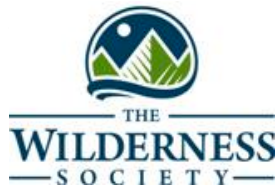




Sierra Forest Legacy

Protecting Sierra Nevada Forests and Communities



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Land Management Plan Revision
USDA Forest Service
Ecosystem Planning Staff
1323 Club Drive
Vallejo, CA 94592.

Forest Issues Group



FS-R5planrevision@fs.fed.us

To the Regional Planning Team:

These comments are submitted on behalf of Sierra Forest Legacy and eight conservation organizations. We appreciate the opportunity to provide comments on the Preliminary Need for Change Analysis circulated by the Forest Service in December 2013.

We have been participating in the plan revision process during the past year through the submission of written comments on the draft forest assessments, attendance at public workshops and meetings, and meetings with Forest Service staff. Although we have been exchanging information with the Forest Service on trends and conditions, the preliminary analysis of the need for change is the first expression of the agency's perspective on the basic issues that would drive the revision process. As described below, we have significant concerns about the scope of the revision process and the implied timeline for completion of the revision process as described in the Need for Change Analysis.

I. Overview

The purpose of national forest system (NFS) land management planning is to develop plans that “guide management of NFS lands so that they are ecologically sustainable and contribute to social and economic sustainability; consist of ecosystems and watersheds with ecological integrity and diverse plant and animal communities; and have the capacity to provide people and communities with ecosystem services and multiple uses that provide a range of social, economic, and ecological benefits for the present and into the future, ...includ[ing] clean air and water; habitat for fish, wildlife, and plant communities; and opportunities for recreational, spiritual, educational, and cultural benefits” (36 CFR 219.1(c)). These are the overall, broad-scale desired conditions set forth in the new National Forest Management Act (NFMA) regulations (see inner circle in Figure 1).

To achieve these broad goals, a system has been developed to assess current conditions and trends, identify the need to change the forest plan *based on the assessment*, develop a plan to meet desired conditions, and monitor conditions to test if the plan is working. Each element of the system is integral to the whole.

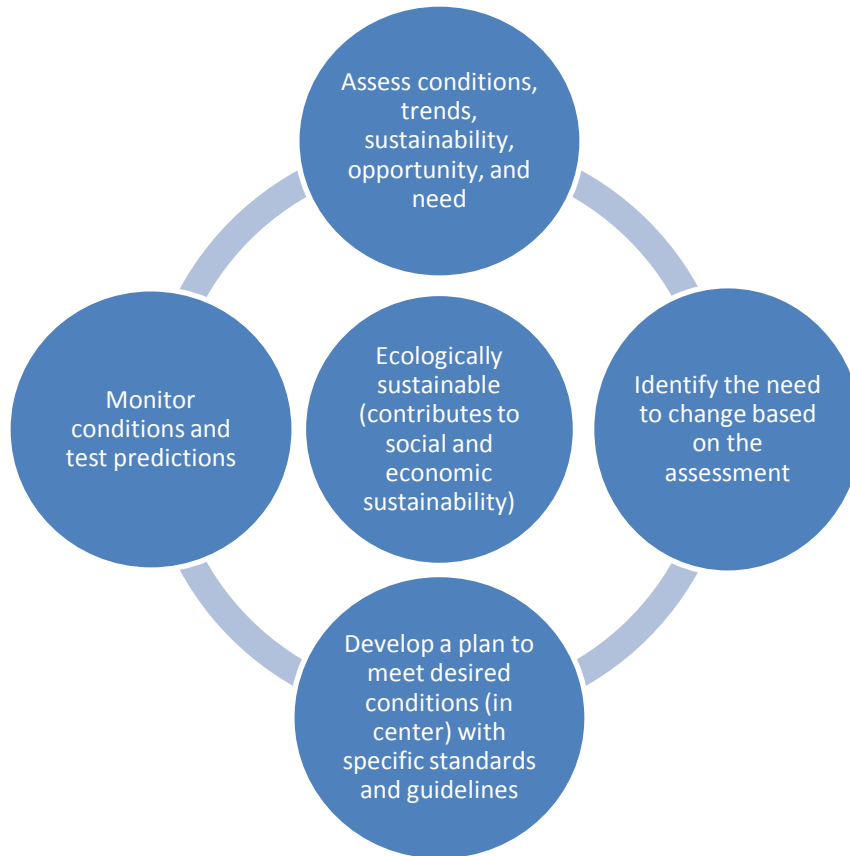


Figure 1: Forest planning is a continuous clockwise cycle revolving around the goal of sustainability.

The forest assessments “rapidly evaluate existing information about relevant ecological, economic, and social conditions, trends, and sustainability and their relationship to the land management plan within the context of the broader landscape” (36 CFR 219.5(2)(i)). The NFMA regulations clearly state that in developing a new plan the responsible official “shall **review relevant information from the assessment** and monitoring to identify a preliminary need to change the existing plan and to inform the development of plan components and other plan content” (emphasis added) (36 CFR 219.7(c)(2)(i)).

The proposed directives for forest planning also stress that the need to change the plan must be grounded in an adequate information base and that “information developed during the assessment and other relevant information must be used to inform the development of a new plan” (FSH 1909.12 21.1).

The assessments and the Need for Change Analysis are clearly linked. Therefore, at a minimum, the responsible official must consider and evaluate each of the 15 assessment topic areas in determining the need to change the plan. There would be no purpose in assessing the condition of a topic area if it were not going to inform the need to change the forest plan. Yet, many of the 15 topic areas from the assessments are not included in the preliminary analysis of need for change. We ask that you clearly establish how the “emphasis areas” in the Need for Change Analysis relates to the 15 topic areas covered in the forest assessments.

Forest assessments have been completed for three national forests in the southern Sierra Nevada: Inyo, Sequoia, and Sierra. The Region 5 website states that the forest assessments “gathered existing relevant information on current forest conditions to evaluate their sustainability while identifying aspects of the current land management plans that need revising.”¹ As we pointed out in our comment letters on the draft forest assessments, significant information for some resources, for example species at risk, was not included in the forest assessments². Furthermore, information on the effectiveness of the current forest plans was not presented in the forest assessments. For instance although there is much stated about the perceived threat of wildland fire on human communities, there is no evaluation of the fuel treatments completed in the past 15 years, their effectiveness in reducing the threat of fire on communities, or an evaluation of the specific direction in the forest plan, e.g., the specific plan components, that may limit or contribute to effectiveness. We will discuss these points more fully below, but raise them here because the revision process will be relying on forest assessments that are incomplete. In relying on incomplete assessments, we believe that the preliminary evaluation of need for change has been inappropriately limited.

As a general matter, we are concerned about the process used to evaluate the need for change. The Need for Change Analysis depends on assessing whether or not the current plan provides for sustainability as described in the new planning rule. However, the forest assessments did not describe well enough the difference between current conditions and those that would be sustainable. In many cases, we cannot tell why a need for change was identified since the Need for Change Analysis has no direct links, for example citations, to the forest assessments. Short-cutting this important process will damaged the credibility of the Forest Service and lead to charges of lack of transparency from all corners.

Lastly, the term “restoration” is used throughout the analysis, but it is not defined. We see the Forest Service proposing “restoration,” for example salvage logging, which can harm wildlife and important habitats. The analysis needs to be clearer on what restoration is and how loss in ecological value is justified by a “restoration” objective.

The following comments identify emphasis areas that although not identified in the Preliminary Need for Change Analysis should be included, provide feedback on the emphasis areas that were presented, and propose desired conditions for the social, economic and ecological conditions for these national forests.

¹ <http://www.fs.usda.gov/detail/r5/news-events/?cid=STELPRDB5444724>

² The forest assessments themselves each identified this and roughly stated that all the available information would be used when developing the revised forest plan.

II. Emphasis Areas that should be Included in the Need for Change Analysis

A. Conservation of Wildlife Species at Risk

The 2012 planning rule clearly identifies the importance of species conservation in meeting the direction in the National Forest Management Act to maintain the diversity of species across the planning area. The conservation of wildlife, including plants, needs to be an emphasis area because so many species have been negatively affected by management and other human actions. Further, the health and persistence of wildlife species are fundamental to providing for ecological integrity as directed by the new planning rule. We believe species at risk must be included as an emphasis area for several reasons.

First, each forest has a high number of species identified as at risk in the forest assessment (federally designated and potential species of concern).

National Forest	# of Species
Inyo	92
Sequoia	163
Sierra	93

As identified in the respective assessments, these species cover a variety of habitats and are threatened by numerous management activities or other human activities. The 2012 planning rule commits to “maintaining the diversity of plant and animal communities and the persistence of native species in the plan area” (36 CFR 219.9) as a primary goal of the planning rule. This direction is not incidental to other planning goals or objectives and planning documents must clearly account for how the species diversity goals will be met (Ibid.).

Second, the 2012 planning rule adopts a new approach to species management that:

...requires that future plans be based on a complementary ecosystem and species specific approach to provide for the diversity of plant and animal communities in the plan area and the long-term persistence of native species in the plan area. This approach is often referred to as the coarse-filter/fine-filter approach.

The ecosystem integrity and diversity requirements in Modified Alternative A are meant to provide a coarse-filter designed to maintain biological diversity. By working toward diverse, connected ecosystems with ecological integrity, the Agency expects that over time, management will create ecological conditions which support the abundance, distribution, and long-term persistence of most native species within a plan area, as well as provide for diversity of plant and animal communities. The fine-filter provisions are intended to provide a safety net for those species whose specific habitat needs or other influences on their life requirements may not be fully met under the coarse-filter provisions.

(77 FR 21175-21176) Given the significant number of species at risk, demonstrating that ecosystem level plan components address species needs is best accomplished if this is identified as an emphasis area. This “emphasis” provides the needed assurance that species conservation is not incidental to other objectives or thought to be a secondary factor in Region 5’s planning process.

Lastly, the information provided in the forest assessment was so incomplete that it remains unclear precisely how Region 5 views the status of these species or how management has affected their trends. The forest plans for the Sierra Nevada today and in the past have included significant direction to maintain viable populations of species at risk. Despite this direction, risks and threats to many species, e.g., willow flycatcher, great gray owl, fisher, California spotted owl, Yosemite toad, Sierra yellow-legged frog, have increased. The forest assessments did not clearly evaluate these risks and threats and did not clearly state how the current forest plans might be contributing or be incidental to them.

B. Designated Areas

Designations of new areas such as recommendations for wilderness, research natural areas, special interest areas and other special areas need to be evaluated now in the forest planning process. The Planning Rule requires the Forest Service to assess the potential need and opportunity for additional designated areas, which then enables the Forest Service to designate additional areas as needed. If designations are not made now, management actions could degrade or destroy values.

1. Wilderness, wild and scenic rivers, and other designations must be considered in the identification of need to change the forest plan

The Preliminary Need for Change Analysis lacks any discussion of the need for new designations, despite it being a major content area in the assessment process. The Frequently Asked Questions section of the Preliminary Need for Change Analysis claims that “wilderness has a concurrent, separate process.” The wilderness process is not separate. Wilderness is clearly outlined within the planning rule as a resource that will be assessed for condition, trend, opportunity, and need—and that assessment will inform the Need for Change Analysis. The NFMA regulations require that the responsible official “**identify and evaluate existing information relevant to the plan area for...existing designated areas located in the plan area including wilderness and wild and scenic rivers and potential need and opportunity for additional designated areas**” (36 CFR 219.6(1)(b)(15)).

In addition, wilderness is not the only type of designation that should be considered in the Need for Change Analysis. This statement should also include the evaluation of wild and scenic rivers and any additional types of designations, including designations listed in the proposed Directives at FSH 1909.12: 14 – Exhibit 10, Designated Areas. According to the NFMA regulations, the responsible official “shall...identify existing designated areas other than [wilderness and wild and scenic rivers] and determine whether to recommend any additional areas for designation. If the responsible official has the delegated authority to designate a new area or modify an existing area, then the responsible official may designate such area when approving the plan” (36 CFR

219.7(c)(2)(vii)). Clearly the responsible official will need to know the current trends and conditions of designated areas and whether there is a need to change the forest plan before making these decisions.

The proposed planning rule directives state that “relevance in the assessment phase is information that is relevant to the conditions and trends **of the 15 topics in 36 CFR 219(b)** or to the sustainability of social, economic, or ecological systems” and that “**relying on this information base, the responsible official for new and revised plans must identify a ‘preliminary need to change the plan’** to give focus to the planning process” (FSH 1909.12 21.1).

In developing a proposed plan revision, the responsible official shall identify the eligibility of rivers for inclusion in the National Wild and Scenic Rivers System, unless a systematic inventory has been completed and documented and there are no changed circumstances that warrant additional review. (36 CFR 219.7(c)(2)(vi)) The early adopter forests (Inyo, Sequoia, and Sierra) failed to complete a systematic inventory of potential Wild & Scenic Rivers in their original Forest Plans. In response to appeals, the Forest Service made contractually binding agreements to complete Wild & Scenic River assessments, including determining the suitability of eligible rivers and streams, prior to or as part of the Forest Plan Revision. All three forests have identified some rivers and streams eligible for Wild & Scenic protection but these streams were not identified in systematic inventories nor have the required suitability study of eligible streams been completed. Completion of systematic inventories and suitability studies of eligible streams is an important “need for change” that should be included in the Forest Plan Revisions.

In 2009, Congress designated two Wild & Scenic Rivers on the Inyo Forest (Owens River Headwaters and Cottonwood Creek). The Forest Service is required to prepare a comprehensive management plan to protect the values of designated rivers, in consultation with state and local governments and the interested public, within 3 full fiscal years after the date of designation. (16 USC Sec. 1274(d)(1)). Since this deadline is already past, committing to completing comprehensive river plans for the Owens River Headwaters and Cottonwood Creek underscores this issue as a “need for change” that must be addressed in the Forest Plan Revision.

Segments of the Kings, Kern, and Merced were designated as Wild & Scenic Rivers by Congress in 1987. The comprehensive management plans for these designated rivers are all more than 20 years old. Since the comprehensive plans were adopted, there have been substantial changes in the public use and natural resources of these rivers. Updating these plans, or at least committing to updating the plans, is another “need for change” that should be included in the Forest Plan Revisions.

2. Conservation designations are an essential part of a sustainability strategy

There are clear legal requirements to consider conservation designations in identifying need for change. Legal considerations aside, conservation designations are an essential component to any ecological, social, and economic sustainability strategy. Conservation designations should be considered in the context of achieving goals related to:

- ecosystem integrity—including structure, function, composition, and connectivity of terrestrial and aquatic systems
- opportunities to restore fire and flood regimes to fire- and flood-adapted ecosystems
- air and water quality
- soil productivity, erosion, and sedimentation
- fish and wildlife habitat
- sustainable recreation
- scenic values
- ecosystem services
- opportunities to connect people with nature and
- diversity of plant and animal communities.

In addition, conservation designations should be considered in addressing system stressors, such as resource extraction, invasive species, fire suppression, lack of fire in a fire-disturbance system, and anthropogenic climate change. Designated and connected conservation reserve systems have the potential to mitigate stressors and allow plants and animals to adapt to changing conditions.

We outlined in our comments for the bioregional and forest assessments a variety of ways in which designated areas could be assessed with respect to their condition and the possible opportunities and need for more designations. Please refer to these comments and the scientific literature that we cited. We would also like to point to the proposed directives on forest planning that pertain to designated areas: “To evaluate the potential need and opportunity for designated areas, the responsible official should identify and evaluate information to answer questions such as:

- Are there published documents that identify an important need or potential for a designated area? For example, a research report may indicate a need for an experimental forest within the plan area.
- Are there specific land types or ecosystems present in the plan area that are not currently represented or minimally represented within the wilderness system or system of research natural areas?
- Are there rare or outstanding resources in the plan area appropriate to specific types of designated areas?
- Are there known opportunities to highlight unique recreational or scenic areas in the plan area to provide for sustainable recreation opportunities?
- Is there scientific or historical information that suggests a unique opportunity to highlight specific educational, historic, cultural, or research opportunities?
- Has a need for specific designated areas been identified in the plans of states, tribes, counties and other local governments?
- Are there known important ecological roles that could be supported by designation?” (FSH 1909.12 14 – Assessing Designated Areas)

It is difficult to imagine how a forest plan in which the primary goal is ecological sustainability could be devised without a discussion of the opportunities and need for conservation designations—regardless of the final decision.

We ask that you include the designations above as emphasis areas in the Need for Change Analysis.

C. Roads and Infrastructure

Roads fundamentally affect ecological integrity of terrestrial and aquatic systems. The Planning Rule requires consideration of sustainable placement and management of infrastructure as well as requiring an outcome of sustainable access. Plan revision will not achieve this if infrastructure is not considered at a forest scale and as an emphasis area.

1. Roads and infrastructure must be considered in the identification of need to change the forest plan

We are disappointed to see that the Preliminary Need for Change Analysis does not include a discussion of the road and trail system, despite the fact that the road systems on the Sierra, Sequoia, and Inyo National Forests are indisputably unsustainable, as acknowledged in the forest assessments³ and other Forest Service documents.⁴

We take issue with the statement in the Frequently Asked Questions page attached to the Preliminary Need for Change that explains that roads are not a primary theme because “Most roads issues are more appropriately dealt with at the project level...Different alternatives may have different management activities that may be associated with the different road requirements and management, but these will be determined at a project scale, with a staged approach.” To the contrary, roads are a fundamental determinant of ecological condition, as well as the fundamental enabling mechanism for practically all management and access activities on national forests. Without affirmative guiding direction in the forest plan, the road system will continue to undermine the ecological, fiscal, and social sustainability of the national forests.

Moreover, Forest Service planning regulations establish substantive requirements related to roads, infrastructure, and access that the Forest Service clearly cannot meet without changing current management direction. The intent of the regulations is that the Forest Service establish plan direction for transportation infrastructure that will result in sustainable (fiscal and ecological) access and healthy aquatic and terrestrial systems. Specifically the rule at 36 CFR 219.8(a) and (b) requires that:

³ See Attachment 1 for relevant excerpts from the final assessments

⁴ For example, see US Forest Service, 2005. *Forest Scale Roads Analysis, Sierra National Forest*. Revised November 17, 2005. Secured in Freedom of Information Request filed by Wildlands CPR in 2006.

- (a) ... The plan must provide for social, economic, and ecological sustainability within Forest Service authority and consistent with the inherent capability of the plan area, as follows:
 - (1)...[I]nclude plan components, including standards or guidelines, to maintain or restore the ecological integrity of terrestrial and aquatic ecosystems and watersheds in the plan area, including plan components to maintain or restore structure, function, composition, and connectivity, taking into account... (iv) System drivers, including dominant ecological processes, disturbance regimes, and stressors, such as ... climate change... (vi) Opportunities for landscape scale restoration.
 - (2) *Air, soil, and water.* The plan must include plan components, including standards or guidelines, to maintain or restore:
 - (i) Air quality.
 - (ii) Soils and soil productivity, including guidance to reduce soil erosion and sedimentation.
 - (iii) Water quality.
 - (iv) Water resources in the plan area, including lakes, streams, and wetlands; ground water; public water supplies; sole source aquifers; source water protection areas; and other sources of drinking water (including guidance to prevent or mitigate detrimental changes in quantity, quality, and availability).
 - (3) *Riparian areas...*
 - (4) *Best management practices for water quality.* The Chief shall establish requirements for national best management practices for water quality in the Forest Service Directive System. Plan components must ensure implementation of these practices.
- (b) ... The plan must include plan components, including standards or guidelines, to guide the plan area's contribution to social and economic sustainability, taking into account:
 - (1) Social, cultural, and economic conditions relevant to the area influenced by the plan;
 - (2) Sustainable recreation; including recreation settings, opportunities, and access; and scenic character;

The rule also requires at 36 CFR 219.10(a) and (b) that:

- (a) ... When developing plan components for integrated resource management ... the responsible official shall consider: (1) ..., trails, ...(3) Appropriate placement and sustainable management of infrastructure, such as recreational facilities and transportation and utility corridors.
- (b) (1) The plan must include plan components, including standards or guidelines, to provide for: ... (i) Sustainable recreation; including recreation settings, opportunities, and access; and scenic character.

The draft handbook provides additional direction on addressing transportation infrastructure in the plan revision process:

“The plan should provide for a realistic desired infrastructure that is sustainable and can be managed in accord with other plan components within the fiscal capability of the planning unit and its partners....

The central consideration in land management planning for infrastructure is that the integrated desired conditions and other plan components set a framework for the management of the plan area’s infrastructure...

For forest roads, the desired conditions should clarify the intended nature of the road system for the plan area and for management and geographic areas. The plan should identify the major arterial road system that provides primary access to, and within, the plan area. Determining the desired conditions, including the intended desired uses for management areas or geographic areas within the plan area, helps identify what type of road system is needed for access to and within these management areas or geographic areas...

Based on the desired conditions, other plan components can be developed for the road system. These include objectives either for modifying the road system such as decommissioning and restoring roads in areas where existing roads are no longer desired or improving roads in areas where the road system needs improvement. The objectives should recognize fiscal limitations and relative urgencies in determining objectives for the road system. Suitability can include identifying what types of roads are suitable or not suitable for certain management areas and geographic areas. Standards or guidelines for road management may restrict road management activities in certain situations such as in riparian zones or sensitive scenic areas.” (Forest Service Handbook 1909.12, 23.22o, February 14, 2013 draft)

Given the significant aggregate impacts of transportation infrastructure on landscape connectivity, ecological integrity, water quality, soils, etc., we cannot conceive how the Forest Service would meet its substantive requirements without identifying a need for change related to transportation infrastructure.

2. Current plans do not address the effects of climate change on transportation infrastructure

The sustainability of transportation infrastructure is an issue for these three forests even without the specter of climate change. When we consider climate change and its potential impacts on infrastructure, achieving sustainability is a much more daunting task. As a general matter, it is expected that climate change will be responsible for more extreme weather events, leading to increasing flood severity, more frequent landslides, changing hydrographs (peak, annual mean flows, etc.), and changes in erosion and sedimentation rates and delivery processes. Many roads in the national forests have not been designed to an engineering standard. Those that have were designed for storms and water flows typical of past decades, and most likely may fail under

future storm scenarios. The likelihood of failure is higher for facilities in high-risk settings—such as rain-on-snow zones, coastal areas, and landscapes with unstable geology.⁵

This new reality argues for a forest-wide systematic review and modification of transportation infrastructure so that it can hold up in future storm events and be more sustainable. Activities will have to include: addressing fish passage, replacing undersized culverts with larger ones, prioritizing maintenance and upgrades (e.g., installing drivable dips and more outflow structures), and obliterating roads that are no longer needed and pose erosion hazards. The only way that this significant body of work will get done in a relatively short amount of time is if the Forest service proactively plans to do it in a coordinated and prioritized way. The place to do that is in the forest plan revision starting in the Need for Change Analysis. Moreover, because the previous forest plans for the three forests did not consider the hydrologic impacts of climate change on infrastructure, or how the ecological effects of infrastructure would be exacerbated in a climate change world, there is clearly a need to change management direction for transportation infrastructure in the plan revision.

3. Transportation infrastructure must be part of a sustainability strategy

The transportation systems on the three forests are unsustainable. On an ecological level, roads directly and indirectly fragment and disturb habitat, pollute water, alter stream morphology, aid the spread of invasive species, result in unnatural wildfire ignitions, and cause direct mortality of species.⁶ On a fiscal level, the Forest Service cannot afford its transportation system; it has a multi-billion dollar deferred road maintenance backlog, and can only each year fund a small fraction of its road maintenance needs.⁷

Transportation infrastructure should be viewed as a system stressor like anthropogenic climate change and invasive species, and considered in the context of achieving goals related to:

- ecosystem integrity—including structure, function, composition, and connectivity of terrestrial and aquatic systems;
- opportunities to restore landscapes;

⁵ USDA Forest Service. 2010. Water, Climate Change, and Forests: Watershed Stewardship for a Changing Climate, PNW-GTR-812, June 2010, p. 72 (emphasis added), available at: http://www.fs.fed.us/pnw/pubs/pnw_gtr812.pdf.

⁶ For instance, see:

Gucinski, Michael, Furniss, J., Ziemer, Robert, and Martha H. Brookes. 2000. *Forest Roads: A Synthesis of Scientific Information*. Gen. Tech. Rep. PNWGTR-509. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 103 pp. Available at <http://www.fs.fed.us/pnw/pubs/gtr509.pdf>.

USDA Forest Service. 2001. *Roads Analysis: Informing Decisions about Managing the National Forest Transportation System*. Available at http://www.fs.fed.us/eng/road_mgt/DOCSroad-analysis.shtml

US Forest Service, 2005. *Forest Scale Roads Analysis, Sierra National Forest*. Revised November 17, 2005. Secured in Freedom of Information Request filed by Wildlands CPR in 2006.

⁷ Ibid.

- air and water quality;
- soil productivity, erosion, and sedimentation;
- fish and wildlife habitat;
- sustainable recreation;
- scenic values;
- ecosystem services;
- opportunities to connect people with nature;
- diversity of plant and animal communities; and
- fiscal sustainability.

We provided information in our comments for the bioregional and forest assessments why and how roads are ecologically and fiscally problematic. Please refer to these comments and the scientific literature that we cited. In particular, please refer to the scientific literature reviews submitted in Appendices 1 and 2 as part of our comments on the Inyo National Forest Draft Assessment.

D. Protecting Unroaded Areas

Areas that are undisturbed by roads or have few roads are important to protect for watershed health and other habitat values. The forest plan needs to identify these areas and provide protection from road building and other actions that can harm their ecological values.

III. Specific Emphasis Areas Noted in the Preliminary Analysis

A. Vegetation, Resilience, Wildlife, and Fire Emphasis Area

This emphasis area identifies that “drought and insects” have adversely impacted resources such as “key habitat, near communities, near power supplies and recreation sites” and “connectivity, and habitat for plant and wildlife.” We find no specific data in the forest assessments to support this claim of harm or adverse impact on the stated resources. Further, draft reports prepared by the Ecology Program with Region 5 did not find clear evidence that current mortality from insects was generally outside the range of historic variability for several forest types, including yellow pine-mixed conifer (Safford 2013), red fir (Meyer 2013a), hardwoods (Merriam 2013), and subalpine types (Meyer 2013b). Information on “drought and insects” also appears to be conflated with information about estimated effects from large, high intensity fire and should be separated from reports on effects or trends in wildfire.

Fire is an essential process that shapes the landscape of the Sierra Nevada. Presently, there is a significant deficit of fire in the Sierra Nevada overall (Stephens et al. 2007) with the departure being focused primarily in the low to moderate severity classes (Mallek et al. 2013). Fire suppression and the location of human communities and infrastructure have driven this deficit. The Need for Change Analysis fails to clearly state this as a current threat to ecosystem benefits or to address how the loss of this disturbance process affects sustainability. We need all types of fire – low, moderate and high severity. The forest plan prevents us from achieving the mix of fire effects that were part of the natural system. And the current forest plans more generally prevent us from using fire to manage the forest and other habitats. The forest plans need to be

changed to promote the active use of managed fire. To accomplish this, the Need for Change Analysis needs to be revised to address the items above.

Burned trees and snags are one beneficial consequence of fire as a disturbance process. The burned environment provides a complex setting for the development and renewal of plant communities (Lindenmayer et al. 2008). The burned trees provide nesting and foraging habitat for a variety of wildlife species (Hutto 2006). Salvage logging can destroy important habitat for snag dependent species and complex early seral environments. Post-fire tree planting and herbicide treatments also impact the development of early seral vegetation. Climate change and changed environments is another concern about the typical approach to post-fire restoration, i.e., replanting an area with the same tree species at high densities with regular spacing. Currently there is little direction in the forest plans on managing landscapes that have been affected by wildfire. Given Region 5's commitment to "ecological restoration" as stated in the Ecological Restoration: Leadership Intent, clear direction in the forest plans is needed to establish post-fire actions that are consistent with ecological restoration. The Need for Change should identify this as an emphasis area to be addressed in the revised plans.

Logging of trees can remove habitat for at risk species. The forest plan needs to have clear direction on how enough habitat of good quality will be provided in the short and long term to ensure that at-risk wildlife will persist across the plan area. Biodiversity conservation is a multi-faceted landscape process, on par with fire as a disturbance, vegetation growth and change, hydrologic function and other range-wide, multi-scale ecosystem elements. Presently, the Need for Change document simply refers to "single species management" as a barrier to the achievement of other objectives and makes no mention of the threats to biodiversity and species persistence that logging, fire suppression, road-building and other actions can provoke. We find this to be a remarkable omission since the tension between human demands for timber or fuel reduction and conservation of species at risk has been an unresolved conflict in the Sierra Nevada for over 25 years. These concerns should be clearly stated in the Need for Change to provide a basis for addressing the conflicts in the draft plan.

B. Wildland Urban Interface Emphasis Area

The Need for Change Analysis does not provide information to support this as an emphasis area needing change in the current forest plans. We believe there are components of the plan that need to change to improve the safety of communities and reduce fire suppression costs, but the information presented in the analysis does not reflect those barriers. Instead, the Need for Change Analysis makes claims that a majority of fuels treatments have been completed in the WUI; this is not supported by the forest plan monitoring data collected by the Forest Service. We assembled the data available in the forest monitoring reports from 2004 to 2012 for each of the three forests. These monitoring reports indicate that for this period on national forests in the Sierra Nevada bioregion, 40% of the fuels treatments were located in the wildland urban interface (WUI). For the forests covered in this revision process and during the period where it was possible to evaluate each forest independently (2008 to 2012), the proportion of the WUI treated ranged from 22% to 49%. Thus, the majority of treatments have not been located in the WUI as claimed by the Need for Change Analysis.

Table 1. Acres of fuel treatment on the Inyo, Sequoia and Sierra National Forests compared to national forests within the scope of the Sierra Nevada Forest Plan Amendment. Data compiled from annual reports dated 2004 to 2012

(<http://www.fs.usda.gov/detail/r5/landmanagement/planning/?cid=STELPRDB5349922>).

Year	Inyo NF			SN Bioregion		
	Fuel Treatments	WUI (acres)	Proportion WUI Treated	Fuel Treatments	WUI (acres)	Proportion WUI Treated
2004	ND	ND	ND	169,190	84,595	50%
2005	ND	ND	ND	67,014	32,167	48%
2006	ND	ND	ND	53,468	28,338	53%
2007	ND	3,066	ND	99,942	24,124	24%
2008	10,471	3,979	38%	119,584	38,267	32%
2009	5,110	2,504	49%	131,203	53,093	40%
2010	3,919	2,116	54%	106,426	35,211	33%
2011	6,034	2,112	35%	98,151	40,183	45%
2012	5,479	3,945	72%	69,274	30,565	44%
2007 to 2012	ND	17,222	ND	624,580	221,443	35%
2008 to 2012	31,013	14,656	47%	524,638	197,319	38%
All Years	ND	ND	ND	914,252	366,543	40%

Year	Sequoia NF			SN Bioregion		
	Fuel Treatments	WUI (acres)	Proportion WUI Treated	Fuel Treatments	WUI (acres)	Proportion WUI Treated
2004	ND	ND	ND	169,190	84,595	50%
2005	ND	ND	ND	67,014	32,167	48%
2006	ND	ND	ND	53,468	28,338	53%
2007	ND	10,114	ND	99,942	24,124	24%
2008	6,817	409	6%	119,584	38,267	32%
2009	12,718	2,162	17%	131,203	53,093	40%
2010	14,014	4,835	35%	106,426	35,211	33%
2011	26,605	5,055	19%	98,151	40,183	45%
2012	1,233	1,233	100%	69,274	30,565	44%
2007 to 2012	ND	23,808	ND	624,580	221,443	35%
2008 to 2012	61,387	13,694	22%	524,638	197,319	38%
All Years	ND	ND	ND	914,252	366,543	40%

Year	Sierra NF			SN Bioregion		
	Fuel Treatments	WUI (acres)	Proportion WUI Treated	Fuel Treatments	WUI (acres)	Proportion WUI Treated
2004	ND	ND	ND	169,190	84,595	50%
2005	ND	ND	ND	67,014	32,167	48%
2006	ND	ND	ND	53,468	28,338	53%
2007	ND	1,241	ND	99,942	24,124	24%
2008	16,950	7,458	44%	119,584	38,267	32%
2009	13,787	4,274	31%	131,203	53,093	40%
2010	9,645	4,514	47%	106,426	35,211	33%
2011	6,691	4,951	74%	98,151	40,183	45%
2012	13,861	8,455	61%	69,274	30,565	44%
2007 to 2012	ND	30,893	ND	624,580	221,443	35%
2008 to 2012	60,934	29,652	49%	524,638	197,319	38%
All Years	ND	ND	ND	914,252	366,543	40%

In our comments on the draft assessments, we asked that an analysis be completed to assess the effectiveness in limiting the potential spread of fire of all fuel treatments completed since 2001 or 2004. This analysis was not completed in the final assessments. Because this analysis was not completed, we have no way of evaluating the performance of the current forest plans in reducing risks to human communities. We are confounded about the omission of such an analysis since the prior amendments to the forest plan in 2001 and 2004 were driven by the Forest Service’s claim that fuels needed to be treated strategically over the landscape to moderate the intensity and spread of fire. The efficacy of this strategy must be evaluated as a part of the Need for Change Analysis.

We do believe that current forest plans unduly limit the use of managed fire in the WUI. The WUI should be reduced in size to more effectively focus fire suppression as a primary response close to communities while changing the suitable use on the remaining landscape to allow for managed fire to be used if the conditions are right. This aspect of Need for Change should be recognized in the analysis.

D. Meadows Emphasis Area

We agree that the forest plans need to change direction on the management of meadow systems and associated species. Historical overgrazing, mining, logging and fire suppression have all contributed to the decline of meadow ecosystems in the Sierra Nevada, as evidence by gullyng, desiccation, shrub encroachment and changes in plant species composition and diversity. Today, persistent channel incision in many meadows has drastically lowered streambeds and groundwater tables and the primary continuing land use pressure on these meadows is livestock grazing. The forest plans currently lack ecological standards for meadow health and function. Plan components need to be designed to address the ecological health of meadows and to incorporate the needs of meadow associated species into these ecological standards.

We are very concerned that monitoring data has yet to be presented on meadow systems, especially those affected by livestock grazing and those intersected by roads and trails. It appears to us from the timeline for the revision process reported to us in January that the monitoring results from livestock grazing will not be completed before the scoping notice is published and may not be available until after a draft forest plan has been issued. It is inconceivable to us that desired conditions and other plan components can be drafted without essential information, such as the monitoring results. Further, we believe that the monitoring results need to be presented in a comprehensive manner to provide a basis for assessing if those monitoring programs are effective in assessing the ecological health of the affected meadow systems. We have reason to believe that attributes important to assessing ecological health are not being collected, e.g., end of year vegetative condition (forb and shrub), hydrological condition; this needs to change in the revised forest plans. A suite of metrics is needed to evaluate the ecological conditions of grazed watersheds, particularly wet meadows. For example, forage utilization standards are not adequate to protect riparian areas and streams from degradation (Herbst et al. 2012, Henrey et al. 2011, Henjum et al. 1994, Rhodes et al. 1994). Field reviews indicate that forage utilization standards are not consistent with restoration and protection of degraded reaches, wet meadows, seeps and travel corridors because the trampling and chiseling of banks and vegetation by livestock are causing much of the habitat damage rather than forage utilization (Rhodes 2003).

E. Aquatic and Riparian Emphasis Area

We agree that forest plans need to change direction for aquatic and riparian systems. However, contrary to claims in the Need for Change Analysis we find no evidence presented in the forest assessments or in our own review that the forest plans are prescriptive with respect to actions close to or within aquatic or riparian habitats. There are very few standards in the Aquatic Management Strategy (AMS) for each forest plan. The AMS is essentially an objective based strategy that allows activities to proceed near to these sensitive resources when they are consistent with a suite of goals and objectives. Currently, there are five elements to the AMS: 1) desired conditions; 2) land use allocations (RCAs and CARs); 3) a discrete salmon strategy for salmon-bearing areas of the Lassen NF; 4) adaptive management strategy focused on Yosemite toad and Willow flycatcher; and 5) landscape analysis focused on restoration. Our concern with this approach, in large measure, is that the wording for some objectives allows management actions to slow the rate of recovery in areas in poor condition or allows management actions that would limit the transition of a site from good to excellent condition. In addition, the plans provide for no accountability or requirement to take action in areas presently in poor condition, e.g., a poorly functioning road. Therefore, we recommend the AMS be amended to address these problems. The forest plans need to be revised to establish priorities for remediation and guidelines to direct the closure, removal or decommissioning of infrastructure when needed for resource protection.

F. Specific Issues Driving Need to Change Plans to Address Riparian and Meadow Ecosystems

Roads and trails can have negative impacts on meadow and stream condition (e.g., erosion, altering drainage patterns). The forest plan needs to provide clearer direction on when the

negative effects of roads must be eliminated. If negative condition exists, roads and trails should be closed until the conditions are fixed.

Livestock grazing today can have negative impacts on meadow systems. The plan needs to provide direction that stops the trampling of meadows, springs and seeps by cows. The plan needs to state if grazing is not managed to avoid impacts the cows must be removed.

Livestock grazing can damage woody shrubs in meadow systems. These shrubs are essential habitat for some birds, e.g., willow flycatcher. The plan needs to change so that livestock are not allowed to damage woody shrubs.

Great gray owls, a rare and at risk species, depend on trees in meadow margins for nesting and foraging habitat. Some approaches to meadow restoration focus on logging these trees. The forest plan needs clearer direction on how to protect these important habitat areas for great gray owls in places where logging is proposed.

Yosemite toad, an imperiled species, uses wet meadows and uplands for key parts of their life cycle. The forest plan needs to include standards to protect Yosemite toad from habitat loss and direct killing of toads due to grazing, road construction and other operations.

Dispersed recreation areas near streams and meadows can have negative impacts on these resources, e.g., trampling, loss of vegetation, streambank damage. The forest plan needs to have clearer direction about limiting this damage and shifting recreational use to other areas as a means of control.

IV. Desired Conditions

The announcement for the workshops stated that one purpose was to invite the discussion of Desired Conditions for the planning area. In 2012, we prepared *National Forests in the Sierra Nevada: A Conservation Strategy* (Britting et al. 2012⁸) in anticipation of the forest plan revision process. This document includes information on the status of various resources, analysis of concerns about resource conflicts in the current forest plans and recommendations on changes to make to the forests plans and other policy recommendations to achieve the stated objectives. The strategy document identifies numerous desired conditions for a variety of ecological and social settings in the Sierra Nevada. We incorporate the Desired Conditions from the strategy by reference and ask that you evaluate them for inclusion in the revised forest plans. As an illustration of the scope the Desired Conditions in the strategy, we restate a selection in the table below.

⁸ http://www.sierraforestlegacy.org/Resources/Conservation/Biodiversity/SN_Conservation_Strategy_web3-14-13.pdf

Table 2. Selected desired conditions taken from *National Forests in the Sierra Nevada: A Conservation Strategy* (Britting et al. 2012).

Emphasis	Focus	Desired Condition
Planning	Economic	Projects are developed that utilize wood fiber locally in support of local wood processing efforts and community-based restoration.
Planning	Economic	Resource planning is completed at a scale appropriate to the issue at hand. Clear direction results in analyses that are completed in an efficient manner, focused on the relevant issues, and integrated across multiple planning scales.
Planning	Social	Regional and watershed scales of planning require cooperation across national forest boundaries. Cooperative planning efforts between national forests improve the efficiency of the planning process and more effectively address restoration goals. For many issues, cooperative planning among the national forests is the only course capable of achieving the restoration goals established by the Regional Office.
Adaptive Management	Social	Social and administrative infrastructure is in place to support the flexible management necessary to respond to changing climate and other shifting ecological pressures.
Adaptive Management	Social	A structure for collaboration is established that defines how public involvement will be facilitated, how information will be shared, and how conflicts will be resolved.
Adaptive Management	Social	The adaptive management cycle is transparently implemented and accessible to the public.
Disturbance: Fire	Ecological	Managed fire occurs across the landscape at a pace, intensity, and scale appropriate to site conditions, and functions as an ecological process that increases the resiliency and health of fire-adapted landscapes.
Disturbance: tree mortality	Ecological	Insects, disease, and tree mortality positively influence stand dynamics by creating structural complexity with pockets of mortality that allow vegetation to regenerate and provide large dead trees to enrich soils, waterways and wildlife habitat. Mortality occurs according to a range of natural variability in each forest type and at multiple scales (e.g., 2-5 acres, stand level and watershed or larger).
Disturbance: Fire	Ecological	Areas affected by wildfire support all seral stages of vegetation including native shrub, hardwood, and herbaceous plants that would be found on the site under a natural disturbance regime. Periods of early-seral hardwood and shrub dominance following fire extend in time to reflect the pace of vegetation growth and development.

Emphasis	Focus	Desired Condition
Forest structure	Ecological	Late-successional forests are well represented on the landscape and their distribution is driven by the range of variation of landscape patterns, disturbance processes, and interaction with climate change.
Forest species composition	Ecological	High quality habitat for old-forest associated wildlife (such as California spotted owl, Northern goshawk, great gray owl, fisher, marten, Sierra Nevada red fox and wolverine) includes habitat to support their preferred prey species as well as mature forest to support productive breeding and rearing. Each of these species is well distributed throughout its historic range.
Habitat connectivity: aquatic	Ecological	Corridors and passage ensure that existing aquatic habitat and species fragmentation as a result of physical barriers or habitat alterations (e.g., temperature changes, loss of stream flow, non-native species predations/hybridization) does not exclude species from their historic habitat, or diminish historic range size.
Habitat connectivity: terrestrial	Ecological	High quality home ranges and dispersal habitat for forest carnivores, such as fisher, American marten, Sierra Nevada red fox, and wolverine, are distributed across the landscape in a pattern that allows the movement of these species and thereby facilitates breeding among individuals.
Species composition	Social, Ecological	Human caused disturbances do not occur at a scale and frequency that adversely affects the viability of native species or the overall persistence and quality of habitats in the planning area.
Function, structure, composition: aquatic	Ecological	Aquatic-riparian habitats and montane meadows have a high ecological function, include key structural attributes and support the expected aquatic-riparian dependent species.
Watershed function	Ecological	Unauthorized routes are restored to natural conditions and unneeded NFTS roads and motorized trails are decommissioned.
Various	Ecological	The wild character of all roadless areas (including citizen inventoried roadless areas) and primitive and semi-primitive non-motorized areas is preserved.
Species composition	Ecological	Roadless lands are distributed across the range of habitats found within the Sierra Nevada and are important in the conservation of rare and common species and communities.
Aquatic and cultural values	Ecological, social	River segments “possessing outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations” (Wild and Scenic Rivers Act 1968).

V. Timeline for Revision Process and Conclusion

As conceived in the 2012 planning rule, a “land management plan provides a framework for integrated resource management and for guiding project and activity decisionmaking on a national forest” for the coming 10-15 years. (36 CFR 219.2(b)) The new rule also directs that the plan be revised “in the context of the broader landscape” (36 CFR 219.1(b)) and that planning “shall use the best available scientific information to inform the planning process.” (39 CFR 219.3) Thus, the revised plan is to be a foundational document to support an integrated approach to resource management. The southern Sierra Nevada region is a complex ecological, social and economic setting. Achievement of integrated planning in such a landscape requires sufficient time to collect science information, evaluate trends, engage the public in dialogue, assess the need to change the plans and formulate proposed plans. This rich and varied landscape is highly valued by many people and it is our responsibility to spend the time needed to plan carefully for this remarkable resource.

We are extremely disturbed by the early statements in the Need to Change Analysis that “under the current timeline, it is only possible to address a few emphasis areas.” It is unclear to us what is driving the timeline or why it should limit the selection of “emphasis areas” to just a few. The revision process is the opportunity to evaluate entire national forests in order to integrate planning. Segmenting or neglecting to consider critical issues is likely to result in a plan that is not integrated. The land planning decisions made today can have far reaching effects on the quality of resources and their long term condition. The sustainability of high quality resources is dependent on a carefully thought out plan.

The present timeline with a scoping notice to be issued in April 2014 and the draft plan and draft EIS in October 2014 does not provide enough time to develop adequate plans. This timeline does not allow a sufficient amount of time for Forest Service staff to absorb and reflect on comments from the public or to produce plan components and analyses that are sufficiently comprehensive. One example is the present situation where we are rushing to determine the plan components for meadow ecosystems, yet the monitoring results have not yet been evaluated, peer reviewed or discussed publicly. The lack of attention to and evaluation of species at risk is another example of the timeline seeming to drive the presentation of an incomplete product. Information still has not been provided on the status and trends of species of conservation concern or information that establishes the link between these species and broad scale habitat conditions and critical habitat elements. We ask ourselves, how will the decision maker document the use of Best Available Science Information if such information is never presented? We are setting ourselves up for failure if we do not take the time needed to create a proper foundation for these plans.

Lastly, by rushing through the assessment process, a valuable opportunity to build trust with the public will be lost. As demonstrated by our consistent engagement in workshops and submission of written comments, we are fully committed to providing high quality feedback that is timely. We need to be given sufficient time to accomplish this and Forest Service staff need to be given sufficient time to thoughtfully review and incorporate our feedback. Anything less than this is

insulting to the time and effort that stakeholders and Forest Service staff have contributed. We ask that you extend the timeline for this next phase of planning to ensure that we have a proper foundation on which to build and refine the revised forest plans.

Please contact Susan Britting (britting@earthlink.net; 530-295-8210) if you have specific questions about these comments. Thank you for the opportunity to comment.

Sincerely,



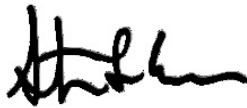
Susan Britting, Ph.D.
Executive Director
Sierra Forest Legacy
PO Box 377
Coloma, CA 95613



Craig Thomas
Conservation Director
Sierra Forest Legacy
Garden Valley, CA

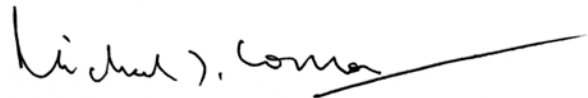


Stan VanVelsor, Ph.D.
Regional Conservation Representative
The Wilderness Society
San Francisco, CA



Steve Evans
Wild & Scenic River Consultant
Friends of the River
Sacramento, CA

Greg Haller
Conservation Director
Pacific Rivers Council
Portland, OR

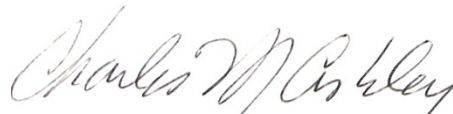


Michael J. Connor, Ph.D.
California Director
Western Watersheds Project
Reseda, CA 91337

Joe Fontaine
Kern-Kaweah Chapter, Sierra Club
Tehachapi, CA



Alan Carlton
Sierra Nevada Team Leader, Sierra Club
San Francisco, CA



Charles Ashley
Tehipite Chapter, Sierra Club



Malcolm Clark
Range of Light Group (Toiyabe Chapter)
Sierra Club
Mammoth Lakes, CA

Ryan Henson
Senior Policy Director
California Wilderness Coalition
Anderson, CA



Pamela Flick
California Representative
Defenders of Wildlife
Sacramento, CA

Peter Nelson
Senior Policy Advisor
Defenders of Wildlife
Bozeman, MT

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Attachment 1 – Excerpts Related to the Unsustainability of the Road and Trail System from the Final Assessments for the Sierra, Sequoia, and Inyo National Forests

Sequoia National Forest

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The annual cost of performing all needed maintenance activities according to the required cycle for the Sequoia National Forest road system is approximately \$5,142,250. In past decades, commercial users maintained a substantial portion of the transportation system in the Sequoia National Forest. With the decrease in vegetation management, fewer roads are being fully maintained. Additionally while maintenance budgets decrease and the maintenance backlog grows, safety standards have become more stringent. The most recent estimate of deferred maintenance needs on the Sequoia National Forest is \$49,728,000 for roads and \$5,811,090 for all trails (USDA 2012 INFRA)...

Ongoing motorized and non-motorized trail maintenance on the Sequoia National Forest is traditionally funded through appropriations. Appropriated trails funding is expected to remain flat or to slightly decrease over time. At the same time, increased and changing use causes more damage to motorized trails, resulting in greater costs to keep the trails stable. Motorized users are increasingly using larger trail vehicles, and widening motorized trails. Heavier equipment, like graders, is needed more often than in the past to maintain these motorized trails...

When roads and associated drainage-control features contribute flow directly to a natural water body, they become part of the drainage network and are said to be hydrologically-connected. These drainage systems may further increase hydrologic connectivity if they deteriorate because of use, weather, or inadequate maintenance.

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As a result of decreasing budgets, routine maintenance is reduced, maintenance cycles are extended, and selective repairs are made to ensure public safety and prevent significant resource damage. Current and projected funding levels do not cover deferred maintenance, which means that the deferred maintenance backlog grows each year. For example, roads that are to be maintained once every five years may be maintained only once every 10 years. Over time, roads may develop severe public safety or resource damage issues, and may need to be evaluated for closure to public motorized vehicular use. Existing funding for maintenance is insufficient to fully maintain the NFTS. Lower priority roads (ML 1 and 2) are causing deterioration of the roadway. Some roads and trails have become overgrown with brush and trees and are impassible to vehicular traffic ...

Road and trail maintenance on the Sequoia National Forest is essential for managing recreation opportunities. While recreation demand in the future is expected to increase, anticipated appropriated funding will not be enough to fully fund the operation and maintenance of roads and trails. Not performing the routine annual maintenance on time may increase the amount of deferred maintenance. As a result, fewer of the roads and trails will be fully maintained to standard. Roads and trails not receiving proper maintenance will inevitably be affected. Both public and administrative accesses are expected to continue to be degraded, and that will encourage road and trail decommissioning.

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With fewer commercial users maintaining portions of the NFTS compared to the past and declining federal budgets, the Sequoia National Forest has had and is expected to continue to have challenges maintaining the road system to safety and environmental standards, resulting in a backlog of deferred maintenance. At the same time, public use of forest roads has grown steadily in recent years, and driving for pleasure is one of the main activities on Forest Service land.

... As population grows and urban development expands, use of forest trails is expected to increase, as is the demand for both motorized and non-motorized recreation opportunities. At the same time, federal budgets are expected to continue to decline, challenging the forest's ability to operate and maintain trails...

Road and trail maintenance in the Sequoia National Forest are essential for managing recreation opportunities. Increasing use, coupled with decreasing maintenance could lead to erosion and deterioration of roads and trails, closures due to safety concerns and deferred maintenance needs, and subsequent loss of recreation opportunities and quality of experience.

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Forest roads are one of the major sources of sediment on national forests in California, including the Sequoia National Forest. Road decommissioning is the most effective approach to reducing road-related sediment delivery. However, for roads necessary for forest management and recreation, road maintenance including storm proofing, is the primary means of controlling erosion. Declining budgets have reduced the ability of the national forests in California to maintain and stormproof roads.

Roads are likely to be substantial sources of sediment in some actively-managed forested watersheds with overall low sediment yields.

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Alteration of flow paths from roads can affect meadow and wetland function, with the effects extending far beyond the area road itself (Hunsaker et al. 2013).

Sierra National Forest**Page 43**

Forest roads are one of the major sources of sediment on national forests in California. Road decommissioning is the most effective approach to reducing road-related sediment delivery. However, for roads necessary for forest management and recreation, road maintenance including storm proofing, is the primary means of controlling erosion. Declining budgets have reduced the ability of the national forests in California to maintain and stormproof roads.

On the Sierra NF, there is an estimated 1,969 miles of road across just over 1.3 million acres. The estimated sediment yield from these roads is between 0.01 and 0.09 tons per acre per year. Estimated road-related sediment yields overlap the low end of the range of reservoir sediment

yields. This comparison indicates that roads are likely to be substantial sources of sediment in some actively-managed forested watersheds with overall low sediment yields.

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Alteration of flow paths from roads can affect meadow and wetland function, with the effects extending far beyond the area of the road itself (Hunsaker et al. 2013).

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A condition of the overall road system is difficult to quantify; there are no detailed forest-level road condition surveys. General federal funds for repairing and maintaining roads have decreased approximately five percent each year for over 10 years. The road work done by commercial uses has been reduced by approximately 80 percent in the last 15 years. As a result of these short falls the forest road system has dropped from well maintained at the designated maintenance level to marginally maintained at the designated maintenance level.

Passenger cars roads have more pot holes, and the pavement is not repaired in a timely manner. Maintenance on these ML3-4 roads is for safe access and resource protection. High clearance roads have become much rougher than originally expected. Typically, road maintenance is to remedy watershed or water quality concerns. Much of this road mileage is becoming too brushy for passage. The public's expectation for mobility on national forest roads has been lowered as a result of these constraints...

It is expected that the national forest road system will begin to deteriorate at a faster pace. Direct road maintenance funding has been decreasing for over ten years while recreational uses of the road system have not diminished. Commercial use of the roads has been reduced by 80 percent over ten years. These commercial interests historically maintained the roads. These limited funds are directed mostly to passenger car roads (ML3-4). Less work is being done on high clearance vehicle roads (ML2). The ML2 roads are the primary access into forest activities. Recreation access will be reduced as roads become brushed over and washed out. Restoration and vegetation projects will become more expensive as more project funds are diverted to provide for the cost of project access.

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The deferred maintenance for road infrastructure on the Sierra NF is approximately \$100,000,000 (Sierra NF Travel Management DEIS). The Sierra NF receives approximately \$425,000 annually to operate and maintain roads, and the estimated funding needed to maintain roads to standard is approximately \$1,600,000 (Sierra NF Travel Management FEIS). Over the past several years, the Sierra NF has had funding to maintain only about 25 percent of its road system to safety and environmental standards.

Inyo National Forest

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The current base funding level for appropriated road construction and maintenance funds is \$545,000, which is expected to remain flat or decrease. An estimated \$1.7 million would be needed annually to maintain the Inyo NF's road system to standard. Due to the annual shortfall

in road maintenance dollars, the deferred maintenance backlog increases each year. In 2009, an estimated backlog of about \$26.9 million existed for the Inyo NF road system (USFS 2009). In addition, because of the annual nature of federal budgets, the forest is unable to plan for and accomplish larger-scale projects, such as road resurfacing or bridge replacement. Competitive funds for such projects are largely unpredictable.

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Little routine maintenance is currently being performed on the forest with the exception of a few high-use roads. Other road maintenance is generally limited to emergency repairs to address safety issues or critical resource damage.

Funding for trails was relatively high in the late 1980s and early 1990s but has since been reduced dramatically. The current base funding level for appropriated trail construction and maintenance funds is \$115,000, which is expected to remain flat or decrease. An estimated \$1.1 million would be needed annually to maintain the forest's trail system to standard. Due to the annual shortfall in trail maintenance dollars needed, the deferred maintenance backlog increases each year. The current backlog is about \$16.5 million. Funding for larger-scale trails projects is also subject to competition and largely unpredictable.

At the same time, increasing and changing use of trails is causing more damage to motorized trails, resulting in greater costs to keep trails stable. Motorized users are increasingly using larger vehicles and more trails are being used by motorcycles, resulting in the need for heavier and more costly equipment to maintain these motorized trails...

Climate change can influence the transportation system due to increased flooding, which could result in additional transportation restrictions as a result of landslides and slope failures. Conversely, less snow on roads from climate change may result in increased winter season accessibility. However, it is expected that more frequent loss of access to parts of the forest would be faced with increased climate variability (Duvair et al. 2002).