Appendix L—Response to Comment

This appendix includes a summary of public involvement activities and efforts made to solicit public input to the Giant Sequoia National Monument (Monument) plan, a description of the formal public comment analysis and response to comment process, and a list of public concerns and responses. Public concern statements and our responses are organized by sections to mirror the order of the resource topics in the FEIS. This appendix also includes copies of the city, county, state, federal, and tribal agency letters received.

As a federal agency, we are required by the National Environmental Policy Act (NEPA) to solicit public comment on our draft plans involving significant actions. We are directed to "assess and consider [the resulting] comments both individually and collectively." We view such comments as critical in helping us to shape a responsible plan for management of the Monument that best meets the purpose and need as expressed in the Presidential proclamation establishing the Monument (see Appendix G—Clinton Proclamation). During the formal comment period, the public reviewed and commented on the DEIS and its alternative proposals for managing the Monument.

The Forest Service responded in the following ways to the substantive comments, as prescribed in 40 CFR 1503.4:

- Modifying alternatives
- Supplementing, improving, or modifying the analysis documented in the DEIS
- Making factual corrections
- Explaining why the comments do not need further agency response

Public Involvement

Public involvement has been extensive in developing a management plan for the Monument. An initial planning effort from 2001 through 2003 included public meetings, meetings of the Scientific Advisory Board, and multiple documents for public review and comment. In January 2004, the Monument Plan was published as a FEIS and Record of Decision, and implementation began. Two lawsuits were brought challenging the Monument Plan decision and, in October 2006, Federal District Court Judge Charles Breyer permanently enjoined implementation of the 2004 decision and remanded the plan to the Forest Service.

After the plan was remanded to the Forest Service, the Sequoia National Forest's forest supervisor restarted the planning process. As part of the current public involvement process, the Forest Service engaged a variety of stakeholders in a collaborative process designed to help develop the Monument Plan and EIS as required by NEPA. The intent of this collaborative approach to planning is to involve people throughout the planning process and to ensure that this process is transparent to all. In addition, public involvement focuses on iterative conversations with stakeholders and the general public, and on being open to possibilities that are legal, fair, and practical.

On January 25, 2008, a notice of intent was published in the Federal Register to renew the planning effort for the Monument and to establish that the management plan would be created under the 1982 Planning Rule. The initial scoping period was for a full year.

A third-party facilitator was hired through the U.S. Institute for Environmental Conflict Resolution to lead a collaborative effort among Forest Service employees, environmental groups, community leaders, recreation groups, forest products industry representatives, homeowner associations, and others. These people were brought together to assess how to develop a new Monument Plan.

Many of the public meetings led by the facilitator focused on recreation and resulted in the formation of the Sequoia Monument Recreation Council (SMRC). These meetings were held in December 2007; January, February, May, June, August, October, November, and December 2008; and January, February, March, April, May, and June 2009. This interest group provided ideas to help the Forest Service develop and implement a management plan for a Monument that will well serve generations to come. Members of this group continued to meet and later formed the Giant Sequoia National Monument Association.

Other public meetings were focused on fuels and vegetation management, including a demonstration of an environmental modeling tool, the Stewardship

Fireshed Assessment, developed by the Forest Service. These meetings were held in May, July, September (field trip), October, and November 2008.

During 2008 and 2009, Sequoia National Forest personnel and a number of stakeholders evaluated several decision support tools, including the Strategic Decision Support (SDS) model (which includes the Stewardship Fireshed Assessment tool) and the Multi-Criteria Decision Support (MCDS) model. As a result of public and agency meetings, it was decided to use SDS as the primary assessment tool to predict effects to vegetation, fuels, and habitat conditions, and to use the MCDS decision framework tool during scoping as described in the following paragraphs (for more information, see Appendix J of this FEIS).

A website was developed to collect public comments on the Clinton proclamation and the Science Advisories from the Scientific Advisory Board from July through August 2008. A number of public comments were received on the interpretation of terms used in the Clinton proclamation and on whether the scientific advisories used to develop the 2004 Giant Sequoia National Monument EIS are still relevant for this planning effort. These comments were summarized, used to prepare an interpretation of the key principles of the Clinton proclamation by the Forest Supervisor (Terrell 2009), and have been considered in developing this FEIS.

On March 18, 2009, a new notice of intent and scoping letter were issued with a more detailed purpose and need statement and a proposed action for public comment. This scoping and comment period was for 45 days and included a new web-based opportunity to provide comments. The Monument Public Comment Portal was developed so the public could access the scoping letter and related documents on-line, and comment on the proposed action using the web site.This virtual tool was used throughout the planning process for public consultation and comment. The scoping period garnered 552 comments from 126 respondents. These comments were received on the public comment portal, at the public workshops, and by e-mail, mail, and facsimile (FAX). Using these comments, the interdisciplinary team developed a list of issues to address (see the issues section in this chapter).

Four public workshops were held during the scoping period to elicit comments focused on giant sequoia grove management. These workshops were held in April 2009 in the cities of Visalia, Lake Isabella, Porterville, and Dunlap, California.

Running concurrently with the scoping period was a public opportunity to use a multiple criteria decision support (MCDS) model, the Values and Interest-Based Explorer (VIBE). This web-based tool helped users to see how the values they placed on different criteria could affect a decision among several pseudo alternatives, and gave them an idea of how the decision process works. At the general scoping stage, the MCDS consisted of a "decision framework." The decision framework was developed collaboratively through interviews, work with the Forest Service, and the 12 public meetings held prior to general scoping. During public meetings, as well as on-line, the decision framework was refined to help the interdisciplinary team understand how values and interests were compared and weighed by the public (Von Winterfelt and Edwards 1986, Saaty 1992a).

After the scoping period, MCDS was used again in public meetings to adjust the decision framework based on scoping comments, and to refine the alternatives considered in detail (see Chapter 2). Two public workshops were held to discuss the draft alternatives developed in response to public comment and revisit the MCDS tool. An evening workshop was held at the Visalia Convention Center on June 18, 2009, and an all day workshop was held at the Sequoia National Forest Supervisor's Office in Porterville on June 19, 2009.

To gain input from the Tule River Indian Reservation (TRIR) tribe and landowners adjacent to the Monument, Forest Service employees met with different members of the tribe and resources staff. Two formal tribal consultation meetings were held with the TRIR Tribal Council, on April 14 and July 20, 2009. In addition, three informal meetings were held with TRIR tribal forestry and environmental staff members on February 23, August 14, and August 31, 2009, to discuss the Monument planning process and the MSA. Forest Service employees met with the Elders Council on October 14, 2009, and attended four quarterly Forest Tribal Forum meetings on January 14, April 30, August 19, and December 17, 2009.

A Scientific Advisory Board was created with the purpose of providing scientific guidance during the development of the initial monument management plan. This Board operated under a Department of Agriculture charter, which was signed August 31, 2000. It consisted of eight members, representing a range of scientific disciplines including the physical, biological, and social sciences. Its members were:

- **Chairperson, Dr. Paul Waggoner**, Department of Forestry and Horticulture, Connecticut Agricultural Experiment Station
- **Vice Chairperson, Professor Jeanne Clarke**, University of Arizona
- **Dr. Douglas Piirto**, Professor, California Polytechnic University
- **Dr. David M. Graber**, Senior Science Advisor, National Park Service
- **Dr. Karen Nissen**, Anthropologist/Archaeologist
- **Dr. Daniel Tormey**, Principal, Environmental Consultant, Entrix, Inc.
- **Dr. Nate Stephenson**, Research Ecologist, U.S. Geological Society
- **Dr. George Woodwell**, Woods Hole Research Center

The Scientific Advisory Board provided advice to the Forest Service in the form of advisories. The advisories wee reached by a consensus of the board members present who had participated in the discussion regarding the advisory. The Board met six times and provided 27 advisories to the Forest Service. Board meetings were open to public attendance and were also open to public comment during the first 30 minutes of each meeting.

Since the Sequoia National Forest initiated the collaborative planning process in October 2007, a number of tasks were completed that link science to management, in particular for the development of the Monument Plan. The first was reconvening a portion of the Scientific Advisory Board (SAB) formed in 2001 (which functioned through 2003). In May 2008, the Forest Service met with former members of the SAB to review the science advisories that were developed between 2001 and 2003. The group discussed whether the science advisories are still relevant, how they are being implemented, and how they may be used in developing a new EIS and Monument Plan. In July 2008, the Forest Service provided a public comment period for reviewing the advisories and determining their relevance to the present planning process.

In September 2008, the Forest Service held a Southern Sierra Science Symposium to share current scientific information with the interested public, academia, and research scientists. The symposium focused on five agents of change affecting the southern Sierra region: climate change, fire, forest management, pollutants (air), and invasive species. The goal of the symposium was to develop a program of research, resource management, and public education to help mitigate the impacts of agents of change (including climate change) on ecosystems of the southern Sierra Nevada.

As a result of the symposium, personnel from the host agencies—including the National Park Service, the Forest Service Pacific Southwest Research Station, and the U.S. Geological Survey—developed an adaptive management strategy to address climate change in the southern Sierra Nevada. In June 2009, this group produced "A Strategic Framework for Science in Support of Management in the Southern Sierra Nevada Ecoregion" (June 2009).

In October 2009, a Science Review Panel was convened to formalize a process for reviewing how the interdisciplinary team integrated current science into the development of the draft EIS and Monument Plan. A science review determines whether an analysis or decision document is consistent with the best available science. The review is accomplished by judging whether scientific information of appropriate content, rigor, and applicability has been considered, evaluated, and synthesized in the documents that underlie and record land management decisions.

On November 10, 2009, a public meeting was held in Visalia to introduce the Science Review Panel process and the scientists who reviewed the draft EIS and Monument plan. At that meeting, the public was asked to submit scientific resources for the panel to consider as they review the Forest Service documents. The panel of scientists prepared a report of its review of the draft documents, which was published in Appendix F of the DEIS.

The draft environmental impact statement (DEIS) and draft Monument plan were released for public comment on August 6, 2010. Both volumes of the DEIS and the Monument plan were available for review in hard copy, on compact disc (CD), and on the Sequoia National Forest website: http://www.fs.fed.us/r5/sequoia/gsnm_planning.html. Comments were requested using the Public Commenting portal (http://epubplus.limehouse.com/portal/) and in a transmittal letter. A correspondence database for e-mails was also made available.

Public meetings were held as follows:

- Wednesday, September 15, 2010, from 6:00 to 9:00 p.m., at the Elks Lodge in Porterville.
- Saturday, September 18, 2010, from 1:00 to 4:00 p.m., at the Doubletree Hotel in Bakersfield.
- Tuesday, September 21, 2010, from 6:00 to 9:00 p.m., at the Hilton Garden Inn in Clovis.
- Wednesday, September 22, 2010, from 6:00 to 9:00 p.m., at the Hyatt Regency in San Francisco.
- Wednesday, October 6, 2010, from 6:00 to 9:00 p.m., at the Hyatt Regency in Valencia.
- Thursday, October 7, 2010, from 6:00 to 9:00 p.m., at the Hilton in Pasadena.

The meetings were designed to: (1) offer a brief presentation of the information in, and the layout of, the DEIS and draft management plan; (2) help people understand the NEPA process and identify the information most important to them, so that they could make informed comments on the documents; and (3) allow the public ample time to speak individually or in small groups with specialists to answer specific questions and concerns. Forms were available at each of these meetings for submitting written comments on the DEIS.

Another meeting of the Science Review Panel was held on October 12, 2010, to discuss the science consistency review of the DEIS and the draft management plan.

The public comment period for the DEIS and draft management plan ended December 3, 2010. A total of 79,088 letters, postcards, public meeting forms, e-mails, and faxes containing comments were received from individuals; preservation and environmental groups; businesses; county, state, and federal government entities; tribal governments; placed-based groups; special use permittees; wood products associations; and motorized and non-motorized recreational groups.

Another Science Review Panel was convened on December 12, 2011, to perform a science consistency review of the FEIS. The report of this review is in Appendix F of this FEIS.

Content Analysis of Public Comment on the DEIS and Draft Management Plan

Content analysis followed a systematic process of logging, numbering, reading, and coding all public comments that were submitted. The process ensures that every comment was read, analyzed, and considered.

Each response letter was read in its entirety and discrete comments identified within them. Each comment was assigned a unique tracking number and coded by document or resource topic, based on the action or change requested and the reason(s) behind it.

Once the unique comments were coded, those that were made by different commenters on the same subject were grouped and summarized into public concern (PC) statements that captured the essence of like comments. Every comment has the same value, whether expressed by many or by one respondent.

All original response letters, the coding structure, and other supporting documents are at the Supervisor's Office in Porterville, CA. The coding structure and other supporting documentation are available in the administrative record at the Supervisor's Office in Porterville, CA.

The following table presents the number of responses and number of comments received that give a general picture of the scope of public response to the Monument draft EIS and plan.

Number of Responses, Signatures, and Comments Received During the Public Comment Period for the Monument DEIS

Number of Responses	Number of Comments[1]
79,088	1,280

1. This count includes comments from each master organized response campaign letter, but not the total number of the comments submitted from all respondents of each response campaign.

Considering Different Types of Comments under the National Environmental Policy Act

Agencies have a responsibility under the National Environmental Policy Act (NEPA) to first "assess and consider comments both individually and collectively" and then to "respond…stating its response in the final statement." The content analysis process described in the previous section considers comments received "individually and collectively" and considers them equally, not weighting them by the number received or by organizational affiliation or by any other status of the respondent.

We classified comments, or the concerns identified from them, as either falling within the scope of decision-making for the Monument Plan or falling outside of the scope. Generally, the scope of the plan is the range of connected, similar, or cumulative actions; the alternatives and mitigation measures; and the ongoing, indirect, or cumulative impacts to be considered in the EIS. Generally, the types of comments received and concerns identified that were considered outside of the scope include those that:

- Do not address the purpose, need, or goals of the Monument Plan (e.g., propose an action in areas outside the Monument or that do not directly relate to the action proposed in the plan, or relate to day-to-day operational issues such as law enforcement procedures or road maintenance).
- Address concerns that are already decided by federal law or national policy.
- Suggest an action not appropriate for the current level of planning (e.g., site-specific decisions to construct new roads, campgrounds or facilities, to offer special use permits).
- Propose untenable restrictions on management of the Monument or conflict with approved plans not being revised in the Monument planning process.
- Do not consider reasonable and foreseeable negative consequences.
- Point to only minor editorial corrections.

We further classified comments within the scope of the plan as either substantive or non-substantive. Based on the Council of Environmental Quality's regulations, a substantive comment is one that:

- Questions, with a reasonable basis, the accuracy of the information in the environmental impact statement.
- Questions, with a reasonable basis, the adequacy of environmental analysis as presented.
- Presents reasonable alternatives other than those presented in the DEIS that meet the purpose and need of the proposed action and address significant issues.
- Causes changes or revisions in the proposal.

Non-substantive comments, or concerns identified from them, include those that simply state a position in favor of or against an alternative, merely agree or disagree with Forest Service policy, or otherwise express an unsupported personal preference or opinion.

Summary of Public Comment

This summary provides an analysis of the major themes and concerns submitted by the public during the official comment period for the Monument DEIS and draft management plan. These concerns range in

nature from broad issues to technical specifics. The extensive public comment received demonstrates the intense interest, depth of feeling, and level of concern of the public regarding the management of the Monument.

It is important to recognize that the consideration of public comment is not a vote-counting process in which the outcome is determined by the greatest number of comments on a particular issue. Relative depth of feeling and interest among the public can serve to provide a general context for decision-making. However, it is the relevance, specificity, and factual accuracy of comment content that serves to provide the basis for modifications to planning documents and decisions. Further, those who respond do not constitute a random or representative public sample because they are self-selected, unlike scientifically designed surveys or polls. The NEPA encourages all interested parties to submit comment as often as they wish regardless of age, citizenship, or eligibility to vote. Respondents may include businesses, people from other countries, children, and people who submit multiple responses. Therefore, caution should be used when interpreting comparative terms provided in this report. Every substantive comment and suggestion has value, whether expressed by one respondent or many. All input is read and evaluated and the analysis team attempts to capture all relevant public concerns in the content analysis process described above.

The results of this process serve two related purposes in public land management planning. The first is to fulfill the legal mandate of the NEPA and accompanying CEQ regulations. These statutes require planning teams to seek public comment on significant proposed actions and use it to clarify, modify, or revise analyses and conclusions in order to improve agency decision-making. The public can thus provide a vital contribution to planning efforts. The second goal of content analysis is to provide the public a review of the range of concerns, background issues, and substantive comment submitted on a project.

The Monument DEIS has inspired intense public debate focused primarily on the protection of the giant sequoias and other objects of interest, mechanical treatments, protection of communities or the urban interface, recreational access, and sensitive biological resources. Those supporting Alternative B, the preferred alternative, believe it represents a reasonable balance of interests between resource protection and management activities. Those opposed to Alternative B tend to fall into two broad groups. One group believes the preferred alternative focuses too heavily on active management and does not go far enough to protect forested ecosystems. Therefore members of this group endorse a modified Alternative C or Alternative D that align with a submitted Citizen's Park Alternative. The other group believes Alternative B is too restrictive, especially in regards to the 20-inch diameter limit, and endorses the more flexible Alternative F.

While there is overall agreement among respondents that increasing recreational and urban interface pressures necessitate changes in forest management, there is disagreement as to how those pressures should be alleviated. The reasons for the polarity of opposition to the preferred alternative are well illustrated in the debate between supporters of modified versions of Alternatives C and D and supporters of Alternative F. This debate is driven in large measure by competing values and viewpoints. In general, those who support a modified version of Alternative C and those who support Alternative F fall into two camps in terms of how they value forest resources and in terms of how they view the role of the Forest Service. The differences are not always clearly defined, and may sometimes be more perceptual than real. Therefore common values and fundamental points of agreement among various stakeholders tend to be obscured by conflicting social values and underlying assumptions. These values, personal experiences, and assumptions lead to the expression of impassioned views on public land management in general and the Monument Plan in particular. Most individuals, regardless of which alternative they support, identify themselves in terms of personal background, values, and direct experiences in the Monument. It is clear that this Monument exerts a powerful influence on residents and visitors alike. Respondents care very deeply about the management of the Monument and most express a strong sense of personal ownership. Individuals from all recreational user groups use similar terms to describe why they value recreating

in the Monument. Most often mentioned are the giant sequoias, scenic beauty, open space, the wilderness experience, wildlife, and opportunities for developed and dispersed recreation. However, there is a fundamental lack of agreement over which activities are compatible with each other and with preserving and protecting the objects of interest. The mix and levels of acceptable activities are also hotly contested. It is clear that the preferred public land management approach of each group is rooted in basic differences in viewpoint and values regarding the utility and highest public benefit of the Monument's natural resources.

Those favoring Alternatives C and D tend to see Monument lands as whole ecosystems that are disrupted by management activities. For these respondents, protecting the Monument consists of minimizing human disturbance and encouraging or mimicking natural processes. Active management activities are often viewed as unnecessary and unwise meddling in complex natural systems that humans do not yet fully understand. Supporters of a modified Alternative C wish to see the Monument managed in a manner that mimics the neighboring Sequoia and Kings Canyon National Parks (SEKI), want to see little or no management of the Monument, and see the forest as an ecosystem whose long-term functioning is best preserved by restoring natural disturbance regimes such as fire, insect, and disease cycles. They note that disease, death, and decay are not only normal but crucial elements of natural systems, and extensive human interference harms the delicate balance of nature. Persons holding this view place a high priority on protecting the environment. They believe intact forest ecosystems should be protected for their own intrinsic value, for the benefit of wildlife, and for the non-commodity benefits public lands offer to humans. Many thus describe the Monument as an important provider of under-appreciated but vital ecosystem services such as biodiversity, clean drinking water and air, solitude, and spiritual renewal. As such, they believe that ecosystem protection is rarely compatible with active management or intensive motorized use.

While they value many similar forest characteristics, advocates of Alternative F perceive proper management of Monument lands differently than those who favor Alternatives C and D. They also see national forests in terms of the resources they offer for human use, but identify a different set of primary uses. Many of these users also express significant concern for the environment. However, they feel that negative impacts of human activity are greatly exaggerated. Respondents often note that they themselves are local and responsible users who cause no harm. They are therefore personally insulted by accusations to the contrary from those they believe lack local knowledge. Since they feel that their activities are legitimate and sustainable uses, any proposed restrictions on their activities are perceived as a violation of fundamental fairness, democratic principles, and civil liberties. Some feel that the Forest Service is over-reacting to unsupported charges of damage and legal threats by environmentalists.

Those supporting Alternative F tend to see national forests as natural systems whose health is often threatened by unmanaged natural processes. They tend to favor a utilitarian or agricultural model whereby human ingenuity and modern vegetation management can maximize forest health for human benefit. These respondents argue that the management approach dictated by Alternatives C and D sentences the Monument to catastrophic wildfire, increased disease and insect damage, and wasted plant resources. Moreover, they argue, prudent management benefits wildlife as well as humans by creating varied game habitat.

Thus what separates the supporters of various alternatives is a difference in perspective regarding the fundamental nature of public lands, ecosystem health, appropriate human uses, and the role of land managers. This difference in perspective gives way to significant polarization on all sides and the sentiment that all users have a great deal to lose depending on the outcome of the Monument Plan. This in turn leads to public concern over the objectivity of the decision-making process and each group's ability to influence the planning process. In summary, those favoring Alternative C and those favoring Alternative F appreciate similar natural characteristics of the Monument but hold very different assumptions and beliefs regarding the true environmental effects of various uses and the proper mix of management activities. These competing views are expressed

by respondents within the context of a number of concerns relevant to the Monument Plan and DEIS. The DEIS identified 12 issues:

1. Recreation and Public Use
2. Road and Trail Access
3. Diverse Array of Wildlife and Their Habitats
4. Fuels Management/Community Protection
5. Tree Removal
6. Methods for Giant Sequoia Regeneration
7. Fires Spreading to Tribal Lands
8. Obligation to Analyze MSA under NEPA
9. Manage the Monument Like Sequoia and Kings Canyon National Parks
10. Convene a New Scientific Advisory Board
11. Tribal Access to and Protection of Cultural Sites
12. Livestock Grazing

The themes addressed by those commenting on the Monument DEIS are, for the most part, complementary to these issues.

Planning

Decision-making

PC #460: The Forest Service should make sure that the final decision rests with the Secretary of Agriculture and not the Forest Service.

Response: The Clinton proclamation stipulates that the Giant Sequoia National Monument be managed by the Secretary of Agriculture through the Forest Service. The decision maker for the Monument Plan is the Regional Forester; however, before any decision is issued, there will be a review at the Forest Service headquarters for concurrence. The review process includes briefings at various staff levels that include the Chief and briefings with the Secretary's Office. When that process is completed a decision will be issued. The decision, in a technical sense, is issued by the Secretary through the Forest Service (the Regional Forester).

PC #462: The Forest Service should collaborate with the SEKI in visitor recreation, invasive plants, and cultural resources, as well as in managing prescribed burns and coordinating fire protection activities.

PC #464: The Forest Service should continue to coordinate efforts and share information with land management agencies that share boundaries with the Monument.

Response (to PC #s 462 and 464): We agree. The Sequoia National Forest coordinates with other agencies, including its neighbor SEKI. The forest and the parks share wilderness information, have a partnership that includes Forest Service employees working at the Kings Canyon Visitor Center, and have a Service First Agreement to help staff the visitor center and entrance station at Big Stump. The national forest has a signed agreement with the parks for the Generals Highway between Grant Grove and Wuksachi Village, and the parks manage the entire road.

For cultural resources, the forest and the parks collaborate by sharing archaeological data, holding informal quarterly meetings with Monument and Park archaeologists, and jointly holding the Data Share Archaeology of the Southern Sierra annual meetings. They also work together on projects along the boundary and help each other during fires.

The forest and the parks have jointly managed several lightning-caused wildfires and prescribed burns. Their continued working relationship has enhanced both agencies' ability to manage wildfire in a cost effective manner by applying the lessons learned approach. The Forest Service, National Park Service, and other federal agencies follow the "Guidelines for Implementation of Federal Wildland Fire Management Policy," which include using common standards, maintaining cross-jurisdictional agreements, coordinating responses to wildland fire, and intergovernmental fire management planning.

The Sequoia National Forest will continue to cooperate and collaborate with adjacent land management agencies in its adaptive management of the Monument. The joint strategic framework, "A Strategic Framework for Science in Support of Management in the Southern Sierra Nevada Ecoregion," an adaptive management strategy to address climate change in the southern Sierra Nevada, was developed with the National Park

Service to incorporate current and new science. This document continues to be re-examined and updated by all of the agencies that cooperated in its development, including the National Park Service, the Forest Service Pacific Southwest Research Station, and the U.S. Geological Survey.

Strategies for using this framework are included in the Scientific Study and Adaptive Management Strategies listed in Chapter 2 of the FEIS (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Scientific Study and Adaptive Management; Strategies). In addition, as part of the Partnership Strategy established in the Monument Plan, the Sequoia National Forest will strive to "expand partnerships with other federal, state, and local government agencies, as well as associations, non-government organizations, and other community groups, to leverage information and resources for mutual benefit" (Management Plan, Appendix E—Partnership Strategy).

PC #463: The Forest Service should apply the management direction and policies of the SEKI in the Monument, where logging is not allowed.

Response: Managing the Monument like the neighboring Sequoia and Kings Canyon National Parks was raised as an issue in scoping and developed as Issue 9 in Chapter 1 of this FEIS (FEIS, Volume 1, Chapter 1, Issues).

Alternative C was developed "to manage the Monument similar to SEKI in a manner that is consistent with Forest Service regulation and the direction of the Clinton proclamation. It was determined that some management policies or direction from SEKI would not be applicable to the Monument because of differences in law, regulation, and policy for the two federal agencies. In Alternative C, restoration activities would focus on areas that have been affected by human use and occupation" (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative C, Alternative Theme). In order to manage the Monument with similar strategies as the national parks, some land allocations associated with the Forest Plan and the 2001 SNFPA would be removed. This is to mimic SEKI's management of areas outside of human use as a single ecosystem with minimal use of tools. Land allocations/ management areas designating grove influence zones, protected activity centers, den sites, old forest emphasis, and riparian conservation areas or critical aquatic refuges would not be carried forward in this alternative (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative C, Management Direction).

Compared to SEKI, there are many more private communities inside the Monument, several directly adjacent to or partly inside giant sequoia groves. In the Monument, wildland urban intermix (WUI) zones are designed to protect communities and the objects of interest. Treatments for fuels reduction and ecological restoration are prioritized in WUI defense zones to reduce the spread and intensity of wildfire (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Fire and Fuels Strategies). Therefore, even though SEKI does cut and remove larger trees that are determined to be public hazards, more vegetation management is likely in more areas of the Monument to protect life, property, and the objects of interest.

Whereas diameter limits are set for tree felling and removal in the alternatives considered for the Monument, SEKI does not have an established diameter limit. Any tree felling or tree removal in the Monument must meet the criteria for determining the appropriateness of tree felling and the clear need for tree removal (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Reader's Guide to Alternative Descriptions, Ecological Restoration, Removal of Trees from Within the Monument). By applying specific criteria for determining a clear need for tree removal, the Monument Plan places more restrictions on tree removal in the Monument than currently exist in the adjacent national parks, where trees may be cut and removed for a variety of reasons. For example, trees are removed from SEKI for construction projects, to reduce safety hazards, and for fire safety (Hendricks 2011, SEKI/YOSE letter), whereas in the Monument all tree removal must meet criteria for protecting the objects of interest and communities, promoting resiliency, or reducing safety hazards.

PC #465: The Forest Service should provide the rationale for treating borders along the tribal lands

differently than any other part of the Monument boundary.

Response: The Tule River Indian Tribe of California (Tribe) is a federally recognized tribe and as such it is the policy of the USDA to consult and coordinate with them on a government-to-government basis in compliance with Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments) prior to making a decision. Throughout the Monument planning process, the Sequoia National Forest has consulted with the Tribe, in particular regarding their comment letter submitted during scoping. In this letter, the Tribe raised their concerns about the area within the Monument adjacent to their reservation, which was identified as the Tribal Fuels Emphasis Treatment Area (TFETA). The Tribe expressed concerns over fires spreading to tribal lands from the Monument. Not only is the TFETA adjacent to the Tribe's land, but it also contains the headwaters for their drinking and agricultural water supply, as well as objects of interest that have cultural significance for the Tribe. According to Departmental Regulations (DR 1350-001), the USDA should "Fully consider the information, input and recommendations from tribes and address tribal concerns as much as practicable on proposed decisions" (2008, p. 4). Alternatives B and F as analyzed in the FEIS include the TFETA.

PC #480: The Forest Service should disclose who in the tribal community expressed concerns about fire.

Response: The Sequoia National Forest is in negotiation with the Tule River Indian Tribe on a memorandum of understanding that formally recognizes the government-to-government relationship between the Tribe and the Forest Service. This memorandum of understanding will outline the goal of increased cooperation between the Sequoia National Forest and the Tribe in order to develop community opportunities and partnerships in areas of mutual interest. It documents national forest recognition of the importance of the Indian tribe and its need to have access to, and the use of, certain natural resources existing in the national forest. Other Native American tribes have expressed interest in similar memorandums of understanding but no formal negotiations have taken place (FEIS, Volume 1, Chapter 3, Tribal and Native American Interests).

In addition to submitting a comment letter during the scoping period, the Tule River Indian Tribal Council, tribal forestry and environmental staff members, and Elders Council met with the Forest Service, both formally and informally, to discuss the Monument planning process and the MSA, and to provide their concerns and input (FEIS, Volume 1, Chapter 1, Public Involvement, Third-Party Facilitation).

Issues 7 and 11, Fires Spreading to Tribal Lands, and Tribal Access to and Protection of Cultural Sites, were formulated from the comments received from the Tule River Indian Tribal Council. Issue 7 reflects their concern that a large wildfire spreading to the Tule River Indian Reservation from the Monument could result in irreversible damage to the tribe's watershed resources and community; and Issue 11 addresses the potential for resource management activities and increased public use to negatively affect tribal member access to traditional sites and the cultural resources in the Monument (FEIS, Volume 1, Chapter 1, Issues).

PC #466: The Forest Service should define goals as required by the NFMA, and not use "aspirational" desired conditions in their place.

Response: The 1982 Forest Service planning process at 36 CFR 219.3 states that forest plans shall include "forest multiple-use goals and objectives that include a description of the desired future condition of the forest or grassland." A goal is defined as:

> a concise statement that describes a desired condition to be achieved sometime in the future. It is normally expressed in broad, general terms and is timeless in that it has no specific date by which it is to be completed (36 CFR 219.3).

We have interpreted this to mean that goals and desired conditions are essentially the same. There is precedent for this interpretation. In the southern California Plan Revisions, desired conditions were cited as fulfilling the requirement for goals in forest plans.

In this FEIS and the Monument Plan, desired conditions are the goals that we are seeking to achieve over time. Like the traditional description of a goal, desired conditions may be achieved as the result of a project or they may be achieved at some point in the future. In that sense desired conditions, like goals, are "aspirational." We believe that we are consistent with the 1982 processes through the use of desired conditions as goals.

PC #467: The Forest Service should acknowledge the constraints that the 2000 Presidential Proclamation, the District Court's 2006 Order, the 1990 Mediated Settlement Agreement, the National Environmental Policy Act, and the National Forest Management Act place on the management actions possible in the Monument.

Response: The Forest Service acknowledges these documents and agreements and their relationship to developing a management plan for Monument, as stated in the FEIS:

The proposed action and alternatives are guided by the 1988 Sequoia National Forest Land and Resource Management Plan (Forest Plan) (USDA Forest Service 1988a), as amended by the 1994 Kings River Wild and Scenic River and Special Management Area Implementation Plan (KRSMA), the 2001 Sierra Nevada Forest Plan Amendment (2001 SNFPA) (USDA Forest Service 2001c), and the 2007 Sierra Nevada Forest Management Indicator Species Amendment (2007 SNF MIS) (USDA Forest Service 2007a).

The Judgment for Case 3:05-cv-00898-CRB, Document 76, Filed 10/11/2006, Page 1 of 3, United States District Court For the Northern District of California, Judge Charles R. Breyer, ruled that the Monument area would be managed as follows:

In the interim, and until the Forest Service issues a new Management Plan, the Monument shall be managed consistent with the Monument [Clinton] Proclamation of April 15, 2000, and in accordance with direction from the 1988 Sequoia National Forest Land and Resource Management Plan, as amended by the 1990 Mediated Settlement Agreement and the 2001 Sierra Nevada Forest Plan Amendment.

Subsequent to this judgment, the Record of Decision, June 2007, for the Sierra Nevada Forests Management Indicator Species Amendment further amended the Sequoia Forest Plan, and this direction has been incorporated into the current management of the Monument (FEIS, Volume 1, Chapter 1, Current Management Direction).

The desired conditions, strategies, objectives, and standards and guidelines developed for each of the alternatives considered all of the current management direction in determining what combinations were applicable to their different themes.

PC #468: The Forest Service should commit to upfront, site-specific NEPA evaluation for all projects likely to result in resource impacts.

Response: In the beginning of Chapter 4 of the FEIS, it states:

The Giant Sequoia National Monument Management Plan is a programmatic plan that defines and describes the management direction for the Monument for the next 10 to 15 years. Programmatic plans are consistent with national direction and are, by nature, strategic and make no site-specific project decisions (FEIS, Volume 1, Chapter 4, Types of Effects).

This FEIS does not include any decisions on specific projects or activities. Those decisions will be made later, after more detailed analysis of specific project sites and additional public involvement on site-specific proposals. Compliance with the National Environmental Policy Act (NEPA) is required for any project-level decision that may have an effect on the environment. Project-level decisions must be informed by site-specific analysis through an open, public process. In addition, all site-specific projects in the Monument must be in conformance with the Monument Plan, including the standards and guidelines applicable to the land allocations and management areas. Projects may only deviate if they follow the procedures for amending or revising the plan (FSM 1921.3; FSH 1909.12, Chapter 20, Sec. 25.2).

PC #469: The Forest Service should prepare a plan revision rather than an amendment because this is a

significant change from the direction in the Forest Plan and in the determination of the land base that is suitable for timber production.

Response: The Forest Service decided to prepare the management plan for the Monument as an amendment to the existing Forest Plan in order to focus on and fully address the issues that are unique to the management of the National Monument. The agency expects to initiate the revision of the Forest Plan for the remainder of the Sequoia National Forest in 2012, consistent with the requirements of the National Forest Management Act (NFMA). The management plan for the Monument will be carried forward in the revision of the Forest Plan. The determination of timber suitability is appropriate for the revision of the Forest Plan and will be addressed there. The Clinton proclamation is clear that:

> No portion of the monument shall be considered to be suited for timber production, and no part of the monument shall be used in a calculation or provision of a sustained yield of timber from the Sequoia National Forest (Clinton 2000, p. 24097).

Therefore, since 2000 and continuing under the Monument Plan, there are no suitable acres for commercial timber harvest identified within the Giant Sequoia National Monument.

PC #470: The Forest Service should finally take a logical, common sense approach to the management of this forest with the knowledge of people who really know this forest, not those who have sent in thousands of pre-printed comment letters.

Response: The process and procedure for responding to public comments is set forth in the NEPA and the CEQ implementing regulations (40 CFR 1503.4, 1506.6) as described in FSH 1909.15. All comments on the Monument DEIS and draft Monument Plan were compiled, organized, read, and analyzed. Individual comments that relate to a particular topic of concern or resource consideration are identified, as well as the reason or rationale for the comments, to help determine which are substantive comments. All comments that are submitted as part of an organized response (or "form letter") campaign are also considered. However, it is important to recognize that the consideration of public comment is not a vote-counting process in which the outcome is determined by the greatest number of comments on a particular issue. It is the relevance, specificity, and factual accuracy of comments that serve to provide the basis for modifications to planning documents and support for making an informed decision.

We do recognize that decisions and management actions for a national forest can directly affect those living in or near it. We appreciate your comments which include your personal and local knowledge of the Sequoia National Forest and the Giant Sequoia National Monument.

PC #471: The Forest Service should transfer the Monument to the Sequoia National Park.

Response: Neither the Forest Service, nor the Department of Agriculture, has the authority to transfer land to another agency or department unless it involves the rights-of-way for highways and other roads. The National Forest Management Act of 1976 limits the President's authority and states that boundaries may be changed but land cannot be removed from national forest status. Forest Service Manual 5400 (regarding landownership) states that "A jurisdictional transfer involving National Forest lands requires an act of Congress, except when specifically authorized (FSM 5450.1)" (FSM 5452.1).

PC #472: The Forest Service should clearly define ecological restoration, the desired future conditions, and the goals of restoration.

PC #568: The Forest Service should interpret "ecological restoration" to mean letting "natural processes" take over, not "management activities."

Response (to PC #s 472 and 568): The Forest Service definition for ecological restoration can be found in the Forest Service Manual, Chapter 2020, Ecological Restoration and Resilience (FSM 2000, Sept. 22, 2008), which defines it as:

> The process of assisting the recovery of resilience and adaptive capacity of ecosystems that have been degraded, damaged, or destroyed. Restoration focuses on establishing the composition, structure, pattern, and ecological processes necessary to make terrestrial and aquatic ecosystems sustainable, resilient, and healthy under current and future conditions.

In addition, the Pacific Southwest Region of the Forest Service has published a Region 5 Ecological Restoration Leadership Intent that states:

> Our goal for the Pacific Southwest Region is to retain and restore ecological resilience of the National Forest lands to achieve sustainable ecosystems that provide a broad range of services to humans and other organisms. Ecologically healthy and resilient landscapes, rich in biodiversity, will have greater capacity to adapt and thrive in the face of natural disturbances and large scale threats to sustainability, especially under changing and uncertain future environmental conditions such as those driven by climate change and increasing human use. (USDA 2011).

The discussion of ecological restoration in the Monument has been moved to its own section before the alternative descriptions in Chapter 2 of the FEIS (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Reader's Guide to Alternative Descriptions, Ecological Restoration). In addition to describing how ecological restoration is defined by the Forest Service and the Pacific Southwest Region, this section discusses how the Monument will be managed for ecological restoration in compliance with the Clinton proclamation.

The Forest Service will comply with the proclamation in managing the Monument to protect the objects of interest, restore ecosystems, and provide opportunities for public use (FEIS, Volume 1, Chapter 1, Purpose and Need). Some management activities are needed to reduce fuels and protect the objects of interest from uncharacteristically severe wildfires, to meet restoration needs, and to move the Monument towards the desired conditions. Given the current conditions of the Monument as described in Chapter 3, and the needs described in the Clinton proclamation to address the unprecedented buildup of surface fuels and failure in sequoia reproduction (Clinton 2000, p. 24095), restoration activities are necessary.

Alternative D as analyzed in this FEIS focuses on managing through natural processes with little to no human manipulation. It relies on naturally-occurring fire to reduce fuels, to protect the objects of interest, and to promote giant sequoia regeneration (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative D).

PC #473: The Forest Service should substantiate proposed projects that include tree removal with site-specific scientific findings.

Response: Any treatments that include tree removal will be based on a determination that they are "clearly needed for ecological restoration and maintenance or public safety" (Clinton 2000, p. 24097). As stated in Chapter 2 of the FEIS, "A clearly needed evaluation is required and will be completed before any site-specific projects that propose tree removal take place in the Monument" (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Readers Guide to Alternative Descriptions, Ecological Restoration, Removal of Trees from Within the Monument). Appendix A to the FEIS includes a decision tree, as recommended by the Scientific Advisory Board, to help determine which methods of ecological restoration and maintenance should apply at different locations (FEIS, Volume 2, Appendix A, All Action Alternatives, Decision Tree).

PC #474: The Forest Service should protect fire vulnerable, large fallen logs and sequoia snags as a natural part of the grove ecosystem.

Response: Standards and guidelines for snag and down log retention specific to the Monument have been developed and added to the FEIS (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Monument-wide). These guidelines require that projects be designed to provide a sustainable population of medium- and large-diameter snags, set minimum numbers and amount of snags and well-dispersed down logs, and retain felled trees, where needed, to meet down woody material standards.

PC #475: The Forest Service should select an alternative that includes proactive forest restoration outside the WUI zones.

Response: All of the action alternatives (Alternative B through Alternative F) include treatments in giant sequoia groves outside of the wildland urban intermix (WUI) zones (FEIS; Volume 1; Chapter

2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Fire and Fuels Strategies), to protect the objects of interest and for ecological restoration.

PC #476: The Forest Service should emphasize the ecosystems and limit recreation.

Response: A range of recreation opportunities is made available in the alternatives considered in detail. A table in Chapter 2 that summarizes the environmental effects on resource areas displays the emphases and limitations for recreational opportunities in each alternative (FEIS, Volume 1, Chapter 2, Comparison of Alternatives, Comparison of Alternatives by Environmental Effects on Resources).

The Clinton proclamation places an emphasis on ecological restoration and provides the context in which to use ecological restoration for protecting and caring for the objects of interest. The proclamation also states: "The plan will provide for and encourage continued public and recreational access and use consistent with the purposes of the monument" (Clinton 2000, p. 24097).

PC #477: The Forest Service should preserve the long-term health of the Monument's ecosystems and not increase logging.

PC #567: The Forest Service should not increase logging beyond what was allowed in the forest prior to its designation as a national monument.

Response (to PC #s 477 and 567): As the FEIS states, the purpose of the Monument Plan is to "protect the objects of interest and manage Monument resources to restore ecosystems and provide opportunities for public use" (FEIS, Volume 1, Chapter 1, Purpose and Need). The desired conditions for the Monument, as well as the strategies and objectives designed to move the Monument toward the desired conditions, are designed to restore ecosystems (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives). There is no intent to increase logging in the Monument, or to promote logging in the Monument; to the contrary, management direction is designed to follow the clear intent of the Clinton proclamation:

> No portion of the monument shall be considered to be suited for timber production, and no part of the monument shall be used in a calculation or provision of a sustained yield of timber from the Sequoia National Forest. Removal of trees, except for personal use fuel wood, from within the monument area may take place only if clearly needed for ecological restoration and maintenance or public safety (Clinton 2000, p. 24097).

A clearly needed determination is required and will be completed before any site-specific projects that propose tree removal take place in the Monument (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Ecological Restoration, Removal of Trees from Within the Monument). Any felling of trees in the Monument must be based on established criteria (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Ecological Restoration, Tree Felling); cut trees may then only be removed from the Monument if it is determined necessary for ecological restoration and maintenance or public safety, as prescribed by the Clinton proclamation, and based on the established criteria for tree removal (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Ecological Restoration, Removal of Trees from Within the Monument). Any volume of wood products removed will be incidental to fuels reduction and vegetation management projects for ecological restoration.

PC #478: The Forest Service should adopt a management plan guided by the best available science.

Response: The FEIS and Monument Plan are "guided by the best available science, a thorough review of relevant scientific information, and practical experience" (Monument Plan, Part 1—Vision, Relationship of Monument Plan to Other Documents). The desired conditions for the Monument include that resource management decisions be based on sound science, that research projects focus on science relevant to managers, and that there be continuous collaboration between scientists and managers (FEIS; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Scientific Study and Adaptive Management).

PC #566: The Forest Service should use fire as a basic tool in habitat restoration programs and reserve mechanical thinning for areas adjacent to man-made structures.

Response: Each of the alternatives considered in detail proposes the use (in varying amounts) of both prescribed burning and managed wildfire as tools for fuels reduction and vegetation management projects. These alternatives emphasize the use of strategies that are designed to restore ecosystems and wildlife habitat in the Monument. As an example, the use of fire as a tool is emphasized in Alternatives B, C, and D.

The use of prescribed fire and managed wildfire is expected to help with the restoration of landscape structure and heterogeneity, as well as produce fire effects associated with natural diversity. Prescribed fire is the preferred tool from a wildlife habitat point of view. Where fuels are heavy and wildfire effects would likely move away from desired conditions, managed wildfire is unlikely to be a viable option. In many areas of the Monument, because of high fuel loading, mechanical treatments may be necessary before fire, even prescribed fire, is reintroduced. Otherwise there is a risk of adversely affecting the desired habitat structures that we are trying to protect. In addition, there may be increased risk to firefighter safety in these situations.

PC #617: The Forest Service should explain more clearly that this EIS is being done under the 1982 Planning Rule.

Response: The planning process outlined in the 1982 planning rule has been employed in the development of the Monument Plan. As described in Chapter 1 of the FEIS, this amendment to the Forest Plan is conducted under the transition provisions of the 2012 Planning Rule, which allow plan amendments already in progress to continue to use the transition provisions of the 2000 Planning Rule, which in turn allow use of the 1982 planning process. To clarify this, the following paragraph has been added:

> The Regional Forester has decided to use the provisions of the prior 1982 planning regulation. This amendment has been prepared using the process outlined in the 1982 planning regulations, while also considering the best available science as required by the 2000 rule transition provisions (36 CFR 219.35(a) [2010]). While the Forest Service will explicitly approve this project under the 1982 rule, it has also implicitly evaluated the project under the 2000 transitional, best available science rules (FEIS, Volume 1, Chapter 1, Background, Planning Rule).

Purpose and Need

PC #522: The Forest Service should modify the Purpose and Need statement to actually include a "purpose" statement, to include a "need" to protect the objects of interest, and to delete the reference to the 2007 MIS Amendment.

Response: The Purpose and Need section of the FEIS has been modified to include a more defined purpose statement and expand upon the need to protect the objects of interest (FEIS, Volume 1, Chapter 1, Purpose and Need).

The 2007 Sierra Nevada Forests Management Indicator Species Amendment (2007 SNF MIS) is a plan amendment for each of the Sierra Nevada national forests. Therefore, the amendment is part of the current management direction for the Sequoia National Forest.

This amendment is based upon recent analysis and a reasoned determination of the best MIS to meet the objectives of national forest management in the Sierra Nevada range, and represents the best available scientific information regarding suitable MIS for the Monument. This direction, as well as the 1994 Kings River Wild and Scenic River and Special Management Area Implementation Plan (KRSMA) and the 1992 Bush proclamation, have been incorporated into the current management direction for the Monument (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative A, Alternative Theme).

PC #495: The Forest Service should explain or analyze that each of the alternatives proposed is in compliance with the Proclamation's directive to achieve ecosystem restoration.

Response: Each of the alternatives complies with the Clinton proclamation and restores ecosystems. The alternatives have different approaches to achieve ecosystem restoration, some using active

management to more quickly and actively restore damaged, degraded, or destroyed landscapes, while others rely upon natural processes to achieve it over longer periods of time. A section has been added before the description of the alternatives to define ecological restoration and to describe the types of treatments considered to accomplish restoration (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Readers Guide to Alternative Descriptions, Ecological Restoration). In addition, the effects analysis for each resource area in Chapter 4 begins with a description of what ecological restoration means for that resource, and the subsequent analyses track how well this would be accomplished in the alternatives (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology, etc.).

PC #523: The Forest Service should provide a purpose to restore fire to the ecosystem.

Response: The second need identified in the Purpose and Need is to comply with the Clinton proclamation by managing the Monument to restore ecosystems (FEIS, Volume 1, Chapter 1, Purpose and Need). Restoring fire to the ecosystem is addressed in two of the needs brought forward from the Clinton proclamation for protecting the objects of interest in the Monument (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative A, Management Direction):

- Provide for the survival of mature giant sequoias and the establishment of young giant sequoias to assure the continued existence of this species. Consider the effects of fire exclusion, climate change, and other environmental changes on the regeneration, range, and distribution of giant sequoias.

  Sequoias and their surrounding ecosystems provide a context for understanding ongoing environmental changes. For example, a century of fire suppression has led to an unprecedented failure in sequoia reproduction in otherwise undisturbed groves. Climatic change also has influenced the sequoia groves; their present highly disjunct distribution is at least partly due to generally higher summertime temperatures and prolonged summer droughts in California from about 10,000 to 4,500 years ago. During that period, sequoias were rarer than today. Only following a slight cooling and shortening of summer droughts, about 4,500 years ago, has the sequoia been able to spread and create today's groves (Clinton 2000, pp. 24095-24096).

- Restore ecosystems and ecological processes that may be altered because of a century of fire suppression and large-scale logging, so that forest resiliency to large-scale wildfire and other potentially catastrophic events is improved.

  These giant sequoia groves and the surrounding forest provide an excellent opportunity to understand the consequences of different approaches to forest restoration. These forests need restoration to counteract the effects of a century of fire suppression and logging. Fire suppression has caused forests to become denser in many areas, with increased dominance of shade-tolerant species. Woody debris has accumulated, causing an unprecedented buildup of surface fuels. One of the most immediate consequences of these changes is an increased hazard of wildfires of a severity that was rarely encountered in pre-Euroamerican times. Outstanding opportunities exist for studying the consequences of different approaches to mitigating these conditions and restoring natural forest resilience (Clinton 2000, p. 24096).

The desired condition for Fire and Fuels addresses restoring fire to the ecosystem:

Fire occurs in its characteristic pattern and resumes its ecological role. Frequent fire maintains lower, manageable levels of flammable materials in most areas, especially in the surface and understory layers. There is a vegetation mosaic of age classes, tree sizes, and species composition and a low risk for uncharacteristic large fires. The objects of interest are protected; sustainable environmental, social, and economic benefits (such as those associated with tourism) are maintained; and the carbon sequestered in large trees is stabilized.

> Fuel reduction treatments in the wildland urban intermix (WUI) zones are focused on developed areas within these zones. The need to maintain fuel conditions that support fires characteristic of complex ecosystems is emphasized and allows for a natural range of fire effects, while protecting human life and property on lands in and adjacent to the Monument. (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Vegetation, including Giant Sequoias/Fire and Fuels; Fire and Fuels Desired Conditions).

And finally, the Affected Environment for Fire and Fuels states that:

> Within the Monument, it is desirable for fire to recur in its characteristic pattern and resume its ecological role. Restoring fire regimes would greatly enhance the resilience of ecosystems to uncharacteristically severe or damaging fires. While the restoration of fire is likely to result in long-term reduction in susceptibility to large damaging fires, consideration of human health and safety and other resource values will require prioritization of fires to specific emphasis areas. In other areas permanent changes to fire regimes may result in long-term changes to the geographic distribution of ecosystems (FEIS, Volume 1, Chapter 3, Fire and Fuels).

Public Involvement

PC #479: The Forest Service should address specific concerns and make clear and objective presentations at public meetings.

PC #569: The Forest Service should promote effective participation in the public meetings, not prevent the public from directly confronting the agency.

> **Response (to PC #s 479 and 569):** NEPA requires the Forest Service to provide public hearings or public meetings so that the public can provide input and comment on the draft EIS and other pertinent draft documents. For the Monument Plan and DEIS, the Forest Supervisor held public meetings throughout the state of California to inform the public of the proposed action, the alternatives, the affected environment, and the potential environmental effects from the alternatives, as well as to elicit input and comments (FEIS, Volume 1, Chapter 1, Public Involvement).
>
> The meetings were designed to: (1) Offer a brief presentation of the information in, and the layout of, the DEIS and Draft Management Plan; (2) Help people understand the NEPA process and find the information most important to them, so that they could make informed comments on the documents; and (3) Allow the public ample time to speak individually or in small groups with specialists to answer specific questions and concerns. At nearly every public meeting, there was a facilitator present to allow for a structured discourse. The meetings commenced with a presentation to the group, which was followed immediately by a formal question and answer session with the Forest Supervisor, interdisciplinary team members, and Forest Service specialists. These components of the meetings were conducted with the entire group of attendees. Questions were answered by the Forest Supervisor, with help from the interdisciplinary team, so that everyone attending could hear both the question and the answer, ask follow-up questions, address conflicting views, and participate in the entire discussion.
>
> Following the formal question and answer part of the meetings, the specialists were available for questions that the public wanted to ask in a one-on-one setting or were not comfortable asking in the formal group setting. When a member of the public had a discussion with Forest Service specialists or made a comment, they were encouraged to write their comments on comment forms available at nearly every table in the meeting room. Several computer stations were also available to help attendees understand and use the project websites.

PC #483: The Forest Service should provide a comprehensive table of outputs for all resources in the Monument, including recreation and grazing, calculated at the programmatic level.

> **Response:** The FEIS includes a description of potential outputs in the discussion of how the economic benefits and costs are expected to change by alternative (FEIS, Volume 1, Chapter 4, Effects on Human Use, Effects on Socioeconomics, Indirect Effects).

At this time, it is not possible to quantify changes to the number and type of recreation visits to the Monument caused by any particular alternative. Therefore, changes to the Forest Service contribution to the economy attributable to recreation are too speculative to be quantified.

Livestock grazing within the Monument covers approximately 218,000 acres of grassland, chaparral, open forest, and riparian meadows. There are 22 grazing allotments wholly or partially within the Monument, located in two counties. Approximately 15,757 head months (HMs) of livestock grazing are permitted within the Monument. The Grazing Allotments in the Monument table in Chapter 3 displays current information on the existing allotments (FEIS, Volume 1, Chapter 3, Range). None of the alternatives in this FEIS propose changes to grazing management in the Monument.

An estimate is given of the incidental timber and biomass that may be expected from restoration activities, as projected by the SPECTRUM model. This information is required by the 1982 planning procedures and is being included to maintain consistency with those procedures; however, there is no commercial timber harvest planned within the Monument and any biomass produced will only be as a result of ecological restoration activities.

PC #484: The Forest Service should have used the open collaborative process to tailor make Alternatives C and D in a way appropriate to the Monument and national forest management.

PC #459: The Forest Service should modify Alternatives C and D so they do not sharply decrease dispersed recreation or snowmobiling.

Response (to PC #s 484 and 459): Alternative C was developed to mimic the management practices of the adjacent Sequoia and Kings Canyon National Parks (SEKI), in a manner that is consistent with Forest Service regulation and the direction of the Clinton proclamation. It was developed in consultation with SEKI, and to respond to Issue 9, Manage the Monument Like the Sequoia and Kings Canyon National Parks. This alternative is not an exact replica of SEKI management because some national park management policies and direction could not be applied to the Monument (FEIS, Volume 1, Chapter 1, Issues).

Alternative C meets recreation provisions of the proclamation by focusing on developed recreation sites, with new development located in recreation opportunity areas. The recreation demand analysis indicates a preference by overnight visitors to the Monument for camping in developed sites over primitive camping. More developed campgrounds may be proposed in this alternative than currently exist, in order to better satisfy public demand and attract use. New campgrounds are expected to be at the higher end of the development scale (including amenities such as flush toilets and RV hookups). Lodges, cabins, or other overnight accommodations could also be developed. This type of development complies with the direction in the proclamation to "encourage continued public and recreational access and use consistent with the purposes of the monument" (Clinton 2000, p. 24097), by not only responding to public demand, but also protecting the objects of interest by minimizing the effects of new recreation development and dispersed/end of road camping on the surrounding ecosystem.

Alternative D focuses on natural processes with little to no human manipulation, relying on naturally-occurring fire to reduce fuels, protect the objects of interest, and promote giant sequoia regeneration (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Summary of Alternatives). In Alternative D, existing recreation opportunities would be maintained. Dispersed camping is allowed, and new development is limited to walk-in picnic areas and walk-in campgrounds, since no new roads would be constructed. Alternative D restricts snowmobiles to paved roads (FEIS, Volume 1, Chapter 4, Effects on Human Use, Effects on Recreation, Indirect Effects, Provides Access, Roads), whereas under current management in Alternative A, pursuant to the proclamation, designated roads for snowmobile use do not need to be paved.

PC #485: The Forest Service should not make use of a Limehouse website that does not allow people to comment in any manner they wish.

Response: The Limehouse comment portal was developed to give the public the opportunity to

comment on-line. We understand that some did not prefer to use this web-based method, and that some had trouble using it. Therefore, comments on the DEIS and draft Monument Plan that were received by e-mail, FAX, and regular mail, and collected at public meetings, were also accepted and included in the comment analysis process. Many people responded in more than one way; all comments were accepted from any source. A total of 1,280 comments were received from 79,088 respondents.

Alternatives

PC #110: The Forest Service should re-examine the rationale for eliminating grazing from the Monument as an issue.

Response: The Clinton proclamation is clear that grazing can continue in the Giant Sequoia National Monument:

> Laws, regulations, and policies pertaining to administration by the Department of Agriculture of grazing permits and timber sales under contract as of the date of this proclamation on National Forest System lands within the boundaries of the monument shall continue to apply to lands within the monument (Clinton 2000, p. 24098).

Our assessment of the management situation did not indicate any need to change grazing in the Monument and the alternatives do not include any recommendations for change. The potential effects from grazing are addressed as ongoing effects in the analysis of the environmental consequences described for all resources is Chapter 4 of the FEIS consistent with the requirements of NEPA (FEIS, Volume 1, Chapter 4).

PC #112: The Forest Service should provide more range and variability in the alternatives as required by NEPA.

Response: The National Environmental Policy Act (NEPA) regulations state that, in environmental impact statements, agencies shall:

> Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated (40 CFR 1502.14, (a)).

All of the action alternatives were developed to meet the Purpose and Need and to comply with the Clinton proclamation. Alternatives were developed based on the issues that emerged during public scoping, using the proclamation direction as a sieve. In this sense, the range of alternatives is necessarily restricted by the terms of the Clinton proclamation. Within these parameters, the alternatives consist of different approaches with some differences in priority and treatment emphasis, respond differently to the issues, and contain some different strategies and objectives. There is also a temporal difference between the alternatives, in the time it would take to approach the desired conditions. These trade-offs are discussed in the effects analyses in Chapter 4 of the FEIS.

The descriptions of the alternatives have been augmented to be more specific and to be more consistent in covering resource areas, in an effort to clarify and highlight the differences between the alternatives (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail). In addition, the strategies and objectives are now displayed in table format to better show which ones apply to each alternative (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives).

PC #114: The Forest Service should have considered an alternative that synthesized the principles of ecosystem management specified in the 1990 Mediated Settlement Agreement ("MSA").

PC #115: The Forest Service should incorporate those provisions of the MSA that are compatible with the proclamation in each of the alternatives because of its contractual obligations.

PC #544: The Forest Service should incorporate the MSA provisions into alternatives besides Alternative E, to show that it is incorporating these provisions into the management plan in good faith.

PC #558: The Forest Service should make it clear that it has a legal obligation to conduct a good-faith analysis of the environmental impacts of the specific provisions of the MSA that are still in force and to incorporate those into the Monument Plan where they do not conflict with the proclamation.

Response (to PC #s 114, 115, 544, and 558): The 1990 Mediated Settlement Agreement includes a number of provisions that were intended to be implemented and incorporated into a forest plan amendment for the Sequoia National Forest. The MSA recommends standards and guidelines and other management guidance for giant sequoia groves, fuels, grazing, wildlife, timber harvesting, recreation (mainly trails and off-highway vehicle use), watersheds, and soils. The Amended Order and Memorandum issued by the Federal District Court for the Northern District of California on August 25, 2006 found that the MSA "remains in effect to the extent it has not been amended by other NEPA-compliant amendments" and instructed the Forest Service to "consider the remaining applicable provisions of the MSA, at least until the MSA has been terminated pursuant to its terms," in the development of a new management plan for the Monument (*People of the State of California, ex rel. Lockyer v. United States Department of Agriculture, et al., No. C-05-00898 CRB*).

In response to this requirement and to public scoping, Alternative E was designed to manage the Monument as guided by the Mediated Settlement Agreement (MSA). Alternative E incorporates all remaining applicable MSA provisions. It includes current management direction from the Forest Plan and the MSA that was modified to comply with the Bush and Clinton proclamations. This alternative includes strategies that are responsive to the issue of the obligation to analyze the MSA under NEPA, and is designed to meet that obligation to consider and analyze the actions, standards, and guidelines contained in the MSA (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative E).

However, Alternative E is not the only alternative that incorporates and analyzes MSA guidance. Each of the other alternatives includes applicable MSA provisions as well, as appropriate to the Monument and to the intent of the alternative. For example, MSA amendments for grove fuel load reduction plans and reintroducing fire in the groves are included in each of the alternatives (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives). Management guidance from the MSA is identified with citations wherever included (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative B, etc.).

PC #118: The Forest Service should include alternatives that implement the restoration activities outlined by the Scientific Advisory Board.

Response: The Scientific Advisory Board advisories that give advice on restoration include:

- Advisory III, Desired Conditions—restoring natural forest resilience
- Advisory IV, Restoration of the Natural Fire Regime—restoring the natural fire regime
- Advisory V, Prioritizing Areas of Land—restoring fire regimes and forest structure
- Advisory VIII, Air Quality—management alternatives for forest restoration
- Advisory X, Impairment of Watershed Functions—restoration of existing water quality

This advice from the Scientific Advisory Board has been followed and these types of restoration are included in the strategies for each alternative, as listed by resource area in Chapter 2 of the FEIS (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives). As advised in Advisory IV, a decision tree has been developed for site-specific projects (FEIS, Volume 2, Appendix A, All Action Alternatives, Decision Tree).

PC #119: The Forest Service should consider an alternative that protects homes and structures by reducing the flammability of the structure itself and reducing vegetation within 100-200 feet of a structure

Response: Alternative D includes a WUI defense zone approximately 200 feet wide; Alternative C's WUI defense zone is about 300 feet wide (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative C/Alternative D). These two alternatives are analyzed in detail and the effects of the different widths of the WUI defense zone in the alternatives are analyzed in Chapter 4 of the FEIS (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Indirect Effects, Wildland Urban Intermix (WUI) Zones).

PC #120: The Forest Service should change Alternative D so that it uses managed fire and any pre-treatments as options for ecological restoration.

Response: As described in Chapter 2 of the FEIS, Alternative D would use the following tools for fuels reduction and ecological restoration, in order of priority: managed wildfire (when available), prescribed fire, and mechanical treatment. Managed wildfire would be the preferred tool and its use would be emphasized when available, but mechanical treatments would be used when necessary to reduce fuels so that prescribed fire or managed wildfire could burn without harming the objects of interest. The diameter limit for any vegetation management for ecological restoration is 12 inches (FEIS, Volume 1, Chapter 2, Alternative D, Fire and Fuels).

PC #121: The Forest Service should have an alternative that conserves the Monument's objects of interests above other resources.

PC #129: The Forest Service should have an alternative that both protects the objects of interest listed in the Clinton proclamation and complies with the rules set forth by that proclamation.

Response (to PC #s 121 and 129): Each of the alternatives is designed to provide protection for the objects of interest, as required by the Clinton proclamation, and meet the Purpose and Need. The Purpose and Need for the Monument Plan is to comply with the Clinton proclamation in developing a management plan specific to the Monument that will protect the objects of interest and manage Monument resources to restore ecosystems and provide opportunities for public use (FEIS, Volume 1, Chapter 1, Purpose and Need).

As part of the description of each action alternative, the Alternative Theme specifically addresses how that alternative is expected to protect the objects of interest (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative B, Alternative Theme, Protection of Objects of Interest). Each of the alternatives does protect the objects of interest, but some are different in how they do so. The alternatives have different approaches to protecting the objects of interest, some using active management to reduce risk more quickly, some allowing natural process to make landscape changes even if, as a result, it takes longer to achieve the desired conditions. Some alternatives take a more active approach to strategically manage risk in priority places.

The intent of each of the alternatives is to comply with the Clinton proclamation and to restore ecosystems. A section has been added before the description of the alternatives to clarify this intent, define ecological restoration, present criteria for removing or felling trees within the Monument, and describe the types of treatments considered to accomplish restoration (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Reader's Guide to Alternative Descriptions, Ecological Restoration).

PC #122: The Forest Service should change Alternative C to make it more like SEKI.

Response: Alternative C was developed to manage the Monument similar to SEKI in a manner that is consistent with Forest Service regulation and the direction of the Clinton proclamation. It was determined that some management policies or direction from SEKI would not be applicable to the Monument because of differences in law, regulation, and policy for the two federal agencies (FEIS, Volume I, Chapter 2, Alternatives Considered in Detail, Alternative C).

Many comments from the public expressed the desire to manage the Monument in the same way and using the same methods as the adjacent national parks, Sequoia and Kings Canyon National Parks (SEKI). There appears to be a perception that adoption of SEKI's management practices, especially in the groves, would result in less tree cutting and tree removal.

Compared to SEKI, there are many more private communities inside the Monument, several directly adjacent to or partly inside giant sequoia groves. In the Monument, wildland urban intermix (WUI) zones are designed to protect communities and the objects of interest. Treatments for fuels reduction and ecological restoration are prioritized in WUI defense zones to reduce the spread and intensity of wildfire (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Fire and

Fuels Strategies). Therefore, even though SEKI does cut and remove larger trees that are determined to be public hazards, more vegetation management is likely in more areas of the Monument to protect life, property, and the objects of interest.

Whereas diameter limits are set for tree felling and removal in the alternatives considered for the Monument, SEKI does not have an established diameter limit. Any tree felling or tree removal in the Monument must meet the criteria for determining the appropriateness of tree felling and the clear need for tree removal (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Reader's Guide to Alternative Descriptions, Ecological Restoration, Removal of Trees from Within the Monument). By applying specific criteria for determining a clear need for tree removal, the Monument Plan places more restrictions on tree removal in the Monument than currently exist in the adjacent national parks, where trees may be cut and removed for a variety of reasons. For example, trees are removed from SEKI for construction projects, to reduce safety hazards, and for fire safety (Hendricks 2011, SEKI/YOSE letter), whereas in the Monument all tree removal must meet criteria for protecting the objects of interest and communities, promoting resiliency, or reducing safety hazards.

Alternative C was designed to mimic SEKI management practices and was developed in collaboration with personnel from SEKI. This alternative is not an exact replica of SEKI management, however, because some national park management policies or direction could not be applied to the Monument in light of Forest Service policies and direction, including the Clinton proclamation. The two federal agencies, the Forest Service and the National Park Service, and their respective departments, the Department of Agriculture and the Department of the Interior, have different laws, regulations, and policies governing their management direction (FEIS, Volume 1, Chapter 1, Issues, Issue 9—Manage the Monument Like Sequoia and Kings Canyon National Parks).

The TFETA has been removed from Alternative C in response to public comment and to better reflect the intent of the alternative, as there is no comparable allocation in SEKI management (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative C).

PC #124: The Forest Service should consider an alternative that would meet its goals (desired future conditions) while also limiting tree removal.

Response: All of the alternatives considered and analyzed limit tree removal as established under the Clinton proclamation. Any treatments that include tree removal will be based on a determination that they are "clearly needed for ecological restoration and maintenance or public safety" (Clinton 2000, p. 24097). As stated in Chapter 2 of the FEIS, "A clearly needed evaluation is required and will be completed before any site-specific projects that propose tree removal take place in the Monument" (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Ecological Restoration, Removal of Trees from Within the Monument). The diameter limits included for each alternative range from 8 inches in Alternative C to up to 30 inches in Alternatives A and E, to no diameter limit for some areas in Alternative F (see the Management Direction for Ecological Restoration table for each alternative analyzed in Chapter 2). Appendix A to the FEIS includes a decision tree, as recommended by the Scientific Advisory Board, to help determine which methods of forest restoration and maintenance should apply at different locations (FEIS, Volume 2, Appendix A, All Action Alternatives, Decision Tree).

PC #125: The Forest Service should have alternatives that show a range of snowmobile use, instead of the extremes.

Response: The alternatives considered and analyzed include a range of recreation opportunities. National Forest System roads were designated for use by all motorized recreationists, including snowmobiles, on December 31, 2000, as directed by the Clinton proclamation. Changes to the designated road system for various vehicle types are expected to occur as conditions change in the future. The alternatives address motorized vehicle use and non-motorized vehicle (mountain bike) use according to the management emphasis described for each. Alternative C restricts the use of snowmobiles (over-snow vehicles or OSVs) for

public use; in that alternative, OSVs could only be used to access private property, for administrative use, or for emergencies. Alternative D restricts over-snow vehicle use to paved roads only. Alternatives A, B, E, and F allow OSVs on all designated roads (FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Recreation; Indirect Effects; Provides Access; Roads). Therefore, the alternative considered in detail represent a range of alternatives considered for permissible OSV use.

PC #126: The Forest Service should properly set forth the reasons why certain alternatives were eliminated.

Response: All suggested alternatives were considered and addressed. As detailed in Chapter 2 of the FEIS, wherever feasible, components of suggested alternatives were included in one or more of the alternatives considered in detail. However, in their entirety, a number of alternatives were considered but dismissed from detailed consideration. For the explanation of why some alternatives were considered but eliminated from further study, see Chapter 2 of the FEIS (FEIS, Volume 1, Chapter 2, Alternatives Considered and Eliminated from Further Study).

PC #127: The Forest Service should clearly and consistently define alternatives presented in the DEIS and correct conflicts among the DEIS, specialist reports, and the draft plan in the descriptions of the various alternatives.

PC #128: The Forest Service should sharply define and highlight the differences between alternatives so that the ultimate decision can be fully informed.

PC #137: The Forest Service should better tie the analysis in Chapters 3 and 4 to the explanation of the alternatives in Chapter 2.

PC #527: The Forest Service should present a clear basis for reasoned choices among options, and not present desired conditions, strategies, objectives, and standards and guidelines that are nearly identical for every alternative.

Response (to PC #s 127, 128, 137, and 527): The descriptions of the alternatives have been expanded, and the definitions of the desired conditions, strategies, and objectives have been improved, to better clarify and highlight the differences between the alternatives (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives). The range of alternatives is necessarily restricted by the terms of the Clinton proclamation. Within these parameters, the alternatives consist of different approaches with some differences in priority and treatment emphasis, respond differently to the issues, and contain some different strategies, objectives, standards and guidelines.

PC #132: The Forest Service should provide the highest standards needed for protecting the giant sequoia ecosystem.

Response: The purpose of this FEIS is to analyze alternative management strategies in order to establish sound management direction for the land and resources in the Monument. The fundamental decision to be made is the selection of an alternative or combination of alternatives that will be the basis for the Monument management plan. As stated in the Purpose and Need for this plan amendment:

> A single comprehensive management plan is needed that will protect and preserve the unique features of the Monument. This plan is expected to protect the giant sequoia groves and the other objects of interest, and encourage continued public and recreational access and use. Although many valuable objects of interest are identified and must be protected, the major purpose of the Monument is to protect and maintain the giant sequoia groves and the rare giants within their unique and natural habitat (FEIS, Volume 1, Chapter 1, Purpose and Need).

The Monument Plan is expected to provide the highest level of protection for the giant sequoias and their ecosystems, recognizing that they make the Monument a unique and special place, and focusing on their proper care and maintenance as directed by the Clinton proclamation.

PC #135: The Forest Service should revise Alternative D to include:

- a 10-inch diameter limit,
- no special management areas for wildlife,
- no cutting of dead trees,

- old growth emphasis Monument-wide, and
- no grazing.

Response: Alternative C as considered and analyzed includes most of these design criteria, proposing an 8-inch diameter limit, and no land allocations or management areas specifically for wildlife and plant habitat, which would result in an emphasis on old growth throughout the Monument. Alternative D is similar in proposing a slightly larger 12-inch diameter limit, but does include some land allocations specifically for wildlife and plant habitat. Alternatives C and D have different themes and intents and are analyzed separately to help constitute a range of alternatives. Even though the specific provisions listed are not all contained in the same alternative, the decision maker is free to include components from different alternatives in the selected alternative.

The Clinton proclamation allows tree removal for public safety, and the Forest Service is required by law to provide for public safety, so hazardous dead trees close to roads, trails, developed recreation areas, and buildings may be felled for that reason. The Clinton proclamation is clear that grazing can continue in the Giant Sequoia National Monument. Our assessment of the management situation did not indicate any need to change grazing in the Monument and the alternatives do not include any recommendations for change.

PC # 136: The Forest Service should continue with the current alternatives that range from "do nothing - everything is fine" (Alternative A) to a plan similar to that for the National Parks (Alternative C).

Response: All of the action alternatives were developed to meet the Purpose and Need and to comply with the Clinton proclamation. Alternatives were developed with the issues from public scoping, using the proclamation direction as a sieve. In this sense, the range of alternatives is necessarily restricted by the terms of the Clinton proclamation. Within these parameters, the alternatives consist of different approaches with some differences in priority and treatment emphasis, respond differently to the issues, and contain some different strategies and objectives. There is also a temporal difference between the alternatives, in the time it would take to approach the desired conditions. The different timelines nessarily involve accepting different levels of risk and consequences of disturbances that may further influence the length of time to achieve desired conditions. For example, in Alternative D, which relies more on natural processes, a drought period and uncharacteristically severe wildfire may kill large areas of formerly mature forest, requiring many centuries to return to old forest conditions, whereas in an alternative with more active management, where treatments may help prevent uncharacteristically severe wildfire, the mature forest may become old forest in less than a century. These trade-offs are discussed in the effects analyses in Chapter 4 of the FEIS.

Citizens' Park Alternative

The Citizens' Park Alternative was submitted to the Forest Service during the comment period on the DEIS and Draft Monument Plan. This alternative was reviewed by the interdisciplinary team, who determined that each element of the Citizens' Park Alternative was fully analyzed in the existing action alternatives, particularly in Alternatives C and D. Alternative C was designed in response to previous suggestions from members of the public that the Monument be managed like the nearby national parks. Alternative C differs from the Citizens' Park Alternative in that is does not allow dispersed camping along roadsides or at the end of roads. Most of the suggestions in the Citizens' Park Alternative were appropriate and resulted in modifications to the management direction in the FEIS.

PC #92: The Forest Service should consider the following strategies for ecological restoration and protecting objects of interest from the Citizens' Park Alternative:

- Focus on allowing natural processes to prevail.
- Limit treatments to areas of human use and influence.
- To address fuels buildup, allow limited manual or mechanical treatment, with diameter limits for tree cutting, subject to restrictions in the Clinton proclamation with a focus on prescribed and naturally occurring fire.
- Remove many of the land allocations associated with the 2001 Framework, but will retain any

associated standards and guidelines that provide protection for monument objects.

- Mimic Sequoia and Kings Canyon National Parks' (SEKI's) management of areas outside of human use as a single ecosystem with the minimal use of tools. Land allocations/management areas designated grove influence zones, protected activity centers, den sites, old forest emphasis, and riparian conservation areas or critical aquatic refuges will not be carried forward.
- Emphasize resource conservation that allows natural processes to prevail and focuses on the restoration of natural processes to areas altered by human use by employing tactics that minimize the use of tools used for restoration.
- To promote heterogeneity, use both prescribed and naturally occurring fire.

Response: The strategies for ecological restoration and protecting the objects of interest identified in the Citizens' Park Alternative are included in the FEIS as follows:

- Focus on allowing natural processes to prevail—this is the theme for Alternative D (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative D, Alternative Theme).
- Limit treatments to areas of human use and influence—this is included in Alternative C (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative C, Alternative Theme).
- Focus on prescribed and naturally-occurring fire-managed wildfire and prescribed burning are included as tools in every alternative, and are the two most preferred tools in Alternatives C and D (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative C, Resource Areas, Fire and Fuels; FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative D, Resource Areas, Fire and Fuels).

  The prioritization of management tools used for ecological restoration (fuels reduction and vegetation management) is intended to show a difference in tool preference between the alternatives. It does not direct the order in which these tools will be used in site-specific projects, as consideration of the tools to be used will follow the decision tree for all alternatives. The three tools—mechanical treatment, prescribed fire, and managed wildfire—can be used individually or in combination based on site-specific analysis and existing conditions. For example, if mechanical treatment is the priority in an alternative, that tool might be applied more often in that alternative, but it also may be used in combination with the other tools or not used at all, based on site-specific conditions and project goals. In addition, whenever naturally-ignited wildfires occur and are available to manage for resource benefits, those managed wildfires will be used first for ecological restoration, no matter their order of priority in an alternative (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative A, Resource Areas, Fire and Fuels, Prioritizing Tools for Ecological Restoration).
- Manage the Monument similar to the Sequoia and Kings Canyon National Park ("SEKI")—this is the theme for Alternative C (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative C, Alternative Theme).

PC #96: The Forest Service should consider the objectives for vegetation management in the Citizens' Park Alternative:

- No specific numerical objectives for canopy cover, seral type, basal area by forest type, or other structural forest elements in the Monument.
- Focus on the restoration of natural processes, including the reintroduction of fire into groves and other areas where fire has been excluded.
- If tree removal is considered, follow the Tree Cutting and Removal standard and guidelines to determine whether cutting and removal are clearly needed for ecological restoration and maintenance or public safety. The standard and guideline provides a hierarchy for the disposition of felled trees.
- Within 5 years, complete a giant sequoia grove-specific fuel load reduction plan for every grove in the Monument, which focuses on reintroducing fire and protects and maintains current large down woody material levels.

- Within 5 years, complete a plantation restoration plan for every plantation within the Monument, which focuses on creating heterogeneity and diversity of species and structure, with the goal of eventually reintroducing managed and natural fires into the plantation area.

Response: The objectives for vegetation management identified in the Citizens' Park Alternative are included in the FEIS as follows:

- The FEIS does not include specific numerical objectives for canopy closure, seral type, or basal area by forest type; however it does include objectives for the percentage of acres where ecological restoration will be accomplished by vegetation type (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Vegetation Objectives (by Type).
- Focusing on the restoration of natural processes—this is the theme for Alternative D (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative D, Alternative Theme).
- Any projects which propose the felling of trees inside the Monument will be subject to specified criteria for tree felling. These five criteria shall apply to any treatments which involve the felling of trees, whether or not removal of those trees from the Monument is also proposed. Where removal of the felled trees from the Monument is proposed, the proposal will also be subject to the "clearly needed" evaluation for tree and down log removal (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Readers' Guide to Alternative Descriptions, Ecological Restoration, Removal of Trees from Within the Monument/Tree Felling).
- The first objective for giant sequoias in all alternatives is to complete a giant sequoia grove-specific fuel load reduction plan for every grove within the Monument (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Vegetation Objectives (by Type); Objectives for Giant Sequoias, by Alternative).
- Complete a plantation restoration plan for every plantation within the Monument—this objective was not included in the FEIS, but two standards and guidelines are included for the management of plantations and young stands to increase stand heterogeneity and accelerate old growth characteristics (FEIS; Volume 2; Appendix A; All Action Alternatives; Vegetation, including Giant Sequoias; Young Stands, including Plantations).

PC #97: The Forest Service should include the standards and guidelines for vegetation management as suggested by the Citizens' Park Alternative.

PC #98: The Forest Service should include the strategy for vegetation that mimics that of the SEKI as suggested by the Citizens' Park Alternative.

Response (to PC #s 97 and 98): The strategy, standards, and guidelines for vegetation management identified in the Citizens' Park Alternative are included in the FEIS as follows:

- The elements of the strategy for vegetation in the Citizen's Park Alternative have been included in the vegetation strategies displayed in the FEIS for all alternatives. These strategies have been expanded to cover more specific considerations in restoring ecosystems and their natural systems, such as reducing fuels, improving resiliency, and promoting heterogeneity (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Vegetation Strategies/Fire and Fuels Strategies; Strategies for Ecological Restoration, by Alternative).
- Any decision to cut a tree or remove trees from the Monument must include a determination whether cutting or removal is clearly needed for each treatment; and
- Any decision to remove trees from the Monument shall be made in a separate decision from the treatment decision (Citizens' Park Alternative, p. 16).

  Any decision to remove trees from the Monument shall include a determination that tree removal is warranted, independent of the determination that the treatment is warranted. Any projects which propose the felling of trees inside the Monument will be subject to specified

criteria for tree felling. These five criteria shall apply to any treatments which involve the felling of trees, whether or not removal of those trees from the Monument is also proposed. Where removal of the felled trees from the Monument is proposed, the proposal will also be subject to the "clearly needed" evaluation for tree and down log removal (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Readers' Guide to Alternative Descriptions, Ecological Restoration, Removal of Trees from Within the Monument/Tree Felling).

- The snag retention standards and guidelines for determining of the minimum number of large snags in each treatment unit are included for all alternatives (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Monument-wide).

PC #107: The Forest Service should consider the following desired conditions for fire and fuels suggested in the Citizens' Park Alternative:

- Fire will occur in its characteristic pattern and will resume its ecological role.
- Frequent fire will maintain lower, manageable levels of flammable materials in most areas, especially in the surface and understory layers.
- There will be a vegetation mosaic of age classes, tree sizes, and species composition, and a low risk of uncharacteristic large fires. But there will be enough risk of some crown fire to sustain species that depend on fire-damaged, snag habitat, such as the black-backed woodpecker and the olive-sided flycatcher.
- The objects of interest will be protected and restored with fire. Sustainable environmental, social, and economic benefits (such as those associated with recreation and tourism) will be maintained.
- Fuel reduction treatments adjacent to structures will be focused on developed areas within these zones.
- The need to maintain fuel conditions that support fires characteristic of complex ecosystems will be emphasized, and will allow for a natural range of fire, but which protects human life, structures, recreation sites, and administrative sites on lands in and adjacent to the Monument.

Response: The desired conditions for fire and fuels have been modified to include the suggested changes (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies and Objectives; Fire and Fuels Desired Conditions):

> Fire occurs in its characteristic pattern and resumes its ecological role. Frequent fire maintains lower, manageable levels of flammable materials in most areas, especially in the surface and understory layers. There is a vegetation mosaic of age classes, tree sizes, and species composition, and a low risk for uncharacteristic large fires. The objects of interest are protected; sustainable environmental, social, and economic benefits (such as those associated with tourism) are maintained; and the carbon sequestered in large trees is stabilized.
>
> Fire susceptibility and severity, and fire hazards to adjacent human communities and surrounding forest types, are low. The need to maintain fuel conditions that support fires characteristic of complex ecosystems is emphasized and allows for a natural range of fire effects in the Monument (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies and Objectives; Fire and Fuels Desired Conditions).

The desired conditions are the same for all alternatives, and the effects analysis in Chapter 4 discusses and compares how each alternative moves toward or away from them (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels).

Effects on species dependent upon burned forest habitat are analyzed in Chapter 4 of the FEIS (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Burned Forest Habitat).

PC #198: The Forest Service should include the following strategies for fire and fuels suggested in the Citizens' Park Alternative:

- To address fuels buildup, allow limited manual or mechanical treatment, with diameter limits for tree cutting, subject to the restrictions in the Clinton proclamation with a focus on prescribed fire and naturally occurring fire.

Table 1 Fuels/Vegetation Management Direction

Area	Resource Management Focus	Diameter Limit for Felling Trees[3]
Monument-wide	Fuels reduction/ forest resilience–incidental safety	5-8[1]
Structure defense zones (and areas around public safety zones)[2]	Fuels reduction/ fire protection	5-8 (with incidental felling for operability up to 20)
Public safety zones[4]	Averting hazards	No limit[5]
Northern goshawk and spotted owl habitat areas (SOHAs) (2001 SNFPA ROD, Appendix A, pp. A-35 and A-37)	Fuels reduction in and out of defense and public safety zones	6
Carnivore den sites buffers (2001 SNFPA ROD, Appendix A, p. A-39)	Fuels reduction	Avoid

1. In practice, cutting trees up to and including 8 inches in diameter has proven effective in fuels reduction in SEKI. The actual size of trees cut should be the smallest to accomplish the goal of preparing areas for fire reintroduction. Moreover it should be the least intrusive, which means that many of the trees in the 5-8 inches diameter class and some smaller trees below 5-8 inches in diameter will be left standing in each treatment unit.
2. The structure defense zone width is approximately 200 feet around structures and around developed recreation sites or administrative sites. Targets in these zones do not include roads or trails.
3. Fuel removal will focus on material 3 inches or smaller, consisting of small trees, limbs, and tops of trees, which are the type of material that causes unwanted fire behavior. Tree removal must be clearly needed, as determined in the standards and guidelines for Tree Cutting and Tree Removal.
4. Public safety zones include developed recreation or administrative sites. Targets in these zones do not include roads or trails.
5. Because these are the largest trees to be cut, additional scrutiny is required. Hazard tree felling and tree removal shall comply with the standards and guidelines for Tree Cutting and Tree Removal.

- The structure defense zones extend approximately 200 feet from the structure. Public safety zones include developed recreation sites and administrative sites, which would also be managed with a 200 ft boundary for fuels treatment.
- The priorities for the management tools used for fuels reduction are:
  1. Prescribed fire and managed wildfire (unplanned natural ignitions).
  2. Manual or mechanical means in the structure defense or public safety zones.
  3. Manual or mechanical means, where necessary, to prepare areas for prescribed fire and managed wildfire, such as in plantations.

Response:

- In the FEIS, for each of the alternatives, diameter limits are given for ecological restoration (fuels reduction and vegetation management) in tables similar to the one given (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative A, Fire and Fuels, etc.). The priorities for the management tools used (prescribed fire, managed wildfire, and mechanical treatments) are listed before this table. The smallest diameter limit used in this table for an alternative is 8 inches in Alternative C. Alternative C has no diameter limit for tree cutting in the WUI defense zone for fuels reduction and fire protection; however, according to SEKI personnel, there is rarely a need to cut a tree over 8 inches (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative C, Fire and Fuels).
- Alternative D uses a wildland urban intermix (WUI) defense zone that extends approximately 200 feet out from developed private land.
- In the WUI, mechanical treatments would be used to reduce fuels to the point where prescribed fire or managed wildfires could burn without harming high value resources. Tree removal would only be allowed as a by-product of fuels reduction or public safety activities, and only when clearly needed for ecological restoration and maintenance or public safety (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology/Indirect Effects).

PC #199: The Forest Service should consider the following objectives for fire and fuels suggested in the Citizens' Park Alternative:

- Allow significantly more low to moderate intensity fires to burn in the Monument including within giant sequoia groves.
- Manage a moderate amount of hot fires to create a natural variability of openings, and tolerate relatively high mortality in extensive areas of the Monument outside the structure defense and public protection zones. Continue to allow this, as specified in landscape analysis, to reduce fuels or to improve the diversity of vegetation and habitat characteristics in the Monument.
- Within 2 years, complete a public safety fuel treatment plan that provides for 200-ft defensible space around all structures on administrative sites, structures authorized by permit, developed recreation sites, and for developments directly adjacent to National Forest System lands.
- Within 5 years, fully implement the public safety fuel treatment plan.
- Within 5 years, develop a Monument-wide fire management plan, subject to a full NEPA analysis, that looks at a full range of alternatives of fire suppression techniques and associated effects, which guides fire suppression decisions (versus managed fire), consistent with the protection of Monument objects of interest.

Response: The following strategies and objectives for fire and fuels have been added or modified to address these suggestions:

17. Allow low to moderate intensity fires to burn in the Monument, including within giant sequoia groves.

4. Promote a range of natural fire effects by allowing low, moderate, and high intensity fires to burn in the Monument.

10. Manage high-intensity fires to create openings, and tolerate relatively high mortality, in fairly extensive areas of the Monument outside of the WUI, to reduce fuels or to improve the diversity of vegetation and habitat characteristics in the Monument (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Fire and Fuels Strategies).

3. When wildfires occur, determine if they can be managed to reduce fuels in giant sequoia groves and their ecosystems to promote ecological restoration.

4. Re-introduce fire to achieve ecological restoration goals in the giant sequoia groves on an average of 5 percent of grove acres per year, according to their fuel load reduction plans (MSA, pp. 9-11, b. Grove Management) (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Fire and Fuels Objectives).

Managed wildfire and prescribed fire are used as management tools to reduce fuels in all alternatives; each of the alternatives includes strategies allowing low, moderate, and high intensity fires to burn in the Monument. Alternatives C and D employ strategies that are expected to allow fires to burn hot enough to create openings and tolerate relatively high mortality in fairly extensive areas of the Monument outside of the WUI. Alternatives A, B, E, and F make use of strategies that are expected to better control fire intensity and reduce the threat of uncharacteristically severe wildfire, but do not depend as much upon naturally-ignited wildfires to produce resource benefits (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology/Indirect Effects).

The FEIS is a strategic plan and does not include site-specific project level decisions. A public safety fuel treatment plan addressing site specific treatment areas and time frames would require appropriate NEPA analysis and a project level decision.

On June 2, 2006, the Chief of the Forest Service, Dale Bosworth, issued a letter approving the withdrawal of the 2005 Fire Management Plan and granting the Sequoia National Forest a waiver of the requirement in FSM 5103 that each national forest have such a plan. This exemption remains in effect.

The Sequoia National Forest follows fire management guidelines in the 1988 Land and Resource Management Plan, 2001 Sierra Nevada

Forest Plan Amendment Record of Decision, and Federal Wildland Fire Management Policy.

Forest managers have chosen to defer the development of a detailed fire management plan until the forest plan revision is completed. Plan components in a revised plan are expected to address some of the needs of a fire management plan. Plan revision for the Sequoia National Forest is expected to start in 2012 and will be completed within the 5-year time frame cited previously.

PC #123: The Forest Service should analyze the "Citizens' Park Alternative," which includes the following priorities for wildlife protection:

- Provide the greatest protection and maintenance of habitats for wildlife and plants listed as objects of interest and focus on the recovery of at risk species to maximize habitat values for these species and species considered objects of interest.

PC #455: The Forest Service should include the following strategy for Wildlife and Plant Habitat as suggested in the Citizens' Park Alternative:

- The strategy will provide the greatest protection and maintenance of habitats for wildlife and plants listed as objects of interest and will focus on the recovery of at risk species to maximize habitat values for these species and species considered objects of interest.

Response (to PC #s 123 and 455): The Citizens' Park Alternative was submitted to the Forest Service during the comment period on the DEIS and Draft Monument Plan. This alternative was reviewed by the interdisciplinary team, who determined that each element of the Citizen's Park Alternative was fully analyzed in the existing action alternatives for the Monument FEIS, particularly in Alternatives C and D. Alternative C was designed in response to previous suggestions from members of the public, requesting that the Monument be managed like the nearby national parks. Alternative C differs from the Citizens' Park Alternative in that it does not allow dispersed camping along roadsides or at the end of roads.

The desired conditions for Wildlife and Plant Habitat, which apply to all alternatives, have been updated to include the wildlife priorities emphasized in the Citizens' Park Alternative:

> Lands in the Monument continue to provide a diverse range of habitats that support viable populations of associated vertebrate species, with special emphasis on riparian areas, montane meadows, and late successional forest. Proper hydrologic and ecological functioning conditions in riparian areas and meadows are restored and maintained. Old forest habitat is in suitable quality, quantity, and distribution to support viable populations of late successional dependent species, including Pacific fishers, American martens, California spotted owls, northern goshawks, and great gray owls. The configuration of habitat in the Monument provides connectivity and heterogeneity. Ecological conditions in the Monument contribute to the recovery of federally threatened and endangered species such as the California condor and Springville clarkia, and help avoid federal listing of Forest Service sensitive species (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Vegetation, including Giant Sequoias/Fire and Fuels/Wildlife and Plant Habitat; Wildlife and Plant Habitat Desired Conditions).

All of the alternatives in the FEIS have strategies to "Maintain species diversity within the Monument" and "Maintain and improve habitat for endangered and threatened plant and animal species on federal and state lists to meet objectives set forth in their recovery and management plans" (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Vegetation, including Giant Sequoias/Fire and Fuels/Wildlife and Plant Habitat; Wildlife and Plant Habitat Strategies). Particular emphasis is placed on protecting threatened and endangered listed species and Forest Service sensitive species (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Wildlife and Plant Habitat Strategies). Standards and guidelines are the primary tools for protecting habitat for these species (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat).

PC #416: The Forest Service should include the desired conditions and strategy for Human Use and Recreation as suggested in the Citizens' Park Alternative.

Response: Forest Service review of the human use description in the Citizens' Park Alternative indicates that the human use desired condition is nearly identical to that described in Chapter 2 of the FEIS (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Human Use; Desired Conditions).

The recreation strategy in the Citizens' Park Alternative was used as a basis for the strategies emphasized in Alternative D. For example, dispersed camping would continue to be allowed, and new development would be limited to walk-in picnic areas and walk-in campgrounds, since no new roads are included. Alternative D differs from the Citizens' Park Alternative in the treatment of hazard trees. Instead, the established procedures for hazard tree abatement for the Sequoia National Forest and the Monument are included to comply with current management direction. These procedures are not proposed for modification in any alternative.

PC #623: The Forest Service should add more specific objectives for the proposed Moses Wilderness addition, the Freeman Creek Botanical Area, and the Windy Gulch Geological Area, as proposed in the Citizens' Park Alternative.

Response: Strategies and objectives are included for each special area in Chapter 2 of the FEIS (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Special Areas, including Special Interest Areas). As management plans are written for these areas as part of the implementation of the Monument Plan, more specific objectives will be developed.

PC #427: The Forest Service should protect geological features while providing public use and enjoyment of these resources, as suggested in the Citizens' Park Alternative:

- Geological features will be protected while providing for public use and enjoyment of these resources.

Response: All alternatives provide for Geological features to be protected while providing for public use and enjoyment of these resources. The following desired condition and strategy are included for all alternatives:

Desired Condition: Geological features, including caves, domes and spires, soda springs, and hot springs, are protected while providing for public use and enjoyment of these resources.

Strategy: Identify areas where caves, domes, spires, soda springs, and hot springs are located and can be used by recreationists, while protecting and preserving these sites.

PC #429: The Forest Service should retain the components of paleontological resources that provide the fossil record, as suggested in the Citizens' Park Alternative:

- Paleontological resources will retain the components providing the fossil record.

Response: All alternatives have the desired condition that Paleontological resources retain the components providing the fossil record. Two strategies provide for: 1) retaining areas of significant sedimentation and meadow vegetation deposits; and 2) during cave inventories, conduct paleontological evaluations of any fossilized material found.

PC #433: The Forest Service should use the suggested language for the Transportation System desired condition provided in the Citizens' Park Alternative:

- Safe and fully-maintained roads and trails that minimize adverse resource impacts will provide public and administrative access to National Forest System lands and facilities within the Monument.
- The road system will be minimized to protect the objects of interest and to reduce maintenance costs and resource impacts.
- Appropriate access will be provided to the objects of interest, consistent with their proper care, protection, and management.

Response: The desired conditions for the transportation system have been modified and now read:

Roads are safe and fully-maintained to minimize adverse resource effects, while providing public and administrative access to National Forest System lands and facilities within the Monument. The road system is properly sized to provide needed access to the objects of interest for their proper care, protection, and management, as well as visitor enjoyment of the Monument. Roads that are no longer needed have been decommissioned to restore natural drainage and vegetation or converted to other uses (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Transportation System; Desired Conditions).

The Comparison of Alternatives by Issues and Their Units of Measure table in Chapter 2 provides the miles of open roads by alternative (FEIS, Volume 1, Chapter 2, Comparison of Alternatives, Comparison of Alternatives by Issues). All alternatives include direction to reduce the number of Maintenance Level 1 and 2 roads over time.

PC #438: The Forest Service should include the following strategy to limit grazing, as suggested in the Citizens' Park Alternative:

- Grazing will be limited where meadows are determined to only have moderate ecological functions. Meadows will be managed to achieve high ecological function and the desired species composition, hydrology, and disturbance levels reflective of healthy meadow systems.

Response: Livestock grazing in meadows is limited through implementation of forage utilization standards. The FEIS refers to livestock utilization based on ecological status of meadows (FEIS, Volume 2, Appendix A, All Action Alternatives, Range, Monument-wide). A mid seral vegetative meadow rating is considered a healthy condition class. This is very similar to the recommendation in the Citizen's Park Alternative.

The ecological status of key meadows should be assessed every three to five years. If meadow ecological status is determined to be moving in a downward trend (as a result of grazing), grazing is modified or suspended.

The desired condition for meadows in the 2004 SNFPA ROD, on p. 43 states, "The ecological status of meadow vegetation is late seral (50 percent or more of the relative cover of the herbaceous layer is late seral with high similarity to the potential natural community." This guidance will be followed in managing meadows throughout the Monument. Other meadow disturbance factors, such as roads, culverts, drains, campgrounds, and trails, are addressed in the Hydrological Resource sections of the FEIS. The proposed strategies, objectives, and standards and guidelines for management of meadows are very similar to the recommendations of the Citizens' Park Alternative.

PC #439: The Forest Service should include the following desired condition for livestock grazing suggested in the Citizens' Park Alternative:

- Livestock grazing will be managed in a manner that improves range, watershed conditions, and water quality, consistent with the protection of the objects of interest.

Response: The desired conditions for Range have been updated to read:

Livestock grazing opportunities are maintained and managed for sustainable, healthy rangelands that contribute to local economies and improve watershed conditions. Meadows are hydrologically functional and stable, with 80-90 percent vegetative cover, root masses stabilizing stream banks, and any sites of accelerated erosion stabilized or recovering. The ecological status of meadow vegetation is late seral, with a diversity of age classes of hardwood shrubs, and regeneration is occurring. Streams in meadows, lower elevation grasslands, and hardwood ecosystems have vegetation and channel bank conditions that meet proper functioning condition. Special aquatic habitats such as springs, seeps, vernal pools, fens, bogs, and marshes are healthy and diverse (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Range; Desired Conditions).

In addition, the standards and guidelines for Range, Hydrological Resources, Invasive Nonnative Species, and Wildlife set the parameters for range management in the Monument and help protect the objects of interest (FEIS, Volume 2, Appendix A, All Action Alternatives).

PC #440: The Forest Service should include the following desired conditions for Air Quality as suggested in the Citizens' Park alternative:

- Emissions generated by the Monument will be managed, and clean air will be provided for the Monument and surrounding communities, subject to frequent managed and natural fires.

PC #441: The Forest Service should include the following objectives for Air Quality as suggested in the Citizen's Park alternative:

- As part of prescribed fire and managed wildfire, develop actions that reduce public exposure to atmospheric pollutants, recognizing substantial increases in managed burning in the monument. Within 1 year, enter into a Memorandum of Understanding with the California Air Resources Board and the San Joaquin Valley Air Pollution Control District for regulatory consideration, which allows for maximizing opportunities for prescribed and wildland fire use burning in the Monument to restore ecological conditions.

Response: The desired condition is clean air. But there exist many misconceptions about air quality in the Monument. Most of the air pollution is of anthropogenic origin and created in the San Joaquin Valley, Bay area, and Sacramento area. The amounts of air pollution generated by the activities in the Monument are insignificant when compared to what is coming from other sources. The Forest Service does work with San Joaquin Valley Air Pollution Control District to ensure that the effects from prescribed fire are minimized. A smoke management plan is created for every prescribed project and submitted to the San Joaquin Valley Air Pollution Control District.

The Monument Plan is intended to provide management direction in compliance with all applicable regulations, including air quality, that will minimize effects to managed resources and maximize the benefits of these resources to the public. The Forest Service provides analysis of potential emissions from the alternatives considered in detail (FEIS, Volume 1, Chapter 4, Effects on Air Resources, Assumptions and Methodology, Particulate Matter in the Southern Sierra Nevada), which addresses potential effects from various scenarios. As explained in the FEIS, it has been determined that to best adhere to the Clean Air Act, the Sequoia National Forest should reduce effects on air quality by decreasing the contribution of emissions from large canopy replacing wildfires by mitigating the potential of these large fires with prescribed fire. This allows the Forest Service, air regulatory agencies, and the public to have the most active role in emissions reduction and mitigation of effects on air quality. The smoke management plan applicable to each project is consistent with the smoke management program run cooperatively with the San Joaquin Air Pollution Control District.

As the understanding of the relationship between Sierra Nevada ecosystem health and air quality has increased, attempts to restrict emissions on a project level to satisfy short term goals have been shown to fail. The inevitable large, uncontrolled wildfires increase effects. Factors determining short- and long-term air quality effects such as forest health, the departure from historic fire regimes, fire intensity, fire growth (acres per day burned), plume height, weather conditions, terrain, location, elevation, and distance to affected populated areas all need to be addressed to ensure that the Clean Air Act is adequately addressed. Significant impacts to the air basin have consistently derived from large unnatural wildfires. Wildfires that behave within their historic fire regime have not been found to cause the same level of air quality effects seen from large uncontrolled wildfires occurring as a result of fuel accumulation from past suppression policies in the Sierra Nevada. However, effects from wildland fire have historically been part of the Sierra Nevada ecosystem. The best way to reduce these effects is to maintain the forest within its natural fire regime and maximize forest resiliency.

PC #444: The Forest Service should include the following desired conditions for Soils suggested in the Citizens' Park Alternative:

- Productive soil conditions will be maintained, enhanced, or restored to promote ecosystem health, diversity, and productivity.

Response: The desired conditions for Soils have been modified in the FEIS to read:

> Productive soil conditions are maintained to promote ecosystem health, diversity, and productivity (FEIS; Volume 1; Chapter 2;

Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Soils).

In addition, specific standards and guidelines have been added to the FEIS to conserve and restore productive soil conditions in the Monument (FEIS, Volume 2, Appendix A, All Action Alternatives, Soil Resources).

PC #445: The Forest Service should include the following desired conditions for Hydrological Resources suggested in the Citizens' Park Alternative:

- Streams, meadows, wetlands, and other special aquatic features will have proper hydrologic connectivity and high ecological function, while allowing for beneficial uses in the Monument, consistent with the protection of the objects of interest.

Response: The desired conditions for Hydrological Resources suggested in the Citizens' Park Alternative are already included in the FEIS (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Hydrological Resources; Desired Conditions). These desired conditions for Hydrological Resources aim to protect the objects of interest. Standards and guidelines for Hydrological Resources further protect the objects of interest (FEIS, Volume 2, Appendix A, All Action Alternatives, Hydrological Resources).

PC #446: The Forest Service should include the following Hydrological Strategies suggested in the Citizens' Park Alternative:

- Strategies will involve actions that move meadows in a moderate ecological function to a condition of high ecological function.
- Additional land disturbing actions, such as grazing, road conditions, etc., shall be prohibited until a high ecological function is achieved and stabilized within these specific meadows.

Response: Management direction for the Monument moves meadows toward ecological function and the desired conditions. Strategies for hydrological resources in the Monument are to "restore ecological processes of streams, **meadows** [emphasis added], wetlands, and other special aquatic features wherever possible" (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Hydrological Resources; Strategies). Prohibiting the continuation of land disturbing activities associated with a particular meadow would be analyzed at the project level.

PC #448: The Forest Service should include the following desired conditions for groundwater suggested in the Citizens' Park Alternative:

- Groundwater quality and quantity in aquifers across watersheds will be sustained.

Response: The desired conditions for groundwater identified in the FEIS are the same as those included in the Citizens' Park Alternative: "Groundwater quality and quantity in aquifers across watersheds are sustained" (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Groundwater; Desired Conditions).

PC #454: The Forest Service should include the following desired conditions for Wildlife and Plant Habitat suggested in the Citizens' Park Alternative:

- Lands within the Monument will provide a diverse range of habitats that maximize the potential for restoring at risk species to optimal population levels, with special emphasis on recovering native species populations, riparian areas, montane meadows, and late successional forests.

Response: A desired condition for Wildlife and Plant Habitat that applies to all alternatives in the FEIS is that "Lands in the Monument continue to provide a diverse range of habitats that support viable populations of associated vertebrate species, with special emphasis on riparian areas, montane meadows, and late successional forests" (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Wildlife and Plant Habitat Desired Conditions). This is virtually identical to the desired condition suggested in the Citizen's Park Alternative.

PC #456: The Forest Service should include the objectives for Wildlife and Plant Habitat as suggested in the Citizens' Park Alternative:

- Manage the entire Monument to optimize wildlife habitat for old forest-dependent species and species listed as objects of interest.
- Within 10 years, produce an inventory and database of large snags and large down logs (for California spotted owls, Pacific fishers, and other wildlife species) that includes information about densities, sizes, basal area, and tonnages, at a scale that can be used for treatment units.

Response: All of the action alternatives include the strategy to "Protect, increase, and perpetuate old forest ecosystems and provide for the diversity of native plant and animal species associated with old forest ecosystems" (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Wildlife and Plant Habitat Strategies; Strategy #2). This appears to be comparable to the objectives in the Citizens' Park Alternative.

Currently in the Monument, information on snags and down logs is collected on a site-specific project basis, not broadly across the entire Monument. Some broader information is available from Forest Inventory and Analysis (FIA) plots and annual tree mortality surveys. This information will continue to be collected in all of the action alternatives. While inventorying snags and down logs across the entire 328,315 acres of the Monument would provide useful information for management, it would be cost prohibitive.

PC #457: The Forest Service should include the following desired conditions for Cultural Resources suggested in the Citizens' Park Alternative:

- A comprehensive cultural resource management program will place a greater management emphasis on the rich cultural resources within the Monument as described in the Proclamation. Cultural resources will be identified and allocated to appropriate management categories (FSM 2363) (e.g., preservation, enhancement, scientific investigation, interpretation, release) so that they can be protected, maintained, studied, and used by the public.

Response: This is the same desired condition described for Cultural Resources in Chapter 2 of the FEIS (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Cultural Resources).

PC #458: The Forest Service should include the following strategies for Cultural Resources as suggested in the Citizens' Park Alternative:

- The strategy will implement a complete cultural resource program that not only complies with Section 106 of the NHPA (36 CFR 800) but also complies with other sections of the NHPA, especially section 110 of NHPA and other laws and regulations while developing an evaluation context consistent with the two prominent cultural resource issues in the proclamation. In order to accomplish this change in directive and develop National Register of Historic Places contexts based on the proclamation, the Monument staff will, within three years, develop a Monument Cultural Resource Management Plan (MCRMP) that emphasizes identification and research on issues identified in proclamation.

Response: The strategies and objectives for Cultural Resources include those suggested in the Citizen's Park Alternative, including the development of a comprehensive cultural resource management plan for the Monument within three years. Projects proposed in Monument will comply with all of the acts established for the protection of cultural resources (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Cultural Resources).

Management Direction

PC #528: The Forest Service should define each land allocation, discuss why each land allocation is important or critical, and communicate clearly what activities are relevant in these designations through the standards and guidelines.

PC #533: The Forest Service should revise the "trumping order" chart of overlapping land allocations in the draft plan to make clear it applies to the current set of standards and guidelines, not just those from the 2001 Framework.

Response (to PC #s 528 and 533): Definitions of the land allocations have been added to Chapter 2 of the FEIS (FEIS, Volume 1, Chapter 2, Alternatives

Considered in Detail, Reader's Guide to Alternative Descriptions, Land Allocations and Management Areas). The land allocations and management areas proposed for each alternative are displayed on the alternative maps in the FEIS Map Packet. In addition, the standards and guidelines tables have been updated to show where each apply; the standards and guidelines are organized by resource area and land allocation (FEIS, Volume 2, Appendix A, All Action Alternatives).

The trumping diagram in Chapter 2 of the FEIS has been removed to reduce confusion. It only represented the standards and guidelines from the 2001 SNFPA and was already confusing and too complicated. To add other allocations would have made it more confusing. The table that followed the trumping diagram, Dominant Management Direction When Land Allocations/Management Areas Overlap, remains in that section to help readers understand what management direction would be followed when land allocations or management areas overlap (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Reader's Guide to Alternative Descriptions, Land Allocations and Management Areas).

PC #529: The Forest Service should make it clear where the listed standards and guidelines apply.

PC #531: The Forest Service should specify prescriptions and standards and guidelines by geographic management area, as required by NFMA.

Response (to PC #s 529 and 531): The tables of standards and guidelines in both the FEIS and the Monument Plan have been updated to more clearly identify the land allocation(s) where each apply. They are now organized by resource area and land allocation (Monument Plan, Part 3, Standards and Guidelines; FEIS, Volume 2, Appendix A, All Action Alternatives).

PC #532: The Forest Service should proofread and re-organize the standards and guidelines in Appendix A, to get rid of internally contradictory direction and better integrate this management direction.

Response: The tables of standards and guidelines have been re-organized to better indicate which ones apply to each land allocation or management area (FEIS, Volume 2, Appendix A, All Action Alternatives). We have reduced the number of sections in Appendix A to reduce redundancy and make it easier for readers to compare all of the action alternatives at once.

PC #534: The Forest Service should not incorporate standards and guidelines from the 2001 Framework that are inconsistent with Monument values, or any from the 2004 Framework.

PC #535: The Forest Service should not include inappropriate old direction from the 1988 Forest Plan.

Response (to PC #s 534 and 535): Standards and guidelines from the Forest Plan, the MSA, and the 2001 and 2004 SNFPAs were reviewed specifically to assess their applicability to the Monument as described by the Clinton proclamation. Some alternatives include standards and guidelines from the 2004 SNFPA where appropriate for Monument resources, e.g., those for the great gray owl and the willow flycatcher that are adaptable to local site conditions. This discussion is presented in the Proposed Changes to Current Management Direction section of Appendix A to the FEIS. This section explains the changes made to current management direction in developing standards and guidelines for the Monument alternatives.

Standards and guidelines from current management direction were revised to: 1) comply with the Clinton proclamation; 2) respond to the MSA; 3) better reflect current policy, law, and regulation; and/or 4) reduce the redundancy and conflict that resulted from the change from management areas with associated management emphases (from the 1988 Forest Plan) to the land allocations established in the 2001 SNFPA (FEIS, Volume 2, Appendix A, Proposed Changes to Management Direction).

Alternative A is the no action alternative, so the standards and guidelines for this alternative consist of those from current management direction: the Forest Plan, the MSA, and the 2001 SNFPA. A no action alternative is required by the NEPA (CEQ 1502.14). In this alternative, no formal, legal actions for amendment to current direction would be made to include the direction in the Clinton proclamation or the relevant parts of the MSA. This alternative is needed to provide a baseline for measuring the

effects of the other alternatives and to demonstrate expected changes from the way the Monument is currently managed.

PC #536: The Forest Service should clearly delineate what tools to use, and under what circumstances to use them, in order to avoid the possible misapplication of treatments.

Response: The tools that are considered for use in all of the alternatives—managed wildfire, prescribed fire, and mechanical treatments—are described in Chapter 2 of the FEIS (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Fire and Fuels Strategies). These tools are divided into two types of treatments, fire and mechanical, defined as:

- Fire: prescribed fire, managed wildfire, and the hand treatments that accompany them, including the use of chainsaws
- Mechanical: self-propelled ground-based machines (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Ecological Restoration, Types of Treatments).

A decision tree was developed to help determine which management tools should be used for ecological restoration and maintenance in site-specific projects in the Monument (FEIS, Volume 2, Appendix A, All Action Alternatives, Decision Tree).

PC #537: The Forest Service should continue to rely on future site-specific planning for specific projects.

PC #540: The Forest Service should recognize that allowing for discretion in planning can result in both proper stewardship and possible inappropriate project implementation.

Response (to PC #s 537 and 540): This FEIS and Monument Plan do not propose any site-specific projects. Additional analysis at the project level will be required, as well as a new, open, and public planning process, for any site-specific projects proposed in the future to implement this plan. As the Plan states:

> The Monument Plan provides a context for informed decision making, while guiding resource management programs, practices, uses, and projects. It will guide the development and analysis of resource management activities in future site-specific projects to move resources toward the desired conditions for the Monument.
>
> Compliance with the National Environmental Policy Act (NEPA) is required for any project-level decision that may have an impact on the environment. Project-level decisions must be informed by site-specific analysis through an open, public process (Monument Plan, Part 1—Vision, Purpose of the Monument).

The selected alternative, as described in the Monument Plan, allows for some discretion within the management direction described in the strategies and objectives (Monument Plan, Part 2—Strategy, Strategies and Objectives), and in the prescribed standards and guidelines (Monument Plan, Part 3—Design Criteria). Site-specific plans can only deviate from conformance with the Monument Plan if they follow the process to amend the plan to allow a different type of project.

Management of the Monument will adapt based on scientific study and monitoring results (Monument Plan, Part 2—Strategy, Strategies and Objectives, Scientific Study and Adaptive Management; Monument Plan, Part 3—Design Criteria, Monitoring and Evaluation). The adaptive management cycle provides a framework to guide future management decisions and actions. Implementation monitoring will occur to determine if the strategies, objectives, and standards and guidelines are implemented as designed and in compliance with the Monument Plan (Monument Plan, Part 3—Design Criteria, Monitoring and Evaluation).

PC #538: The Forest Service should describe the conditions to achieve in the desired conditions and clearly link them to scientific literature.

Response: Desired conditions were developed for the key resources or opportunities in the Monument (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives). They describe the desired future state of these resources and are based on a review of applicable science. The desired conditions are also derived from:

1. The presidential proclamations
2. Advisories from the Scientific Advisory Board and information presented at the Southern Sierra Science Symposium
3. Current management direction
4. Public comments on the interpretation of the Clinton proclamation and the proposed action
5. Public comments on the DEIS and draft Monument Plan

The desired conditions drive the Monument Plan in the sense that they are the goals that managers are working to achieve. The strategies included in each alternative were developed as the best approaches to achieve the desired conditions. The objectives identified serve as mileposts along the way toward the realization of the desired conditions. Finally, the standards and guidelines are the basic rules that managers will follow as projects are designed, to accomplish objectives and eventually desired conditions.

PC #539: The Forest Service should make it easier to reconcile the standards and guidelines in Appendix F of the draft plan with those more exact standards and guidelines in Appendix A of the DEIS, as required by the NEPA.

Response: The standards and guidelines in Part 3 of the Monument Plan are simply the set of standards and guidelines that apply to the preferred or selected alternative. The longer tables of standards and guidelines in Appendix A contain every standard and guideline considered in any of the action alternatives, and show to which alternative(s) each of them applies.

PC #543: The Forest Service should include an amendment to allow interested parties to accompany agency officials to the field, as provided by the MSA.

Response: Many times during scoping for site-specific projects, field trips are scheduled for the public. Any member of the public is welcome to request field trips to project areas. Public involvement and collaboration is an important part of the National Environment Policy Act (NEPA). All site-specific projects will fully comply with the NEPA and the public involvement processes implemented by the Forest Service.

PC #545: The Forest Service should explain how allowing maximum discretion can be reconciled with the Proclamation's clear and explicit mandate that the Monument is to be reserved for the purposes of protection and managed for ecological restoration, and that tree removal is restricted to very limited circumstances.

Response: Each of the alternatives is designed to protect the objects of interest, as required by the Clinton proclamation, and meet the Purpose and Need. The Purpose and Need for this Monument Plan is to comply with the Clinton proclamation in developing a management plan specific to the Monument that will protect the objects of interest and manage Monument resources to restore ecosystems and provide opportunities for public use (FEIS, Volume 1, Chapter 1, Purpose and Need).

The intent of each of the alternatives is to comply with the Clinton proclamation and to restore ecosystems. A section has been added before the description of the alternatives to clarify this intent, define ecological restoration, and describe the types of treatments to consider to accomplish restoration (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Reader's Guide to Alternative Descriptions, Ecological Restoration). A decision tree is presented in Appendix A for determining appropriate treatment methods in site-specific projects (FEIS, Volume 2, Appendix A, All Action Alternatives, Decision Tree).

The selected alternative allows only the flexibility allowed by the Clinton proclamation, clearly stating through strategies, objectives, and standards and guidelines the limitations on tree removal, and setting the Monument apart as a special and different part of the Sequoia National Forest. Some management discretion is needed to allow efficient and effective management of the Monument, and to balance short-term and long-term effects with benefits to the objects of interest and the forest ecosystem as a whole.

PC #556: The Forest Service should explain the difference between the Mediated Settlement

Agreement (MSA) as a source of management direction and as a basis for one of the alternatives.

Response: The1990 MSA includes a number of provisions to implement and incorporate into a forest plan amendment. The MSA recommends standards and guidelines and other management guidance for giant sequoia groves, fuels, grazing, wildlife, timber harvesting, recreation (mainly trails and off-highway vehicle use), watersheds, and soils. Only the portions of the MSA applicable to the Monument portion of the Sequoia National Forest are considered in this FEIS. In addition, as stated in the MSA, "It is understood that since this new round of the NEPA process is open and public, the decision may not conform to this Agreement verbatim" (MSA 1990, p. 154). The 2001 SNFPA, in replacing all of the management areas and several of the associated management emphases set forth in the Forest Plan, along with their standards and guidelines, satisfied some of the MSA provisions applicable to both the Sequoia National Forest and the Monument (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative A, Management Direction).

Alternative E was developed specifically to respond to the issue of the obligation to consider and analyze the agreements contained in the MSA. It represents management practices implemented in the Sequoia National Forest to follow the Forest Plan and the 1990 Sequoia National Forest Land Management Plan MSA, which were modified to comply with the Bush and Clinton proclamations. Alternative E consists of management direction that has evolved to comply with the MSA and the proclamations (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative E).

However, Alternative E is not the only alternative that incorporates MSA guidance. Each of the other alternatives includes applicable MSA provisions as well, as appropriate to the Monument and to the intent of the alternative. For example, MSA amendments for grove fuel load reduction plans and reintroducing fire in the groves are included in each of the alternatives (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives). Management guidance from the MSA is identified with citations in the alternative descriptions, in the strategies and objectives, and in the standards and guidelines (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail; FEIS, Volume 2, Appendix A, All Action Alternatives).

PC #557: The Forest Service should explain why the MSA spreadsheet is "not all inclusive."

Response: The sentence introducing the MSA Review spreadsheet has been changed to read:

> The following spreadsheet identifies where direction in the MSA that is applicable to the Monument portion of the Sequoia National Forest is addressed in the FEIS (FEIS, Volume 2, Appendix E, Comprehensive Review of the 1990 Sequoia National Forest Land Management Plan Mediated Settlement Agreement [MSA]).

The working copy of the spreadsheet used for the comprehensive review had columns to identify how the MSA had been implemented while waiting for a forest plan amendment, and a column that contained references and remarks applicable to the implementation of the MSA. There was also a column that identified what needed to be addressed in Forest Plan Revision, because the MSA is applicable to the whole forest, not just the Monument. Due to the size of the spreadsheet and the relative importance of the columns to the Monument, some columns were omitted in this version, and a column was added to document where the subject areas are addressed in the Monument FEIS.

Document

PC #524: The Forest Service should use the "Background Information on Giant Sequoia National Monument" as the primary interpretation of the proclamation.

Response: The background information referred to was an informal document prepared to introduce the Clinton proclamation and provide a history of the Monument area. The Forest Service used the background document in interpreting the intent of the Clinton proclamation. Many of the sentences

in the Clinton proclamation are the same as in the background information. The principles and concepts described in the background information are incorporated into the Monument FEIS and Plan through consistent reference to the Clinton proclamation.

PC #113: The Forest Service should create a single comprehensive management plan.

PC #481: The Forest Service should produce a major stand-alone plan, not merely an amendment to the Forest Plan or the 2001 Framework, since those plans include procedures that are in conflict with the Proclamation.

PC #525: The Forest Service should produce a stand-alone plan, and not rely on other planning documents, including the DEIS.

PC #530: The Forest Service should revise the draft plan to remove references to previous plans and to incorporate all necessary information to make it a stand-alone plan.

PC #573: The Forest Service should produce a decipherable plan.

Response (to PC #s 113, 481, 525, 530, and 573): The Forest Service has prepared a management plan for the Monument (Monument Plan), supported by this FEIS. The draft Monument Plan was published for public comment and a final Monument Plan has now been prepared. The Forest Service has made every effort to prepare a Monument Plan that is easy to understand and implement.

PC #526: The Forest Service should make the following corrections to the DEIS and draft management plan:

a. TYPO- Page 17- Great Western Divide- (used incorrectly) is a geological feature-need to change nomenclature to Western Divide. Again Page 22.

Response: Great Western Divide is the name of the recreation niche setting.

b. The use of the term "niche" in describing the Monument is unclear. "Monument Niche" (draft plan, p. 13) is defined as "the Monument's uniqueness on a national and regional level." (Ibid., p. 8). There is a second use of the term "niche" as applied to recreation (appearing first on Ibid., p. 14 and throughout the plan). The aspects described under "Recreational Niche" are components of the Monument; they are not independent. The use of the term "niche" in the heading "Monument Niche" implies that its relationship is equivalent to "Recreational Niche" as opposed to the topic of "Recreational Niche" being subsumed under the Monument, a broader concern. Further, "niche" appears to be new terminology applied to recreational planning; its use in this is confusing when combined with the idea of "Monument Niche." We suggest that you eliminate the reference to "niche" in "Monument Niche" and simply title the section "Monument."

Response: Monument niche is, as defined, the uniqueness of the Monument on a national and regional level. Recreation niche is a subset of the Monument niche, being the unique recreation features in the Monument.

c. The section on Design Criteria (draft plan, p. 79) states that "design criteria" include standards and guidelines," yet this section does not include the standards and guidelines. These are instead placed in Appendix F and are not referenced in the "Design Criteria" section. The standards and guidelines should be removed from an appendix and integrated into the section on "Design Criteria."

Response: The standards and guidelines have been moved to Part 3—Design Criteria in the Monument Plan.

d. There is a table in the DEIS identifying the strategy for determining where tree removal is "clearly needed." (DEIS, Volume 1, Chapter 2, p. 52). This table is absent from the draft plan. The final plan should to be internally consistent and consistent with the FEIS.

Response: We have made sure the Ecological Restoration section, including the Clearly Needed criteria, is included in the Monument Plan.

e. Table 3 needs row headings to ensure the reader knows what the table addresses.

Response: Thank you for your comment. We have modified Table 3 to repeat the row headings from page to page.

f. It would have been helpful to have the description of Objects of Interest, now at Vol. 1 page 68, also included in the Summary. After all, a main purpose of the new management plan is to protect those objects of interest.

Response: Thank you for your comment. We have included the description of the objects of interest in the Purpose and Need section of the Summary for the FEIS.

g. The many hundreds of pages of tables describing alternative strategies in Chapter 2 and their standards and guidelines in Appendix A rise to the level of reader abuse...there is no way to figure out what specific parts of Alternative A are still included in each alternative and which have been replaced. This is important because the whole alternative equals the remaining part of Alternative A applicable to each alternative, plus the descriptions, desired conditions, strategies, objectives and standards and guidelines found in Chapter 2 and Appendix A. There is neither one place where the full alternative description is presented nor clear direction for how to synthesize it for yourself. It is thereby impossible for either a professional or non-professional to formulate a complete picture of each alternative under the range of alternative management scenarios from so many tabular entries, in so many different places, without at least a better framing narrative.

Response: Thank you for your comment. We have reduced the number of sections in Appendix A to reduce redundancy and make it easier for readers to compare all of the action alternatives at once. Each standard and guideline that comes from the MSA now references that document (FEIS, Volume 2, Appendix A, All Action Alternatives). In Chapter 2, MSA references have also been added, to the alternative descriptions as well as the Strategies and Objectives.

i. Chapter 3 contains a huge amount of well developed information, in the main well-presented. However, it is difficult to separate the important baseline information that will become the basis for effects analysis in Chapter 4 from the general background information that is nice to know.

Response: Chapter 3 does contain, as required by the NEPA, the affected environment or existing condition by resource area, as each is currently managed. To help make that transition from the baseline information in Chapter 3 to the effects analyses in Chapter 4, an Assumptions and Methodology section has been placed at the beginning of each resource area section (FEIS; Volume 1; Chapter 4; Effects on Vegetation, including Giant Sequoias; Assumptions and Methodology, etc.).

j. Turning to the next page, we see immediately that Table 71 needs work. Much confusion could be headed off by a few corrections and a little explanatory text not now available. First, the column head "Addressed in the GSNM FEIS" (emphasis added) is in obvious error. Assuming you mean "DEIS" instead of "FEIS," I then have to ask what the difference is between these two columns: "Address in Monument Plan EIS" and "Addressed in GSNM F/DEIS"? Second, the references given in the latter column are so ridiculously general as to be of little assistance. The reader is most often left to flounder in many pages of tables. These references need to be tightened up and made more specific with a section heading and/or page number.

Response: Thank you for your comment. The column headings in this table have been modified to clarify what information is included. The columns "Addressed in SNFPA" and "Addressed in Monument FEIS" simply show where each provision is addressed. The information in the column titled "Where Addressed in Monument FEIS" shows, by section headings, where those provisions addressed in the Monument FEIS are located. The FEIS is electronically searchable and MSA items are referenced in the document, so the reader can easily search for specific MSA topics.

k. I can't make out what the tables regarding ROS class and PAOT/Acre (Vol. 2 pages 94-97) mean and why there are so many --- to what do the

various tables refer? There may be an easy answer, but it eludes me.

Response: The tables you refer to are part of the set in Appendix A that show the standards and guidelines that are part of the current management direction for Alternative A. The tables display standards and guidelines from the Forest Plan, the MSA, and the Clinton proclamation, in order to "crosswalk" them by resource area (FEIS, Volume 2, Appendix A, Alternative A, Introduction). The particular standards and guidelines you ask about are those for the Recreation Opportunity Spectrum (ROS) capacity in terms of persons at one time (PAOT) from the Forest Plan. Each of these includes a reference to the pages where they can be found in the Forest Plan (or LRMP).

l. Why aren't grove boundaries on the base map for all maps except those showing alternatives where grove boundaries do not pertain?

Response: Thank you for your comment. Grove boundaries have been added to each of the maps showing land allocations, as identified for each alternative. The groves (administrative boundaries) have also been added to each map where they can be displayed clearly with other layers.

m. The introductory language on page 427 raises another question as well. I am unaware that SNFPA 2001 "removed timber as a goal for the Sequoia National Forest." Does this mean no ASQ (allowable sale quantity)? The SNFPA 2001 puts most, but not all, of the forest in the Southern Sierra Fisher Conservation Area which makes commercial timber harvest difficult, but timber production per se was never excluded. It is of course excluded from the Monument by Proclamation.

Response: Thank you for your comment. This statement has been removed from the FEIS. The 2001 SNFPA Record of Decision stated that a revised ASQ for each of the Sierra Nevada national forests would be established at the time of each of their forest plan revisions. It is the Clinton proclamation that excluded the Monument from being considered suitable for timber production.

Scientific Study and Adaptive Management

Use of Science

PC #486: The Forest Service should conduct a proper science consistency review to determine that decisions rely on the best available scientific information to maximize the chances of meeting applicable requirements and stated goals.

Response: The Forest Service conducted two science consistency reviews, the first of the draft EIS and management plan, the second of the FEIS. The report on the review of the FEIS (Volumes 1 and 2) in December 2011 and January 2012 is included as Appendix F to this FEIS. We have included the Forest Service's response as to how the FEIS was modified, based on this report, in Appendix F, as well. According to FSH 1909.12, Section 41.1:

> The purpose of science reviews is to enhance and maximize the quality and credibility of plans and planning evaluations. In addition, the purpose is to review how the best available science was taken into account, not to add to the body of scientific knowledge.
>
> Science reviews allow the Responsible Official to document that the best available science was taken into account in the planning process. Reviews should be conducted in a timely and expeditious manner to provide useful feedback.
>
> A science review should address four central questions:
>
> 1. Has applicable and available scientific information been considered?
> 2. Has scientific information been interpreted reasonably and accurately?
> 3. Are the uncertainties associated with the scientific information acknowledged and documented?
> 4. Have the relevant trends of social, economic, and ecological resources (Sec. 24.23),

including risks and uncertainties, been identified and documented?

These four questions were the ones used by scientists on both review panels. The level of the review used for the Monument planning process was Level 4, the highest level of review and a "Structured Review" (FSH 1909.12, Section 41.21–Exhibit 01), that requires that "Models, concepts, proposed methods, draft science syntheses, draft specialist reports, draft plan components, draft plan" be reviewed.

PC #482: The Forest Service should comply with the President's transparency mandate and provide a full and fair discussion of the environmental impacts, making it possible to compare the alternative the Science Review Panel commented on with the preferred alternative in the DEIS.

PC #570: The Forest Service should comply with the President's transparency mandate and improve the public's ability to read and understand the documents, and to provide a full and fair discussion of the environmental impacts.

PC #503: The Forest Service should require the highest level of scientific review by the Science Review Panel.

PC #506: The Forest Service should address inconsistencies between the Science Review Panel's report and the published DEIS.

PC #507: The Forest Service should reconvene the Science Review Panel to review the current preferred alternative and provide further scientific guidance.

PC #508: The Forest Service should continue using the Science Review Panel, making clear that the scientists reviewed the whole range of alternatives.

PC #509: The Forest Service should show how they responded to or fixed the items found weak by the Science Review Panel.

Response (to PC #s 482, 570, 503, 507, 508, and 509): In response to input and comments received during the planning process, we have made improvements to the Monument Plan and FEIS to make the documents more readable, consistent, and transparent. We have made changes and added to the discussion of environmental effects in Chapter 4 in response to public comment. We have added more resource area discussion to the alternative descriptions, and modified the format of the strategies and objectives, to better show the differences between alternatives. See the Responses to PC #s 482, 503, and 506-508.

The six scientists on the Science Review Panel reviewed the DEIS (Volumes 1 and 2) and the draft Monument Plan in their entirety in accordance with the scientific review process outlined in the Forest Service Handbook, 1909.12, Chapter 41. Although the preferred alternative changed after the science review was conducted, the information and analyses that the panel was tasked with reviewing did not change. The purpose of a scientific review is to "...enhance and maximize the quality and credibility of plans and planning evaluations" (FSH 1909.12, Chapter 41.1). By modifying and clarifying information in the DEIS and draft Monument Plan in response to the Science Review Panel report, the quality of the information in those documents was enhanced.

The Science Review Panel reviewed the DEIS (Volumes 1 and 2) and the Draft Management Plan in May 2010, when the Forest Service was considering choosing Alternative F as the preferred alternative. The Panel was given all of the three published documents, as well as copies of the specialist reports, to determine whether scientific information of appropriate content, rigor, and applicability was considered, evaluated, and synthesized in the analyses of effects on resources for each of the alternatives. The scientists on the panel developed evaluation criteria and followed a standardized process. They were not asked to select a favored alternative, but instead were directed not to do so. They were asked to focus on certain resource areas on which they are most qualified to comment, as well as on any other topics in their area of expertise. The review panel scientists reviewed each of the six alternatives considered in detail in terms of their consistency with the best available science.

We realize the Science Review Panel reviewed earlier drafts of the DEIS and draft Monument Plan,

and that the page numbers have changed since then. That is why, in our report of how we responded to the Panel's review, we include the sections in the documents, rather than the page numbers, where the responses can be found. The same method is used in our response to the Science Review Panel's review of the FEIS, so that you can find the changed information even if page numbers change (FEIS, Volume 2, Appendix F).

The Science Review Panel's report on the review of the draft documents was included in Appendix F of the DEIS. A response to their report, showing how the DEIS was changed because of their findings, is in the administrative record and was made available on the Monument science webpage, http://www.fs.fed.us/r5/sequoia/gsnm/science_index.html.

The Science Review Panel also reviewed the FEIS (Volumes 1 and 2) in December 2011 and January 2012. This report is included as Appendix F to this FEIS. We have also included the Forest Service's response as to how the FEIS was modified, based on this report, in Appendix F. In the responses, wherever appropriate, we have included both the previous version of the text commented on and the modified text, so that readers can see exactly what changes were made.

PC #116: The Forest Service should establish adequate standards and guidelines for when the agency can remove trees.

PC #117: The Forest Service should include an alternative that establishes clear standards grounded in ecological consequences for when it can use mechanical treatment instead of fire.

PC #488: The Forest Service should canvass the best available science, establish presumptive standards for when tree removal would meet the Proclamation's enumerated purposes, including default diameter limits, and describe how site-specific analysis should be used to establish an exception to the standards.

Response (to PC #s 116, 117, and 488): A clearly needed evaluation is required and will be completed before any site-specific project that proposes tree removal takes place in the Monument (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Reader's Guide to Alternative Descriptions, Ecological Restoration, Removal of Trees from Within the Monument). The following criteria will be used:

Removal

1. Protection of Objects of Interest: If keeping one or more trees on site would cause unacceptable fuels accumulation and fire severity effects (high tree mortality when fire is reintroduced); if removing trees would reduce the risk of wildfire to the giant sequoia groves, sensitive wildlife habitat, and adjacent communities at risk.

   Woody debris has accumulated, causing an unprecedented buildup of surface fuels. One of the most immediate consequences of these changes is an increased hazard of wildfires of a severity that was rarely encountered in pre-Euroamerican times. Outstanding opportunities exist for studying the consequences of different approaches to mitigating these conditions and restoring natural forest resilience (Clinton 2000, pp. 24095-24096).

2. Resiliency: If keeping one or more trees on site would provide a vector for insect or disease infestations at levels higher than currently known endemic levels.

   Outstanding opportunities exist for studying forest resilience to large-scale logging and the consequences of different approaches to forest restoration (Clinton 2000, p. 24097).

3. Public Safety: If keeping one or more trees on site would create a public safety hazard or attractive nuisance. Forest Service policy is to eliminate safety hazards from developed recreation sites, including trees or tree limbs identified as hazardous (FSM 2332). Depending on the situation, down trees in a developed recreation site may present a hazard if people are likely to climb on them and potentially fall and get hurt (becomes more likely if the logs are large and/or they are piled on top of one another).

   In addition to these criteria, the Forest Service will consider the following restrictions when considering the felling of trees:

Felling

4. Resiliency: If keeping one or more trees on a site would deplete moisture, light, or nutritional resources critical to the health and survival of the plant community or forest.

   > These giant sequoia groves and the surrounding forest provide an excellent opportunity to understand the consequences of different approaches to forest restoration... Outstanding opportunities exist for studying the consequences of different approaches to mitigating these conditions and restoring natural forest resilience (Clinton 2000, pp. 24095-24096).

5. Regeneration: If keeping one or more trees of a particular species or size would adversely affect the regeneration, longevity, or growth of giant sequoias and other desired species.

   > ...a century of fire suppression has led to an unprecedented failure in sequoia reproduction in otherwise undisturbed groves (Clinton 2000, p. 24095).

6. Heterogeneity: If keeping one or more trees of a particular species or size would adversely affect the desired diversity or structure of a stand or forest.

   > Sequoias and their surrounding ecosystems provide a context for understanding ongoing environmental changes (Clinton 2000, p. 24095).

   The criteria will be refined further with ongoing and future scientific research as part of adaptive management of the Monument.

   As explained in the Monument Plan, it is a programmatic document that provides strategic direction at the broad program level, but does not include any decisions on specific projects or activities. "Those decisions will be made later, after more detailed analysis of specific project sites and additional public involvement on site-specific proposals" (Monument Plan, Part I—Vision, Purpose of the Monument Plan). Those project-level decisions must be informed by site-specific analysis.

   In addition, a decision tree was developed in response to Advisories IV and XXVIII of the Scientific Advisory Board (The Scientific Advisory Board 2003), to be used for any site-specific project proposed in the Monument. It will help determine which methods of forest restoration and maintenance should apply at different locations (FEIS, Volume 2, Appendix A, All Action Alternatives, Decision Tree).

PC #130: The Forest Service should not label an EIS as programmatic and provide no environmental analysis of direct or indirect impacts whatsoever.

PC #489: The Forest Service should recognize that direct, indirect, and cumulative effects apply to all federal actions, including programmatic documents.

PC #490: The Forest Service should review and make sure that every section in Chapter 4 describes direct, indirect, and cumulative effects.

Response (to PC #s 130, 489, and 490): The effects of the alternatives considered in detail in this FEIS are disclosed in Chapter 4. The analysis of effects includes the analysis of ongoing activities (the no action alternative, Alternative A), as well as the effects from implementing the strategies modeled in each alternative, and the management activities that are suitable in the various land allocations in the Monument.

The Giant Sequoia National Monument Plan is a programmatic plan that defines and describes the management direction for the Monument for the next 10 to 15 years. Programmatic plans are consistent with national direction and are, by nature, strategic and make no site-specific project decisions. There are potential effects associated with programmatic plans, and those effects are described and disclosed in the FEIS consistent with the requirements of NEPA. Specifically, a description of the alternatives considered in this analysis is included in Chapter 2 of the FEIS (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail); a description of existing resource conditions is included in Chapter 3 of the FEIS (FEIS, Volume 1, Chapter 3); and finally, a description of the potential environmental effects associated with this analysis of all of the alternatives (ongoing, potential indirect, and cumulative effects) is included in Chapter 4 of the FEIS (FEIS, Volume 1, Chapter 4). The appendices to the FEIS include a description

of the model used to estimate the environmental effects of the various alternatives, as well as other components of the analysis process (FEIS, Volume 2).

PC #492: The Forest Service should analyze the effects of the trade-offs between the competing management goals of fuels reduction and habitat protection,

- how those competing needs are balanced,
- the trade-offs,
- the magnitude of the short-term habitat losses, and
- the impacts of the different management options.

Response: Analyses of the trade-offs between fuels reduction and habitat protection can be found in the Vegetation, including Giant Sequoias; Wildlife and Plant Habitat; and Fire and Fuels sections of Chapter 4 of the FEIS. The short-term loss of habitat quality from vegetation treatments versus the benefits of reduced risk of stand-replacing fire is discussed in the effects analyses for several species (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat). Trade-offs are discussed in a general sense because detailed effects will only be able to be determined in site-specific project analysis. Local conditions and the specific treatments being proposed would need to be known to measure in detail the balance between short-term risks to wildlife habitat and long-term benefits of treatments.

These kinds of trade-offs would be species-specific due to differences in habitat preference. Some examples of these trade-offs include:

1. The Biological Evaluation references and summarizes the Conservation Biology Institute (Spencer et al. 2008) report for fishers, where this balance was modeled for the southern Sierra fisher population. That model determined that treating only two percent of the treatable landscape every five years (or up to 10 percent of the treatable landscape over 20 years) had no significant effect on fire or Pacific fishers at the landscape level, while treating four to eight percent of the treatable landscape every five years (or up to 20-32 percent of the treatable landscape over 20 years) was effective in reducing fire and benefiting Pacific fishers.
2. In Alternatives A, B, D and F, some short-term reductions in habitat quality in spotted owl and northern goshawk Protected Activity Centers (PACs) from fuel reduction treatments would be tolerated in defense zones. Outside of defense zones in these PACs, fuel reduction treatments would be limited to prescribed fire, favoring short-term habitat quality over fuels reduction.
3. In areas with important wildlife habitat, the short-term risks to wildlife would be reduced through the use of limited operating periods. Avoiding disruptions during the nesting or denning season would allow fuel reduction goals to be achieved with minimal risks to wildlife.

   The trade-offs between different types of treatments or management tools are discussed in the effects analysis for fire and fuels (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology, Trade-offs Between Types of Treatments). This section discusses the capabilities and effectiveness of each of the tools to restore ecological processes, re-introduce fire, and reduce fuels.

   The trade-offs between different types of treatments are also discussed in the effects analysis for vegetation (FEIS, Volume 1, Chapter 4, Effects on Vegetation, Assumptions and Methodology, Trade-offs).

PC #491: The Forest Service should explain that the SPECTRUM modeling resulted in almost no difference among alternatives in terms of the effects over the long term.

Response: More information on the SPECTRUM model has been added to Chapter 4 of the FEIS (FEIS, Volume 1, Chapter 4, Methodology and Assumptions, SPECTRUM Model), including the assumptions used in the modeling exercise. Appendix C, the Modeling Overview, has also been updated to include more Monument-specific information on the model used for the Monument analysis. The model was designed to reflect the alternatives with the differences described in Chapter 2 of the FEIS. The alternatives were

developed with the issues brought forward in public scoping. They do have different approaches, and respond differently to the issues, but their variety is bound by the parameters of the Clinton proclamation. The SPECTRUM model reflects these constraints, as well as those that limit the amount of the Monument that is considered available for fire or mechanical treatments (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Reader's Guide to Alternative Descriptions, Ecological Restoration, Types of Treatments).

PC #494: The Forest Service should quantify the effects of the alternatives, use tools currently available to estimate effects, support analyses with information from scientific literature, and integrate the evaluations of effects on various resources.

Response: More detail has been added to the descriptions of the alternatives, and the strategies and objectives clarified, to show more clearly the differences between the alternatives. The effects analyses in Chapter 4 of the FEIS quantify the effects of the alternatives wherever possible, but recognize that this is a programmatic-level plan and does not propose any site-specific projects. A summary of the environmental consequences for each resource area, by alternative, is displayed in one of the three tables comparing the alternatives towards the end of Chapter 2 of the FEIS (FEIS, Volume 1, Chapter 2, Comparison of Alternatives, Comparison of Alternatives by Environmental Effects).

The interdisciplinary team considered peer-reviewed scientific research applicable to the Monument; recommended literature, methods, and tools from the Scientific Advisory Board and the Science Review Panel; and information recommended by the public to estimate effects. The overall assumptions and methodology used are described in general at the beginning of Chapter 4 of the FEIS, and then described in more detail in the effects analysis section for each resource area (FEIS, Volume 1, Chapter 4, Assumptions and Methodology; FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology, etc.). The conclusions reached in the effects analyses are supported by the assumptions as described and current science as cited in Chapter 4 for each of the resource areas.

PC #496: The Forest Service should describe the affected environment in a way to determine the restoration needs of the Monument, specifically to support the need for burning or tree removal.

Response: The need for ecological restoration is described in Chapter 3 in the affected environment or current conditions for each resource area. How this need will be determined for site-specific projects is laid out in Chapter 4 of the FEIS, in the Assumptions and Methodology section for each resource area (e.g., FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology, Ecological Restoration).

PC #497: The Forest Service should summarize outcomes of treatments, not merely the input used to determine effects, in Tables 3 and 48.

Response: The Comparison of Alternatives tables use acres of land allocations, units of measure for each issue, and summaries of environmental effects by resource area to compare the alternatives (FEIS, Volume 1, Chapter 2, Comparison of Alternatives). The outcomes of possible treatments, displayed in percent of the Monument or range of acres, are discussed in the Socioeconomics section of Chapter 4 (FEIS, Volume 1, Chapter 4, Effects on Human Use, Effects on Socioeconomics, Indirect Effects).

PC #499: The Forest Service should discuss past management of the Monument, including past timber harvesting, to provide adequate environmental baseline information.

PC #572: The Forest Service should provide a landscape level analysis that discloses the direct and cumulative impacts to the Monument resulting from both logging and fire suppression, or clear guidelines from a century of logging damage.

Response (to PC #s 499 and 572): The description of Alternative A, the affected environment discussed by resource area in Chapter 3, and the analyses of environmental effects of Alternative A by resource area in Chapter 4, discuss past management of the Monument and provide baseline information. The affected environment and cumulative effects sections for Vegetation, Fire and Fuels, and Wildlife and Plant Habitat discuss how fire suppression in recent decades have disrupted the natural fire regime and caused forests to become more dense,

with increased dominance of shade-tolerant tree species. The plantations resulting from past harvesting tend to provide lower quality habitat for some wildlife species because of their lack of diversity and large trees. Priority areas for restoration are those sites which were modified from their natural state by fire suppression, logging, unmanaged grazing, adverse changes in hydrology, and historic development.

This programmatic document includes a forest-level analysis; any landscape level and site-specific project analyses in the Monument will follow the management direction in the Monument Plan and determine the level of effects from the project proposals. This FEIS analyzes ongoing effects from activities and permitted uses in the Monument, as well as the indirect and cumulative effects expected from each of the alternatives. There are no direct effects from any of the alternatives, as no site-specific projects or activities are proposed.

PC #500: The Forest Service should analyze the impacts of livestock grazing on other objects of interest:

- meadows and streams;
- habitats and ecosystems;
- a diverse array of plants and animals, many of which are rare or endemic to the southern Sierra Nevada;
- shade-tolerant species;
- habitats for an extraordinary diversity of plant species and communities;
- rare plants;
- more than 200 plant species endemic to the southern Sierra Nevada mountain range, arrayed in plant communities ranging from low-elevation oak woodlands and chaparral to high-elevation subalpine forest;
- essential habitat for wildlife, ranging from large charismatic animals to less visible and less familiar forms of life, such as fungi and insects;
- American marten;
- northern goshawk;
- peregrine falcon;
- condors;
- hot springs;
- soda springs; and
- paleontological resources found in meadow sediments.

Response: The FEIS analyzes the effects of grazing on watersheds and meadows in the Hydrological Resources section of Chapter 4 (FEIS, Volume 1, Chapter 4, Effects on Hydrological Resources); on wildlife and plants in the Wildlife and Plant Habitat and Vegetation sections of Chapter 4 (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat/Effects on Vegetation, including Giant Sequoias); and on hot springs, soda springs, and paleontological resources in the Effects on Geological Resources/Effects on Paleontological Resources sections of Chapter 4 (FEIS, Volume 1, Chapter 4, Geological Resources/Paleontological Resources).

The effects of grazing on watersheds and meadows are considered in the effects analysis for hydrological resources (FEIS, Volume 1, Chapter 4, Effects on Hydrological Resources, Indirect Effects, All Alternatives).

The effects of grazing on wildlife habitat are considered in the cumulative effects sections of the Wildlife Biological Assessment and Wildlife Biological Evaluation, particularly for meadow-dependent species like willow flycatchers and great gray owls. There are standards and guidelines, which differ by alternative, designed to protect key habitats from adverse grazing effects (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat). The Monument FEIS considers these effects at a programmatic level. Effects on habitat at specific locations will be evaluated in analyses for site-specific projects such as the reauthorization of grazing permits. The site-specific allotment management plans and requirements for obtaining grazing permits are designed to minimize effects and include monitoring requirements (see the Range specialist report for general grazing standard and guidelines).

The potential effects of grazing on geological and paleontological resources are considered in the effects analysis for Geological Resources (FEIS,

Volume 1, Chapter 4, Effects on Geological Resources, Indirect Effects, Other Proposed Management Strategies).

PC #502: The Forest Service should take full advantage of the opportunity to rebalance the Plan so that recreation and human use are treated as the near equals of natural resources management.

Response: Alternatives B and F include recommendations made by the public through the Sequoia Monument Recreation Council (SMRC), both of which place more emphasis on recreation than does current plan direction, as reflected in Alternatives A and E. Some members of the public emphasized a need for more restrictions on recreation opportunities, both in where development could occur and/or the types of opportunities allowed, which are reflected in Alternatives C and D. The Clinton proclamation states that the management plan "will provide for and encourage continued public and recreational access and use consistent with the purposes of the monument." Recreation use is encouraged as long as it is consistent with the purposes of the Monument to protect the objects of interest and to properly care for and manage those objects.

Numerous recreation activities are occurring in the Monument, and new recreation activities are expected to emerge over time. The variety of activities is expected to continue to grow (Cordell 1999, Sheffield 2005). The analysis of effects considers how well the alternatives are expected to meet future recreation demand. Although the provision of recreation opportunities in the Monument is a supply, managers do not know what to provide (supply) unless they know what people want to do (demand).

PC #504: The Forest Service should distribute the rationale behind the decision to not convene a new Scientific Advisory Board (SAB).

PC #505: The Forest Service should appoint a new SAB.

Response (to PC #s 504 and 505): Members of the Scientific Advisory Board formed in 2001 and used in the initial planning process were invited to re-convene in May 2008. Former members of this Board reviewed the science advisories that were developed between 2001 and 2003, and discussed whether they were still relevant, how they were being implemented, and how they could be used in developing a new EIS and Monument Plan. In addition, the advisories were reviewed, considered, and incorporated into the effects analyses as appropriate. In July 2008, the Forest Service asked the public to review the advisories and share their thoughts on the relevance of the advisories to the new planning process.

Linking science to management of the Monument is of the utmost importance to the Forest Service (FEIS, Volume 1, Chapter 1, Public Involvement, Integrating Science). The Forest Service has developed direction regarding scientific review procedures. In 2006, science review guidelines were developed, standardized, and codified in the Forest Service Handbook in 2006 (Forest Service Handbook 1909.12-2006-5, Chapter 40—Science and Sustainability). The purpose of the science review is to review the environmental documents prepared for the Monument Plan to allow the Responsible Official to document that the best available science was taken into account in the planning process. The reviewers on the panel must have the following attributes: expertise in the subject area, credibility in their area of expertise, and independence from the planning process. Both the DEIS and this FEIS were reviewed by a Science Review Panel. Their report on the review of the FEIS is included in Appendix F to this FEIS. The description of Issue 10, Convene a New Scientific Advisory Board, has been expanded to better explain this issue(FEIS, Volume 1, Chapter 1, Issues, Issue 10—Convene a New Scientific Advisory Board).

PC #510: The Forest Service should conduct research on vegetation, as well as other objects of interest, as perhaps the most critical component of a Monument that exists to manage a plant species (sequoias).

Response: Throughout the FEIS and Monument Plan, scientific research and adaptive management are emphasized. This focus is included as a "resource area" by which management direction, current conditions, and effects analyses are organized in the documents. In Chapter 2 of the FEIS, nine strategies and four objectives are described for research on the objects of interest

in the Monument (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Scientific Study and Adaptive Management).

PC #511: The Forest Service should recognize that some conclusions reached in the North paper fail to consider available fire science.

Response: The North paper was used as a reference in the FEIS, but other current and applicable fire science was also considered and cited in the Fire and Fuels analysis in the FEIS. Other sources addressed include Stephens 2010, North 2009, Keeley 2009, Knapp 2009, Sawyer 2009, Odion and Hanson 2006, Husari 2006, and Van Wagtendonk 2006 (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels).

Uncertainties in predicted effects are described in the assumptions used for both the Vegetation and Fire and Fuels effects analyses (FEIS, Volume 1, Chapter 4, Effects on Vegetation, Assumptions and Methodology; FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology).

PC #512: The Forest Service should propose other relevant scientific projects besides those that result in alternative management strategies, allowing the public to propose projects.

Response: The FEIS integrates and links science to management through monitoring, scientific research, and adaptive management (FEIS, Volume 1, Chapter 1, Public Involvement, Integrating Science). Strategies and objectives for scientific study include responding to science advisories, using the joint strategic framework with the National Park Service, and fostering other partnerships dealing with science (FEIS; Volume 1; Chapter 2: Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Scientific Study and Adaptive Management). Other partnerships can be formed with associations, non-government organizations, permit holders, volunteers, and other community groups at the landscape level or site-specific project level of analysis. Several strategies and objectives for partnerships are included in Chapter 2 of the FEIS (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Human Use).

Monitoring

PC #513: The Forest Service should include a more detailed monitoring plan.

PC #514: The Forest Service should revise the monitoring plan to address internal inconsistencies and define the terms used in the performance measures.

PC #516: The Forest Service should not use open-ended monitoring questions.

Response (to PC #s 513, 514, and 516): The Monitoring Plan included in the Monument Management Plan has been updated to give more specific guidance to monitoring effects on the objects of interest. Terms used in describing the performance measures used in the Monitoring Plan have been defined (Monument Plan, Part 3—Design Criteria, Monitoring and Evaluation).

PC #515: The Forest Service should incorporate monitoring and the metrics for that monitoring that relate directly back to the desired conditions.

Response: The Monitoring Plan included in the Monument Management Plan has been updated to more clearly show that monitoring that will measure movement toward the desired conditions.

PC #517: The Forest Service should amend the monitoring criteria to include fire behavior as a factor.

Response: The Monitoring Plan includes monitoring for fire behavior and fire regime that checks if fire and fuel strategies and treatments are effective in achieving the desired fire behavior and fire regimes within vegetation types or series (Monument Plan, Part 3—Design Criteria, Monitoring and Evaluation, Monitoring Plan, Fire and Fuels). Performance measures include severity, rate of spread, fire type, intensity, frequency, spotting, crown bulk density, and tree density.

PC #518: The Forest Service should include a monitoring metric that addresses sugar pine mortality.

Response: Sugar pine mortality is a great concern in the Sequoia National Forest and in the Monument. While no current metric is included in the Monument Monitoring Plan, silviculturists monitor sugar pines and other white pines on a regular basis, and Forest Service entomologists, pathologists, and geneticists visit every year or two to monitor the condition of sugar pine in the forest.

PC #519: The Forest Service should follow their monitoring and evaluation plan as outlined, with the proper attention to plant resources.

Response: Thank you for your comment. The Monitoring Plan has been updated to better reflect the intent of and results measured by monitoring and evaluation. It will be followed to ensure that the objects of interest are protected and cared for, and Monument ecosystems are restored.

PC #520: The Forest Service should identify methods for creating monitoring plans, as well as define methods for modifying carrying capacity or management activities if impacts lie outside the limits of acceptable change.

Response: The Monitoring Plan for the Monument has been developed using a collaborative approach. The protocols are designed to monitor the effectiveness of the strategies employed to achieve the desired conditions. Monitoring includes recreation use. At present, capacity limits are not included in the Monument Plan. If recreation use reaches a point where carrying capacity limits are needed they can be amended into the Monument Plan. The Monitoring Plan is an integral part of the adaptive management cycle that will provide a framework to guide future management decisions and actions (Monument Plan, Part 3—Design Criteria, Monitoring and Evaluation, Monitoring Plan).

PC #521: The Forest Service should continue using the adaptive management approach, allowing for consideration of new knowledge and plan changes.

Response: Managers expect to employ adaptive management strategies through the life of the Monument Plan. The intent is to continually adjust management practices to protect and care for the objects of interest. As Figure 3 of the Monument Management Plan displays (Monument Plan, Part 2—Strategy, Strategies and Objectives, Scientific Study and Adaptive Management), site-specific analysis will be a continuing source of new knowledge. Scientific study and monitoring results will be evaluated to determine the need for changes or updates to the Monument Plan.

Vegetation, including Giant Sequoias

PC #1: The Forest Service should consider and evaluate the impacts of previously approved timber sales.

PC #80: The Forest Service should explain what timber stand improvement projects are.

PC #84: The Forest Service should not apply standards to the Monument that were developed to maximize timber production.

PC #85: The Forest Service should cancel any remaining uncut units of the timber sales grandfathered by the Clinton proclamation.

PC #86: The Forest Service should only allow commercial loggers to bid publicly for specific sites that meet stringent requirements.

PC #87: The Forest Service should locate landings and access roads well away from stands containing specimens of the largest trees if logging is allowed.

Response (to PC #s 1, 80, 84, 85, 86, and 87): The effects from past harvesting are discussed as part of the existing condition of vegetation in the Monument in Chapter 3 of this FEIS (FEIS, Volume 1, Chapter 3, Vegetation, Plantations/Historic Harvesting in Giant Sequoia Groves).

Timber stand improvements (TSI) are silvicultural treatments that enhance the growth of trees. In forestry, these silvicultural treatments have been used for timber, fire, wildlife, recreation, and soils management. The most common TSI treatment is the thinning of trees to provide more growing space for the remaining trees. This would increase tree size and enhance resiliency. Other examples of TSI

are pruning, release, and fertilization. Fertilization is generally not needed in forest ecosystems in the Monument. Other TSI treatments, however, may be important. The purpose and need for treatment would be identified at the project level. Pruning helps reallocate growth to different parts of a tree. Pruning also increases the height to live crown and reduces lower branches which may act as fire ladders to the upper tree crown. Pruning has been used as part of fuels projects in the Monument to help protect forests from crown fires. Sometimes shrubs or other non-tree vegetation pose severe water and sunlight competition to desirable trees. Release is the "thinning" out of non-tree vegetation to help trees grow. It is often used in combination with the thinning of trees. Pruning, thinning, and release can be combined to protect young forests from fire and to enhance resiliency to drought, insects, disease, and future severe fires. Since timber management is not an objective in the Monument, TSI will not be done for the purpose of maximizing tree growth for commercial timber purposes. It will only be done if needed to meet objectives for ecological restoration and maintenance or public safety.

Removal of trees for the purpose of a timber program is prohibited by the Clinton proclamation. Trees can only be removed from the Monument if it is clearly needed for ecological restoration and maintenance or public safety. All silvicultural treatments in the Monument, whether dealing with cutting trees or brush, reducing fuels, planting trees, or providing protection from insects, disease, drought, and severe fire are done for the purpose of protecting the objects of interest.

The timber sales grandfathered by the Clinton proclamation that were enjoined are current legal contracts. The proclamation acknowledged the need to honor the legal contracts. Although these sales were prepared before timber production objectives were prohibited in the Monument, the major purposes of these enjoined sales include fuels and stand density reduction, which are consistent with ecological restoration and promoting stand resiliency.

There are no proposals or plans for additional commercial logging in the Monument but, if a future site-specific project includes a commercial sale, bidding will be done in accordance with Forest Service regulations.

Roads and landings are not designed to be placed in the middle of a stand. They are designed to provide safe access, and standards that are used to protect wildlife, old growth, soils, and water would protect trees. Stands containing specimens of the largest trees receive specific consideration in all site-specific project implementation.

PC #2: The Forest Service should analyze the impacts of livestock grazing on Monument vegetation.

Response: The ongoing and potential effects of grazing on Monument vegetation are discussed in the Range sections of this FEIS (FEIS, Volume 1, Chapter 3, Range; FEIS, Volume 1, Chapter 4, Effects on Range, Assumptions and Methodology, Assumptions for All Alternatives; FEIS, Volume 1, Chapter 4, Effects on Range, Standards and Guidelines and Monitoring).

PC #4: The Forest Service should include more analysis to support the vegetation and wildlife management conclusions.

Response: The Vegetation, including Giant Sequoia Groves section in Chapter 4 has been modified, and citations added, to help improve readability and more clearly link the content to supporting literature and research.

For example, a portion of the discussion of Giant Sequoia Regeneration has been modified to read:

> Many groves currently have scattered trees or groups of small sequoia trees 30 to 100 years old in small openings or other disturbed areas. The lack of recent disturbances, such as fire and harvesting over the last decade or more which create canopy gaps and exposes mineral soils and allows light to reach the ground, has resulted in many groves lacking significant natural sequoia regeneration less than thirty years old (e.g., Stephenson 1994, Meyer and Safford 2011b, York et al. 2012). The lack of more favorable summer rains or soil moisture during the summer and fall has likely been an additional factor in poor survival and growth of new seedlings (e.g., Stephens et al. 1999, York et al. 2010). Sequoia seedlings planted during this time have survived

and established well in the limited openings available for regeneration projects (FEIS; Volume 1; Chapter 3; Vegetation, including Giant Sequoias; Giant Sequoia Regeneration).

PC #6: The Forest Service should provide valid scientific criteria for removing 20-30 inch trees for ecological restoration.

PC #59: The Forest Service should not use diameter limits to achieve forest health and restoration.

PC #62: The Forest Service should research the impact on fire severity of removing trees 3 to 4, 4 to 5, 5 to 6, 6 to 7, 7 to 8, and 8 to 9 inches in diameter in order to determine which has the least impact on the environment.

PC #64: The Forest Service should make the standards and guidelines allowing for the removal of large trees consistent with science.

PC #89: The Forest Service should only consider removing trees with a dbh of 10 inches or less.

Response (to PC #s 6, 59, 62, 64, and 89): The alternatives propose a range of diameter limits, from six inches (within one to two acres of a nest in northern goshawk and spotted owl habitat areas and PACs in Alternatives A, B, and F) to 36 inches (for giant sequoias in Alternative E). The potential effects of the different diameter limits in different alternatives are analyzed by resource area in Chapter 4 of this FEIS. A scientific basis for the use of diameter limits does not exist. Diameter limits were included in response to public comment and concerns. The potential effects of these limits on restoring ecosystems, and promoting resiliency and homogeneity in the Monument, are analyzed in the Vegetation, including Giant Sequoias section of Chapter 4 (FEIS; Volume 1; Chapter 4; Effects on Vegetation, including Giant Sequoias).

Given a range of tree sizes growing adjacent to a desired tree, trees most similar to the desired tree offer the greatest amount of competition for resources. While the removal of the smaller neighbors can provide for the reduction of fuel hazards, the biological effect of their removal is small. Removing incrementally larger trees from the area around the desired tree, or trees, provides for increased beneficial biological effects. The specific tree size that provides a desirable effect will vary in site-specific ways and by project-specific designs.

PC #7: The Forest Service should not misrepresent the commonly-used scientific terms, including "resilience" and "ecological restoration" to further justify thinning larger trees in the Monument.

PC #11: The Forest Service should not consider commercial timber value or recovery of economic value in deciding whether to authorize logging and tree removal.

PC #15: The Forest Service should better define what constitutes a "clear need for removing trees for ecological restoration and maintenance of public safety."

PC #60: The Forest Service should not use logging as the means to accomplish forest health and conservation.

PC #61: The Forest Service should provide a clear need when removing trees of 8 inches DBH or greater for ecological restoration.

PC #63: The Forest Service should make the decision to remove trees from the Monument separate from the treatment decision.

PC #65: The Forest Service should leave large cut trees in the Monument.

Response (to PC #s 7, 11, 15, 60, 61, 63, and 65): The terms "ecological restoration" and "resiliency" are defined and discussed throughout the FEIS, but not with the intent to justify thinning of larger trees. Ecological restoration and restoring natural forest resilience are key themes in the Clinton proclamation:

> No portion of the monument shall be considered to be suited for timber production, and no part of the monument shall be used in a calculation or provision of a sustained yield of timber from the Sequoia National Forest. Removal of trees, except for personal use fuel wood, from within the monument area may take place only if clearly needed for ecological restoration and maintenance or public safety (Clinton 2000, p. 24097).

Outstanding opportunities exist for studying the consequences of different approaches to

mitigating these conditions and restoring natural forest resilience (Clinton 2000, pp. 24095-24096).

In compliance with the Clinton proclamation, no portion of the Monument has been identified as suitable for timber production and long-term sustained yield calculations are not relevant. While the effects analysis of the alternatives considers the outputs of the SPECTRUM model, those projections of tree removal are estimated outcomes, modeled only as a consequence of efforts to achieve ecological restoration goals. The spatial extent of and potential outputs were estimated by the SPECTRUM model in order to compare the alternatives and their different approaches to ecological restoration, but those estimates do not serve as future project targets.

Any treatments that involve the removal of trees from within the Monument area, including both standing trees and downed logs, will only be permitted following a determination that removal of the trees is "clearly needed for ecological restoration and maintenance or public safety" (Clinton 2000, p. 24097). As stated in Chapter 2 of the FEIS, "An evaluation of clear need is required and will be completed before any site-specific projects that propose tree removal take place in the Monument" (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Readers Guide to Alternative Descriptions, Ecological Restoration, Removal of Trees from Within the Monument). The criteria to be applied in determining a clear need are included in this section.

The decision to remove trees from the Monument is separate from the treatment decision. Appendix A to the FEIS includes a decision tree, as recommended by the Scientific Advisory Board, to help determine which methods of forest restoration and maintenance should be applied in site-specific projects that have been determined to be clearly needed (FEIS, Volume 2, Appendix A, All Action Alternatives, Decision Tree). Cut trees will only be removed from the Monument if it is determined necessary for ecological restoration and maintenance or public safety, as prescribed by the Clinton proclamation. Any volume of wood products removed will be incidental to fuels reduction and vegetation management projects.

Down trees will be retained to provide other resource values, such as wildlife habitat. Site-specific projects will include several resource objectives that will be considered, along with site-specific conditions, in their NEPA analysis.

PC #8: The Forest Service should disclose data and methodologies relied upon for conclusions about desired future conditions and specific objectives for vegetation management.

PC #10: The Forest Service should use reference landscape conditions as a model for desired conditions and specific objectives.

PC #22: The Forest Service should provide more quantitative information to characterize baseline conditions and to evaluate the effects of the alternatives on vegetation.

Response (to PC #s 8, 10, and 22): Desired conditions are management preferences based on social and scientific factors. They are not exclusive research studies, but are an attempt to set a goal or target when determining if a change is needed, what direction, and how much. The data helping to form the basis for vegetation desired conditions is derived from the Sequoia National Forest database. Desired conditions must be specific to the Monument. The Clinton proclamation provides qualitative direction in helping develop management preferences in relation to factors such as species, densities, and fuels loading. A major factor considered in the desired conditions for vegetation is the long-term preference for a more stable and variable range of species and seral stages. The current conditions, based on the existing vegetation database, indicate that most forested stands are mid or late seral. This indicates that there should be attention placed on providing early seral habitat and size classes. The desire to have a variety of tree ages and species is compatible with wildlife, recreation, fuels, and ecological restoration objectives, including objectives for ecological restoration and resiliency (North et al. 2007).

Landscape conditions from the Sequoia and Kings Canyon National Parks and the Mountain Home Demonstration State Forest provide valuable references for comparison. These helped develop the desired conditions for the Monument. The

histories of disturbances in the Monument and at Mountain Home provide more diverse and often a more valuable study for determination of needs, desired conditions, and expected responses. These areas are also more relevant or site-specific. Observations made within the actual ecosystems of the Monument, including the difference in fuel loading due to fire exclusion, provide a higher level of scientific confidence than extrapolating from site conditions developed under different management.

The Sequoia National Forest does not collect detailed data on every stand in the Monument. Data are collected on a landscape basis from permanent plots established for continuous inventories. The data are extrapolated to provide a baseline estimate of vegetation type, size, and density for similar stands in the Monument. These data were used in the SPECTRUM model to help estimate the potential effects of the alternatives on vegetation. Site-specific data will be collected for all future projects that include fuels reduction and vegetation management.

PC #9: The Forest Service should include specifically-enumerated "objectives" for treating the plantations.

PC #246: The Forest Service should discuss the amount of existing plantations in the Monument, which could already account for much of the early seral habitat.

Response (to PC #s 9 and 246): Strategy #11 for Vegetation is specific to plantations (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Vegetation; Vegetation Strategies; Strategies for Ecological Restoration, by Alternative). The affected environment for Vegetation described in Chapter 3 includes a section on the existing plantations in the Monument (FEIS, Volume 1, Chapter 3, Vegetation, Giant Sequoia Ecology, Plantations).

What may have begun as a plantation for timber management before the Clinton proclamation is now considered and will be managed as a stand of trees or a forest ecosystem in the Monument. Plantations that are predominantly small trees are included as early seral habitat, but many plantations in the Monument are past the early seral stage.

PC #12: The Forest Service should discuss what percentage of the treatment areas would be done with prescribed fire or mechanical treatments.

Response: As a plan amendment, it is unknown at this time what percentage of any part of the Monument will be treated with prescribed fire or mechanical treatments. An analysis was completed and added to the FEIS of the percentage of the WUI and the TFETA that could be considered for mechanical treatment, based on criteria determining where mechanical treatment is limited or prohibited. It was determined that, based on these constraints, approximately 23 percent of the 328,315 acres of National Forest System land in the Monument could be considered for mechanical treatments (alone or in conjunction with fire treatments), compared to about 77 percent that could be considered for fire treatments (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Readers Guide to the Alternatives, Ecological Restoration, Types of Treatments).

A decision tree has been developed and added to the FEIS that will be used for each site-specific project proposed in the Monument. This decision tree will help managers determine, after a clear need determination, which methods of forest restoration and maintenance should be used (FEIS, Volume 2, Appendix A, All Action Alternatives, Decision Tree).

PC #13: The Forest Service should make the standards and guidelines regarding revegetation consistent with the desired condition for species composition.

Response: Thank you for your comment. The standards and guidelines for revegetation were revisited and corrected to show the intent to move toward desired species composition and better show how they differ by alternative (FEIS; Volume 2; Appendix A; All Action Alternatives; Vegetation, including Giant Sequoias; Monument-wide).

PC#16: The Forest Service should only include natural seeding for regeneration.

Response: Alternative D as developed and analyzed allows only natural regeneration. The other alternatives allow for tree planting where natural regeneration is not likely.

PC #17: The Forest Service should make it a priority to manage for forest health and protection, both inside and outside of the wildland urban intermix.

Response: The desired conditions, strategies, and objectives developed for Vegetation make it a priority to restore and maintain forest resiliency, heterogeneity, and health, as well as protect the giant sequoia groves and their ecosystems throughout the Monument (FEIS; Volume 1; Chapter 2; Desired Conditions, Strategies, and Objectives; Vegetation Strategies; etc.). In all alternatives, the focus for fuel reduction activities is in the wildland urban intermix (WUI). Treatments for fuels reduction and ecological restoration are prioritized in the WUI defense zones before other allocations.

PC #18: The Forest Service should manage at a sufficient pace and scale to restore natural forest resilience.

Response: The range of alternatives is bound by the Clinton proclamation. Within these parameters, the alternatives consist of different approaches with some differences in priority, respond differently to the issues, and contain some different strategies and objectives. There is also a temporal difference between the alternatives, in the time it would take to approach the desired conditions. The analyses of the potential effects of the alternatives in Chapter 4 consider this difference in pace and scale.

PC #19: The Forest Service should emphasize restoring natural processes such as fire and post fire natural succession in its management strategy.

PC #21: The Forest Service should allow for natural succession in seral stages.

Response (to PC #s 19 and 21): Allowing nature to take its course is the theme of Alternative D. The potential effects of this approach in Alternative D are analyzed by resource area, such as Vegetation (FEIS; Volume 1; Chapter 4, Effects on Vegetation, including Giant Sequoias; Indirect Effects; Heterogeneity/Giant Sequoia Regeneration; FEIS; Volume 1; Chapter 4; Vegetation, including Giant Sequoias; Cumulative Effects; Resiliency/ Heterogeneity/Giant Sequoia Regeneration).

The Sequoia and Kings Canyon National Parks (SEKI) adjacent to the Monument have had a prescribed burning program for decades. Surface and ladder fuels have not built up as much as in the Monument, making it easier to control the intensity and rate of spread of prescribed fires. Burning without mechanical treatment however is often too high a risk even in the parks. Some prescribed burns have burned hot enough to unintentionally kill larger giant sequoias. Mechanical treatments using hand tools or heavy equipment may be needed before prescribed burning to reduce this risk and is considered in the alternatives.

The need for fuels treatment is higher in the Monument, and years of fire suppression have resulted in an unprecedented buildup of fuels, as discussed in the Clinton proclamation. This, along with the potential for a warmer climate with dryer summers, has increased the risk of catastrophic disturbances such as uncharacteristically severe fires that can kill vast areas of mature forests.

Exclusion of fire in the Monument has disrupted natural succession. Major natural disturbances interrupt seral progression, creating patches or larger areas of early seral habitat. Letting hotter fires burn and alter large areas of existing mature trees is not consistent with the purpose of the Monument to protect and care for the objects of interest. Managed wildfire, prescribed burns, and mechanical treatments are explored in the alternatives as methods to restore ecosystems, including restoring the natural role of fire and natural plant succession.

PC #27: The Forest Service should include a more extensive discussion of existing snag and down wood levels and understory conditions.

PC #55: The Forest Service should incorporate hazard tree felling and removal standards.

PC #72: The Forest Service should explain or scientifically justify the standard and guideline which allows 90 percent removal of snag forest habitat created by high-intensity wildland fire.

PC #73: The Forest Service should include harvesting the hazard trees and trees blown over alongside all roads and campgrounds within the monument.

PC #271: The Forest Service should explain why, ecologically, a 19-inch-diameter tree, for example, would need to be "removed" from the ecosystem, as opposed to being converted into a large snag or large downed log.

Response (to PC #s 27, 55, 72, 73, and 271): A more extensive discussion of snags and down wood has been added to the Wildlife sections of the FEIS (FEIS, Volume 1, Chapter 3, Wildlife and Plant Habitat, Wildlife Habitat, Burned Forest Habitat/ Wildlife Species Considered in Detailed Analysis; FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Assumptions and Methodology, Burned Forest Habitat; FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Effects on Management Indicator Species Habitat, Snags in Burned Forest Ecosystem Component [Black-backed Woodpecker]). Wildlife standards and guidelines in Appendix A to the FEIS give management guidance on snags and down wood levels (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Monument-wide).

Standards and guidelines for hazard tree felling and removal are included in Appendix A to the FEIS (FEIS, Volume 2, Appendix A, All Action Alternatives, Vegetation/Hydrological Resources). The Forest Service updates and adheres to safety policies for tree removal.

This FEIS for the Monument does not include a standard and guideline that allows a certain percentage of snag forest habitat to be removed.

Large fallen non-sequoia logs will not be removed unless needed for safety or ecological restoration. In general, given low rates of mortality, larger fallen trees will be left in place. One exception may be where they block important transportation routes or pose a public safety concern. Large sequoia snags and down logs will not be cut or removed. One exception would be where they present a safety hazard that outweighs the value to forest resources.

PC #20: The Forest Service should ensure that elder trees are not "treated," "burned," or "managed."

Response: This plan is expected to protect the giant sequoia groves and the other objects of interest, and encourage continued public and recreational access and use (FEIS, Volume 1, Chapter 1, Purpose and Need). The first two strategies for giant sequoia groves deal with the protection of all large, naturally-occurring giant sequoias, as well as large trees of other species (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Vegetation Strategies; Strategies Specific to Giant Sequoias).

PC #23: The Forest Service should closely examine the benefit of using fire to manage for structural diversity and heterogeneity.

PC #83: The Forest Service should lightly burn after vegetation projects in groves, especially when the material has been chipped.

PC #208: The Forest Service should acknowledge it cannot "burn" its way back to forest health.

PC #101: The Forest Service should use both mechanical treatments and prescribed fire together for fuels reduction.

Response (to PC #s 23, 83, 208, and 101): A combination of fire and mechanical treatments are considered in each alternative analyzed in this FEIS. The benefits of using fire, and a combination of fire and mechanical, to promote heterogeneity are discussed and analyzed in the Vegetation and Fire and Fuels sections of Chapter 4 of this FEIS (FEIS, Volume 1, Chapter 4, Effects on Vegetation, Assumptions and Methodology, Assumptions for All Alternatives, Trade-offs/Heterogeneity; FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology, Assumptions for All Alternatives, Trade-offs Between Types of Treatments).

PC #29: The Forest Service should pursue vegetation management goals at the landscape scale.

Response: The alternatives in this FEIS do not propose any specific projects or activities. Vegetation management in specific areas will

be subject to site-specific project planning and analysis.

PC #30: The Forest Service should not use fuel strategies to justify creating patches of young growth within stands dominated by old growth.

Response: Management activities will be based on meeting the desired conditions, which include heterogeneous stands with some young growth. Managed wildfire and prescribed burning are tools for accomplishing fuels reduction and ecological restoration. Mechanical methods will be used separately, or in addition, to help meet desired conditions, including vegetation diversity.

PC #31: The Forest Service should not use chemicals and other non-natural means to manage pests.

PC #79: The Forest Service should not use strychnine to control rodent populations in plantations.

Response (to PC #s 31 and 79): To a large extent, endemic levels of pests will be managed as part of the forest ecosystem. Pest management considers the need for the use of pesticides at the site-specific project level. Pesticide risk assessments will be used to determine suitability of treatments if any are considered. The application of pesticides and other treatments that favor trees will not be used for the purpose of maximizing tree survival and growth unless they are considered necessary for resiliency, heterogeneity, forest health, or other objectives of ecological restoration.

PC #32: The Forest Service should discuss black oak ecosystems.

Response: The black oak species is discussed as part of the Montane-Hardwood Conifer and Mixed Conifer including Giant Sequoia vegetation types in Chapter 3 of the FEIS (FEIS; Volume 1; Chapter 3; Vegetation, including Giant Sequoias; Vegetation Types; Montane-Hardwood Conifer), as well as in the Giant Sequoia Ecology section of Chapter 3 (FEIS; Volume 1; Chapter 3; Vegetation, including Giant Sequoias; Giant Sequoia Ecology).

PC #33: The Forest Service should not project thinning as a cost offset.

Response: The analysis in the FEIS was updated to rely less on cost offset projections. According to the Clinton proclamation, none of the Monument is to be viewed as a source of timber or to be used to produce volume. Even though this was not our intent, there is the perception that we were looking at the Monument in this manner in the DEIS. Average costs for prescribed burning and mechanical treatments were used in the SPECTRUM model to estimate potential outcomes, and analyze and compare the alternatives.

Analysis of the costs and benefits associated with any proposed treatments will take place during site-specific project analysis where site-specific investigations, integrated resource considerations, and cost-effective prescriptions are developed. The Monument Plan is a programmatic plan and is not intended to justify a particular treatment.

PC #34: The Forest Service should stop understory clearing.

PC #57: The Forest Service should consider only removing undergrowth brushes and dead branches instead of cutting trees.

PC #58: The Forest Service should achieve forest health with minimal outlay in appropriations by mechanical removal of overly dense vegetation in the overstory and surface and ladder fuels.

Response (to PC #s 34, 57, and 58): Because of the fuels buildup in the Monument and the danger this presents to the giant sequoias and other objects of interest, this FEIS analyzes different strategies and combinations of tools to reduce surface and ladder fuels.

PC #35: The Forest Service should re-examine their information regarding red fir regeneration.

Response: The regeneration data for red fir is limited to the relatively few acres that exist in sequoia groves. A 100 percent inventory was not performed and it is likely that some seedlings exist in red fir types. Plots were taken within groves to obtain an estimate of the number of seedlings. A value of zero means that no plots taken in red fir types within groves contained a particular species of tree seedling. When expanded to a landscape level, this means that these particular seedlings are rare or not abundant in groves.

PC #36: The Forest Service should review the scientific data that indicates that tree mortality from competition for water or nutrients or insects/pathogens is actually quite low in pine-dominated and mixed-conifer forests.

Response: There are numerous studies on managing stand density that pertain directly to the types of ecosystems within the Monument or indirectly to the concepts involved in providing growing space. The study by Hanna et al. (2000) quantified the amount of water and nutrients extracted by trees under different densities. It also quantified the stresses found under these densities. This study measured the changes in stress and growth of remaining trees resulting from thinning. In conditions of drought, trees with more growing space (less competition) will generally have a better chance for survival. Leaving densely packed stands of trees in the Monument often promotes high risks of mortality due to drought, insects, disease, and fire. Catastrophic social and ecological losses have occurred in California and other parts of the western United States from similar conditions that create tree and forest stress. Tree stress due to increased temperatures and overcrowding has accelerated greatly over the last fifteen years (Safford 2009, Millar et al. 2007).

PC #37: The Forest Service should improve the standards and guidelines to restore sugar pine to its historic role as a component of pine stands of the Monument.

Response: Four standards and guidelines for sugar pine are included in this FEIS (FEIS; Volume 2; Appendix A; All Action Alternatives; Vegetation, including Giant Sequoias; Sugar Pine).

The proportion of sugar pine that needs to planted in a stand will be based on site-specific evaluations. The Sequoia National Forest currently plants more sugar pine in areas of artificial regeneration than were lost from the site. The current planting program, which selects both phenotypically (exterior noticeable traits) and genotypically (genetically tested traits) superior parent trees, is a promising way to maximize the chance for successful regeneration and survival of this species which is threatened by the blister rust disease.

PC #38: The Forest Service should acknowledge the adverse consequences of thinning.

Response: The potential adverse effects of thinning are discussed in Chapter 4 of this FEIS, as part of the discussions of the trade-offs between the use of fire and mechanical treatments (FEIS; Volume 1; Chapter 4; Effects on Vegetation, including Giant Sequoias; Assumptions and Methodology; Assumptions for All Alternatives; Trade-offs).

PC #54: The Forest Service should provide a complete description of the affected environment including a quantitative and qualitative description of all the logging damage that the Clinton proclamation states needs restoration.

Response: Historic harvesting is described and discussed in Chapter 3 of this FEIS (FEIS; Volume 1; Chapter 3; Vegetation, including Giant Sequoias; Giant Sequoia Ecology; Historic Harvesting in Giant Sequoia Groves). An historical perspective is also included in the Cultural Resources section of Chapter 3 (FEIS, Volume 1, Chapter 3, Cultural Resources, Historical Background, Emergence of Timber and Grazing Interests).

PC #56: The Forest Service should adopt a general management plan that is based on the same ecological principals as the National Park Service provides Sequoia National Park.

Response: This option is analyzed in the FEIS as Alternative C. In the alternative descriptions, it is explained that Alternative C was developed "to manage the Monument similar to Sequoia and Kings Canyon National Parks (SEKI) in a manner that is consistent with Forest Service regulation and the direction of the Clinton proclamation. It was determined that some management policies or direction from SEKI would not be applicable to the Monument because of differences in law, regulation, and policy for the two federal agencies. In this alternative, restoration activities would focus on areas that have been affected by human use and occupation" (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative C, Alternative Theme). In order to manage the Monument with similar strategies as the national parks, some land allocations associated with the Forest Plan and the 2001 SNFPA would be

removed. This is to mimic SEKI's management of areas outside of human use as a single ecosystem with the minimal use of tools. Land allocations/ management areas designating grove influence zones, protected activity centers, den sites, old forest emphasis, and riparian conservation areas or critical aquatic refuges would not be carried forward in this alternative (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative C, Management Direction).

PC #66: The Forest Service should provide constraints to ensure that management furthers the purpose of protecting and restoring the resources of the Monument as required by the Clinton proclamation.

Response: The standards and guidelines developed for the action alternatives considered in detail were developed to do just that, to protect the giant sequoia groves and the other objects of interest, and encourage continued public and recreation access and use.

PC #67: The Forest Service should disclose the costs and benefits associated with using mechanical treatments to achieve ecological restoration.

PC #78: The Forest Service should highlight the costs and benefits of the alternatives for vegetation management.

Response (to PC #s 67 and 78): Average costs for prescribed burning and mechanical treatments were used in the SPECTRUM model to estimate potential outcomes, and analyze and compare the alternatives. Analysis of the costs and benefits associated with any proposed treatments will take place during site-specific project analysis where site-specific investigations, integrated resource considerations, and cost-effective prescriptions are developed. The Monument Plan is a programmatic plan and is not intended to justify a particular treatment.

PC #68: The Forest Service should reexamine its interpretation of the North et al GTR-220.

Response: The North et al (2009) report was used as a reference in the FEIS, but other current and applicable science was also considered and cited in the FEIS. That report is a guide and was not meant to serve as a prescription or justification for the use of specific management tools or treatments.

PC #71: The Forest Service should integrate the objects of interest with the management plan.

Response: Thank you for your comment. The FEIS has been updated to better integrate proposed management direction with the protection and care of the objects of interest.

PC #312: The Forest Service should conduct an adequate analysis of carbon sequestration.

Response: The FEIS has been updated with separate Climate Change sections in Chapter 3 (Affected Environment) and Chapter 4 (Environmental Consequences). Carbon sequestration is discussed in the Climate Change section of Chapter 4 (FEIS, Volume 1, Chapter 4, Effects from Climate Change, Indirect Effects, Carbon Sequestration).

PC #313: The Forest Service should actively manage the forest in the Monument to substantially reduce wildfire emissions and net carbon sequestration.

Response: Wildfire emissions are analyzed in the Air Quality section of Chapter 4 (FEIS, Volume 1, Chapter 4, Effects on Air Resources, Indirect Effects, Air Quality). Carbon sequestration is analyzed in the Climate Change section of Chapter 4 (FEIS, Volume 1, Chapter 4, Effects from Climate Change, Indirect Effects, Carbon Sequestration).

Giant Sequoias

PC #5: The Forest Service should provide citations to support their conclusion that creating openings is necessary for giant sequoia regeneration.

PC #48: The Forest Service should take into consideration the opportunity for regeneration following managed or prescribed fire.

PC #49: The Forest Service should use fire to create openings for giant sequoia regeneration.

PC #50: The Forest Service should not overstate the uncertainty and urgency of sequoia regeneration.

PC #51: The Forest Service should incorporate additional scientific studies on sequoia regeneration.

PC #53: The Forest Service should include a strategy for giant sequoia regeneration.

PC #76: The Forest Service should not perpetuate the tree farming paradigm that was thrown out by the Clinton proclamation.

PC #82: The Forest Service should define what regeneration areas are.

Response (to PC #s 5, 48, 49, 50, 51, 53, 76, and 82): Giant sequoia regeneration, both its current state and the potential effects on it as a result of the alternatives considered in detail, is discussed in several sections of Chapters 3 and 4 of the FEIS (FEIS; Volume 1; Chapter 3; Vegetation, including Giant Sequoias; Giant Sequoia Ecology; Regeneration in Undisturbed Groves; FEIS; Volume 1; Chapter 3; Vegetation, including Giant Sequoias; Giant Sequoia Regeneration; FEIS; Volume 1; Chapter 4; Effects on Vegetation, including Giant Sequoias; Indirect Effects; Giant Sequoia Regeneration). These sections have been modified, and citations added, to help improve readability and more clearly link the content to supporting literature and research.

Strategies for giant sequoia regeneration are included in the strategies and objectives for Scientific Study and Adaptive Management, and Vegetation, including Giant Sequoias (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Scientific Study and Adaptive Management; Objectives for Scientific Study and Adaptive Management, by Alternative; FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Vegetation, including Giant Sequoias; Vegetation Strategies; Strategies Specific to Giant Sequoias, by Alternative/Strategies for Ecological Restoration, by Alternative/Objectives for Giant Sequoias, by Alternative).

PC #39: The Forest Service should include giant sequoia groves as part of their surrounding ecosystem, not as a separate ecosystem.

Response: The giant sequoia grove land allocation varies in size by alternative, depending upon whether administrative boundaries, grove influence zones (GIZs), or grove zones of influence (ZOIs) are considered the outer boundaries. Each of these include area beyond the tree line boundaries in the grove allocation. Alternatives B and F make use of the largest of these areas, the ZOIs. The ZOIs define an area, based on the best available science, within which key ecological processes, structures, and functions should be evaluated to ensure that the giant sequoia groves are preserved, protected, and restored. They include area outside the tree-line boundary of the groves as determined by terrestrial considerations, surface water drainage (watershed s), and the nearest stable stream channel (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Reader's Guide to Alternative Descriptions, Land Allocations and Management Areas, Static Land Allocations/Management Areas, Giant Sequoia Groves).

PC #40: The Forest Service should conduct research on the population of giant sequoia groves.

PC #603: The Forest Service should let the giant sequoia groves that have not been thinned, logged, or seriously disrupted by human activity serve as control groves for scientific study.

Response: The grove inventory completed in 2009 provided baseline data on the giant sequoia groves in the Monument. The inventory results are included in Appendix I to this FEIS. Strategies and objectives for Scientific Study and Adaptive Management include research on the giant sequoia groves and other objects of interest in all alternatives (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Scientific Study and Adaptive Management).

PC #41: The Forest Service should have a guideline for protection of old growth sequoia features from fire, not just the three named trees.

Response: The first two strategies for giant sequoia groves deal with the protection of all large, naturally-occurring giant sequoias, as well as large trees of other species (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Vegetation Strategies; Strategies Specific to Giant Sequoias, by Alternative). Though there is one particular standard

and guideline that specifies protection for the named giant sequoias, there are many other standards and guidelines that restrict activities and protect giant sequoias and the groves (FEIS; Volume 2; Appendix A; All Action Alternatives; Vegetation, including Giant Sequoias; Giant Sequoia Groves).

PC #42: The Forest Service should develop an alternative that provides for long-range management plans to guarantee the preservation and expansion of the giant sequoia groves.

PC #43: The Forest Service should focus on restoration of more natural conditions in the giant sequoia groves.

PC #45: The Forest Service should give proper attention to the special qualities of each of the giant sequoia groves, many of which are wonders of the world.

Response (to PC #s 42, 43, and 45): Each of the alternatives considered in detail is designed to provide protection for the objects of interest, as required by the Clinton proclamation. The naturally-occurring giant sequoia groves are considered first in priority among the objects of interest. Desired conditions, strategies, objectives, and standards and guidelines developed for the action alternatives recognize this priority and focus on the giant sequoias and their groves, including those for Scientific Study and Adaptive Management (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Scientific Study and Adaptive Management). The grove inventory completed in 2009 provided baseline data on the giant sequoia groves in the Monument. The inventory results are included in Appendix I to this FEIS.

PC #52: The Forest Service should explain why, according to the SPECTRUM model, the preferred alternative does so poorly for giant sequoia regeneration.

Response: The SPECTRUM model was not designed to predict sequoia regeneration. Making these predictions at the grove level, where they would be correlated to regeneration, would require more site-specific data than available for this programmatic plan. This will be gathered and evaluated at the project level. The programmatic design of the SPECTRUM model predicts possible treatments, but also predicts that, in all alternatives, the Monument will be subjected to unplanned wildfire and insect disturbances. Some of these may occur in groves and some of these may affect sequoia regeneration.

PC #75: The Forest Service should provide an adequate discussion of the cumulative impacts.

Response: The cumulative effects section of the Vegetation effects analysis has been updated to better describe the potential cumulative effects on vegetation (FEIS; Volume 1; Chapter 4; Vegetation, including Giant Sequoias; Cumulative Effects).

PC #77: The Forest Service should explain the management of the Zones of Influence (ZOIs) for the giant sequoia groves.

Response: The definition of the land allocations, including the giant sequoia grove ZOIs, and the descriptions of Alternatives B and F have been updated to better describe the intents and purposes of the ZOIs (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Reader's Guide to Alternative Descriptions, Land Allocations and Management Areas, Static Land Allocations/ Management Areas, Giant Sequoia Groves; FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Alternative B; Resource Areas; Vegetation, including Giant Sequoias).

PC #81: The Forest Service should not immediately replant in areas previously logged or burned.

Response: Although some openings are desired for early seral habitat and regeneration of trees, large openings created by uncharacteristically severe wildfires may occur. It is not likely that any openings created by fuels reduction or vegetation management will be very large. Openings will be surveyed for site-specific projects to consider the need for ecological restoration, and to assess how to regenerate to the desired and suitable species. Planting, where done in the Monument, will promote vegetative cover and diversity and consider the appropriate succession of tree species.

PC #88: The Forest Service should not use guidelines and land allocations that foster commodity production instead of protection.

Response: The land allocations and standards and guidelines included in the alternatives are designed to protect the giant sequoia groves and other objects of interest. The standards and guidelines do set limits on management activities that may be proposed in site-specific projects in the future.

PC #91: The Forest Service should address the current vegetation conditions.

Response: The current conditions for vegetation in the Monument are described by vegetation type in Chapter 3 of the FEIS (FEIS; Volume 1; Chapter 3; Vegetation, including Giant Sequoias; Vegetation Types).

PC #92: The Forest Service should consider the following strategies for ecological restoration and protecting objects of interest from the Citizens' Park Alternative:

- Focus on allowing natural processes to prevail.
- Limit treatments to areas of human use and influence.
- To address fuels buildup, allow limited manual or mechanical treatment, with diameter limits for tree cutting, subject to restrictions in the Clinton proclamation with a focus on prescribed and naturally occurring fire.
- Remove many of the land allocations associated with the 2001 Framework, but will retain any associated standards and guidelines that provide protection for monument objects.
- Mimic Sequoia and Kings Canyon National Parks' (SEKI's) management of areas outside of human use as a single ecosystem with the minimal use of tools. Land allocations/management areas designated grove influence zones, protected activity centers, den sites, old forest emphasis, and riparian conservation areas or critical aquatic refuges will not be carried forward.
- Emphasize resource conservation that allows natural processes to prevail and focuses on the restoration of natural processes to areas altered by human use by employing tactics that minimize the use of tools used for restoration.
- To promote heterogeneity, use both prescribed and naturally occurring fire.

Response: The strategies for ecological restoration and protecting the objects of interest identified in the Citizens' Park Alternative are included in the FEIS as follows:

- Focus on allowing natural processes to prevail—this is the theme for Alternative D (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative D, Alternative Theme).
- Limit treatments to areas of human use and influence—this is included in Alternative C (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative C, Alternative Theme).
- Focus on prescribed and naturally occurring fire-managed wildfire and prescribed burning are included as tools in every alternative, and are the two most preferred tools in Alternatives C and D (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative C, Resource Areas, Fire and Fuels; FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative D, Resource Areas, Fire and Fuels).

  The prioritization of management tools used for ecological restoration (fuels reduction and vegetation management) is intended to show a difference in tool preference between the alternatives. It does not direct the order in which these tools will be used in site-specific projects. The three tools—mechanical treatment, prescribed fire, and managed wildfire—can be used individually or in combination based on site-specific analysis and existing conditions. For example, if mechanical treatment is the priority in an alternative, that tool might be preferred and considered first, but it also may be used in combination with the other tools or not used at all, based on site-specific conditions and project goals. In addition, whenever naturally-ignited wildfires occur and are available to manage for resource benefits, those managed wildfires will be used first for ecological restoration, no matter their order of priority in an alternative (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative A, Resource Areas, Fire and Fuels, Prioritizing Tools for Ecological Restoration).

- Manage the Monument similar to Sequoia and Kings Canyon National Park ("SEKI")—this is the theme for Alternative C (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative C, Alternative Theme).

PC #96: The Forest Service should consider the objectives for vegetation management in the Citizens' Park Alternative:

- No specific numerical objectives for canopy cover, seral type, basal area by forest type, or other structural forest elements in the Monument.
- Focus on the restoration of natural processes, including the reintroduction of fire into groves and other areas where fire has been excluded.
- If tree removal is considered, follow the Tree Cutting and Removal standard and guidelines to determine whether cutting and removal are clearly needed for ecological restoration and maintenance or public safety. The standard and guideline provides a hierarchy for the disposition of felled trees.
- Within 5 years, complete a giant sequoia grove-specific fuel load reduction plan for every grove in the Monument, which focuses on reintroducing fire and protects and maintains current large down woody material levels.
- Within 5 years, complete a plantation restoration plan for every plantation within the Monument, which focuses on creating heterogeneity and diversity of species and structure, with the goal of eventually reintroducing managed and natural fires into the plantation area.

Response: The objectives for vegetation management identified in the Citizens' Park Alternative are included in the FEIS as follows:

- The FEIS does not include specific numerical objectives for canopy closure, seral type, or basal area by forest type; however it does include objectives for the percentage of acres where ecological restoration will be accomplished by vegetation type (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Vegetation Objectives [by Type]).
- Focusing on the restoration of natural processes—this is the theme for Alternative D (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative D, Alternative Theme).
- Any projects which propose the felling of trees inside the Monument will be subject to specified criteria for tree felling. These five criteria shall apply to any treatments which involve the felling of trees, whether or not removal of those trees from the Monument is also proposed. Where removal of the felled trees from the Monument is proposed, the proposal will also be subject to the "clearly needed" evaluation for tree and down log removal (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Readers' Guide to Alternative Descriptions, Ecological Restoration, Removal of Trees from Within the Monument/Tree Felling).
- The first objective for giant sequoias in all alternatives is to complete a giant sequoia grove-specific fuel load reduction plan for every grove within the Monument (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Vegetation Objectives (by Type); Objectives for Giant Sequoias, by Alternative).
- Complete a plantation restoration plan for every plantation within the Monument—this objective was not included in the FEIS, but two standards and guidelines are included for the management of plantations and young stands to increase stand heterogeneity and accelerate old growth characteristics (FEIS; Volume 2; Appendix A; All Action Alternatives; Vegetation, including Giant Sequoias; Young Stands, including Plantations).

PC #97: The Forest Service should include the standards and guidelines for vegetation management as suggested by the Citizens' Park Alternative.

PC #98: The Forest Service should include the strategy for vegetation that mimics that of SEKI as suggested by the Citizens' Park Alternative.

Response (to PC #s 97 and 98): The strategy, standards, and guidelines for vegetation

management identified in the Citizens' Park Alternative are included in the FEIS as follows:

- The elements of the strategy for vegetation in the Citizen's Park Alternative have been included in the vegetation strategies displayed in the FEIS for all alternatives. These strategies have been expanded to cover more specific considerations in restoring ecosystems and their natural systems, such as reducing fuels, improving resiliency, and promoting heterogeneity (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Vegetation Strategies/Fire and Fuels Strategies; Strategies for Ecological Restoration, by Alternative).
- Any decision to cut a tree or remove trees from the Monument must include a determination whether cutting or removal is clearly needed for each treatment; and
- Any decision to remove trees from the Monument shall be made in a separate decision from the treatment decision(Citizens' Park Alternative, p. 16).

  Any decision to remove trees from the Monument shall include a determination that tree removal is warranted, independent of the determination that the treatment is warranted. Any projects which propose the felling of trees inside the Monument will be subject to specified criteria for tree felling. These five criteria shall apply to any treatments which involve the felling of trees, whether or not removal of those trees from the Monument is also proposed. Where removal of the felled trees from the Monument is proposed, the proposal will also be subject to the "clearly needed" evaluation for tree and down log removal (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Readers' Guide to Alternative Descriptions, Ecological Restoration, Removal of Trees from Within the Monument/Tree Felling).
- The snag retention standards and guidelines for determining the minimum number of large snags in each treatment unit are included in all alternatives (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Monument-wide).

PC #93: The Forest Service should coordinate with the Sequoia and Kings Canyon National Parks for scientific study and adaptive management research.

Response: The Sequoia National Forest will continue to cooperate and collaborate with adjacent land management agencies in its adaptive management of the Monument. The joint strategic framework "A Strategic Framework for Science in Support of Management in the Southern Sierra Nevada Ecoregion," was developed with the National Park Service to incorporate current and new science. This document continues to be re-examined and updated by all of the agencies that cooperated in its development, including the National Park Service, the Forest Service Pacific Southwest Research Station, and the U.S. Geological Survey.

Strategies for using this framework are included in the Scientific Study and Adaptive Management Strategies listed in Chapter 2 of the FEIS (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Scientific Study and Adaptive Management; Strategies). In addition, as part of the Partnership Strategy, the Sequoia National Forest will strive to "expand partnerships with other federal, state, and local government agencies, as well as associations, non-government organizations, and other community groups, to leverage information and resources for mutual benefit" (Monument Plan, Appendix E).

PC #94: The Forest Service should re-establish continuous forest inventories every 10 years.

Response: Continuous forest inventories (FIA) are still performed in the Monument. These are landscape level inventories that provide a general idea of what is happening at the Monument, forest, or regional scale. The Forest Service is no longer funded to perform continuous inventories in each stand but must usually wait for funding to survey project areas.

PC #95: The Forest Service should consider the following outline for the 10-year Monument Management Plan.

1. Establish a primary administrative unit for the Monument
2. Reinstate the Continuous Forest Inventory (CFI)
3. Prioritize highest wildfire risk for sequoia groves
4. Select the grove with the highest risk and define its Zone of Influence (ZOI)
5. Conduct a unit-area inventory of the selected ZOI
6. Write treatment prescription for ecological restoration of the ZOI following the approach in the North paper (North et al 2009)
7. Treat the ZOI as prescribed
8. Select the grove with the next highest risk and repeat process

Response: The plan as outlined in this PC is logical and similar to what might happen in the future. Prioritizing sequoia groves will be an annual task depending on changing conditions and a method for doing so is described in the FEIS (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative A, Prioritizing Fuel Load Reduction in Giant Sequoia Groves).

PC #99: The Forest Service should provide desired conditions that include all giant sequoias, not just the young ones.

Response: The desired conditions for Vegetation have been updated in Chapter 2 (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Vegetation, including Giant Sequoias; Vegetation Desired Conditions; Giant Sequoias). The desired conditions for giant sequoias include all giant sequoias.

PC #100: The Forest Service should consider the following attributes of successful long-term management of giant sequoias.

- The ecosystems containing giant sequoias look and act like they would under natural conditions. In other words, indicators of key ecological elements are well within their historic ranges of variability when evaluated against an appropriate geologic time frame that takes into account recent but enduring human-induced environmental changes.
- Special attention is given to the protection of unusual or outstanding grove features. - There is a consensus among managers and users that progress is being made toward helping nature speed recovery where contemporary human actions or inactions have interferred with natural processes.
- There is continuity and predictability in the administrative, financial, and public support for the goals of grove protection, preservation, and restoration.
- On-the-ground decisions are guided by sound ecological principles and supported by current science. Ecological principles include the human, as well as the physical and biological, dimension.
- Either natural or artificial methods may be employed where appropriate to meet the goals of protection, preservation, and restoration.
- Both self-guiding and assisted interpretive services are available to anyone wanting to learn about the human and natural history of the groves.
- Uninterpreted “discoveries” are available to those who seek adventure through individual exploration.
- There are opportunities for solitude, inspiration, and spiritual renewal.
- There is a consensus among managers and users that recreation uses and developments are well balanced and conflicts are resolved fairly.
- Administration of giant sequoia ecosystems is fully integrated with other components of the overall Forest Service land management strategy.
- Adaptive learning, research, and information exchange are supported by policy and encouraged in practice.

Response: The attributes listed are consistent with the alternatives considered in detail in this FEIS which propose different ways of protecting the objects of interest, providing recreation opportunities, and stimulating scientific research.

Historical conditions are used as ecological reference points to help determine our desired conditions. Desired conditions consider the combinations and interactions of several factors,

some of which may not have existed in a particular historical reference point. For example, the current warmer climate may not accompany the same precipitation, vegetation, burn intervals, etc. as a warmer climate in the past.

PC #541: The Forest Service should use the grove-specific approach contained in the MSA to ensure that each grove is properly accounted for and that any management practices reflect the specific needs of each grove.

Response: Each of the alternatives includes many of the grove-specific standards and guidelines from the MSA (FEIS; Volume 2; Appendix A; All Action Alternatives; Vegetation, including Giant Sequoias; Giant Sequoia Groves). In particular, the section on Prioritizing Fuel Load Reduction in Giant Sequoia Groves describes how each grove will be inventoried and evaluated for its fuel load buildup, and then identified and prioritized for fuel reduction treatments (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative A, Resource Areas, Fire and Fuels, Prioritizing Fuel Load Reduction in Giant Sequoia Groves).

PC #542: The Forest Service should address what measures the agency will take to protect isolated sequoia trees and those outside of the 500 foot zone.

Response: Standards and guidelines are included in Appendix A to the FEIS to protect isolated giant sequoia trees and include them in groves (FEIS; Volume 2; Appendix A; All Action Alternatives; Vegetation, including Giant Sequoias; Giant Sequoia Groves).

Fire and Fuels

PC #14: The Forest Service should make the fire and fuels standards and guidelines for canopy cover and fire behavior consistent with the desired conditions, strategies, and objectives for fire and fuels.

PC #214: The Forest Service should define its fire and fuels standards and guidelines more precisely.

Response (to PC #s 14 and 214): The standards and guidelines for canopy cover and fire behavior for fuel treatment are listed in Appendix A of the FEIS (FEIS, Volume 2, Appendix A, All Action Alternatives, Fire and Fuels). The general guidelines for canopy cover are listed in the same section. These will be used during site-specific projects to achieve the outcomes described in the standards and guidelines, such as flame length and live crown base height. The standards and guidelines tie to the strategies and objectives for fire and fuels in the FEIS (FEIS; Volume 1; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Fire and Fuels; Strategies 13, 14, and 15).

Canopy cover is a component used in the SPECTRUM model. The fire intensity aspect of fire behavior is projected by SPECTRUM and displayed in the graph titled Projected High Intensity Fire (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Indirect Effects, Spectrum Model, Projected Trend in Wildfire Acres per Decade, Projected High Intensity Fire by Alternative).

PC #24: The Forest Service should establish a priority list in responding to wildland fire that places the objects of interest above the protection of property and show that the agency's assumptions regarding ecological restoration through fuel reduction are grounded in science.

Response: The giant sequoia groves which overlap with WUI defense zones, the TFETA, and WUI threat zone are included in the first treatment priorities for fuels reduction and ecological restoration. Only those groves which are located outside these areas are lower in priority. For example, in Alternatives A, B, E, and F, 51 percent of the giant sequoia groves are located within WUI defense and threat zones and the TFETA. Forty-nine percent of the groves are located outside of WUI zones and the TFETA (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Fire and Fuels Strategies; Strategies for Ecological Restoration, by Alternative).

The Guidance for Implementation of Federal Wildland Fire Management Policy, February 2009 emphasizes the protection of human life as the single, overriding priority in the management of wildland fire. The primary responsibility for protecting private property and rural communities lies with individual property owners and local governments. Setting priorities among protecting

human communities and community infrastructure, other property and improvements, and natural and cultural resources will be done based on the values to be protected, human health and safety, and the costs of protection. Firefighter and public safety is the first priority in every fire management activity. Once people have been committed to an incident, these human resources become the highest value to be protected. Emphasis is placed on preventing the movement of wildfires from wildlands into the WUI area and out of the WUI area into wildlands, as well as improving the efficiency of wildfire suppression in the WUI.

> The highest priority has been given to fuel reduction activities in the urban wildland intermix zone. Fuel reduction treatments protect human communities from wildland fires as well as minimize the spread of fires that might originate in urban areas. Fire suppression capabilities are enhanced by modified fire behavior inside the zone (USDA Forest Service 2001e (2001 SNFPA ROD), p. 9).

Ecological restoration in semiarid conifer forests that historically supported fire regimes of frequent, low and moderate severity fire is primarily about reducing fuels (either through reintroduction of fire, where possible, or through fire-surrogates, or through a combination of both), since our principal effect on these types of forests in and around the Monument has been to densify and homogenize stands through fire suppression and timber harvest. Many publications from third parties support the restorative importance of reducing fuels in frequent-fire forests (e.g., Covington 2000, Allen et al. 2002, Schoennagel et al. 2004, Noss et al. 2006).

PC #25: The Forest Service should have a map of fuel loadings or fire behavior.

> **Response:** Fuel loading data and giant sequoia grove inventory data can be found in Appendix I of the FEIS (FEIS, Volume 2, Appendix I). Fire behavior modeling at the programmatic level is incorporated in the SPECTRUM model. A fire return interval departure (FRID) map has been added to the FEIS Map Packet.

PC #201: The Forest Service should provide a clear definition of the term "fire susceptibility," and address the concerns with predictions based on fire return interval departures (FRID) discussed in the Odion papers (Odion et al. 2004, Odion and Hanson 2006, Odion and Hanson 2008, Odion et al. 2010).

> **Response:** Fire susceptibility is defined in several places in the FEIS (FEIS, Volume 1, Chapter 3, Fire and Fuels; FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology/ Indirect Effects; FEIS, Volume 1, Glossary of Terms).
>
> To quantify the shift of vegetation from a resilient fire-dependent ecosystem to an ecosystem that is susceptible to uncharacteristic damage from wildfire, a fire susceptibility rating was developed for the Sequoia National Forest. Fire susceptibility is an indicator of the possibility of large severe fires. There is higher potential for large severe fires in areas of high and moderate fire susceptibility under high fire danger weather conditions than in areas of low susceptibility. The rating uses severity, hazard, and risk to identify areas on the forest that have high, moderate, or low susceptibility to wildfire. This index is used as a tool for prioritizing areas that need treatment, particularly around communities within high fire susceptibility areas. Fire susceptibility photos can be found in Chapter 3 of the FEIS (FEIS, Volume 1, Chapter 3, Fire and Fuels, Landscape Conditions, Fire Susceptibility).
>
> The Odion et al. (2004, 2010) papers referenced pertain to the western Klamath Mountains and not to the southern Sierra Nevada, and are over 400 miles southeast of the Monument. The Odion and Hanson (2006) paper used BAER soil burn severity mapping to make inferences about fire effects to vegetation, and was subsequently shown by Safford et al. (2007) to have made a series of invalid conclusions regarding fire severity, patch size, and the relationship between FRID and fire severity. In fact, by using vegetation burn severity data, Safford et al. (2007) showed that FRID was strongly correlated with fire severity in conifer stands within the perimeter of the McNally Fire, which occurred in the Sequoia National Forest and partially within the Monument.

PC #202: The Forest Service should include the specificity on prescribed burning from Knapp et al 2009 in a standard and guideline.

Response: This specificity was not added as a standard and guideline, but the following strategy for prescribed burning has been added to the FEIS:

> Conduct prescribed burning at various times of the year and with different prescriptions (firing patterns) to maximize diversity and to avoid the potential undesirable changes from repeated burning at the same time of year (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Fire and Fuels Strategies).

PC #203: The Forest Service should not focus on low-intensity forest fires in its desired conditions.

Response: The desired conditions for Fire and Fuels in the FEIS have been modified to better reflect a range of fire intensities. The following was added:

> Fire susceptibility and severity, and fire hazards to adjacent human communities and surrounding forest types, are low. The need to maintain fuel conditions that support fires characteristics of complex ecosystems is emphasized and allows for a natural range of fire effects in the Monument (FEIS; Volume 1; Chapter 2, Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Fire and Fuels Desired Conditions).

Most current wildfires are those that escape control under severe weather and fuel moisture conditions. They are burning through forests that are generally much denser and fuels-rich than forests would have been when fire was occurring frequently. It therefore stands to reason that wildfires will have much higher proportions of high severity fire than prescribed fire or managed wildfire, but this is not necessarily an ecologically beneficial outcome in ecosystems that historically supported low to moderate intensity fires with relatively small areas of high severity effects. Research in managed wildfire areas in Sierra Nevada national parks, including Sequoia and Kings Canyon National Parks, has found that, on average, only about 15 percent of the area covered by recent fires burned at high severity, even though these areas had 90 years of fire suppression before the beginning of managed wildfire policies (Collins and Stephens 2010). Although this is a much lower percentage of high severity than is occurring outside of the managed wildfire areas (Miller et al. [2009] found an average of 26-29 percent high severity in mixed conifer and ponderosa pine forest fires outside of the national parks), it is still higher than most published estimates for pre-Euroamerican settlement values in Sierra Nevada mixed conifer forests (e.g., five percent for mixed conifer and ponderosa pine [Stephens et al. 2007]).

PC #204: The Forest Service should include a Fire Management Plan.

Response: On June 2, 2006, the Chief of the Forest Service, Dale Bosworth, issued a letter approving the withdrawal of the 2005 Fire Management Plan and granted the Sequoia National Forest a waiver of the requirement in FSM 5103 that each national forest have such a plan. This exemption remains in effect.

The Sequoia National Forest follows fire management guidelines in the 1988 Land and Resource Management Plan, 2001 Sierra Nevada Forest Plan Amendment Record of Decision, and Federal Wildland Fire Management Policy.

Forest managers have chosen to defer the development of a detailed Fire Management Plan until the Forest Plan revision is completed. Plan components in a revised plan are expected to address some of the needs of a fire management plan. Plan revision for the Sequoia National Forest is expected to start in 2012 and will be completed within the 5-year time frame cited previously.

PC #205: The Forest Service should clear up conflicting ideas in the desired condition statement that potentially prevent fire from occurring "in its characteristic pattern and resume its ecological role."

Response: In response to this comment, the desired condition for Fire and Fuels has been modified in the FEIS (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Fire and Fuels Desired Conditions).

Management strategies for the Monument do not seek to erase moderate and high severity fire from

the landscape, but rather to restore fire effects to vegetation to levels that can be considered "normal" and sustainable for the ecosystems in question. High severity fire is a component of all fire regimes, but, in Monument ecosystems characterized by relatively frequent, low to moderate severity fire, the desired condition for the high severity component should be somewhere between 5-15 percent of the fire area (the range between the Stephens et al. [2007] presettlement estimate for mixed conifer and Collins and Stephens' [2010] estimate of current wildland fire use fires in Yosemite and Sequoia and Kings Canyon National Parks).

Van Wagtendonk and Lutz (2007) refer to prescribed fires that burned under conditions that had minimal effectiveness in reducing fuels. This is a common problem with prescribed fire, as prescriptions are meant to result in minimal air quality impacts and maximum controllability. In managed wildfire areas, such as those in Yosemite and Sequoia and Kings Canyon National Parks, controllability is much less of a concern, as these areas are long distances from areas of human habitation. Most of the Monument, in contrast, is either in or near areas of wildland-urban intermix.

PC #206: The Forest Service should use the best available science in its fire and fuels analysis and evaluate what size treatment zone is effective at reducing wildfire threats to communities.

PC #216: The Forest Service should only promote fuel treatments within 200 to300 feet of structures to reduce fire severity and protect communities.

PC #236: The Forest Service should use an accurate metric to assess flammability and justify removal of trees farther than 200 feet from structures.

PC #241: The Forest Service should scientifically defend the size of the WUI zones.

PC #242: The Forest Service should measure treatments from structures, not private property boundaries.

Response (to PC #s 206, 216, 236, 241, and 242): The size of the WUI varies between alternatives in the FEIS. While Alternatives A, B, E, and F follow the 2001 SNFPA of generally a ¼-mile-wide defense zone and 1¼-mile-wide threat zone, Alternative C calls for a WUI defense zone of approximately 300 feet wide, and Alternative D a WUI defense zone of only about 200 feet wide.

The actual boundaries of the WUI are determined locally, based on distribution of structures and communities adjacent to or intermixed with national forest lands. Strategic landscape features such as roads, changes in fuel types, and topography are used in delineating the physical boundary of the WUI zones (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Indirect Effects, Wildland Urban Intermix [WUI] Zones).

The fuel reduction treatments in the WUI zones are designed to protect human communities from wildland fires as well as minimize the spread of fires that might originate in urban areas. Management of the WUI zones is designed to enhance fire suppression capabilities by modifying fire behavior and provide a safe and effective area for possible future fire suppression activities. The management direction for WUI zones is to design fuel treatments to provide a buffer between developed areas and wildlands.

The Forest Service is working with Fire Safe Councils, private property owners, and Cal Fire to reduce fuels on private lands.

Various studies (e.g., Weatherspoon and Skinner 1996, van Wagtendonk 1996, and Safford et al. 2009) have found that 400 to 500 meters (greater than 1/4 mile) are an absolute minimum width for effective fuel treatments in the WUI defense zone, as many other factors must be taken into account beyond the space required to reduce a canopy fire to a more controllable surface fire. These factors include fire engine response time, fire spread rate, weather conditions, road access and egress to and from the treatment area, fire fighter safety, and space requirements for movement of fire fighting machinery.

The diameter limits for tree cutting vary by alternative. Each alternative except Alternative F includes a diameter limit for tree cutting in the WUI defense zone for fuels reduction and fire protection. Research suggests that, for managing fuels, most of the reduction in fire severity is achieved by reducing

surface fuels and thinning smaller ladder fuel trees (Agee et al. 2000, Agee and Skinner 2005, Stephens et al. 2009). What is considered a ladder fuel differs from stand to stand, but typically these are trees in the 10- to 16-inch diameter classes (North et al. 2009). If trees larger than this are thinned, it is important to provide reasons other than for ladder-fuel treatment (North et al. 2009). In most cases, thinning 20- to 30-inch diameter trees will not affect fire severity (North et al. 2009). Retaining the largest trees within stands also increases fire resistance (Keeley 2009). This research indicates that by reducing surface fuels and thinning smaller diameter trees less than 16 inches, fire severity is reduced and fuels management objectives can be achieved (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Indirect Effects, Fuels Management Activities).

The FEIS utilizes Fire Susceptibility as an indicator of the possibility of large severe fires (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology/Indirect Effects). The rating uses severity, hazard, and risk to identify areas on the forest that have high, moderate, or low susceptibility to wildfire. The SPECTRUM model was used to comparethe effects of the alternatives in the FEIS (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology/Indirect Effects). Flame length is also included in the standards and guidelines to be used as an activity-related guide for project-level outcomes (FEIS; Volume 2; Appendix A; All Action Alternatives; Vegetation, including Giant Sequoias/ Fire and Fuels).

PC #207: The Forest Service should discuss the proportion of the area treated, along with the placement, size, and shape of treatments that matter in terms of ecological heterogeneity.

Response: The size, shape, placement, and timing of treatments will be established in site-specific project analyses and decisions.

Even in WUI zones and the TFETA, mechanical treatments will be limited or prohibited in many areas including wilderness, wild and scenic river corridors, roadless areas, research natural areas, riparian conservation areas, and on slopes exceeding 35 percent.

Based on these constraints, approximately 23 percent of the 328,315 acres of National Forest System land in the Monument could be considered for mechanical treatments (alone or in conjunction with fire and hand treatments), compared to about 77 percent that could be considered for fire and hand treatments. Within the WUI defense zone, approximately 30 percent of the area could be considered for mechanical treatments and, within the WUI threat zone, about 24 percent.

PC #208: The Forest Service should acknowledge it cannot "burn" its way back to forest health.

Response: Prescribed fire and managed wildfire are just two of the management tools considered in the alternatives analyzed in the FEIS. A combination of prescribed fire, managed wildfire and mechanical treatment are proposed in Alternatives A, B, C, E and F (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology/Indirect Effects/Cumulative Effects). The tradeoffs between types of treatments are analyzed in Chapter 4 in both the Vegetation and Fire and Fuels analyses (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology, Assumptions for All Alternatives, Tradeoffs Between Types of Treatments). In addition, an analysis of burn days is included in the Air Resources analysis in Chapter 4 (FEIS; Volume 1; Chapter 4; Effects on Vegetation, including Giant Sequoias; Assumptions and Methodology; Assumptions for All Alternatives; Trade-offs; FEIS, Volume 1, Chapter 4, Effects on Air Resources, Indirect Effects/Cumulative Effects/ Air Quality Monitoring).

PC #209: The Forest Service should acknowledge it may not yet know the best way to suppress unwanted fires, due to changing climate and natural conditions.

Response: It is acknowledged that climate and natural conditions change over time. Federal wildland fire management policy allows for a wildland fire to be concurrently managed for one or more objectives, and those objectives can change as the fire spreads across the landscape. Objectives are affected by changes in fuels, weather, and topography; varying social understanding and tolerance; and involvement of other governmental jurisdictions having different missions and objectives.

Response to wildland fires is based on the ecological, social, and legal consequences of the fire. The circumstances under which a fire occurs, and the likely consequences on firefighter and public safety and welfare, natural and cultural resources, and the values to be protected, dictate the appropriate response to the fire.

PC #210: The Forest Service should modify the standard and guideline for the defense zone of the WUI that discusses enhancing heterogeneity, so that it is not based merely on acreage, but rather includes issues describing complexity.

Response: Ecological heterogeneity in Monument forests will be enhanced by treatments, not decreased, and this is independent of the amount of untreated area within the treatments. One of the most serious results of past management decisions in the Sierra Nevada, including fire suppression and certain timber harvest practices, has been to densify and homogenize much of the mixed conifer belt. This forest homogenization and densification is well-known and amply documented (Sugihara et al. 2006, Barbour et al. 2007). Any local reduction of tree density, canopy cover, or understory fuels will increase stand heterogeneity at the landscape scale.

PC #211: The Forest Service should acknowledge that higher densities of snags do not result in higher fire intensity, as reported in Bond et al. 2009.

Response: In all alternatives snags may be removed from burned forests for safety reasons. Preventing the recruitment of standing snags in order to reduce fire intensity is not proposed in the FEIS.

Once their needles or leaves have been cast, snags only increase future fire intensity when they have fallen to the ground, which begins soon after fire but continues for decades. The Bond et al. (2009a) paper referenced studied effects of snag densities on fire severity where the trees in question had died in the previous year or two, i.e., the great majority of trees were still standing but their needles were already cast. Brown et al. (2003) considered coarse woody debris (fallen snag) contributions to fire behavior, and used literature summary and modeling to show that high coarse woody debris loadings can be difficult to control and may lead to increased surface fire intensities. These conditions were most likely after 10 or more years had passed since the fire or other disturbance that created the snags (because it took 10 years or more to generate high surface fuel loadings from falling snags). Metz et al. (2011) found that dead oaks killed by Sudden Oak Death (SOD) in the central Coast Ranges increased vegetation burn severity when they were burned within a year or so of death, as their dead, dry leaves easily carried fire, but once leaves had fallen there was no contribution to increased fire severity. Where SOD had entered stands in earlier years, dead trunks had begun to fall and fuel loadings were high enough to significantly increase soil burn severity. Metz et al.'s (2011) results thus support the general conclusions of Brown et al. (2011).

PC #212: The Forest Service should describe the closed canopy forest as one which provides a variety of benefits that decrease the risk of forest fires, such as moisture retention and wind protection.

Response: The Forest Service agrees that fuel moisture and wind are two important factors affecting fire behavior. Other factors influencing fire behavior include surface fuels, topography, relative humidity, and temperature. Weather and topographic features were the dominant explanatory variables describing fire severity as indicated in the study titled "Characterizing fire severity patterns in three use of wildland fire incidents in the southern Sierra Nevada" by Nicole Vaillant (USDA Forest Service, AMSET, 2009).

Although dense ("closed canopy") stands may support higher humidities and lower windspeeds, under the extremely dry fuel conditions which characterize late California summers they are susceptible to high severity fire, especially at the elevations of the Monument. For example, the Angora Fire at Lake Tahoe was carried into part of a housing subdivision by an untreated, closed canopy lodgepole pine forest that had been left as a riparian reserve. In many years, humidities in the lodgepole pine stand would have resisted burning, but not in 2007, which was extremely dry. Instead, the closed canopy stand acted as a "fire wick" (see Murphy et al. 2007, Safford et al. 2009). In ponderosa pine forests in Arizona, Holden et al. (2010) found that moist forests on north facing slopes were more likely to suffer severe fire than any other landscape class. These forests supported higher vegetation

densities and fuel accumulations. Such forests may be less likely to burn, but when the conditions are right, they burn at high severity. This is the basic principle behind the differences in fire regimes between lower elevation, semiarid yellow-pine dominated forests, and higher elevation, moist and dense forests dominated by firs and other less fire-tolerant species. The former are characterized by frequent, low to moderate severity fires, while the latter are characterized by less frequent but more severe fires (Agee 1993, Sugihara et al. 2006).

PC #213: The Forest Service should employ a strong staff of fire ecologists and technicians.

Response: Sequoia National Forest fire managers hold current wildland and prescribed fire qualifications. Fire managers are highly trained and experienced in the use of prescribed fire and managed wildfire. The expertise of regional and zone fire ecologists is utilized in fire management planning at the programmatic and project levels.

PC #215: The Forest Service should make the strategies, and standards and guidelines, consistent with the Fuels Report, in terms of being based on susceptibility.

Response: Fire susceptibility is an indicator of the possibility of large severe fires. It is defined in the FEIS (FEIS, Volume 1, Chapter 3, Fire and Fuels, Landscape Conditions, Fire Susceptibility; FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology, Methods and Measurement; FEIS, Volume 1, Glossary of Terms).

Fire susceptibility is discussed in the desired conditions and strategies for fire and fuels. It is also one of the measures used in the effects analysis to compare acres of moderate and high fire susceptibility (FEIS, Volume1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology, Methods and Measurement; FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Indirect Effects, Fire Susceptibility). Fire susceptibility is a rating index that can be used as a tool for prioritizing projects.

PC #218: The Forest Service should manage properly to reduce fuels.

Response: All of the alternatives in the FEIS include the fuels reduction tools of managed wildfire, prescribed fire, and mechanical treatments, in WUI zones ranging in width from approximately 200 feet to 1½ miles (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Indirect Effects, Wildland Urban Intermix [WUI] Zones).

PC #219: The Forest Service should provide independent, peer-reviewed scientific research to prove that reducing the continuity and density of fuels on National Forest managed lands protects houses located on private property.

Response: Murphy et al. (2007) and Safford et al. (2009) found that fuel treatments on public land surrounding private property were very effective in reducing loss of homes to fire in the 2007 Angora Fire. In the recent Wallow Fire in Arizona, the largest fire in the state's history, only 38 structures were lost to fire, principally due to completed networks of fuel treatments on public and, in some cases, private lands.

PC #220: The Forest Service should include a discussion of the role of fire in shaping the forests of the Monument, and include an approach that uses fire as a restoration tool like the adjacent national parks.

Response: The role of fire in shaping the forests of the Monument is discussed in the Vegetation and Fire and Fuels sections of Chapter 3 (FEIS; Volume 1; Chapter 3; Vegetation, including Giant Sequoias; Disturbance and Patterns of Vegetation; FEIS, Volume 1, Chapter 3, Fire and Fuels, Landscape Conditions, Fire Return Interval).

Alternative C includes strategies that are responsive to the issue of managing the Monument like a national park, in particular Sequoia and Kings Canyon National Parks (SEKI), in a manner that is consistent with Forest Service regulations and the direction of the Clinton proclamation. In Alternative C, restoration activities focus on areas that have been affected by human use and occupation.

In partnership with SEKI, we have jointly managed several lightning caused wildfires and prescribed burns. Our continued working relationship has enhanced both agencies ability to manage wildfire

in a cost effective manner applying the lessons learned approach.

PC #222: The Forest Service should recognize that fire has to be the priority restoration treatment for ecological restoration.

Response: Fire is one of two types of treatments considered for ecological restoration, and includes prescribed fire, managed wildfire, and the hand treatments that accompany them, including chainsaws (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Reader's Guide to Alternative Descriptions, Ecological Restoration, Types of Treatments). Alternatives B, C, and D set managed wildfire and prescribed fire as top priorities for ecological restoration fuels reduction tools (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative B/Alternative C/Alternative D, Resource Areas, Fire and Fuels).

PC #223: The Forest Service should not focus on the "single mission" of fuels reduction.

Response: As identified in the FEIS, sustainable ecosystem-based management, which is now the standard on most public lands, will be successful if fire policy and management are: (1) based on ecological principles; (2) integrated with other resource disciplines such as wildlife, hydrology, and silviculture; and (3) are relevant for applications at large spatial and temporal scale (Keeley et al. 2009) (FEIS, Volume 1, Chapter 3, Fire and Fuels).

Fire is such a pervasive disturbance in nearly all Monument ecosystems that failure to include it as part of managing large landscapes will inevitably lead to unintended outcomes (Keeley et al. 2009). The restoration and long-term maintenance of Monument ecosystems will require the restoration of fire as an ecological process. Restoring the natural role of fire in many parts of the Monument will require a focused restoration of the fuel conditions that support fire. However, mechanical treatments and fire treatments that are specifically applied to reduce fuel loads, or manipulate potential fire behavior are temporary in nature (FEIS, Volume 1, Chapter 3, Fire and Fuels, Restoration and Maintenance, Restoration of Fire as an Ecological Process). All alternatives include the use of prescribed fire, managed wildfire and mechanical treatments as management tools.

PC #224: The Forest Service should collect baseline data on current fuel loads that would justify this level of treatment in the Monument.

Response: Fuel loading data have been collected as part of the giant sequoia grove inventories and are included in the Vegetation and Fire and Fuels sections of Chapter 3 and in Appendix I of the FEIS (FEIS, Volume 1, Chapter 3, Vegetation, including Giant Sequoias, Giant Sequoia Ecology, Fuel Loadings; FEIS, Volume 1, Chapter 3, Fire and Fuels, Fuels Management; FEIS, Volume 2, Appendix I). A fire return interval departure (FRID) map has been added to the FEIS Map Packet.

PC #226: The Forest Service should focus treatment on surface fuels rather than crown fuels.

Response: The fuel treatments included in each alternative considered in detail include prescribed fire, managed wildfire, and mechanical treatments (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Indirect Effects, Fuels Management Activities). All of these treatment methods will reduce surface fuel loadings and associated fire behavior.

PC #227: The Forest Service should acknowledge that tree boles over 10 to 12 inches in diameter do not create any significant fire hazard.

Response: As identified in the standards and guidelines for Wildlife Habitat and Fire and Fuels, felled trees on the ground will be retained, where needed, to achieve down woody material standards of 10 to 20 tons per acre in logs greater than 12 inches diameter at midpoint (FEIS, Volume 2, Appendix A, All Action Alternatives, Fire and Fuels/Wildlife Habitat, Monument-wide).

There should be at least five well-distributed logs per acre representing the range of decomposition classes (Maser et al., 1979). Desired logs are at least 20 inches in diameter and 10 feet long. Logs less than 12 inches in diameter or stumps should not be counted as large woody material. Down woody material retention levels will be determined on an individual project basis, based on desired conditions.

Trees over 10 to 12 inches in diameter can increase fire hazard. Many trees over 10 inches in diameter have grown into the canopies of much larger trees, and can act as fuel ladders, threatening the older trees which are the focus of much concern in the Monument. Reducing densities of small and medium sized trees is also desirable from a restoration and sustainability standpoint. Drought stress is a major influence in large tree mortality in the Sierra Nevada (van Mantgem et al. 2009), and competition for water in dense stands of smaller trees may be a major factor in inducing stress. Reconstructions of historic mixed conifer stands in the vicinity of the Monument suggest that tree densities before Euroamerican settlement were between 20 and 40 trees (greater than 5 inches diameter) per acre, while current densities are often greater than 200 trees (greater than 5 inches diameter) per acre (North et al. 2007). Most of these trees are small and medium sized, and are shade-tolerant species that have grown up in the absence of fire.

PC #228: The Forest Service should complete at least one substantial fuel reduction project during the first several years of the plan in a grove area outside of WUI defense zone.

Response: In the summer of 2010, the Sequoia National Forest jointly managed the Sheep Wildfire with SEKI which covered 9,000 plus acres in the Monument. This fire was allowed to burn into the Monarch Giant Sequoia Grove, effectively re-introducing fire and lowering hazardous fuel loading on fifty-two acres of giant sequoia trees.

Objectives for giant sequoia groves are included in both the Vegetation and Fire and Fuels objectives in Chapter 2 of the FEIS (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Vegetation Objectives [by Type]; Objectives for Giant Sequoias by Alternative; FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Fire and Fuels Objectives). Site-specific fuel reduction projects to protect groves will require project-level analyses.

PC #229: The Forest Service should explain why the analysis of effects anticipates treatments throughout the vast area identified as WUI and/or TFETA, when the desired conditions say treatments will be focused on developed areas in these zones.

PC #230: The Forest Service should give a detailed explanation of and scientific justification for how the WUI zones were delineated, and how setting them accomplishes ecological restoration.

Response (to PC #s 229 and 230): Two types of treatment are considered for ecological restoration in the Monument: fire (prescribed fire, managed wildfire, and the hand treatments that accompany them, including chainsaws) and mechanical (self-propelled ground-based machines). Site-specific project analysis will determine the scope and percentage of fire and mechanical treatments necessary to restore and maintain ecosystems, provide for public safety, and meet the desired conditions for the Monument.

Even in WUI zones and the TFETA, mechanical treatments will be limited or prohibited in many areas including wilderness, wild and scenic river corridors, roadless areas, research natural areas, riparian conservation areas, and on slopes exceeding 35 percent.

Based on these constraints, approximately 23 percent of the 328,315 acres of National Forest System land in the Monument could be considered for mechanical treatments (alone or in conjunction with fire and hand treatments), compared to about 77 percent that could be considered for fire and hand treatments. Within the WUI defense zone, approximately 30 percent of the area could be considered for mechanical treatments and, within the WUI threat zone, 24 percent.

Within the TFETA, approximately 15 percent of the 56,640 acres could be considered for mechanical treatments, compared to about 85 percent that could be considered for fire and hand treatments (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology, Assumptions for All Alternatives, Trade-offs Between Types of Treatments).

The actual boundaries of the WUI are determined locally, based on distribution of structures and communities adjacent to or intermixed with national forest lands. Strategic landscape features such as

roads, changes in fuel types, and topography are used in delineating the physical boundary of the WUI (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels).

Fuel reduction activities in the WUI zones are designed to protect human communities from wildland fires, as well as minimize the spread of fires that might originate in urban areas. The management objective in the WUI zones is to enhance fire suppression capabilities by modifying fire behavior inside the zones and provide a safe and effective area for possible future fire suppression activities (USDAFS 2001e). Fuels reduction in the WUI zones will help restore fuel conditions that support fire and restore fire as an ecological process in these areas.

The restoration and long-term maintenance of Monument ecosystems will require the restoration of fire as an ecological process. Restoring the natural role of fire in many parts of the Monument will require a focused restoration of the fuel conditions that support fire.

PC #231: The Forest Service should include in its standard and guidelines for the threat zone of the WUI that it will treat surface fuels other than through thinning.

Response: The FEIS includes prescribed fire and managed wildfire as fuel reduction tools, as well as mechanical means, in WUI threat zones to treat surface fuels. Analysis shows that only about 24 percent of the WUI threat zone could be considered for mechanical treatments (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology, Assumptions for All Alternatives, Resource Topics, Wildland Urban Intermix [WUI]).

PC #232: The Forest Service should disclose the existing conditions and strategy that drove the delineation of the TFETA.

Response: Issue #7 addresses fires spreading to tribal lands (FEIS, Volume 1, Chapter 1, Issues). A large wildfire spreading to the Tule River Indian Reservation from the Monument could result in irreversible damage to the tribe's watershed resources and community. Because more than half of the Tule River Indian Reservation borders the Monument, the Tule River Indian Tribe expressed concerns about the effects that large wildfires could have on cultural and sacred sites in the Monument and on the reservation. A tribal fuels emphasis treatment area (TFETA) was created in collaboration with the tribe and is included in Alternatives B and F.

In the DEIS, the TFETA was included in Alternatives B, C, and F. In the FEIS, the TFETA is no longer included in Alternative C, since it does not meet the intent of the alternative to manage the Monument similar to the adjacent national parks.

The TFETA was developed in response to discussions with the Tule River Indian Tribe and their concern over fires spreading to the Tule River Indian Reservation. The Tule River Indian Tribe of California is a federally recognized tribe, and as such it is the policy of the USDA to consult and coordinate with them on a government-to-government basis in compliance with Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments) prior to making a decision. This land allocation was designed along the boundary with the Tule River Indian Reservation to not only protect the reservation and its watersheds, but also the objects of interest and watersheds in the Monument, from fires spreading from one to the other.

The TFETA is designed to act as a fuels emphasis area bordered by road systems, natural barriers, and topographic features that logically define a perimeter within which, fuels reduction activities could take place.

PC #234: The Forest Service should discuss that thinning is needed prior to prescribed fire due to safety concerns and the small window of opportunity for burning.

PC #235: The Forest Service should acknowledge the effectiveness of prescribed fire in ecological restoration, in determining if thinning is clearly needed, considering the research of Rhodes and Baker (2008).

Response (to PC #s 234 and 235): The FEIS includes prescribed fire, managed wildfire, and mechanical treatments as fuel reduction tools (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels). These tools can be used in combination based on

site-specific analysis and existing conditions to achieve fuels management objectives.

Regarding the efficacy of thin plus burn vs. burn only treatments, the literature is in general agreement that the former is more likely to effectively and rapidly reduce fuels (e.g., Stephens et al. 2009, Schwilk et al. 2009). It is important to note that fuels reduction is one reason for thinning stands. "Forest health" issues have always been part of the reasoning behind Forest Service treatment plans. When properly accomplished, stand thinning has long-term effects on stand sustainability, not only with respect to fire, but with respect to insects and drought as well (Spurr and Barnes 1992, Graham et al. 2004). The fact that there is some probability that these areas may not be impacted by a high severity fire does not negate the fact that stand densities will be reduced to levels more characteristic of fire-adapted and fire-resilient forests. It also does not negate the fact that stand density reductions will increase the resilience of the treated stands to water stress (and myriad secondary stressors), which takes on progressively greater importance as California climates continue to warm.

Regarding the Rhodes and Baker (2008) paper referenced: Rhodes and Baker (2008) carried out a simple analysis of the probability that escaped wildfires will encounter randomly located fuels treatments within 20 years of original treatment, at the scale of the western United States (1,197,000 square miles), and also for six other very large analysis areas nested within the western United States, one of these being the entire State of California (164,000 square miles, of which about 31,000 square miles are Forest Service managed). The Monument encompasses an area of 512 square miles. The huge scale of the Baker and Rhodes analysis (and their many limiting assumptions discussed below) makes any local application of their results statistically and scientifically unsupportable. On page 6, Conclusion, paragraph 1, Rhodes and Baker (2008) specifically state that:

> Our analysis area provides West-wide and regional first approximation of the likely upper bound of fuel treatment effectiveness. While valid at these two scales [sic], they are not applicable to all smaller analysis areas, due to spatial variation in annual fire probability.

In their analysis, Rhodes and Baker (2008) assume, among other things, that fires and fuel treatments occur at random across their study region (i.e., that fires and fuels treatments are not more probable in some locations than in others), that there is no geographic variability in fire severity, that climate and its effects on fire occurrence and behavior are static, and that there is no spatial variability in the "value" of landscapes (i.e., that there are no geographic, fire-related, social, or cultural factors which might influence the placement of fuels treatments or the relative value of those treatments in meeting human needs or desires). All of these fundamental assumptions in the Rhodes and Baker (2008) analysis are demonstrably inaccurate and essentially negate their conclusions even at the huge geographic scales at which they make them.

Regarding two of Rhode and Baker's (2008) most fundamental assumptions: (1) random treatment placement, and (2) random fire occurrence, as noted above, both of these assumptions are inaccurate. Forest Service fuels treatments in the Sierra Nevada are strategically located so as to maximize effectiveness and long-term benefit, and indeed strategic location of fuels treatments is a major time, money, and energy sink for Forest Service units statewide (Bahro et al. 2007). Fuels treatments located in a strategic manner on as little as 20 to 30 percent of a landscape can lead to strong amelioration of fire severity across the landscape as a whole (Finney 2001, Agee and Skinner 2005). It is also well-known that forest fires do not occur randomly on landscapes, but rather preferentially occur in locations with high ignition probabilities, topographically complex terrain, and propensity to warm, dry, and windy conditions (Graham et al. 2004, Sugihara et al. 2006, Bahro et al. 2007).

PC #237: The Forest Service should state in a fire and fuels standard and guideline that, in those locations where mechanical treatments are necessary to prepare a site for prescribed burning, that type of treatment is allowed only once.

Response: Standards and guidelines for fire and fuels in the FEIS follow those in the 2001 SNFPA (FEIS, Volume 2, Appendix A, All Action Alternatives, Fire and Fuels). Project-level site-specific conditions will determine when mechanical

treatments are necessary to meet the fuel objectives identified in the standards and guidelines.

PC #238: The Forest Service should include fuel reduction plans as identified in the MSA as a priority action.

Response: Fuel reduction plans for the giant sequoia groves, as identified in the MSA, are included as management direction for all of the action alternatives considered in the FEIS. They are identified as the means to prioritize fuel load reduction in the giant sequoia groves (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative A, Resource Areas, Fire and Fuels, Prioritizing Fuel Load Reduction in Giant Sequoia Groves). Fuel load reduction plans are included in the strategies specific to giant sequoias (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Vegetation Strategies; Strategies Specific to Giant Sequoias, by Alternative), and the first objective for giant sequoias is to "complete a grove-specific fuel load reduction plan for each giant sequoia grove in the Monument" (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Vegetation Objectives (by Type); Objectives for Giant Sequoias, by Alternative), as well as in two of the objectives for fire and fuels (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Fire and Fuels Objectives; Objectives for Fire and Fuels, by Alternative). Approved fuel load reduction plans are required in standards and guidelines for vegetation management in the giant sequoia groves (FEIS; Volume 2; Appendix A; All Action Alternatives; Vegetation, including Giant Sequoias; Giant Sequoia Groves). The following standard and guideline has been added for Fire and Fuels:

> Use the most recent inventories of fuel load to develop a fuel load reduction plan for each giant sequoia grove (within its administrative boundaries) (MSA 1990, pp. 9-11).

PC #239: The Forest Service should include actions in the grove fuel reduction plans.

Response: The FEIS identifies the condition information and data that should be included in each sequoia grove plan (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Alternative A; Vegetation, including Giant Sequoias; Prioritizing Fuel Load Reduction in Giant Sequoia Groves). Grove-specific grove fuel reduction plans will include a detailed evaluation and analysis for each of the items listed.

PC #240: The Forest Service should demonstrate that the thinning of trees up to 20" dbh and substantial reductions of canopy cover are "clearly needed" to protect communities or any other resource from catastrophic wildfire, as required by the Clinton proclamation.

Response: Any treatments that include tree removal will be based on a determination that they are "clearly needed for ecological restoration and maintenance or public safety" (Clinton 2000, p. 24097). As stated in Chapter 2 of the FEIS, "A clearly needed evaluation is required and will be completed before any site-specific projects that propose tree removal take place in the Monument" (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Readers Guide to Alternative Descriptions, Ecological Restoration, Removal of Trees from Within the Monument).

In the FEIS, diameter limits for tree cutting vary by alternative. Alternative B (proposed action) includes a 20-inch diameter limit in the WUI defense zone for fuels reduction and fire protection. Research suggests that for managing fuels most of the reduction in fire severity is achieved by reducing surface fuels and thinning smaller ladder fuel trees (Agee et al. 2000, Agee and Skinner 2005, Stephens et al. 2009). What is considered a ladder fuel differs from stand to stand, but typically these are trees in the 10 to 16 inch diameter classes (North et al. 2009). If trees larger than this are thinned, it is important to provide reasons other than for ladder-fuel treatment (North et al. 2009). In most cases, thinning 20- to 30-inch diameter trees will not affect fire severity (North et al. 2009).

Retaining the largest trees within stands also increases fire resistance (Keeley 2009). This research indicates that by reducing surface fuels and thinning smaller diameter trees less than 16 inches in diameter, fire severity is reduced and fuels management objectives can be achieved (FEIS,

Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative A, Resource Areas, Fire and Fuels; FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology/Indirect Effects).

PC #243: The Forest Service should allow property owners to clear within 150' of their property line.

Response: The area 150 feet outside private property lines and inside the Monument is not within the jurisdiction of the private property owner.

The Forest Service is working with Fire Safe Councils, private property owners, and Cal Fire to reduce fuels on private lands and plan fuel reduction projects on adjacent federal lands.

PC #244: The Forest Service should make it clear that WUI management won't be an excuse for logging.

Response: The intent of WUI management is not for logging purposes or incentives, but for fuels reduction to protect human communities from wildland fires as well as minimize the spread of fires that might originate in urban areas. The range of fuels reduction treatments includes prescribed fire, managed wildfire, mechanical treatments, hand thinning, and brushing. The management objective in the WUI zone is to enhance fire suppression capabilities by modifying fire behavior inside the zone and providing a safe and effective area for possible future fire suppression activities. Management direction for WUI zones is to design fuel treatments to provide a buffer between developed areas and wildlands.

PC #245: The Forest Service should analyze managed wildfire as it does prescribed burns, and they should accomplish the same goals.

Response: Wildland fires are categorized as two distinct types:

a. Wildfires–unplanned ignitions or prescribed fires that are declared wildfires. A managed wildfire is considered an unplanned ignition and is managed as a wildfire. Managed wildfire is defined as the use of wildfires started by natural ignitions to protect, maintain, and enhance resources, and, whenever possible, allow fire to function in its natural ecological role.

b. Prescribed fires–planned ignitions (Guidance for Implementation of Federal Wildland Fire Management Policy, February 2009).

Managers use a decision support process to guide and document wildfire management decisions. The process provides situational assessment, analyzes hazards and risk, defines implementation actions, and documents decisions and rationale for those decisions. The current process used is the Wildland Fire Decision Support System (WFDSS).

PC #247: The Forest Service should not seek to reduce or prevent fire in a fire-adapted forest ecosystem.

Response: The Guidance for Implementation of Federal Wildland Fire Management Policy, February 2009 emphasizes the protection of human life as the single, overriding priority in the management of wildland fire (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology). The highest priority has been given to protection of human communities from wildland fires and providing a safe and effective area for fire suppression activities.

The Clinton proclamation recognizes the need to reduce fuels in the Monument:

> Fire suppression has caused forests to become denser in many areas, with increased dominance of shade-tolerant species. Woody debris has accumulated, causing an unprecedented buildup of surface fuels. One of the most immediate consequences of these changes is an increased hazard of wildfires of a severity that was rarely encountered in pre-Euroamerican times (Clinton 2000, p. 24095).

Not only is there the need to protect the objects of interest from uncharacteristically severe fire, the restoration and long-term maintenance of Monument ecosystems will require the restoration of fire as an ecological process. Long-term maintenance of fire-dependent ecosystems will require the return of characteristic fire regimes (FEIS, Volume 1, Chapter 3, Fire and Fuels, Restoration and Maintenance, Restoration of Fire as an Ecological Process).

PC #248: The Forest Service should adequately analyze how it can use wildland fire to achieve desired conditions.

Response: The FEIS includes the use of managed wildfire in all alternatives (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology).

In the summer of 2010, the Sequoia National Forest jointly managed the Sheep Wildfire with Sequoia and Kings Canyon National Parks covering over 9,000 acres in the Monument and parks. This fire was allowed to burn into the Monarch Giant Sequoia Grove, effectively re-introducing fire and lowering hazardous fuel loading on fifty-two acres of giant sequoia trees. The FEIS has been modified to include information regarding the Sheep managed wildfire of 2010 (FEIS, Volume 1, Chapter 3, Fire and Fuels, Restoration and Maintenance).

In all alternatives, unplanned natural ignitions will be evaluated on a case-by-case basis to determine if resulting wildfires can be managed to protect, maintain, and enhance resources, and, whenever possible, allow fire to function in its natural ecological role. This is one tool used to restore and maintain the natural fire regime. Managed wildfires will make use of strategies and tactics commensurate with protection of human health, safety, and natural and cultural resource values. Risks and complexities for all ignitions will be analyzed in order to determine which ignitions can be successfully managed for ecological benefit.

PC #249: The Forest Service should discuss fire as a natural ecological process in the Sierra Nevada, equal in ecological significance to floods, volcanic eruptions, hurricanes, and other natural disturbances.

Response: The FEIS identifies the importance of fire in discussions of the restoration of and maintaining fire as an ecological process (FEIS, Volume 1, Chapter 3, Fire and Fuels, Restoration and Maintenance, Restoration of Fire as an Ecological Process/Maintaining Fire as an Ecological Process).

PC #250: The Forest Service should explain the scientific basis for asserting that landscape-level thinning must occur to reduce high-intensity fire occurrence, given the extremely low rate of high-intensity fire in the Monument.

Response: The alternatives in the FEIS include mechanical treatments as one of the tools for fuels reduction, along with prescribed fire and managed wildfire. The prioritization of these tools varies by alternative. The analyses in this FEIS do not assert that landscape-level thinning must occur, but discuss a combination of these tools for fuels reduction.

It is important to remember that the low rate of fire across much of the Sierra Nevada is not a "natural" occurrence, but rather is due to very vigilant fire suppression on the part of fire management agencies. Fire frequency and size, total burned area, and fire severity are rising in escaped wildfires across the Sierra Nevada (Westerling et al. 2006, Miller et al. 2009), probably driven by an interaction between fuels accumulation and warming climate.

PC #252: The Forest Service should spend more money on education instead of trying to clean up the entire forest to prevent unwanted fires.

Response: Fire prevention education is an important part of the Sequoia National Forest Fire Management Program. Prevention focuses on the activities needed to reduce human-caused ignitions.

Fire history on the Sequoia National Forest shows that 60 percent of fires are attributed to lightning and 40 percent to human causes. Within the Monument, 50 percent of fires were lightning-caused and 50 percent human-caused (FEIS, Volume 1, Chapter 3, Fire and Fuels, Fire History).

PC #253: The Forest Service should include the Tribal Fuels Emphasis Treatment Area (TFETA) in its selected alternative.

Response: The decision has not yet been made on the selected alternative. Alternatives B and F include the Tribal Fuels Emphasis Treatment Area (TFETA) (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Indirect Effects, Tribal Fuels Emphasis Treatment Area [TFETA]). At the time of decision, the deciding official can choose to include elements from other alternatives in the selected alternative.

PC #101: The Forest Service should use both mechanical treatments and prescribed fire for fuels reduction.

Response: All alternatives in the FEIS include prescribed fire, managed wildfire, and mechanical treatments as fuel reduction tools. The prioritization of these tools varies by alternative (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology, Assumptions for All Alternatives, Trade-offs Between Types of Treatments).

PC #102: The Forest Service should use fire management as a preferred method of ecosystem restoration and fuel treatment.

Response: The FEIS analyzes the use of managed wildfire and prescribed fire in all alternatives. Alternatives C and D prioritize prescribed fire and managed wildfire as fuel reduction tools. Alternative B (proposed action) prioritizes prescribed fire as a fuel reduction tool (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology/Indirect Effects).

PC #103: The Forest Service should meet fuel management objectives through mechanical means.

Response: All alternatives in the FEIS include prescribed fire, managed wildfire, and mechanical treatments as fuel reduction tools. Alternative B (the proposed action) prioritizes prescribed fire as a fuels reduction tool with mechanical treatments secondary. There are no priorities for the management tools used for fuels reduction in Alternative F. The three tools, mechanical means, prescribed fire, and managed wildfire will be used in combination based on site-specific analysis and existing conditions (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology, Assumptions for All Alternatives, Trade-offs Between Types of Treatments).

PC #104: The Forest Service should describe the fire standards the plan will comply with and which entities will provide emergency services.

PC #105: The Forest Service should acknowledge that fire suppression activities in themselves are harmful to the forest.

Response (to PC #s 104 and 105): The Sequoia National Forest follows fire management guidelines in the 1988 Forest Plan, the 2001 SNFPA ROD, and Federal Wildland Fire Management Policy.

Fires are suppressed minimizing damages and maximizing overall benefits of wildland fire within the framework of land use objectives and land/resource management plans (Policies—Interagency Guides Redbook 2011). See the responses to PC #s 106 and 247.

Ecological restoration in semiarid conifer forests that historically supported fire regimes of frequent, low and moderate severity fire is primarily about reducing fuels (either through reintroduction of fire, where possible, or through fire-surrogates, or through a combination of both), since our principal effect on these types of forests in and around the Monument has been to densify and homogenize stands through fire suppression and timber harvest. Many publications from third parties support the restorative importance of reducing fuels in frequent-fire forests (e.g., Covington 2000, Allen et al. 2002, Schoennagel et al. 2004, Noss et al. 2006).

PC #106: The Forest Service should not allow wildfires to spread and damage vegetation.

Response: The Forest Service's response to wildland fires is based on the ecological, social, and legal consequences of the fire. The circumstances under which a fire occurs, and the likely consequences for firefighter and public safety and welfare, natural and cultural resources, and values to be protected, dictate the appropriate response to the fire (Guidance for Implementation of Federal Wildand Fire Management Policy, February 2009).

Unplanned natural ignitions in all alternatives will be evaluated on a case-by-case basis to determine if the fire will be managed for ecological benefit. In managed wildfires, strategies and tactics will be used that are commensurate with protection of human health, safety, and natural and cultural resource values. Risks and complexities for all ignitions will be analyzed in order to determine which ignitions can be successfully managed for ecological benefit. Managed wildfire can be used as a tool to re-introduce fire to the ecosystem, reduce

unnatural fuel accumulations, and promote resilient forest structures under appropriate conditions (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels). Also see the responses to PC #s 105 and 247.

PC #107: The Forest Service should consider the following desired conditions for fire and fuels suggested in the Citizens' Park Alternative:

- Fire will occur in its characteristic pattern and will resume its ecological role.
- Frequent fire will maintain lower, manageable levels of flammable materials in most areas, especially in the surface and understory layers.
- There will be a vegetation mosaic of age classes, tree sizes, and species composition, and a low risk of uncharacteristic large fires. But there will be enough risk of some crown fire to sustain species that depend on fire-damaged, snag habitat, such as the black-backed woodpecker and the olive-sided flycatcher.
- The objects of interest will be protected and restored with fire. Sustainable environmental, social, and economic benefits (such as those associated with recreation and tourism) will be maintained.
- Fuel reduction treatments adjacent to structures will be focused on developed areas within these zones.
- The need to maintain fuel conditions that support fires characteristic of complex ecosystems will be emphasized, and will allow for a natural range of fire, but which protects human life, structures, recreation sites, and administrative sites on lands in and adjacent to the Monument.

Response: The desired conditions for fire and fuels have been modified to include the suggested changes (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies and Objectives; Fire and Fuels Desired Conditions):

> Fire occurs in its characteristic pattern and resumes its ecological role. Frequent fire maintains lower, manageable levels of flammable materials in most areas, especially in the surface and understory layers. There is a vegetation mosaic of age classes, tree sizes, and species composition, and a low risk for uncharacteristic large fires. The objects of interest are protected; sustainable environmental, social, and economic benefits (such as those associated with tourism) are maintained; and the carbon sequestered in large trees is stabilized.
>
> Fire susceptibility and severity, and fire hazards to adjacent human communities and surrounding forest types, are low. The need to maintain fuel conditions that support fires characteristic of complex ecosystems is emphasized and allows for a natural range of fire effects in the Monument (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies and Objectives; Fire and Fuels Desired Conditions).

The desired conditions are the same for all alternatives, and the effects analysis in Chapter 4 discusses and compares how each alternative moves toward or away from them (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels),

Effects to species dependent upon burned forest habitat are analyzed in Chapter 4 of the FEIS (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Burned Forest Habitat).

PC #198: The Forest Service should include the following strategies for fire and fuels suggested in the Citizens' Park Alternative:

- To address fuels buildup, allow limited manual or mechanical treatment, with diameter limits for tree cutting, subject to the restrictions in the Clinton proclamation with a focus on prescribed fire and naturally occurring fire.
- The structure defense zones extend approximately 200 feet from the structure. Public safety zones include developed recreation site and administrative sites, which would also be managed with a 200 ft boundary for fuels treatment.
- The priorities for the management tools used for fuels reduction are:
  1. Prescribed fire and managed wildfire (unplanned natural ignitions).
  2. Manual or mechanical means in the structure defense or public safety zones.

Table 1 Fuels/Vegetation Management Direction

Area	Resource Management Focus	Diameter Limit for Felling Trees[3]
Monument-wide	Fuels reduction/ forest resilience–incidental safety	5-8[1]
Structure defense zones (and areas around public safety zones)[2]	Fuels reduction/ fire protection	5-8 (with incidental felling for operability up to 20)
Public safety zones[4]	Averting hazards	No limit[5]
Northern goshawk and spotted owl habitat areas (SOHAs) (2001 SNFPA ROD, Appendix A, pp. A-35 and A-37)	Fuels reduction in and out of defense and public safety zones	6
Carnivore den sites buffers (2001 SNFPA ROD, Appendix A, p. A-39)	Fuels reduction	Avoid

1. In practice, cutting trees up to and including 8 inches in diameter has proven effective in fuels reduction in SEKI. The actual size of trees cut should be the smallest to accomplish the goal of preparing areas for fire reintroduction. Moreover it should be the least intrusive, which means that many of the trees in the 5-8 inches diameter class and some smaller trees below 5-8 inches in diameter will be left standing in each treatment unit.
2. The structure defense zone width is approximately 200 feet around structures and around developed recreation sites or administrative sites. Targets in these zones do not include roads or trails.
3. Fuel removal will focus on material 3 inches or smaller, consisting of small trees, limbs, and tops of trees, which are the type of material that causes unwanted fire behavior. Tree removal must be clearly needed, as determined in the standards and guidelines for Tree Cutting and Tree Removal.
4. Public safety zones include developed recreation or administrative sites. Targets in these zones do not include roads or trails.
5. Because these are the largest trees to be cut, additional scrutiny is required. Hazard tree felling and tree removal shall comply with the standards and guidelines for Tree Cutting and Tree Removal.

3. Manual or mechanical means, where necessary, to prepare areas for prescribed fire and managed wildfire, such as in plantations.

Response:

- In the FEIS, for each of the alternatives, diameter limits are given for ecological restoration (fuels reduction and vegetation management) in tables similar to the one given (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative A, Fire and Fuels, etc.). The priorities for the management tools used (prescribed fire, managed wildfire, and mechanical treatments) are listed before this table. The smallest diameter limit used in this table for an alternative is 8 inches in Alternative C. Alternative C has no diameter limit for tree cutting in the WUI defense zone for fuels reduction and fire protection; however, according to SEKI personnel, there is rarely a need to cut a tree over 8 inches (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative C, Fire and Fuels).
- Alternative D uses a wildland urban intermix (WUI) defense zone that extends approximately 200 feet out from developed private land.
- In the WUI, mechanical treatments would be used to reduce fuels to the point where prescribed fire or managed wildfires could burn without harming high value resources. Tree removal would only be allowed as a by-product of fuels reduction or public safety activities, and only when clearly needed for ecological restoration and maintenance or public safety (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology/Indirect Effects).

PC #199: The Forest Service should consider the following objectives for fire and fuels as part of the Citizens' Park Alternative:

- Allow significantly more low to moderate intensity fires to burn in the Monument including within giant sequoia groves.
- Manage a moderate amount of hot fires to create a natural variability of openings, and tolerate relatively high mortality in extensive areas of the Monument outside the structure defense and public protection zones. Continue to allow this, as specified in landscape analysis, to reduce fuels or to improve the diversity of vegetation and habitat characteristics in the Monument.

- Within 2 years, complete a public safety fuel treatment plan that provides for 200-ft defensible space around all structures on administrative sites, structures authorized by permit, developed recreation sites, and for developments directly adjacent to National Forest System lands.
- Within 5 years, fully implement the public safety fuel treatment plan.
- Within 5 years, develop a Monument-wide fire management plan, subject to a full NEPA analysis, that looks at a full range of alternatives of fire suppression techniques and associated effects, which guides fire suppression decisions (versus managed fire), consistent with the protection of Monument objects of interest.

Response: The following strategies and objectives for fire and fuels have been added or modified to address these suggestions:

17. Allow low to moderate intensity fires to burn in the Monument, including within giant sequoia groves.

4. Promote a range of natural fire effects by allowing low, moderate, and high intensity fires to burn in the Monument.

10. Manage high-intensity fires to create openings, and tolerate relatively high mortality, in fairly extensive areas of the Monument outside of the WUI, to reduce fuels or to improve the diversity of vegetation and habitat characteristics in the Monument (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Fire and Fuels Strategies).

3. When wildfires occur, determine if they can be managed to reduce fuels in giant sequoia groves and their ecosystems to promote ecological restoration.

4. Re-introduce fire to achieve ecological restoration goals in the giant sequoia groves on an average of 5 percent of grove acres per year, according to their fuel load reduction plans (MSA, pp.9-11, b. Grove Management) (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Fire and Fuels Objectives).

Managed wildfire and prescribed fire are used as management tools to reduce fuels in all alternatives; each of the alternatives includes strategies allowing low, moderate, and high intensity fires to burn in the Monument. Alternatives C and D employ strategies that are expected to allow fires to burn hot enough to create openings and tolerate relatively high mortality in fairly extensive areas of the Monument outside of the WUI. Alternatives A, B, E, and F make use of strategies that are expected to better control fire intensity and reduce the threat of uncharacteristically severe wildfire, but do not depend as much upon naturally-ignited wildfires to produce resource benefits (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Assumptions and Methodology/Indirect Effects).

The FEIS is a strategic plan and does not include site-specific project level decisions. A public safety fuel treatment plan addressing site specific treatment areas and time frames would require appropriate NEPA analysis and a project level decision.

On June 2, 2006, the Chief of the Forest Service, Dale Bosworth, issued a letter approving the withdrawal of the 2005 Fire Management Plan and granting the Sequoia National Forest a waiver of the requirement in FSM 5103 that each national forest have such a plan. This exemption remains in effect.

The Sequoia National Forest follows fire management guidelines in the 1988 Land and Resource Management Plan, 2001 Sierra Nevada Forest Plan Amendment Record of Decision, and Federal Wildland Fire Management Policy.

Forest managers have chosen to defer the development of a detailed fire management plan until the Forest Plan revision is completed. Plan components in a revised plan are expected to address some of the needs of a fire management plan. Plan revision for the Sequoia National Forest is expected to start in 2012 and will be completed within the 5-year time frame cited previously.

PC #109: The Forest Service should re-examine the metrics used for Issue #4 (Fuels Management/ Community Protection).

Response: The metrics used for Issue #4 are designed to address that issue, Fuels Management/ Community Protection, and use the SPECTRUM

modeling, the size of the WUI, and fire susceptibility to compare the alternatives in terms of fuels reduction to protect communities and objects of interest in the Monument.

Air Quality

PC #318: The Forest Service should provide some information regarding expected emissions from future projects, provide measures that can be taken to reduce emissions, and explain how the Forest Service will comply with CAA General Conformity requirements.

Response: The Monument Plan is intended to provide management direction in compliance with all applicable regulations, including air quality, that will minimize impacts to managed resources and maximize the benefits of these resources to the public. Although air pollution generated from anthropogenic sources in the California Central Valley are a major stressor for air quality in the Monument, the primary focus in this analysis is fire emissions because they are a product of forest processes and management.

This FEIS is programmatic. Issues more appropriately handled in specific implementation plan details are to be provided at the site-specific project level and will go through the appropriate environmental compliance. This includes compliance with general conformity requirements. The EPA has included a presumption of conformity for prescribed fires that are conducted in compliance with a smoke management plan. Burns conducted in accordance with Title 17 in California qualify under the presumption of conformity. The Forest Service adheres to the general conformity requirements through project level smoke management plans. The smoke management plan applicable to each project is consistent with the smoke management program run cooperatively with the San Joaquin Air Pollution Control District.

The goal of this analysis is to provide an overarching assessment of the efficacy of the general management plan to adhere to the Clean Air Act. The FEIS provides analysis of potential emissions by alternative (FEIS, Volume 1, Chapter 4, Effects on Air Resources, Indirect Effects, Air Quality). As explained in the FEIS, it has been determined that to best adhere to the Clean Air Act, the Sequoia National Forest should reduce impacts on air quality by decreasing the contribution of emissions from large canopy-replacing wildfires by mitigating the potential of these large fires with prescribed fire. This allows the forest, air regulatory agencies, and the public to have the most active role in emissions reduction and the mitigation of impacts to air quality.

It must be restated that emissions are not impacts. Impacts are determined by human exposure to pollutants. There are many other variables for air quality impacts from smoke management. As the understanding of the relationship between Sierra Nevada ecosystem health and air quality has increased, restricting emissions at the project level to satisfy short term goals has been shown to fail, in that the inevitable large, uncontrolled wildfires increase impacts. Factors determining short- and long-term air quality impacts, such as forest health, the departure from historic fire regimes, fire intensity, fire growth (acres per day burned), plume height, weather conditions, terrain, location, elevation, and distance to affected populated areas, all need to be addressed to ensure that the Clean Air Act is adequately addressed. Significant impacts to the air basin have consistently been from large uncharacteristically severe wildfire. Wildfires that behave within their historic fire regime have not been found to have the air quality impacts seen from large uncontrolled wildfires occurring as a result of fuel accumulation from past suppression policies in the Sierra Nevada. However, impacts from wildland fire have historically been part of the Sierra Nevada ecosystem. The best way to reduce these impacts is to maintain the forest within its natural fire regime and maximize forest resiliency.

The types of treatments proposed in the action alternatives considered in detail in this FEIS will be considered at the project level, and mitigations for individual treatments will be addressed, allowing new information and technologies to best be used for emission reductions. The Forest Service works closely with the public, surrounding land managers, neighboring communities, the California Air Resources Board, and local air pollution control districts to establish treatments that will minimize effects to this anthropogenically polluted air shed.

As stated earlier, general conformity requirements are met with the submitted smoke management plan, which is part of the smoke management program. Emissions from mobile sources will be included at the project level when actual treatments are presented to the public through the NEPA process. This is preferred because localized impacts from specific projects can be better mitigated during this process. It is not adequate to estimate local impacts from treatments without the knowledge of specific site and project parameters. Site conditions can be better addressed for each project while adhering to the objective of minimizing emission impacts (FEIS, Volume 1, Chapter 4, Effects on Air Resources, Cumulative Effects).

PC #319: The Forest Service should acknowledge that smoke from the Monument also travels to the Owens Valley.

Response: Smoke is transported to the Owens Valley as well as other areas such as Bakersfield, Fresno, and the Yosemite valley. Analysis for air quality in this document was intended to address local and regional concerns and not attempt predictive modeling for transport for specific events. Larger wildfires have a more regional air quality impact. Thus the preference to keep fires within historic size and intensity with more management control will localize impacts and reduce the overall effects from local fire on the Owens Valley.

In collaboration with the California and Nevada Smoke and Air Consortium (CANSAC), the Forest Service provides daily Blue Sky dispersion modeling during large wildland fire events. The modeling predicts smoke plume path and pollutant ($PM_{2.5}$) concentrations. The California Air Resources Board has released a tool called the Prescribed Fire Information Reporting System that tracks burns in California and the emissions generated. It will communicate directly with the Blue Sky dispersion modeling and produce smoke plume maps and pollutant concentrations. These tools will help land management agencies and regulators organize and authorize burns so that fire can play its natural role with reduced smoke impacts on the public.

PC #320: The Forest Service should correct the analysis and presentation of the air quality impacts of the different alternatives.

Response: The use of emissions models is an effective tool to facilitate the understanding of multiple scenarios. However, proper interpretation of model scenarios must include analysis of limitations inherent in the model. Emissions for model scenarios for all alternatives are relatively close when comparing Monument emissions to other sources. Lower emissions do not necessarily directly correlate to fewer air quality impacts. There are many other variables for air quality impacts from smoke management. As the understanding of the relationship between Sierra Nevada ecosystem health and air quality has increased, restricting emissions at the project level to satisfy short-term goals has been shown to fail, in that the inevitable large, uncontrolled wildfires increase impacts. Factors determining short- and long-term air quality impacts, such as forest health, the departure from historic fire regimes, fire intensity, fire growth (acres per day burned), plume height, weather conditions, terrain, location, elevation, and distance to affected populated areas, all need to be addressed to ensure that the Clean Air Act is adequately addressed. Significant impacts to the air basin have consistently been from large uncharacteristically severe wildfire. Wildfires that behave within their historic fire regime have not been found to have the air quality impacts seen from large uncontrolled wildfires occurring as a result of fuel accumulation from past suppression policies in the Sierra Nevada. However, impacts from wildland fire have historically been part of the Sierra Nevada ecosystem. The best way to reduce these impacts is to maintain the forest within its natural fire regime and maximize forest resiliency. After analysis of model scenarios, published scientific data, and monitoring data, it has been concluded that prescribed fire will decrease the number and size of destructive wildfires and allow the Forest Service better control over the quantity and timing of emissions thus reducing air quality effects (FEIS, Volume 1, Chapter 4, Effects on Air Resources, Indirect Effects, Air Quality).

For example, Alternative B has the potential for the highest prescribed fire emissions. Thus, the analysis suggests that this will decrease the number

of wildfires that burn out of the historic normal fire size and intensity, which typically have the most significant impacts to air quality.

A table has been added to the FEIS that ranks alternatives by emissions (FEIS, Volume 1, Chapter 4, Effects on Air Resources, Indirect Effects, Air Quality, Air Quality Ranking by Alternative table). Emissions are not impacts. Impacts are determined by human exposure to pollutants, which is why monitoring is critical to detecting air quality impacts. Air quality monitoring will be conducted during site-specific projects and wildfire events to ensure protection of community human health and to increase understanding of emissions, effects, and smoke management techniques (Monument Plan, Part 3—Design Criteria, Monitoring and Evaluation, Part 1 Monitoring, Part 1 Monitoring Summary, Air Quality).

As suggested in the response to PC #319, CANSAC will start running the Blue Sky model that will predict smoke plume path and pollutant concentrations. The data, plume path, and forecast for up to three days will be provided even at sites that lack air quality monitors.

PC #321: The Forest Service should define what constitutes poor air quality.

Response: The Forest Service does not establish standards for air quality. The Forest Service is a land management agency and not a regulatory agency like the U.S. Environmental Protection Agency (EPA). Poor air quality is defined by the U.S. EPA. For the alternatives considered in detail in this FEIS, the Forest Service used the standards established by the U.S. EPA, such as the National Ambient Air Quality Standards (NAAQS) and the Air Quality Index (AQI).

PC #323: The Forest Service should take air quality measurements at and near campgrounds and along roads.

Response: The southern Sierra Nevada region has the most robust Forest Service air quality monitoring program in the nation. This air monitoring program focuses on populated areas that may be affected by smoke. Mobile monitors are used in campgrounds during smoke events with the potential for significant air quality impacts. Campgrounds are a part of the air quality monitoring program in the Monument. Staffing and funding limitations require prioritization of monitoring to maximize the benefits of monitoring and provide the best information about air quality to the public (Monument Plan, Part 3—Design Criteria, Monitoring and Evaluation, Part 1 Monitoring, Part 1 Monitoring Summary, Air Quality).

PC #324: The Forest Service should consider the effects on air quality for the tribal community from Alternatives C and D.

Response: This FEIS is programmatic. Issues more appropriately handled in specific implementation plan details will be provided at the site-specific project level and will go through the appropriate environmental compliance. This is preferred because localized impacts from specific projects can be better mitigated during this process. It is not adequate to estimate local impacts from treatments without the knowledge of specific site and project parameters. Site conditions can be better addressed for each project while adhering to the objective of minimizing emission impacts (FEIS, Volume 1, Chapter 4, Effects on Air Resources, Cumulative Effects).

The goal of this analysis is to provide an overarching assessment of the efficacy of the general management plan to adhere to the Clean Air Act. The FEIS provides analysis of potential emissions by alternative (FEIS, Volume 1, Chapter 4, Effects on Air Resources, Indirect Effects, Air Quality). As explained in the FEIS, it has been determined that to best adhere to the Clean Air Act, the Sequoia National Forest should reduce impacts on air quality by decreasing the contribution of emissions from large canopy-replacing wildfires by mitigating the potential of these large fires with prescribed fire. This allows the forest, air regulatory agencies, and the public to have the most active role in emissions reduction and mitigation of impacts to air quality.

The southern Sierra Nevada region has the most robust Forest Service air quality monitoring program in the nation. This air monitoring program

focuses on populated areas that may be affected by smoke. Mobile monitors are used during smoke events with the potential for significant air quality impacts. Air quality monitoring will be conducted during projects and wildfire events to ensure protection of community (including tribal) human health and to increase understanding of emissions, effects, and smoke management techniques (Monument Plan, Part 3—Design Criteria, Monitoring and Evaluation, Part 1 Monitoring, Part 1 Monitoring Summary, Air Quality).

PC #440: The Forest Service should include the following desired conditions for Air Quality as suggested in the Citizens' Park alternative:

- Emissions generated by the Monument will be managed, and clean air will be provided for the Monument and surrounding communities, subject to frequent managed and natural fires.

PC #441: The Forest Service should include the following objectives for Air Quality as suggested in the Citizen's Park alternative:

- As part of prescribed fire and managed wildfire, develop actions that reduce public exposure to atmospheric pollutants, recognizing substantial increases in managed burning in the monument. Within 1 year, enter into a Memorandum of Understanding with the California Air Resources Board and the San Joaquin Valley Air Pollution Control District for regulatory consideration, which allows for maximizing opportunities for prescribed and wildland fire use burning in the Monument to restore ecological conditions.

Response (to PC #s 440 and 441): The desired condition statement suggested is almost the same as that in the DEIS and FEIS, which reads:

> Emissions generated by the Monument are limited and managed, and clean air is provided for the Monument and surrounding communities (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Air Quality; Desired Conditions).

Basically, the desired condition is clean air. But there exist many misconceptions about air quality in the Monument. Most of the air pollution is of anthropogenic origin and created in the San Joaquin Valley, Bay area, and Sacramento area. The amount of air pollution generated by the activities in the Monument is insignificant when compared to what is coming from other sources. The Forest Service does work with the San Joaquin Valley Air Pollution Control District to ensure that the effects from prescribed fire are minimized. A smoke management plan is created for every prescribed burn project and submitted to the San Joaquin Valley Air Pollution Control District.

The Monument Plan is intended to provide management direction in compliance with all applicable regulations, including air quality, which will minimize impacts to managed resources and maximize the benefits of these resources to the public. The FEIS provides analysis of potential emissions by alternative (FEIS, Volume 1, Chapter 4, Effects on Air Resources, Indirect Effects, Air Quality).

PC #442: The Forest Service should point out that Alternative F has the least level of carbon dioxide emissions of all the alternatives, and 30 percent less than Alternative B.

Response: Carbon dioxide emissions are displayed graphically and compared by alternative in the emissions assessment in Chapter 4 of the FEIS (FEIS, Volume 1, Chapter 4, Effects on Air Resources, Indirect Effects, Air Quality).

PC #443: The Forest Service should analyze the impacts on air quality from construction and operational activities and increased recreational traffic, and how activities would meet requirements of the National Ambient Air Quality Standards (NAAQS).

Response: The goal of this analysis is to provide an overarching assessment of the efficacy of the general management plan to adhere to the Clean Air Act. This FEIS is programmatic. Issues more appropriately handled in specific implementation plan details will be provided at the site-specific project level and will go through the appropriate environmental compliance. This is preferred because localized impacts from specific projects can be better mitigated during this process. It is not adequate to estimate local impacts from treatments without the knowledge of specific site and project parameters. Site conditions can be better addressed

for each project while adhering to the programmatic plan goal to minimize emissions (FEIS, Volume 1, Chapter 4, Effects on Air Resources, Cumulative Effects).

Climate Change

PC #325: The Forest Service should consider climate-related research and planning tools that are relevant to the Monument.

PC #328: The Forest Service should revise the management plan to implement climate-smart management practices.

Response (to PC #s 325 and 328): Blate et al. (2009) outlines adaptation strategies/options for climate change for the national forests. Many of the adaptation options are similar to those proposed in several of the alternatives considered in this FEIS. Additional key sources of information can be found in the USDA Forest Service 'Strategic Framework for Responding to Climate Change' (USFS 2008) and 'National Roadmap for Responding to Climate Change' (2010), Millar et al. (2007), North et al. (2010), Stephens et al. (2010), Baron et al. (2008), and Innes et al. (2009).

PC #326: The Forest Service should genuinely analyze the effects from climate change on Monument resources, as well as craft strategies for addressing and adapting to impacts from climate,

- to satisfy NEPA.
- not just conclude the precise effects are difficult to predict.
- against a baseline that incorporates climate change impacts over time.

PC #329: The Forest Service should consider multiple likely climate change scenarios and ecological conditions.

PC #333: The Forest Service should approach resource management from the perspective that climate change is one of the largest threats to biodiversity.

PC #334: The Forest Service should call for the identification and conservation of current and potential future habitat and refugia via regional reserve networks of high-quality habitat that are connected across landscapes.

Response (to PC #s 326, 329, 333, and 334): A climate change summary for the Monument was included in Appendix C of the EIS (FEIS, Volume 2, Appendix C—Trends in Climate Change). Information in this summary can be applied directly to the resource areas covered in the effects analyses in Chapter 4 of the FEIS. Separate sections on Climate Change have been added to Chapters 3 and 4 of the FEIS to address this issue more independently (FEIS, Volume 1, Chapter 3, Climate Change; FEIS, Volume 1, Chapter 4, Effects from Climate Change).

With regard to sensitive wildlife species (e.g., fisher, spotted owl), there are few sources of information currently available that directly examine climate change effects to these species (see the response to PC #s 331 and 332 below). Also, recent efforts in other regions have been inconclusive in regards to these effects (e.g., Carroll in press). However, the following resources could be helpful to review from several recent sources examining large landscape or regional-level strategies for conserving wildlife species in the context of rapidly changing climate:

1. Southern Sierra Partnership 2010 document cited above
2. Spencer, W.D., P. Beier, K. Penrod, K. Winters, C. Paulman, H. Rustigian- Romsos, J. Strittholt, M. Parisi, and A. Pettler. 2010. California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California. Prepared for California Department of Transportation, California Department of Fish and Game, and Federal Highways Administration. Available online at http://www.dfg.ca.gov/habcon
3. United States Fish and Wildlife Service. 2010. Rising to the Urgent Challenge: Strategic Plan for Responding to Accelerating Climate Change. Available online at: http://www.fws.gov/home/climatechange/

Lawler et al. (2011) recently published a study investigating the possible direct and indirect effects of climate change on selected species of the genus *Martes*. They found that macroclimate conditions closely correlated with Pacific fisher presence in

California were likely to change greatly over the next century, resulting in a possibly pronounced loss of suitable habitat. Their results suggested that martens and fishers will be highly sensitive to climate change, and would probably experience the largest climate impacts at their southernmost latitudes (i.e., in the southern Sierra Nevada). The authors noted that fisher habitat is driven to a great extent by mesotopographic and local vegetation features that could not be incorporated into the climatic modeling that they did, so they also looked at stand-level implications of fire under a series of future fire scenarios (since fire occurrence and behavior is driven to a large extent by climate/weather). Lawler et al. (2011) recommended protecting fisher habitat through targeted forest-fuel treatment, and applying more liberal fire-suppression policies to naturally ignited fires during moderate weather conditions.

PC #327: The Forest Service should have conducted a climate vulnerability assessment.

Response: There are two current sources (one in draft form) for a vulnerability assessment of the southern Sierra Nevada, including the Monument:

1. Southern Sierra Partnership. 2010. Framework for Cooperative Conservation and Climate Adaptation for the Southern Sierra Nevada and Tehachapi Mountains, California, USA.
2. Koopman, M. E., K. Meis, and J. Corbett. 2011. Integrated strategies for a vibrant and sustainable Fresno County [Draft]. The Geos Institute and Local Government Commission ClimateWise Report. (Note: This report is currently in review but does cover Tulare County and the Monument.) A final report is due soon.

The Southern Sierra Partnership assessment (SSP 2010), in Table 4 on page 46, lists "changes in fire regime" as the principal threat (ranked as "Very High") to the sustainability of mixed conifer forest. Threats ranked as "High" were: climate change, roads, pests and pathogens, airborne pollutants, and incompatible vegetation management practices. Five other threats were ranked "Medium." Overall, the SSP 2010 found that riparian and aquatic ecosystems were at the highest risk, followed by the different forest types (oak woodland, mixed conifer, subalpine/alpine), and migratory and wide-ranging wildlife. The highest ranked threats were surface and groundwater withdrawals (ranked as "Very High"). A certain number of threats ranked "High" fall under Forest Service management, including water management, climate change, roads, changes in fire regime, livestock grazing practices, invasive non-native plants and animals, pests and pathogens, and habitat loss outside the planning area.

The SSP 2010 suggested that species distribution projections and future climate projections show that the southern Sierra Nevada landscape is likely to experience relatively more stability and less climate stress than many other parts of the State of California. This is mostly due to the high elevation range, high landscape connectivity, and large area of protected lands in the planning area.

Table 6 (pp. 61-67) the SSP 2010 makes a number of hypotheses of likely future change for nine separate ecosystem types. For mixed conifer forests, the type that comprises the majority of Forest Service lands in the Monument, the assessment finds that increased large tree mortality and increased outbreaks of wood-boring insects and disease are "Very Likely" outcomes of future climate change.

On pages 70-71, the SSP 2010 discusses possible carbon storage trends. Future projected trends are highly variable, depending on the direction of future climate change. Some models show increases in C storage, others show decreases. SSP 2010 suggests (page 70) that: "Active restoration of forests through thinning and prescribed burning has been shown to be an effective strategy to minimize catastrophic wildfire emissions and maintain natural sequestration."

The general findings of the Geos Institute report (Koopman et al. 2011, p. 5) are:

Based on climate change model projections from three global climate models, as well as peer-reviewed scientific publications, local experts and leaders identified the following as changes that are likely to occur in Fresno County by the end of this century:

- Hotter, drier, and longer summers

- More severe storms
- 80 percent decline in snowpack
- Increase in wildfire
- Increase in erosion and sediment
- Declines in water quality and flow in streams and rivers
- Lower groundwater recharge rates
- Loss of some native species and functioning ecosystems
- Less productive range for cattle
- Increase in invasive species
- Increase in severe heat days that cause illness and death
- Further declines in air quality
- Increase in stress that impacts mental health
- Increase in natural disasters (floods, droughts, fires)
- Stress to water and flood infrastructure
- Reduced number of "chill hours"
- Changes to agricultural production

The Monument has been and will continue to be a part of several collaborative climate change-related scenario planning efforts currently underway or starting in the southern Sierra Nevada:

1. Southern Sierra Conservation Cooperative (and preceding Southern Sierra Strategic Framework)
2. Fire Management Scenario Planning Project (in collaboration with SEKI and University of California)
3. Interagency Southern Sierra Nevada Fire Science Integration Working Group
4. Southern Sierra Fisher Working Group

PC #330: The Forest Service should engage qualified experts to adequately analyze and estimate the complex interactions inherent to the carbon exchange process.

Response: The Climate Change and Carbon Sequestration sections of the FEIS disclose and estimate to the extent practical the carbon implications of forest growth and disturbance factors associated with the various forest treatments (FEIS, Volume 1, Chapter 4, Effects from Climate Change, Indirect Effects, Carbon Sequestration). These sections tap experts in forest growth, disturbance, and air quality management. They draw from currently available science and forest growth models and address the complexities of forest management and carbon exchange. The Science Consistency Review found these sections to conform with existing research and to have adequately addressed these issues.

PC #331: The Forest Service should develop a robust adaptive management and monitoring program that explicitly addresses climate-driven uncertainties.

PC #332: The Forest Service should provide meaningful discussion of climate change effects and how those are likely to affect management of the Monument in upcoming decades.

Response (to PC #s 331 and 332): The FEIS includes strategies and objectives for Scientific Study and Adaptive Management to study the effects and uncertainties of climate change (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Scientific Study and Adaptive Management). Climate change monitoring programs are included in the three-part monitoring and evaluation section of the Monument Plan (Monument Plan, Part 3—Design Criteria, Monitoring and Evaluation, Part 1 Monitoring Summary, Climate Change).

In regards to scientific uncertainty, it's important to note that future climate projections for many resources (e.g., vegetation, wildlife), have an inherent high degree of uncertainty at this point in time. Until climate models improve and more information becomes available, the uncertainty regarding future conditions will remain high. Also, it will be crucial to emphasize the types of monitoring and research that are or will be taking place in the Monument. Feeding information obtained from monitoring into management (adaptive management component) will be a critical step in any adaptive strategy to climate change.

Wildlife and Plant Habitat (including Management Indicator Species; Threatened, Endangered, and Sensitive Species; Invasive Nonnative Species; Rare and Endemic Species; and Botanical Resources)

Wildlife Habitat

PC #3: The Forest Service should analyze impacts of livestock grazing on Monument special habitats and protect these habitats from adverse effects.

Response: The effects of grazing on wildlife habitat is considered in the cumulative effects sections of the Wildlife Biological Assessment (Appendix N) and Wildlife Biological Evaluation (Appendix M), particularly for meadow dependent species like willow flycatchers and great gray owls. There are standards and guidelines, which differ by alternative, designed to protect key habitats from adverse grazing effects (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat). The Monument FEIS considers potential effects at a programmatic level. Effects on specific meadows, streams, etc. will be evaluated for project-level management decisions, such as reauthorization of grazing permits. The site-specific allotment management plans and requirements of grazing permits are designed to minimize effects and include monitoring requirements (FEIS, Volume 2, Appendix A, All Action Alternatives, Range [standards and guidelines]; Monument Plan, Part 3—Design Criteria, Monitoring and Evaluation, Part 3 Monitoring, Part 3 Monitoring Summary, Range).

PC #4: The Forest Service should include more analysis to support the vegetation and wildlife management conclusions.

Response: The Monument FEIS contains a summary of the analysis of effects of the alternatives on wildlife habitat. More detailed information has been added to the FEIS from the specialist reports to better support the conclusions. The complete analyses are found in the Wildlife Biological Assessment in Appendix N, the Wildlife Biological Evaluation in Appendix M, and the Management Indicator Species Report. These reports cite a considerable number of references which inform the species-specific analyses.

PC #26: The Forest Service should overlay fuel reduction with other elements of ecological restoration, such as protection of endangered species and their habitat.

Response: The effects analyses in the Wildlife Biological Assessment (Appendix N), Wildlife Biological Evaluation (Appendix M), and the Management Indicator Species Report are based largely on an overlay of areas likely to be selected for fuel treatment (WUI threat zones, defense zones, and the TFETA) with species-specific wildlife habitat (FEIS; Volume 1; Chapter 4; Effects on Wildlife and Plant Habitat; Effects on Wildlife; Wildlife Species Considered in Detail; Effects on Threatened, Endangered, or Proposed Species; California Condor; Indirect Effects; Vegetation Management; etc.). For example, 1-12 percent of the suitable northern goshawk and California spotted owl habitat in the Monument falls within WUI defense zones, depending on the alternative. In Alternative B, over 25,000 acres of goshawk and spotted owl protected activity centers (PACs) overlap with WUI defense zones. PACs have been established to preserve habitat features important to these species. Within these areas, fuels reduction projects would be restricted with limited operating periods and other requirements designed to preserve key habitat elements (see wildlife standards and guidelines in the FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat).

The Dominant Management Direction When Land Allocations/Management Areas Overlap table in

Chapter 2 illustrates what management direction would be followed when land allocations or management areas overlap. Land allocations with standards and guidelines that protect special habitats or protected species have a higher priority than land allocations or management areas that allow more active management. For example, standards and guidelines for California spotted owl protected activity centers (PACs) protect owl habitat and breeding by limiting the types and intensities of fuel treatments within their boundaries (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Reader's Guide to Alternative Descriptions, Land Allocations and Management Areas).

PC #254: The Forest Service should increase protections for the five willow flycatcher sites in the Monument rather than decreasing them by shifting to the 2004 Framework guidelines.

Response: The point that shifting to the 2004 SNFPA guidelines and allowing late season grazing to begin August 15 could increase the potential for disturbance of nesting willow flycatchers is correct. This was an oversight and was corrected in the analysis for the Final Wildlife Biological Evaluation (Appendix M) and the FEIS (FEIS; Volume 1; Chapter 4; Effects on Wildlife and Plant Habitat; Effects on Wildlife; Wildlife Species Considered in Detail; Effects on Forest Service Sensitive Species; Little Willow Flycatcher; Indirect Effects; Management Areas; Alternatives B, C, D, and F). The analysis in the Draft Wildlife Biological Evaluation was based on the fact that surveys since 2001 have not detected willow flycatchers at any of the five sites (Appendix M, willow flycatcher section). Since these sites have not been recently occupied, whether late-season grazing begins on August 15 or September 1 would not be a concern because there are no birds present to disturb.

Site-specific allotment management plans and requirements in grazing permits are designed to minimize grazing effects on meadows and include monitoring requirements (FEIS, Volume 2, Appendix A, All Action Alternatives, Range [standards and guidelines]; Monument Plan, Part 3—Design Criteria, Monitoring and Evaluation, Part 3 Monitoring, Part 3 Monitoring Summary, Range). In addition, meadows are a priority for restoration for the Monument (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Hydrological Resources; Desired Conditions/ Strategies/Objectives).

All the alternatives, except Alternative E, would continue the requirement for conducting surveys in the five known willow flycatcher sites on a four-year cycle (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Willow Flycatcher Sites).

PC #255: The Forest Service should examine critical habitat attributes (such as snags and down wood) and identify actions or strategies to improve habitat conditions.

Response: The desired conditions for Wildlife Habitat express the intent to provide a diverse range of habitats, with special emphasis on riparian areas, montane meadows, and late successional forest (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Wildlife and Plant Habitat Desired Conditions). Strategies to meet these desired conditions vary by alternative, using different land allocations and their associated standards and guidelines to protect high value wildlife habitat (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Wildlife and Plant Habitat Strategies). In some alternatives, strategies would be implemented through the use of a variety of land allocations (e.g., PACs, HRCAs, RCAs) designed to protect key wildlife habitat features, including snags and down woody debris (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat).

Current levels of snags and down wood on the Monument-wide scale are not known. Snags and down woody debris are always being created by natural events, prescribed burns, etc.; therefore, the abundance of these habitat elements are a dynamic and constantly changing variable to which we cannot accurately assign a number on such a large scale.

The SPECTRUM model projects increases in the number of snags, along with other important habitat

features like large trees over the current condition for all the alternatives.

When site-specific project-level Common Stand Exams are conducted, we will gain further knowledge of these habitat elements. Changes to the number of snags and down woody debris will be determined at the project level, based on local conditions and the project design. Since the FEIS does not specify the particular treatment type on specific acres, the analysis for this programmatic level plan amendment can only be addressed in general terms.

PC #256: The Forest Service should make the determination of effects on the willow flycatcher consistent with previous findings for the 2001 and 2004 SNFPA.

Response: This has been corrected in the Final Wildlife Biological Evaluation (Appendix M) and the FEIS (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Wildlife Species Considered in Detail, Effects on Forest Service Sensitive Species, Little Willow Flycatcher). The analysis in the Draft Wildlife Biological Evaluation was based on the fact that surveys since 2001 have not detected willow flycatchers at any of the five sites (Appendix M, willow flycatcher section). However, if these sites become occupied in the future, the change in management to the 2004 SNFPA guidelines could result in an effect to this species. The specialist report has been corrected and the determination for Alternatives B, C, D, and F changed to "may affect individuals, but is not likely to result in a trend toward Federal listing or loss of viability" (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Wildlife Species Considered in Detail, Effects on Forest Service Sensitive Species, Little Willow Flycatcher, Determination).

PC #257: The Forest Service should conduct an adequate analysis of the impacts to the black-backed woodpecker, including the basic baseline data describing the habitat requirements of this rare species.

Response: The effects of the alternatives on snags in burned forest, for which black-backed woodpeckers are an MIS, are evaluated in the MIS Report and have been added to Chapter 4 of the FEIS (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Wildlife Species Considered in Detail, Effects on Management Indicator Species Habitat, Effects of the Alternatives on MIS Habitat, Snags in Burned Forest Ecosystem Component [Black-backed Woodpecker]). The MIS report adequately documents the potential effects of the alternatives analyzed in the Monument FEIS on the MIS habitat component of snags in burned forest, and found that the indirect and cumulative effects of all the alternatives would possibly result in a reduction in medium snags (15-30 inches in diameter) and large snags (greater than 30 inches in diameter) per acre in burned forest created by stand-replacing fire. Alternative E is expected to result in the fewest snags in burned forest across the Monument because the guidelines in this alternative only require the retention of 1.5 snags per acre. Alternative A could result in the second fewest snags in burned forest across the Monument through the use of the 2001 SNFPA guidelines. Alternative D, which would have a greater likelihood of stand-replacing fires and would remove the fewest snags, is expected to result in the greatest number of snags in burned forest across the Monument (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Pant Habitat, Effects on Wildlife, Burned Forest Habitat, Indirect Effects).

The black-backed woodpecker analysis in the MIS Report has been modified to account for the higher likelihood of stand-replacing fire in Alternative D. The number of new snags created in Alternative D is likely to be higher than in the other alternatives because fuel reduction activities would likely take place on fewer acres, and natural processes, including stand-replacing fires, would be the primary vegetation management strategy.

In response to this comment, the standards and guidelines for snags have been modified and clarified (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Monument-wide). Specifically, in Alternatives B, C, and F, the standards and guidelines have been changed to include:

- Managing snag levels to meet ecological restoration objectives.
- Designing projects to provide a sustainable population of medium- and large-diameter snags with consideration for the spatial arrangement and density of snags for wildlife and other resources.

Existing snags and living trees that exhibit form and/or decay characteristics regarded as important wildlife habitat (e.g., have substantial wood defect, teakettle branches, broken tops, large cavities in the bole), will form the backbone snag network over large landscapes. The effects analysis in the MIS Report has been modified accordingly.

Management in post-fire areas will only occur to meet ecological restoration or human safety needs. Ecological restoration projects after fires must balance short-term and long-term ecosystem needs, including soil productivity and maintenance, water quality and quantity, tree resilience, management of current and future fuels (especially in WUIs), and restoration of the lost green forest habitat for species such as fisher, spotted owl, goshawk, and marten, as well as providing the short-term or ephemeral post-fire habitat for snag-associated species (FEIS; Volume 1; Chapter 4; Effects on Wildlife and Plant Habitat; Effects on Wildlife; Assumptions and Methodology; Burned Forest Habitat; Indirect Effects; Vegetation Management).

PC #259: The Forest Service should describe the affected environment for habitat for old-growth dependent species.

Response: The Wildlife and Plant Habitat section in Chapter 3 of the FEIS provides a general description of habitat in the Monument (FEIS, Volume 1, Chapter 3, Wildlife and Plant Habitat, Wildlife Habitat, Terrestrial and Aquatic Habitat). Detailed descriptions of species-specific habitats are provided in the Wildlife Biological Assessment (Appendix N), the Wildlife Biological Evaluation (Appendix M, in the "Habitat Preferences" section and often in maps), and the MIS Report. These descriptions of habitat include those for old-growth dependent species, such as the northern goshawk, California spotted owl, and American marten.

PC #260: The Forest Service should keep extremely flammable areas as important habitat.

Response: Habitat in the Monument varies in flammability, with chaparral as the most highly flammable habitat, and moist, high elevation areas as the least flammable habitat.

As the desired conditions for Fire and Fuels state, there is a need to maintain fuel conditions that support fires characteristic of complex ecosystems and allow for a natural range of fire effects in the Monument. Also, a diversity of wildlife habitats is called for in the desired conditions for Wildlife and Plant Habitat (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Wildlife and Plant Habitat Desired Conditions).

Treatments for fuels reduction would be prioritized in WUI defense zones. Other areas are lower priorities for fuels reduction, but could receive limited treatments to reduce flammability, including some key habitat areas like spotted owl or goshawk PACs. To meet desired conditions for both Wildlife and Plant Habitat, and Fire and Fuels, and due to management constraints, all highly flammable habitats would not be treated.

PC #261: The Forest Service should provide a sound scientific foundation for the assertion in the Wildlife Biological Evaluation that current wildland fire is "uncharacteristically severe."

Response: Uncharacteristically severe wildfire in this discussion is defined as fire occurring beyond the historical range of natural variation in terms of scope, intensity and duration. The discussion in the Wildlife Biological Evaluation (BE, Appendix M) was not meant to imply that all stand-replacing fires were uncharacteristically severe wildfires. This section of the BE refers to the potential loss of habitat features important to fishers, as well as loss of habitat connectivity that could result from large stand-replacing fires. All the action alternatives identify having a "vegetation mosaic of age classes, tree sizes, and species composition," including burned areas, as a desired condition (FEIS; Volume1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Fire and Fuels Desired Conditions).

Recent large fires on the Sequoia National Forest have indeed been "uncharacteristically severe." For example, the Manter (2000) and McNally (2002) Fires burned huge areas of forest at high severity (between about 30 and 40 percent of the fire area). Taking all fires on the Sierra and Sequoia National Forests which were assessed for fire severity by the Sierra Nevada Fire Severity Monitoring Program (Miller and Safford 2008) between 1984 and 2004, the total percent of fire area that burned at high severity (greater than 75 percent mortality) was about 22 percent (29 percent if shrub areas are removed from the analysis). This is in great contrast to Stephens et al.'s (2007) estimate that mixed conifer forests burned about five percent of their area at high severity before Euroamerican settlement of California. It is also much higher than the severity of fires currently burning in wildland fire use (WFU) areas in Yosemite, Sequoia and Kings Canyon national parks where, after about 30 years of fire use, fires now burn at about 15 percent high severity (Collins and Stephens 2010).

PC #262: The Forest Service should discuss detection information on the great gray owl.

Response: Historically, there have been a number of detections of individual great gray owls in the Monument. This is discussed briefly in the great gray owl section of the Biological Evaluation (Appendix M, Environmental Effects, Great Gray Owl–Effects, Historic and Current Distribution.) Comprehensive surveys of meadows in 2001 and 2002, as well as subsequent targeted surveys, failed to confirm nesting within the Monument. In 2009, the first confirmed nest site was located and a Protected Activity Center was established (Appendix M, Figure 5). This nest was at a low elevation site and not adjacent to a meadow.

In the alternatives considered in detail in this FEIS, standard and guidelines are put in place to protect meadows that are potential great gray owl nesting sites (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Great Gray Owl PACs). In addition, allotment management plans and requirements in grazing permits are designed to limit adverse effects on meadows from grazing (FEIS, Volume 2, Appendix A, All Action Alternatives, Range).

PC #263: The Forest Service should address all the factors likely to reduce habitat quality for great gray owls in their adopted conservation measures.

Response: The effects analysis in the great gray owl section of the Wildlife Biological Evaluation (Appendix M) considers the effects of vegetation management, grazing, recreation and wildfire on habitat quality. Conservation measures include the creation of PACs around all known nesting sites. These areas are a land allocation and have standards and guidelines designed to protect key habitat elements like large trees and meadow vegetation (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Great Gray Owl PACs). Other conservation measures, like the artificial creation of nest trees, could be considered at the site-specific project level.

PC #264: The Forest Service should limit fuel reduction treatments in Little Kern golden trout habitat in all alternatives.

Response: The FEIS is a forest plan amendment and addresses management at the programmatic level. The Wildlife Biological Assessment (Appendix N) and FEIS analyze the potential effects of the alternatives considered in detail on Little Kern golden trout, and consultation with the U.S Fish and Wildlife Service on the Monument Plan will occur (FEIS; Volume 1; Chapter 4; Effects on Wildlife and Plant Habitat; Effects on Wildlife; Wildlife Species Considered in Detail; Effects on Threatened, Endangered, or Proposed Species; Little Kern Golden Trout [LKGT]). Any proposal for fuels treatment within critical habitat for Little Kern golden trout will have to undergo site-specific NEPA analysis, in addition to further consultation with the U.S. Fish and Wildlife Service.

PC #265: The Forest Service should analyze the cumulative environmental impacts on wildlife from repeated mechanical activities.

Response: The general effects of vegetation management on wildlife habitat are discussed in the effects sections of the Wildlife Biological Assessment (Appendix N), the Wildlife Biological Evaluation (Appendix M), and the Management Indicator Species Report. The Monument FEIS addresses management at the programmatic level

and the Wildlife BA, Wildlife BE, Management Indicator Report, and FEIS analyze the potential effects of the programmatic management proposed in the alternatives on wildlife species and habitat. The number of acres and specific location of any mechanical treatments proposed in the Monument will be analyzed in site-specific projects. That is when any cumulative effects from repeated mechanical treatments will be analyzed.

PC #266: The Forest Service should quantify the effects of the alternatives and incorporate the details of the SPECTRUM model into the effects analysis for different habitats.

Response: The Monument FEIS addresses management at the programmatic level and the Wildlife BA, Wildlife BE, Management Indicator Species Report, and FEIS analyze the potential effects of the alternatives considered in detail on wildlife species and habitat. The number of acres and specific location of any vegetation management activities proposed in the Monument will be analyzed in site-specific projects. Therefore, a quantitative analysis of the effects of the alternatives is not possible at the programmatic level. Some broad trends from the SPECTRUM model are incorporated into the discussion for several species evaluated in the Wildlife Biological Assessment and Wildlife Biological Evaluation, such as spotted owls, bald eagles and Pacific fishers (Appendix M, Environmental Effects, California Spotted Owl-Effects/Bald Eagle-Effects/Pacific Fisher-Effects, California Spotted Owl/Bald Eagle/Pacific Fisher, Determination).

PC #267: The Forest Service should include an extensive description of habitat needs for each species in the affected environment.

Response: Detailed descriptions of species-specific habitats are provided in the Wildlife Biological Assessment (Appendix N), the Wildlife Biological Evaluation (Appendix M, Habitat Preferences sections and maps), and the Management Indicator Species Report.

PC #268: The Forest Service should analyze the effects from certain types of hunting, such as the use of dogs for hunting bear, because of the potential for disease transmission to native species, including fishers.

Response: Disease has been identified as a cause of mortality in a number of fisher studies, including the Sierra Nevada Adaptive Management Project and the Kings River Fisher Study. However, neither the U.S. Fish and Wildlife Service's 12-month Finding for a Petition to List Fisher (USFWS 2004) nor the Fisher Conservation Assessment (Lofroth et al. 2010) identifies disease transmission from domestic dogs as a known threat to fishers. The USFWS concluded that "fisher populations do not currently appear to be at risk" from disease in domestic animals (USFWS 2004). There is no evidence that infection comes from domestic dogs vs. endemic levels in wild canid populations. There is also a high likelihood that hunting dogs are vaccinated in accordance with California law.

There is no known case of hunting dogs wounding or killing a fisher. Dogs were not a threat deemed by the USFWS (2004) to be "important" to fishers.

PC #269: The Forest Service should analyze the direct and indirect effects of the proposed treatments on numbers of goshawks and their suitable habitat.

Response: An analysis of effects of the alternatives on goshawks is in the Wildlife Biological Evaluation (Appendix M, Environmental Effects, Northern Goshawks–Effects, Northern Goshawk, Indirect Effects). Since the Monument Plan is a forest plan amendment, the analysis is at the programmatic level. Site-specific determinations of effects to goshawks will be conducted in site-specific project NEPA analysis. In addition, see the response to PC #26.

PC #270: The Forest Service should discuss the indirect effects on wildlife from the reduction of future snag recruitment.

Response: General effects of vegetation management on wildlife habitat, including the loss of snags, are discussed in the Indirect Effects sections of the Wildlife Biological Assessment (Appendix N), the Wildlife Biological Evaluation (Appendix M), and the Management Indicator Species Report. This FEIS addresses management at the programmatic level. The number of acres

and specific effects of any proposed management activities on snags will be analyzed for site-specific projects. Therefore, a detailed analysis of the effects on snags would be conducted at the project level. In addition, see response to PC #255.

PC #272: The Forest Service should divulge the current densities of large snags in the Monument, either in terms of basal area or number per acre.

Response: Current levels of large snags at a Monument-wide scale are not known. And, since the Monument FEIS does not specify the particular treatment type on specific acres, analyzing the specific change in snag levels is not possible. The analysis for this forest plan amendment is at the programmatic level and addressed only in general terms. Effects of changes to the number of snags will be determined in NEPA analysis for site-specific projects, based on local conditions and the project design. In addition, see the responses to PC #s 255 and 270.

PC #273: The Forest Service should analyze the cumulative effects to the California spotted owl and how the alternatives would negatively affect its habitat.

Response: An analysis of the cumulative effects of the alternatives on California spotted owls is found in the FEIS and the Wildlife Biological Evaluation (FEIS, Volume 1, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Wildlife Species Considered in Detail, Effects on Forest Service Sensitive Species, California Spotted Owl, Cumulative Effects; Appendix M, Environmental Effects, California Spotted Owl–Effects, California Spotted Owl, Cumulative Effects). The Wildlife BE (Appendix M) also contains information on currently available habitat, distribution of PACs for known nesting pairs, and maps of habitat and protected areas. Since the Monument Plan is a forest plan amendment, this analysis is at a programmatic level. Site-specific determinations of effects on spotted owls will be conducted in project-level analysis. In addition, see the response to PC #26.

PC #274: The Forest Service should analyze the effects of livestock grazing on the Pacific fisher.

Response: Neither the U.S. Fish and Wildlife Service's 12-month Finding for a Petition to List Fisher (USFWS 2004), nor the West Coast Fisher Conservation Assessment (Lofroth et al. 2010), identifies current livestock grazing as a known threat to fishers. Although fishers use a variety of habitats for hunting, cattle use is generally concentrated in open areas, lacking the canopy cover preferred by fishers. No cause and effect relationships regarding fisher fitness and livestock grazing are available in the literature. In addition, site-specific allotment management plans and the requirements of grazing permits are designed to minimize adverse impacts on habitat quality from grazing (FEIS, Volume 2, Appendix A, All Action Alternatives, Range for grazing standards and guidelines).

PC #275: The Forest Service should analyze the effects of livestock grazing on rare amphibians.

Response: The Wildlife Biological Evaluation in Appendix M to this FEIS analyzes the effects of the alternatives considered in detail, including ongoing livestock grazing, on Forest Service Sensitive amphibians. The sections for mountain yellow-legged frogs and foothill yellow-legged frogs discuss grazing as a potential threat to habitat quality by reducing streamside cover and degrading water quality. However, because neither of these species are known to occur in the Monument, it was determined that the alternatives considered in detail in the FEIS will have no effect on these species.

The Wildlife Biological Evaluation (Appendix M) and FEIS have been modified to address the potential effects of grazing on relictual slender salamanders (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Effects on Forest Service Sensitive Species, Relictual Slender Salamander, Cumulative Effects, Grazing). The additional information includes:

> ...the U.S. Fish and Wildlife Service recognized… livestock grazing…as threats to the related Tehachapi slender salamander (USFWS 2009).
>
> ...grazing may result in trampling of individuals and reduce the quality of habitat by removing cover vegetation.

Grazing effects factored into the determination that all the alternatives…may affect individuals. However, Forest Service utilization standards,

site-specific allotment management plans, and requirements in grazing permits are all designed to minimize adverse effects on habitat quality from grazing (FEIS, Volume 2, Appendix A, All Action Alternatives, Range for grazing standards and guidelines). Following these management standards makes grazing not likely to result in a trend toward Federal listing or loss of viability of relictual slender salamanders (Wildlife Biological Evaluation, Appendix M, Environmental Effects, Relictual Slender Salamander–Effects, Relictual Slender Salamander, Determination).

PC #276: The Forest Service should analyze the effects of livestock grazing on the great gray owl.

Response: The Wildlife Biological Evaluation (Appendix M) analyzes the effects of the alternatives considered in detail, including ongoing livestock grazing, on great gray owls. The Cumulative Effects section discusses grazing as a potential threat to habitat quality (Appendix M, Environmental Effects, Great Gray Owl–Effects, Great Gray Owl, Cumulative Effects). Forest Service utilization standards, site-specific allotment management plans, and requirements in grazing permits are all designed to minimize adverse effects on habitat quality from grazing (FEIS, Volume 2, Appendix A, All Action Alternatives, Range). In addition, if nesting is confirmed in an area, a Protected Activity Center will be established and standards and guidelines will be in place to protect habitat for great gray owls and their prey species (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Great Gray Owl PACs). Also see the response to PC #263.

PC #277: The Forest Service should analyze the impacts of livestock grazing on southwestern pond turtles.

Response: The Wildlife Biological Evaluation (Appendix M) analyzes the effects of the alternatives considered in detail, including ongoing livestock grazing, on the southwestern pond turtle. The Cumulative Effects section discusses grazing as a potential threat to habitat quality (Appendix M, Environmental Effects, Southwestern Pond Turtle–Effects, Southwestern Pond Turtle, Cumulative Effects). Grazing may reduce streamside cover and reduce water quality, as well as result in trampling of individuals or nests. Grazing effects were considered in the determination that "all the alternatives…may affect individuals." However, Forest Service utilization standards, site-specific allotment management plans, and requirements in grazing permits are all designed to minimize adverse effects on habitat quality from grazing (FEIS, Volume 2, Appendix A, All Action Alternatives, Range). Following these management standards makes grazing not likely to result in a trend toward Federal listing or loss of viability of southwestern pond turtles (Appendix M, Environmental Effects, Southwestern Pond Turtle–Effects, Southwestern Pond Turtle, Determination).

PC #278: The Forest Service should analyze the effects from livestock grazing on special status bats.

Response: The Wildlife Biological Evaluation (Appendix M) analyzes the effects of the alternatives, including ongoing livestock grazing, on Forest Service Sensitive bat species. Forest Service utilization standards, site-specific allotment management plans, and requirements in grazing permits are all designed to minimize adverse effects on habitat quality from grazing (FEIS, Volume 2, Appendix A, All Action Alternatives, Range). Following these management standards makes grazing unlikely to adversely affect foraging habitat for pallid bats, Townsend's big-eared bats, or Western red bats (Appendix M, Environmental Effects, Pallid Bat–Effects/Townsend's Big-eared Bat–Effects/Western Red Bat–Effects).

PC #279: The Forest Service should analyze the effects from livestock grazing on the valley elderberry longhorn beetle.

Response: The Wildlife Biological Assessment (Appendix N) analyzes the effects of the alternatives considered in detail, including ongoing livestock grazing, on the valley elderberry longhorn beetle. The Cumulative Effects section discusses grazing as a potential threat to habitat quality (Appendix N, Environmental Effects, Valley Elderberry Longhorn Beetle–Effects, Cumulative Effects). However, Forest Service utilization standards, site-specific allotment management plans, and requirements in grazing permits are all designed to minimize adverse effects on habitat quality from

grazing (FEIS, Volume 2, Appendix A, All Action Alternatives, Range). There is limited browsing of elderberry by livestock, but it does not appear to limit recruitment or affect the larger diameter twigs used by valley elderberry longhorn beetles. All areas have utilization standards that limit effects on riparian shrubs, including elderberry.

PC #280: The Forest Service should supply citations or sources of data to support the conclusions made for the indirect effects on goshawks.

Response: The Assumptions and Methodology sections of the Wildlife Biological Evaluation (Appendix M) and the FEIS provide the framework for the effects analyses, including that for northern goshawks (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Assumptions and Methodology). The data referred to in the indirect effects analysis was obtained from the forest's Geographic Information System geodatabase files, which are part of the project record. The statement that "the short-term loss of habitat features important to northern goshawks would likely be higher in this alternative [Alternative B] than in Alternatives A, C, D, and E," was based on larger WUI areas and adoption of the Tribal Fuels Emphasis Treatment Area (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Wildlife Species Considered in Detail, Effects on Forest Service Sensitive Species, Northern Goshawk, Indirect Effects, Vegetation Management, Alternative B). Since a larger area containing more suitable goshawk habitat is likely to be treated, the short-term loss of habitat features is likely to be greater.

PC #281: The Forest Service should supply a plan to reintroduce the porcupine.

Response: The Monument Plan guides management at the programmatic level. The decision to reintroduce porcupines to the Monument would be a site -specific, project-level decision. That action would require a separate NEPA analysis and decision, in addition to consultation with other state and federal agencies and stakeholders.

PC #282: The Forest Service should not allow logging in Old Forest Emphasis Area (OFEA) or in Protected Activity Centers (PACs), or allow for a greater reduction in canopy cover in OFEA and Home Range Core Areas.

Response: Alternatives A, B, and F continue to follow the existing 2001 SNFPA standards and guidelines for OFEA, and spotted owl and goshawk PACs. Alternatives C and D do not include OFEA as a land allocation, but would still follow these standards and guidelines in old forest habitat. Alternative E includes the standard and guideline for late-successional and old-growth habitat from the MSA (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Old Forest Emphasis Area/Old Forest Habitat). An error in the Management Direction tables for the alternatives has been corrected in the FEIS, to maintain diameter limits where PACs overlap WUI defense zones. In addition, the standards and guidelines to be applied in OFEA are now grouped under that subheading in the list of standards and guidelines.

PC #283: The Forest Service should specifically discuss the direct or indirect effects from changes in management standards such as reductions in canopy cover for PACs and HRCAs.

Response: The analysis of the potential indirect effects on PACs and HRCAs in Chapter 4 of this FEIS considers the differences in management standards between alternatives (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife). Two of the alternatives comparison tables included in Chapter 2, the Comparison of Alternatives by Issues and Comparison of Alternatives by Environmental Effects tables, compare the land allocations for wildlife and the special management areas for wildlife included in each alternative (FEIS, Volume 1, Chapter 2, Comparison of Alternatives, Comparison of Alternatives by Issues/Comparison of Alternatives by Environmental Effects).

An error in the Management Direction tables for the alternatives has been corrected in the FEIS, to maintain diameter limits where PACs overlap WUI defense zones. Alternatives A, B, D, and F implement existing 2001 SNFPA standards and guidelines for spotted owl and goshawk PACs (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife

Habitat, California Spotted Owl PACs and HRCAs/ Northern Goshawk PACs). Alternative C does not use any of the land allocations from the 2001 SNFPA or the Forest Plan, and Alternative E carries forward only those management emphasis areas from the Forest Plan and MSA. Alternatives A, B, and F all implement existing 2001 SNFPA standards and guidelines for Old Forest Emphasis Areas with no changes, except lack of diameter limit in Alternative F.

PC #284: The Forest Service should discuss how the 2004 Framework's Riparian Conservation Objectives make it easier to allow grazing in great gray owl habitats.

Response: The 2001 SNFPA standard and guideline for grazing in meadows within great gray owl Protected Activity Centers (PACs) is "maintain herbaceous meadow vegetation at least 12 inches in height and covering at least 90 percent of the meadow." Some meadows within the Monument may not meet this standard due to factors other than grazing (e.g., lack of water in Southern Sierra). It was therefore decided that it is more appropriate to adopt the standard and guideline from the 2004 SNFPA of "maintain herbaceous vegetation at a height commensurate with site capability and habitat needs of prey species." This change does not necessarily make it easier to allow grazing in great gray owl habitat, but provides a more logical management goal. There is one great gray owl PAC in the northern portion of the Monument (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Wildlife Species Considered in Detail, Effects on Forest Service Sensitive Species, Great Gray Owl, Indirect Effects, Management Areas; Appendix M, Environmental Effects, Great Gray Owl–Effects, Great Gray Owl).

PC #285: The Forest Service should consider the recent science that recommends against post-fire logging within pre-fire spotted owl home ranges and integrate it with the proposed management direction for the Monument.

Response: The Wildlife Biological Evaluation in Appendix M to this FEIS has been updated to include results from two recent papers on the relationship between fire and spotted owls (Bond et al. 2009 and Roberts et al. 2010). Included in the update are the following statements: "spotted owl occupancy rates and densities were found to be similar in recently burned forests versus unburned forests in Yosemite National Park (Roberts et al. 2010);" "Bond et al. (2009) found that spotted owls tended to select burned areas, particularly high severity burned areas, for foraging;" and "in an area impacted by the McNally fire on Sequoia National Forest, Bond et al. (2009) found that spotted owls avoided roosting in high severity burned areas, but utilized low severity burned areas" (Appendix M, Environmental Effects, California Spotted Owl–Effects, California Spotted Owl, Habitat Preferences and Biology).

In the action alternatives other than Alternative E, snags could only be removed from burned forests for safety (in all of the alternatives) or ecological restoration (Alternatives B, C, and F) purposes. This could potentially reduce the number of medium and large snags per acre in the affected area. The change in number of available snags would depend on the size and specific location of the burned area (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Burned Forest Habitat, Indirect Effects, Vegetation Management, Abundance of Snags in Burned Forest).

PC #286: The Forest Service should develop a Cave Management Plan as soon as possible to address the probable spread of White Nose Syndrome in California's bats.

Response: Some management measures are currently in place to reduce the risk of White Nose Syndrome spreading to the caves in the Monument (e.g., access controlled by permit, recommended decontamination procedures). Currently, the Pacific Southwest Region of the Forest Service is developing a strategy to combat the spread of white nose syndrome. This strategy will likely be implemented in the Monument when it is finalized. In the longer term, a Cave Management Plan will address management of bat habitat as well as a variety of other issues.

PC #287: The Forest Service should analyze the effects from climate change on the Pacific fisher, American marten, California spotted owl, and any other species and their habitat.

Response: The Assumptions and Methodology sections of the Wildlife Biological Assessment (Appendix N), the Wildlife Biological Evaluation (Appendix M), and the FEIS state that "climate change will cause changes in the distribution of individual species and of forest and rangeland ecosystems. The precise effects of climate change on individual species are difficult to predict…" (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Assumptions and Methodology, Methods and Measurements, Determining Cumulative Effects). It is generally agreed that the range of some species will shift and that climate change will be an additional environmental stressor, but the effects on individual species in the Monument are not currently known to any degree of certainty. It is unclear whether climate change would benefit or adversely affect these species over the long term. Predictive models of the distribution of some species in California (some birds) are available, but they have many variables and are not available for any of the species analyzed in this FEIS.

Lawler et al. (2011) recently published a study investigating the possible direct and indirect effects of climate change on selected species of the genus Martes. They found that macroclimate conditions closely correlated with Pacific fisher presence in California were likely to change greatly over the next century, resulting in a possibly pronounced loss of suitable habitat. Their results suggested that martens and fishers will be highly sensitive to climate change, and would probably experience the largest climate effects at their southernmost latitudes (i.e., in the southern Sierra Nevada). The authors noted that fisher habitat is driven to a great extent by mesotopographic and local vegetation features that could not be incorporated into the climatic modeling that they did, so they also looked at stand-level implications of fire under a series of future fire scenarios (since fire occurrence and behavior is driven to a large extent by climate/weather). Lawler et al. (2011) recommended protecting fisher habitat through targeted forest-fuel treatment, and applying more liberal fire-suppression policies to naturally ignited fires during moderate weather conditions.

PC #288: The Forest Service should disclose the negative effects of motorized routes on fisher habitat in the Monument, as it did in the Motorized Travel Management EIS.

Response: As stated in the Pacific fisher section of the Wildlife Biological Evaluation (Appendix M): "The level of route density and associated noise disturbance may influence how Pacific fishers utilize available habitat" (Appendix M, Environmental Effects, Pacific Fisher–Effects, Pacific Fisher, Threats to Fishers in the Southern Sierra Nevada, Habitat Fragmentation or Loss of Connectivity). Within the Monument, the road density in fisher habitat (using CWHR 2.1) is 2.0 miles of roads per square mile. However, route density thresholds for Pacific fishers are not readily available in the literature.

None of the alternatives considered in detail in this FEIS propose adding new routes to the National Forest Transportation System. Alternatives C and D would likely lead to reductions in the number of motorized routes in the Monument. The Wildlife Biological Assessment (Appendix N) and the Wildlife Biological Evaluation (Appendix M) address this in the Recreation Effects sections of the indirect effects analyses and the Cumulative Effects sections for the appropriate species. The wildlife effects analysis in the FEIS considers the indirect effects of recreation on each of the species analyzed (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Wildlife Species Considered in Detail). The FEIS also has a detailed description of the existing road system in the Monument (FEIS, Volume 1, Chapter 3, Transportation System).

PC #289: The Forest Service should incorporate and address information from recent studies on habitat connectivity.

Response: The Wildlife Biological Evaluation (Appendix M) addresses habitat connectivity for fishers and other appropriate species (Appendix M, Environmental Effects). Tucker et al. (2009) and other references dealing with habitat connectivity and fragmentation are incorporated into the analysis. Standards and guidelines requiring consideration of habitat connectivity are included for the action alternatives in Appendix A to the

FEIS (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Old Forest Emphasis Area/Old Forest Habitat). The Monument Plan guides management at the programmatic level. Any proposal involving vegetation management will be considered at the site-specific project level and include an analysis of the effects on habitat connectivity.

PC #290: The Forest Service should make the protection and restoration of healthy habitat for sensitive wildlife a priority.

Response: The desired condition section for wildlife section of the FEIS identifies the intent of providing a diverse range of habitats, with riparian areas, meadows and late successional forests as priorities (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Wildlife and Plant Habitat Desired Conditions). Several management strategies for wildlife habitat address protection and restoration of habitat, including the following:

> Minimize impacts to TES plant species and their habitat. Restore and enhance suitable habitat (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Wildlife and Plant Habitat Strategies).

In the alternatives considered in detail in this FEIS, this strategy would be implemented through the use of a variety of land allocations (PACs, HRCAs, RCAs, etc.) designed to protect key wildlife habitat features, including large trees, snags and down woody debris (FEIS, Volume 1, Chapter 2, Comparison of Alternatives, Comparison of Alternatives by Issues/Comparison of Alternatives by Environmental Effects).

PC #291: The Forest Service should assess the suitability of cave gates for bats.

Response: It is recognized that other cave gate designs may be more "bat friendly" than the ones currently in place in the Monument. The Forest Service is currently considering options for replacement of these older gates. Those will be project-level considerations made on a site-specific basis, and therefore are not included in this programmatic-level analysis.

PC #292: The Forest Service should consider ornithologists' recommendations to remove only those ladder fuel trees 6 inches in diameter or smaller in fuels treatments.

Response: The Monument Plan guides management at the programmatic level. The details of a fuels treatment project (including the diameter of trees that may need to be felled or removed) would be part of a site-specific project analysis. That action would require that separate NEPA analysis, which would consider the effects of the project on birds and other wildlife species in the project area.

North et al. (2009) recommended thinning based on crown strata or age cohorts and species, rather than uniform diameter limits. What is considered a ladder fuel differs from stand to stand, but, typically, these are trees in the 10-16-inch dbh classes (FEIS, Volume 1, Chapter 4, Effects on Fire and Fuels, Indirect Effects, Fuels Management Activities, Alternative F).

PC #293: The Forest Service should justify preferring mechanical treatments over prescribed fire for fisher habitat conservation.

Response: A standard and guideline from the 2001 SNFPA for the Southern Sierra Fisher Conservation Area (which includes most of the Monument) states:

> Because the effects of prescribed fire on key components of fisher habitat are uncertain, give preference to mechanical treatments over prescribed fire. However, prescribed fire may be applied to achieve restoration and regeneration objectives for fire-adapted giant sequoia (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Southern Sierra Fisher Conservation Area [SSFCA]/Furbearer Den Sites).

This standard and guideline would be applied in Alternatives A, B, and F.

Both mechanical treatments and prescribed fire may reduce the quality of fisher habitat in the short-term (Truex and Zielinski 2005). However, mechanical treatments have the advantage of allowing greater control in protecting key habitat elements for fishers such as oaks, large snags, and down logs, which may be lost in a prescribed fire (FEIS, Volume 1

Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Wildlife Species Considered in Detail, Effects on Forest Service Sensitive Species, Pacific Fisher, Indirect Effects, Vegetation Management).

The FEIS and the Pacific fisher section of the Biological Evaluation (Appendix M) state:

> Uncharacteristically severe wildfire is defined as fire occurring beyond the historical range of natural variation in terms of scope, intensity and duration. These stand-replacing fires affect large areas of the landscape, decreasing or removing key fisher structural and habitat elements including large trees, overstory and understory canopy, vegetative diversity, snags, and logs. Landscape permeability for fisher movements at all scales may decrease as a result. As part of the threat evaluation completed for the West Coast Fisher Conservation Assessment (Lofroth et al. 2010), uncharacteristically severe wildfire ranked as a high threat in the southern Sierra Nevada geographic area (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Wildlife Species Considered in Detail, Effects on Forest Service Sensitive Species, Pacific Fisher, Cumulative Effects,Wildfires; Appendix M, Environmental Effects, Pacific Fisher–Effects, Pacific Fisher, Threats to Fishers in the Southern Sierra Nevada, Uncharacteristically Severe Wildfire).

PC #294: The Forest Service should conduct an adequate analysis of the effects to the Pacific fisher, including the basic baseline data describing the habitat requirements of this rare species.

Response: Chapter 4 of the FEIS contains a summary of the analysis of the ongoing, indirect, and cumulative effects on Pacific fishers, as well as other species (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Wildlife Species Considered in Detail). The complete analysis is found in the Pacific fisher section of the Wildlife Biological Evaluation (Appendix M, Environmental Effects, Pacific Fisher–Effects, Pacific Fisher). This evaluation contains habitat data which informs the species-specific analysis.

The Science Consistency Review found the Pacific fisher analysis to be adequate. Comments from the Science Review Panel regarding the analysis were addressed by a number of changes to the Wildlife Biological Evaluation (Appendix M) and FEIS. The detailed comments from the Panel and how they were responded to are included in Appendix F to this FEIS.

A number of fisher den site buffers have been established in the Sierra National Forest with radio telemetry data from the Sierra Nevada Adaptive Management Project (SNAMP) and Kings River Fisher Project studies. The strategies developing there may provide a model for management of den sites in the Monument.

Fisher den site buffers (700 acres) are but one part of the management strategy to protect key fisher habitat. In Alternatives A, B, and F, all suitable habitat for Pacific fishers in the Monument is within the Southern Sierra Fisher Conservation Area, a land allocation with standards and guidelines which requires the retention of habitat structures (canopy cover and large trees) important to Pacific fishers (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Southern Sierra Fisher Conservation Area (SSFCA)/Furbearer Den Sites). These standards and guidelines also require that management "minimize old forest habitat fragmentation," "assess the potential impact of projects on the connectivity of habitat for old forest associated species," and "consider forested linkages."

Several other land allocations also protect Pacific fisher habitat by maintaining canopy cover, large trees, and down woody debris. These areas include: spotted owl PACs, goshawk PACs, riparian conservation areas, critical aquatic refuges, and old forest emphasis areas, and have associated standards and guidelines (Appendix M, Description of Alternatives; FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Old Forest Emphasis Area/ California Spotted Owl PACs and HRCAs/Northern Goshawk PACs; etc.). Also please see the response to PC #589.

Details on the importance of snag basal area to rest sites were added to the FEIS and the Pacific

fisher section of the Wildlife Biological Evaluation (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Effects on Forest Service Sensitive Species, Wildlife Species Considered in Detail, Pacific Fisher, Cumulative Effects, Wildfires; Appendix M, Environmental Effects, Pacific Fisher–Effects, Pacific Fisher, Threats to Fishers in the Southern Sierra Nevada, Uncharacteristically Severe Wildfire). The complete analysis of effects on snags can be found in the Management Indicator Species Report.

Specific, quantitative analyses of effects on fisher habitat, including canopy cover, distribution of large trees, and snags and down woody debris, will be conducted at the site-specific project level, based on local conditions and the project design. Therefore, the analysis for this programmatic-level plan is addressed only in conceptual terms. Since the alternatives considered in detail do not specify the particular treatment type on specific acres, a more detailed analysis is not possible.

PC #295: The Forest Service should show that proposed fuel treatments will not affect Pacific fisher and other old forest dependent species.

Response: The Wildlife Biological Evaluation (Appendix M) has determined that all of the alternatives may affect individual fishers, American martens, California spotted owls, northern goshawks, and other old forest dependent species (Appendix M, Environmental Effects, Determination sections by species; FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Wildlife Species Considered in Detail). All of the alternatives allow fuels reduction treatments that may create short-term reductions in habitat quality by removing trees, snags and down woody material and have the potential to disturb individuals. Since the alternatives considered in detail do not specify the particular treatment type on specific acres, a more detailed analysis is not possible.

PC #296: The Forest Service should analyze the effects of proposed forest thinning in the Monument on large downed log levels, and the effects of this on fishers, using scientific literature such as Zielinski et al. 2006.

Response: The Wildlife Biological Evaluation (Appendix M) addresses down woody debris in the effects analyses for several species, including Pacific fishers:

> Vegetation management projects for fuels reduction and ecological restoration may impact Pacific fisher habitat by…removing key habitat features (large trees, snags, down woody debris) (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Wildlife Species Considered in Detail, Effects on Forest Service Sensitive Species, Pacific Fisher, Indirect Effects, Vegetation Management).

The Monument Plan guides management at the programmatic level. Changes to the number of down logs will be determined at the project-level, based on local conditions and the project design. Therefore, the analysis for this programmatic-level plan is addressed only in general terms. Since the alternatives considered in detail do not specify the particular treatment type on specific acres, a more detailed analysis is not possible.

The Conservation Assessment for Pacific fishers (Lofroth 2010) does not suggest a minimum standard for down woody debris in fisher habitat. The use of Zielinski et al. 2006 as a standard index of the number of down logs needed by fishers in the Monument is inappropriate. It attempts to apply the results of a study within a limited area across all of the varied habitat types used by fishers in the Monument.

PC #297: The Forest Service should analyze the effects of disproportionately removing white fir and incense cedars on fishers since Underwood et al. 2010 showed that fishers preferentially select stands with the highest proportions of white fir and incense cedar.

Response: In a radio telemetry study of fishers, Underwood et al. (2010) found a "disproportionate number of observations in canyons, and fewer [observations] than expected on ridge-tops" and speculated that "this result may reflect their habitat association for resting and denning in large trees and snags surrounded by dense canopy." They did not link the presence of fishers to specific types of trees but noted that "data showed canyons were characterized by greater stem density, which often is associated with higher canopy cover, and, in

general, higher snag density." Therefore, they found that fishers use trees for rest and den sites based on their structural characteristics rather than species.

Lofroth (2010) also concluded that this was the case, stating "fishers are somewhat flexible in the tree species they use for resting, and probably select live trees and snags based on other structural characteristics including the presence of platform structures and cavities."

PC #298: The Forest Service should identify conservation measures that address fisher and marten.

Response: The Monument FEIS does incorporate conservation measures for fishers and martens. In Alternatives A, B, and F, all suitable habitat for Pacific fishers in the Monument is within the Southern Sierra Fisher Conservation Area, which requires the retention of habitat structures (canopy cover and large trees) important to Pacific fishers (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Southern Sierra Fisher Conservation Area [SSFCA]). Wildlife standards and guidelines also require that management "minimize old forest habitat fragmentation," "assess the potential effects of projects on the connectivity of habitat for old forest associated species," and "consider forested linkages" (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Old Forest Emphasis Area). Standards and guidelines for several other land allocations, although not specifically aimed at protecting Pacific fishers, also protect Pacific fisher and American marten habitat by maintaining canopy cover, large trees and down woody debris. These allocations include: spotted owl PACs, goshawk PACs, riparian conservation areas, critical aquatic refuges, and old forest emphasis areas (Appendix M, Description of Alternatives; FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Old Forest Emphasis Area/ California Spotted Owl PACs and HRCAs/Northern Goshawk PACs; etc.).

Some conservation measures will be determined at the project level, based on local conditions and the project design. For example, a Limited Operating Period during the reproductive period may be implemented across an entire project area to account for a lack of specific den site location information.

PC #299: The Forest Service should disclose the effects of open roads on fishers.

Response: The Pacific fisher analysis in the Wildlife Biological Evaluation (Appendix M) addresses the potential effects of roads on fisher, including mortality from collisions, disturbance and habitat fragmentation (Appendix M, Environmental Effects, Pacific Fisher–Effects, Pacific Fisher, Threats to Fishers in the Southern Sierra Nevada, Habitat Fragmentation or Loss of Connectivity). These effects are summarized in the FEIS (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Wildlife Species Considered in Detail, Effects on Forest Service Sensitive Species, Pacific Fisher, Indirect Effects).

The existing roads, trails, and developed recreation sites would continue to be utilized in Alternatives A, B, E, and F. Alternatives C and D would likely lead to reductions in the number of motorized routes in the Monument. The Wildlife Biological Evaluation addresses this in its analysis of effects on the Pacific fisher (Appendix M, Environmental Effects, Pacific Fisher–Effects, Pacific Fisher, Indirect Effects, Recreation Impacts; Appendix M, Environmental Effects, Pacific Fisher–Effects, Pacific Fisher, Cumulative Effects, Recreation Impacts). A discussion of the current road density in fisher habitat in the Monument was added to the Pacific fisher section of the Wildlife Biological Evaluation (Appendix M, Environmental Effects, Pacific Fisher–Effects, Pacific Fisher, Threats to Fishers in the Southern Sierra Nevada, Habitat Fragmentation or Loss of Connectivity). The Transportation System section in Chapter 3 of the FEIS has a detailed description of the existing road system in the Monument (FEIS, Volume 1, Chapter 3, Transportation System, Roads).

PC #300: The Forest Service should conduct an adequate analysis of the effects on the California spotted owl, including the basic baseline data describing the habitat requirements of this rare species.

Response: Chapter 4 of the FEIS contains a summary of the analysis of the ongoing, indirect,

and cumulative effects of the alternatives on California spotted owls (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Wildlife Species Considered in Detail, Effects on Forest Service Sensitive Species, California Spotted Owl). The complete analysis is found in the California spotted owl section of the Wildlife Biological Evaluation (Appendix M, Environmental Effects, California Spotted Owl–Effects, California Spotted Owl). This evaluation also contains information about currently available habitat, the distribution of PACs for known nesting pairs and maps of habitat and protected areas.

PC #301: The Forest Service should address recent research that shows California spotted owls prefer unlogged high-intensity fire patches for foraging.

Response: The California spotted owl section of the Wildlife Biological Evaluation (Appendix M) has been modified to address this and other recent research on the relationship of spotted owl habitat use to burned areas (Bond et al. 2009, Roberts et al. 2010) (Appendix M, Environmental Effects, California Spotted Owl–Effects, California Spotted Owl, Habitat Preferences and Biology). See also the response to PC #285.

The research does not clearly show that spotted owls prefer high intensity fire patches for foraging. The Bond et al. (2009) paper referenced is limited by a very small sample size (three pairs and a single) and nonrandom owl selection. Collectively, the studies carried out on spotted owls (both the northern and California) suggest the presence of large trees and high overstory canopy closure (i.e. areas of low and moderate fire severity) are the post-fire conditions most strongly associated with owl presence (e.g., Blakesley et al. [2005], Clark [2007], Roberts et al. [2011]).

PC #302: The Forest Service should include conservation measures that minimize effects to areas critical to spotted owl nesting and foraging (e.g., PACs and HRCAs).

Response: Alternatives A, B, D, and F would continue to follow the existing 2001 SNFPA standards and guidelines for spotted owl and goshawk Protected Activity Centers (PACs) and Home Range Core Areas (HRCAs) (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, California Spotted Owl PACs and HRCAs/ Northern Goshawk PACs). Outside of WUI defense zones, this would limit stand altering treatments in spotted owl PACs to "reducing surface and ladder fuels through prescribed fire treatments" and hand treatments "of small trees (less than 6 inches dbh), within a 1- to 2-acre area surrounding known nest trees as needed to protect nest trees and trees in their immediate vicinity."

These alternatives are expected to maintain the 73 current California spotted owl PACs which cover approximately 22,650 acres of the Monument. Only about 3,470 of these acres are within WUI defense zones (15 percent of PAC acres). Therefore, vegetation management activities would be greatly restricted on 85 percent of the PAC acres in the Monument.

PC #303: The Forest Service should analyze the effects of proposed forest thinning in the Monument on large downed log levels, and the effects of this on California spotted owls.

Response: The Wildlife Biological Evaluation (Appendix M) addresses down woody debris in the effects analyses for several species, including California spotted owls:

> Vegetation management projects for fuels reduction and ecological restoration may impact California spotted owl habitat by…removing key habitat features (large trees, snags, down woody debris) (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Wildlife Species Considered in Detail, Effects on Forest Service Sensitive Species, California Spotted Owl, Indirect Effects, Vegetation Management).

The Monument Plan guides management at the programmatic level. Changes to the number of down logs will be determined at the project level, based on local conditions and the project design. Therefore, the analysis of effects for this programmatic-level plan is addressed only in general terms. Since the alternatives considered in detail do not specify the particular treatment type on specific acres, a more detailed analysis is not possible.

PC #69: The Forest Service should retain large tree boles on site or somewhere else in the Monument for wildlife needs.

Response: Alternatives A, B, C, D, and F would retain the guideline from the 2001 SNFPA ROD to "maintain down woody material standards of 10 to 20 tons per acre in logs greater than 12 inches diameter at midpoint" (FEIS, Volume 2, Appendix A, All Action Alternatives, Fire and Fuels/Wildlife Habitat, Monument-wide). The need to remove large tree boles from a site will be determined at the project level, based on local conditions and the project purpose and need.

PC #70: The Forest Service should leave snags after a fire for wildlife habitat.

Response: In response to comments, the standards and guidelines related to snags have been modified and clarified (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Monument-wide). For example, in Alternatives B, C, and F, one of the standards and guidelines has been changed to:

- Manage snag levels to meet ecological restoration objectives. Within green forests design projects to provide a sustainable population of medium- and large-diameter snags. Existing medium- and large-diameter snags, as well as medium- and large- diameter living trees, that exhibit form and/or decay characteristics regarded as important wildlife habitat (e.g., have substantial wood defect, teakettle branches, broken tops, large cavities in the bole), will form the backbone snag network over large landscapes. In areas burned by wildfire, including high- and mid-severity patches, manage snag levels to meet ecological restoration objectives, with consideration for the spatial arrangement and density of snags for wildlife needs. Include site-specific considerations such as a wider range of snag sizes and densities, and focal placement of snags and snag patches (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Monument-wide).

The effects analysis in the FEIS and the MIS Report has been modified to address these changes (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Effects on Management Indicator Species, Snags in Green Forest Ecosystem Component [Hairy Woodpecker], Alternative A, Indirect Effects to Habitat).

PC #436: The Forest Service should provide the road density in the Monument to help determine effects on wildlife habitat and watersheds.

Response: The current road density in the Monument is 1.7 miles/square mile based on open routes. None of the alternatives in this programmatic plan propose adding new routes to the National Forest Transportation System. Alternatives C and D would likely lead to reductions in the number of motorized routes in the Monument. The Wildlife Biological Assessment (Appendix N) and the Wildlife Biological Evaluation (Appendix M) address this in the Recreation Impacts section of the indirect effects analysis and the Cumulative Effects sections for the appropriate species. The Transportation section of the FEIS has a detailed description of the existing road system in the Monument (FEIS, Volume 1, Chapter 3, Transportation System).

PC #451: The Forest Service should adequately integrate management of the forest for vegetation and for wildlife.

Response: The Monument Plan guides management at the programmatic level. The design of a vegetation management project (including the specific needs of wildlife) will require site-specific project level analysis. In the Monument, projects will be designed for ecological restoration to protect and maintain the objects of interest, which include the giant sequoia groves and their ecosystems, and the diverse array of rare animal species. A number of standards and guidelines are designed for each alternative which minimize the potential for short-term adverse effects on wildlife and other objects of interest (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Vegetation/ Fire and Fuels/Wildlife Habitat).

PC #452: The Forest Service should continue with the proposed objectives and directives for the fisher and marten.

Response: Alternatives A, B, and F retain all the standard and guidelines from the 2001 SNFPA

ROD for protection of the habitat characteristics important to fishers and martens (e.g., Southern Sierra Fisher Conservation Area, Den Sites) (FEIS,Volume 1, Chapter 2, Comparison of Alternatives, Comparison of Alternatives by Land Allocations and Management Areas). Of these alternatives, Alternative B has the lowest diameter limit (20 inches) for ecological restoration through fuels reduction and vegetation management, which would help preserve larger trees, an important habitat element (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative B, Resource Areas, Alternative B Management Direction for Ecological Restoration).

At the project level, a variety of tools are currently available for evaluating effects on fisher habitat. Project-specific mitigations, which are flexible in the light of new information, can be utilized to protect key habitat features.

PC #453: The Forest Service should include standards and guidelines for the peregrine falcon.

Response: Peregrine falcons and their habitat in the Monument are protected by the National Forest Management Act which requires maintenance of viable populations of existing native vertebrate species. Peregrine falcons are also protected by the Migratory Bird Treaty Act. Existing management of peregrine falcon nest sites in the Monument is carried out through Forest Orders for seasonal closures to protect these areas from disturbance. Management needs for peregrine falcon are identified site specifically, and mitigations are designed to protect this species while limiting effects on recreation opportunities.

PC #454: The Forest Service should include the following desired conditions for Wildlife and Plant Habitat as suggested in the Citizens' Park Alternative:

- Lands within the Monument will provide a diverse range of habitats that maximize the potential for restoring at risk species to optimal population levels, with special emphasis on recovering native species populations, riparian areas, montane meadows, and late successional forests.

Response: A desired condition for Wildlife and Plant Habitat that applies to all alternatives in the FEIS is that "Lands in the Monument continue to provide a diverse range of habitats, with special emphasis on riparian areas, montane meadows, and late successional forests" (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Wildlife and Plant Habitat Desired Conditions). This is virtually identical to the desired condition suggested in the Citizen's Park Alternative.

PC #123: The Forest Service should analyze the "Citizens' Park Alternative," which includes the following priorities for wildlife protection:

- Provide the greatest protection and maintenance of habitats for wildlife and plants listed as objects of interest and focus on the recovery of at risk species to maximize habitat values for these species and species considered objects of interest.

PC #455: The Forest Service should include the strategy for Wildlife and Plant Habitat as suggested in the Citizens' Park Alternative:

- The strategy will provide the greatest protection and maintenance of habitats for wildlife and plants listed as objects of interest and will focus on the recovery of at risk species to maximize habitat values for these species and species considered objects of interest.

Response (to PC #s 123 and 455): The Citizen's Park Alternative was submitted to the Forest Service during the comment period on the DEIS and Draft Monument Plan. This alternative was reviewed by the interdisciplinary team, who determined that each element of the Citizen's Park Alternative was fully analyzed in the existing action alternatives for the Monument FEIS, particularly in Alternatives C and D. Alternative C was designed in response to previous suggestions from members of the public requesting that the Monument be managed like the nearby national parks. Alternative C differs from the Citizens' Park Alternative in that is does not allow dispersed camping along roadsides or at the end of roads.

The desired conditions for Wildlife and PlantHabitat, which apply to all alternatives, have been updated to include the wildlife priorities emphasized in the Citizens' Park Alternative:

Lands in the Monument continue to provide a diverse range of habitats, with special emphasis

on riparian areas, montane meadows, and late successional forest. Proper hydrologic and ecological functioning conditions in riparian areas and meadows are restored and maintained. Old forest habitat is in suitable quality, quantity, and distribution to support viable populations of late successional dependent species, including Pacific fishers, American martens, California spotted owls, northern goshawks, and great gray owls. The configuration of habitat in the Monument provides connectivity and heterogeneity. Ecological conditions in the Monument contribute to the recovery of federally threatened and endangered species such as the California condor and Springville clarkia, and help avoid federal listing of Forest Service sensitive species (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Vegetation, including Giant Sequoias, Fire and Fuels, and Wildlife and Plant Habitat; Wildlife and Plant Habitat Desired Conditions).

All of the alternatives in the FEIS have strategies to "Maintain species diversity within the Monument" and "Maintain and improve habitat for endangered and threatened plant and animal species on federal and state lists to meet objectives set forth in their recovery and management plans" (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Vegetation, including Giant Sequoias, Fire and Fuels, and Wildlife and Plant Habitat; Wildlife and Plant Habitat Strategies). Particular emphasis is placed on protecting listed species, Forest Service sensitive species, and other species at risk (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Wildlife and Plant Habitat Strategies). Standards and guidelines are the primary tools for protecting habitat for these species (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat).

PC #456: The Forest Service should include the following objectives for Wildlife and Plant Habitat as suggested in the Citizens' Park Alternative:

- Manage the entire Monument to optimize wildlife habitat for old forest-dependent species and species listed as objects of interest.
- Within 10 years, produce an inventory and database of large snags and large down logs (for California spotted owls, Pacific fishers, and other wildlife species) that includes information about densities, sizes, basal area, and tonnages, at a scale that can be used for treatment units.

Response: All of the action alternatives include the strategy to "Protect, increase, and perpetuate old forest ecosystems and provide for the diversity of native plant and animal species associated with old forest ecosystems" (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Wildlife and Plant Habitat Strategies, Strategy #2). This appears to be comparable to the objectives in the Citizens' Park Alternative.

Currently in the Monument, information on snags and down logs is collected on a site-specific, project basis, not broadly across the entire Monument. Some broader information is available from Forest Inventory and Analysis (FIA) plots and annual tree mortality surveys. This information will continue to be collected in all of the action alternatives. While inventorying snags and down logs across the entire 328,315 acres of the Monument would provide useful information for management, it would be cost prohibitive.

PC #131: The Forest Service should consider the direct and indirect effects of the alternatives considered in detail on wildfire risk and old forest dependent species.

Response: The potential effects of the alternatives on select old forest dependent species (including northern goshawk, spotted owl, great gray owl, American marten, Pacific fisher, and wolverine) are considered in the effects analysis in Chapter 4 of the FEIS and the Wildlife Biological Evaluation (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Wildlife Species Considered in Detail, Effects on Forest Service Sensitive Species, Northern Goshawk/California Spotted Owl/Great Gray Owl/American Marten/ Pacific Fisher/California Wolverine; Appendix M, Environmental Effects). The potential indirect and cumulative effects of the alternatives on late seral coniferous forest and large snags are evaluated

in the Management Indicator Species Report (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Effects on Management Indicator Species, Effects of the Alternatives on MIS Habitat).

PC #493: The Forest Service should recognize the threat posed by habitat fragmentation at the larger programmatic scale.

Response: Wildlife standard and guidelines for all alternatives address the threat posed by habitat fragmentation by requiring that management "minimize old forest habitat fragmentation," "assess the potential impact of projects on the connectivity of habitat for old forest associated species," and "consider forested linkages" (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Old Forest Emphasis Area/Old Forest Habitat).

Within the Southern Sierra Fisher Conservation Area, outside of WUI, there are requirements to retain large trees in 60 percent of watersheds and keep canopy cover greater than or equal to 60 percent. These requirements will help maintain connectivity and reduce the potential for habitat fragmentation.

Ongoing Forest Service efforts in mapping probability of fisher occupancy (Spencer et al.), which were based on southern Sierra scale habitat information and detections, created a contour probability surface that provides significant insight to areas of potential connectivity. Conservation Biology Institute (CBI)-led connectivity work is on-going for the four rare carnivore species. The resultant insights from this modeling effort will inform management of habitat in the Monument.

PC #498: The Forest Service should include an evaluation of the Pacific tree frog, as an MIS species representing wet meadow habitat.

Response: Thank you for your comment. A Pacific tree frog evaluation has been added to the Final Management Indicator Species Report and Chapter 4 of the FEIS (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Effects on Management Indicator Species).

PC #551: The Forest Service should revise the standards and guidelines for wildlife and plant habitat to protect the objects of interest.

Response: The standards and guidelines for all of the action alternatives are designed to protect habitat characteristics important to species of high conservation concern (old forest, meadow, and riparian dependent species). These species are also considered objects of interest in the Clinton proclamation.

PC #579: The Forest Service should address the concern that several of the alternatives do not include limits on the size of tree that can be cut, due to the potential effects of the removal of large trees on both the California spotted owl (*Strix occidentalis occidentalis*) and the fisher (*Martes pennanti*).

Response: The effects of different diameter limits on wildlife habitat are considered in the wildlife effects analysis in Chapter 4 of the FEIS, the Wildlife Biological Assessment (Appendix N), and the Wildlife Biological Evaluation (Appendix M), particularly for species dependent on large trees, such as California spotted owls and Pacific fishers (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Wildlife Species Considered in Detail, Effects on Forest Service Sensitive Species; Appendix N, Environmental Effects; Appendix M, Environmental Effects). Analyzing the contrast between alternatives that do not have diameter limits and those that do will inform the deciding official, and is an appropriate function of the NEPA analysis process.

PC #580: The Forest Service should provide clarification as to whether the 20-inch diameter limit can be exceeded in Alternative B, and if so, incorporate specific guidelines for when exceeding the stated diameter limit is allowed.

Response: The footnote for Vegetation standards and guidelines with exceptions to the diameter limit has been removed from the FEIS. The assumption for the analysis of effects for Alternative B is that trees greater than 20 inches in diameter will only be felled or removed for safety reasons, as stated in the standards and guidelines for Vegetation (FEIS; Volume 2; Appendix A; All Action Alternatives;

Vegetation, including Giant Sequoias; Monument-wide).

PC #581: The Forest Service should include a more detailed description of how fuels treatment activities will alter the landscape beyond a fire standpoint, and focus more on the effects of these activities on wildlife.

Response: Chapter 4 of the FEIS contains a summary of the analysis of the ongoing, indirect, and cumulative effects of the alternatives on wildlife habitat. More detailed analyses are found in the Wildlife Biological Assessment (Appendix N), the Wildlife Biological Evaluation (Appendix M), and the Management Indicator Species Report. The Indirect Effects sections of these reports address the effects of fuels treatment activities on habitat for specific species. Changes to canopy cover and forest structure will be analyzed at the project level, based on local conditions and the project design. Therefore, the analysis for this programmatic level plan is addressed only in general terms.

PC #582: The Forest Service should include a discussion of the effects that fuels reduction activities will have on wildlife and the natural community as it relates to habitat fragmentation.

Response: Chapter 4 of the FEIS contains a summary of the analysis of the ongoing, indirect, and cumulative effects of the alternatives on wildlife habitat (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Wildlife Species Considered in Detail). More detailed analyses are found in the Wildlife Biological Assessment (Appendix N), the Wildlife Biological Evaluation (Appendix M), and the Management Indicator Species Report. The Indirect Effects sections of these reports address the effects of fuels treatment activities, including fragmentation, on habitat for specific species.

Wildlife standards and guidelines address the threat posed by habitat fragmentation by requiring that management "minimize old forest habitat fragmentation," "assess the potential effects of projects on the connectivity of habitat for old forest associated species," and "consider forested linkages" (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Old Forest Emphasis/Old Forest Habitat).

PC #583: The Forest Service should make the Biological Assessment publicly available, or include it as an appendix to the final EIS.

Response: The Biological Assessment has been added as Appendix N to the FEIS. It is also available to the public on both the Sequoia National Forest web site http://www.fs.fed.us/r5/sequoia/gsnm_planning.html.

PC #584: The Forest Service should include the total acreage of suitable owl habitat within the Monument in the analysis.

Response: Chapter 3 of the FEIS states that there are over 210,000 acres of moderate and high suitability nesting and foraging habitat for spotted owls in the Monument (FEIS, Volume 1, Chapter 3, Wildlife and Plant Habitat, Wildlife Habitat, Wildlife Species Considered in Detailed Analysis, Sensitive Species, California Spotted Owl). The habitat model is based on the best professional opinion contained in the California Wildlife Habitat Relationships (CWHR) database and rates the following vegetation types as providing high nesting and feeding habitat capability for California spotted owls: Structure Classes 4M, 4D, 5M, 5D and 6. Maps of suitable spotted owl habitat in the Monument are provided in the Wildlife BE (Appendix M, Environmental Effects, California Spotted Owl–Effects, California Spotted Owl, Habitat Preferences and Biology).

PC #585: The Forest Service should include a discussion of the treatments that could still occur within owl PACs and other special management areas, and recalculate these acreages to reflect areas not included in the areas treated within the WUI and the TFETA.

Response: Details about treatments within specific land allocations (inside and outside the WUI and the TFETA) have been added to the effects analysis section for California spotted owls in the FEIS and Wildlife Biological Evaluation (FEIS, Volume 1, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Wildlife Species Considered In

Detail, Effects on Forest Service Sensitive Species, California Spotted Owl, Indirect Effects, Vegetation Management; Appendix M, Environmental Effects, California Spotted Owl-Effects, California Spotted Owl, Indirect Effects, Vegetation Management).

PC #589: The Forest Service should include a discussion of the treatments that could still occur within fisher den site buffers, the SSFCA, and other special management areas, and recalculate acreages to reflect areas not included in the WUI and the TFETA.

Response: Details about treatments within specific land allocations (inside and outside the WUI and TFETA) are given in the effects analysis for Pacific fisher in the FEIS and Wildlife Biological Evaluation (FEIS, Volume 1, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Wildlife Species Considered in Detail, Effects on Forest Service Sensitive Species, Pacific Fisher, Indirect Effects, Vegetation Management; Appendix M, Environmental Effects, Pacific Fisher–Effects, Pacific Fisher, Indirect Effects, Vegetation Management).

Fuel treatments would be avoided within fisher den site buffers that are outside of WUI. Within the Southern Sierra Fisher Conservation Area, outside of WUIs (68,300 acres or 46 percent of fisher habitat in the Monument), there are requirements to retain large trees in 60 percent of the watersheds and to keep canopy cover greater than or equal to 60 percent. These restrictions would also apply to areas within the TFETA. Inside the WUIs (81,170 acres or 54 percent of fisher habitat in the Monument), these restrictions would not apply. Specific treatment prescriptions will be considered and analyzed at the project level. Prescribed fire could be used if there is no other reasonable treatment alternative. Limited operating periods will be implemented where necessary.

Some habitat characteristics important to fishers will also be protected in goshawk PACs (3,200 acres), spotted owl PACs and HRCAs (44,460 acres), marten den site buffers (110 acres), riparian conservation areas, critical aquatic refuges (27,150 acres), and old forest emphasis area (160,610 acres). Each of these land allocations has unique standards and guidelines which vary in the level of protection they provide for fisher habitat (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat).

PC #586: The Forest Service should include an expanded discussion of the modification of fisher habitat in the effects assessment.

Response: The Monument Plan guides management at the programmatic level. The design of a vegetation management project (including the specific needs of wildlife) will be part of a site-specific project level analysis. A number of standards and guidelines are designed for each alternative which minimize the potential for short-term adverse effects on wildlife (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat). Since this programmatic document does not specify the type of vegetation treatments that will occur on particular acres, a more detailed analysis of habitat modification is not possible. A general discussion of the mitigations that minimize adverse effects to fisher habitat, and the differences between the alternatives, can be found in the analyses of effects in the FEIS and Wildlife Biological Evaluation (FEIS, Volume 1, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Wildlife Species Considered In Detail, Effects on Forest Service Sensitive Species, Pacific Fisher; Appendix M, Environmental Effects, Pacific Fisher–Effects, Pacific Fisher).

PC #587: The Forest Service should include the total acreage of suitable fisher habitat within the Monument.

Response: Using one model (CWHR2.1), there are almost 150,000 acres of moderate and high suitability habitat in the Monument (FEIS, Volume 1, Chapter 3, Wildlife and Plant Habitat, Wildlife Habitat, Wildlife Species Considered in Detailed Analysis, Sensitive Species, Pacific Fisher; Appendix M, Environmental Effects, Pacific Fisher–Effects, Pacific Fisher, Habitat Preferences and Biology). The Wildlife BE includes maps of these areas (Appendix M, Environmental Effects, Pacific Fisher–Effects, Pacific Fisher, Habitat Preferences and Biology).

PC #588: The Forest Service should present minimum standards for fisher habitat retention in the WUI and TFETA.

Response: The FEIS and the Wildlife Biological Evaluation (Appendix M) discuss protection measures for fisher habitat in the form of standards and guidelines (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Southern Sierra Fisher Conservation Area [SSFCA]). For example, these standards and guidelines are included:

- Avoid fuel treatments in den site buffers to the extent possible. If areas within den site buffers must be treated to achieve fuels objectives for the wildland urban intermix zone, limit treatments to mechanical clearing of fuels. Treat ladder and surface fuels over 85 percent of the treatment unit to achieve fuels objectives. Use piling or mastication to treat surface fuels during initial treatment. Burning of piled debris is allowed. Prescribed fire may be used to treat fuels if no other reasonable alternative exists.
- Fisher den sites are 700-acre buffers consisting of the highest quality habitat (CWHR size class 4 or greater and canopy cover greater than 60 percent) in a compact arrangement surrounding verified fisher birthing and kit rearing dens in the largest, most contiguous blocks available.
- Prior to vegetation treatments, identify important wildlife structures, such as large diameter snags and coarse woody material within the treatment unit. For prescribed fire treatments, use firing patterns, fire lines around snags and large logs, and other techniques to minimize effects on snags and large logs. Evaluate the effectiveness of these mitigation measures after treatment. (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Southern Sierra Fisher Conservation Area [SSFCA]/Furbearer Den Sites).

Any specific changes to fisher habitat will be analyzed at the project level, based on local conditions and project design. Therefore, the analysis for this programmatic-level FEIS is addressed only in general terms. Since the Monument FEIS does not specify the particular treatment type on specific acres, a more detailed analysis is not possible.

Also see the response to PC #298,

PC #590: The Forest Service should correct conflicting information and discrepancies regarding the removal of large trees in the analysis of effects to the California condor.

Response: The footnote for Vegetation standards and guidelines with exceptions to the diameter limit has been removed from the FEIS. The assumption for the condor analysis in Alternative B is that trees greater than 20 inches in diameter will only be felled or removed for safety reasons, as stated in the standards and guidelines for Vegetation (FEIS; Volume 2; Appendix A; All Action Alternatives; Vegetation, including Giant Sequoias; Monument-wide). The effects on condor habitat would depend on the size and specific location of the hazard trees removed.

The Wildlife Biological Assessment (Appendix N) was modified and includes the following clarifications:

> The Forest will continue to follow the current recovery plan for this species. All the Monument FEIS alternatives would continue to manage the Starvation Grove historic nest site and Lion Ridge Roost site following existing direction.

Management direction from the Starvation Creek Grove Nest Site Management Plan includes:

- No habitat modification (including reduction in the vegetative cover) will be allowed within ½ mile of the historic nest tree. Management activities within the condor nest management area but beyond the ½ mile restriction will be designed to protect and/or enhance habitat in the area for condors.
- Management activities will immediately cease if condors are found within or searching for nests in the vicinity of the nest management area.
- Public firewood gathering will not be permitted along FS Road 23S64 because of its proximity to the historic nest site.
- If condors nest or are actively searching for nest sites in the vicinity of the nest management

area, there will be a seasonal suspension of travel on FS Roads 23S03C, 23S29, and 23S68. There will be a permanent suspension of public vehicle traffic on FS Road 23S64. County road M-50 will remain open.

- If condors nest in the management area, an area closure will be implemented by Forest Order. The area closure would include all the nest management area except that portion west of County Road M-50 to the watershed divide.
- Cattle grazing is permitted in the nest management area, but not during the nest selection period (December through April).
- Management direction for condor roost sites, including the Lion Ridge Roost Site, designated by the 1988 Forest Plan (USDA 1988), includes:
  - Roost sites receive modified management to minimize possible conflict with the recovery needs of the condor (Appendix N, Environmental Effects, California Condor–Effects, Management).

    Within Condor Essential Habitat in the Monument, approximately 45,200 acres are within WUI (57 percent of Essential Habitat), and 11,260 of those acres are within WUI defense zones (14 percent of Essential Habitat). In Designated Condor Critical Habitat in the Monument, approximately 600 acres are within WUI (80 percent of Critical Habitat in the Monument) and 80 of those acres are within WUI defense zones (10 percent of Critical Habitat) (FEIS; Volume 1; Chapter 4; Effects on Wildlife and Plant Habitat; Effects on Wildlife; Wildlife Species Considered in Detail; Effects on Threatened, Endangered, or Proposed Species; California Condor; Indirect Effects; Vegetation Management). The Monument Plan does not specify management within critical habitat.

    In all of the alternatives, road closures would be utilized in the Starvation Grove Nest Area and Lion Ridge Roost Area if the Forest Service is notified by the USFWS that these areas are being used by condors. The management plan for the Starvation Creek Grove Nest Area would also restrict recreation with an area closure and stop all management activities if condors are found in or searching for nests in the vicinity of the nest management area. No new roads or trails are allowed within ½ mile of the historic nest site (USDA 1996).

PC #591: The Forest Service should include a more-detailed discussion on the effects of grazing on the little Kern golden trout.

Response: Chapter 4 of the Monument FEIS contains a summary of the analysis of the potential ongoing, indirect, and cumulative effects of the alternatives on Little Kern golden trout. A more detailed analysis is found in the Wildlife Biological Assessment (Appendix N). The effects analysis for Little Kern Golden Trout in the Wildlife BA addresses the effects of grazing and has been improved to clarify the status of grazing within Little Kern Golden Trout Critical Habitat and correct errors (Appendix N, Environmental Effects, Little Kern Golden Trout–Effects, Indirect Effects, 4. Grazing). The determination for Little Kern golden trout in the Wildlife BA was changed to reflect the effects of continued cattle grazing, which was previously determined to adversely affect this species in the 1994 Biological Assessment for the Little Kern and Jordan grazing allotments (Appendix N, Environmental Effects, Little Kern Golden Trout–Effects, Determination).

PC #592: The Forest Service should include a discussion of the treatments that could still occur within goshawk and marten habitat, and other special management areas, and recalculate acreages to reflect areas not included in the WUI and the TFETA.

Response: Further details about treatments within specific land allocations (including the WUI and TFETA) have been added to the effects sections for northern goshawks and American martens in the FEIS and Wildlife Biological Evaluation (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Wildlife Species Considered In Detail, Effects on Forest Service Sensitive Species, Northern Goshawk/American Marten, Indirect Effects, Vegetation Management; Appendix M, Environmental Effects, Northern Goshawk–Effects/American Maretn–Effects, Northern Goshawk/American Marten, Indirect Effects, Vegetation Management).

PC #388: The Forest Service should analyze how the decibel levels of over-snow vehicles (OSV) will affect wildlife and other visitors.

Response: The Monument FEIS does not address OSV use. OSV use will be addressed for the forest under Subpart C of the Travel Management Rule. None of the alternatives in this programmatic plan propose adding new routes to the National Forest Transportation System or increasing OSV use in the Monument over current levels. Alternatives C and D would likely lead to reductions in the number of motorized routes and OSV use in the Monument (FEIS, Volume 1, Chapter 4, Effects on Transportation, Effects on Trails and Motorized Recreation).

PC #596: The Forest Service should use the term extirpated rather than extinct for the Kern primrose sphinx moth.

Response: Table 1 of the Wildlife Biological Assessment (Appendix N) has been corrected to remove the term "extinct" (Appendix N, Introduction/Appendix A—Species Eliminated from Detailed Analysis, Kern Primrose Sphinx Moth).

PC #597: The Forest Service should clarify whether WUI threat and TFETA zones will be treated the same within fisher habitat.

Response: For those alternatives proposing to add the TFETA designation, the TFETA would be one of the priority areas for fuel treatments. The TFETA would not supersede any standard and guidelines for wildlife land allocations (e.g., PACs, HRCAs, den site buffers). For the purposes of wildlife standard and guidelines, the guidance would be the same as other areas of the forest outside of WUI (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat).

The dominant management direction when land allocations overlap is displayed in Chapter 2 of the FEIS (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Reader's Guide to Alternative Descriptions, Land Allocations and Management Areas, Dominant Management Direction When Land Allocations/Management Areas Overlap table).

PC #598: The Forest Service should list the 2004 SNFPA standards and guidelines for RCAs and CARs relevant to aquatic species.

Response: The following has been added to the Wildlife Biological Assessment (Appendix N) to clarify protection measures for Riparian Conservation Areas and Critical Aquatic Refuges. Standard and guidelines related to these areas include:

- Maintain and restore the hydrologic connectivity of streams, meadows, wetlands, and other special aquatic features by identifying roads and trails that intercept, divert, or disrupt natural surface and subsurface water flow paths. Implement corrective actions, where necessary, to restore connectivity.
- Ensure that existing roads…meet best management practices (BMPs).
- Identify roads, trails, staging areas, developed recreation sites, dispersed campgrounds, areas under special use permits or grazing permits, and day use sites during landscape analysis. Identify conditions that degrade water quality or habitat for aquatic- and riparian-dependent species. At the project level, evaluate and consider actions to ensure consistency with standards and guidelines.
- Evaluate new proposed management activities within critical aquatic refuges (CARs) and RCAs during environmental analysis to determine consistency with the riparian conservation objectives at the project level and the aquatic management strategy goals for the landscape. Ensure that appropriate mitigation measures are enacted to (1) minimize the risk of activity-related sediment entering aquatic systems, and (2) minimize impacts to habitat for aquatic- or riparian-dependent plant and animal species.
- Ensure that management activities do not adversely affect water temperatures necessary for local aquatic- and riparian-dependent species assemblages.
- Maintain average stream surface shade at greater than 60 percent on streams affected by management activities. Assess meadow

environments and streams with limited overhead vegetation on a site-by-site basis at the project level.

- Prevent disturbance to stream banks and natural lake and pond shorelines caused by management activities and resource use (such as livestock and dispersed recreation) from exceeding 20 percent of a stream reach or 20 percent of natural lake and pond shorelines. Disturbance includes bank sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots.
- Within CARs, in occupied habitat or "essential habitat" as identified in conservation assessments for threatened, endangered, or sensitive species, evaluate the appropriate role, timing, and extent of prescribed fire. Avoid direct lighting within riparian vegetation; prescribed fires may back into riparian vegetation areas. Develop mitigation measures to avoid impacts to these species whenever ground-disturbing equipment is used.
- Allow hazard tree removal within RCAs or CARs if it is clearly needed for ecological restoration and maintenance or public safety. Allow mechanical ground-disturbing fuels treatments, or commercial fuelwood cutting within RCAs or CARs when the activity is consistent with RCOs and it is clearly needed for ecological restoration and maintenance or public safety (Appendix N, Environmental Effects, Little Kern Golden Trout–Effects, Indirect Effects, 2. Recreation Impacts).

PC #599: The Forest Service should limit the cumulative effects in the Biological Assessment to those required by Section 7 of the Endangered Species Act.

Response: The cumulative effects section of the Wildlife Biological Assessment (Appendix N) has been corrected to state: "Cumulative effects are those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation (50 CFR 402.02)." The analyses have been modified accordingly.

PC #600: The Forest Service should describe the management direction that offers specific protection to the:

- ***Valley elderberry longhorn beetle (VELB)***

Response: The following has been added to the Wildlife Biological Assessment (Appendix N) to clarify protection measures for VELB habitat. Standards and guidelines for Riparian Conservation Areas and Critical Aquatic Refuges include:

1. Limit browsing to no more than 20 percent of the annual leader growth of mature riparian shrubs (including willow and aspen) and no more than 20 percent of individual seedlings. Remove livestock from any area of an allotment when browsing indicates a change in livestock preference from grazing herbaceous vegetation to browsing woody riparian vegetation.
2. Evaluate new proposed management activities within critical aquatic refuges (CARs) and RCAs during environmental analysis to determine consistency with the riparian conservation objectives at the project level and the aquatic management strategy goals for the landscape. Ensure that appropriate mitigation measures are enacted to (1) minimize the risk of activity-related sediment entering aquatic systems, and (2) minimize impacts to habitat for aquatic- or riparian-dependent plant and animal species.
3. Within CARs, in occupied habitat or "essential habitat" as identified in conservation assessments for threatened, endangered, or sensitive species, evaluate the appropriate role, timing, and extent of prescribed fire. Avoid direct lighting within riparian vegetation; prescribed fires may back into riparian vegetation areas. Develop mitigation measures to avoid impacts to these species whenever ground-disturbing equipment is used.
4. Design prescribed fire treatments to minimize disturbance of ground cover and riparian vegetation in RCAs. In burn plans for project areas that include or are adjacent to RCAs, identify mitigation measures to minimize the spread of fire into riparian vegetation. In determining mitigation measures, weigh the potential harm of mitigation measures

(e.g.,firelines) against the risks and benefits of prescribed fire entering riparian vegetation. Strategies should recognize the role of fire in ecosystem function and identify those instances when fire suppression or fuel management actions could be damaging to habitat or the long-term function of a riparian community.

- ***Little Kern golden trout (LKGT)***

Response: The following has been added to the Wildlife Biological Assessment (Appendix N) to clarify protection measures for Little Kern golden trout habitat. Standards and guidelines related to these areas include:

1. Maintain and restore the hydrologic connectivity of streams, meadows, wetlands, and other special aquatic features by identifying roads and trails that intercept, divert, or disrupt natural surface and subsurface water flow paths. Implement corrective actions, where necessary, to restore connectivity.
2. Ensure that existing roads…meet best management practices (BMPs).
3. Identify roads, trails, staging areas, developed recreation sites, dispersed campgrounds, areas under special use permits or grazing permits, and day use sites during landscape analysis. Identify conditions that degrade water quality or habitat for aquatic- and riparian-dependent species. At the project level, evaluate and consider actions to ensure consistency with standards and guidelines.
4. Evaluate new proposed management activities within critical aquatic refuges (CARs) and RCAs during environmental analysis to determine consistency with the riparian conservation objectives at the project level and the aquatic management strategy goals for the landscape. Ensure that appropriate mitigation measures are enacted to (1) minimize the risk of activity-related sediment entering aquatic systems, and (2) minimize impacts to habitat for aquatic- or riparian-dependent plant and animal species.
5. Ensure that management activities do not adversely affect water temperatures necessary for local aquatic- and riparian-dependent species assemblages.
6. Maintain average stream surface shade at greater than 60 percent on streams affected by management activities. Assess meadow environments and streams with limited overhead vegetation on a site-by-site basis at the project level.
7. Prevent disturbance to stream banks and natural lake and pond shorelines caused by management activities and resource use (such as livestock and dispersed recreation) from exceeding 20 percent of a stream reach or 20 percent of natural lake and pond shorelines. Disturbance includes bank sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots.
8. Within CARs, in occupied habitat or "essential habitat" as identified in conservation assessments for threatened, endangered, or sensitive species, evaluate the appropriate role, timing, and extent of prescribed fire. Avoid direct lighting within riparian vegetation; prescribed fires may back into riparian vegetation areas. Develop mitigation measures to avoid impacts to these species whenever ground-disturbing equipment is used.
9. Allow hazard tree removal within RCAs or CARs if it is clearly needed for ecological restoration and maintenance or public safety. Allow mechanical ground-disturbing fuels treatments, salvage harvest, or commercial fuelwood cutting within RCAs or CARs when the activity is consistent with RCOs and it is clearly needed for ecological restoration and maintenance or public safety.

- ***Pacific fisher***

Response: As discussed in the FEIS and Wildlife Biological Evaluation (Appendix M), disturbance to fishers is possible near roads, trails, dispersed camping areas, and developed recreation areas (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Wildlife Species Considered in Detail, Effects on Forest Service Sensitive Species, Pacific Fisher, Indirect Effects, Recreation; Appendix M, Environmental Effects, Pacific Fisher–Effects, Pacific Fisher, Indirect Effects, 2. Recreation Impacts). Fisher mortality from vehicle collisions has occurred in

the Monument, particularly along major roads (e.g., highway 180, General's Highway). Effects to fishers could also result from the loss of trees and snags that pose safety hazards and are therefore removed from along roads or in developed recreation sites. The specific effects from the removal of trees and snags that pose safety hazards would depend upon size, specific location, and other site-dependent factors. Removing hazard trees would require a site-specific project level analysis.

Several standard and guidelines would be used to maintain habitat connectivity for old forest associated species, including fisher. These include:

1. Minimize old forest habitat fragmentation. Assess potential effects of fragmentation on old forest associated species (particularly fisher and marten) in biological evaluations. Evaluate locations of new landings, staging areas, and recreational developments, including trails and other disturbances.
2. Assess the potential effects of projects on the connectivity of habitat for old forest associated species.
3. Consider forested linkages (with canopy cover greater than 40 percent) that are interconnected via riparian areas and ridgetop saddles during landscape-level and project-level analysis (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Old Forest Emphasis Area/Old Forest Habitat).

Multiple standards and guidelines are designed specifically for the Southern Sierra Fisher Conservation Area and Furbearer Den Sites (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Wildlife Habitat, Southern Sierra Fisher Conservation Area/Furbearer Den Sites).

Also see the response to PC #298.

- ***Mountain yellow-legged frog***

Response: There are no known populations of mountain yellow-legged frogs within the Monument. Adjacent to the Monument, in the Golden Trout Wilderness, there are three known small populations. The subwatersheds with mountain yellow-legged frogs are outside of the Monument, therefore any management activities in the Monument will have no effects on these populations. The standards and guidelines listed below for Riparian Conservation Areas and Critical Aquatic would be applied for potentially suitable, but currently unoccupied habitat within the historic range of mountain yellow-legged frogs. Although currently unoccupied, these areas may be important for future reintroduction efforts and the recovery of this species (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Wildlife, Wildlife Species Considered In Detail, Effects on Forest Service Sensitive Species, Mountain Yellow-legged Frog, Indirect Effects; Appendix M, Environmental Effects, Mountain Yellow-legged Frog–Effects, Mountain Yellow-legged Frog, Indirect Effects).

Riparian Conservation Areas and Critical Aquatic Refuges are maintained as land allocations in all alternatives except Alternatives C and E. All the lakes, ponds, and perennial streams that could provide suitable habitat for mountain yellow-legged frogs are within these areas. Within these land allocations, the 2004 SNFPA guidelines would be followed to assess effects and require that Best Management Practices are followed to minimize adverse effects and maintain habitat for riparian dependent species including mountain yellow-legged frogs.

Standards and guidelines for Riparian Conservation Areas and Critical Aquatic Refuges include:

1. Evaluate new proposed management activities within critical aquatic refuges (CARs) and RCAs during environmental analysis to determine consistency with the riparian conservation objectives at the project level and the aquatic management strategy goals for the landscape. Ensure that appropriate mitigation measures are enacted to (1) minimize the risk of activity-related sediment entering aquatic systems, and (2) minimize impacts to habitat for aquatic- or riparian-dependent plant and animal species.
2. Within CARs, in occupied habitat or "essential habitat" as identified in conservation

assessments for threatened, endangered, or sensitive species, evaluate the appropriate role, timing, and extent of prescribed fire. Avoid direct lighting within riparian vegetation; prescribed fires may back into riparian vegetation areas. Develop mitigation measures to avoid impacts to these species whenever ground-disturbing equipment is used.

3. Design prescribed fire treatments to minimize disturbance of ground cover and riparian vegetation in RCAs. In burn plans for project areas that include or are adjacent to RCAs, identify mitigation measures to minimize the spread of fire into riparian vegetation. In determining mitigation measures, weigh the potential harm of mitigation measures (e.g.,firelines) against the risks and benefits of prescribed fire entering riparian vegetation. Strategies should recognize the role of fire in ecosystem function and identify those instances when fire suppression or fuel management actions could be damaging to habitat or the long-term function of a riparian community (FEIS, Volume 2, Appendix A, All Action Alternatives, Hydrological Resources, Riparian Conservation Areas [RCAs] and Critical Aquatic Refuges [CARs]).

Invasive Nonnative Species

PC #310: The Forest Service should complete a baseline inventory for invasive plant species to accurately assess the invasive plant situation in the Monument.

Response: One of the objectives included in all alternatives is to complete a baseline inventory for invasive species within three years of the Monument Plan taking effect (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Wildlife and Plant Habitat Objectives).

PC #311: The Forest Service should include *Hocus lanatus* (velvet grass) on their list of invasive plant species listed in Table 12.

Response: *Holcus lanatus* (velvet grass) is now included in the list of invasive plant species in Chapter 3 of this FEIS (FEIS, Volume 1, Chapter 3, Wildlife and Plant Habitat, Invasive Nonnative Species).

Botanical Resources

PC #258: The Forest Service should recognize other "wet places" besides fens that need equal and similar management attention.

Response: Meadows are discussed and identified in the Hydrological Resources sections of Chapters 3 and 4 (FEIS, Volume 1, Chapter 3/Chapter 4, Hydrological Resources/Effects on Hydrological Resources) and meadow conditions are described in Appendix E of the Hydrology Report.

PC #304: The Forest Service should change livestock grazing management in the alternatives so that it can analyze the indirect and direct effects to the 32 sensitive or watch-list plant species known to occur or potentially occur in the Monument.

Response: The Clinton proclamation is clear that grazing can continue in the Monument. Our assessment of the management situation did not indicate any need to change grazing in the Monument and the alternatives do not include any recommendations for change. Therefore, livestock grazing removal is not part of any alternative and has not been analyzed.

The Sequoia National Forest maintains two different lists of rare plants. The Sensitive Plant List contains federally threatened plants, federally endangered plants, and plants in danger of becoming federally threatened or endangered. The Watch List contains those rare plants that are not in as much danger of becoming federally threatened or endangered. Of the 93 species designated in the forest, 32 species are known to, or potentially occur, within the Monument. The potential ongoing, indirect, and cumulative effects of the alternatives on sensitive and watch-list plant species, including those from grazing, are analyzed in Chapter 4 of the FEIS (FEIS,Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Botanical Features, Indirect Effects, All Alternatives; FEIS,Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Botanical Features, Cumulative Effects).

PC #305: The Forest Service should make sure that inventories and assessments directly consider botanical resources, both seasonal and perennial, and general vegetative characteristics.

Response: Current standards and guidelines for threatened, endangered, and Forest Service sensitive plant species require inventory and assessment prior to ground-disturbing activities and projects (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Plant Habitat). Meadow plant condition and composition are also specifically assessed. General forest vegetation is inventoried and assessed within Forest Service vegetation plots. As appropriate, other species and site-specific management plan and recovery plan direction will be followed.

PC #306: The Forest Service should use the McCreary studies, and McDonald and Reynolds 1999, given in the Science Consistency Review Report.

Response: The standards and guidelines for oaks and other hardwoods which apply in all alternatives were developed with the Phillips, McDougald, Standiford, McCreary, and Frost (1996) and McDonald and Reynolds (1999) studies, along with others (FEIS; Volume 2; Appendix A; All Action Alternatives; Vegetation, including Giant Sequoias; Hardwood Ecosystems). A detailed discussion of oak regeneration ecology is included in project-level NEPA analysis for range allotments (see Sequoia National Forest range project files).

PC #307: The Forest Service should acknowledge that the Front Country (recreation niche) is not the only area that provides luxuriant displays of flowering plants.

Response: It is true that luxuriant displays of wildflowers are found throughout the Monument. However, the open lower elevation front country (blue oak savanna and annual grassland) does provide the most displays of highly showy wildflowers like poppies, popcorn flowers, fiddlenecks, and farewell-to-springs.

PC #308: The Forest Service should not apply the adjective "competing" to vegetation since all plants that grow together in an ecosystem are part of natural diversity.

Response: All plant species compete with each other for water, nutrients, light, and a place to root. The term "competing vegetation" has in the past referred to "undesirable" native plants which delay reforestation. All native plants have a place within the Monument area as part of natural diversity.

PC #309: The Forest Service should acknowledge that meadows are important for their distinctive plants, not just for wildlife.

Response: The first two strategies for Wildlife and Plant Habitat make it clear that plant species are important, have intrinsic values of their own, and are more than just wildlife habitat (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Wildlife and Plant Habitat Strategies). Strategies for Hydrological Resources give importance to restoring and protecting meadows and their ecosystems (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Hydrological Resources; Strategies).

PC #601: The Forest Service should elaborate on why unconfirmed sightings of the Springville clarkia are not discussed in the Biological Assessment.

Response: Species experts (Stebbins and Clark 1992) consider Element Occurrence 2 in the Kaweah River watershed of Tulare County to be erroneous (FEIS; Volume 1; Chapter 3; Wildlife and Plant Habitat; Botanical Resources; Species in Drier, Upland, and Forest Habitats; *Clarkia springvillensis*, Springville clarkia; Current Distribution).

PC #602: The Forest Service should describe the management direction that offers specific protection to the Springville clarkia.

Response: Current standards and guidelines for Springville clarkia come from the 1996 Draft Springville Clarkia Management Plan (FEIS, Volume 2, Appendix A, All Action Alternatives, Wildlife and Plant Habitat, Plant Habitat). Weed mitigations are included in the Invasive Plants standards and guidelines which apply to all alternatives (FEIS, Volume 2, Appendix A, All

Action Alternatives, Wildlife and Plant Habitat, Invasive Nonnative Species). As the FEIS discloses:

> In all alternatives, threatened and endangered plants would be protected. As detailed previously, Springville Clarkia (*Clarkia springvillensis*) is the only threatened species that occurs within the Monument. The Forest Service is mandated to maintain the viability of such species. Effects on species listed under the protection of the ESA, both adverse and beneficial, are regulated by the USDI Fish and Wildlife Service. Due to the programmatic, non-specific nature of this forest plan amendment, most of the discussion of potential effects to Springville Clarkia is on future habitat potential rather than direct effects on existing populations. Negative effects to Springville Clarkia and its habitat from forest management activities are minimized by conducting botany surveys prior to project implementation, using flagging and avoidance techniques. Compliance with the Sequoia National Forest weed management guidelines during all management activities minimizes the risk for introduction and spread of noxious weeds (FEIS, Volume 1, Chapter 4, Effects on Wildlife and Plant Habitat, Effects on Botanical Features, Indirect Effects, Indirect Effects on Springville Clarkia, All Alternatives).

Range

PC #335: The Forest Service should disclose all of the adverse effects of livestock grazing.

PC #337: The Forest Service should analyze the direct and indirect effects of livestock grazing on all those objects the Monument was designated to protect.

Response (to PC #s 335 and 337): The analysis of environmental consequences in Chapter 4 discusses the effects of livestock grazing on Monument resources, specifically in the Effects on Range, Effects on Hydrological Resources, and Effects on Wildlife and Plant Habitat sections of Chapter 4.

Livestock grazing in the Monument is already authorized by current policy. The Clinton proclamation is clear that the current policy for livestock grazing can continue in the Monument, including providing forage in suitable areas to qualified livestock operators. Assessment of the management situation did not indicate any need to change grazing in the Monument and the alternatives do not include any recommendations for change.

Site-specific NEPA analysis will be completed for each grazing allotment in the Monument, according to the Sequoia National Forest Rangeland NEPA Strategy. Grazing permits in and outside the Monument are managed by the National Forest Grazing Permit System. Each permit includes standards and guidelines from the 1988 Forest Plan and amendments. Each permit for a grazing allotment in the Monument will include the applicable standards and guidelines for the Monument (FEIS, Volume 2, Appendix A, All Action Alternatives, Range). These standards and guidelines are designed to adequately protect objects of interest, including riparian areas, oak woodlands, annual grasslands, and specific wildlife species. Modifications to individual grazing permits can and do take place when current monitoring indicates the need.

PC #338: The Forest Service should modify all of the range standard and guidelines to explicitly incorporate protection of the objects of interest.

Response: The standards and guidelines for Range listed in Appendix A of the FEIS are designed to protect all objects of interest, which include riparian areas (such as meadows), wildlife, oak woodlands, and annual grasslands (FEIS, Volume 2, Appendix A, All Action Alternatives, Range). Grazing effects on wildlife and other Monument resources are addressed in Chapter 4 of the FEIS by resource area.

PC #339: The Forest Service should evaluate and emulate the policy of the Bureau of Land Management for grazing, such as that included in:

- BLM IM 2009-215, and
- Secretary Salazar's November 15, 2010 Secretarial Order.

Response: The Clinton proclamation states:

> Management plans or rules and regulations developed by the Secretary of the Interior

governing uses within national parks or other national monuments administered by the Secretary of the Interior shall not apply within the Giant Sequoia National Monument.

BLM IM 2009-215 expired on September 30, 2010 and is BLM policy. It does not apply to National Forest System lands or the Monument. Secretary Salazar's Secretarial Order also applies only to BLM lands.

PC #340: The Forest Service should consider a no grazing and no renewal of grazing permits alternative.

Response: The Clinton proclamation states that, "Laws, regulations, and policies pertaining to administration by the Department of Agriculture of grazing permits…shall continue to apply…" One of the basic policies for range management on National Forests (FSM 2203.1) includes, "Consistent with Forest land and resource management plans, make forage available to qualified livestock operators from lands that are suitable for livestock grazing."

The Clinton proclamation does not limit our ability to manage grazing, but it does say that current policy concerning grazing permits will continue. Current policy for grazing allows us to make changes wherever and whenever necessary in order to meet forest plan direction.

Site-specific environmental analysis will be completed for each grazing allotment in the Monument following the Sequoia National Forest Rangeland NEPA Strategy. When conducting allotment-specific NEPA, a no grazing alternative will be analyzed.

PC #341: The Forest Service should make suitability and capability determinations for the Monument.

Response: Capability and suitability were determined in the 1988 Forest Plan and carry forward in this FEIS. The 2004 SNFPA did not change the capable, available, and suitable lands determinations made in forest plans (USDA Forest Service 2004 SNFPA ROD, p.15) The definitions of the terms capability and suitability have not changed since the Forest Plan was developed. When site-specific environmental analysis is conducted for each allotment, as specified in the Sequoia National Forest Rangeland NEPA Schedule, part of the analysis is to verify that capability and suitability is still consistent with the Forest Plan (SNFPA, Appendix K).

PC #342: The Forest Service should include provisions to close any allotments that have remained vacant for more than five years.

Response: There is nothing in Forest Service policy that directs us to close grazing allotments if they have been vacant for more than five years. Based on the number of requests the forest receives for availability of grazing areas, there is definitely much interest for their use. Currently there is only one allotment in the Monument that is vacant. This particular grazing permit was cancelled due to non-compliance of the terms and conditions of the term grazing permit. It may be made available after site-specific environmental analysis is completed.

PC #343: The Forest Service should explain if sheep are currently moved onto national forest or monument lands.

Response: There are currently no sheep grazing permits in the Sequoia National Forest, and there have not been any since about 1975. The guidelines for sheep grazing come directly from the Sierra Nevada Forest Plan Amendment (2001 SNFPA).

PC #344: The Forest Service should remove cows from the Monument.

PC #345: The Forest Service should discontinue grazing in all of the giant sequoia groves in the Monument.

Response (to PC #s 344 and 345): The Clinton proclamation states that: "Laws, regulations, and policies pertaining to administration by the Department of Agriculture of grazing permits… shall continue to apply…" National direction for range management is provided in FSM 2202 (objectives). FSM 2202.1 lists several objectives, which include:

To provide for livestock forage, wildlife food and habitat, outdoor recreation, and other resource values dependent on range vegetation, and, to contribute to the economic and social well being of people by providing opportunities for

economic diversity and by promoting stability for communities that depend on range resources for their livelihood.

One of the basic policies for range management on National Forests (FSM 2203.1) includes, "Consistent with Forest land and resource management plans, make forage available to qualified livestock operators from lands that are suitable for livestock grazing." Site-specific environmental analysis will be completed for each grazing allotment within the Monument, according to the Sequoia National Forest Rangeland NEPA Strategy. When conducting allotment-specific environmental analysis, a no grazing alternative and the effects of grazing in giant sequoia groves will be analyzed.

The potential effects of grazing on the giant sequoia groves are discussed in Chapter 4 of the FEIS (FEIS, Volume 1, Chapter 4; Effects on Vegetation, including Giant Sequoias). The standards and guidelines in Appendix A of the FEIS are designed to protect all objects of interest, including the giant sequoia groves (FEIS; Volume 2; Appendix A; All Action Alternatives; Vegetation, including Giant Sequoias; Giant Sequoia Groves).

PC #346: The Forest Service should not make management decisions based upon contributions to local economies from livestock grazing.

Response: Management decisions will not be based solely on contributions to local economies from livestock grazing, but on the full national direction for range management as provided by FSM 2202 (objectives). Site-specific environmental analysis will be conducted for each grazing allotment in the Monument, according to the Sequoia National Forest Rangeland NEPA Strategy.

PC #438: The Forest Service should include the following strategy to limit grazing, as suggested in the Citizens' Park Alternative:

- Grazing will be limited where meadows are determined to only have moderate ecological functions. Meadows will be managed to achieve high ecological function and the desired species composition, hydrology, and disturbance levels reflective of healthy meadow systems.

Response: Livestock grazing in meadows is limited through implementation of forage utilization standards. The FEIS includes standards and guidelines for livestock utilization based on the ecological status of meadows (FEIS, Volume 2, Appendix A, All Action Alternatives, Range, Monument-wide). A mid seral vegetative meadow rating is considered a healthy condition class. This is very similar to the recommendation in the Citizen's Park Alternative. The ecological status of key meadows should be assessed every three to five years. If meadow ecological status is determined to be moving in a downward trend (as a result of grazing), grazing is modified or suspended (FEIS, Volume 2, Appendix A, All Action Alternatives, Hydrological Resources, Riparian Conservation Objective 5).

The desired condition for meadows in the 2004 SNFPA ROD, on p.43 states, "The ecological status of meadow vegetation is late seral (50 percent or more of the relative cover of the herbaceous layer is late seral with high similarity to the potential natural community." This guidance will be followed in managing meadows throughout the Monument. The desired conditions for Range in this FEIS include:

Meadows are hydrologically functional and stable, with 80-90 percent vegetative cover, root masses stabilizing stream banks, and any sites of accelerated erosion stabilized or recovering. The ecological status of meadow vegetation is late seral, with a diversity of age classes of hardwood shrubs, and regeneration is occurring. Streams in meadows, lower elevation grasslands, and hardwood ecosystems have vegetation and channel bank conditions that meet proper functioning condition (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Range; Desired Conditions).

Other meadow disturbance factors, such as roads, culverts, drains, campgrounds, and trails, are addressed in the Hydrological Resources sections of the FEIS. The proposed strategies, objectives, and standards and guidelines for management of meadows are very similar to the recommendations of the Citizens' Park Alternative.

PC #439: The Forest Service should include the following desired condition for livestock grazing suggested in the Citizens' Park Alternative:

- Livestock grazing will be managed in a manner that improves range, watershed conditions, and water quality, consistent with the protection of the objects of interest.

Response: The desired conditions for Range have been updated to read:

> Livestock grazing opportunities are maintained and managed for sustainable, healthy rangelands that contribute to local economies and improve watershed conditions. Meadows are hydrologically functional and stable, with 80-90 percent vegetative cover, root masses stabilizing stream banks, and any sites of accelerated erosion stabilized or recovering. The ecological status of meadow vegetation is late seral, with a diversity of age classes of hardwood shrubs, and regeneration is occurring. Streams in meadows, lower elevation grasslands, and hardwood ecosystems have vegetation and channel bank conditions that meet proper functioning condition. Special aquatic habitats such as springs, seeps, vernal pools, fens, bogs, and marshes are healthy and diverse (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Range; Desired Conditions).

In addition, the standards and guidelines for Range, Hydrological Resources, Invasive Nonnative Species, and Wildlife set the parameters for range management in the Monument and help protect the objects of interest (FEIS, Volume 2, Appendix A, All Action Alternatives, Range/Hydrological Resources/Invasive Nonnative Species/Wildlife).

PC #316: The Forest Service should propose actions that move meadows with moderate ecological function to a condition of high ecological function, using the 2007 UC Davis assessment of meadow condition.

PC #552: The Forest Service should revise the standards and guidelines for range to protect the objects of interest, especially meadows as they are restored.

Response (to PC #s 316 and 552): The vegetation health index calculated by the Forest Service represents the vegetation and soil health of the mountain meadow floodplain and stream terrace system. It is not expected that the Forest Service condition scores would agree with the biotic index scores calculated by the UC Davis study because they measure different aspects of the riparian and stream ecosystem. The Forest Service system of measurements reflects direct impacts to the stream riparian system due to livestock trampling and utilization of forage, while the UC Davis index measures specific in- stream fish and insect habitat parameters which are not statistically related to livestock impacts. This lack of a relationship is borne out by the results of a study comparing stream invertebrate populations and stream invertebrate habitat quality vs. livestock impacts recently undertaken by the USFS Pacific Southwest Region Office in Vallejo, CA. This study was a cooperative study by Dr. Joseph Furnish, USFS invertebrate ecologist, and the Pacific Southwest range program. The results are on file at the Tahoe National Forest supervisor's office in Nevada City, CA. This two-year study concluded that there was no significant statistical relationship between habitat quality of stream invertebrates and invertebrate populations in streams and the impacts due to livestock in riparian areas. This study concluded that it was equally likely to have healthy stream invertebrate populations in stream riparian areas whether they were degraded by livestock or not. This result determines that there is no statistical relationship between in-stream habitat parameters and riparian degradation from livestock use. Therefore, it is not surprising that the ratings of health by the Forest Service estimates are not in complete agreement with the ratings of stream health determined by the UC Davis study of 2007.

Livestock grazing in meadows is limited through implementation of forage utilization standards. The FEIS includes standards and guidelines for livestock utilization based on the ecological status of meadows (FEIS, Volume 2, Appendix A, All Action Alternatives, Range, Monument-wide). The standards and guidelines for range are designed to protect the objects of interest and emphasize the protection of meadows. The ecological status of

key meadows should be assessed every three to five years. If meadow ecological status is determined to be moving in a downward trend, grazing will be modified or suspended (FEIS, Volume 2, Appendix A, All Action Alternatives, Hydrological Resources, Riparian Conservation Objective 5).

The desired conditions for Range have been modified to include: "The ecological status of meadow vegetation is late seral, with a diversity of age classes of hardwood shrubs, and regeneration is occurring." These desired conditions apply to all of the alternatives. According to Weixelman, a mid seral condition meets the satisfactory meadow rating, although the desired condition is still late seral (Weixelman and Cooper 2009).

A table has been added to the Range section in Chapter 3 that shows the ecological ratings for key meadows in the Monument (FEIS, Volume 1, Chapter 3, Range, Key Area Meadows and Frequency Plot Scores in the Monument table).

An example of how a meadow can be overgrazed is Meadow Flat (sometimes referred to as Eshom Meadow), which was too severely grazed in 2010. Utilization measurements taken in Meadow Flat revealed overuse of the meadow vegetation. There are a couple of reasons for this over utilization of the meadow:

1. In the winter of 2010, an excessive number of trees fell on the existing fence that surrounds this relatively small (2 to 3 acres) meadow. The fence is designed to control the timing of use by livestock and is normally only used in the fall for gathering. Repairing the fence took much longer than usual, and livestock got into and grazed in the meadow.
2. After the fence was repaired, and the meadow closed to grazing, the gates were repeatedly left open by people camping in the adjacent campground. As a result, livestock were able to get into the meadow and overgraze. The situation has been discussed with the grazing permittee and will be rectified next grazing season.

PC #336: The Forest Service should revise the response to the livestock grazing issue to reflect that changes in grazing management are being considered in this EIS.

PC #614: The Forest Service should include alternative management direction for grazing, and should:

- not just put off analysis to site-specific grazing projects,
- make it clear the potential effects will not be significant (Save the Yaak Committee v. Block, 840 F.2d 714, 717 (9th Cir. 1988) ,
- not authorize livestock grazing to continue at "historic" levels,
- and analyze effects to aquatic, riparian and meadow ecosystems.

Response (to PC #s 336 and 614): The discussion of how Issue #12, Livestock Grazing, is addressed has been revised to better explain why the issue of livestock grazing is responded to in the same way in each of the alternatives (FEIS, Volume 1, Chapter 1, Issues, Issue 12—Livestock Grazing).

The proposed changes in grazing management direction for the Monument are listed in Appendix A to this FEIS (FEIS, Volume 2, Appendix A, Proposed Changes to Management Direction, Range). The desired conditions, strategies, objectives, and standards and guidelines proposed for the Monument are discussed in Chapter 2 and Appendix A of this FEIS (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Range; FEIS, Volume 2, Appendix A, All Action Alternatives, Range).

The management direction for grazing does vary by alternative. Alternative A makes use of current direction from the 1988 Forest Plan, 2001 SNFPA, and 1990 MSA. Alternatives B, C, D, and F include direction from the 1988 Forest Plan, 2004 SNFPA, and 1990 MSA. Alternative E makes use of the direction and guidance from the 1988 Forest Plan and 1990 MSA.

The analysis of environmental consequences in Chapter 4 discusses the effects of livestock grazing on Monument resources, specifically in the Effects on Range, Effects on Hydrological Resources, and

Effects on Wildlife and Plant Habitat sections. This analysis does not identify any significant effects from livestock grazing.

The referenced case of Save the Yaak Committee v. Block, 840 F.2d 714, 717 (9th Cir. 1988), centered around the requirement of whether to prepare an EIS or an EA. An EIS has been prepared for the Monument.

The statement "not to exceed historical levels" has been changed to read "not exceed current levels in the Monument" (FEIS, Volume 2, Appendix A, Proposed Changes to Management Direction, Range, Grazing and Oak Management).

PC #615: The Forest Service should analyze the effects of livestock grazing on the great gray owl and exclude cattle from all meadows used by great gray owls.

Response: Please see the responses to PC #s 262 and 263 in the Wildlife Habitat section of this appendix. The effects of livestock grazing on meadows is controlled through implementation of Forest Plan standards and guidelines (FEIS, Volume 2, Appendix A, All Action Alternatives, Range, Monument-wide). The standards and guidelines contain forage utilization requirements based on the ecological status of the meadow. The standards and guidelines from the 2001 SNFPA require maintaining meadow vegetation at least 12 inches in height and covering at least 90 percent of the meadow. This standard does not work within meadows where vegetation does not naturally reach 12 inches in height. The 2004 SNFPA requires that, in meadow areas of great gray owl PACs, herbaceous vegetation be maintained at a height commensurate with site capability and habitat needs of prey species. Regional guidance will be followed to determine potential prey species and associated habitat requirements at the site-specific project level. If additional great gray owl PACs are established in the Monument, wildlife biologists and other resource specialists will prescribe the appropriate height of meadow forage. As a result of this prescription requirement, the grazing permit will be modified to meet this need.

PC # 616: The Forest Service should analyze effects of livestock grazing on Monument vegetation:

- using a more appropriate method than RDM utilization levels,
- and addressing the effects on understory grasses.

Response: The existing condition of rangeland vegetation is discussed in Chapter 3 of the FEIS (FEIS, Volume 1, Chapter 3, Range). Rangeland health is achieved through implementation of the standards and guidelines for range that include direction for rangeland vegetation such as annual grassland, hardwood forest, upland browse, and riparian vegetation (FEIS, Volume 2, Appendix A, All Action Alternatives, Range, Monument-wide). Each specific type of rangeland vegetation has its own set of desired conditions, monitoring requirements, and allowable forage use standards.

Use of the Residual Dry Matter (RDM) method for measuring utilization of annual grass rangelands is not only the accepted procedure for the Forest Service, but is also used by the Bureau of Land Management (BLM), Natural Resources Conservation Service (NRCS), National Park Service (NPS), and the University of California's San Joaquin Experimental Range. This method is used to manage livestock use on annual grass range to provide a high degree of protection from soil erosion and nutrient loss.

This FEIS does not include any specific proposals to re-establish native perennial grasses where native and nonnative annual grasses dominate the area. There are many theories in the scientific literature that address this issue. Most of the scientific research concludes that perennial grasses may be a realistic management goal in the North Coastal Region, but not in other drier locations, such as the Monument.

Several references were cited in public comment to report possible livestock effects, including:

- Van Dyne and Heady, 1965 [26]
- Bartolome, Stroud and Heady, 1980 [27]
- Bartolome, 1987 [28]
- Stubbendieck et al ., 1991 [29]

- Belsky and Blumenthal, 1997 [30]
- McCreary and George, 2005 [31]

Some of these references were cited to support the theory that the use of RDM would hinder the re-establishment of native perennial grasses in now annual grass dominated rangelands, and create overuse. These references include statements made by the authors such as:

- perennial grasses may be a realistic management goal in the North Coastal region, but not at other locations;
- on drier sites, Southern Sierra Foothills, grazing management should be directed toward maintenance of sufficient plant cover to prevent soil loss;
- by the mid-1800s the take over from native perennials was complete and no areas free of exotic annuals are left;
- although grazing may have started the process of change by damaging or destroying the native grasses, the new immigrant plant species made the change permanent and irreversible, even under complete protection;
- forage value ratings and range condition evaluations have proven of limited value for management of annual ranges;
- an overstory of oak changes the grassland into a savannah;
- the foothill woodland is dominated by blue oak and interior live oak;
- clearing for range improvement and fuel wood has historically altered the structure and extent of oak savannahs;
- valley, blue, and coast live oaks are apparently not regenerating in sufficient numbers to maintain existing stands.

The reasons for these effects have not been determined and are the subject of intensive research, but appear to vary by species, region, and site.

One of the references (Belsky and Blumenthal 1997) discusses effects of livestock grazing on stand dynamics and soils in upland forests of the interior west, specifically in ponderosa pine and douglas-fir forests. Most of the negative effects of livestock grazing in this article refer to overgrazed areas with poor livestock distribution. This type of grazing can cause damage, but this is not happening in the Monument or forest. Standards and guidelines are in place, along with grazing permit administration and monitoring requirements, which prohibit this type of grazing effect.

Hydrological Resources

PC #312: The Forest Service should eliminate references to the 2004 Framework's standards and guidelines for RCAs or CARs if they reduce protection of Monument values by allowing salvage harvesting.

Response: The Clinton proclamation allows removal of trees when they pose a threat to safety or when their removal is needed for ecological restoration. If removal is clearly needed, and burning is not a good option, trees may be felled and removed from the Monument (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Readers Guide to Alternative Descriptions, Ecological Restoration, Removal of Trees from Within the Monument).

Salvage harvesting is not planned in the Monument. Any treatments that involve the removal of trees from within the Monument area, including both standing trees and downed logs, will only be permitted following a determination that removal of the trees is "clearly needed for ecological restoration and maintenance or public safety" (Clinton 2000, p. 24097).

PC #314: The Forest Service should address the continuous flow of water to the valley from the forest, and the dependency of communities and farming.

Response: In order to maintain and/or improve a continuous flow of water to the valley from the forest, the alternatives considered in detail in this FEIS contain desired conditions, strategies, objectives, and standards and guidelines to accomplish this task. This would develop and/or maintain functions of streams, meadows, and

special aquatic features providing a continuous flow of water.

Protecting and maintaining water resources can also be accomplished by reducing the risk of severe wildfires. Severe wildfires reduce infiltration from storm events creating excessive runoff to nearby stream channels. Reduced infiltration increases the likelihood of flooding and decreases the duration of water flow following storm events or snow melt. Reducing the risk of severe wildfires would protect water resources and aide in supplying the valley with a continuous flow of water.

PC #315: The Forest Service should discuss the existing habitat quality in montane meadow systems and analyze the effects of the alternatives on them.

Response: The Hydrological Resources section of Chapter 3 discusses meadows by watershed (FEIS, Volume 1, Chapter 3, Hydrological Resources). A summary of the condition and locations of meadows in the Monument can be found in Appendix F to the Hydrology Report. Survey of meadow conditions in the Monument show that meadow are 36 percent functioning, 59 percent functioning at risk, and five percent impaired functioning.

Meadows are included in the Cumulative Watershed Effects analysis documented in this FEIS (FEIS, Volume 1, Chapter 4, Effects on Hydrological Resources, Cumulative Effects),

PC #436: The Forest Service should provide the road density in the Monument to help determine effects on wildlife habitat and watersheds.

Response: The current road density in the Monument is 1.7 miles/square mile based on open routes. None of the alternatives in this programmatic plan propose adding new routes to the National Forest Transportation System. Alternatives C and D would likely lead to reductions in the number of motorized routes in the Monument. The Wildlife Biological Assessment (Appendix N) and the Wildlife Biological Evaluation (Appendix M) address this in the Recreation sections of the indirect effects analysis, and Cumulative Effects sections for the appropriate species. The Transportation System section in Chapter 3 of the FEIS has a detailed description of the existing road system in the Monument (FEIS, Volume 1, Chapter 3, Transportation System). Site-specific project analysis will determine watershed restoration projects related to roads based on their potential for runoff and sedimentation.

PC #445: The Forest Service should include the following desired conditions for Hydrological Resources suggested in the Citizens' Park Alternative:

- Streams, meadows, wetlands, and other special aquatic features will have proper hydrologic connectivity and high ecological function, while allowing for beneficial uses in the Monument, consistent with the protection of the objects of interest.

Response: The desired conditions for Hydrological Resources suggested in the Citizens' Park Alternative are already included in the FEIS (Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Hydrological Resources; Desired Conditions). These desired conditions for Hydrological Resources aim to protect the objects of interest. Standards and guidelines for Hydrological Resources further protect the objects of interest (FEIS, Volume 2, Appendix A, All Action Alternatives, Hydrological Resources).

PC #446: The Forest Service should include the following Hydrological Strategies suggested in the Citizens' Park Alternative:

- Strategies will involve actions that move meadows in a moderate ecological function to a condition of high ecological function.
- Additional land disturbing actions, such as grazing, road conditions, etc., shall be prohibited until a high ecological function is achieved and stabilized within these specific meadows

Response: Management direction for the Monument moves meadows toward ecological function and the desired conditions. Strategies for hydrological resources in the Monument are to "restore ecological processes of streams, **meadows** [emphasis added], wetlands, and other special aquatic features wherever possible" (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Hydrological Resources; Strategies). Prohibiting the

continuation of land disturbing activities associated with a particular meadow would be analyzed at the project level.

PC #447: The Forest Service should define "proper" hydrologic connectivity and function.

Response: Thank you for noticing a missing definition. This definition has been added to the Glossary section of the FEIS (FEIS, Volume 1, Glossary of Terms). The definition is from *A User Guide to Assessing Proper Functioning Condition and the Supporting Science for Lotic Areas*:

> Proper Hydrologic Connectivity and Function: A state of resiliency that will allow a riparian-wetland area to hold together during high-flow events with a high degree of reliability.

PC #449: The Forest Service should restore hydrological resources and meadows by removing grazing and re-introducing fire to meadows.

Response: The desired conditions, strategies, and objectives for hydrological resources focus on the restoration of meadows and other hydrological resources (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Hydrological Resources). Specific actions taken to restore a meadow will be determined for site-specific projects. Removing grazing from or re-introducing fire to meadows may or may not be a way to meet desired conditions. During project level environmental analysis, the cause and extent of disturbances, such as grazing, in addition to the best course of action for restoration will be evaluated.

The Clinton proclamation allows livestock grazing to continue in the Monument. Standards and guidelines, Best Management Practices, and other requirements contained in the grazing permit are there to mitigate this use of the landscape. The potential effects of grazing on hydrological resources (including meadows) are discussed in Chapter 4 of the FEIS (FEIS, Volume 1, Chapter 4, Effects on Hydrological Resources).

Depending on the restoration technique used, the reintroduction of fire could be beneficial to a meadow. Post-fire runoff could introduce nutrients to the soil and vegetation, and possibly fill in downcut channels. However, if the runoff is excessive, it could create rills and small gullies along the landscape above the meadow. Sediment entering a channel could limit aquatic habitat and affect water quality. The effects from wildfire and prescribed fire on hydrological resources are also discussed in Chapter 4 (FEIS, Volume 1, Chapter 4, Effects on Hydrological Resources, Cumulative Effects).

PC #547: The Forest Service should revise the standards and guidelines for hydrological resources to protect the objects of interest, specifically those relating to:

- maintaining water temperatures for aquatic- and riparian-dependent species
- prohibiting fuel storage in RCAs or CARs
- level of coarse large woody debris
- hazard tree removal in RCAs or CARs, and
- livestock grazing.

Response: The standards and guidelines for hydrological resources are listed in Appendix A of the FEIS (FEIS, Volume 2, Appendix A, All Action Alternatives, Hydrological Resources). They are designed to protect those objects of interest associated with aquatic ecosystems both inside and outside of the groves. These standards and guidelines follow the Aquatic Management Strategy (AMS) developed in the 2001 Sierra Nevada Forest Plan Amendment (2001 SNFPA) and continued in the 2004 Sierra Nevada Forest Plan Amendment (2004 SNFPA). The AMS was developed to retain, restore, and protect processes and landforms that provide habitat for aquatic and riparian-dependent species. The AMS provides an approach based on maintaining and restoring watershed processes that form and maintain habitats and yield high quality water. The Riparian Conservation Objectives (RCOs) provide standards and guidelines to meet hydrological resource objectives described for each alternative. For example:

- Temperatures in Big Meadows range from approximately -0.04 C (31.9 F) to 13.5 C (56.3 F). Data was collected using data loggers that recorded temperatures every hour. The range is not too high to support aquatic species

and meets the standard and guideline (FEIS, Volume 2, Appendix A, All Action Alternatives, Hydrological Resources, Riparian Conservation Objective 1).

- Prohibiting fuel storage in RCAs and CARs, unless covered by a special use authorization, is important to protect the natural resources within those designated areas. This helps protect the objects of interest and hydrological resources (FEIS, Volume 2, Appendix A, All Action Alternatives, Hydrological Resources, Riparian Conservation Objective 1).
- Wildfires can be devastating to watersheds depending on severity and duration. Stream corridors are likely to experience increased erosion, negative effects to water quality, and loss of aquatic habitat. Standards and guidelines that put emphasis on maintaining coarse large woody debris reduce the likelihood of watersheds and stream corridors experiencing the full extent of these effects (FEIS, Volume 2, Appendix A, All Action Alternatives, Hydrological Resources, Riparian Conservation Objective 3).
- Standards and guidelines for hazard tree removal reflect the need for determining a clear need for ecological restoration and maintenance or public safety, as prescribed by the Clinton proclamation. The particular standard and guideline referred to has been modified to focus on human safety and only allow those management tools appropriate to the Monument. Site-specific project analysis would determine which tools are appropriate (FEIS, Volume 2, Appendix A, All Action Alternatives, Hydrological Resources, Riparian Conservation Objective 4).
- Livestock grazing is allowed within the Monument according to the Clinton proclamation. Standards and guidelines, Best Management Practices, and other requirements contained in the grazing permit are there to mitigate this use of the landscape (FEIS, Volume 2, Appendix A, All Action Alternatives, Range/Hydrological Resources).

PC #371: The Forest Service should discuss the effects of legal OHV use on roads and legal trails, and the indirect effects of soil erosion and degradation of water resources.

Response: Motorized OHV use is confined to designated roads and motorized vehicles are not allowed on trails in the Monument. The only exception to this is in KRSMA, where motorized use is allowed on two trails by the public law that created KRSMA (see the response to PC #386 in the Recreation section of this appendix).

OHV use on designated dirt roads adds little to the inherent erodibility of dirt roads built on mountain slopes. There are no ongoing or indirect effects of soil erosion (of road material) on soil conservation and productivity. The ongoing and indirect effects of soil erosion (of road material) are analyzed in the Transportation System, Recreation, and Hydrological Resources sections of Chapter 4 in the FEIS (FEIS, Volume 1, Chapter 4, Effects on Transportation/Effects on Recreation/Effects on Hydrological Resources).

All vehicle use is subject to water quality standards and guidelines. Using Best Management Practice (BMP) 4-7 (Water Quality Monitoring of Off-Highway Vehicle Use), monitoring of water quality will be conducted and "if considerable adverse effects are occurring, or are likely to occur, immediate corrective action will be taken," which may include a reduction in OHV use (which includes OSVs) (Water Quality Management for Forest System Lands in California: Best Management Practices, 2000, p. 101).

PC #385: The Forest Service should analyze the environmental effects on water quality from snowmobile emissions.

Response: The emissions generated by over-snow vehicles (OSVs) have the potential to affect air and water quality. In the Monument, OSV use is only permitted on designated routes. Using Best Management Practice 4-7 (Water Quality Monitoring of Off-Highway Vehicle Use), monitoring of water quality will be conducted and "if considerable adverse effects are occurring, or are likely to occur, immediate corrective action will be taken," which may include a reduction in OHV use (which includes OSVs) (Water Quality

Management for Forest System Lands in California: Best Management Practices, 2000, p. 101).

According to the 2004 National Visitor Use Monitoring (NVUM) report for the Sequoia National Forest, 0.72 percent of visitors surveyed participated in snowmobiling. The NVUM is for the entire forest, both inside and outside of the Monument. With so little OSV use by visitors to the Giant Sequoia National Monument, it is expected that any potential effects would be minimal.

Groundwater

PC #313: The Forest Service should include karst watersheds in discussing groundwater basins.

Response: The affected environment section for Groundwater has been modified to describe karst geology in the Monument (FEIS, Volume 1, Chapter 3, Groundwater).

PC #448: The Forest Service should include the following desired conditions for groundwater suggested in the Citizens' Park Alternative:

- Groundwater quality and quantity in aquifers across watersheds will be sustained.

Response: The desired conditions for groundwater identified in the FEIS are the same as those included in the Citizens' Park Alternative: "Groundwater quality and quantity in aquifers across watersheds are sustained" (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Groundwater; Desired Conditions).

PC #548: The Forest Service should revise the standards and guidelines for groundwater to protect the objects of interest.

Response: A geological resources standard and guideline is provided for the evaluation of proposed septic systems to determine their potential to contaminate groundwater that moves through cave systems. In addition, the desired conditions, strategies, objectives, and standards and guidelines for hydrological resources provide for protection of groundwater-dependent ecosystems (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Groundwater; FEIS, Volume 2, Appendix A, All Action Alternatives, Hydrological Resources, Riparian Conservation Objectives 2 and 5).

Geological Resources

PC #133: The Forest Service should not allow open access to most Monument caves.

Response: All caves will be managed in accordance with the Federal Cave Resources Protection Act of 1988 (102 Stat. 4546; 16 U.S.C. 4301 et seq.) and direction in FSM 2880 and FSM 2356. Regardless of the alternative, all caves will be inventoried, significance will be determined, and appropriate management will be provided to protect the cave resources in the Monument from open access. The effects analysis for Geological Resources in Chapter 4 has been changed to reflect this management objective (FEIS, Volume 1, Chapter 4, Effects on Geological Resources, Recreation).

PC #461: The Forest Service should follow the practices of Sequoia and Kings Canyon National Parks (SEKI) and give all caves within the Monument significant cave status.

Response: All caves will be managed in accordance with the Federal Cave Resources Protection Act of 1988 (102 Stat. 4546; 16 U.S.C. 4301et seq.) and direction in FSM 2880 and FSM 2356. Regardless of the alternative, all caves will be inventoried, significance will be determined, and appropriate management will be provided to protect the cave resources in the Monument from open access.

PC #546: The Forest Service should acknowledge that all objects of interest need to be protected from septic tank contamination, and not imply that caves are the only important subterranean features.

Response: There is a standard that provides evaluation of the potential for septic systems to contaminate ground water. The septic system evaluation standard has been modified to protect other geologic objects of interest (FEIS, Volume 2, Appendix A, All Action Alternatives, Groundwater).

PC #406: The Forest Service should list the specific features included as geological features.

PC #407: The Forest Service should include an inventory of caves and their features, with recreational and mineralogical resources, as per the Federal Cave Resources Protection Act.

Response (to PC #s 406 and 407): The list of objects of interest includes the following geological features:

> The limestone caverns and other geological features, including granite domes, spires, geothermally-produced hot springs and soda springs, and glacial and river-carved gorges (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative A, Management Direction, 2000 Presidential Proclamation Establishing the Monument).

Desired conditions for Geological Resources have been expanded to provide a clear vision for management of caves:

> Geological features, including caves, domes and spires, soda springs, and hot springs, are protected while providing for public use and enjoyment of these resources (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Geological Resources; Desired Conditions).

A strategy has been added for Alternatives B and F which provides for establishing the Windy Gulch Geological Area (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Geological Resources; Strategies). This will result in the development of a cave management plan for the significant caves in the Windy Gulch Geological Area as directed under FSM 2880 and FSM 2356 (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Geological Resources; Objectives).

PC #408: The Forest Service should add to and correct the discussion of caves in the Monument.

Response: A paragraph has been rewritten to clarify that Church Cave is the cave of discussion; a paragraph has been added to describe access control and cave gates in the Windy Gulch area; and a paragraph has been added to the Cumulative Effects section on caves to acknowledge effects from human access that can result in broken speleothems and speleogens, dust, and tracked sediments and mud that can cover large areas of walls and floors within caves (FEIS, Volume 1, Chapter 4, Effects on Geological Resources, Indirect Effects, Caves).

Additional statements have been added to the affected environment section for caves describing bat habitat and observations of bats in Boyden Cave, as well as the importance of Boyden Cave as a seasonal spring (FEIS, Volume 1, Chapter 3, Geological Resources, Caves).

The objectives for Geological Resources have been modified to determine significant caves within the monument, based on the current cave inventory, within two years of approval of the Monument Plan.

PC #409: The Forest Service should reconsider giving special protection to the Windy Gulch Geological Area.

Response: Carbonate geology from the most accurate geologic map was used to draw the boundary of the proposed Windy Gulch Geological Area. Higher resolution maps are available upon request. Any new caves will be inventoried, significance will be determined, and appropriate management will be provided regardless if they are in the established Windy Gulch Geological Area. A more specific map will be developed as the Monument Plan is implemented to locate the special area. The potential effects of designating the Windy Gulch area as a special area are discussed in Chapter 4, such as drawing more people to the area and higher risks of cave damage. A statement has also been added describing the benefit of partnerships and potential funding opportunities for recreation opportunities if the Windy Gulch Geological Area is designated (FEIS, Volume 1, Chapter 4, Effects on Geological Resources, Indirect Effects, Caves, Recreation).

PC #427: The Forest Service should protect geological features while providing public use and enjoyment of these resources, as suggested in the Citizens' Park Alternative:

- Geological features will be protected while providing for public use and enjoyment of these resources.

Response: All alternatives provide for geological features to be protected while providing for public use and enjoyment of these resources. The following desired conditions and strategy are included for all alternatives:

Desired Conditions: Geological features, including caves, domes and spires, soda springs, and hot springs, are protected while providing for public use and enjoyment of these resources.

Strategy: Identify areas where caves, domes, spires, soda springs, and hot springs are located and can be used by recreationists, while protecting and preserving these sites.

PC #428: The Forest Service should identify speleological as well as, and distinct from, paleontological resources.

Response: The desired conditions for Geological Resources have been expanded to provide a clear vision for management of caves.

PC #429: The Forest Service should retain the components of paleontological resources that provide the fossil record, as suggested in the Citizens' Park Alternative:

- Paleontological resources will retain the components providing the fossil record.

Response: All alternatives have this same desired condition, that paleontological resources retain the components providing the fossil record (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Paleontological Resources; Desired Conditions).

In addition, two strategies provide for: 1) identifying areas of significant sedimentation and meadow vegetation deposits; and 2) conducting paleontological evaluations of any fossilized material found during cave inventories (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Paleontological Resources; Strategies).

Soils

PC #317: The Forest Service should explain the statement that Alternatives C and D provide "inadequate protection of structure and soils," and why it contradicts the Effects on Soil Resources section.

Response: Thank you for your comment. The inaccurate statement "inadequate protection of structure and soils" has been removed from the Vegetation section.

PC #444: The Forest Service should include the following desired conditions for Soils suggested in the Citizens' Park Alternative:

- Productive soil conditions will be maintained, enhanced, or restored to promote ecosystem health, diversity, and productivity.

Response: The desired conditions for Soils have been modified in the FEIS to read:

Productive soil conditions are maintained to promote ecosystem health, diversity, and productivity (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Soils).

In addition, specific standards and guidelines have been added to the FEIS to conserve and restore productive soil conditions in the Monument (FEIS, Volume 2, Appendix A, All Action Alternatives, Soil Resources).

PC #371: The Forest Service should discuss the effects of legal OHV use on roads and legal trails, and the indirect effects of soil erosion and degradation of water resources.

Response: Motorized OHV use is confined to designated roads and motorized vehicles are not allowed on trails in the Monument. The only exception to this is in KRSMA, where motorized use is allowed on two trails by the public law that created KRSMA (see the response to PC #386 in the Recreation section of this appendix).

OHV use on designated dirt roads adds little to the inherent erodibility of dirt roads built on mountain slopes. There are no ongoing or indirect effects of

soil erosion (of road material) on soil conservation and productivity. The ongoing and indirect effects of soil erosion (of road material) are analyzed in the Transportation System, Recreation, and Hydrological Resources sections of Chapter 4 in the FEIS.

All vehicle use is subject to water quality standards and guidelines. Using Best Management Practice (BMP) 4-7 (Water Quality Monitoring of Off-Highway Vehicle Use), monitoring of water quality will be conducted and "if considerable adverse effects are occurring, or are likely to occur, immediate corrective action will be taken," which may include reduction of OHV use (which includes OSVs) (Water Quality Management for Forest System Lands in California: Best Management Practices, 2000, p. 101).

Human Use (including Recreation, Scenery, and Socioeconomics)

Recreation

PC #369: The Forest Service should satisfy the people who use the forest instead of those who want to prevent people from using the forest.

Response: Alternatives B and F were developed in response to comments brought forward by members of the public, representing a broad range of recreation interests, through a year and a half long collaborative process. The comments emphasized what is important to recreation users in the Monument. Other members of the public emphasized a need for more restrictions on recreation opportunities. These concerns are reflected in Alternatives C and D. Alternatives A (no action) and E are more restrictive than Alternatives B and F in that their ability to respond to future recreation demand is reduced. See Chapter 4, Effects on Recreation, for discussion of the various alternatives' recreation opportunities (FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Recreation, Indirect Effects).

PC #370: The Forest Service should address the potential direct effects from recreational activities authorized by the management plan.

Response: The effects of ongoing activities, including recreation activities (existing recreation use and other activities), are analyzed and disclosed as effects from the no-action alternative (Alternative A) by resource area. Those effects represent a baseline and are carried forward through the range of alternatives. These activities have been approved in prior environmental analysis processes, including the existing forest plan. The programmatic effects described for each of the other alternatives include the effects of ongoing activities. Forest Service recreation policy is to limit regulation, constraint, and supervision of recreation use to the minimum necessary while providing for resource protection, visitor satisfaction, and safety (FSM 2331.03; similar wording appears in FSM 2303 and FSM 2350.3). These limitations are expressed through the application of the standards and guidelines included in the Forest Plan and in the Forest Service Manual direction referenced above. Any changes needed in specific situations for resource protection, visitor satisfaction, or safety will undergo site-specific environmental analysis before deciding on the action needed.

PC #372: The Forest Service should examine interactions among recreation opportunities and other multiple uses, as required by the NFMA.

Response: Chapter 4, Effects on Recreation, Indirect Effects, discusses interactions among recreation opportunities and other multiple uses in the Protects Resources section under the Increasing Numbers of Recreationists heading, the Effects on Recreation from Management Activities section under the Connects People to the Land (Places) heading, the Day Use and Camping section under the Promotes Diversity of Uses heading, Connects People to Others and Across Generations and Interpretation and Education Programs (Conservation Education) sections, as well as in the Cumulative Effects section. Recreation effects to other resources are described in more detail in those sections of Chapter 4 (such as Effects on Wildlife and Plant Habitat and Effects on Cultural Resources).

PC #373: The Forest Service should eliminate recreation from the Monument as humans are not an integral part of that ecosystem.

Response: Eliminating recreation from the Monument would be in violation of the Clinton proclamation. The proclamation states that the management plan "will provide for and encourage continued public and recreational access and use consistent with the purposes of the monument." Numerous recreation activities are occurring in the Monument, and new recreation activities are expected to emerge over time. The variety of activities is expected to continue to grow (Cordell 1999, Sheffield 2005). Recreation activities will be managed in compliance with the Forest Plan. Recreation opportunities are described for the Monument, and the general effects of those activities have been analyzed and disclosed (FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Recreation, Indirect Effects). Site-specific environmental analysis will be required before facilities could be provided to support new activities or before special use permits could be issued. The Clinton proclamation restricted the use of all motorized vehicles, including ATVs, to designated roads only.

PC #374: The Forest Service should identify carrying capacity in the Monument and manage accordingly.

Response: Recreation activities are managed on a sustainable basis using the protections described in the Forest Plan. Maintaining a spectrum of diverse recreation opportunities is important (Cordell 1999) (Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Recreation; Assumptions and Methodology). As use increases or new development occurs, the concept of capacity restrictions will be examined and applied.

Capacities for different opportunities are determined at the site-specific level, rather than this programmatic level, taking into account the recreation opportunity spectrum (ROS) class identified at the programmatic level, the recreation niche setting, site conditions, and desired recreation experience. For example, the size of campsites may vary at different campgrounds, along with the distance between campsites, and amenities provided. The capacity is determined by the number of campsites. Picnic/day use area capacity will typically be determined by the number of picnic sites/tables and/or the size of the parking area. Trailhead capacity is often determined by the size of the parking area. The capacity is often expressed as people at one time (PAOT).

The recreation opportunity spectrum (ROS) and limits of acceptable change (LAC) are two systems that were developed to deal with aspects of visitor capacity. ROS classes have criteria (access, remoteness, naturalness, facilities and site management, social encounters, visitor impacts, and visitor management) with indicators to be applied in managing particular recreation settings. The existing ROS classes and developed site PAOT capacities are described in Chapter 3 of the FEIS (FEIS; Volume 1; Human Use, including Recreation, Scenery, and Socioeconomics; Recreation; Recreation Opportunities). The Proposed Changes to Management Direction section of Appendix A describes and maps changes proposed to existing ROS class locations for Alternatives B, C, D, and F (FEIS, Volume 2, Appendix A, Proposed Changes to Management Direction, Human Use and Recreation). In addition, this section of Appendix A lists considerations to guide all future recreation site-specific planning. LAC has primarily been used in wilderness; a key aspect of that system is to monitor use and site conditions, in order to determine any corrective management actions needed.

A recent paper (Whitaker, D.; Shelby, B.; Manning, R.; Cole, D.; Haas, G. 2010. Capacity reconsidered; finding consensus and clarifying differences. Capacity Work Group. National Association of Recreation Resource Planners. Marienville, PA. 18 p.) documents the state of knowledge regarding capacity, how the concept has evolved, agreements, and continued areas of disagreement. The paper does not specify a process for developing capacities (ROS and LAC are both mentioned). Although the concept of capacity has evolved over time and been applied differently in different situations, the consensus in this paper defines capacity "as the amount and type of use that is compatible with

the management prescription for an area" and further elaborates on that definition. However, some areas of disagreement with the definition still exist: is capacity a maximum use level or a reasonable use level that fits with a management prescription; is capacity the amount of use that can be accommodated or the amount that will be accommodated; are capacities and use limits synonymous? Disagreement among the authors also exists as to what action must be taken if use starts to exceed capacity. Sometimes factors other than the level of use can cause resource impacts, so that limiting use may not resolve the impact, and other actions may be needed (such as site restoration to eliminate user created trails, trail redesign/reconstruction, site hardening to accommodate use, visitor education, or enforcement). The authors also disagree about whether establishing a specific use level is always necessary or whether establishing standards and monitoring are sufficient.

PC #375: The Forest Service should identify existing user groups and their numbers and address the user mix and potential conflicts between user groups.

Response: Existing user groups who visit and use the forest and the opportunities they pursue are described in Chapter 3 of the FEIS (FEIS; Volume 1; Human Use, including Recreation, Scenery, and Socioeconomics; Recreation; Connection to Place; User Groups). Specific numbers of these users is unknown. Some recreation uses are not compatible with other uses. In determining what activities to provide and where, existing activities need to be considered, as well as competition and conflict between user groups; potential social impacts need to be minimized and mitigated (see Appendix A, Proposed Changes to Management Direction, Human Use and Recreation, for considerations to guide all future recreation site specific planning). Mitigation could consist of visitor education, enforcement, prohibitions by forest order, or site modifications, which would need to be addressed in site-specific environmental analysis before implementation could occur (see FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Recreation; Indirect Effects; Increasing Numbers of Recreationists, Protects Resources; FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Recreation; Indirect Effects; Promotes Diversity of Users/Promotes Diversity of Uses; FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Recreation; Cumulative Effects; and comparable sections in Chapter 4, Effects on Transportation, Effects on Trails and Motorized Recreation for information on potential user conflicts).

PC #376: The Forest Service should allow the maximum number of opportunities for community groups and non-profits to interact with the forest.

Response: Alternatives B and F have the greatest capability to provide for these opportunities (see FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Recreation; Indirect Effects; Promotes Diversity of Uses; Tourism/Concessionaires and Private Resorts; FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Recreation; Indirect Effects; Connects People to Others and Across Generations [all sections under that heading]; FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Recreation; Cumulative Effects; and comparable sections in Chapter 4, Effects on Transportation, Effects on Trails and Motorized Recreation).

PC #377: The Forest Service should describe down logs as a natural and valued part of the forest landscape, not safety hazards to be removed.

Response: Forest Service policy is to eliminate safety hazards from developed recreation sites, including trees or tree limbs identified as hazardous (FSM 2332). Depending on the situation, down trees in a developed recreation site may present a hazard if people are likely to climb on them and potentially fall and get hurt (becomes more likely if the logs are large and/or they are piled on top of one another). Each hazardous situation needs to be dealt with on a case-by-case basis; potential actions include removing the hazard, posting signs, installing barriers, or closing the site.

PC #378: The Forest Service should include data from the National Visitor Use Monitoring Program

to compare motorized and non-motorized winter recreation.

Response: National Visitor Use Monitoring (NVUM) data were included in the recreation demand analysis (Appendix D). The 2004 Sequoia report indicates that 0.72 percent participated in snowmobiling, while 0.06 percent participated in cross-country skiing. Snowshoeing was not listed as a separate activity (nor was it combined with cross-country skiing), but would have been lumped together with other non-motorized activities (not specific to winter recreation). The 2009 Sequoia report indicates 0 percent participated in snowmobiling, while 0.9 percent participated in cross-country skiing and snowshoeing combined; due to sampling problems associated with the 2006 survey these results need to be viewed with caution (the most recent survey sample began on October 1, 2010 and continued through September 30, 2011). The results from both the Sequoia 2004 and 2009 reports vary from the 2008 national report, where 3.0 percent participated in snowmobiling and 3.2 percent participated in cross-country skiing. Snowshoeing was not listed as a separate activity (nor was it combined with cross-country skiing), but would have been lumped together with other non-motorized activities (not specific to winter recreation).

PC #379: The Forest Service should provide more recreational opportunities and travel on existing roads.

Response: Alternatives B and F provide the most opportunities for recreation and travel on existing roads. Alternatives A and E would have similar transportation systems to Alternatives B and F (see FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Recreation; and FEIS, Volume 1, Effects on Transportation, Effects on the Transportation System for information on these alternatives).

PC #380: The Forest Service should promote fewer roads, more walking trails, and allow dispersed camping.

Response: According to the Clinton proclamation, "no new roads or trails will be authorized within the monument except to further the purposes of the monument." Low levels of new road construction are included in Alternatives A, B, C, E, and F, where road construction would be compatible with the requirements of the Clinton proclamation. The potential for new road construction is examined for developed recreation facilities and loop driving opportunities in these alternatives. In contrast, Alternative D does not include the construction of any new roads.

Some roads are expected to be decommissioned in all alternatives. Road decommissioning is emphasized in Alternative C and in Alternative D to a lesser extent. Dispersed camping along a roadside or at the end of roads is not included in Alternative C, resulting in less need for lower level maintenance roads (objective maintenance levels 1 and 2) and a greater potential for decommissioning. Some roads are expected to be upgraded to accommodate the development of new recreation facilities or to allow better access to the objects of interest. Hiking trails are included in all alternatives. Changes to the existing National Forest Transportation System will require site-specific environmental analysis.

Whenever new construction, alteration, or reconstruction of buildings, recreation sites, constructed features, or trails occurs, accessibility for individuals with disabilities must be considered in the design, according to the established guidelines/standards (FSM 2333 and FSM 2353) (see FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Recreation; and FEIS, Volume 1, Chapter 4, Effects on Transportation, Effects on the Transportation System for additional information).

PC #381: The Forest Service should not raise fees for organizational camps.

Response: The method of fee computation for all special uses is determined nationally, and the fee systems are described in the Forest Service handbook (FSH 2709.11). The determination of fees is not addressed in management plans for the Monument or for the national forest.

PC #382: The Forest Service should conduct an analysis of what roads are appropriate for snowmobile use.

Response: National Forest System roads were designated for use by all motorized recreationists, including snowmobiles, on December 31, 2000, as described in the Clinton proclamation. Any changes made in the future to the designations will be analyzed in travel analysis processes and with site-specific environmental analysis.

PC #383: The Forest Service should promote continued recreational use by mountain bikes.

Response: Mountain bikes are allowed on designated roads and trails, as described in the Clinton proclamation. As of December 31, 2000, all roads that were designated for motorized vehicle use were also designated for non-motorized mechanized (mountain bike) use unless specifically closed by a forest order. All trails outside wilderness have been designated for mountain bike use unless specifically closed by a forest order. Changes to these designations are expected to occur as conditions change in the future (see the Transportation Plan in Part 4 of the Monument Plan for criteria to evaluate the need for future changes). The alternatives address mountain bike use according to the management emphasis described for each. Accordingly, Alternatives A, B, E, and F have the greatest range of opportunities. Alternative C includes mountain bike use on designated roads only (no trails). In contrast, Alternative D deemphasizes mountain bike access from Alternatives A, B, E, and F, in order to address issues raised by the public (see FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Recreation; Indirect Effects; Provides Access; Roads/Trails; and FEIS, Volume 1, Effects on Transportation, Effects on Trails and Motorized Recreation, Indirect Effects, Provides Access, Roads/Trails).

PC #384: The Forest Service should discuss the Monument ‘s unique combination of local residents who contribute to its maintenance and temporary visitors who enjoy many recreational pursuits.

Response: See Chapter 3, Recreation, in the User Groups section under the Connection to Place heading, for a description of the various kinds of user groups who visit and use the forest and the opportunities they pursue.

PC #386: The Forest Service should limit off-road vehicle use to public roads open to normal highway vehicles.

Response: Alternatives C and D are designed to include the use of only street licensed vehicles. The Clinton proclamation specifically precludes the use of motorized vehicles on trails. The only exception is within the Kings River Special Management Area (KRSMA), because the language in the law (Public Law 100-150) that created KRSMA allows OHV use on trails to the same extent and in the same location that was permitted before KRSMA was created. In this case, the law takes precedence over the proclamation (see FEIS; Volume 1; Chapter 3; Human Use, including Recreation, Scenery, and Socioeconomics; Recreation; Recreation Opportunities; Northern Portion; FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Recreation; Indirect Effects; Provides Access; Roads; and the comparable section in Chapter 4, Effects on Transportation, Effects on Trails and Motorized Recreation).

PC #387: The Forest Service should address the conflict between motorized and non-motorized recreation, including both winter and summer uses, by not opening all roads to motorized off-highway vehicles (and over-snow vehicles) and setting aside some roads for bicycle use.

Response: Changes to the designated road system for various vehicle types are expected to occur as conditions change in the future. Any changes to the national forest road system will be subject to travel analysis processes and site-specific environmental analysis and public disclosure (see the Transportation Plan in Part 4 of the Monument Plan). Numerous strategies can be employed in any alternative to help with user conflicts, such as the conversion of roads to trails or the relocation of routes. The alternatives address motorized vehicle use and non-motorized vehicle (mountain bike) use according to the management emphasis described for each. Accordingly, Alternatives A, B, E, and F have the greatest range of opportunities. Alternatives C and D include only street licensed motorized vehicles. Alternative C includes mountain bike use on designated roads only (no

trails). In contrast, Alternative D deemphasizes mountain bike access compared to Alternatives A, B, E, and F, in order to address issues raised by the public (see FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Recreation; Indirect Effects; Provides Access; Roads; and the comparable section in Chapter 4, Effects on Transportation, Effects on Trails and Motorized Recreation).

PC #388: The Forest Service should analyze how the decibel levels of over-snow vehicles (OSV) will affect wildlife and other visitors.

PC #392: The Forest Service should address the specific needs of winter access to quiet recreation areas.

Response (to PC #s 388 and 392): The Clinton proclamation restricted the use of motorized vehicles, including OSVs, to designated roads. Consequently, as of December 31, 2000, snowmobiles could be used in fewer locations in the Monument. Any additions or changes to National Forest System road designations that may be proposed in the future would be subject to environmental analysis, including the levels of noise resulting from the activity (see the Transportation Plan in Part 4 of the Monument Plan.)

PC #389: The Forest Service should recognize historic stock use and promote its continuation as a suitable land use, as in Alternative B.

Response: Alternatives B and F treat recreation, including stock use, in the same way. Livestock grazing is a recognized use of National Forest System lands. Livestock grazing is not eliminated in any of the alternatives.

PC #390: The Forest Service should recognize that the Monument warrants a higher level of restrictions on higher impact uses.

Response: All alternatives analyzed are required to be consistent with the proclamation that created the Monument.

PC #391: The Forest Service should not leave all trails open to mountain bikes, and should analyze the effects from mountain bike use on trails and other users.

Response: The Clinton proclamation that created the Monument restricted the use of non-motorized mechanized vehicles (mountain bikes) to designated National Forest System roads and trails; no amount of mileage is specified for that designation. The alternatives analyze a range of management strategies that include the restriction of mountain bikes to designated National Forest System roads only (no trails) and a reduced number of roads/trails. Other alternatives include use of the National Forest System roads and trails that are currently designated.

PC #393: The Forest Service should recognize that snowshoeing is more than a minor winter recreation activity and develop well-defined routes for both cross-country skiers and snowshoers.

Response: The national forest does not groom ski trails; all grooming is done through partnerships or by permittees through a special use permit. For example, Montecito Lake Resort is currently the only organization that is grooming cross-country ski trails. Some cross-country skiers do take advantage of the grooming done for snowmobiling; snowmobile route grooming is done through an agreement with the state.

Snowshoeing is a recognized use and is not ignored. The recreation demand analysis did not list snowshoeing, because the various information sources examined did not break out that activity as a separate category (may have been lumped with other activities) and/or snowshoeing was not one of the most popular activities. Neither of the California State Parks public opinion surveys (California State Parks 1998, 2003) list snowshoeing as an activity, but presumably lump it with other non-mechanized winter sports activities (although it was not mentioned in that category). Both of these surveys were statewide surveys and were not specific to participation occurring on National Forest System lands.

The 2010 Outdoor Foundation report (Outdoor Foundation. 2010. Outdoor recreation participation report 2010. Boulder, CO. 67 p.) does discuss

snowshoeing, with a growth rate from 2008 to 2009 of 17.4 percent, the second highest growth rate for activities noted in the report. However, the participation rate is still quite low, with 1.2 percent of respondents participating in 2009, up from 1.0 percent of respondents participating in 2008. For cross-country skiing, 1.5 percent of respondents participated in 2009. The survey did not include snowmobiling as one of the activities surveyed. The survey was nationwide and was not specific to activities occurring on National Forest System lands.

The potential exists in all alternatives to develop trail opportunities after site-specific environmental analysis is completed (see FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Recreation; Indirect Effects; Provides Access; Trails; and the comparable section in Chapter 4, Effects on Transportation, Effects on Trails and Motorized Recreation).

PC #394: The Forest Service should develop loop opportunities for non-motorized winter recreation.

Response: The potential exists in all alternatives to develop loop trail opportunities after site-specific environmental analysis is completed (see FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Recreation; Indirect Effects; Provides Access; Trails; and the comparable section in Chapter 4, Effects on Transportation, Effects on Trails and Motorized Recreation). Please refer to the response to PC #393 regarding grooming of cross-country ski trails.

PC #414: The Forest Service should include the Sequoia Monument Recreation Council's list of recommendations for dispersed and different kinds of recreation.

Response: The recommendations made by the Sequoia Monument Recreation Council (SMRC) are included in the Recreation section of Chapter 3 (FEIS; Volume 1; Chapter 3; Human Use, including Recreation, Scenery, and Socioeconomics; Recreation; Recreation Demand Analysis Summary; Public Involvement) and in the Recreation Demand Analysis in Appendix D. Those recommendations have been incorporated into Alternatives B and F. In addition, the analysis in Chapter 4, in the Effects on Recreation and Effects on Transportation, Effects on Trails and Motorized Recreation sections, has been organized around the topics that SMRC identified, along with the portion of the Multi-Criteria Decision Support (MCDS) framework that SMRC developed (they appear as headings and subheadings).

PC #415: The Forest Service should provide areas for dispersed camping where campfires are prohibited.

Response: Campfires are allowed outside of developed campgrounds and picnic areas for holders of valid campfire permits. However, when fire restrictions are in effect, campfires are only allowed in developed recreation sites or in designated fire exempt areas (with a valid campfire permit). If someone is camping elsewhere in the Monument during fire restrictions, campfires are not allowed. Prohibition of campfires in areas where campfires would normally be allowed is done through a forest order, with documentation in an administrative record that supports such a prohibition.

PC #416: The Forest Service should include the desired conditions and strategy for Human Use and Recreation as suggested in the Citizens' Park Alternative.

Response: Forest Service review of the human use description in the Citizens' Park Alternative indicates that the human use desired condition is nearly identical to that described in Chapter 2 of the FEIS (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Human Use; Desired Conditions).

The recreation strategy in the Citizens' Park Alternative was used as a basis for the strategies emphasized in Alternative D. For example, dispersed camping would continue to be allowed, and new development would be limited to walk-in picnic areas and walk-in campgrounds, since no new roads are included. Alternative D differs from the Citizens' Park Alternative in the treatment of hazard trees. Instead, the established procedures for hazard tree abatement for the Sequoia National Forest and the Monument are included to comply

with current management direction. These procedures are not proposed for modification in any alternative.

PC #417: The Forest Service should include hunting and fishing as a recreation niche.

Response: Hunting and fishing are activities that will occur in all alternatives unless restricted by law. The recreation niche settings are place based, such as Rivers and Lakes, Great Western Divide, and Lloyd Meadow, and assume that hunting and fishing will occur (FEIS; Volume 1; Chapter 3; Human Use, including Recreation, Scenery, and Socioeconomics; Recreation; Connection to Place; Recreation Niche).

PC #418: The Forest Service should not propose use fees.

Response: The application of a fee system is not addressed within the scope of this planning effort. Forest Service policy is to charge fees for sites, facilities, equipment, or services that meet the criteria specified by law (Federal Lands Recreation Enhancement Act).

PC #419: The Forest Service should build more access roads, parking lots, and trails to groves.

Response: The Clinton proclamation specifically states that "no new roads or trails will be authorized within the monument except to further the purposes of the monument." New road construction (designed to be compatible with the proclamation) could be considered in Alternatives A, B, C, E, and F. The potential for new road construction is included for developed recreation facilities and loop driving opportunities in these alternatives. Alternative D emphasizes the use of existing National Forest System roads and construction of additional parking facilities in response to the increased level of use that is projected in all alternatives. Additional interpretive or access trails can be constructed in any alternative. Changes to the National Forest Transportation System, including parking facilities, will require site-specific environmental analysis (see FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Recreation; and FEIS, Volume 1, Chapter 4, Effects on Transportation; Effects on the Transportation System for additional information.)

PC #420: The Forest Service should include a primitive, non-mechanical category.

Response: The Recreation Opportunity Spectrum is a national-level inventory system designed to show where various recreation opportunities are available to forest users. The national inventory, at present, does not include the non-mechanical category and includes mountain bikes in the non-motorized category. The introduction of a new category in the national inventory system is not addressed within the scope of this planning effort.

PC #421: The Forest Service should permit dispersed camping and allow motorized use only on paved roads.

Response: Dispersed (end of the road/roadside) camping is included in all alternatives except Alternative C (see FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Recreation; Indirect Effects; Promotes Diversity of Uses; Day Use and Camping). Restricting all motorized use to paved roads only is not included in any alternative; over-snow vehicle use is allowed only on paved roads in Alternative D, and only street licensed vehicles are allowed on designated roads in Alternatives C and D (see FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Recreation; Indirect Effects; Provides Access; Roads; and Chapter 4, Effects on Transportation, Effects on Trails and Motorized Recreation, Indirect Effects, Provides Access, Roads).

PC #422: The Forest Service should close the Monument to snowmobile use.

Response: Although the Clinton proclamation restricts the use of motorized vehicles to designated roads, the proclamation does not specify any amount of mileage for that designation. Alternative C restricts the use of snowmobiles (over-snow vehicles or OSVs) for public use; OSVs could only be used to access private property, for administrative use, or for emergencies (FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics;

Effects on Recreation; Indirect Effects; Provides Access; Roads; FEIS, Volume 1, Chapter 4, Effects on Transportation, Effects on Trails and Motorized Recreation, Indirect Effects, Provides Access, Roads).

PC #423: The Forest Service should protect giant sequoia roots from bicycle use.

Response: Standards and guidelines are in place to offset the effects of those activities on the roads and trails where the activities have been determined to be suitable (FEIS, Volume 2, Appendix A, All Action Alternatives). Bicycle use is restricted to designated roads and trails.

PC #434: The Forest Service should consider creating loop opportunities for off-road vehicles on existing logging roads.

Response: Specific loop opportunities will be identified in the future and analyzed in travel analysis and site-specific environmental analysis. Analysis of existing logging roads (or any other existing roads) will occur in that site-specific environmental analysis. Changes to the existing road system are discussed in Chapter 4 of the FEIS (FEIS, Volume 1, Chapter 4, Effects on Transportation, Effects on the Transportation System).

PC #111: The Forest Service should explain the potential inconsistencies of metrics for recreation related issues in Chapter 1.

Response: The metrics for determining the value of ecosystem services are expected to vary. The metric used to value an ecosystem service such as firewood would not be appropriate to value an ecosystem service such as "spiritual renewal." In this analysis, the metric for the Recreation and Public Use issue (Issue 1) uses qualitative information from the recreation demand analysis (Appendix D). The analysis of effects is based on how well the alternatives are expected to meet future recreation demand. Although the provision of recreation opportunities in the Monument is a supply, managers do not know what to provide (supply) unless they know what people want to do (demand). The Diverse Array of Wildlife and Their Habitats issue (Issue 3) uses a number of units of measure, including the number of developed and dispersed recreation sites, for analysis. The information on developed and dispersed recreation appears in Chapter 3 and Summary of the FEIS (FEIS; Volume 1; Chapter 3; Human Use, including Recreation, Scenery, and Socioeconomics; Recreation; Recreation Opportunities; FEIS, Volume 1, Summary, Chapter 2, Comparison of Alternatives, Comparison of Alternatives by Issues and Their Units of Measure).

PC #554: The Forest Service should revise the standards and guidelines for human uses to protect the objects of interest, and include a standard for extractive uses of the Monument.

Response: The standards and guidelines listed in Appendix A are designed to offset the effects of activities that are suitable for the various areas in the Monument (FEIS, Volume 2, Appendix A, All Action Alternatives). The objects of interest are protected through standards and guidelines that affect human use, but are included in resource categories other than Human Use. In short, all standards and guidelines are necessary to offset the effects of human activities in the Monument.

The assumption that the Human Use cross-country travel standard and guideline applies to mechanical means is incorrect. The Proposed Chages to Management Direction section of Appendix A shows that standard and guideline in the non-motorized (e.g., horses, hikers—non-mechanized) category (the standard and guideline came from the MSA). The standard and guideline has been clarified in the standard and guideline tables later in Appendix A (FEIS, Volume 2, Appendix A, All Action Alternatives, Human Use, Recreation) to show that it applies to non-motorized (e.g., horses, hikers—non-mechanized) use.

Although the Clinton proclamation withdraws Monument lands from mineral entry and geothermal leasing, other kinds of energy development, such as solar, wind, or other utilities, would be possible, except in Alternative D, as long as the development is consistent with other standards and guidelines and after site-specific environmental analysis is completed (FEIS, Volume 2, Appendix A, Proposed Changes to Management Direction, Human Use and Recreation, Revised Recreation and Energy Standards and Guidelines table).

Scenery

PC #430: The Forest Service should explain how scenery can be improved.

Response: Scenery is improved by creating or encouraging landscape conditions that people prefer. These conditions are documented in Chapter 3 of the FEIS, where there is a brief description of what people find visually appealing (FEIS; Volume 1; Chapter 3; Human Use, including Recreation, Scenery, and Socioeconomics; Scenery Resources). More detail is in the Scenery Management Report. The following information was added to that report to clarify what people prefer and consider more scenic versus less scenic.

> People prefer natural appearing landscapes and forests that have large, mature trees, open structure with visual access through the understory, little downed wood, herbaceous, smooth groundcover, vistas with distant views, high topographic relief, and landscapes that are more visually complex (Ryan 2005). People do not find landscapes having the following elements or conditions scenic: uniform or monotonous vegetation, dense vegetation at eye level, rapid tree regeneration resulting in many small trees and shrubs, black landscapes, charred trees, severe natural disturbances, tree stumps, piles of dead wood, overstocked vegetation, large amounts of dead wood, and extensive areas of dead or dying trees (Ryan 2005). The desired condition for scenery within the Monument was developed based on the above human preferences.

The valued scenic attributes found in each "place" in the Monument are identified in Chapter 3 of the FEIS (FEIS; Volume 1; Chapter 3; Human Use, including Recreation, Scenery, and Socioeconomics; Scenery Resources; Landscape Character Descriptions). By protecting the existing or enhancing the valued scenic attributes described in the landscape character descriptions, scenery can be protected or improved (FEIS; Volume 1; Chapter 3; Human Use, including Recreation, Scenery, and Socioeconomics; Scenery Resources; Overview of Scenery Management System). The Forest Service expects to improve scenery through ecological restoration, fuel reduction, and vegetation management (FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Scenery Resources).

A strategy has been added to the EIS in Chapter 2:

> In all vegetation treatment and fuels reduction projects consider improving scenery resources especially in areas that do not meet established scenic integrity objectives (SIOs) (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Human Use; Strategies).

PC #450: The Forest Service should camouflage easements for utilities and remove obsolete equipment such as wire, cables, and pipes to improve visual quality.

Response: According to the proposed scenic integrity objectives (SIOs) which will guide scenery management, all projects inside the Monument boundary must mitigate alterations to the landscape to be visually subordinate to the natural appearance of the landscape, based upon the scenic integrity objective assigned to the land area. This would include camouflaging easements for utilities such as telephone, electricity, cell towers, and water pipes.

All areas in the Monument are assigned a very high to moderate scenic integrity objective (FEIS; Volume 1; Chapter 3; Human Use, including Recreation, Scenery, and Socioeconomics; Scenery Resources; Proposed Scenic Integrity). Scenic integrity levels are defined in Chapter 3 of the FEIS (FEIS; Volume 1; Chapter 3; Human Use, including Recreation, Scenery, and Socioeconomics; Scenery Resources; Scenic Integrity Level Definitions). For all of the alternatives, these proposed SIOs reflect the Clinton proclamation's emphasis on public enjoyment and protection of the objects of interest. The scenic integrity objectives represent the minimum thresholds for scenery resource achievement in project design and implementation.

PC #426: The Forest Service should manage Highway 190 and the Western Divide Highway as scenic highways and their visual quality should be protected.

Response: The Western Divide Highway corridor is identified as a place in the Scenic Routes recreation niche setting. Viewing scenery is the essence of that setting. Highway 190 falls in the Rivers and

Lakes recreation niche setting because of its close proximity to the Tule River. The proposed scenic integrity objective for both of these areas is high, which means the landscape character in these corridors will be managed to appear unaltered. Although deviations may be present, most will repeat the form, line, color, texture, and pattern commonly found in the landscape character and blend into the natural appearing landscape (FEIS; Volume 1; Chapter 3; Human Use, including Recreation, Scenery, and Socioeconomics; Scenery Resources; Landscape Character Descriptions; Rivers and Lakes/Scenic Routes).

Socioeconomics

PC #410: The Forest Service should not encourage gateway community development.

Response: Based on public input, alternatives include the potential for enhancing gateway community development (FEIS; Volume 1; Chapter 3; Human Use, including Recreation, Scenery, and Socioeconomics; Socioeconomics; Major Natural Resource Economic Sectors; Gateway Communities). The FEIS analyzes the potential for economic development based on current conditions and trends as well as the capacity of existing gateway communities to encourage development. None of the alternatives nor the analysis suggest the development of "new, small towns."

The analysis in the FEIS emphasizes that the "educational, health and social services" category of employment is the largest employer for all gateway communities analyzed, ranging from a low of 19 percent in Squaw Valley to a high of 34 percent in Springville (FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Socioeconomics; Gateway Community Development). Because of the expected population growth and aging population it is probable this job sector will continue to grow the fastest and remain the largest employer among gateway communities. None of the proposed alternatives are expected to increase economic growth in this large, fast growing job sector. While the "arts, entertainment, recreation, accommodation and food services" job sector may be most influenced by the proposed alternatives based on human use and recreation facilities, the potential for economic growth in this sector will again, come primarily from the expected increase in population.

As stated in the FEIS:

> …it is important to consider the ability, or capacity, of a gateway community to take advantage of those opportunities. In other words, growth potential may also be affected by a gateway community's capacity for adapting to changing conditions. For example, only six percent of the population in Squaw Valley currently works in the community; the remaining 94 percent work outside of the community. This means there is a lack of available labor to capitalize on potential growth opportunities. The ability of a gateway community then, to take advantage of increased recreation potential may depend, in part, on their capacity to adapt to changing conditions and opportunities (FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Socioeconomics; Gateway Community Development).

PC #411: The Forest Service should assure a predictable wood supply from the Sierra and Sequoia National Forests to help offset the cost of fuels reduction in the Monument.

Response: Assuring a predictable wood supply from the Sierra and Sequoia National Forests outside the Giant Sequoia National Monument to offset fuel reduction costs in the Monument is outside the scope of this planning effort.

PC #412: The Forest Service should make clear that existing contracts were considered in the baseline and analysis of environmental effects.

Response: Existing contracts were considered in the baseline and analysis of environmental effects. Simply, the model used to conduct the analysis figures out how many times a dollar circulates in a study area between the time it enters and the time it leaves. All recorded monetary transactions are included (FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Socioeconomics; Indirect Effects).

PC #413: The Forest Service should define a maximum carrying capacity for the Monument, which is key to the stability of the surrounding regional economies.

Response: Please see the response to PC #374 in the Recreation section of this appendix. Based on the analysis in the FEIS, none of the action alternatives will change the Forest Service's relative contribution to the area of influence economy in a measurable way (FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Socioeconomics; Indirect Effects).

PC #431: The Forest Service should identify all of the indirect effects and reasonably foreseeable effects on gateway communities and counties, stating mitigation goals.

Response: The ongoing, indirect, and cumulative effects of the alternatives on the social and economic condition within the area of influence, including Fresno, Tulare, and Kern counties are addressed in the FEIS (FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Socioeconomics). Key within the analysis is the finding that the indirect effects are associated with the existing condition outside the Monument, including:

> …changing demographics in urban areas, increased population growth, double-digit unemployment rates associated with the latest economic downturn, and a growing emphasis on the health and social service economic sector… overwhelm the current and foreseeable role of Forest Service-related contributions to the area's economy, which currently represents 0.11 percent of the labor income across all economic sectors in the three-county area. It follows then that, regardless of the alternative selected, the economic impact to the area of influence has the potential to remain less than one percent (FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Socioeconomics; Gateway Community Development).

Regarding mitigation, Chapter 3 of the FEIS also highlights the role of transfer payments to counties through the re-authorized Secure Rural Schools and Community Self-Determination Act (P.L. 110-343) (FEIS; Volume 1; Chapter 3; Human Use, including Recreation, Scenery, and Socioeconomics; Socioeconomics; Three-County Socioeconomic Profile). This act provides, "…authority for the Federal Government to purchase and insure certain types of troubled assets for the purposes of providing stability to and preventing disruption in the economy and financial system and protecting taxpayers, to amend the Internal Revenue Code of 1986 to provide incentives for energy production and conservation, to extend certain expiring provisions, to provide individual income tax relief, and for other purposes" (accessed on 1/26/11 at http://www.gpo.gov/fdsys/pkg/PLAW-110publ343/content-detail.html). While the alternative selected may influence the type of projects recommended by a Resource Advisory Committee (RAC), the individual projects will be site-specific and require their own separate environmental analysis (FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Socioeconomics). Further, the total available dollars authorized by the Act through fiscal year 2011 is unrelated to this FEIS and Monument Plan and does not vary across alternatives.

Finally, the FEIS states:

> Monitoring changes in demographic patterns can assist both communities and the Monument in remaining responsive to changing societal needs over time. Monitoring gateway community capacity for economic development could include the indicators covered in Chapter 3: housing, employment by industry, the index of industrial specialization, place of work, and source of income" (FEIS; Volume 1; Chapter 3; Human Use, including Recreation, Scenery, and Socioeconomics; Socioeconomics; Major Natural Resource Economic Sectors; Gateway Communities).

In this manner, gateway communities and counties may be better positioned to adapt to changing societal needs. Additional opportunities, such as the development of partnerships for monitoring economic and gateway community development,

are identified in the Monument Plan Partnership Strategy (Monument Plan, Appendix E).

PC #432: The Forest Service should revise the "communities of color" section.

Response: "Communities of color" refer to people representing a broad spectrum of ethnic and racial backgrounds within the area of influence including African American, American Indian, Asian, Pacific Islander, and Hispanic or Latino. It is important to note that as measured by the U.S. Census, "Hispanic" is a cultural identity, and not a race (FEIS; Volume 1; Chapter 3; Human Use, including Recreation, Scenery, and Socioeconomics; Socioeconomics; Environmental Justice; Composition of the Area of Influence).

Mitigation measures identified in the environmental justice analysis for the FEIS include steps to reduce or eliminate the potential effects associated with the alternatives considered in detail (FEIS; Volume 1; Chapter 4; Effects on Human Use, including Recreation, Scenery, and Socioeconomics; Effects on Socioeconomics; Environmental Justice). The analysis demonstrated the need for the Forest Service to mitigate potential linguistic barriers, particularly within, but not limited to, the limited-English speaking segment of the Hispanic community, to ensure full and active participation in the Monument planning process.

Furthermore, a Partnership Strategy designed to promote active outreach and relationship building to all communities within the area of influence has been included in the Monument Plan (Monument Plan, Appendix E, Creating a Partnership Culture, Steps for Ensuring Effective Outreach to Nontraditional Partners). The Monument Plan further states that implementation of the partnership strategy should be monitored and evaluated to ensure effective outreach to potentially affected groups has occurred. The following steps may be considered for future site-specific projects, as appropriate, in developing an innovative Partnership Strategy (Monument Plan, Part 2—Strategy, Strategies and Objectives, Human Use, Communication with Communities of Color):

- Translation of major documents (or summaries thereof), provision of translators at meetings, or other efforts as appropriate to ensure that limited-English speakers potentially affected by a proposed action have an understanding of the proposed action and its potential effects;
- Provision of opportunities for limited-English speaking members of the affected public to provide comments throughout the NEPA process;
- Provision of opportunities for public participation through means other than written communication, such as personal interviews or use of audio or video recording devices to capture oral comments;
- Use of different meeting sizes or formats, or variation on the type and number of media used, so that communications are tailored to the particular community or population;
- Use of locations and facilities that are local, convenient, and accessible to disabled individuals, low-income and minority communities, and Indian tribes; and
- Assistance to hearing-impaired or sight-impaired individuals.

Cultural Resources

PC #353: The Forest Service should analyze the effects of livestock grazing on Monument cultural resources.

Response: The FEIS includes an analysis of the potential effects of livestock grazing on archaeological sites and lists the various effects that may be associated with grazing (FEIS, Volume 1, Chapter 4, Effects on Cultural Resources, Livestock Grazing). This analysis acknowledges that grazing has the potential to affect a majority of cultural resources since 78 percent of all known sites are within existing grazing allotments. Effects to cultural resources from grazing can be highly variable and are highly site-specific. Monitoring on four grazing allotments over the last three years indicates that approximately one quarter (1/4) of the sites in an allotment are affected by grazing. The majority of those effects come from cattle trails that cross sites and cause chiseling and compaction. Annual monitoring conducted after the effects are initially observed indicates that, for the most part, the effects have stabilized and are not exacerbated

to the point of an adverse effect to cultural resources under the *Programmatic Agreement Between The U.S. Department Of Agriculture, Forest Service, and the Advisory Council on Historic Preservation Regarding Rangeland Management Activities on National Forest System Lands and Memorandum Of Understanding Among The USDA Forest Service, Pacific Southwest Region, California State Historic Preservation Officer, and the Nevada State Historic Preservation Officer Regarding Rangeland Management Activities*.

The Clinton proclamation is clear that grazing can continue in the Monument. The alternatives do not include any recommendations for change. The effects analysis for cultural resources states that cultural resources will be managed according to existing laws, regulations, and policy to protect these resources (FEIS, Volume 1, Chapter 4, Effects on Cultural Resources, Assumptions and Methodology). The "Protection of cultural resources identified as objects of interest in the Clinton proclamation is consistent in all alternatives" (FEIS, Volume 1, Chapter 4, Effects on Cultural Resources, Indirect Effects, All Alternatives).

PC #354: The Forest Service should consult the Tribe as to the suitability of releasing or sharing of cultural resource site or site information to the public.

Response: The Forest Service is bound by law and policy to conduct tribal consultation on all projects (FEIS, Volume 1, Chapter 3, Tribal and Native American Interests).

The Sequoia National Forest remains committed to cultivating good relationships with Native American tribes and Native American groups. National Forest System lands and resources represent significant cultural and economic values to Native Americans. Forest Supervisors have the responsibility to maintain a government-to-government relationship with federally-recognized Indian tribes. They are to ensure that forest programs and activities honor Indian treaty rights and executive orders, and fulfill trust responsibilities, as those responsibilities apply to National Forest System lands. Treaties, statutes, and executive orders often reserve off-reservation rights and address traditional interests relative to the use of federal lands.

The Forest Supervisor also administers programs and activities to address and be sensitive to traditional native religious beliefs and practices and provide research, transfer of technology and technical assistance to tribal governments. The Sequoia National Forest also confers with non-federally recognized tribes, organizations and individuals.

PC #457: The Forest Service should include the following desired conditions for Cultural Resources suggested in the Citizens' Park Alternative:

- A comprehensive cultural resource management program will place a greater management emphasis on the rich cultural resources within the Monument as described in the proclamation. Cultural resources will be identified and allocated to appropriate management categories (FSM 2363) (e.g., preservation, enhancement, scientific investigation, interpretation, release) so that they can be protected, maintained, studied, and used by the public.

Response: This is the same desired condition described for Cultural Resources in Chapter 2 of the FEIS (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditons, Strategies, and Objectives; Cultural Resources).

PC #458: The Forest Service should include the following strategies for Cultural Resources suggested in the Citizens' Park Alternative:

- The strategy will implement a complete cultural resource program that not only complies with Section 106 of the NHPA (36 CFR 800) but also complies with other sections of the NHPA, especially section 110 of NHPA and other laws and regulations while developing an evaluation context consistent with the two prominent cultural resource issues in the proclamation. In order to accomplish this change in directive and develop National Register of Historic Places contexts based on the proclamation, the Monument staff will, within three years, develop a Monument Cultural Resource Management Plan (MCRMP) that emphasizes identification and research on issues identified in proclamation.

Response: The strategies and objectives for Cultural Resources include those suggested in

the Citizens' Park Alternative, including the development of a comprehensive cultural resource management plan for the Monument within three years. Projects proposed in Monument will comply with all of the acts established for the protection of cultural resources (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Cultural Resources).

PC #605: The Forest Service should describe Tubatulabals and their language as recommended by the Tubatulabal Tribe.

Response: This information has been integrated into the FEIS (FEIS, Volume 1, Chapter 3, Cultural Resources, Ethnography).

PC #606: The Forest Service should include a description of tribal hunting, seasonal travel, ceremonial, and trade routes used by the tribes.

Response: Thank you for the information but it is about a location that is outside the Monument, and thus outside the analysis area.

PC #607: The Forest Service should include the historical background map for the tribes by Dr. Dotty Theodoratus.

Response: This map was added to the Cultural Resources specialist report (Cultural Resources Report, Cultural Resources, Ethnography).

PC #608: The Forest Service should show how the changes in county lines since 1850 may have influenced water, timber, and natural resource rights for the Monument.

Response: This information is important; but because the forest reserve and the national forest are federal lands, the water use and resource rights were more influenced by federal policy than county and state policy.

PC #609: The Forest Service should refer to the assumptions, and current U.S. Presidential Policies and Executive Orders, in the Cultural Resources and Tribal and Native American Interests effects analyses.

Response: Current laws and policy are referenced in the Assumptions section for Cultural Resources: "Applicable laws, policy, directions, and regulations provide the management direction for tribal relations and issues. Forest Service activities and special use authorizations will comply with the Forest Plan and the Monument Plan" (FEIS, Volume 1, Chapter 4, Effects on Cultural Resources, Assumptions and Methodology). Since the laws are already listed at the beginning of Chapter 4 of the FEIS, there is no need to restate them (FEIS, Volume 1, Chapter 4, Legal and Regulatory Compliance).

PC #610: The Forest Service should include in vendor special permits the focus of protection of cultural landscapes, resources, and sites.

Response: Conditions for uses authorized by special use permit are included in the special use permit (clauses are determined nationally) and supplemented through annual operating plans, which are tailored individually for each permitted use. These conditions are project-specific and beyond the scope of this programmatic document.

PC #611: The Forest Service should use the term "cultural landscape" in describing the overall importance of the forest lands.

Response: As stated in the "Types of Cultural Resources" section of the Cultural Resources Report, "Cultural Landscapes" and their relationship to National Register Districts are related to the National Register of Historic Places (NRHP). Until the area has been formally studied to determine its NRHP significance, use of the term on a broad scale unrelated to the NRHP could introduce confusion, especially within the context of the Cultural Resource and Tribal Relations analysis.

PC #612: The Forest Service should include additional statements and references in addressing usage of and access to National Forest System lands by California Native Americans.

Response: The Cultural Resources Report does discuss Native Americans and access to National Forest System lands. "Applicable laws, policy, direction, and regulations provide the management direction for tribal relations and issues. Forest Service activities and special use authorizations will comply with the Forest Plan and the Monument Plan" (Cultural Resources Report, Tribal and Native American Interests, Assumptions and

Methodology). The 2008 U.S. Farm Bill Act is one of many that allow Native American access or ability to gather on National Forest System lands.

A summary of Indian Law and Policy (1960s-2010) is beyond the scope of this analysis.

Transportation, including the Transportation System and Trails and Motorized Recreation

PC #355: The Forest Service should include a thorough analysis of transportation effects.

Response: No direct effects would occur from the alternatives analyzed in this programmatic level document because no site-specific decisions are being made. The ongoing effects from current usage of the existing transportation system are discussed in Chapter 4 of the FEIS (FEIS, Volume 1, Chapter 4, Effects on the Transportation System, Indirect Effects, Transportation System, Alternative A).

In the Effects on the Transportation System section, under Measures Used to Assess Environmental Effects for the Transportation System, the effects on the transportation system itself are explained. Effects from the transportation system on other resources can be found in Chapter 4 of the FEIS where the effects on those resources are analyzed (e.g., Effects on Fire and Fuels, Effects on Wildlife and Plant Habitat, Effects on Hydrological Resources, and Effects on Groundwater).

PC #356: The Forest Service should present a Transportation Plan that both provides for visitor enjoyment and understanding about the objects of interest and is consistent with their protection.

Response: The Clinton proclamation predates both the 2001 Forest Service Roads Policy decision which implemented the Road Analysis Process (RAP) and the 2005 Travel Management Rule (including subparts A, B, and C), as well as the requirement for a transportation atlas displaying the transportation system available for public motorized vehicle use. These regulations, subsequent to the Clinton proclamation have led to a more accurate and complete inventory of the transportation system. This transportation system is the basis of the Transportation Plan for the Monument. Because the Monument FEIS is at the programmatic level and does not make any site-specific decisions, the Transportation Plan is also a framework for making future decisions. The roads analysis process (RAP) was an analysis, not a decision document, and implementation, if any, will only occur after site-specific project analysis. While the RAP did not make decisions, it is still a valid tool to help inform decisions about the road system (see Appendix A of the Transportation specialist report). The size and character of the Monument transportation system in the future will be determined by the need for access based on the selected alternative and consistent with protection of the objects of interest. Travel analysis, which will identify the minimum road system, must support the strategies and objectives adopted in the Monument Plan, as required by 36 CFR 212.

PC #357: The Forest Service should include in the Transportation Plan:

- the carrying capacities of each type of road
- methods for managing and monitoring the use patterns of these roads
- how user activities are modified by the transportation system

Response: The Monument Plan provides programmatic direction for the road system; it does not authorize or analyze site-specific proposed actions for individual roads. Therefore, the Transportation Plan is also a framework for making future decisions and does not make any site-specific decisions either. The Transportation Plan outlines management strategies for the road system as a whole. It describes how existing roads are managed by maintenance level (ML) and functional class, which indicate intended use and capacity. In Chapter 4 of this FEIS, the user activities for the Monument are outlined by alternative (FEIS, Volume 1, Chapter 4, Effects on the Transportation System, Indirect Effects, Trails and Motorized Recreation, Provides Access). Alternatives vary in their treatment of roads and what kinds of use

would be allowed. Methods for managing and monitoring individual roads could be set after site-specific analysis has been conducted, as well as the usage for specific roads, depending on the selected alternative.

PC #358: The Forest Service should include an implementation plan which identifies the minimum transportation system for each alternative, road decommissioning project priorities, targets based on resource damage, and a schedule for decommissioning unnecessary roads.

Response: Identification of the minimum road system and unneeded roads in accordance with Subpart A of the Travel Management Rule may be desirable prior to completion of the Monument Plan, but is not mandated by either the Clinton proclamation or the Travel Management Rule. Completing such a detailed analysis for each alternative in the FEIS is not required by the Clinton proclamation. The Monument Plan provides programmatic direction for managing the roads in the Monument; it does not analyze site-specific projects within the Monument, such as specific roads that may be open, closed, changed, or decommissioned. Changes to the road system will be recommended through travel analysis and implemented after site-specific environmental analysis.

PC #359: The Forest Service should emphasize maintaining the Monument roads that provide access to the Tribe for management purposes, recreational use, and cultural use.

Response: The Transportation Plan, included in Part 4 of the Monument Plan, states that appropriate access is provided to the objects of interest for their proper care, protection, and management. Appropriate access is provided for recreation purposes. Appropriate access is provided for use by Native Americans in consultation with local tribal governments (Monument Plan, Part 4). Resources available for maintaining the existing transportation system are very constrained, so the Sequoia National Forest must prioritize numerous competing needs for access including agency management activities, tribal activities, and public recreation. If limited resources are unable to adequately maintain roads needed for tribal access, the Tribe could consider taking responsibility for specific road maintenance requirements through either road use permits or other agreements with the Sequoia National Forest.

PC #360: The Forest Service should make improvements to the Quail Flat to Big Meadow road.

Response: The Monument Plan provides programmatic direction; it does not authorize or analyze site-specific projects within the Monument, such as specific roads that may be opened, closed, or decommissioned. Site-specific decisions regarding management of the Monument, including road closures, road decommissioning, road improvements, or changes to a specific road would require site-specific environmental analysis and public input, while supporting the selected alternative. Recommendations for a site-specific project such as this in the Hume Lake Ranger District should be directed to the District Ranger.

PC #361: The Forest Service should consider the effects of a deteriorating network of roads, or road decommissions, on the success of implementing future management activities.

PC #501: The Forest Service should analyze the effects of the transportation system on the forest's fiscal ability to maintain it, on user's access, and on systems outside the forest boundary.

Response (to PC #s 361 and 501): In Chapter 3 of the FEIS, the Transportation System discloses the current condition of the road system as a whole. It states:

> In recent years, the Forest Service has assessed the condition of its roads network. The network is in a deteriorating condition, due to increased use and the continued deferral of maintenance and capital improvements. Some roads are becoming unusable through lack of maintenance, may be causing resource damage, or are no longer needed or desired for administrative or public access (FEIS; Volume 1; Chapter 3; Transportation; Transportation System; Funding and Cost for Road Construction, Maintenance, and Decommissioning; Road Maintenance Terminology).

In Chapter 4 of the FEIS, the discussion of effects on the Transportation System discloses and explains the effects of the road system towards further project implementation such as restoration projects or fuels reduction projects. It states in all alternatives:

> The existing funding for road maintenance is insufficient to fully maintain the existing roads within the Monument. The lack of maintenance, particularly on the lower priority Maintenance Levels 1 and 2 roads, is causing deterioration of the roadways...As a result, few of the roads are being fully maintained to standard. Roads not properly receiving maintenance within the Monument would inevitably be affected, and access for both public and administrative use would continue to be degraded (FEIS, Volume 1, Chapter 4, Effects on the Transportation System, Assumptions and Methodology, Assumptions for All Alternatives).

PC #362: The Forest Service should eliminate roads that were primarily used for logging.

Response: The Monument Plan provides programmatic direction for managing the roads in the Monument. Site-specific decisions regarding management of the Monument, including road closures, road decommissioning, and road improvements, would require site-specific environmental analysis and public input. As explained in Chapter 3 of the FEIS: "Current Forest Service direction is to use travel analysis and environmental analysis at the project-specific level to identify potential roads for decommissioning" (FEIS, Volume 1, Chapter 3, Transportation System, Road Management Strategies). The travel analysis process identifies the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of Monument lands. Travel analysis will identify roads that are no longer needed to meet management objectives, as candidates to consider for decommissioning or conversion to a motorized trail in a site-specific project level analysis (see discussion in the Road System Changes section of the Transportation Plan). The Travel Management Rule at 36 CFR 212.1 defines a road as a motor vehicle route over 50 inches wide, unless identified and managed as a trail (FEIS, Volume 1, Chapter 3, Transportation System, Road System Background).

PC #363: The Forest Service should provide direction to achieve the desired maintenance levels already established for the road system.

Response: The current objective (desired) maintenance levels are based on current management direction, and may need to change in the future depending on which management alternative is selected for the Monument. The Monument Plan is a programmatic level document that provides overall management direction for the Monument. It does not propose any site-specific projects or any specific changes to public access such as changes to road maintenance levels. Site-specific decisions regarding management of the Monument, including changes in road maintenance levels which would result in road closures, road decommissioning, or road improvements, would require site-specific environmental analysis and public input.

PC #364: The Forest Service should maintain existing roads in a satisfactory condition.

Response: The Monument Plan recognizes this shortfall of resources needed to fully maintain the road system and provides programmatic direction for managing the roads in the Monument. Chapter 4 of the FEIS states:

> If funding is not adequate to keep the road system in acceptable condition, roads would be repaired, closed, relocated, or decommissioned to reduce unacceptable impacts on the surrounding environment. A lack of funding for maintenance could lead to a reduced available road mileage as roads are closed or decommissioned after site-specific environmental analysis (FEIS, Volume 1, Chapter 4, Effects on the Transportation System, Measures Used to Assess Environmental Effects for the Transportation System).

PC #365: The Forest Service should address user conflicts and safety issues on trails.

Response: The proclamation that created the Monument restricted the use of motorized vehicles, including snowmobiles, to designated National Forest System roads. The proclamation restricted

the use of non-motorized mechanized vehicles (mountain bikes) to designated roads and trails. The alternatives analyze a range of management strategies that include the restriction of mountain bikes to designated National Forest System roads only (no trails) or to a reduced number of roads/trails, in order to address issues raised by the public. Other alternatives include use of the National Forest System roads and trails that are currently designated. Standards and guidelines are in place to offset the effects of those activities on the roads and trails where the activities have been determined to be suitable.

Changes to the designated trail system are expected to occur as conditions change in the future. Any changes to the national forest trail system will be subject to site-specific project level analysis and public disclosure (see the Transportation Plan appendix in the management plan for criteria to evaluate the need for future changes). Numerous strategies can be employed in any alternative to help with user conflicts, such as visitor education, enforcement, prohibitions by forest order, conversion of roads to trails, or the relocation of routes (FEIS, Volume 1, Chapter 4, Effects on Recreation, Indirect Effects, Increasing Numbers of Recreationists, Protects Resources/Promotes Diversity of Users/Promotes Diversity of Uses/Provides Access, Roads; FEIS, Volume 1, Chapter 4, Effects on Recreation, Cumulative Effects; and comparable sections in the Effects on Transportation, Trails and Motorized Recreation section of Chapter 4, for information on potential user conflicts.)

PC #366: The Forest Service should have a standard in the plan that mountain bikes are only allowed on trails that have been designated as open for them in the Monument.

Response: The proclamation that created the Monument restricted the use of non-motorized mechanized vehicles (mountain bikes) to designated National Forest System roads and trails; no amount of mileage is specified for that designation. As of December 31, 2000, all roads that were designated for motorized vehicle use were also designated for non-motorized mechanized (mountain bike) use unless specifically closed by a forest order. All trails outside wilderness have been designated for mountain bike use unless specifically closed by a forest order. Changes to these designations are expected to occur as conditions change in the future (see the Transportation Plan, Part 4 in the Monument Plan for criteria to evaluate the need for future changes). The alternatives address mountain bike use according to the management direction described for each. Accordingly, Alternatives A, B, E, and F have the greatest range of opportunities. Alternative C includes mountain bike use on designated roads only (no trails). In contrast, Alternative D deemphasizes mountain bike access compared to Alternatives A, B, E, and F, in order to address issues raised by the public (FEIS, Volume 1, Chapter 4, Effects on Recreation, Indirect Effects, Provides Access, Roads/Trails; FEIS, Volume 1, Effects on Transportation System, Indirect Effects, Trails and Motorized Recreation, Provides Access, Roads/Trails).

PC #367: The Forest Service should maintain trails at different qualities and standards, and restore some historic trails.

Response: The Forest Service Manual (FSM 2353) specifies that each trail be managed to meet the Trail Management Objectives (TMOs) identified for it and to apply the trail national quality standards. Trails are to be managed in accordance with the Trails Management Handbook (FSH 2309.18).

PC #368: The Forest Service should maintain and improve trails in the Golden Trout Wilderness with the help of volunteers.

Response: While most of the Golden Trout Wilderness is not in the Monument, the Monument FEIS discusses that the public can provide assistance by volunteering for trail maintenance projects throughout the Monument (FEIS, Volume 1, Chapter 4, Effects on Recreation, Indirect Effects, Increasing Numbers of Recreationists, Protects Resources; FEIS, Volume 1, Chapter 4, Effects on Recreation, Cumulative Effects, Management Decisions/Facility, Road, and Trail Maintenance/Facility, Road, and Trail Construction/Reconstruction).

PC #433: The Forest Service should use the suggested language for the transportation system desired condition provided in the Citizens' Park Alternative:

- Safe and fully-maintained roads and trails that minimize adverse resource impacts will provide public and administrative access to National Forest System lands and facilities within the Monument.
- The road system will be minimized to protect the objects of interest and to reduce maintenance costs and resource impacts.
- Appropriate access will be provided to the objects of interest, consistent with their proper care, protection, and management.

Response: The desired conditions for the transportation system have been modified and now read:

> Roads are safe and fully-maintained to minimize adverse resource impacts, while providing public and administrative access to National Forest System lands and facilities within the Monument. The road system is properly sized to provide needed access to the objects of interest for their proper care, protection, and management, as well as visitor enjoyment of the Monument. Roads that are no longer needed have been decommissioned to restore natural drainage and vegetation or converted to other uses (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Transportation System; Desired Conditions).

The Comparison of Alternatives by Issues and Their Units of Measure table in Chapter 2 provides the miles of open roads by alternative (FEIS, Volume 1, Chapter 2, Comparison of Alternatives, Comparison of Alternatives by Issues). All alternatives include direction to reduce the number of Maintenance Level 1 and 2 roads over time.

PC #435: The Forest Service should prepare an EIS for the road system which:

- identifies, where possible, the long-term impacts and secondary effects of the action alternatives;
- indicates possible mitigating measures which may be used to avoid or reduce impacts; and
- provides a comprehensive, reliable document for review and evaluation.

Response: The Monument Plan is a programmatic level document that provides overall management direction for the Monument, including direction for managing the road system. It does not propose any site-specific projects, and does not attempt to estimate or quantify any future increase in visitation or tourism. An assessment of increased tourism and traffic impacts may be appropriate in the future in conjunction with a proposed site-specific project which may significantly increase tourism. In Chapter 4 of the FEIS, ongoing, indirect, and cumulative effects on the Transportation System are disclosed for all of the alternatives. In addition, protective measures are outlined for reducing further resource impacts. In Part 4 of the Monument Plan, the Transportation Plan provides general strategies and objectives that will be used to reduce effects on other resources from the road system. Effects related to air quality and greenhouse gases are disclosed in the Effects on Air Resources and Effects from Climate Change sections of Chapter 4 of the FEIS (FEIS, Volume 1, Chapter 4, Effects on Air Resources/Effects from Climate Change).

PC #437: The Forest Service should clearly define trail maintenance standards in the Monument.

Response: The Forest Service Manual (FSM 2353) specifies that each trail be managed to meet the Trail Management Objectives (TMOs) identified for it and to apply the trail national quality standards. Trails are to be managed in accordance with the Trails Management Handbook (FSH 2309.18). Whenever new construction, alteration, or reconstruction of buildings, recreation sites, constructed features, or trails occurs, accessibility for individuals with disabilities must be considered in the design, according to the established guidelines/standards (FSM 2333 and FSM 2353). Site-specific environmental analysis must be completed before a trail project, such as the Freeman Creek Trail construction project, can occur.

PC #553: The Forest Service should revise the standards and guidelines for the transportation system to protect the objects of interest.

Response: The standards and guidelines listed in Appendix A are designed to mitigate the effects of activities that are suitable for the various areas in the Monument. The objects of interest are protected through the standards and guidelines for human

use and the transportation system, as well as those included for other resource areas (FEIS, Volume 2, Appendix A, All Action Alternatives, Human Use/ Transportation System).

The proclamation that created the Monument restricted the use of non-motorized mechanized vehicles (mountain bikes) to designated National Forest System roads and trails. The alternatives analyzed include a range of management strategies that include the restriction of mountain bikes to designated National Forest System roads only (no trails) and reduced number of roads/trails, in order to address issues raised by the public. Other alternatives include the use of National Forest System roads and trails that are currently designated. Standards and guidelines are in place to offset the effects of suitable activities on the roads and trails.

PC #501: The Forest Service should analyze the effects of the transportation system on the forest's fiscal ability to maintain it, on users' access, and on systems outside the forest boundary.

Response: Chapter 3 of the FEIS discloses the current condition of the road system as a whole:

> ...due to increased use and the continued deferral of maintenance and capital improvements, the network is in a deteriorating condition. Some roads are becoming unusable through lack of maintenance, may be causing resource damage, or are no longer needed or desired for administrative or public access (FEIS; Volume 1; Chapter 3; Transportation System; Funding and Cost for Road Construction, Maintenance, and Decommissioning; Road Maintenance Terminology).

In Chapter 4 of the FEIS, the analysis of the alternatives discloses and explains the effects of the road system on future project implementation, such as restoration projects and fuels projects:

> The existing funding for road maintenance is insufficient to fully maintain the existing roads within the Monument. The lack of maintenance, particularly on the lower priority Maintenance Levels 1 and 2 roads, is causing deterioration of the roadways...As a result, few of the roads are being fully maintained to standard. Roads not properly receiving maintenance within the Monument would inevitably be affected, and access for both public and administrative use would continue to be degraded (FEIS, Volume 1, Chapter 4, Effects on the Transportation System, Assumptions and Methodology, Assumptions for All Alternatives).

The strategies for the transportation system include coordination with neighboring agencies and the Tule River Indian Tribe for transportation planning, management, and decommissioning (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Desired Conditions, Strategies, and Objectives; Transportation System; Strategies). The arterial and collector system of roads maintained for passenger vehicles is displayed on maps in the Map Packet for this FEIS with the symbol for Main Road.

Special Areas, including Special Interest Areas

PC #623: The Forest Service should add more specific objectives for the proposed Moses Wilderness addition, the Freeman Creek Botanical Area, and the Windy Gulch Geological Area, as proposed in the Citizens' Park Alternative.

Response: Strategies and objectives are included for each special area in Chapter 2 of the FEIS (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Special Areas, including Special Interest Areas). As management plans are written for these areas as part of the implementation of the Monument Plan, more specific objectives will be developed.

Botanical Areas

PC #404: The Forest Service should add Botanical Areas to the places needing focused management activity in the strategies for climate change.

Response: After establishment of a Botanical Area (a specific type of Special Interest Area), a management plan will be prepared in which focused management activities are proposed.

PC #405: The Forest Service should correct the text to state "a portion of" Slate Mountain is managed as a botanical area.

Response: The upper portion of Slate Mountain is managed as a botanical area (Monument Plan, Appendix H, Special Area Maps, Slate Mountain Botanical Area). The description of this area has been modified to reflect this (Monument Plan; Part 2—Strategy; Special Areas, including Special Interest Areas; Other Special Areas; Slate Mountain Botanical Area).

Roadless Areas

PC #396: The Forest Service should manage every roadless area in the Monument to "maintain or improve one or more of the roadless area characteristics as defined in 36 CFR 294.11.

Response: The Forest Service will manage every inventoried roadless area, or portion of in the Monument, to maintain or improve the roadless characteristics defined in 36 CFR 294.11.

PC #425: The Forest Service should list all Monument roadless areas in the Recreation Niche section under Wildlands, and define the criteria for the assignment of some roadless areas and not others.

Response: Existing roadless areas in the Monument are listed in the Alternative A description in Chapter 2 (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative A, Special Areas). The Wildlands recreation niche setting includes designated wilderness and a few other areas with limited access. This setting offers the best opportunities for solitude and those recreation experiences centered on self-reliance. No developed facilities and very, very steep slopes characterize these lands (FEIS, Volume 1, Chapter 3, Human Use, Recreation, Connection to Place, Recreation Niche).

Wilderness

PC #397: The Forest Service should include recommendations for wilderness designation and a wilderness evaluation.

Response: The proposal to recommend the mapped portion of the Moses Inventoried Roadless Area is being considered only in Alternative E and does not apply to the other action alternatives. In the other action alternatives, the Moses Inventoried Roadless Area would be managed in the backcountry land allocation (FEIS; Volume 1; Chapter 2; Alternatives Considered in Detail; Special Areas, including Special Interest Areas; Moses Wilderness).

As part of the decision to be made, the deciding official can choose elements from other alternatives to include in the selected alternative. Therefore it is possible that, if Alternative E is not selected in its entirety, this proposal could be added to another alternative that is selected. Other wilderness recommendations are deferred until forest plan revision.

PC #398: The Forest Service should recommend 15,110 acres of the Moses IRA as Wilderness, as agreed to in the Mediated Settlement Agreement (MSA).

Response: Recommendation of the Moses Roadless Area as wilderness is included in Alternative E. The responsible official may decide to select Alternative E or include that recommendation in another selected alternative.

PC #399: The Forest Service should address carrying capacities within Wilderness areas.

Response: Very little wilderness is included in the Monument. Consequently, appropriate wilderness analysis is deferred until forest plan revision.

Wild and Scenic Rivers

PC #400: The Forest Service should study potential Wild & Scenic Rivers in "...all planning for the use and development of water and related land resources..." as required by the National Wild & Scenic Rivers Act, and review and evaluate the North Fork, and both the North and South Forks of the Middle Fork of the Tule River, for purposes of inclusion in the Wild and Scenic River System.

PC #402: The Forest Service should screen streams and rivers for their potential Wild and Scenic eligibility, as required by the MSA.

Response (to PC #s 400 and 402): All eligibility determinations required by the Mediated Settlement Agreement (MSA) were completed, as indicated in the letter, dated October 19, 1995, signed by Acting Forest Supervisor, Del Pengilly. Suitability studies have not been completed on the stream

segments determined to be eligible, due to lack of funding, and are not required to be completed as part of the Monument Plan. However, once a stream has been determined to be eligible, it must be managed to protect the outstandingly remarkable values for which the stream was determined to be eligible for designation as a wild and scenic river. Suitability studies are time consuming, expensive, and the study results do not necessarily result in designation, even when the stream is found suitable. For example, the suitability study conducted for a one-mile segment of the South Fork of the Kern River, completed in 1991, has not yet been acted upon by Congress; in the meantime, however, the stream continues to be managed as though it were designated, in order to protect its outstandingly remarkable values, as are the other streams determined to be eligible.

PC #401: The Forest Service should discuss the National Wild and Scenic Rivers Act and existing Wild and Scenic River implementation plans, and give specific standard and guidelines for existing designated rivers.

PC #403: The Forest Service should provide a detailed assessment of Wild and Scenic rivers and correct the table of Suitable Land Uses and Activities.

Response (to PC #s 401 and 403): The designated wild and scenic rivers (Kings and Kern) have existing management plans which detail their management direction; no changes are proposed in the Monument FEIS.

Kings River Special Management Area

PC #424: The Forest Service should include the Kings River Special Management Area in the planning process for the Monument and phase out motorcycle trails.

Response: Current management direction for the part of the Kings River Special Management Area that lies within the Monument is included in the FEIS (FEIS, Volume 1, Chapter 2, Alternatives Considered in Detail, Alternative A, Management Direction, 1991 Kings River Wild and Scenic River and Special Management Area Implementation Plan [KRSMA]). Public Law 100-150, which established this area, provides that off-highway vehicle use on trails is allowed to the same extent and in the same location as was permitted before enactment. This statute takes precedence over the Clinton proclamation that created the Monument. Therefore, motorized vehicle use of those trails (3.8 miles) in the Monument will continue to be allowed in accordance with law.

Comments to the Draft EIS from Federal, State, and Local Agencies, Elected Officials, and Tribes

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Pacific Southwest Region
1111 Jackson Street, Suite 520
Oakland, California 94607

IN REPLY REFER TO:
ER# 10/0676

Electronically Filed

3 November 2010

Randy Moore, Regional Forester
Pacific Southwest Region
1323 Club Drive
Vallejo, CA 94592

Subject: Review of the Draft Environmental Impact Statement (EIS) for the *Draft EIS, USFS, CA,* Sequoia National Forest Plan Amendment, Giant Sequoia National Monument, Comprehensive Management Plan Implementation, CA

Dear Mr. Moore:

The Department of the Interior has received and reviewed ER10/0676: Review of the Draft Environmental Impact Statement (EIS) for the *Draft EIS, USFS, CA,* Sequoia National Forest Plan Amendment, Giant Sequoia National Monument, Comprehensive Management Plan Implementation, CA and has no comments to offer.

Thank you for the opportunity to review this project.

Sincerely,

Patricia Sanderson Port
Regional Environmental Officer

cc:
Director, OEPC
Staff Contact, OEPC

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SEQUOIA NF
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November 9, 2010

VIA Email

Tina Terrell
Forest Supervisor
Sequoia National Forest
1839 South Newcomb Street
Porterville, CA 93257

Via electronic and U.S. mail

RE: Comments Regarding the Giant Sequoia National Monument Management Plan and Draft Environmental Impact Statement, August 2010

Dear Ms. Terrell:

This letter contains the comments of the Attorney General of the State of California regarding the United States Forest Service's Draft Environmental Impact Statement ("DEIS") and Draft Management Plan ("Draft Plan") for the Giant Sequoia National Monument.

The Attorney General submits these comments pursuant to his independent authority under the California Constitution, common law, and statutes to represent the public interest. Along with other State agencies, the Attorney General has the power to protect the natural resources of the State from pollution, impairment, or destruction. *See* Cal. Const. Art. V, § 13; Cal. Gov. Code §§ 12511, 12600-12; *D'Amico* v. *Board of Medical Examiners*, 11 Cal.3d 1, 14-15 (1974). These comments are made on behalf of the Attorney General and not on behalf of any other California agency or office. This letter focuses on some major concepts and concerns presented by the Forest Service's DEIS and Draft Plan, and is not an exhaustive discussion of all issues.

Unfortunately, while this DEIS and Draft Plan are improved compared to the previous effort, they remain in violation of the terms of the 2000 Presidential Proclamation, the District Court's 2006 Order, the 1990 Mediated Settlement Agreement, and National Environmental Quality Act, and the National Forest Management Act. In particular, neither the DEIS or Draft Plan acknowledges the constraints that those documents and laws place on the management actions possible in the Monument. The Forest Service must comply with these requirements if the Monument is to be protected and managed in the manner expected by the public and directed by the law.

INTRODUCTION

Interest of the Attorney General's Office

Because the Giant Sequoias are among the most precious of resources to the people of California, the Attorney General's Office has been involved in Sequoia National Forest land management planning issues since we commented on the first comprehensive management plan proposed for the forest in 1986. One of our most pressing concerns over the last twenty years has been ensuring that the forest's Giant Sequoia Groves and the old forest ecosystem that sustains them are fully protected.

We actively participated in the extensive mediation process over the 1988 Land and Resource Management Plan (LRMP), and were a party to the 1990 Mediated Settlement Agreement (MSA) that rewrote LRMP. One of the most significant accomplishments of the MSA was to set specific protections for the Giant Sequoia Groves within the boundaries of the national forest, protections that set the stage for President Clinton's issuance of the Antiquities Act Proclamation that established the Giant Sequoia National Monument.[1/] We intervened to help defend the creation of the Monument when that the legality of the Proclamation was challenged.

In 2003, we filed extensive comments on the Forest Service's first proposed management plan for the Monument, and ultimately filed suit challenging that plan when our comments were not addressed. In October of 2006, the U.S. District Court found that the 2003 plan was adopted in violation of the National Environmental Policy Act (NEPA) and failed to comply with the requirements of the Proclamation or the MSA. As we requested, the court permanently enjoined the Forest Service from implementing the plan, and ordered that "until the Forest Service issues a new Management Plan, the Monument shall be managed consistent with the Monument Proclamation of April 15, 2000, and in accordance with direction from the 1988 Sequoia National Forest Land and Resource Management Plan, as amended by the 1990 Mediated Settlement Agreement and the 2001 Sierra Nevada Forest Plan Amendment." October 11, 2006 *Judgment in People of the State of California v. U.S. Dept. of Agriculture, et al.*, Case No. C05-00898 CRB, at p. 3.

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[1] The Monument Proclamation was preceded by the Giant Sequoia Proclamation issued by President George H.W. Bush in 1992 that protected the Giant Sequoia Groves as defined in the MSA and precluded commercial logging and mining in the groves.

The Forest Service has now released the revised management plan in the form of the Draft Plan and DEIS. Although generally an improvement over the 2003 plan, the Draft Plan and DEIS continue to suffer from some of the same problems the court found fatal to the prior effort. In particular, the documents allow discretionary tree removal in violation of the Proclamation, which requires specific determinations of need; lacks scientific guidance as required by the Proclamation; and relies almost exclusively on "treatment" for fuels and fire to restore the Monument ecosystem without consideration of other options, including those used by the National Park Service. Accordingly, the Attorney General's Office submits the following detailed comments in the interest of ensuring that the management standards adopted for the Monument comply with all applicable legal requirements.

APPLICABLE LEGAL STANDARDS

2000 Proclamation. The Presidential Proclamation that created the Monument serves as its fundamental legal charter. As stated in the Proclamation, the Monument has one dominant purpose: to protect the unique and irreplaceable natural, scientific, and historical objects of interest contained within its boundaries (which include the Giant Sequoia Groves and their ecosystems and surrounding landscape, rare and endemic plants, a diverse array of rare animal species, and paleontological, geological and cultural resources). 65 Fed. Reg. 24095-98 (DEIS, Vol. 2 at p. 549-55). Where other activities are mentioned in the Proclamation as appropriate for the Monument, they are made explicitly subordinate to protection of the Monument's objects, and any activity in the Monument must further that purpose. *Id.* at 24097-98. The Proclamation "set[s] apart and reserve[s]" the federal lands within the Monument's borders, distinct from the national forest land it is derived from and provides that management of the reserved land must implement the protective purpose. *Id.* Consistent with this protective purpose, the Proclamation places strong emphasis on the need for ecological restoration of Monument lands. *See, e.g.*, 65 Fed. Reg. 24095 ("[t]hese forests need restoration to counteract the effects of a century of fire suppression and logging"); *id.* (the Monument presents opportunities to study the consequences of different approaches to forest restoration); *id.* at 24097 (trees may be removed only for "ecological restoration and maintenance").

While some of the management directives are written in general terms,[2] the Proclamation specifically and explicitly prohibits commerical timber harvest. 65 Fed. Reg. 24097 ("[n]o portion of the monument shall be considered to be suited for timber production"). In addition, the Proclamation limits tree removal from the Monument only to situations where there is strong concrete evidence that removal is justified and effective alternatives are absent: "*Removal of trees, except for personal use fuel wood, from within the monument area may take place only if*

[2] For example, the management plan is directed to "encourage public and recreational access" and to include a transportation plan that "provides for visitor enjoyment and understanding about the scientific and historic objects in the monument," as long as the objects of interest are protected. 65 Fed. Reg. 24097-98.

clearly needed for ecological restoration and maintenance or public safety." 65 Fed. Reg. 24097.

1990 Mediated Settlement Agreement. In 1990, to resolve multiple administrative appeals of the proposed 1988 LRMP, the Forest Service agreed to implement specific provisions effectively rewriting the 1998 LRMP until it could be amended in a NEPA-compliant process. Further, pursuant to the terms of the MSA, the Forest Service agreed that the LRMP "shall be amended to reflect" the provisions of the MSA.[3] MSA at p. 154, Sec. Y.1. Nevertheless, the Forest Service did not undertake to amend the LRMP until the adoption of the Sierra Nevada Framework Plan in 2001 (2001 Framework). Although the 2001 Framework incorporated some of the MSA requirements, significant key provisions were not incorporated – including the protections for the Giant Sequoia Groves, such as grove-specific fuel reduction plans and restrictions on mechanical entry into groves, set forth on pages six through 28 of the MSA. (*See* Letter dated March 8, 2002 from Forest Supervisor to Mediated Settlement Agreement Partners.) In 2002, the Forest Service stated its intent to incorporate those requirements into the management plan for the Monument. *Id.* As the District Court found, the Forest Service's obligations under the MSA with respect to those provisions remain in effect. *California v. U.S. Forest Service*, 465 F.Supp.2d 942, 954 (N.D.Cal. 2006) (the term of the MSA "has not yet lapsed").

National Environmental Policy Act. NEPA is "a procedural statute intended to ensure environmentally informed decision-making by federal agencies." *Tillamook County v. U.S. Army Corps of Eng'rs*, 288 F.3d 1140, 1142 (9th Cir. 2002). NEPA requires that federal agencies prepare a detailed statement disclosing the environmental impacts of a proposed action and, of particular importance, presenting alternatives to the proposal. 42 U.S.C. § 4332(c). A DEIS must permit those who do not participate in its preparation to understand and consider meaningfully the reasoning, premises, and data relied upon, and to permit a reasoned choice among different courses of action. *Friends of the River v. FERC*, 720 F.2d 93, 120 (D.C. Cir. 1983).

Alternatives to the agency's preferred action must be analyzed in "comparative form" to "sharply define[e] the issue;" evaluation of alternatives is considered the "heart" of the EIS. *See* 40 C.F.R. § 1502.14.; *see also Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992). One of the main purposes of the alternatives section on an EIS is to make clear the resource conflicts that are inherent in the decision and how each alternative proposes to resolve those conflicts. 42 U.S.C. § 4332(2)(E); *See Bob Marshall Alliance*, 852 F.2d at 1219.

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[3] Although the parties recognized that NEPA compliance for any amendment may result a language that "does not conform to the [MSA] verbatim," the parties intended that the Forest Service complete amendments incorporating the MSA within a two year period. MSA at p. 154, Sec. Y.1.

National Forest Management Act. The Draft Plan has been prepared under the authority of NFMA, which prescribes how land and resource management planning is to be conducted on national forest system lands. The Forest Service has determined that the plan is to developed using the planning regulations and rules adopted by the agency in 1982 (1982 Rule). The 1982 Rule sets forth mandatory content for the Draft Plan, including "goal and objectives that include a description of the desired future condition of the forest" as well as "prescriptions and associated standards and guidelines for each management area" covered by the plan. 36 C.F.R. § 219.11 (1982). A "goal" is defined as a "statement that describes a desired condition to be achieved" and goals "form the principle basis from which objectives are to be developed." 36 C.F.R. § 219.3 (1982). Under the 1982 Rule, the goals, objectives, standards and guidelines developed for the forest-wide plan serve to provide integrated management direction to guide and constrain the Forest Service's discretion in the approval and implementation of specific management actions.

COMMENTS

In invalidating the 2003 plan, Judge Breyer noted that the Forest Service's decision to rely on an "overlay" of management direction from prior plans, including the 1998 LRMP and the 2001 Framework, created a plan that lacked coherent management direction and as a result did not effectively constrain the Forest Service's discretion. *California v. U.S. Forest Service*, 465 F.Supp.2d at 948-49. In response, the Forest Service has prepared the Draft Plan with more explanation of land allocations and the standards and guidelines that would apply in the Monument, and has prepared a plan document that is separate from the DEIS. While these changes in format and explanation are welcome and represent an improvement, the Draft Plan continues to suffer from the lack of clarity and specificity that plagued the prior plan.

Some of the problem can be solved by more careful explanation and clearer drafting. Comment III below provides some examples of places where the documents are particularly confusing and unclear. Even were these corrected, however, more fundamental problems remain. First and foremost, it appears that this plan has been prepared with the overarching goal of preserving as much management "flexibility" as possible. A desire for maximum discretion, however, cannot be reconciled with the Proclamation's clear and explicit mandate that the Monument is to be reserved for the purposes of protection and managed for ecological restoration, and that tree removal is restricted to very limited circumstances. The Monument is not like, and cannot be managed like, any other national forest in the system.

In addition, further revisions are required for the DEIS to comply with the requirements of NEPA and serve as a document that fully informs the public regarding federal agency action and that results in fully informed decision-making. The plan as drafted also fails to comply with NFMA planning regulations, the MSA, and the science review requirements of the Proclamation.

I. The Draft Plan and DEIS Fail to Fulfill the Proclamation's Fundamental Management Directives in Violation of the Proclamation and NEPA

It is without dispute that the Presidential Proclamation establishing the Giant Sequoia National Monument provides the dominant management direction applicable in the Monument, and the Draft Plan and DEIS properly recognize this. *See, e.g.,* DEIS, Vol. 1 at p. 42. In addition, the Forest Service acknowledges that the Proclamation requires the Monument to be managed with the primary focus on achieving ecological restoration and protecting the objects of interest. *Id.* While these mandates are acknowledged, the management direction as it is developed and applied in the Draft Plan does not articulate or support clear criteria for achieving restoration and protection. These comments focus on two areas where there is the largest disconnect between the Proclamation's requirements and the management prescriptions -- the emphasis on fire and fuels treatments, and the reliance on the management prescriptions in the 2001 and 2004 Framework plans.

A. Emphasis on Fire and Fuels Rather than Restoration

We understand and share the Forest Service's interest in reducing the risk of intense and large wildfires that are outside the historical fire regimes of the Monument. Fuels reduction work in the Monument. however, must comply with the management requirements in the Proclamation's restoration and protection mandate; it is not clear that the Draft Plan does this.

The Draft Plan and DEIS appear to assume, absent supporting scientific analysis, that ecological restoration is best accomplished by "treatment" to remove trees to reduce unwanted fire risk and create openings. In some cases, prescriptions for fire and fuels treatments are the only actions identified in the DEIS as available tools to achieve restoration. For example, in Table 25, titled "Strategies for Ecological Restoration by Alternative," three of the four strategies set forth are focused on accomplishing ecological restoration through the reduction of fuels and fuels treatment. Although the table contains a footnote that makes passing reference to "additional strategies for ecological restoration in other resource areas, such as hydrological resources," the focus here, as it is throughout the document, is on the notion that reducing fuels equates with ecological restoration. DEIS, Vol. 1 at p. 111; *see also, e.g.*, DEIS, Vol. 1 at p. 65 ("[e]cological restoration in the Monument is likely to be related to, or dependent upon, fuel treatments in the WUIs"), Vol 1. at p. 430 ("[e]cological restoration may be accomplished or partially accomplished through the reduction of fuels, and in some cases restoration or resiliency treatments may be equal to the fuels treatment"). Further, the Draft Plan and DEIS seem to simplistically suggest that ecological restoration as required by the Proclamation will be accomplished equally well under each one of the alternatives – whether the alternative limits fuels treatments to 4,600 acres or authorizes 56 times that much (257,400 acres) (DEIS, Vol. 1 at p. 16), and regardless of the upper limit on the size of tree allowed to be removed (compare

tables for fuels management direction for each alternative on pages 82-100; each alternative "complies with the Clinton proclamation").

This focus makes the Draft Plan read more like a fire and fuels management plan than an integrated plan to restore the complex Giant Sequoia ecosystem. As noted in the Forest Service's own Science Consistency Review (SCR) Report, "habitat provision for sensitive species can be at odds" with fuels reduction objectives and therefore restoration of the Monument requires "balanc[ing] the needs for fuels reduction, ecosystem restoration, and provision of wildlife habitat." SCR at p. II-3. Rather than addressing the complexities of balancing these competing goals, both the DEIS and the underlying Silviculture Report are improperly focused on the "single mission" of fuels reduction.

The DEIS recognizes, as it must, that "most of the reduction in fire severity is achieved" by "thinning smaller ladder-fuel trees . . . from 10 to 16 inches in diameter". . [i]f trees larger than [10 to 16 inches] are thinned, it is important to provide reasons other than for ladder-fuel treatment." DEIS, Vol. 1 at p. 184. However, these reasons are not identified in the alternatives that allow cutting of larger trees or that have no diameter limits at all.[4] Nor is there an explanation of how thinning greater than that necessary for fuels reduction would accomplish the restoration required by the Proclamation.[5] As noted by one of the reviewing scientists, by allowing wide latitude to thin trees up to 20 inches and beyond, the Draft Plan "gives forest managers discretion in applying treatments without clarifying what science they will use to make decisions on thinning intensity." SCR at p. II-2. While Forest Service managers may desire to have the most flexibility possible, in order for the plan to be legally adequate, it must contain constraints to ensure that management furthers the purpose of protecting and restoring the resources of the Monument as required by the Proclamation.

Most of the alternatives place over half of the Monument (58%) into wildland urban intermix (WUI) defense or threat zones, where more aggressive thinning is allowed even when it

[4] Although the Silviculture Report repeatedly emphases the desirability for "maximum flexibility," it provides little information about the scientific justification of such as approach, and virtually no discussion of the resource protection trade offs associated with aggressive thinning. The preferred alternative appears to impose diameter limits of 20 inches as a matter of course, however, exceptions are allowed without meaningful criteria to govern when that limit may be exceeded. According to the science review report, there is "little scientific support for removing [trees greater than 20 inches] in the interest of restoration or maintaining resiliency." SCR at p. II-47.

[5] In discussing Alternative C, the DEIS recognizes that even practices that limit tree cutting to 8 inches are effective for fire reduction, "In practice, cutting trees up to and including 8" in diameter has proven effective in fuels reduction in the [Sequoia-Kings Canyon National Park]". *Id.*, Vol. 1 at p. 90. Yet, the preferred alternative allows cutting trees up to 20" (and beyond under an undefined "exception") and Alternative F includes no diameter limits at all.

affects sensitive resources.[6] Further, most of the alternatives include a large Tribal Fuels Emphasis Treatment Area (TFETA) of 56,643 acres (including inventoried roadless areas) adjacent to the boundary of the Tule River Reservation where more aggressive thining is allowed.[7] Again, however, the Draft Plan lacks both explanation and scientific justification as to why these zones contain so much of the land area of the Monument, why the treatment prescriptions in them should take precedence over other land allocations designed to protect resources such as old forest emphasis areas, spotted owl home range core areas, or Southern Sierra Fisher conservation areas. *See* chart on p. 61 of volume 1 of the DEIS. To be legally valid, the Forest Service must demonstrate that these decisions are based on the determination – following the best available science – that these management directives are needed to accomplish ecological restoration of the Monument resources and to protect the objects of interest in the Monument. It is not sufficient for the DEIS to simply rely on whatever WUI zones were developed for the 2001 Framework.

The Forest Service's Draft Plan and DEIS provide little more than conclusory statements, without explanation or analysis, that each of the alternatives proposed is "in compliance"with the Proclamation's directive to achieve ecosystem restoration. *See, e.g.,* DEIS, Vol. 1, at p. 83 ("[r]estoring more natural conditions, such as fire return intervals, and protecting the objects of interest and communities fulfill the needs identified in the Clinton Proclamation"). Under NEPA, however, conclusory statements of compliance are improper. *Ecology Center, Inc. v. Austin,* 430 F.3d 1057, 1065 (9th Cir. 2005) (an EIS must do an analysis, not just "treat[] the prediction that treatment will benefit old-growth dependent species as a fact").

B. Reliance on 2001 and 2004 Framework Standards

The Record of Decision adopting the 2001 Framework clearly stated that it was not developed to address the requirements of the Proclamation and that any changes needed to comply with the Proclamation would be made when the Monument Plan itself was developed. SNFPA ROD, January 2001, p. 18 ("Lands within the [Giant Sequoia National Monument] are

[6] The WUI zones are defined as they were in the 2001 Framework, with the defense zone being "generally" 1/4 mile, and the threat zone being one and 1/4 mile from "structures and communities intermixed with national forest lands." DEIS, Vol. 1 at p. 458. As the DEIS acknowledges, however, these distances are general guidelines. As depicted on the maps accompanying the DEIS, the WUIs appear to extend in some cases significantly beyond a mile and 1/2 from communities, according to the scales provided on those maps. (*See* Map C with a 5 mile scale line.) There does not appear to be a detailed explanation or any scientific justification as to how these zones were delineated, other than that they are based on the 2001 Framework. There is no discussion of how setting these WUI zones accomplishes ecological restoration as required by the Proclamation.

[7] Unlike the WUIs, the TFETA is set from the geographical boundary of the reservation lands, rather from any communities or structures on those lands.

subject to the decisions made through this ROD. However, the monument management plan . . . may modify this direction to protect the values for which the monument was created.") The Forest Service, therefore, cannot rely on management prescriptions set out in the 2001 Framework without further analysis that justifies and supports why those management directives meet the requirements of the Proclamation. This is equally true for the managmeent prescriptions set forth in the 2004 Framework, which expressly did not apply to Monument lands. SNFPA ROD, January 2004, p. 15.[8]

Despite the express limitations of the 2001 and 2004 decisions as applied to the Monument, the standards and guidelines adopted by those prior plans are used repeatedly to supply the standards and guidelines to be applied in the Monument, without any explanation or analysis as to why these prescriptions are appropriate for the Monument, or how they will serve to protect the objects of interest and accomplish ecosystem restoration as required by the Proclamation. (*See* tables beginning on page 120 of volume 2 of DEIS which include numerous references to 2004 and 2001 Framework standards and guidelines.) Reliance on the 2004 Framework standards and guidelines – including those for riparian conservation objectives, soil conservation, canopy cover, great gray owl and willow flycatcher protections -- is particularly problematic for the Monument lands, in light of the directives of the Proclamation.[9] The 2004 Framework was adopted to remove some of the more restrictive and protective provisions of the 2001 Framework, in order to give the Forest Service more management flexibility. Specifically, changes to the standards and guidelines affecting aquatic, riparian and meadow ecosystems were adopted in 2004 for the express purpose "to allow more economic benefits to be retained" from grazing allotments, and the changes to fire and fuels prescriptions were adopted to "[i]ncrease the economic value of fuel treatment byproducts." (SNFPA, Final Supplemental Environmental Impact Statement, Vol. 1 at pp. 3-4.) These justifications are impossible to reconcile with the protective purposes of the Proclamation.

Use of the 2001 and 2004 Framework standards without further analysis would relegate management of the Monument to the same status as any other multi-use national forest in the Sierra Nevada. This approach, however, contravenes the express direction in the Proclamation that sets Monument land aside for preservation and protection.

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[8] In addition, although the Draft Plan cites the 2007 Management Indicator Species Amendment as a source of current management direction in the Monument, the legal basis for that determination is not explained.

[9] The legality of the 2004 Framework has been challenged by the State of California and others. Because the case has not yet been resolved, any reliance on its standards and guidelines is legally questionable. The U.S. District Court has ruled that the 2004 Framework Plan was adopted in violation of NEPA; appeal of that decision is pending in the Ninth Circuit Court of Appeals. *People of the State of California v. U.S. Dept. of Agriculture*, 2008 WL 3863479 (E.D.Cal. August 19, 2008).

II. The DEIS and Draft Plan Fail to Establish Criteria for Tree Removal that Comply with the Proclamation

A related defect is the failure of the Draft Plan and DEIS to articulate a clear standard for tree removal in the Monument. As noted, the Proclamation contains a very specific restriction on tree removal, limiting tree cutting only when "clearly needed for ecological restoration and maintenance or public safety." 65 Fed.Reg. 24097. The DEIS and Draft Plan, however, lack a generalized rubric, decision tree, or any other analytical or scientific methodology or meaningful criteria to determine whether tree removal satisfies the "clearly needed" standard. Instead, the plan assumes that any tree cutting proposal that is labeled a "treatment" is de facto and by fiat "clearly needed for ecological restoration." While the Forest Service may desire to retain maximum discretion to make tree removal decisions on a case-by-case basis, the specificity of the Proclamation's directive requires much more guidance.

In place of any binding criteria to govern when the Proclamation standard is satisfied, the Draft Plan offers only a "strategy" that includes six very general criteria, relating to whether keeping the tree on site would "deplete moisture," "adversely affect growth . . .[or] diversity," "cause unacceptable fuels accumulation," "provide a vector . . . beyond endemic levels," or "create a public safety hazard." DEIS, Vol. 1 at p. 104. What would satisfy any of these conditions, however – such as what would be considered "unacceptable fuels accumulation"[10] or "a public safety hazard" -- is left undefined and thus up to the discretion of the individual Forest Service personnel. The "enforceable" standard and guideline designed to implement the strategy calls only for an in field "evaluation" based on some unstated criteria.[11] *Id.*

In addition, although the Forest Service is prohibited from making planning decisions in the Monument based on any commerical harvest considerations, the cutting of large trees or removing biomass to fund other restoration seems to improperly inform the management

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[10] In places, the DEIS grafts this "criterion" onto the clearly needed language to state that tree removal is allowed "when clearly needed for ecological restoration and public safety and when unacceptable fuel accumumlations occur." *See, e.g.,* DEIS, Vol. 1 at p. 460 (emphasis added). This standard does not conform to the Proclamation.

[11] The narrative of the DEIS contains the following language relating to field evaluation of trees: "In order to establish the clear need for removing trees, as set out by the Clinton proclamation, each individual forest stand or forest ecosystem should be evaluated in the field considering the major objectives for the project. For all projects within the Monument, there will be a determination to establish if the treatment is "clearly needed for ecological restoration and maintenance or public safety." DEIS, Vol. 1 at p. 438. This "guidance" is so general as to be meaningless.

direction at various points in the plan. For example, the chart explaining treatment rationale states that alternatives A, B, C, E, and F, "allow and promote the use of unwanted forest carbon" and that "removal of [unwanted forest carbon] would reduce associated costs in vegetation and fuels management either as cost offsets or reduced amount of subsequent work needed." DEIS, Vol. 1 at p. 427-28; see also Silviculture Report at p. 27-28. Curiously, despite the clear intent of the Proclamation that the Monument management steer completely clear of concepts such as flow of sustained yield of wood products that inform ordinary multiple-use forest planning, the Silviculture Report prepared for the Draft Plan discusses management for "timber partnerships," "value of sale," "wood product offsets," and the use of "wood products to support" treatment operations. Silviculture Specialists Report at pp. 53-54. This type of analysis, coupled with management guidance that essentially equates all "treatment" with "restoration," gives the public very little assurance that the Monument will be protected as a unique "reservation," separate and apart from how every other forest in the system is managed.

III. The Draft Plan and DEIS Contain Unclear Management Standards in Violation of NEPA

The Forest Service's most basic NEPA obligation is to ensure that it prepares a plan that is intelligible to the public. While the format of the Draft Plan is an improvement over the 2003 plan, the management directives in the Draft Plan continue to contain some confusing contradictions and inconsistencies that undermine its clarity and value.

For example, in the key chart setting forth the management priorities for standards and guidelines in overlapping land allocations (called "trumping order" in the Draft Plan), the Forest Service refers to a version of the management standards contained as an appendix to the 2001 Framework decision. Draft Plan at p. 39 (Figure 2). Yet, in the DEIS and Draft Plan, the standards and guidelines are not always based on the 2001 Framework, leaving the reader guessing as to the management direction for any particular land allocation. In addition, it is not clear whether this "trumping order" from the 2001 Framework is or is not being applied in the new Draft Plan. If it is intended to apply, then additional analysis as to how it meets the requirements of the Proclamation would be required, for the reasons stated in Comment I above. If it is not intended to apply, then the Draft Plan does not give guidance as to what kind of a "trumping order" would stand in its place.

In addition, the Draft Plan contains separate tables of "Strategies" and "Standards and Guidelines," directed primarily at resource type (e.g. vegetation, hydrology, fire and fuels, etc.). Draft Plan at p. 57-70 and 118-47. These tables, however, are neither linked together nor linked to any of the land allocations (which are described as either static, overlapping, or dynamic) or any of the other special or defined management areas. And, the standards and guidelines themselves are not numbered or associated with management actions or areas. As a result, it continues to be difficult, if not impossible, to identify what standards apply to any given geographic area of the Monument.

Appendix A to the DEIS (Volume 2) purports to contain a comprehensive list of all the standards and guidelines that would apply under each alternative. Again, there is nothing linking these standards to specific land allocations or management areas. It is unclear whether the various tables of standards and guidelines are additive for each alternative, or whether the reader must piece together the standards from the several tables to find the total list of standards for a given alternative. Also, it is unclear why prior management direction that is clearly prohibited by the Proclamation (relating to timber harvest, removal of very large trees, and creation of very large openings, for example) remains in the standard and guideline tables at all. This serves no purpose except to create confusion. Finally, the separate Draft Plan document does not appear to be a "stand alone" plan, but instead, continues to rely on other planning documents, including the DEIS, further adding to the lack of clarity.

IV. Failure to Convene a Scientific Advisory Board Violates the Proclamation

The Proclamation requires the Forest Service to "appoint a Scientific Advisory Board to provide scientific guidance during the development of the initial management plan" 65 Fed.Reg. 24098 (DEIS, Vol.2 at p. 556). The membership of the board is expressly required to be representative of the scientific disciplines necessary to accomplish protection of the Monument's scientific and historic objects. Because the Proclamation mandates that the Scientific Advisory Board provide advice "during" development of the initial plan, and because there is still no valid Monument plan, the requirement for a board remains in effect. Advisories created in connection with the invalid 2003 plan do not fulfill the requirement that a science board provide guidance during development of an initial plan. The Proclamation cannot reasonably be read to mandate advice from scientists only after issues for which that advice is relevant have been decided. Therefore, failure of the Forest Service to convene a Science Advisory Board for the Draft Plan violates the requirements of the Proclamation.

Even if use of the previous seven-year-old advisories were determined to be adequate compliance with the Proclamation for the new Draft Plan, the Forest Service has not identified which ones it relied upon in developing this plan, and how it relied upon them or how they informed the preparation of the plan. DEIS, Vol. 1 at p.70 (stating only that "a number of the existing scientific advisories are still relevant"). Although the Forest Service did conduct a Science Consistency Review, the panel had a limited task to review certain aspects of the science after the plan was already prepared, not during its preparation. Further, the SCR was instructed to review only one alternative (Alternative F) that ultimately was not selected as the preferred alternative. This contravenes the directive of the Proclamation to base the plan on the best available science.

V. The DEIS Fails to Conduct a Through Environmental Analysis of the Proposed Plan's Effects Under NEPA

The DEIS as drafted fails to comply with several other of NEPA's mandates for evaluating environmental impacts. First and foremost, the effects analysis declares that this plan

has no direct impacts because it does not authorize ground distirbing activity, and therefore no direct effects are identified or analyzed. This is a misstatement of the requirements of the law. As the courts have repeatedly determined, programmatic plans subject to NEPA make large scale decisions with effects that must be analyzed at the programmatic scale. *See, e.g., City of Tenakee Springs v. Clough*, 915 F.2d 1308, 1312 (9th Cir. 1990); *Ilio'ulaokalani Coalition v. Rumsfeld*, 464 F.3d 1083. 1096-97 (9th Cir. 2006); *Laub v. U.S. Dept. of Interior*, 342 F.3d 1080, 1091 (9th Cir. 2003).

Second, the DEIS, with its focus on fuels treatments, contains scant analysis of the effects of the trade-offs between the competing management goals of fuels reduction and habitat protection. In fact, the trade offs are barely recognized in the document. This statement in the Silviculture Report is typical, but illucidating: "Alternative F treats stands . . . more than any other alternative. While it will have the most favorable impact in the long run, it may have some immediate short term impacts on certain species that require dense canopy." Silviculture Report at p. 34. This statement is repeated on page 433 of the DEIS (volume 1) with no additional analysis. There can be no dispute that managing the Monument is a complex endeavor that involves striking a balance between competing goals. For example, fire is needed for restoration and regeneration of Sequoia, but mechanical treatment may be preferred to reduce fuels when the risk of uncontrolled fire is too high. And, fire treatments can reduce old forest habitat. How are those competing needs balanced? What are the tradeoffs? What will be the magnitude of the short term habitat losses? What are the impacts of the different management options? The Draft Plan and DEIS do not address any of these questions in a meaningful way. Rather, the effects section mostly consists of description of the various alternatives coupled with conclusory statements that each of the alternatives complies with the Proclamation.

The science consistency review comments highlight the fact that the DEIS gives short shrift to the importance of protecting wildlife habitat in achieving ecological restoration. The reviewing scientists documented numerous failures of the analysis to identify and apply the most current wildlife biology and fire science, and to adequately support assertions of impacts with adequate scientific justification. SCR, § II. Further, the DEIS contains only minimal analysis of impacts to wildlife species other than the Pacific fisher and American marten and fails to include any analysis of the potential effects of the alternative management schemes on habitat fragmentation – a key component of wildlife viability. SCR at p. II-55. The Forest Service's response to this scientific criticism fails to acknowledge the commenter's key point – that the DEIS does not recognize the threat posed by habitat fragmentation at the larger programmatic scale.[12]

[12] The response to other scientific comments is similarly inadequate. For example, in response to the comments that the DEIS fails to indentify criteria and science used to make tree thinning decisions especially for larger trees (SCR at pp. II-3 and II-4), the Forest Service's "Responses to Science Review Pannel Comments" consists of narratives that have been cut and pasted from the pre-existing Silviculture Report (*see, e.g.*, pp. 31-35). These answers offer no additional

(continued...)

The DEIS also contains little or no discussion of past management of the Monument, including past timber harvesting that resulted in loss of large trees, degraded ecosystems and even-age stands. Without this information, there is inadequate environmental baseline information and it is impossible to put the current management proposals into context. Further, the cumulative impacts analysis in the DEIS is also deficient because it fails to analyze the impacts of this proposal in the context of the significant changes in the forest that have occurred over the last 50 years. As noted by a scientist reviewer, an appropriate cumulative effects analysis would "acknowledge how tree diameter frequency distributions had changed over the last 50-100 years . . . and how each of the alternatives would affect the recovery of the large tree component." SCR at pp. II-52 and II-53. A cumulative analysis that looks only at "existing conditions," in the manner of this DEIS fails to fully evaluate the proposed action with adequate consideration of the aggregate effects of past degradation, in violation of NEPA.

Finally, there is little meaningful discussion of climate change impacts and how those are likely to affect management of the Monument in upcoming decades, a critical discussion for any programmatic forest plan. NEPA compliance requires a meaningful evaluation of the carbon accounting of the various alternatives, an assessment of the vulnerability of ecosystems and resources (including sensitive species) to a changing climate, an identification of adaptation strategies, and an analysis of how climate considerations can be incorporated into programmatic management direction. *See, e.g., Natural Resources Defense Council v. Kempthorne,* 506 F.Supp.2d 322, 368-70 (E.D.Cal. 2007).

VI. The DEIS Fails to Adequately Analyze A Reasonable Range of Alternatives Under NEPA

The analysis of alternatives suffers from several key deficiences. Purportedly, the DEIS develops five action alternatives. In reality, however, there is very little meaningful difference. Desired conditions and objectives, in general, do not vary by alternative (DEIS, Vol. 1, p. 102), and the land allocations are largely the same in nearly all alternatives (DEIS, Vol. 1 p. 16, Table 1). Further, as the DEIS states, "Most of the standards and guidelines are the same for all of the action alternatives." DEIS, Vol. 2 p. 169. For the alternatives that do contain some land allocation variations, two of them (Alternative C and Alternative E) are constructed with features that directly conflict with the Proclamation so that they could not reasonably or legally be chosen as the preferred alternative. There is only one action alternative other than the preferred action that could legally be implemented (Alternative F), and it differs very little from the preferred action (Alternative B).

(...continued)
information beyond what was in the Silviculture Report, which presumably had already been reviewed and found lacking by the SCR.

Alternative C, in particular, purports to propose a management scheme similar to how the National Park Service manages Giant Sequoia National Park, a concept that has historically been favored by the environmental community. The management of the national park is widely recognized as focusing on restoration and as having created a resilient ecosystem, yet the management principles used there are not analyzed or desribed in detail in the DEIS. As a reviewing scientist notes, the DEIS fails to provide the most basic information about how the Park's management principles have fared in accomplishing ecological restoration, protection of species, or prevention of catastrophic fire – i.e., the goals for Monument management. *See* SCR at p. II-50. Instead, Alternative C includes recreation provisions that directly conflict with the Proclamation, as well as a fuels treatment area (the TFETA) that allows treatments that are not currently included in management of the National Park. Further, Alternative C fails to include any special management areas that would work to protect aquatic ecosystems, sensitive species, or other objects of interest in the Monument. This alternative does not appear to have been seriously developed as a viable option for meeting the restoration goals of the Proclamation.

Similarly, Alternative E purports to implement the grove protections of the MSA. As developed, however, it could never be given serious consideration because it is laden with outdated provisions that clearly conflict with the superceding Proclamation, including authorizing removal of up to 36 inch Sequoias and authorizing logging in groves. DEIS, Vol. 1 at p. 464. These unacceptable and illegal provisions mask the utility of adopting other provisions such as fuel load reduction plans and other grove protections that are still relevant. Further, none of the protected activity centers, home range core areas, riparian conservation areas, or other allocations designed to protect resources are included, even though they do not conflict with the MSA.

Notably, the DEIS does not contain an alternative that strikes a different balance with respect to the tradeoffs between fuels treatment and habitat or other resource protections, as discussed above. One of the primary purposes of NEPA is to sharply define and highlight the differences between alternative decisions so that the ultimate decision can be fully informed. The DEIS fails in this regard. [13]

Finally, the analysis in the DEIS appears to be, at least in part, improperly informed by the consideration of "cost offsets" to be generated by the "use of forest carbon." Even assuming that these types of cost considerations are valid under the Proclamation, the DEIS fails to comply with NEPA because the Forest Service did not look at any alternatives to selling "biomass" to raise the funds needed in order to "treat" the desired number of acres, such as obtaining a greater

[13] As a related point, the Silviculture Report, which is presumably the basis for the Fire and Fuels analysis, does not read like an objective analysis of the differences between the alternatives but instead makes conclusory statements, with little or no citation to scientific support, that Alternative F is the best alternative because it allows maximum flexibility.

appropriation or transferring funds from other sources. This is actually the NEPA deficiency that the court found present in the 2004 Framework SFEIS. The alternatives that the Forest Service failed to evaluate in the 2004 Framework plan should also have been evaluated in this DEIS. *People of the State of California v. U.S.Department of Agriculture*, 2008 WL 3863479 at *28 (E.D.Cal. Aug. 19, 2008).

VII. The Draft Plan Fails to Comply with the NFMA 1982 Planning Rule

The DEIS claims that underpinnings of the Monument plan -- the "desired conditions" for the Monument -- are "aspirational" and therefore expressly disavows that they represent "commitments" or "final decisions." *See, e.g.,* DEIS, Vol. 1, p. 16, 58. This is at odds, however, with the requirements of the 1982 Planning Rule. As noted above, under the 1982 Rule, it is mandatory that a plan contain "goals," which include a description of "desired conditions" that are required "to be achieved." 36 C.F.R. § 219.3 (1982). While the Forest Service may desire the flexibility that would flow from implementing an "aspirational" plan, its own regulations require that it make final decisions regarding goals to be achieved in the Monument lands, and that it adopt and implement specific management directives to accomplish those goals. As drafted the DEIS and Draft Plan do not do this.

VIII. The Forest Service Has Not Complied with the MSA

By its own terms, the 1990 Mediated Settlement Agreement expires when a new management plan is in place for the Sequoia National Forest. Under the MSA, however, the Forest Service is contractually bound (subject to NEPA) to adopt the specific provisions of the MSA designed to protect the Giant Sequoia Groves, where those provisions do not conflict with the 2000 Proclamation.

As did the 2003 plan, this Draft Plan and DEIS continue to minimize the legal significance of the MSA, referring to its legally binding provisions as mere "recommendations."[14] Further, both documents seems to be based on a misunderstanding of the Forest Service's obligation under the MSA in that they propose to either adopt all of the MSA (ostensibly Alternative E) -- even where it conflicts with the Proclamation -- or to adopt none of the MSA (the preferred alternative). As found by the district court, however, the Forest Service has a legal obligation to conduct a good-faith analysis of the environmental impacts of the specific provisions of the MSA that are still in force and to incorporate those into the Monument

[14] The Forest Service appears to have improperly made a unilateral determination that full implementation of the grove inventory required by the MSA is "prohibitive in terms of both time and money." DEIS, Vol. 1 at p. 76.

Plan where they do not conflict with the Proclamation.[15] *California v. U.S. Forest Service*, 465 F.Supp.2d at 954.

CONCLUSION

Because of the deficiencies and problems discussed above, we request that the Forest Service withdraw this DEIS and Draft Plan and prepare planning documents for the Giant Sequoia National Monument that comply with the applicable legal requirements.

Sincerely,

/s/ Sally Magnani

SALLY MAGNANI
Supervising Deputy Attorney General
Environment Section

For EDMUND G. BROWN JR.
Attorney General

[15] Some of the still relevant provisions are identified on page 459 of volume 1 of the DEIS. In addition, the MSA required that the Forest Service recommend the Moses Roadless Area as wilderness.

GSD 65

Congress of the United States

House of Representatives

Washington, DC 20515

OCT 0 4 2010

SEQUOIA NATIONAL FOREST
SUPERVISOR'S OFFICE

September 30, 2010

Tina Terrell, Forest Supervisor
Sequoia National Forest
1839 South Newcomb Street
Porterville, CA 93257-9353

SEQUOIA NF
FS
EM
FMO
LMP
PAO
REC
ENG

Cc: The Honorable Tom Tidwell, Chief
Randy Moore, Regional Forester

Dear Tina Terrell:

We are writing to express our concerns about the Draft Management Plan for the Giant Sequoia National Monument. This is a monument of national significance deserving of the highest protections from logging and climate change. We have concerns that several of the provisions proposed in the Draft Management Plan would not provide the necessary protections and urge you to enact a plan that will protect these national treasures for future generations.

As members of the House of Representatives, we represent hundreds of thousands of people across the country who treasure the Giant Sequoias as an iconic symbol of a uniquely American landscape. The Giant Sequoia are among the largest trees in the world and only 68 groves of these trees exist. In 2000, President Bill Clinton took action to protect 33 of these groves by creating the Giant Sequoia National Monument. We are pleased that the Forest Service has finally announced a Draft Management Plan for the Giant Sequoia National Monument however we have serious concerns that the plan does not provide this jewel of the national forest system the protections it deserves.

The proposed plan is incompatible with preserving the long-term health of the Giant Sequoia Monument's ecosystem. The ecosystem is already under threat from climate change and the most current version of the plan includes several management options, some of which could be devastating to the natural environment such as increasing logging beyond what was allowed in the forest prior to its designation as a National Monument.

We should not increase stress on this one-of-a-kind national treasure. The Giant Sequoia National Monument should be managed the same as the adjacent Sequoia National Park where logging of these iconic trees is prohibited. Anything less will not provide the standards needed to ensure the long term survival of the Giant Sequoia ecosystem.

Again we urge you to enact a plan that will ensure the protection of these historic forests by prohibiting logging in the Giant Sequoia National Monument.

Sincerely,

MEMBER OF CONGRESS

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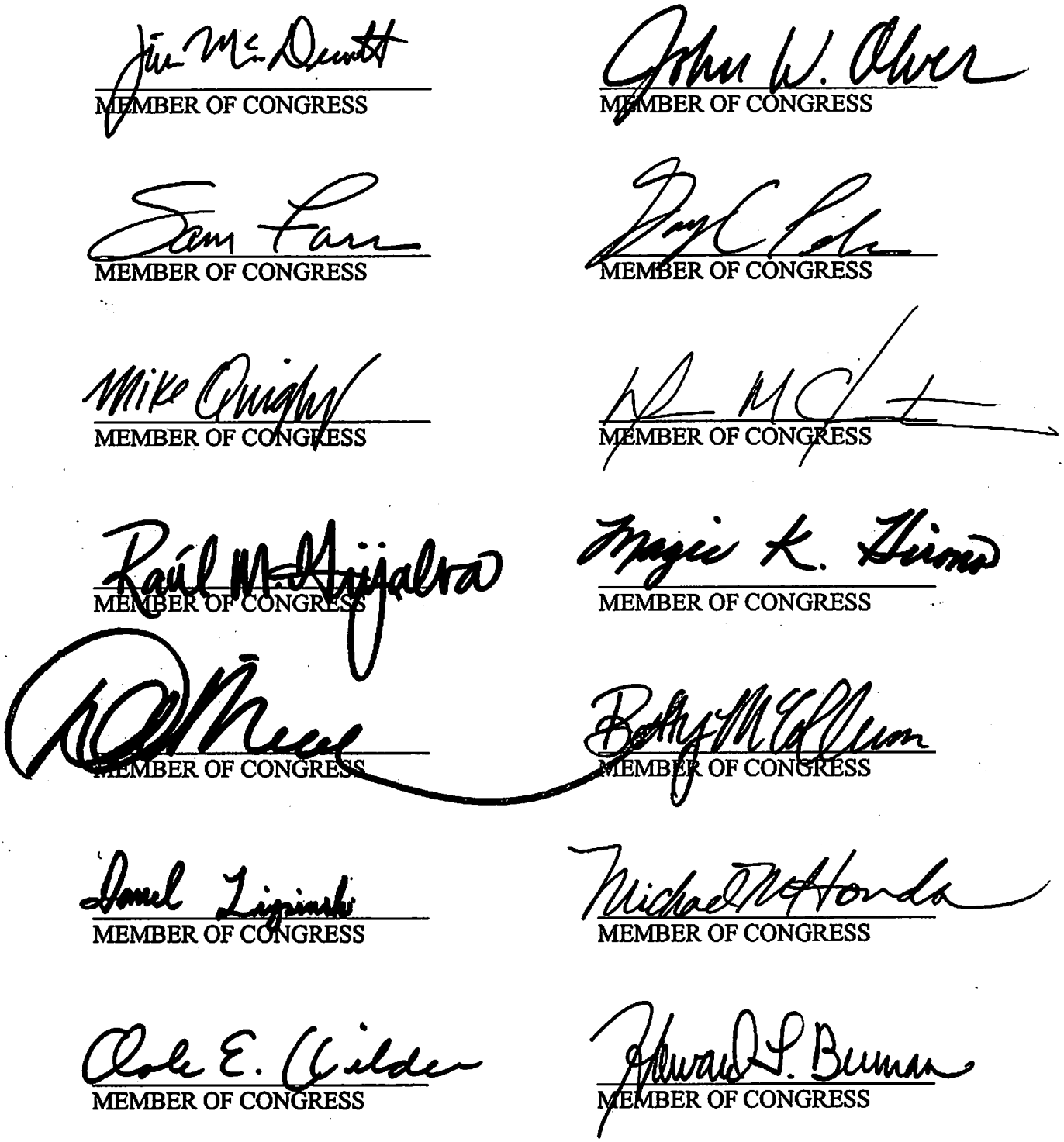

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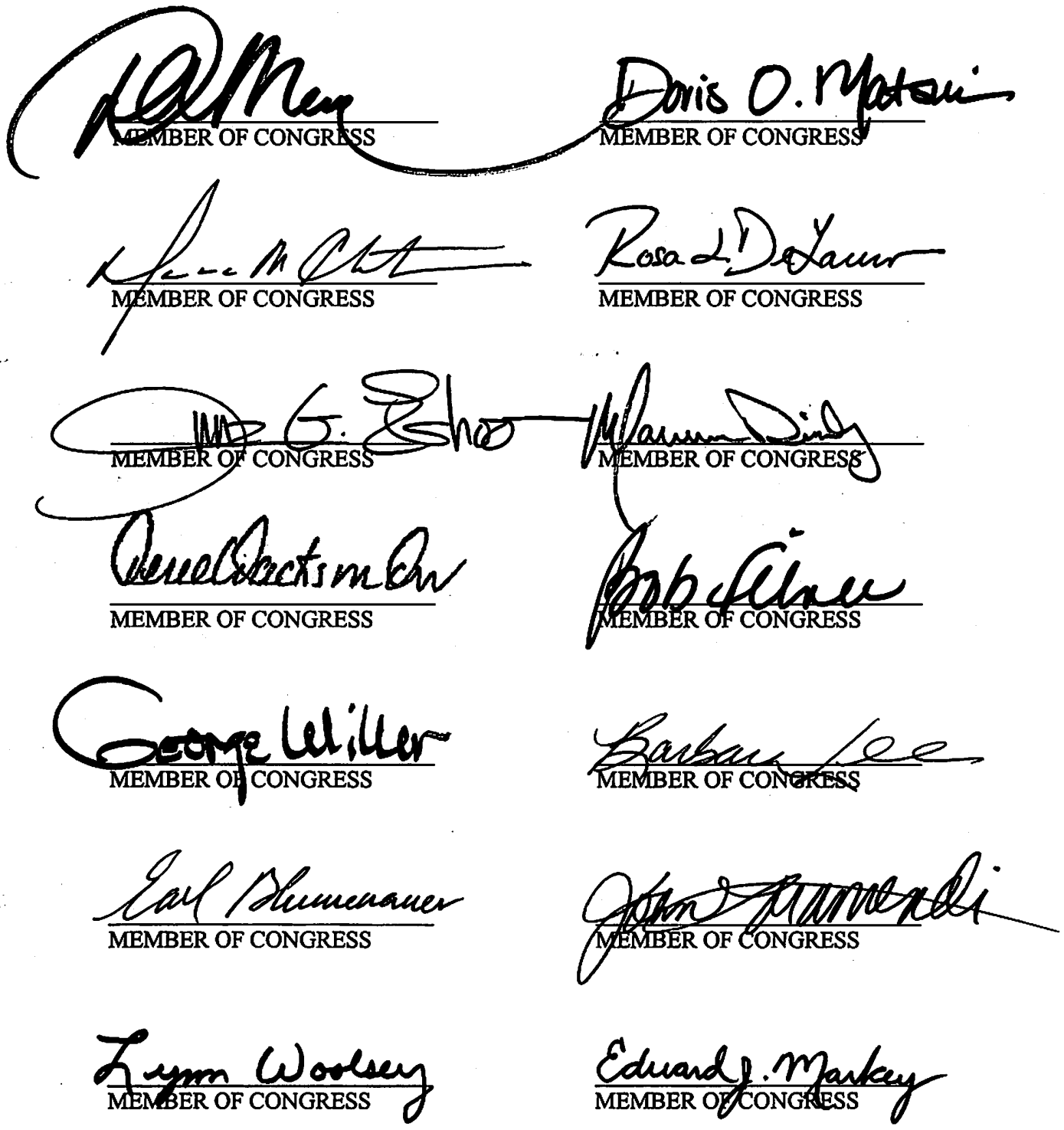
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United States Department of the Interior

NATIONAL PARK SERVICE
Sequoia and Kings Canyon National Parks
47050 Generals Highway
Three Rivers, California 93271-9651
(559) 565-3341

IN REPLY REFER TO:

GSO 50

A3815

November 2, 2010

Anne Thomas, Team Leader
Giant Sequoia National Monument
1839 South Newcomb Street
Porterville, CA 93257

Dear Ms. Thomas,

Sequoia and Kings Canyon National Parks supports and appreciates the efforts put forward by the Sequoia National Forest and the Giant Sequoia National Monument in the Draft EIS planning effort.

Of particular note is this plan's recommendations to coordinate efforts and information; as land management agencies that share boundaries, it benefits both of our agencies and the lands that we manage to grow together in developing science information and management activities using a common science strategic frame work as outlined in the newly developed "A Strategic Framework for Science in Support of Management in the Southern Sierra Nevada Ecoregion".

We look forward to the continued collaborative approach and open communication we have forged in managing prescribed burn plans for projects that cross our administrative boundaries and coordination of fire protection activities to the benefit of the resources we manage.

We also see additional opportunities to collaborate supported in this plan, particularly in the realms of visitor recreation, invasive plants and cultural resources. Working together to maintain access for visitors to park and forest lands via interconnected roads and trail systems, which allows our visitors to seamlessly travel between agency lands. Invasive non-native plants do not recognize boundaries and this plan recognizes this. Given our shared prehistory and history, as the Monument develops the called for cultural resources management plan, we may want to consider pursuing a joint "Cultural Resources Overview".

We look forward to continued coordination with the Giant Sequoia National Monument in management of federal lands for the benefit of park and forest, resources and visitors.

Sincerely,

Colleen C. Bard

Karen F. Taylor-Goodrich
Superintendent

GSO 67

United States Department of the Interior

NATIONAL PARK SERVICE
Sequoia and Kings Canyon National Parks
47050 Generals Highway
Three Rivers, California 93271-9651
(559) 565-3341

IN REPLY REFER TO:

A3815

December 1, 2010

Anne Thomas, Team Leader
Giant Sequoia National Monument
1839 South Newcomb Street
Porterville, CA 93257

Dear Ms. Thomas:

The extension of the comment period for the Draft Environmental Impact Statement and Draft Management Plan for the Giant Sequoia National Monument allows us to provide the following detailed additional comments by park subject matter experts on this draft planning effort.

Athena Demetry, Restoration and Invasive Plant Ecologist:

(1) On p. 64 of the Affected Environment, it states that 31 invasive non-native species are known to occur within or directly adjacent to Sequoia National Forest and 17 are known to occur within the Monument. This list is likely inaccurate and under-represents the number of invasive plant species on both the Forest and the Monument. Note that the "Strategies for Wildlife and Plant Habitat" has an objective to "within 3 years, complete a baseline inventory for invasive species within the monument." I strongly support this objective and think it is necessary to accurately assess the invasive plant situation on the Monument.

(2) The 17 invasive plant species listed in Table 12 does not include Holcus lanatus (velvet grass), an invasive plant species known to occur on Forest land in the Kern Canyon south of the park boundary (not Monument land in that location). This species is a high priority for Sequoia and Kings Canyon National Parks and Sequoia National Forest to cooperate on. It is possible that velvet grass occurs within the Monument as well but has not been inventoried or detected yet. In general, grasses (particularly perennial grasses) may be under-represented in their non-native species list and High Monument Priority list.

(3) Table 12 lists 5 species as High Monument Priority, one of which is yellow star thistle. We agree and applaud a focus on yellow star thistle, a species which is not yet established in Sequoia and Kings Canyon National Parks. A key step in keeping Sequoia and Kings Canyon National Parks free of yellow star thistle is to support our neighbors in keeping the park buffer free of yellow star thistle.

(4) I found the discussion of effects of invasive non-native species in the Environmental Consequences chapter to be very thorough and well-done.

(5) The EIS notes that Alternative B (the Preferred Alternative) has the highest overall treatment acreage for hazard fuel reduction, and therefore the greatest risk for weed invasion. Their primary strategy for mitigating new invasions is prevention and early detection, which is appropriate. The Standards and

Guidelines for Invasive Nonnative Species are comprehensive and detailed. However, to do a good job at these mitigations requires a substantial time/staff commitment, which the Forest may not be able to provide. The overall result may be more weed invasions along park boundaries.

Daniel Gammons, Wildlife Biologist:
On page 141 of Appendix F, which addresses the Standard and Guidelines to be used in implantation of alternatives, the plan states "Because the effects of prescribed fire on key components of fisher habitat are uncertain, give preference to mechanical treatments over prescribed fire."

This does not seem to be a sufficient justification for preferring mechanical treatments over prescribed fire for fisher habitat conservation because the effects of mechanical treatments on key components of fisher habitat are just as uncertain as the effects of prescribed fire. A lot of research is ongoing to resolve these questions (e.g., the Kings River and SNAMP fisher projects), but this is currently a significant knowledge gap.

However, given that mechanical treatments could have effects on the subsequent development of fisher habitat beyond what occurs with a prescribed fire (e.g., through soil compaction, erosion, physical damage to standing trees), a more conservative approach would seem to be giving preference to prescribed fire, especially because it is a disturbance that fishers have evolved with (i.e., they are "used" to it). Of course, this must be balanced with the need to reduced the risk of catastrophic fires—sometimes mechanical thinning may be required for that reason—but as a general rule it seems that prescribed fire for maintenance of fisher habitat should be preferred.

Danny Boiano, Aquatic Ecologist:
Little Kern golden trout (LKGT) is a federally threatened species that occurs in one headwater area of Giant Sequoia National Monument. Actions conducted on these lands have the potential to affect the LKGT population located upstream in the Golden Trout Wilderness and Sequoia and Kings Canyon National Parks, in addition to the LKGT population within Giant Sequoia National Monument. Several alternatives including the preferred alternative include approximately 545 acres of WUI threat zone (12% of LKGT critical habitat in GSNM) as subject to fuel reduction treatments, while alternative C includes approximately 22 acres of WUI defense zone (<1% of LKGT critical habitat in GSNM) as subject to fuel reduction treatments. The plan states that fuel reduction has the potential to increase sedimentation in LKGT habitat, which could negatively affect LKGT reproduction and foraging. Additionally, fuel reduction also has the potential to increase water temperature, which could stress LKGT because they prefer cold water.

Substituting the action above from alternative C into whatever alternative is selected in the FEIS (and thus eliminating the action above from the draft preferred alternative) is a feasible and appropriate compromise that would allow Giant Sequoia National Monument to maximize protection for this listed species while still allowing some fuel reduction to occur.

Joel Despain, Cave Specialist:
Chapter 2, pg 73: Geologic Resources Objectives: Inventory of Caves and their features should include recreational and mineralogical resources as per the Federal Cave Resources Protection Act. Development of a cave management plan for the Monument is warranted since the Monument likely contains more than 100 caves (more than Carlsbad Caverns National Park) including several long caves and many important cave and karst resources.

Chapter 2, Pg 93: The proposed (under Alternatives B and F) Windy Gulch Geologic Area is an appropriate management action for the protection and management this area of caves and karst that includes the third longest cave in California -- Church Cave, several karst springs, cave bat colonies and

caves of significant scientific importance such as Morning Glory, (featured on the cover of *Geology* in 2003) Windy Cliffs Cave, and other caves of the Gates of the Kings.

Chapter 2, Alternatives: Alternatives D and E allow open access for most Giant Sequoia National Monument caves. This is inappropriate due to the resources found within other Monument caves that make them potentially significant and deserving of protection under the Federal Cave Resources Protection Act. Such resources include: bat colonies in Windy Cliffs Cave, giant sequoia paleontology in caves in the Gates of the Kings, helictites in Hummel's Cave, Scientifically valuable sediments in Morning Glory Cave, several cave streams, etc.

Chapter 3, pg 123: In discussing ground water basins include karst watersheds, which are of a significantly different character compared to other types of groundwater basins and aquifers.

Chapter 3, pg 124: (fourth paragraph): There are many more than 15 caves in Giant Sequoia National Monument. We suggest adding: "In the vicinity of Quail Flat the Monument contains lands within the watershed of Redwood Creek which supports unique cave adapted aquatic animals in caves in Kings Canyon National Parks."

Chapter 3, pg 126: This paragraph describes Church Cave, but as written, it seems to be describing Boyden Cave.

Chapter 3, pg 126: Boyden Cave is also important hydrologically as a seasonal spring and as a bat roost. Several species of bats have been known to use the cave.

Chapter 3, pg 126 (sixth paragraph) There is also a barricade on Beauty Cave and one on Hummel's Cave.

Chapter 4, pg 109 Townsend's Big Eared Bats, *Special Management Areas:* Suggested Addition: "Cave gates in the GSNM were built by caving clubs and may not be suitable for the movement of bats into and out of Monument caves." Gate suitability for bats should be assessed in Giant Sequoia National Monument.

Chapter 4, pg 215: Cumulative Effects: Cave impacts also include broken speleothems and speleogens, dust, and tracked sediments and mud that can cover large areas of walls and floors within caves.

Tom Warner, Forester:
Alternative F is preferable ecologically from a strictly vegetation/fuels management perspective, especially in light of potential global climate change effects, by allowing the greatest flexibility in terms of vegetation/fuels management strategies/tools designed to restore and/or maintain forested ecosystems. This alternative provides best protection from effects of drought, insects, and fire by promoting greater resiliency through stocking level reduction (thinning) in order to reduce inter-tree competition. Forest managers need to have access to the full array of tools and not be limited in their use. Mechanical removal of trees/fuels, in many situations is more selective, more environmentally sensitive, and produces superior results to use of fire alone. This alternative also promotes the most vegetative diversity and sequoia regeneration.

This alternative similarly best protects these adjoining National Parks from adverse effects of drought-induced bark beetle attacks and risk of wildfire.

Sylvia Haultain, Plant Ecologist:
The section addressing listed rare plants was found to be quite detailed and complete, but as the monument hosts only one listed plant and that plant does not occur on park lands we have no comments of substance regarding the management of the Springville Clarkia.

Please feel free to contact any one of these specialists if you would like additional information. We look forward to continued coordination with the Forest Service in management of federal lands for the benefit of park and forest, resources and visitors.

Sincerely,

Karen F. Taylor-Goodrich
Superintendent

RESOURCE MANAGEMENT AGENCY

5961 SOUTH MOONEY BLVD
VISALIA, CA. 93277.
PHONE (559) 624-7000
FAX (559) 730-2653

Britt L. Fussel — Planning
Roger Hunt — Public Works
Administration/Community Development

JAKE RAPER JR., AICP, DIRECTOR

December 3, 2010

Anne Thomas,
Interdisciplinary Team Leader
Sequoia National Forest
1839 South Newcomb Street
Porterville, CA 93257

Re: USDA Giant Sequoia National Monument Management Plan (GSNMP) Draft Environmental Impact Statement.

Dear Ms Thomas:

Thank you for the opportunity to provide comments related to the Draft Environmental Impact Statement (EIA) for the abovementioned project. In regard to the Environmental Impact Statement (EIA) prepared for the abovementioned action. The County of Tulare (County) submits the following comments and concerns:

In accordance with the National Environmental Policies Act (NEPA) and the Council on Environmental Quality (CEQ's) Guidelines for Implementing NEPA, the County submits the following comments/ issues of concern.

The Giant Sequoia National Monument Plan encompasses private lands under the jurisdiction of the County of Tulare. The County uses the General Plan to address future physical development within all areas in the County and in addition uses Area Plans specific to the major geographic areas within the County. The Mountain Framework Plan provides policy guidance in the unincorporated mountain area on the eastern side of the County and includes sub-area plans more specific to the areas desired densities and land uses. The Mountain Framework Plan has two adopted sub-area plans the Great Mountain Divide-North Half Plan (1990) and Kennedy Meadows (1996). Within the Giant Sequoia National Monument Management Plan, private owned lands exist that fall under the Mountain Plan and Great Mountain Divide Sub Area Plan. The County expects that the GSNMP will take into consideration the goals and policies of the County's land use plans. The Giant Sequoia National Monument (GSNM) and the County share environmental resources and impacts to those resources affect both the County and the GSNM. We hope that the Management Plan's strategies and objectives co-exist with the goal and policies of the County of Tulare for County impacted areas.

Possible Affects on Gateway Communities and County Communities within the GSNM

There could be both negative and positive indirect environmental impacts to communities that lead into the GSNM or are within the GSNM. Issues such as increased resource use, pollution, waste, habitat

alteration and fragmentation, aesthetics and natural landscape, fire protection all effect gateway communities (communities located near the Monument entrance) and communities within the GSNM. The EIS must identify all the indirect effects that are known, and make a good faith effort to explain the effects that are not known but are "reasonably foreseeable." Section 1508.8(b).

Mitigation is an important mechanism for agencies to use to avoid, minimize, rectify reduce or compensate the adverse environmental impact associated with their actions. 40 CFR section 1508.2. Mitigation goals should be state clearly in the document. The document should clearly indicate how cumulative and indirect impacts to the County would be mitigated.

Air Quality

Impacts from construction and operational activities should include indirect and cumulative impacts. The EIS should quantify traffic and traffic-related impacts, including vehicle emissions that will intensify due to increased recreational use of the GSNM. The EIS should also demonstrate how projects associated with the action would meet requirements of the National Ambient Air Quality Standards (NANQS).

Cumulative Impacts

In regard to cumulative impacts per section 1508.7 of the CEQ Guidelines for Implementing NEPA, it is equally important that the EA fully describe past actions as well as any reasonably foreseeable actions that could affect this property or other nearby lands in the future.

The EIS should consider climate change under the project and the alternatives. Impacts of climate change include water supply, fire, plant and animal species. Secondary impacts of action on climate change include activities such as energy demands, travel, and construction.

The following are some concerns that should be more thoroughly looked at in regard to the project and alternatives:

- Describe the fire standards the plan will comply with and which entities will provide emergency services.
- Describe the impacts to gateway communities and communities within the GSNM.
- Discuss any environmental impact relating to fire equipment necessary to protect patrons, specific to the plan and alternatives.

Traffic and Transportation

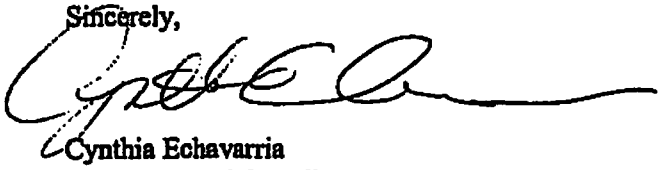
Transportation and traffic from increase tourism can impact, road, public transit systems, regional transit systems, air quality, greenhouse gas emission, and land use patterns. The document indicates that park access constitutes a large percentage of use. The road system outside the GSNM's boundary will need to be maintained and part of this burden could fall upon the County of Tulare.

The County suggest the preparation of an EIA which incorporates the following suggestions for future projects or actions within the GSNM;

- Identify, where possible, the long-term impacts and secondary effects of the action and alternatives.
- Indicate possible mitigating measures which may be used to avoid or reduce impacts; and
- Provide a comprehensive, reliable document for review and evaluation.

If you have any questions that require further information, please call Cynthia Echavarria at (559) 624-7000.

Sincerely,



Cynthia Echavarria
Environmental Coordinator
County of Tulare

cc: file

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In Reply Refer To:
81420-2010-TA-0957-1

October19, 2010

ELECTRONIC MAIL MEMO

To: Regional Environmental Officer, Office of Environmental Policy and Compliance, Oakland, California

From: Acting Forest and Foothills Brach Chief, U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office, Sacramento, California

Subject: Review of the Draft Review of the Draft Environmental Impact Statement (EIS) for the Sequoia National Forest Plan Amendment, Giant Sequoia National Monument, Comprehensive Management Plan Implementation, California (ER10/0676)

The U.S. Fish and Wildlife Service's (Service), Sacramento Fish and Wildlife Office, is providing comments on the *Draft Environmental Impact Statement for the Giant Sequoia National Monument* (DEIS) under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*)(Act). The Service anticipates that the Forest Service will consult with us under Section 7 of the Act on the potential effects of the management plan on federally-listed species prior to the completion of the Record of Decision. At the time the Forest Service enters into consultation, we will be providing substantive comments on the effects determinations. Because it will be more appropriate to provide comment during the Section 7 process, we are not providing comments on the effects determinations contained in the "Biological Assessment" portion of the DEIS, but rather limiting our comments to the other aspects of the draft document. Our comments are as follows:

General Comments

1. The DEIS indicates that Alternative B is the preferred alternative. Alternative B provides a diameter limit for the cutting of trees as large as 20 inches diameter breast height (dbh). While we are not providing comment on the actual diameter limit, it is important to note the Service's concern that several of the alternatives do not include limits on the size of tree that can be cut. This is of concern due to the potential affects of the removal of large trees on both the California spotted owl (*Strix occidentalis occidentalis*) and the fisher (*Martes pennanti*), as larger trees are important habitat components for these species.

2. Table 8 on page 83 of the DEIS contains several footnotes (footnote 2–7) as the table relates to the Diameter limit for Alternative B. The footnote states: "Exceptions to

vegetation management standards and guidelines is acceptable for restoration activities to improve species composition and stand structure and reduce species composition." This statement implies that diameter limits will not apply in under certain circumstances. Please provide clarification as to whether the 20 inch dbh limit can be exceeded under Alternative B, and if so, we recommend that specific guidelines be incorporated as to under what conditions exceeding the stated diameter limit is allowable.

3. While it is understood that the DEIS analyzes the impacts of the implementation of a non-specific area-wide management plan, the DEIS does not appear to include enough detail to understand and adequately analyze the impacts fuels reduction activities within the wildfire urban intermix (WUI) defence zones, WUI threat zones, or the tribal fuels emphasis treatment area (TEFETA), will have on wildlife species. The draft management plan and the DEIS include standards/guidelines, for fuels reduction projects, but there is no description of how fuels treatment activities may impact the landscape (i.e. result in changes in canopy cover, forest structure complexity, etc.), or an analysis of the anticipated changes monument-wide that may reduce habitat suitability for wildlife species. The final EIS should include a more-detailed description of how fuels treatment activities will alter the landscape beyond a fire standpoint, and focus more on the impacts of these activities on wildlife.

4. The DEIS does not include a discussion of the impacts that fuels reduction activities will have on wildlife and the natural community as it relates to habitat fragmentation. There is no indication that the implementation of fuels treatments will be conducted in a manner (either temporally or spatially) so as to reduce the impacts of habitat fragmentation on wildlife. The final EIS should include a discussion of habitat fragmentation and incorporate measures to reduce these impacts on wildlife species.

5. The DEIS relies on other documents (Biological Evaluation (BE), and Biological Assessment (BA)) for further assessment of the impacts on wildlife and botanical resources. It is our understanding that the BE is available for public review at the Forest Supervisor's Office. However, it is unclear as to whether the BA is publically available, and/or includes information not presented in the BE. If the BA is not publically available, and contains unique information, we recommend that BA be included as an appendix to the final EIS.

<u>California spotted owl</u>

1. See *General Comment* 3 and 4.

2. The effects assessment for vegetation management starting on page 500 should include the total acreage of suitable owl habitat within the Giant Sequoia National Monument (Monument), as well as an indication of what percentage of owl habitat is located in the TFETA. Alternative B should include the total area (including WUI and TEFTA) that will be treated under the proposed action. Without knowing the total acreage of owl habitat within the Monument, based on the information presented, it appears that

Alternative B would result in the treatment of approximately 67 percent of owl habitat within the Monument. The final EIS should include a discussion of how treating such a large percent of the owl habitat within the Monument will affect owls and how treatments over such a large are will be conducted to reduce effects to this species. Additionally, the final EIS should include the area treated as a percent of owl habitat for each alternative.

3. In the discussion of Special Management Areas, starting on Page 501, the DEIS states that activities would be restricted in the owl Protected Activity Centers (PACs), and additional habitat would be protected as part of home range core areas (HRCAs), fisher den site buffers, martin den site buffers, etc. This information is misleading in that it is presented in a manner that leads the reader to assume these areas will be protected, and be maintained in their current condition for each of the species, and therefore the owl. However, the standards/guidelines allow for fuels treatments to occur in these areas with different limitations and restrictions than in non-WUI areas. The final DEIS should include a discussion of the treatments that could still occur within owl PACs and the other special management area, and recalculate these acreages to reflect areas not included in the areas treated within the WUI. Additionally, it is unclear as to how and if owl PACs will be treated in TEFTA areas.

Fisher

1. See *General Comment* 3 and 4

2. The effects assessment should include an expanded discussion of the modification of habitat, as it relates loss of the forest complexity necessary for the fisher, and a discussion of how the standards and guidelines will mitigate these effects.

3. The effects assessment for vegetation management starting on page 516 should include the total acreage of suitable fisher habitat within the Giant Sequoia National Monument (Monument), as well as an indication of what percentage of fisher habitat is located in the TFETA. Alternative B should include the total area (including WUI and TEFTA) that will be treated under the proposed action. Without knowing the total acreage of fisher habitat within the Monument, based on the information presented, it appears that Alternative B would result in the treatment of approximately 70 percent of fisher habitat within the Monument. The final EIS should include a discussion of how treating such a large percent of the fisher habitat within the Monument will affect fisher and how treatments over such a large are will be conducted to reduce effects to this species. Additionally, the final EIS should include the area treated as a percent of fisher habitat for each alternative.

4. The DEIS does not appear to present minimum standards for habitat retention and forest complexity as they pertain to fisher habitat within the WUI. Therefore the Service recommends that the final EIS include an analysis of the habitat changes within these areas, including the TEFTA.

5. In the discussion of Special Management Areas, starting on Page 518, the DEIS states that activities would be restricted near den site buffers, as well as the implementation of the standards and guidelines for the Southern Sierra Fisher Conservation Area (SSFCA), and additional habitat would be protected as part of owl PACs, goshawk PACs, martin den site buffers, etc. This information is also misleading in that it is presented in a manner that leads the reader to assume these areas will be protected, and be maintained in their current condition for each of the species, and therefore the fisher. However, the standards/guidelines allow for fuels treatments to occur in these areas when they are located in a WUI with different limitations and restrictions than in non-WUI areas. The final DEIS should include a discussion of the treatments that could still occur within fisher den site buffers, SSFCA, and the other special management area, and recalculate these acreages to reflect areas not included in the WUI treatments. Additionally, it is unclear as to whether the SSFCA includes the TEFTA area and how fuels will be treated in the TEFTA areas.

California condor (*Gymnogyps californianus*)

1. The discussion on effects to California condor (*Gymnogyps californianus*) on page 531 the DEIS states "large trees (>30 inched dbh) would not be removed for fuels reduction or ecological restoration." This statement appears to be in conflict with the footnote from the table on page 83. Please address this discrepancy by either clarification of the table (as discussed in *General Comment* 2) or by correcting this section. If situations arise (other than safety hazards) where trees greater than 30 inched dbh can be removed for Alternatives A, B, C, and D, the final EIS should include an analysis of these effects on the California condor.

Little Kern Golden Trout (*Oncorhynchus aguabonita whitei*)

1. Page 541 of the DEIS should include a more-detailed discussion on the effects of grazing on this species. While cattle grazing may decrease habitat quality, it is important to understand the magnitude of this impact on Little Kern golden trout; therefore, the final EIS should provide an indication of the size of the area subject to grazing, number of cattle, etc., as it pertains to areas occupied, or areas where grazing may affect, this species.

Other

1. The general concept presented as previous comments (*California spotted owl* 3 and *Fisher* 5), regarding Special Management Areas and the treatment of fuels within the WUI and TEFTA, should also be applied to the relevant sections in the effects assessment for both goshawk and martin.

STATE OF CALIFORNIA – THE RESOURCES AGENCY ARNOLD SCHWARZENEGGER, *Governor*

OFFICE OF HISTORIC PRESERVATION
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February 24, 2011 Reply in Reference To: **USFS101115A**

Deb Whitman, Acting Forest Supervisor
United States Department of Agriculture – Forest Service
Sequoia National Forest
1839 South Newcomb St.
Porterville, CA 93257-9353

Re: The Giant Sequoia National Monument Draft Environmental Impact Statement (DEIS) and Draft management Plan

Dear Ms. Whitman:

As per a recent communication with the Forest Heritage Program Manager, Karen Miller, it is not the policy of the Review and Compliance Unit (RACU) of my office to review Federal environmental compliance documents such as the submitted Draft Environmental Impact Statements (DEIS) and its six alternative actions. Also, please be advised that the consultation letter indicates the current submittal, including the Draft management plan, does not "propose any site-specific acts that warrant classification as an undertaking that would trigger section 106 of the National Historic Preservation Act and 36 CFR 800"; and, short of presenting itself as initiating formal consultation on the above referenced items, the submittal did not include any specific requests for consultation. Given this context, I look forward to reviewing future Forest submittals for the Giant Sequoia National Monument that pertain to Federal undertakings as they are defined by 36 CFR Part 800.16(y). I appreciate your patience and urge you to contact Jeff Brooke of my staff at (916) 445-7003 or by email at jbrooke@parks.ca.gov if you have any questions or concerns.

Sincerely,

Susan K Stratton for

Milford Wayne Donaldson, FAIA
State Historic Preservation Officer

GSD 51

TULE RIVER TRIBAL COUNCIL
TULE RIVER INDIAN RESERVATION

November 1, 2010

Anne Thomas, Team Leader
USDA Forest Service
Giant Sequoia National Monument
1839 South Newcomb Street
Porterville, California 93257

Dear Mrs. Thomas,

These comments on the Giant Sequoia National Monument Draft Management Plan ("Plan") are submitted on behalf of the Tule River Tribal Council and Tribal Community for consideration by the Forest Service. We thank you for the opportunity to comment.

As the Tribe as stated on a number of occasions in the past, the future management of the land and resources that lie within the Giant Sequoia National Monument (GSNM) are very important to our people. It is well documented that descendents of the Yokuts people occupied and utilized these lands long before the establishment of the GSNM. Portions of the North Fork and Middle Fork of the Tule River watersheds were once part of the Tule River Reservation. Over one-half of the present Reservation boundary borders the GSNM. The GSNM occupies portions of the headwater areas of the South Fork Tule River watershed, location of the present day Reservation.

The Tribe's primary areas of concern are cultural resources, fire and fuels, transportation system, air quality, and forest health & protection. Our comments by topic are as follows:

Cultural Resources: The preservation of cultural resources is obviously important to the Tribe. The Desired Condition for Cultural Resources, as stated in the Plan (page 34), includes language that implies certain known sites can be "studied and used by the public". The Strategies section of the Plan (page 69) makes reference to public "sharing" and "enjoyment" of cultural resource information. Although public education and outreach may be important, the confidentiality of known sites could be compromised. The Tribe would expect to be consulted as to the suitability of releasing or sharing of cultural resource site or site information to the public. The stated objective to "develop a Monument cultural resource management plan" (page 69) should include Tribal involvement as part of the process.

Fire and Fuels: The final alternative chosen should include the Tribal Fuels Emphasis Treatment Area (TFETA). The importance of initiating and maintaining active fuels reduction treatments over time on the GSNM lands that surround the Reservation have been discussed with Monument leadership and staff at several consultation meetings with the Tribe. The potential for adverse impact from wildfire originating within the GSNM and spreading into the South Fork Tule River watershed and/or onto Tribal lands remains a significant concern. Only Alternatives B,C, and F include the TFETA.

Transportation System: There are several existing GSNM roads that provide access to the Tribe for management purposes, and to the Tribal community for recreational and cultural use. Specific road numbers and mapped locations were previously identified and provided to GSNM staff as part of a Forest Service Roads Analysis Process. The final alternative should include emphasis on maintaining these roads for the access they currently provide. The Scientific Advisory Board to the original monument plan so noted the importance of GSNM roads to the Tribe in Advisory XIV: Reservation Roads. In their final report titled *Advise for the Secretary of Agriculture about Management of the Giant Sequoia National Monument* (July 2003), the Scientific Advisory Board stated that "*Closure of roads accessing Tule River Reservation from the GSNM would result in a loss of jobs and management opportunities on the* Reservation" (page 37). The Board also stated that "*Successful management to sustain the Reservation forest depends on access by roads from the* Monument" (page 38).

Air Quality: Emissions from wildfire and prescribed fire on air quality and human health are a concern. The high fire emissions projected under Alternatives C and D could result in unacceptable impacts on the Tribal community if excessive smoke enters and remains for extended periods within the South Fork Tule River watershed.

Forest Health & Protection: Managing for forest health and protection, both within and outside the wildland urban interface, should be a priority in the final alternative. Restoration objectives and priorities should consider the existing and projected levels of forest insect and disease activity, fuel loading, overstocking of trees, and snag densities as part of the planning and project development process. The Plan should also be flexible enough to allow for prompt action (rehabilitation, direct action) if an emergency or catastrophic event (wildfire, insect epidemic, drought) occurs that results in excessive resource damage. An inadequate response to such an event could adversely affect Tribal watershed and forest resources, as the common GSNM – Reservation boundary forms a continuum across administrative boundaries.

Alternatives: Alternatives B and F, with slight revisions or clarifications as noted above, address Tribal concerns better than the other alternatives presented.

Thank you for considering these comments from the Tule River Tribe.

Sincerely,

Ryan Garfield
Chairman

Tule River Tribal Council
GSNM Comment Letter
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

DEC 0 2 2010

Tina J. Terrell
Forest Supervisor
Sequoia National Forest
1839 South Newcomb Street
Porterville, CA 93257

Subject: Draft Environmental Impact Statement for Sequoia National Monument Management Plan, Fresno, Tulare, and Kern Counties, CA (CEQ# 20100291)

Dear Ms. Terrell:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the above-referenced project. Our review and comments are pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

The Forest Service has developed this DEIS to evaluate six alternatives to managing the resources in the Giant Sequoia National Monument. The proposed action (Alternative B) responds to the issues of fuels management and community protection, which were identified during the scoping process. We have rated the DEIS as Environmental Concerns – Insufficient Information (EC-2) (see enclosed "*Summary of Rating Definitions*"). Our concerns regard direct and cumulative impacts to air quality in an area currently in nonattainment for the National Ambient Air Quality Standards (NAAQS) for ozone and particulate matter, and the Management Plan's deficiency in addressing specific road decommissioning targets. Our detailed comments providing additional information are enclosed.

EPA commends the Forest Service for its efforts to address the many challenges inherent in developing a management plan that responds to both recreational and resource management demands. We especially acknowledge the Forest Service's tribal coordination, which resulted in the development of Tribal Fuels Emphasis Treatment Areas (TFETAs) in response to tribal concerns regarding wildfire, and which is incorporated into a number of the alternatives. We also recognize the climate change analysis (Appendix C) as thorough and current. All alternatives prioritize response to the challenges of climate change, the effects of which are already becoming evident in the Giant Sequoia National Monument.

EPA recognizes that this NEPA process was undertaken to inform programmatic management decisions at the Sequoia National Monument. Future site-specific NEPA documents will address project-level alternatives and environmental impacts. EPA recommends a strong commitment to upfront, site-specific NEPA evaluation for all projects likely to result in

resource impacts. Of special concern are projects which may have water and air quality effects. Likely projects with these types of effects include vegetation management projects to address fuel buildup that puts the Sequoia National Monument at risk from catastrophic fires, and road decommissioning decisions.

We appreciate the opportunity to review this DEIS. Should you have any questions regarding our comments, please contact me at (415) 972-3521, or contact Stephanie Skophammer, the lead reviewer for the project. Stephanie can be reached at (415) 972-3098 or skophammer.stephanie@epa.gov.

Sincerely,

Kathleen M. Goforth, Manager
Environmental Review Office
Communities and Ecosystems Division

Enclosures: Summary of EPA Rating Definitions
Detailed Comments

cc: Anne Thomas, Team Leader, Sequoia National Forest
Steve Thompson, California Operations, US Fish and Wildlife Service
Central Valley Regional Water Quality Control Board, Fresno Office
San Joaquin Valley Air Pollution Control District

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.

EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS) FOR GIANT SEQUOIA NATIONAL MONUMENT MANAGEMENT PLAN, FRESNO, TULARE, AND KERN COUNTIES, CALIFORNIA, DECEMBER 2, 2010

Air Quality

The DEIS states that San Joaquin Valley is in Federal non-attainment areas for ozone and particulate matter and is regulated by the San Joaquin Valley Air Pollution Control District (SJAPCD) (p. 192). The proposed alternative includes prioritized management tools for fuels reduction including 1) prescribed fire, 2) mechanical treatments, and 3) managed wildfire (Table 48 p. 154-155). Alternative B proposes future treatment of 11,966 acres of high fire susceptibility forest and 32,291 acres of moderate fire susceptibility forest (Table 3, p. 24). These actions will result in air emissions of ozone precursors, volatile organic compounds (VOCs) and nitrous oxides (NOx), as well as particulate matter (PM_{10}). In accordance with the Clean Air Act (CAA) General Conformity requirements, a determination must be made that emissions will not exceed the applicable *de minimis* threshold levels for criteria pollutants of concern for projects in federal non-attainment and maintenance areas. If emissions would exceed an applicable *de minimis* threshold, a conformity determination is required to document how the federal action will affect the State Implementation Plan (SIP). Although no emissions will result from the approval of the Management plan, future tiered NEPA documents will need to address CAA General Conformity. As a programmatic document, the FEIS should provide some information regarding expected emissions from future projects, measures the Forest Service can take to reduce emissions, and how the Forest Service will comply with CAA General Conformity requirements. In addition, we note that the air quality impact analysis of the proposed alternatives only includes air impacts from fire and does not include emissions from other sources such as diesel emissions from management activities and road maintenance.

> ***Recommendation:***
> The FEIS should briefly describe the likely implementation schedule of future fuel treatments, their potential air emissions, measures to mitigate emissions, and generally how the Forest Service expects to comply with CAA General Conformity requirements, including compliance with the SIP and State and local air district regulations. The Air quality analyses should include emissions from all sources, including diesel emissions from mobile sources. These analyses should also include the cumulative air impacts from other projects in Sequoia National Forest.

Transportation System

Decommissioning unused roads in the Forest is important for reducing environmental resource damage. The current designated National Forest Transportation System for the Giant Sequoia National Monument was finalized when the monument was founded in the year 2000, and includes 822 miles of authorized roads, including over 450 miles of roads for Off-Highway Vehicle (OHV) use (p. 400). According to the DEIS, the direction for the past decade has been to encourage decommissioning of roads that are no longer used and are impacting environmental resources. However, very little road decommissioning has been completed while the Forest Service awaits the completion of the Monument plan and updated Transportation plan which will incorporate the 2005 travel management rule (p. 682). Remaining unauthorized motorized routes

(p. 400) and changes proposed in the selected alternative are expected to occur after future site-specific NEPA analyses are completed (p. 678).

The development of the management plan for the national monument provides an opportunity to: 1) define the minimum road network needed for management, 2) develop an implementation plan for addressing existing road-related resource impairments and use conflicts, and 3) move towards the minimum road network within a reasonable period of time. We recognize the funding restraints of Sequoia National Forest, especially given the large deferred maintenance schedule for the past 5 years (p. 404). However, both Sequoia National Forest and EPA believe addressing adverse road-related resource problems is important and should not be addressed only in future project-level planning, as suggested on page 678. While the "minimum transportation system" may vary depending on the different action alternatives, all alternatives should include commitments to decommission roads that are causing negative impacts and are not necessary for administrative needs at the earliest possible opportunity, pursuant to Travel Management Rule direction (36 CFR Part 212 Subpart A). This recommendation is suggested in light of Giant Sequoia National Monument's change in management direction responding to the decline in timber management access needs and greater emphasis on restoring the ecosystem (p. 678).

Recommendation:
In the FEIS, we recommend that an implementation plan be included which identifies the minimum transportation system for each alternative, road decommissioning project priorities, targets based on resource damage, and a schedule for decommissioning unnecessary roads.