improvements or changes to the road system that are identified during the planning process.

¹ “The National Forest System has a transportation system that is not suited to its modern needs and requires realignment to ‘right-size’ the system for the future” – US Forest Service Chief Gail Kimbell, May 2009

POLICY ACTIONS NEEDED

Proposal for Revision to Forest Plan Direction

A. Desired Condition *The following statements represent the desired future condition of the landscape and may not reflect the current conditions.*

Desired Condition TM-1. The “minimum road system” necessary to meet the need for safe and efficient travel and for administration, utilization, and protection of NFS lands and resources (36 CFR 212.5 b).

Desired Condition TM-2. A streamlined road system that, over any given 5-7 year time period, can be fully maintained to standard.

Desired Condition TM-3. Motorized vehicles park a maximum of one vehicle length off designated roads and trails.

Desired Condition TM-4. Unauthorized routes restored to natural conditions and unneeded NFTS roads and motorized trails are decommissioned.

Desired Condition TM-5. Reliable and dependable access for resource management and recreation, including to both developed and undeveloped recreational sites throughout the forest system.

Desired Condition TM-6. The wild character of all roadless areas (including citizen inventoried roadless areas) and primitive and semi-primitive non-motorized areas is preserved.

B. Objectives

Objective TM-1. The minimum road system, as determined by Travel Analysis (FSH 7709.55), will be formalized through the forest plan revision process and the roads that are determined to be no longer needed to meet forest resource management objectives will undergo a NEPA analysis, be

decommissioned and removed from the Motor Vehicle Use Map (MVUM).

Objective TM-2. Minimize environmental impacts by establishing a minimum road system (36 CFR 212.55) and decommissioning unnecessary roads by 2025.

Objective TM-3. Minimum road system will reflect long-term funding expectations (based on past and anticipated future road maintenance budgets and appropriations) beginning in 2015 and reviewed and adjusted in 5-year assessment periods.

Objective TM-4. Minimum road system meets applicable statutory and regulatory requirements, including compliance with the Clean Water Act, Clean Air Act, Endangered Species Act, any relevant Executive Orders, and implementing regulations.

Objective TM-5. Motorized route density adheres to scientifically accepted thresholds for terrestrial and aquatic species by 2025.

Objective TM-6. Road and trail management objectives on designated routes are approved in writing by a responsible official, and included in the transportation atlas or INFRA (FSM 7711.2) by 2015.

Objective TM-7. Route designations reduce user conflict by providing separate routes for uses which are inherently incompatible – routes that emphasize motorized verses routes that emphasize non-motorized use.

Objective TM-8. Road Best Management Practices (BMPs) are designed to accommodate a 100-year storm event.

Objective TM-9. Education and enforcement activities are adequate to achieve compliance with forest-level Motor Vehicle Use Maps by 2020.

Objective TM-10. Route signage is installed on all system roads and motorized trails describing use status (i.e., open or closed) to assist users with compliance of motor vehicle use regulations. Conduct regular inventories to ensure that the signs are maintained.

Objective TM-12. By Year 5, 40 percent of road decommissioning has been completed and by Year 10, 100 percent of road decommissioning has been completed.

Objective TM-13. Road maintenance adheres to Best Management Practices that incorporate long-term implementation, effectiveness and forensic monitoring program and meets Basin Plan requirements under the California Clean Water Act.

C. Standards

Standard TM-1. Unneeded roads determined through Travel Analysis (FSH 7709.55), are prioritized for decommissioning or conversion to non-motorized trails based on the following criteria:

- To create large roadless patches,
- Protect habitat for sensitive, threatened, and endangered species (minimizing percentage of habitat affected),
- Minimize disruption of wildlife migration and dispersal corridors,
- Limit fragmentation of wildlife habitat,
- Maximize area below a threshold road density for focal species or in Old Forest and Connectivity (OFC) land allocation,
- Minimize noxious weed dispersal,
- Minimize erosion and sedimentation in streams,
- Minimize number of stream crossings,
- Maximize fish passage (miles unobstructed in suitable habitat),
- Minimize road redundancy to recreation and management access points.

Standard TM-2. Watershed/ecological restoration projects must include road decommissioning as part of project activities.

Standard TM-3. There shall be a net decrease in the mileage of roads in all key watersheds. Priority should be given to closing and decommissioning roads that pose the greatest relative ecological risks to riparian and aquatic ecosystems.

Standard TM-4. Adhere to Best Management Practices detailed in the Region 5 Water Quality Management Plan.

Standard TM-5. Incorporate non-native invasive species prevention and control into road maintenance and close/restore routes documented as contributing to the spread of non-native invasive plants into relatively weed-free areas

Standard TM-6. Treat non-native invasive species before roads are decommissioned; follow-up based on initial inspection and documentation.

Standard TM-7. Close or seasonally restrict road use to minimize adverse impacts to wildlife species that require solitude or tolerate only minimal disturbance (e.g., deer wintering areas, forest carnivore movement areas, Yosemite toad dispersal habitat, CDFG essential habitats maps from 2010).

Standard TM-8. Close or seasonally restrict road use when the roads are impassable due to wet conditions to minimize adverse resource damage.

Standard-9. Seasonally close routes in areas important to ungulate populations during sensitive seasons (i.e., calving/fawning period for known key ungulate calving/fawning areas, critical ungulate wintering habitat/winter concentration areas, migration corridors during migration).

Standard TM-10. Establish a long-term monitoring program to identify resource damage and ensure that the goals and objectives for management of the NFTS are being met:

- Monitor for the amount of erosion occurring
- Map stream crossings without culverts or bridges and note stream sedimentation levels and visible soil/channel impacts in these areas
- Identify areas of significant amounts of bare soil or route-widening along routes through photos and route width measurements
- Monitor closed and restored routes to ensure the measures taken are effectively mitigating impacts to forest soils
- Monitor routes for sensitive, threatened, and/or endangered plants and animals
- Monitor for unauthorized spur routes into areas with sensitive, threatened, and endangered plant and animal species
- Monitor routes for presence and spread of non-native species or the decline of native species
- Monitor routes to identify whether they are impacting the reproduction, nesting, or rearing of key indicator species

- Monitor use concurrently with local wildlife populations to determine the impact on wildlife species
- Monitor to identify whether there are unauthorized spur routes in roadless areas, Research Natural Areas, citizen or agency proposed Wilderness, Wilderness Study Areas, and other lands with Wilderness character.

Standard TM-11. All unneeded NFTS roads and trails identified through Travel Analysis (FSH 7709.55) for decommissioning will be physically closed upon issuance of the Motor Vehicle Use Map and are treated to prevent hydrologic damage including from severe weather events (i.e., storm-proofed).

Standard TM-12. Vegetation management projects must include a commitment to decommission or prevent use (e.g., barriers and signage) of non-system roads within the project boundary simultaneously with the implementation of the project.

D. Regionwide Land Allocations

Table IV H-1. Land allocations related to road management.

Land Allocation	Definition	Management Objective
Wilderness Area (WA)	Area that is designated or proposed for designation as wilderness.	Preserve the roadless character of these lands.
Recommended Wilderness (RW)	Area that is recommended for inclusion in the National Wilderness Protection System by the USFS.	Preserve the wilderness character of these lands until Congress accepts or rejects the recommendations in whole or in part.
Backcountry Management Area (BMA)	An inventoried roadless area (IRA) or citizen’s inventoried roadless areas (CIRA) that do not contain any national forest system roads or motorized trails.	Preserve the roadless and backcountry character of these lands. Manage them under the Roadless Area Conservation Rule with exception, prohibiting motorized over-snow vehicle use and the construction of new motorized trails.

***Recommended Actions at the National Forest
Level Not Directly Addressed in the Forest Plan***

- As part of Subpart A (36 CFR 212.5) implementation and minimum system identification, establish an accurate baseline NFTS as documented through previous management decisions that includes:
 - 1) Comprehensive look at the NFTS to determine what previous travel management decisions have been made including a records search of all previous transportation-related NEPA decisions and decisions containing transportation-related aspects. Through this evaluation, identify the proper administrative status of all roads (i.e., identify whether roads are temporary or permanent, which roads were scheduled to be closed or decommissioned, the operational and objective maintenance levels, and the road management objectives). Update the infrastructure (INFRA) geographic information system (GIS) application and database to correctly reflect past agency actions, including removing any user-created or other unauthorized roads that were added to INFRA as system roads without supporting decisions; and
 - 2) Complete an on-the-ground inventory of the location and condition of motorized routes. Document unauthorized roads, but maintain this data in a separate (non-INFRA) database to ensure user-created roads are not analyzed as part of the minimum system. Place all unauthorized roads on a list of roads to be decommissioned and (during the analysis phase) incorporate these roads into the prioritization scheme for decommissioning system roads, based on priority watersheds and wildlife corridors.
- To meet the minimum system requirement of 36 CFR 212.5 b, conduct a comprehensive science-based analysis (Travel Analysis) of

the NFTS (maintenance levels 1-5) at the large watershed or District scale that includes the following minimum elements:

- 1) Analysis of *all* motorized travelways, not just passenger vehicle roads
- 2) Analysis of environmental impacts, especially to water quality, soils, rare plants and wildlife, including calculation of combined road and motorized route density for the entire planning area using technologically current spatial analyses that incorporate species-specific data and result in site-specific road density information, as opposed to large-scale average road density information. This analysis should include all motorized travelways, e.g., open and closed system roads, motorized trails, and unauthorized user-created routes, as these often function ecologically as roads. Particular attention should be paid to road/motorized route density in riparian areas, headwater areas, and sensitive wildlife habitat. Analysis should use scientifically-based density standards as set in previous forest plans, or, if standards are not in place, then the agency should incorporate existing science that articulates density thresholds for key wildlife species. The following elements should be included in the analysis: a) impacts to viability and recovery of Management Indicator Species (MIS) and species of special concern, b) aquatic indices that measure stream health, fish population and trend data, c) affects of proposed road system on roadless areas, quiet zones, watersheds, and wildlife corridors. The analysis should be conducted at both a site-specific and a larger landscape/watershed scale, as impacts are difficult to accurately assess in an evaluation that only considers individual roads in isolation. The analysis should also include an evaluation of the proposed road system on compliance with

Clean Water Act (including Total Maximum Daily Load standards and any additional state level minimum standards), Clean Air Act (including ambient air quality standards and state implementation plans), Endangered Species Act, and other relevant laws, standards and best practices.

- 3) Analysis of importance to recreation and resource management access, including addressing conformance with Recreation Opportunity Spectrum (ROS) classifications, niche determination, Facility Master Plan analysis, forest plan standards and direction, and valid existing rights.
- 4) Analysis of decommissioning costs (per mile) and the anticipated Forest maintenance budget (average of several years) to ensure that the minimum necessary road system will be consistent

with projected budgets and management capacity without relying on maintenance level downgrades or reclassification of roads as motorized trails to reduce costs without reducing mileage.

Recommendations for New Regional Direction or Policy

- Include road decommissioning as a component of the performance evaluation of each Forest Supervisor.
- Create a decommissioning schedule and score card for each national forest.
- Assess the granting of road access across national forest lands on habitat fragmentation, water quality, wildlife, increased unauthorized use of public lands, increased fire risk, road maintenance costs and other factors associated with increased roaded areas.

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