Sierra Nevada
Forest Protection Campaign

Notice of Appeal
and
Statement of Reasons
March 1, 2004

Sierra Nevada Forest Protection Campaign, Sierra Club, The Wilderness Society, American Lands Alliance, Friends of the River, California Trout	) Appeal of Record of) Decision and Final) Environmental Impact) Statement for the Giant Sequoia) National Monument) Management Plan
Appellants.	)
	) Reviewing Officer:) Jack Blackwell, Regional) Forester, Pacific Southwest) Region, 1323 Club Drive,) Vallejo, California 94592

David Edelson, Attorney for Appellants
Sierra Nevada Forest Protection Campaign
840 Grizzly Peak Blvd.
Berkeley, CA 94708
510/527-4116

TABLE OF CONTENTS

This administrative appeal of the Giant Sequoia National Monument Management Plan Final Environmental Impact Statement (FEIS) and Record of Decision (ROD), approved by Forest Supervisor Arthur L. Gaffrey on January 16, 2004, is filed on behalf of the Sierra Nevada Forest Protection Campaign, Sierra Club, The Wilderness Society, Friends of the River, and American Lands Alliance pursuant to 36 CFR 217.

Based on our review, we have concluded that both the management plan and the FEIS are fundamentally flawed. The plan would significantly degrade old forest ecosystems and wildlife associated with old forests, and would threaten the viability of the Pacific fisher and California spotted owl, contrary to the National Forest Management Act (NFMA) and the Forest Service's planning regulations. The FEIS lacks sufficient information and analysis to allow meaningful disclosure and consideration of the plan's likely adverse effects on late-successional forests and wildlife, as required by the National Environmental Policy Act (NEPA). Overall, the plan is inconsistent with the purposes for establishing the Giant Sequoia National Monument and fails to demonstrate that the amount and intensity of proposed logging is "clearly needed" for ecological restoration as required by the Proclamation. (Clinton 2000).

The ROD justifies the plan based on the risk of catastrophic wildfire and states that the plan "will ensure adequate short-term protection to wildlife habitat." (ROD, p. 18). However, the FEIS fails to demonstrate that logging medium-large trees and substantially reducing canopy cover in suitable owl and fisher habitat will appreciably reduce the risk of catastrophic wildfire. Moreover, the FEIS fails to disclose, much less analyze, potential short-term impacts on old growth and associated species. Therefore, both the plan and the FEIS must be overturned.

I. THE GSNM PLAN WOULD DEGRADE OLD FOREST ECOSYSTEMS AND WOULD THREATEN THE VIABILITY OF THE PACIFIC FISHER AND CALIFORNIA SPOTTED OWL.

According to the Scientific Advisory Board, "[i]t is generally accepted that for the Sierra Nevada as a whole, as a consequence of settlement and resource extraction activities, there is substantially more landscape in early-successional stages, and substantially less habitat in late-successional stages than before 1875." (FEIS, p. C-32). As a result, many species that inhabit old forests, such as the Pacific fisher, "are presently far less broadly distributed than records of past decades or centuries indicate. Consequently, their vulnerability combined with uncertainty about what practices might produce further harm argue for the most conservative forest management practices in mature forests, that is those that produce the least change from present conditions." (FEIS, p. C-33, emphasis added; see also FEIS, p. C-8).

Despite this recommendation from the Scientific Advisory Board, the management plan fails to propose "conservative forest management practices" for old forests and associated wildlife. Instead, the plan substantially weakens restrictions on logging which were adopted in the Sierra Nevada Framework for the specific purpose of protecting old forests and enhancing the viability of old forest associated species. For example:

- The plan allows logging of trees up to 30" dbh and of even larger trees in some circumstances. (FEIS, p. 104). By contrast, the Framework generally prohibited

logging of trees greater than 12" dbh within old forest emphasis areas and 20" dbh within general forest and the threat zone of the wildland-urban interface.

- The plan allows substantial reductions in canopy cover to levels below those required by old growth associated species. Canopy cover can be reduced by as much as 30 percent, down to "a minimum of 40 percent canopy cover." (FEIS, p. 106). By comparison, the Framework generally required retention of 50 percent canopy closure and limited reductions in canopy closure to 10-20 percent, depending upon land allocation.

- The plan weakens or eliminates protections established in the Framework for the Southern Sierra Fisher Conservation Area (SSFCA) and for old forest emphasis areas (OFEAs).

- The plan allows logging within protected activity centers (PACs) for the California spotted owl within the threat zone of the wildland-urban interface (FEIS, p. 107), despite the fact that the Framework precluded such logging to protect the owl.

- The plan greatly expands the size of the wildland-urban interface, thereby allowing more intensive logging within a far larger area than contemplated under the Framework.

- Overall, the proposal would substantially increase the amount and intensity of logging within the Monument and fails to demonstrate that such logging is "clearly needed," as required by the Monument proclamation.

By allowing logging of medium-large trees and substantial reduction in canopy closure, weakening the protection for the SSFCA and OFEAs, and greatly increasing both the amount and acreage of logging, the management plan will significantly degrade the Monument's old growth forests and wildlife, contrary to law.

A. Pacific Fisher and American Marten

1. The Fisher's Population in the Southern Sierra is Highly Imperiled.

The population of the Pacific fisher in the southern Sierra Nevada is highly imperiled. The FEIS acknowledges that the fisher is presently "at low numbers," that the southern Sierra population may be isolated, that mortality rates for adult females appear to be high, and that the Fish and Wildlife Service has found that listing may be warranted. (FEIS, p. 254). However, the FEIS fails to cite the best available information regarding the fisher's imperiled status and therefore fails adequately to disclose the precarious and threatened nature of the population.

According to an analysis co-authored by Forest Service scientists,[1] the isolated fisher population in the southern Sierra Nevada "may face imminent extinction." (Lamberson et al. 2000, p. 10).

[1] We discussed this paper in our comments on the DEIS, but the paper is not mentioned in the FEIS.

The analysis found that the population has a high likelihood of extirpation within the next 50 years, and that the population would only be projected to increase under "extremely optimistic and likely unrealistic" assumptions. (Ibid.). Moreover, the analysis failed to take account of demographic stochasticity, inbreeding, and potential loss of habitat, all of which would tend to make the predictions even more dire. According to the authors, several factors place the fisher population in the southern Sierra at risk of extinction, including isolation, small population size, demographic and environmental stochasticity, low reproductive capacity, and ongoing habitat loss.

Two recent papers, both co-authored by leading Forest Service researchers, confirm the ecological significance and vulnerability of the southern Sierra fisher population. Aubry and Lewis (2003) demonstrate "that the historical continuity in fisher distribution that once provided for genetic interchange among fisher populations in the Pacific states no longer exists." The second paper, by Drew et al. (2003), concludes that the southern Sierra fisher population differs in its genetic characteristics from all other fisher populations, is "both discrete and biologically significant as defined by the US Fish and Wildlife Service," and therefore constitutes a "distinct population segment" meriting protection under the Endangered Species Act.

The U.S. Fish and Wildlife Service, in its review of the Sierra Nevada Framework, emphasized the importance and vulnerability of the southern Sierra fisher population:

> The action area is located within and around the remaining known Pacific fisher population in the Sierra Nevada. The southern Sierra Nevada population is considered vulnerable to disturbance yet essential for the survival and recovery of the Pacific fisher. This is the only remaining Sierra Nevada population and represents the southernmost extent of the species' range. The southern Sierra Nevada population is therefore the population with the highest potential to recolonize the central and northern Sierra Nevada. Range expansion to previously occupied habitat, reestablishment of connectivity with California's northwestern subpopulations, and future reintroduction efforts, if they are to be successful, all depend on a robust southern Sierra Nevada population. (USDI Fish and Wildlife Service 2001, p. 86)(emphasis added).

The Fish and Wildlife Service has found that the fisher may require listing under the Endangered Species Act. In a letter to the Fish and Wildlife Service, eleven leading fisher scientists and wildlife biologists have supported the listing of the fisher as an endangered species. (Buskirk et al. 2003). The authors cite published research to argue that the southern Sierra fisher population is genetically distinct and isolated from other fisher populations. The authors conclude as follows:

> Remaining fisher populations are generally small and isolated and the species has a low reproductive capacity and poor dispersal ability. These factors, in combination with ongoing habitat loss, place the species at considerable risk of extinction in the Pacific states in the near term. We believe such risk merits listing the fisher in the Pacific states as endangered. (Buskirk et al. 2003)

A meeting of Forest Service and other forest carnivore experts concluded with respect to the southern Sierra fisher population: "Conservation biology tells us that the likelihood of this population being extirpated is high…. In a population this imperiled, loss of a few reproductive females may contribute toward a downward population spiral that culminates in extirpation." (Macfarlane and Frolli 1999, emphasis in original). As the Forest Service recognized in the Framework FEIS: "Given the current low density of fishers in the Sierra Nevada, the loss of even a small number of individuals … could significantly impact the population." (USDA Forest Service 2001a, Vol. 3, Chap. 3, part 4.4, p. 9).

2. The GSNM plan threatens the fisher's viability and distribution in the southern Sierra.

Any defensible conservation and recovery strategy for fisher habitat in the Sierra Nevada must ensure protection for currently occupied habitat in the southern Sierra. (Barrett 2004, p. 1). As stated in the fisher analysis in the Framework administrative record, "it is essential to retain the size and habitat quality of the area where fishers currently occur and to manage the land to permit the species to become reestablished in its former range." (Campbell et al. 2000, p. 42). By allowing significant degradation of fisher denning and resting habitat, the GSNM plan would threaten the viability of the fisher population and would lead to a trend toward federal listing, contrary to law. (Barrett 2004; Kucera 2004).

The FEIS generally acknowledges that the fisher is closely associated with old forests characterized by medium and large trees and dense canopy closure. (FEIS, pp. 250-253). The Forest Service has recognized, in the Sierra Nevada Framework FEIS, that logging of medium-large trees, reduction in canopy cover, and habitat fragmentation may adversely affect the fisher.

> Activities under Forest Service control that result in habitat fragmentation or population isolation pose a risk to the persistence of fishers. Timber harvest, fuels reduction treatments, [and] road construction may result in the loss of habitat connectivity resulting in a negative impact on fisher distribution and abundance. (USDA Forest Service 2001a, Vol. 3, Chap. 3, part 4.4, p. 5).

Yet the GSNM plan, by weakening existing protection for medium and large trees and canopy closure, would threaten the very elements that are critical to fisher habitat.

a. Logging of medium-large trees.

The GSNM plan would allow logging of trees up to 30" diameter within all land allocations, whereas the Framework imposed a 12-20" dbh limit, depending upon allocation. As stated by Dr. Reginald Barrett, "These medium-large trees, in combination with larger trees and snags and dense canopy closure, comprise an important element of high quality fisher habitat, and their removal could significantly degrade existing and potential fisher habitat." (Barrett 2004, p. 4).

Recent research on the fisher's habitat use in the southern Sierra Nevada, not discussed in detail in the FEIS, confirms the importance of medium-large trees. At the home range scale, medium-large trees (12-24" dbh) "composed the greatest proportion of home ranges" in the Sierra study area. (Zielinski et al. in press A, p. 23). The authors state that this establishes "guidelines for local managers to use when planning for fisher habitat needs and for evaluating the effects of

vegetation management on fisher habitat." Based on this research, it is clear that removing medium-large trees and degrading habitat characterized by such trees could reduce an important element of fisher home ranges. (Barrett 2004).

At the rest site scale, in another study not analyzed in the FEIS, the same authors found that 12-24" dbh trees constitute the most frequent size classes surrounding fisher rest sites. (Zielinski et al. in press B). The authors emphasize (in the home range study) that "it is likely that historical landscapes had higher proportions of late-seral vegetation … than fishers experience today." (Zielinski et al. in press A). Therefore, medium-large trees are a particularly important habitat element:

> Large live trees are among the most slowly-renewing elements of the forest and are 'dominant' elements … in forest communities. It may take hundreds of years for conifers and hardwoods to develop the size and the decadence necessary to be used by fishers for resting. Because the large live trees and large snags are less abundant in the Sierra Nevada and the Pacific Northwest than historically … <u>every management activity should be evaluated as to whether it enhances or reduces the availability or development of large live and dead trees and large logs</u>. (Zielinski et al. in press B, emphasis added).

Notably, the BE for the GSNM plan assumes that logging under the plan would be limited to removal of trees less than 24" in diameter. (USDA Forest Service 2004, p. 11). Similarly, an earlier draft of the GSNM's "Pacific Fisher Strategy" also recommends a 24" diameter limit on logging. (Sequoia National Forest 2003). Thus, it seems clear from the administrative record that biologists on the Forest recognized the importance of protecting medium-large trees and recommended a 24" dbh limit. Despite this recognition, the FEIS entirely fails to analyze the potential adverse impacts on fisher of logging medium-large trees.

b. Reduction in canopy closure.

It appears incontrovertible that fishers prefer forests dominated by dense canopy closure. The FEIS cites research indicating that fisher home ranges includes large amounts of dense canopy forest and that the fisher preferentially selects forests with higher canopy closure than surrounding areas. (FEIS, p. 250). Yet the FEIS utterly fails to analyze the impacts on the fisher or its habitat of allowing significant reductions in canopy closure in logged areas.

A study of fisher home ranges in the southern Sierra, cited in the FEIS, found that fishers select for high canopy closure and that on average 66 percent of fisher home ranges in the southern Sierra are characterized by canopy closure of 60 percent or greater. (Zielinski et al. in press A; USDA Forest Service 2001a, Vol. 3, Chap. 3, part 4.4, p. 11). Another recent study in the southern Sierra found that fisher "rest sites had greater canopy cover … and canopy layering than random sites," as well as "higher large snag occurrence." (Mazzoni 2002, p. 24). With respect to rest sites, Zielinski et al. (in press B) found that average canopy closure was greater than 90 percent, and that "resting fishers place a premium on continuous overhead cover, as reported previously." A Forest Service literature review concluded that the fisher's "preferred habitat is characterized by dense (60-100% canopy) multi-storied, multi-species late seral stage

coniferous forests." (Freel 1991, p. 2). High quality habitat is characterized by greater than 80 percent canopy closure (p. 3), with "the maximum number of vertical layers possible" (p. 15).

Despite this compelling body of research, the GSNM plan would allow canopy closure to be reduced by as much as 30 percent to as low as 40 percent. As the Forest Service recognized in the Framework FEIS, reductions in canopy closure of only 20% "could effectively reduce the quality of habitat available for fishers, particularly for resting and denning, to a level that is sufficient only for foraging or dispersal." (USDA Forest Service 2001a, Vol. 3, Chap. 3, part 4.4, p. 11). Similarly, the U.S. Fish and Wildlife Service expressed concern about the Framework's allowance of 20 percent reduction in canopy cover, noting that the Framework's 50 percent canopy cover requirement "is below that observed over large areas of fisher home ranges in the southern Sierra." (USDI Fish and Wildlife Service 2001, p. 133).

Although the issue is not addressed in the FEIS, the biological evaluation asserts that the GSNM plan "would result in retention of at least travel and foraging habitat" for fisher. (USDA Forest Service 2004, p. 59). However, not only is this claim unsupported (Barrett 2004, p. 3), but it also ignores the fact that denning and resting habitat, not foraging and travel habitat, appears to be the limiting factor for fisher.

> Fishers have at least one daily resting bout and often use a different resting structure for each occasion. Resting locations protect forest mustelids from unfavorable weather and predators, thus choosing a resting site may be one of the most important choices made outside the breeding season. Previous work indicates that fishers and American martens … are most selective about choosing natal den and resting sites, and the least selective about foraging locations. <u>This suggests that resting and denning sites may be the most limiting habitat element across the species' range.</u> (Zielinski et al. in press B, emphasis added, citations omitted).

Given that denning and resting habitat appears to be "the most limiting habitat element," the GSNM plan needs to manage to protect and restore high quality fisher habitat, rather than allowing canopy closure to be reduced to a level that the Forest Service has characterized as "low quality" habitat for denning and resting. (Freel 1991).

c. Degradation of southern Sierra fisher conservation area and old forest emphasis areas.

The Framework established two distinct land allocations to benefit fisher and other old forest associated species: the southern Sierra fisher conservation area (SSFCA) and old forest emphasis areas (OFEAs). The GSNM plan would substantially weaken management within both of these areas by combining them into a new "fisher/old forest" (FOF) allocation with weaker restrictions on logging. The ROD touts the "fisher/old forest" allocation as "the key component" of the plan that "will ensure that the Monument will continue to contribute to the viability of fisher and old forest habitat." (ROD, p. 14). In fact, the new allocation greatly dilutes the pre-existing standards and guidelines that restricted and guided logging of fisher habitat.

The GSNM plan allows virtually the same intensity of logging within the FOF as elsewhere in the Monument. Canopy cover can be reduced by up to 30 percent, to a minimum of 40 percent,

and trees up to 30" diameter can be logged. The only difference appears to be that, where pre-treatment canopy closure is between 50 and 59 percent, logging will be designed to retain a minimum of 50 percent.[2] (FEIS, p. 107). While 50 percent canopy cover is preferable to 40 percent, it is still below the level considered to be high quality fisher habitat, as noted above.

The GSNM plan would essentially eliminate the Framework's protection for old forest emphasis areas and smaller old growth stands. Under the Framework, logging in these areas would generally be limited to removal of trees 12" diameter and under, and reductions in canopy closure would be restricted to 10 percent. These areas provide potential denning and resting habitat for the fisher as well as facilitate movement and connectivity and potential range expansion for the species. The OFEAs were designed, in substantial part, to provide habitat for old forest associated species like fisher and to promote habitat connectivity and species dispersal. The size of OFEAs was based on the ability to support 14 female and 7 male fisher, and the spacing was designed to be within the fisher's dispersal distance. (USDA Forest Service 2001c, p. D-10). However, by managing OFEAs utilizing the new fisher/old forest land allocation, "the proposal substantially threatens the ability of these areas to support fisher denning, resting, and foraging." (Barrett 2004, p. 3).

Management within the FOF is also weaker than under the Framework's southern Sierra fisher conservation area. The Framework established the SSFCA for the specific purpose of protecting and restoring habitat currently occupied by the fisher. Within this area, which covers the currently occupied habitat, the Framework required that 60% of each watershed contain forests with medium-large or greater trees and 60% or greater canopy closure. (USDA Forest Service 2001b, p. A-45). This requirement was generally based on current research on the Sequoia National Forest, which shows that 66 percent of the average fisher home range was in 60 percent or greater canopy closure. (USDA Forest Service 2001a, Vol. 3, Chap. 3, part 4.4, p. 11; GSNM FEIS, p. 250).

The new proposal would replace this standard with a "long-term goal of developing and/or maintaining 50% of the overall potential fisher habitat" in 60 percent or greater canopy cover. (FEIS, p. 104). This new standard is considerably weaker in at least two ways. First, the new plan replaces a clear, binding standard with a discretionary, long-term goal. Compare USDA Forest Service 2001b, p. A-45 (Framework ROD required the Forest Service to "manage … to support fisher habitat" and to "retain" sufficient habitat with 60 percent or greater canopy cover) with GSNM FEIS, p. 104 (achieve fuels reduction goals "in concert with meeting the long-term goal of developing and/or maintaining" sufficient habitat).[3]

Second, the new standard reduces from 60 to 50 percent the proportion of each watershed that will be managed for 60 percent canopy cover. As noted previously, the SSFCA standard was based upon recent research showing that fishers select for high canopy closure and that on average 66 percent of fisher home ranges in the southern Sierra are characterized by canopy closure of 60 percent or greater. In fact, the research indicates that 72 percent of female home

[2] Because the wording of the standard and guideline is vague, it is not clear whether this limitation applies to fisher habitat (CWHR 4M, 4D, 5M, 5D, and 6) or whether the standard excludes these CWHR types.

[3] As recognized in the GSNM administrative record, "this is recognized as a long term goal and there may be short term deviation in managing current conditions." (Sequoia National Forest 2004, p. 2).

ranges contain forests with 60 percent or greater canopy cover. (Zielinski et al. in press A). The GSNM standard further weakens the Framework standard by managing for high canopy cover within a given percentage of "potential fisher habitat," rather than within each watershed. [4]

The FEIS justifies the weakening of the standard by referring to "local information regarding fisher habitat and the need to protect habitat, communities, and other valuable resources from the effects of severe wildfire." (FEIS, p. 359). However, this explanation is not persuasive, as noted by Dr. Barrett. (Barrett 2004, p. 3). First, the SSFCA was explicitly based on recent research in the southern Sierra Nevada, and the FEIS fails to explain how any additional "local information" justifies weakening the standard. Any such "local information" has not been published and the FEIS fails to describe the information in sufficient detail to determine whether or not it supports the plan's weakened standard.[5] Second, to the extent that the Forest Service has weakened the standard to address "effects of severe wildfire," the FEIS must at a minimum explain how shifting from 60 to 50 percent will achieve fuels reduction goals and analyze the adverse effects on fisher habitat that will result. In fact, the FEIS does not address either point.

The Fish and Wildlife Service has cited the protections within the SSFCA as important measures designed to improve habitat conditions for the fisher, stating that "[r]etaining suitable fisher habitat within and outside the southern Sierra Fisher Conservation Area is necessary to maintain linkage between the southern Sierra Nevada population and the population in northwestern California." (USDI Fish and Wildlife Service 2001, pp. 132, 134). By allowing significant weakening of management with the SSFCA and OFEAs, the GSNM plan will reduce the amount and quality of fisher habitat, potentially threatening the fisher's viability and leading the species closer to extinction. (Barrett 2004).

d. The plan's other management standards are likely to be ineffective.

The plan contains a number of procedural and planning requirements relating to fisher habitat (FEIS, pp. 105-106), but close scrutiny reveals that none of these ensure additional protection. For example, one standard requires that, in "the first project of plan implementation," treatment be limited to "no more than 10 percent" of fisher habitat. However, the subsequent standard makes clear that "additional projects may occur" and fails to establish any enforceable limits on the kinds or amounts of logging that can take place after the initial entry. Similarly, the next standard establishes a "peer review process" for reviewing projects that would have specific impacts on fisher habitat or that would occur within given types of habitat conditions. Again, however, the standard requires only that "the results of the peer review process will be documented in the landscape analysis," and fails to impose any limitations on the intensity or

[4] The GSNM plan manages for 50 percent "of the overall potential fisher habitat" in canopy cover of 60 percent or greater (FEIS, p. 104), compared to the Framework standard which requires that 60 percent of each watershed be managed for 60 percent canopy cover. Given that "potential fisher habitat" only covers a portion of each watershed (due to vegetation types, meadows, rock outcrops, etc.), managing for a given percentage of "potential fisher habitat" will include substantially less area than managing for the same percentage of each watershed.

[5] The administrative record does include analysis of canopy cover within fisher den PACs and within subwatersheds that contain fisher den PACs. According to this analysis, 83 percent of the PACs and 61 percent of the subwatersheds have 60 percent or greater canopy cover. (Sequoia National Forest 2003, Acreage Table). Thus, this "local information" does not justify weakening the SSFCA's requirement that 60 percent of each watershed contain 60 percent or greater canopy cover.

extent of logging. Finally, the following standard generally directs the Forest Service to "identify and design measures to protect important wildlife structures within the treatment unit," but again fails to specify which or how many such structures must be protected or to direct that any specific action be taken or not taken.

In sum, as Dr. Barrett concludes in his review, "none of these planning and procedural standards establish clear and enforceable protection for the fisher, and none of them prohibit or restrict logging practices otherwise allowed by the plan that could significantly degrade fisher habitat." (Barrett 2004, p. 4).

e. Overall the plan would substantially degrade fisher habitat and threaten the fisher's viability and distribution in the planning area.

Additional information in the administrative record, but not included in the FEIS, suggests that the GSNM may have severe impacts on fisher habitat in portions of the Monument.[6] The documents show the results of GIS analysis of projected logging within fisher habitat during the first twenty years. The analysis shows that the 30 percent or more of high quality habitat would be treated in 71 subwatersheds, or approximately 25 percent of the total subwatersheds. Treatment would occur in an additional 29 subwatersheds currently containing less than 50 percent fisher habitat. In sum, the GIS analysis reports significant cause for concern in 34 percent of the Monument's subwatersheds. Given that the fisher's status is precarious, and that the loss of even a few fisher could cause an accelerated trend towards extinction, this extent of projected impacts on fisher habitat is not consistent with the Forest Service's legal duty to ensure the fisher's viability.

In sum, as Dr. Barrett concludes in his review:

> In particular, the plan would substantially weaken the Sierra Nevada Framework by allowing logging of trees up to 30" diameter and larger, by permitting extensive reduction in canopy cover within fisher habitat, and by weakening the Framework's protection for the southern Sierra fisher conservation area and for old forest emphasis areas. Given that the Monument includes a sizeable portion of the southern Sierra fisher population, the plan would threaten the viability of the already imperiled southern Sierra fisher population, thereby reducing the possibility of restoring a viable fisher population throughout the Sierra Nevada and the Pacific states. (Barrett 2004, p. 2, emphasis added).

[6] One document is labeled "Acres of Fisher Habitat Treatment in First 20 Years" with a heading of "GSNM North." The other document is unlabeled, but is in a similar format with the heading "GSNM South." We contacted Steve Anderson, the Wildlife Program Leader, and Jim Whitfield, the ID Team Leader, but neither person could adequately explain the notations "really hard" and "potential problem" in the margins of this document. Whatever the specific meaning, the analysis shows that a number of subwatersheds may be affected "really hard" or may have a "potential problem" as a result of implementing the plan.

Similarly, Dr. Kucera concludes in his review:

> In sum, the FEIS proposes a plan for forest management that will degrade the habitat of the Pacific fisher and American marten by removing large structures and reducing overhead canopy. The document provides no analysis of the consequences of such management activity, and a completely inadequate plan to acquire information necessary for future "adaptive management." I believe that the GSNM plan will lead to degradation of the habitat of the Pacific fisher and the American marten at the southern extent of their continental ranges and will increase the necessity of listing the fisher under the federal Endangered Species Act. (Kucera 2004, p. 4).

3. The FEIS lacks essential information and analysis with respect to the fisher, contrary to NEPA's requirements.

The FEIS is fundamentally flawed as an environmental analysis and disclosure document. Both our comments and those of Dr. Barrett on the GSNM DEIS highlighted critical information and analysis that needed to be included in the EIS to allow a careful consideration of adverse environmental impacts. Although the FEIS included additional information regarding the fisher's habitat use and associations, it continues to lack any kind of meaningful consideration of the plan's likely impacts on fisher and its habitat. Therefore, the decision must be withdrawn and a new draft EIS circulated for public comment.

a. Failure to utilize the best available data.

The FEIS is seriously flawed by its failure to acknowledge the fisher's imperiled status in the southern Sierra Nevada. One key document, co-authored by leading Forest Service fisher scientists, is not cited in the EIS. (Lamberson et al. 2000). As described above, this paper finds that the fisher "may face imminent extinction" under all but the most unrealistically optimistic assumptions. The EIS also fails to cite another important document, a letter from leading fisher scientists urging the Fish and Wildlife Service to designate the west coast population of the fisher as an endangered species. (Buskirk et al. 2003). These two documents bear directly on the fisher's imperiled status in the planning area and indicate that adverse impacts on the fisher and its habitat need to be limited to the greatest extent possible. By failing to cite or acknowledge these documents, the EIS does not adequately inform the decision-maker or the public of critical information as required by NEPA and falls short of the agency's duty to utilize the "best available data" in the planning process. 36 CFR 219.12(d).

b. Lack of basic information and analysis.

The FEIS is based upon the premise that the long-term reduction in stand-replacing wildfire outweighs any short-term adverse effects to old forests and wildlife. The BE states, "the clear challenge in the Management Plan is to balance on the one hand the immediate short-term effects of protection and restoration management associated with community and resource protection [i.e., logging] with the need to protect critical old forest habitat until the long-term improvements in overall habitat 'kick in.'" (USDA Forest Service 2004, p. 57). As stated by the U.S. Fish and Wildlife Service in the context of the Framework: "Potential effects of fire are unpredictable….

However, the immediate effects of fuel treatments to reduce the risk of such fires could also effectively reduce the quality of habitat available for fishers, particularly for resting and denning." (USDI Fish and Wildlife Service 2001, p. 134).

Unfortunately, although the FEIS at least makes an effort to address the potential for reducing future stand-replacing wildfires, it pays virtually no attention to the likely "immediate short-term effects" of logging on the fisher and its habitat. This failure to take a hard look at the plan's likely direct impacts represents a clear violation of NEPA. In our comments on the DEIS, we emphasized this problem and specified the kinds of information that would be needed for an adequate consideration of impacts on fisher:

> An adequate EIS would include far more information and analysis regarding potential environmental impacts. For example, with respect to the Pacific fisher, the EIS should disclose: (1) a map indicating currently occupied and potential habitat, and denning/resting habitat and foraging/traveling habitat; (2) a description of management activities projected within occupied, suitable, denning/resting, and foraging/traveling habitat; (3) an analysis of the short-term impacts of planned logging on the acreage and distribution of fisher habitat, including loss of medium and large trees and reduction in canopy cover; (4) impacts on connectivity of fisher habitat from planned management; (5) the estimated current number of fishers with the Monument and surrounding areas; (6) the potential for increased mortality or reduced fecundity as a result of planned management; and (7) utilizing all of the foregoing information and analysis, the DEIS should assess the plan's potential impacts on the fisher's viability within the planning area and the Sierra Nevada. (Sierra Nevada Forest Protection Campaign 2003, p. 7).

Similarly, Dr. Barrett in his comments on the DEIS stated as follows:

> The DEIS includes almost no analysis of the plan's potential effects on the fisher. The two-page discussion … does not provide the kind of information that would be necessary to make a careful evaluation of the plan's impacts on the fisher. For example, how many acres of fisher habitat (broken down by denning/resting habitat and foraging/travel habitat) would potentially be degraded or lost in the short-term? How many fisher home ranges might potentially be affected? What might the impacts of such habitat loss be on fisher mortality rates, which already appear to be low? What might the impacts be on fisher reproduction? What would be the impact of proposed logging on forest fragmentation and connectivity of habitat? Is it possible that logging might interrupt important habitat corridors and interfere with fisher movement? What might the cumulative effects be on the viability of the southern Sierra fisher population? On the viability of the Pacific coast population of the fisher more generally? Given the small size, precarious status, and ecological significance of the southern fisher population, all of these questions should be explored in detail before proceeding with a project of this magnitude. (Barrett 2003a, pp. 3-4).

Despite our comments and those of Dr. Barrett, the FEIS fails to include any of this essential information and analysis.[7]

Dr. Barrett, in his review of the FEIS, concludes:

> The FEIS includes virtually no analysis of the plan's likely impacts on the Pacific fisher or its habitat. For example, [the] FEIS … does not reflect the importance and precarious status of the southern Sierra fisher population. Nor does the FEIS include basic information like a map of known fisher locations, a map of suitable habitat, the amount of denning/resting and foraging/travel habitat, and the like. Without this kind of basic information, it is very difficult to assess the proposed action thoroughly. (Barrett 2004, p. 5, emphasis added).

Similarly, Dr. Kucera in his review finds that the FEIS "includes virtually no analysis of the plan's impacts on marten and fisher and their habitat, despite the fact that significant adverse environmental consequences are likely to result from the proposed intensive and extensive alterations of habitat." (Kucera 2004, p. 3). Dr. Kucera goes on to list in detail the kinds of information and analysis that should have been included in the EIS:

> In my professional opinion, an adequate EIS should include the following kinds of information and analysis with respect to forest carnivores: historical distribution and locations of modern detections, maps of known home ranges from study animals, distribution of habitat based on empirical detection data and extrapolated from research data, locations of nearest populations of conspecifics, and opportunities to disperse among these populations. Analysis should include the amount of acreage to be modified annually, a structural description of the modified forest before and after treatment, and an analysis of the modified fisher and marten habitat on fishers and martens, and their prey. Areas of insufficient knowledge should be acknowledged and a program to acquire such knowledge designed. Without this kind of information and analysis, the Forest Service cannot make a careful and reasoned decision regarding whether to proceed with the plan or adopt one of the other alternatives considered in the FEIS. (Kucera 2004, p. 3, emphasis added).

Therefore, for the reasons set forth in detail by Drs. Barrett and Kucera, the FEIS is fundamentally flawed as an environmental analysis and disclosure document.

c. Lack of cumulative effects analysis.

Although the Monument includes a considerable portion of the fisher's currently occupied habitat in the Sierra Nevada, the fisher also occupies portions of the Sierra National Forest to the north. It is widely accepted that the existing population in the southern Sierra Nevada may not be viable and that the fisher's recovery in the Sierra Nevada requires expansion of the current

[7] Notably, there are documents in the administrative record that purport to reveal the results of GIS analysis that address projected impacts on fisher habitat by subwatershed. This is one example of the kind of information that should have been disclosed and analyzed in the EIS to enable the public and the decision-maker to balance short-term and long-term impacts.

range.[8] Therefore, an adequate analysis of the GSNM plan's likely impacts on fisher must also consider how areas north of the Monument are managed pursuant to the recently issued supplement to the Framework. By failing to consider this issue, the FEIS violates NEPA's cumulative effects requirement.

NEPA requires the Forest Service to consider cumulative impacts, which include the impacts of "other past, present, and reasonably foreseeable future actions regardless of what agency … or person undertakes such other actions." 40 CFR 1508.7. The FEIS fails at all to consider cumulative impacts on the fisher from the SNFPA revision, despite the fact that the revision was issued at almost the same time as the GSNM ROD. By way of explanation, the FEIS states that the Framework revision was not "final" and therefore "cumulative effects cannot be quantified." (FEIS, p. 359). However, the legal standard is not whether another plan is "final," but rather whether it constitutes a "reasonably foreseeable future action." 40 CFR 1508.7. Because the Framework DSEIS was released well before the GSNM ROD, and because the Framework FSEIS was issued virtually simultaneously with the GSNM ROD, it is indisputable that the Framework revision constituted a "reasonably foreseeable future action."

As stated by Dr. Barrett:

> The GSNM FEIS also fails adequately to consider cumulative impacts on the fisher. The Forest Service has recently issued a revision to the Sierra Nevada Framework, which substantially weakens restrictions on logging within fisher habitat outside of the Monument. An adequate analysis must consider the impacts of both proposals on the fisher population in the southern Sierra Nevada. By neglecting to address this important issue, the GSNM FEIS fails to consider the overall impacts of the GSNM plan, together with the Framework revision, on the fisher population in the Sierra Nevada. (Barrett 2004, p. 6).

A similar analysis applies to the Kings River Administrative Study, which the FEIS also describes as not "final" and therefore does not address. The Framework DSEIS acknowledges "concern over the cumulative effects of adaptive management studies in the Kings River demonstration area and potential changes in management under the Giant Sequoia National Monument Management Plan," which together cover approximately 29 percent of presently occupied fisher habitat. (USDA Forest Service 2003b, p. 176). The Kings River project has proposed intensive logging which, if applied across the range, "would greatly increase risk and

[8] There is widespread agreement that the southern Sierra fisher population is not viable in the long term in the absence of efforts to expand the current range and to connect the population with the fisher population in northwestern California. (Barrett 2003b; Buskirk 2003). "The inability of extant fisher populations to support one another demographically, including those that are isolated by relatively small distances, or to colonize currently unoccupied areas within their historical range, are significant conservation concerns." (Aubry and Lewis 2003, p. 88). "Recolonization of the central and northern Sierra Nevada may be the only way to prevent fisher extinction in the isolated southern Sierra Nevada population." (Truex et al. 1998, p. ii). Facilitating the fisher's dispersal to, and recolonization of, the central and northern Sierra Nevada requires that habitat be provided to promote connectivity and reduce fragmentation. "Retaining suitable habitat within and outside of the Southern Sierra Fisher Conservation Area is necessary to maintain linkage between the southern Sierra Nevada population and the population in northwest California." (U.S. Fish and Wildlife Service 2001, p. 134). "To facilitate recolonization, the Forest Service must provide sufficient habitat for fisher denning, resting, and foraging, and that habitat must be located in a manner that will promote the fisher's occupation of, and movement throughout, the region." (Barrett 2003b, p. 4).

uncertainty over viability" of the fisher. (Ibid., p. 175). Therefore, planned activities pursuant to that project also constitute cumulative effects that need to be addressed in the GSNM FEIS.

Finally, the FEIS must also consider the cumulative effects on fisher, marten, and California spotted owl from logging within adjacent private and tribal lands.

d. Failure to address impacts on American marten.

The FEIS includes virtually no information on the American marten, despite the fact that the plan is likely to have a negative impact on the marten and its habitat. As stated by Dr. Kucera:

> Because a) the American marten is listed as a Sensitive Species by the USDA Forest Service and is recognized as being "vulnerable to local extirpation and extinction," b) documented or suspected gaps exist in their current distribution in Tulare County potentially presaging such local extirpation and extinction, and c) the proposed project includes substantial alterations to marten habitat, the FEIS should contain an analysis of the expected changes to marten populations and distribution. No such analysis is presented in the FEIS. Even a map showing marten distribution and habitat is absent, although the FEIS states on page 251 that "Sequoia National Forest wildlife biologists have conducted extensive fisher and marten surveys..." The Environmental Consequences (p. 358-359) contain no mention of the American marten. These deficiencies in the document make it impossible for any reviewer to adequately evaluate the FEIS. (Kucera 2004, p. 2).

This failure to take a hard look at the plan's likely adverse impacts on the American marten and its habitat violates NEPA.

B. California Spotted Owl.

1. The Owl's Population in the Southern Sierra Nevada is at Risk.

The FEIS fails to consider carefully the owl's status in the southern Sierra Nevada. Results from the demographic study area closest to the GSNM, which covers portions of the Sierra National Forest and Sequoia-Kings Canyon National Park, indicate that the owl's population in the region may be at considerable risk, likely due in part to logging on national forest lands.

Demographic results from the Sierra National Forest study area have consistently shown a declining population. (Steger et al. 2000). The recent meta-analysis specifically found "a negative trend" in estimated population on the Sierra National Forest study area, which "was cause for concern … because it suggested an accelerated rate of decline in the owl population … during most of the study period" (Franklin et al. 2004, p. 33). In fact, the authors conclude that the Sierra National Forest area population "probably experienced a decline during the period of study" (ibid., p. 35), and owl biologists Blakesley and Noon find "compelling evidence that spotted owls did decline on the Sierra National Forest study area." (Blakesley and Noon 2003, p. 1).

The comparison between the Sierra National Forest study area and the Sequoia-Kings Canyon study area is especially relevant, because the national forest has been managed with commercial logging and the national park has not been intensively logged. Franklin et al. describe these two areas as representing "two ends of a spectrum":

> In the Sierran province, the [Sequoia-Kings Canyon] population on national park lands seemed to be the most viable population with the highest adult apparent survival, a positive trend in [lambda], and no evidence of a trend in fecundity. At the opposite end of the spectrum was the [Sierra National Forest] study, which had the lowest estimate of [lambda], low adult apparent survival, and declining trends in both [lambda] and fecundity. (Franklin et al. 2004, p. 35).

These results are consistent with those from the underlying demographic studies in the southern Sierra, which have concluded that the owl's population on the Sierra National Forest appears to be faring appreciably worse than the population on the adjoining Sequoia-Kings Canyon National Park. (Steger et al. 2000). Moreover, the owl's density within the National Park is also significantly higher than within the Sierra National Forest. (North et al. 2000).

One likely explanation for the differences in the owl's status between the Sierra National Forest and the Sequoia-Kings Canyon areas is more intensive logging within the national forest lands. As noted by Franklin et al. (2004, p. 38), "changes in vegetation resulting from timber management may have lowered adult survival in the [Sierra National Forest]." In his declaration (attached hereto), owl biologist Zach Peery agrees with Franklin et al.'s assessment and concludes that "a likely explanation for the differences in the owl's status between the SIE and the SKC areas is more intensive logging within national forest lands." (Peery 2004, p. 4).

In sum, there is good reason to believe that the owl's population is declining on national forest lands in the southern Sierra due in substantial part to logging practices. Yet the FEIS fails to acknowledge this possibility or to consider the best available information bearing on this important point.

2. <u>The GSNM plan would threaten the owl's viability and distribution in the southern Sierra.</u>

The California spotted owl is closely associated with older forests. As the FEIS acknowledges, owl nesting habitat "is characterized by dense canopy closure (greater than 70 percent) with medium to large trees, and usually at least two canopy layers are present." (FEIS, p. 244). Owl foraging habitat "includes all medium to large tree stands with 50 percent or greater canopy closure." (<u>Ibid.</u>). In addition, the proportion of the landscape or watershed in suitable habitat (greater than 50% canopy closure) appears to be important to the owl, and "may be used as a potential indicator of habitat quality." (<u>Ibid.</u>).

The GSNM management plan would allow these very habitat characteristics to be degraded, thereby adversely affecting currently suitable owl habitat and threatening the viability and distribution of the owl. The plan would replace pre-existing diameter limits of 12" and 20" with a limit of 30" or greater and would weaken the Framework's standard of 50 percent canopy

cover. According to the Fish and Wildlife Service and the best available research, logging of trees up to 30" diameter and reduction in canopy closure to below 50 percent will result in stands with "a low likelihood of maintaining canopy suitable for nesting … or foraging." (USDI Fish and Wildlife Service 2001, p. 115). Not only does the plan allow such adverse impacts, but the FEIS utterly fails to disclose or analyze such impacts as required by the National Environmental Policy Act.

a. Logging of medium-large trees.

The GSNM plan would increase logging diameter limits from the existing 12-20" to 30" in all land allocations. However, as explained by owl biologists Zach Peery and Monica Bond, research indicates that 20-30" diameter trees are an important component of owl foraging and nesting habitat. For example, Call et al. (1992) showed that owls strongly select stands with a high basal area of trees between 20.7-35.4 inches for foraging. In fact, the basal area of trees in this size class was the second most important variable (out of 54) for discriminating owl foraging stands from random stands. Bias and Gutierrez (1992) found that a greater basal area of trees in the 20.7-35.4 inch size class occurred in owl nest stands than in random stands. Moreover, Blakesley (2003) documented greater nest success in stands and greater survival in territories dominated by medium and large trees.

"Thus, medium-sized trees are … an important component of nesting, roosting, and foraging habitat, as well as provide a future supply of large potential nest trees." (Bond 2003, p. 9). "Without any information to the contrary, management plans should assume that 20-30 inch trees constitute an important component of Spotted Owl habitat and that removing significant numbers of these trees could have a negative effect on Spotted Owl population viability." (Peery 2004, p. 2).

b. Reduction in canopy closure.

The plan would reduce the Framework's canopy retention standards from 50 percent to 40 percent, while also increasing the amount of canopy reduction allowed from 10-20 percent to 30 percent.[9] The GSNM FEIS (p. 244) characterizes owl foraging habitat as having "greater than 50% canopy closure." According to Dr. Verner (2003a, p. 2), reducing canopy cover to 40 percent "would markedly reduce the suitability of owl habitat, with much uncertainty about the overall effects on the owl population." The reduction in the standard from 50 percent to 40 percent represents a substantial departure from the Framework, one that owl scientists uniformly do not support. (Verner 2003a; Blakesley and Noon 2003; Peery 2004, p. 2; Bond 2003, p. 10). As stated by Dr. Verner in his comments on the Framework DSEIS (which included a similar standard): "In spite of many efforts by owl scientists to emphasize the importance of canopy cover to the owls, the present Draft seems to ignore most of these concerns." (Verner 2003a, p. 3).

[9] Although the plan would ostensibly retain 50 percent canopy cover as a goal, the proposed standard would allow canopy cover to be reduced to 40 percent whenever "site-specific project objectives cannot be met" utilizing the 50 percent standard, for example to "design cost efficient treatments." (FEIS, p. 106). The legal standard would be 40 percent.

The best available research suggests that reducing canopy cover will have adverse effects on owls. For example, Blakesley (2003) documented higher occupancy in territories with large areas >70% canopy cover. The importance of canopy cover to Spotted Owls in the Sierra Nevada is supported at a smaller spatial scale by North et al. (2000), who found that individuals nesting in stands with high foliage volume produced more juveniles than individuals nesting in stands with low foliage volume. As stated by Peery, "the only peer-reviewed analyses relating Spotted Owl demographics in the Sierra Nevada to canopy attributes suggest that reducing canopy protection will have a negative impact on owl population viability." (Peery 2004, p. 2).

In addition, several studies have identified canopy layering as an important stand structural characteristic associated with preferred foraging sites for the northern spotted owl. (USDA Forest Service 2001a, Vol. 3, Chapter 3, part 4.4, p. 72). North et al. (2000) also found that high foliage volume was a key factor in selection of nest sites for spotted owls on the Sierra National Forest. As the Forest Service has recognized elsewhere, the effect of the proposed action would be to simplify the canopy, promoting forests with little or no understory, "which could affect owl reproductive output." (USDA Forest Service 2003b, p. 187).

In sum, by allowing canopy cover to be reduced by as much as 30 percent to as low as 40 percent, the plan will substantially degrade owl nesting and foraging habitat, potentially threatening the owl's viability and distribution and contributing to a trend towards federal listing. (Peery 2004). Yet these impacts are not mentioned, much less analyzed, in the FEIS.

c. Logging within PACs.

Verner et al. (1992) considered the establishment of PACs around all known owl nest sites to be a critical component of a management strategy designed to stabilize owl habitat and populations. "The PACs were designated by the CASPO team as a means of preserving the high canopy cover so consistently associated with owl nesting sites." (Verner 2003a, p. 7). "The loss of available nest sites … may preclude population expansion following breeding pulses. This, in turn, may result in declining populations with lower likelihood of persistence over time." (USDA Forest Service 2001a, Vol. 3, Chap. 3, part 4.4, p. 84). Therefore, "PACs should be viewed as 'centerpieces' of protected habitat for Spotted Owls in the Sierra Nevada and should not be rendered unsuitable by management activities." (Peery 2004, pp. 2-3).

The Framework only allows logging in PACs within the defense zone of the WUI, whereas the GSNM plan allows logging in PACs within the defense and threat zones. In addition, the FEIS reflects a significant expansion in the acreage of the wildland-urban interface compared to the Framework, resulting in additional PACs being included within the threat and defense zones. Under the 2001 Framework, approximately 111,000 acres were within the WUI in the Monument; under the GSNM plan, approximately 209,000 acres are within the WUI, an increase of 88 percent. (Britting 2004). Yet the GSNM FEIS fails to analyze the potential impacts of increased logging within PACs or to offer any explanation for why the WUI was expanded so substantially.

Under the GSNM plan, PACs within the defense and threat zones can be logged pursuant to the same standards and guidelines used in general forest lands. (FEIS, p. 107). Yet the SNFPA DSEIS concedes that such logging "could result in removal of habitat attributes that provide

quality nesting and foraging habitat" for owls. (DSEIS, p. 186). "Allowing this much of the owl's core nesting habitat to be logged significantly increases the likelihood that the owl's distribution and population will decline." (Peery 2003, p. 4). As stated by Dr. Verner: "Mechanical treatments in PACs increase considerably the likelihood that resulting habitat will be less suitable for the owls, thus compromising the effectiveness of the PACs an unknown amount…. In my professional opinion, to degrade this attribute of the PACs [i.e., canopy cover] would be a major risk for the owl." (Verner 2003a, pp. 4, 7).

d. Weakening protection for owl home range core areas (HRCAs).

The Framework strictly limits logging within HRCAs based on the recognition that spotted owls preferentially use core areas within their home ranges (Bingham and Noon 1997) and that degrading habitat within HRCAs will likely reduce survival and reproductive success (Bart 1995; USDA Forest Service 2001a, Vol. 3, Chap. 3, part 4.4, pp. 92-93). As stated in the Framework FEIS, "increasing the number of owl sites with desired amounts of habitat is likely important to stabilizing current population declines." (Ibid., p. 92). The GSNM plan does not clearly state how the HRCAs will be managed, or whether any different logging standards and guidelines will apply within these areas.[10] Assuming, however, that HRCAs would be logged utilizing the same logging standards applied to general forest lands, the adverse impact on nesting spotted owls could be substantial.

e. Increased logging within "area of concern."

The proposed action will allow significant habitat degradation within or near one "area of concern" (AOC) identified by Verner et al. (1992). This area of concern (Area B) is located in central Tulare County, near the southern border between the national park and the national monument. The area is described as "a natural bottleneck in north-south distribution of owls because steep terrain provides only a narrow band of suitable habitat." (Verner et al. 1992, p. 48). With respect to this area, "even relatively small losses of habitat could sever the interchange between adjacent populations of owls." (Verner et al. 1992, p. 45). A review of the GSNM map demonstrates that most of the portion of the GSNM in the vicinity of this AOC (due south of the national park), would be included within the WUI. By allowing more intensive logging within or near the AOC, the GSNM plan could significantly threaten the owls in this area. Yet the potential adverse impacts of logging within this area are not even mentioned, much less analyzed in the FEIS.

f. Summary of impacts on California spotted owls and their habitat.

In summary, the GSNM plan would have a significant, adverse impact on the spotted owl and its habitat. By allowing logging of trees up to 30", significant reduction in canopy cover, and

[10] For example, the GSNM FEIS states that the Framework's "allocations and associated management strategies" for HRCAs will be retained in the Monument plan (FEIS, p. 102), but does not include HRCAs under the list of forest-wide standards and guidelines that would be retained from the Framework (FEIS, p. 103). This and other important discrepancies and ambiguities underscore the Forest Service's failure to adopt a coherent management plan for the GSNM, contrary to the Monument proclamation. (Please see the administrative appeal of the California Attorney General's office on this point, which we hereby incorporate by reference.) Such lack of clarity makes it impossible to assess and review the plan's environmental impacts (see, e.g., Peery 2004, p. 4), which also violates NEPA.

intensified logging within PACs, the plan will degrade owl nesting and foraging habitat. For this reason, owl scientists have concluded that the proposed plan would threaten the owl's distribution and viability, contrary to the agency's legal duty to ensure viability and avoid contributing to a trend towards federal listing under the Endangered Species Act.[11] (Peery 2004; Bond 2003; Verner 2003b; Blakesley and Noon 2003).

3. The FEIS Lacks Essential Information and Analysis With Respect to the Owl, Contrary to NEPA's Requirements.

In our comments on the draft EIS and proposed plan, we noted that the DEIS was fundamentally flawed and needed to be redone from scratch to comply with NEPA's requirements:

> The DEIS, as an environmental disclosure and analysis document, is fundamentally inadequate. As detailed in comments submitted by the Attorney General of the State of California, the DEIS fails to describe the proposed action with sufficient clarity to determine what kinds of management activities will take place on which lands, making any assessment of the plan's likely impacts impossible. Beyond that basic problem, the DEIS fails to take a serious look at environmental consequences. For example, the "analysis" of impacts on the California spotted owl, Pacific fisher, and American marten covers only four paragraphs, most of which constitutes simplistic conclusions without any supporting rationale. In effect, a whole host of important environmental considerations have been swept under the rug…. Given the profound deficiencies of the DEIS, it is imperative that the Forest Service begin the process over with an entirely revised draft. Without a revised draft that thoroughly addresses the plan's potential impacts, the public will have no meaningful opportunity to comment on the plan or the alternatives, contrary to NEPA. (Sierra Nevada Forest Protection Campaign 2003, pp. 6-7).

Unfortunately, the fundamental deficiencies of the DEIS have not been remedied in the FEIS. Although the FEIS includes more background information about species, it still fails to cite the best available data and fails to include the kind of basic analysis that would be needed to evaluate the plan's environmental consequences. Therefore, the decision must be withdrawn and a new draft EIS circulated for public comment before the plan can go forward.

a. Lack of basic information and analysis

Any adequate review of the plan's environmental impacts would include the following kinds of basic information: (1) the amount of owl nesting and foraging habitat currently within the Monument, and within each land allocation; (2) the amount of owl nesting and foraging habitat likely to be logged under the plan; (3) the number of PACs within the defense or threat zones that are likely to be logged; (4) the proportion of suitable habitat currently within owl home range core areas (which the FEIS at p. 244 identifies as "a potential indicator of habitat quality"); (5) how the plan is likely to affect suitable owl habitat within home range core areas; and (6)

[11] Although some of these conclusions were reached in reviewing Alternative S2 of the Framework DSEIS, the GSNM plan shares essential elements with Alternative S2. Therefore, the same conclusions apply.

likely impacts within or near the "area of concern." Incredibly, none of this information appears to be included in the FEIS or in the underlying biological evaluation.

Dr. Verner's critique of the Framework DSEIS applies with equal force to the GSNM FEIS:

> The document suffers from a marked shortage of summary tables and figures to allow reviewers to *see the big picture* more easily. For example, we need to see summary tables that present total acres affected by the DSEIS, total acres of suitable owl habitat (both foraging and nesting) by National Forest and CWHR habitat class, numbers of PACs by land allocation, and the acres in PACs by land allocation, etc. It takes entirely too much time to find some of these numbers in the text when we need them, and many of the important numbers apparently are not even given in the text. For example, a key element of any management regime is the rate at which treatments are done, and the easiest way to assess whether the rate is excessive or not is to look at the percentage of the landbase treated each year—the extent and intensity of the treatments and where treatments are done in relation to elevation, CWHR classes, zone delineations, suitable foraging and nesting habitats of the owls, etc. The way the DSEIS is written, I don't believe it's possible to sort out these details, but some well-crafted tables could make this a relatively simple exercise. <u>But without this information, it's not possible to get a full understanding of the likely effects, overall, of implementing the plan</u>. (Verner 2003a, p. 1).

In addition, the FEIS fails to cite the best available data regarding the owl's status in the southern Sierra. As described above, there is important research comparing the owl's demography in the Sierra National Forest and the Sequoia-Kings Canyon National Park, which suggests that the owl's population is declining on national forest lands due to more intensive management allowed on these lands. The failure to disclose and analyze the implications of this research constitutes "best available data" that was not considered, contrary to the Forest Service's planning regulations. 36 CFR 219.12(d).

b. Failure to analyze direct, short-term impacts

The FEIS relies exclusively on modeling to assess potential impacts of the plan and alternatives. Utilizing such modeling, the FEIS projects that the impacts of all the alternatives on large trees, large snags, and old growth acreage will be virtually identical over the next twenty years. (FEIS, pp. 351-354). Beyond that, the FEIS concedes that "the ability to accurately predict beyond the first two decades is severely limited." (FEIS, p. 25). Therefore, as a practical matter, the FEIS fails to identify any differences at all between the alternatives with respect to old forest characteristics. This conclusion is implausible and unsupportable, and the effect is to sweep critical issues under the rug.

For example, the SNFPA DSEIS analyzed potential impacts on owl habitat of the proposed action, which shares basic features with the GSNM plan (e.g., logging of trees up to 30", logging of PACs in the threat zone, reduction of canopy cover by as much as 30 percent to as low as 40 percent), in some detail. As analyzed and disclosed in that EIS, the proposed action would have a significant, adverse impact on spotted owl habitat in the Sierra Nevada at multiple spatial

levels. See, for example, USDA Forest Service 2003b, p. 186 (Alternative S2 "could result in the removal of habitat attributes that provide quality nesting and foraging habitat"), p. 187 ("Alternative S2 would reduce the amount of multi-story canopy, stand complexity and canopy closure which could affect owl reproductive output"), p. 188 (Alternative S2 would result "in reduced owl densities and reduction in distribution of owls and owl habitat" in geographic areas of concern, as well as "increased fragmentation" in these areas). Overall, the DSEIS concludes (p. 193) that Alternative S2 is "likely to isolate subpopulations and limit the opportunity for interactions across NFS lands."

This kind of basic analysis and disclosure of likely adverse effects is entirely lacking in the GSNM FEIS. Instead, the FEIS presents only predicted positive consequences. See, e.g., FEIS, p. 352 (plan "would lead to a steady increase over time in spotted owl habitat, large trees per acre, and snags"). The FEIS entirely fails to analyze or disclose the short-term degradation in owl habitat that will occur if the plan is implemented. This failure to take a hard look at a critical environmental issue is a plain violation of NEPA.

Not only does the FEIS rely exclusively on modeling, but the FEIS fails to disclose the substantial uncertainty surrounding modeling projections. As stated by Peery:

> It is likely that model predictions in the FEIS, such as the acreage of old-growth and number of trees >30", are characterized by high levels of uncertainty, especially when vegetation conditions are forecasted 150 years into the future. *No range in model outcomes (e.g., minimum and maximum amount of owl habitat present after 150 years) is presented in the FEIS, making it impossible to determine if long-terms increases in habitat will compensate for short term losses due to fuel treatments*. Given the large number of parameters in these models, some which were probably "best guesses", I suspect that the model projections are characterized by high levels of error. Given this uncertainty, it is imperative that short-term effects on owl habitat be documented such that the trade-off between habitat gains and losses can be critically evaluated. Nevertheless, no estimates of changes in owl habitat are provided in the FEIS (see above). (Peery 2004, pp. 5-6).

c. The DSEIS fails to consider effects on spotted owls at the territory or landscape scales.

It is well established that the California spotted owl utilizes and selects for habitat at a variety of spatial scales, including at the home range and landscape scales. As stated in the Framework FEIS: "Conservation measures must consider habitat distribution, abundance, and quality at the landscape, home range, and stand-level scales." (USDA Forest Service 2001a, Vol. 3, Chap. 3, part 4.4, p. 82). Yet inexplicably, the FEIS fails to consider the effect of eliminating spotted owl habitat, as allowed under the plan, at either the home range or the landscape scale.

At the home-range scale, sufficient suitable foraging and nesting habitat must be available for individual owl pairs to survive and reproduce. Nevertheless, the FEIS provides no estimates of the number of owl home ranges that will be affected by timber harvesting or how much habitat will be lost within individual home ranges. Thus, it is not possible to assess the effect of the habitat reduction called for by the proposed action at the home-range scale. (Peery 2004).

At the landscape scale, suitable habitat must be distributed across the Sierra Nevada in a manner that is consistent with spotted owl life history. The spatial distribution of owl home ranges was an important consideration in the development of both the conservation strategy for the northern Spotted Owl (Thomas et al. 1990) and the interim guidelines for the California Spotted Owl (Verner et al. 1992). Both plans considered it important that enough home ranges be located in close proximity so that dispersing juveniles had a high probability of locating vacant territories and recruiting into the population.

Nevertheless, the FEIS does not assess the effect of the plan on spotted owls and their habitat within a spatial context:

> Will the proposed action maintain blocks of home-ranges in close proximity such that successful dispersal is still likely, or will the proposed action result in loss of occupied owl nest sites and an increase in nearest-neighbor distance? Such landscape-scale questions need to be addressed if the effect of the proposed action on Spotted Owl viability is to be assessed in a rigorous manner. These omissions are surprising considering that the Framework carefully considered such issues. (Peery 2004, p. 5).

d. The FEIS fails to explain or justify the significant expansion of the wildland-urban interface.

As stated earlier, the amount of land in the WUI in the FEIS is far greater than it was in the Framework. This is a major increase in the acreage of forest with reduced restrictions on logging and will have a significant impact on owl habitat. The basis for increasing the WUI has not been explained or justified in the FEIS and the impacts have not been assessed as required by NEPA.

II. THE PLAN FAILS TO DEMONSTRATE THAT THE EXTENT AND INTENSITY OF PROPOSED LOGGING IS CLEARLY NEEDED TO ACHIEVE LEGITIMATE FUELS REDUCTION GOALS.

The Proclamation strictly limits the removal of trees and only allows logging where "clearly needed for ecological restoration and maintenance or public safety." (Clinton 2000). The FEIS and ROD fail to identify specific actions necessary to reduce fuel hazard and instead broadly define the nature of allowable tree removal in an effort to create "flexibility in managing vegetation" (FEIS, p. 195) where such flexibility was not prescribed under the Proclamation. The FEIS and ROD fail to demonstrate that the proposed logging is "clearly needed for ecological restoration and maintenance or public safety," contrary to the Proclamation.

A. <u>The FEIS and ROD mischaracterize the issue related to "tree removal" allowed under the proclamation.</u>

The ROD states that tree removal will only occur after completing an assessment of risk/hazard, effectiveness and feasibility. (ROD, p. 29). The major thrust of this assessment will be to determine if prescribed burning is appropriate. In cases where prescribed burning and mechanical treatment without tree removal is judged to be not effective, then tree removal is

allowed. (ROD, p. 30). This assessment scenario fails to distinguish between the variety and intensity of tree removal that is possible. Adverse effects on fire resiliency (Countryman 1955; van Wagtendonk 1996; Christensen et al. 2002) and habitat quality of at-risk species (see Section I of this appeal) can result from the removal of trees and the reduction of canopy cover. Thus, a significant factor that can contribute to adverse impacts is the size of the trees removed, the amount of canopy reduced, and the intensity of tree removal.

The mandate in the proclamation to allow tree removal only when "clearly needed" requires a demonstration that the specific amount and intensity of proposed logging is required for ecological restoration. In other words, if the goals of ecological restoration can be achieved through removal of brush and thinning of small trees, then logging of larger trees would not be "clearly needed" and would be contrary to law. The FEIS and ROD fail to include or require an evaluation of the sizes and amount of trees required for removal in order to restore or maintain the ecology of the Monument or for public safety. By failing to consider the nature of tree removal that will be allowed, the FEIS and ROD fail to address the issue most fundamental to the notion of "tree removal" and fail to meet the direction in the Proclamation.

B. <u>The FEIS and ROD fail to disclose why removing trees up 30" in diameter and reducing canopy cover to 40 percent is clearly needed to meet the fuel objectives.</u>

The concept of demonstrating the type of trees needed to meet the objectives was clearly identified in one of the scientific advisories. (FEIS, pp. C-23-24). The advisory recommended that "a quantitative test" of the Framework standards be completed to determine if they are too restrictive to meet the intent of the proclamation. (FEIS, p. C-24). Specific recommendations were made on setting performance standards, randomly selecting the watersheds on which to test the standards and using fire behavior models to estimate the effects of wildfire under the specified conditions. The Forest Service failed to respond to this advice in a substantive manner and simply used SPECTRUM (a non-spatial forest growth model) to estimate effects of the different alternatives. (FEIS, p. C-67). Thus, the efficacy of the treatments generally allowed under the alternatives with respect to modifying fire behavior is limited to an overly simplified approximation.

The Forest Service is familiar with the type of analysis recommended by the science advisory and could have completed such an analysis. In fact, a similar issue faced the Forest Service in 2001. Following the adoption of the Framework in 2001, the Forest Service speculated that the standards in the newly adopted plan were insufficient to reduce fuel hazard to desired levels. In response to this speculation, the Forest Service developed a landscape analysis of the Middle Fork Cosumnes watershed. (USDA Forest Service 2003a). This analysis used techniques similar to those suggested by the science advisory to evaluate the effect that the fuel treatments proposed in the newly adopted plan would have on changing fire behavior. (USDA Forest Service 2003a, p. 29). Although the FEIS for the Framework made extensive use of SPECTRUM modeling in the same way that the present FEIS does (FEIS, p. H-2), the model makes many assumptions about the effectiveness of fuels treatments and is not a spatial model. Recognizing the limitations of the SPECTRUM modeling, the Forest Service undertook the Middle Fork Cosumnes analysis "as a case study for understanding how fuels treatments

conducted under the ROD would affect potential wildland fire behavior and California spotted owl habitat." (USDA Forest Service 2003a, p. 21).

Thus, analytical tools were available to the Forest Service (and concurrently used elsewhere) to address the critical issue of the type and intensity of tree removal needed to positively modify fire behavior. Nonetheless, the Forest Service failed to undertake such an analysis and therefore failed adequately to evaluate the effects of tree removal on fire behavior or to demonstrate the need for specific kinds and intensities of logging.

C. Minor differences in acres severely burned among alternatives indicate that there is little benefit to the removal of trees greater than 20 inches in diameter.

Based on the generic assumptions in the SPECTRUM modeling, the FEIS estimates that in the first 20 years about 9,720 acres will be severely burned under Alternative 1 and about 8,280 acres will be severely burned under Modified Alternative 6. (FEIS, p. 307). To accomplish this additional reduction of 1,440 acres in area severely burned, Modified Alternative 6 "costs" significantly more in natural and economic resources compared to Alternative 1. For example, Modified Alternative 6:

- Removes larger trees than Alternative 1
- Allows canopy to be reduced to lower levels than Alternative 1
- Results in adverse effects to imperiled species (as described in Section I of this appeal)
- Treats 26,860 more acres during the first 20-year period than Alternative 1 (FEIS, p. 294)
- Cost over $16 million dollars more to implement in the first decade compared to Alternative 1 (FEIS, p. 122).

The minor reduction in acres burned combined with the high financial and biological "costs" indicate that the "benefit" described for Modified Alternative 6 by the Forest Service is dubious at best. The results of the analysis provided for Modified Alternative 6 do not demonstrate that tree removal is "clearly needed" to reduce fire hazard as claimed in the ROD. (ROD, p. 4).

D. The Forest Service does not need to remove trees greater than 20 inches in diameter and reduce canopy cover to 40 percent in order to reduce the risk of catastrophic fire.

The ROD allows the removal of trees up to 30 inches in diameter and reductions in canopy cover to 40 percent in the name of "reducing the threat of catastrophic fire throughout the sequoia system." (ROD, p. 4). As will be shown below, current research does not support the requirement to remove medium to large diameter trees or significantly reduce canopy cover in order to increase fire resiliency.

It is generally recognized that fire resiliency largely is achieved by removing surface fuels and small diameter material. "Most of the trees that need to be removed to reduce accumulated fuels are small in diameter and have little or no commercial value." (U.S. General Accounting Office 1999, p. 44). "When thinning is used for restoration purposes in dry forest types, removal of small diameter material is most likely to have a net remedial effect. Brush, small trees, along with fine dead fuels lying on top of the forest floor, constitute the most rapidly ignited

component of dry forest." (Christensen et al. 2002, p. 2). Thus, "surface fuels are the means by which crown fires are sustained.... Without heavy surface fuels, crown fires are almost always absent, regardless of canopy cover, size class distribution, or the height to live crown." (Rice 2003, p. 2). As a result, the thinning of "smaller diameter trees or biomass removals" in essence produces "stands structurally similar to what are thought to have been presettlement conditions. Resulting forest structures will be more open, less likely to support crown fire, and less likely to exhibit extensive areas of extensive fire effects." (McKelvey et al. 1996, p. 1037). In contrast, medium-large trees contribute little to surface fuels, are more fire resistant, and generally do not act as fuel ladders under most fire intensities. (McKelvey et al. 1996, pp. 1035-1037; Stephens 2004, p. 4).

Additionally, negative effects on fire behavior can result from the reduction of canopy cover. "Thinning or otherwise opening a stand allows more solar radiation and wind to reach the forest floor. The net effect, at least during periods of significant fire danger, is usually reduced fuel moisture and increased flammability. (Countryman 1955). The greater the stand opening, the more pronounced the change in microclimate is likely to be." (Weatherspoon 1996, p. 1173). Weatherspoon and Skinner (1995) observed that uncut stands, with no treatment of natural fuels, burned less intensely than partial-cut stands with no fuel treatment or partial-cut stands with fuel treatments. They determined that the partial cuttings created a warmer, drier microclimate compared with that of the uncut stands and that fuel treatments of surface fuels might have been only partially effective. Even where thinning logging occurs in combination with fuels treatments, the warming and drying of the stand has potential to offset the reduced fuel loading. (Stephens 2003, p. 3). Thus, the "removal of more mature trees can increase fire intensity and severity, either immediately post-logging or after some years." (Christensen et al. 2002, p. 2).

Recent studies of the effects of fuel treatments on fire behavior also support the conclusion that fuel reduction that focuses on ladder fuels and small diameter material is effective in reducing catastrophic fire. Stephens (1998) examined a number of fuel treatments and used the model FARSITE to evaluate their efficacy. In all cases, the most successful fuel treatments included prescribed fire. Further, prescribed fire alone was as effective in reducing fire risk as treatments with logging and prescribed fire combined. "These treatments resulted in fuel structures that will not produce extreme fire behavior at 95th percentile conditions." (Ibid., p. 32). Further, the vegetative conditions in the watershed where the fire effects were modeled included canopy cover conditions of up to 100 percent cover. The prescribed burning treatments did not reduce in any way the canopy cover of the dominant and co-dominant trees, yet these treatments were as effective as the thinning/biomass/prescribed burn treatments in which canopy cover was reduced to 50 percent in some areas of the watershed. Thus, no change in canopy cover of the dominant and co-dominant trees was necessary to meet the fuel objective under extreme weather conditions. Furthermore, reducing canopy in some areas to 50 percent did not result in any additional benefit. Similar results were reported by van Wagtendonk (1996) which again emphasized that removal of the surface and ladder fuels is effective in changing fire behavior. These studies demonstrate that it is not necessary to remove medium to large diameter trees or alter canopy cover in order to prevent crown fire and other extreme fire behaviors.

In sum, the findings of recent studies all identify the importance of removing small diameter ladder and ground fuels as actions that may reduce the risk of catastrophic fire. The removal of

more mature trees (>20" diameter) and the reduction of canopy cover to 40 percent is not required to improve fire resiliency and may well increase the adverse effects from fire. The ROD and FEIS failed to consider this information, contrary to NEPA and the Proclamation.

E. The Forest Service has recognized that the removal of trees greater than 20 inches in diameter and the reduction of canopy cover to 40 percent are not necessary to reduce the losses from catastrophic fire.

The modeling protocol that the FEIS relies upon (i.e. the Framework modeling; FEIS, p. H-2) is built on the premise that all treatments, with the exception of light underburn, are "effective" in reducing the fuel load. (FEIS, pp. H-4-9). As such, treatments that only remove material up to 20 inches in diameter and maintain canopy cover at 50 percent were modeled by the Forest Service to be as effective in reducing wildfire as treatments that allow the removal of trees up to 30 inches in diameter with canopy reductions down to 40 percent. Applying the Forest Service's own reasoning, the primary purpose of reducing canopy cover to 40 percent and removing trees over 20 inches in diameter cannot be to increase the effectiveness of the fuel treatment.

Other analyses completed by the Forest Service confirm this as well. The environmental assessment for the Borda Project (Tahoe National Forest 2003) compares the fire behavior of two alternatives proposed to treat mixed-conifer and eastside pine stands. The analysis concludes that there is essentially no increased benefit to fire resiliency from cutting trees over 20 inches in diameter or by reducing canopy closure to 40 percent. The results of the Middle Fork Cosumnes analysis completed by the Review Team also demonstrated that significant reductions in the severity of wildfire acres burned resulted from applying the Framework standards. For example, approximately 93 percent of this landscape was limited to treatments that removed trees 12 inches in diameter or less. (USDA Forest Service 2003a, p. 26). This level of treatment led to a 50 percent reduction in lethal and mixed-lethal fire type in the analysis area. (USDA Forest Service 2003a, p. 29). A second landscape analysis completed for the Middle Fork Cosumnes area found that treatments as directed in the ROD reduced the size of the fire, reduced the number of acres intensively burned, and reduced flame lengths when post-treatment fire was modeled in the analysis. (Eldorado National Forest 2002). The Forest Service's own analyses recognize that effective fuel reduction is not dependent on the removal of material greater than 20 inches in diameter or a reduction in canopy cover below 50 percent.

Analysis completed by the Forest Service for the FEIS and elsewhere indicates that treating fuels without removing trees larger than 20 inches in diameter and without reducing canopy cover to 40 percent can reduce the risks of catastrophic fire. The Forest Service fails to disclose this in the FEIS and ROD and to consider this information in determining, as mandated by the Proclamation, if tree removal is "clearly needed."

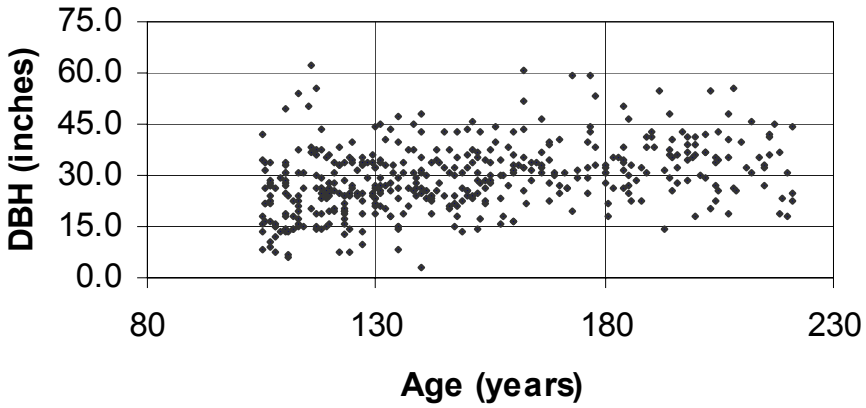
F. The information provided by the Forest Service does not support the view that the removal of trees over 20 inches in diameter is clearly needed for ecological restoration.

A stated goal of the monument plan is to manage the vegetation resulting from the last 130 years of a disrupted fire regime. (FEIS, p. 195). Based on this notion, the Forest Service then assesses the relationship between tree age and diameter in order to infer a size limit of trees to cut. As

demonstrated below, the analysis provided by the Forest Service misleadingly presents a simplified picture of a complicated relationship, presents management direction that mistakenly favors flexibility over protection of important monument elements, and allows the removal of a substantial number of trees older than 130 years.

The FEIS displays a relationship between tree age and diameter which gives the impression that the age-diameter is a clean one with little variation in the data. In fact, the opposite is the case. We obtained the raw data used to create the age-diameter relationship in the FEIS and found that in reality there is tremendous variability inherent to this relationship. This variability is illustrated in Figure 1 below. The variability shows that there are a significant number of trees that are less than 30 inches in diameter and older than 130 years. For example, in this sample of 439 trees approximately 28 percent of the trees are smaller than 30 inches in diameter and older than 130 years. Under Modified Alternative 6, these are the very trees that would be targeted for removal.

Figure 1. Relationship between age and diameter for 439 trees 105 to 221 years old. Data taken from data set provided by the Sequoia National Forest on February 20, 2003.



Even when the diameter limit is set at 20 inches, trees older than 130 years could be removed. In this data set, about 6 percent of the trees 20 inches in diameter and less are more than 130 years old.

A draft science advisory submitted by Nate Stephenson (Stephenson 2003) recommends that tree removal of trees up to 20 inches be allowed for ecological restoration. His rationale for this limit is based on an assessment of a different data set of tree ages and sizes than that presented by the Forest Service. Nonetheless, conclusions similar to those presented above can be drawn. As the size of trees removed is increased above 20 inches in diameter, increasing numbers of trees are removed that are older than 130 years. For instance, removing trees 20 to 25 inches in diameter "come at the expense of now thinning in a size class (20" to 25" dbh) in which, on average, a slight majority of trees are greater than 130 years old, and the average tree is roughly 160 years old. 'Returns' continue to diminish and 'costs' continue to grow as the size limit is set higher beyond 25"." (Ibid., p. 3).

Support for a 20 inch diameter limit is also provided in comments from the National Park Service. (Graber 2003). Dr. David Graber, a Senior Science Advisor for the National Park Service, identifies that the size class of trees between 20 and 30 inches represents the "most immediate source of new large trees" and notes that "it's ecologically important for the Monument to get through its [late successional old-growth] bottleneck as soon as possible."

The management direction in Modified Alternative 6 to allow removal of trees up to 30 inches in diameter is driven by desire to increase "flexibility" at the expense of removing trees that were present prior to the disruption of the fire regime and important to the recruitment of large, mature trees. As shown by Stephenson (2003, pp. 6-9) and in Figure 1, there are many trees less than 20 inches in diameter which are 130 years old or less that would be available for tree removal under Alternative 1 (the Framework alternative). This pool of trees provides enormous "flexibility" in implementing treatments that meet ecological goals. Further, as shown in previous sections, removal of trees greater than 20 inches in diameter is not necessary to reduce the risk of catastrophic fire. "Removal of moderately sized trees (20-30 inches in diameter) can produce revenue and wood products for California, but in the majority of cases, it will not significantly reduce potential fire behavior." (Stephens 2004, p. 4). Thus, the flexibility that the Forest Service seeks in order to remove of trees over 20 inches in diameter (FEIS, p. 195) is not needed to achieve the goals of the proclamation. Rather, the flexibility appears to be aimed at increasing the Forest Service's ability to generate revenue from the sale of larger trees, a purpose that is not supported by the proclamation.

G. <u>The Forest Service failed to address comments raised about how trees will be selected for removal.</u>

Public comments (PC #140 and PC #35C) asked specifically for a decision tool to determine when trees greater than 20 inches DBH would be removed or for an explanation of how the trees to be removed will be selected. The Forest Service responded by stating that "a flow chart is included in the ROD (see Figure 1) to help determine when the use of fire alone will not move an area toward desired conditions and when mechanical treatment or tree removal is clearly needed." This response is evasive and not to the point. As indicated above, at best the chart referenced in the ROD (ROD, p. 30) gives guidance on making a decision between prescribed burning and mechanical treatment without tree removal versus treatment with tree removal. The degree and nature of the tree removal, which is the issue expressed in the public comment, is not addressed in the FEIS and ROD.

H. <u>The claims in the FEIS that the plan is necessary to reduce risk to old forest associated species from stand-replacing wildfire are unsupported and unpersuasive.</u>

Information presented in the FEIS and BE on the effects of wildfire on California spotted owl and fisher is internally inconsistent and contradictory. Further, the dire conclusions drawn about the abandonment of habitat following wildfire are not supported by recent studies or evidence reported by the Forest Service.

The FEIS alleges that 23 owl territories have suffered "substantial habitat loss from wildfire since 1980" and uses this information to establish the link between wildfire and adverse effects

on spotted owl. (FEIS, p. 244). In contrast, the BE notes that "fires prior to 1993 were excluded [from this analysis] because it is difficult to speculate about effects to PACs from these wildfires, since survey efforts to detect spotted owls were variable across national forests and it is unknown how many owl territories may have shifted over time in response to these fires or in response to other forest activities and/or changes in forest vegetation." (USDA Forest Service 2004, p. 74). The BE recognizes that consideration of wildfire effects created prior to an adequate survey effort for spotted owls is speculative and not reliable. Nonetheless, the FEIS relies entirely on this faulty, historic analysis to claim substantial loss of habitat for spotted owl.

Although the BE more appropriately focuses on the effects of recent fires, important information known by the Forest Service is not disclosed. The BE (pp. 74-75) identifies 24 spotted owl PACs that have been affected by wildfire from 1999-2002. The table reports an estimate of area of the PAC that has been altered. What the table fails to report is the status of the PACs following wildfire. This information is contained in another Forest Service document (USDA Forest Service 2003b, p. 114) and was reviewed by Monica Bond, the lead author of a recent paper assessing the short-term effects of wildfire on the spotted owl (Bond et al. 2002). Careful examination of this table reveals that "of PACS that have been affected by nine recent wildfires, 13 are occupied, nine are of unknown status, and only two are known to be unoccupied." (Bond 2003, p. 5). In other words, of the burned PACs that have been surveyed for owls, only 2 out of 15 (13 percent) of the supposedly "lost" PACs are unoccupied, whereas 13 out of 15 (87 percent) are confirmed to be occupied. According to Bond, "it is puzzling how the Forest Service can conclude that these PACs have been 'lost' to fire when most of them are actually still occupied or their status is unknown." (Bond 2003, p. 5).

This result is not surprising given a recent study (Bond et al. 2002), not cited in the DSEIS, that "supports the conclusion that wildfire in a Spotted Owl PAC or HRCA does not necessarily render the habitat unsuitable." (Bond 2003, p. 5). The study examined owl occupancy, site fidelity, mortality, and reproductive success both before and after wildfires occurred within owl sites. The paper also includes an exhaustive literature search on impacts of fire on spotted owls. Based on their research, the authors suggest "that wildfires may have little short-term impact on survival, site fidelity, mate fidelity, and reproductive success of spotted owls." (Bond et al. 2002).

The effects from wildfire reported on fisher in the BE are also contradictory. On one hand, the discussion states that "areas burned by large stand-replacing fires on the Sequoia NF generally do not support fishers or spotted owl, except along peripheries or in isolated islands." (USDA Forest Service 2004, p. 59). In contrast, a following section reports that track plate surveys completed in the McNally Fire "found fisher within this area, including detections within the severely burned area" and verifies that the area is occupied presently.

In sum, evidence presented in support of the aggressive, habitat altering tree removal proposed in the ROD conflicts within the FEIS and BE and conflicts with other studies and reviews. Given the extreme concern for these species at risk and the admitted adverse effects that certain tree removal can have on their habitat as opposed to the speculative loss of habitat from future wildfire, the FEIS fails to clearly demonstrate that implementation of Modified Alternative 6 is

necessary to achieve the stated goals. Therefore, the proposed logging plan is not consistent with the Monument proclamation.

III. THE MANAGEMENT DIRECTION IN THE FEIS AND ROD THREATENS THE VIABILITY OF THE WILLOW FLYCATCHER, CONTRARY TO LAW.

The willow flycatcher was listed in 1991 as endangered under the California Endangered Species Act. Since that time, demographic studies in the north central portion of the Sierra Nevada have shown alarming declines of nests in the study area, from 62 in 1998 to 2 in 2002. (Bombay and Morrison 2003). Further, "consistent survey efforts on the Sierra and Stanislaus National Forests in the past several years show a lack of willow flycatcher occurrence at a number of well-documented breeding areas in the central and southern Sierra Nevada. In addition, three years of surveys on the Sequoia National Forest have failed to re-confirm occupancy of willow flycatchers." (USDA Forest Service 2003b, p. 116). The ongoing demographic study in the north central Sierra Nevada concluded that "the willow flycatcher population in the north central Sierra Nevada has declined significantly since 1997." (Bombay and Morrison 2003, p. 20). In summary, all monitoring and assessment efforts indicate that "the current population status of the willow flycatcher in the Sierra Nevada is that of a population in peril." (Green et al. 2003, p. 42). In spite of these known concerns expressed in studies commissioned by the Forest Service, the BE erroneously concludes that "the current direction and magnitude of the demographic trend are uncertain." (USDA Forest Service 2004, p. 47).

Modified Alternative 6 changes the end of the breeding period of concern from August 30 to August 15, but fails to disclose the effects of doing so. The importance of this change in management direction is reflected in comments made by Dr. Susan Sanders, willow flycatcher expert:

> Allowing grazing in occupied meadows, including late season grazing, has significant potential to harm nesting willow flycatchers. The revised LOP date in Alternative S2[12] fails to protect approximately 10 percent of willow flycatcher nests that on average fledge after August 15th. Undetected willow flycatchers in any sites that receive annual season-long grazing will experience direct and indirect effects of livestock grazing and will be placed at greater risk. Aside from potential direct impacts of cattle knocking over nests, the substantial, negative impact of grazing on flycatcher habitat is well documented in the conservation assessment (Green et al. 2003). Grazing early or late increases willow browsing, retarding regeneration and recruitment of young shrubs as well as negatively affecting the form and structure of mature willows. … Given the precariously small number of willow flycatchers in the Sierra Nevada, even the loss of a few breeding territories could lead to loss of viability for populations in the planning area and a trend toward federal listing." (Sanders 2003, p. 3, emphasis added).

Despite the potential for significant adverse impacts, the likely effects of allowing grazing during the breeding period in occupied meadows are not discussed in the FEIS.

[12] "Alternative 2" refers to the alternative proposed in the recent Supplemental Draft EIS for the Framework (USDA Forest Service 2003b). The wording in Alternative 2 for the grazing period in occupied territories is the same wording as included in the GSNM FEIS, and therefore Dr. Sanders' comments apply equally to the GSNM plan.

In addition to the adverse change in breeding period noted above, it is entirely unclear what additional management prescriptions apply to willow flycatcher management in the Monument. On one hand the management direction appears to imply that the "allocations and associated management strategies from the Framework would be retained" and that these include "Willow Flycatcher Habitat." (FEIS, p. 102). However, the GSNM plan standards and guidelines refer to the August 15 date for allowing grazing, rather than the August 30 date included in the Framework. (FEIS, p. 107). Moreover, the BE states that "Management direction follows the Framework and supplement" (USDA Forest Service 2004, p. 48), without acknowledging the significant difference in breeding period date (and other substantial differences) between the Framework and supplement direction.

Other substantial differences between the Framework and supplement include the selection of sites to which conservation measures are applied, survey requirements, and increased discretion to waive conservation measures. The willow flycatcher sites in the supplement where conservation measures are applied are limited to a subset (66 sites) of the known sites (82 sites) that were covered in the Framework. Sites that were eliminated from the network were those in which willow flycatcher had not been observed during a specified survey period. These sites that were known to support willow flycatcher in the past are simply dropped from consideration in the supplement. Also, direction to identify suitable habitat is significantly limited in the supplement and there is no requirement to complete surveys within a specific time period as is required in the Framework. Instead of systematically evaluating suitable habitat, the supplement simply allows suitable habitat to be considered in project level planning. "To make the surveys project-dependent prevents collection of systematic data regarding movement of willow flycatcher populations. To gather the kind of data needed for a comprehensive, systematic plan for managing and eventually restoring populations of willow flycatcher all emphasis habitats should be surveyed to protocol at least once every five years." (Sanders 2003, p. 8). Directing conservation and restoration activities toward more than the 66 sites is important since even adequate protection of these sites by themselves "is unlikely to sustain a viable willow flycatcher population." (Sanders 2003, p. 7).

Further, the supplement allows the limitation on late season grazing to be waived if a site-specific meadow management strategy is developed. (USDA Forest Service 2003b, p. 263). "The only protection provided here is that a general goal exists to protect willow flycatchers and their habitat, which is no protection at all. If this Standard and Guideline is to be implemented, then region-wide standards for preparing such a management strategy should be developed, and a Biological Evaluation should be prepared before implementing the proposed management strategy. For each site, the Biological Evaluation needs to consistently address all potential impacts of grazing (e.g., cowbird parasitism, hydrological and vegetative changes, nest disruption, increased predation) to willow flycatchers and their habitat before adopting and implementing a specific management strategy for that site." (Sanders 2003, p. 7).

In the absence of clear direction, it appears that the standards and guidelines related to surveying for willow flycatcher, restoration, and monitoring have all been eliminated from the present monument plan. The only measure that remains is the one stated in the FEIS (p. 107) that

addresses late-season grazing. In the absence of all the measures as defined in the 2001 Framework decision, conservation of this imperiled species is not possible.

In sum, the combined disregard for the present decline of the willow flycatcher, the failure to evaluate potential adverse effects to willow flycatcher, and the failure to clearly identify the intended management direction jeopardizes the existence of this species, contrary to NFMA's viability requirement and to the language of the proclamation. In addition, the failure adequately to analyze these impacts in the EIS violates NEPA's full disclosure requirements.

IV. THE FOREST SERVICE MUST CONDUCT POPULATION INVENTORIES FOR MANAGEMENT INDICATOR SPECIES BEFORE PROCEEDING WITH LOGGING.

Under the National Forest Management Act, timber sales, logging and related activities, and the permits, contracts and other instruments associated with them, must be consistent with the forest plan applicable to that particular national forest. 16 USC 1604(i), and 36 CFR. 219.10(e). The Sierra Nevada Framework (and the recent supplement) are amendments to the 1988 Sequoia National Forest plan (USDA Forest Service 1988). Before proceeding with logging, the Forest Service must comply with the requirements of the Framework for population monitoring of management indicator species (MIS) and species at risk (SAR).

The Sequoia National Forest Land and Resource Management Plan and Environmental Impact Statement (February 25, 1988) identifies various management indicator species (USDA Forest Service 1988, FEIS p.3-55 to 3-60) including, mule deer, rainbow trout, pileated and acorn woodpeckers, gray squirrel, California quail, spotted owl, goshawk, bald eagle, peregrine falcon, California condor, little kern golden trout. The Sequoia National Forest MIS "were selected to act as barometers for wildlife communities. These species and associated guilds were selected because they were believed to represent the vegetation types, successional stages, and special habitat elements necessary to provide for viable populations of all species on the Forest; and their population changes are believed to indicate or represent the effects of management activities on wildlife and fish populations." (USDA Forest Service 1988, FEIS, p.3-55) (emphasis added)

The Framework FEIS (USDA Forest Service 2001b, Appendix E) identifies additional (MIS) and (SAR) applicable to the Sequoia National Forest and clearly indicates whether there must be **"**population inventories**"** for those MIS. In the Framework's words: "Checkmarks in the population monitoring column indicate species for which population trend data is expected to be obtained." (USDA Forest Service 2001b, pp. E-64, E-76, E-98). The population inventory requirement is for "annual monitoring." (Ibid., pp. E-63, E-96). The recent supplement to the Framework incorporates these requirements. To the best of our knowledge, the Forest Service has not conducted "annual monitoring" as required by the Framework.

The California spotted owl is a species of particular concern. Yet the FEIS fails to present any population trend data from the planning area to indicate the status or trend of the species. This failure to gather and provide annual monitoring data violates the plain language of the Framework. Further, it independently violates the Forest Service's planning regulations, which require the agency to "obtain and keep current inventory data appropriate for planning and

managing the resources under his or her administrative jurisdiction" (36 CFR § 219.19) and specifically directs that "planning alternatives shall be stated and evaluated in terms of both amount and quality of habitat and of animal population trends of the management indicator species." (36 CFR § 219.19(a)(2). The courts have overturned the Forest Service's failure to utilize actual population trend data for MIS, particularly where (as here) data with respect to habitat is also suspect or inadequate. See, e.g., Idaho Sporting Congress, Inc. v. Rittenhouse, 305 F.3d 957, 971-72 (9th Cir. 2002); Sierra Club v. Martin, 168 F.3d 1 (11th Cir. 1999).

In sum, the Forest Service must conduct population monitoring for MIS and species at risk, including the California spotted owl, before proceeding with logging under the GSNM plan. To the best of our knowledge, such monitoring has not taken place, contrary to law.

V. THE FEIS FAILS TO IDENTIFY AND EVALUATE THE APPROPRIATE MIS/SAR SPECIES.

The Framework and supplement amended the Sequoia National Forest to include an updated list of management indicator species and species at risk. (USDA Forest Service 2001b, pp. E-64, E-76, E-98). These new lists are a significant refinement over the older forest plans because this new approach seeks to avoid the flaws in the previous effort that used "habitat as proxy." Furthermore, these new lists were designed to address the recent concerns raised in the 9th Circuit where "case law suggests that using habitat as a surrogate for populations may be ruled inadequate…" (USDA Forest Service 2001b, Vol. 4, Appendix, p. E-17). However, the FEIS merely presents an outdated MIS list for the Sequoia National Forest and fails to incorporate the changes made in the recent forest plan amendments that resulted from the Framework and supplement. (FEIS, p-233, Table III-22). The document does not appropriately identify and describe the affected species, contrary to NEPA. (40 CFR §1502.15).

The FEIS also does not contain an adequate discussion of the effects of the alternatives on management indicator species and species at risk. The FEIS identifies "species at risk" (FEIS, p. 355), but this only refers to species listed under the Endangered Species Act, and not the species at risk identified in the Framework and supplement. (USDA Forest Service 2001b, Vol. 4, Appendix E). The FEIS fails to meet the intent of NEPA because no basis for scientific and analytic comparison among the alternatives is provided. (40 CFR § 1502.16) The FEIS also fails to disclose the direct, indirect, and cumulative impacts to the MIS/SAR which is contrary to the requirements of NEPA. (40 CFR §1508.7).

VI. CONCLUSION AND REQUEST FOR RELIEF

In sum, for the reasons set forth above, both the GSNM plan and the FEIS are fundamentally flawed and fail to comply with basic legal requirements set forth in NFMA, NEPA, and the Monument proclamation. We request that the plan and FEIS be set aside in their entirety and that the Forest Service issue a new draft EIS containing a revised plan that complies fully with all legal requirements.

Respectfully submitted,

David B. Edelson, Attorney for Appellants
Sierra Nevada Forest Protection Campaign
840 Grizzly Peak Blvd.
Berkeley, CA 94708
510/527-4116

REFERENCES[13]

Aubry, K.B., and Lewis, J.C. 2003. Extirpation and reintroduction of fishers (*Martes pennanti)* in Oregon: implications for their conservation in the Pacific states. Biological Conservation 114:79-90.

Barrett, R. H. 2003a. A Critique of the Giant Sequoia National Monument Management Plan Draft Environmental Impact Statement. March 9, 2003.

Barrett, R. H. 2003b. Comments on the Sierra Nevada Forest Plan Amendment Draft Supplemental Environmental Impact Statement. September 5, 2003.

Barrett, R. H. 2004. A Critique of the Giant Sequoia National Monument Management Plan Final Environmental Impact Statement. February 25, 2004.

Bart, J. 1995. Amount of suitable habitat and viability of Northern Spotted Owls. Conservation Biology 9:943-946.

Bias, M.A., and Gutierrez, R.J. 1992. Habitat association of California Spotted Owls in the central Sierra Nevada. Journal of Wildlife Management 56:584-595.

Bingham, B.B., and Noon, B.R. 1997. Mitigation of habitat "take": application to habitat conservation planning. Conservation Biology 11:127-139.

Blakesley, J.B. 2003. Ecology of the California Spotted Owl: breeding dispersal and associations with forest stand characteristics in northeastern California. Ph.D. dissertation, Colorado State University, summer 2003.

Blakesley, J. A. and Noon, B. R. 2003. Comments on the Sierra Nevada Forest Plan Amendment Draft Supplemental Environmental Impact Statement.

Bombay, H. L. and Morrison, M. L. 2003. 2002 Annual Report and Preliminary Demographic Analysis for Willow Flycatcher Monitoring in the Central Sierra Nevada. February 20, 2003. White Mountain Research Station and U.S.D.A Forest Service, Tahoe National Forest.

Bond, M. 2003. Comments on the Sierra Nevada Forest Plan Amendment Draft Supplemental Environmental Impact Statement. September 10, 2003.

Bond, M. L., Gutierrez, R. J. Franklin, A. B. LaHaye, W. S. May, W. S., and Seamans, M. E. 2002. Short-term effects of wildfires on spotted owl survival, site fidelity, mate fidelity, and reproductive success. Wildlife Society Bulletin 30:1022–1028.

Buskirk, S.W. 2003. Comments on the Sierra Nevada Forest Plan Amendment Draft Supplemental Environmental Impact Statement. September 7, 2003.

[13] Attached to this statement of reasons are references that may not be publicly available. We would be happy to provide any other references to the Forest Service upon request.

Buskirk, S.W., Barrett, R.H., Carroll, C., Hickey, J.R., Kucera, T.E., McLaughlin, J., Noss, R.F., Powell, R.A., Proulx, G., Pulliainen, E., and Schlexer, R.V. 2003. Letter to Wayne White and Jesse Wild, U.S. Fish and Wildlife Service, Subject: listing of the fisher, *Martes pennanti*, in the Pacific states. September 8, 2003.

Call, D. R., Gutierrez, R.J., and Verner, J. 1992. Foraging habitat and home-range characteristics of California Spotted Owls in the Sierra Nevada. Condor 94:880-888.

Campbell, L.A., Zielinski, W.J., and Macfarlane, D.C. 2000. A risk assessment for four forest carnivores in the Sierra Nevada under proposed Forest Service management activities. Unpublished report. Sierra Nevada Framework Project.

Christensen, N. L., Swetman, T. W., Erman, D. E., Perry, D., Morgan, P., Stephens, S., Omi, P. N., Graumlich, L., Romme, W. H., Zedler, P. H., Kauffman, J. B., and Baker, W. L. 2002. Letter to President Bush regarding the scientific basis for efforts to reduce risks from catastrophic wildfire. September 24, 2002.

Clinton, W. J. 2000. Establishment of the Giant Sequoia National Monument. A proclamation. April 15, 2000.

Countryman, C. M. 1955. Old-growth conversion also converts fire climate. In Proceedings of Society of American Foresters meeting, October 16-21, Portland OR, p. 158-160. Washington, DC: Society of American Foresters.

Drew, R.E., Hallett, J.G., Aubry, K.B., Cullings, K.W., Koepf, S.M., and Zielinski, W.J. 2003. Conservation genetics of the fisher (*Martes pennanti)* based on mitochondrial DNA sequencing. Molecular Ecology 12:51-62.

Eldorado National Forest 2002. Middle Fork Cosumnes Landscape Analysis. USDA Forest Service. Placerville, California. September 2002.

Franklin, A. B., Gutiérrez, R. J., Nichols, J. D., Seamans, M. E., White, G. C., Zimmerman, G. S., Hines, J. E., Munton, T. E., LaHaye, W. S., Blakesley, J. A., Steger, G. N., Noon, B. R., Shaw, D. W. H., Keane, J. J., McDonald, T. L., and Britting, S. 2004. Population Dynamics of the California Spotted Owl (*Strix occidentalis*): A Meta-Analysis. Ornithological Monographs 54.

Freel, M. 1991. A literature review for management of the marten and fisher on national forest in California. USDA Forest Service, Pacific Southwest Region. July 1991.

Graber, D. M. 2003. Comments on the draft environmental impact statement for the Giant Sequoia Monument Management Plan. March 17, 2003.

Green, G. A., Bombay, H. L. and Morrison, M. L. 2003. Conservation assessment of the willow flycatcher in the Sierra Nevada. USDA Forest Service, Pacific Southwest Region.

Kucera, T.E. 2004. Declaration of Thomas E. Kucera on the Giant Sequoia National Monument Final Environmental Impact Statement and Record of Decision. February 25, 2004.

Lamberson, R.H., Truex, R.L., Zielinski, W.J., and Macfarlane, D. 2000. Preliminary analysis of fisher population viability in the southern Sierra Nevada. Unpublished report. USDA Forest Service, Pacific Southwest Region.

Mazzoni, A.K. 2002. Habitat use by fishers (*Martes pennanti)* in the southern Sierra Nevada, California. Masters thesis, California State University, Fresno. May 2002.

Macfarlane, D. and Frolli, T. 1999. Key points from the forest carnivore meeting of 6/24/99 and the fisher special management area meeting of 4/7/99. Sierra Nevada Framework Administrative Record No. 505.

McKelvey, K. S., Skinner, C. S., Chang, C., Erman, D. C., Husari, S. J., Parsons, D. J., van Wagtendonk, J. W., Weatherspoon, C. P. 1996. Overview of fire in the Sierra Nevada. Pages 1033-1040 *In* Sierra Nevada Ecosystem Project: Final report to Congress, Volume II, chapter 41. University of California, Davis.

North, M., G. Steger, R. Denton, G. Eberlein, T. Munton, and K. Johnson. 2000. Association of weather and nest-site structure with reproductive success in California spotted owls. *J. Wildlife Management* 64: 797-807.

Peery, Z. 2004. Declaration of Zach Peery, M.S. February 27, 2004.

Rice, C. 2003. Comments on the Sierra Nevada Forest Plan Amendment Draft Supplemental Environmental Impact Statement. September 8, 2003.

Sanders, S. D. 2003. Comments on the Sierra Nevada Forest Plan Amendment Draft Supplemental Environmental Impact Statement. September 10, 2003.

Sequoia National Forest 2003. Pacific fisher strategy Giant Sequoia National Monument. May 13, 2003.

Sierra Nevada Forest Protection Campaign 2003. Comments on the Sierra Nevada Forest Plan Amendment Draft Supplemental Environmental Impact Statement. September 12, 2003.

Steger, G. N., Munton, T. E., Eberlin, G. P., Johnson, K. D., and Shaklee, P. A. 2000. Annual progress report 2000. A study of spotted owl demographics in the Sierra National Forest and Sequoia and Kings Canyon national parks. USDA Forest Service, Pacific Southwest Research Station. Fresno, California. December 2000.

Stephens, S. L. 1998. Evaluation of the effects of silvicultural and fuels treatments on potential fire behavior in Sierra Nevada mixed-conifer forests. Forest Ecology and Management 105(1998): 21-35.

Stephens, S. L. 2003. Comments on the Sierra Nevada Forest Plan Amendment Draft Supplemental Environmental Impact Statement. September 9, 2003.

Stephens, S. L. 2004. Testimony before the Resources Subcommittee on Forest and Forest Health. February 28, 2004.

Stephenson, N. L. 2003. Draft Advisory E. March 11, 2003.

Tahoe National Forest 2003. Borda Project. Environmental assessment. USDA Forest Service. Nevada City, California.

Thomas, J. W., Forsman, E.D., Lint, J.B., Meslow, E.C., Noon, B.R., and Verner, J. 1990. A conservation strategy for the northern spotted owl. U. S. Government Printing Office, Washington, D. C.

Truex, R.L., Zielinski, W.J., Golightly, R.T., Barrett, R.H., and Wisely, S.M. 1998. A meta-analysis of regional variation in fisher morphology, demography, and habitat ecology in California. Final report submitted to California Department of Fish and Game. April 7, 1998.

U.S. General Accounting Office 1999. Western national forests: A cohesive strategy is needed to address catastrophic wildfire threats. GAO/RCED-99-65. Report to the Subcommittee on Forests and Forest Health, Committee on Resources, House of Representatives, April 1999.

USDA, Forest Service 1988. Sequoia National Forest Land and Resource Management Plan and Final Environmental Impact Statement. Pacific Southwest Region. February 1988.

USDA Forest Service 2001a. Sierra Nevada Forest Plan Amendment, Final Environmental Impact Statement. Pacific Southwest Region. January 2001.

USDA Forest Service 2001b. Sierra Nevada Forest Plan Amendment, Final Environmental Impact Statement, Record of Decision. Pacific Southwest Region. January 2001.

USDA Forest Service 2001c. Decision for appeals of the record of decision for the Sierra Nevada Forest Plan Amendment and its final environmental impact statement. Dale N. Bosworth, Reviewing Officer, November 16, 2001.

USDA Forest Service 2003a. Sierra Nevada Forest Plan Amendment management review and recommendations. Pacific Southwest Region, R5-MB-012, March 2003.

USDA Forest Service 2003b. Sierra Nevada Forest Plan Amendment. Draft Supplemental Environmental Impact Statement. Pacific Southwest Region, R5-MB-019, June 2003.

USDA Forest Service 2004. Biological evaluation for R5 sensitive animals. Giant sequoia national monument management plan. Sequoia National Forest.

USDI Fish and Wildlife Service 2001. Formal endangered species consultation and conference on the biological assessment for the Sierra Nevada Forest Plan Amendment final environmental impact statement. January 11, 2001.

USDI Fish and Wildlife Service 2003a. 12-month finding for a petition to list the California Spotted Owl (*Strix occidentalis occidentalis)*. 68 Federal Register 7580-7608 (February 14, 2003).

van Wagtendonk, J. W. 1996. Use of a deterministic fire growth model to test fuel treatments. Pages 1155-1166 *In* Sierra Nevada Ecosystem Project: Final report to Congress, Volume II, chapter 41. University of California, Davis.

Verner, J. 2003a. Letter to Jack Blackwell, Regional Forester. August 31, 2003.

Verner, J. 2003b. Comments on "Sierra Nevada Forest Plan Amendment: Draft Supplemental Environmental Impact Statement" USDA Forest Service, R5-MB-019, June 2003. August 31, 2003.

Verner, J., McKelvey, K.S., Noon, B.R., Gutierrez, R.J., Gould, G.I., and Beck, T.W. 1992. The California spotted owl: A technical assessment of its current status. USDA Forest Service, Pacific Southwest Research Station, General Technical Report PSW-GTR-133, July 1992.

Weatherspoon, C.P. 1996. Fire-Silviculture Relationships in Sierra Forests. In Sierra Nevada Ecosystem Project: Final Report to Congress, Volume II, pp. 1167-1176. Centers for Water and Wildland Resources, University of California, Davis, July 1996.

Weatherspoon, C. P. and Skinner, C. N. 1995. An assessment of factors associated with damage to tree crowns from the 1987 wildfires in northern California. Forest Science 41:430-451.

Zielinski, W.J., Truex, R.L., Schmidt, G.A., Schlexer, F.V., Schmidt, K.N., and Barrett, R.H. In press A. Home range characteristics of fishers in California. Journal of Mammalogy.

Zielinski, W.J., Truex, R.L., Schmidt, G.A., Schlexer, F.V., Schmidt, K.N., and Barrett, R.H. In press B. Resting habitat selection by fishers in California. Journal of Wildlife Management.

ATTACHMENTS

1. Barrett, R. H. 2003a. A Critique of the Giant Sequoia National Monument Management Plan Draft Environmental Impact Statement. March 9, 2003.

2. Barrett, R. H. 2003b. Comments on the Sierra Nevada Forest Plan Amendment Draft Supplemental Environmental Impact Statement. September 5, 2003.

3. Barrett, R. H. 2004. A Critique of the Giant Sequoia National Monument Management Plan Final Environmental Impact Statement. February 25, 2004.

4. Bond, M. 2003. Comments on the Sierra Nevada Forest Plan Amendment Draft Supplemental Environmental Impact Statement. September 10, 2003.

5. Britting, S. 2004. Analysis of the Spatial Distribution of Vegetation in Relation to Important Habitat Areas and Land Allocations for the Giant Sequoia Monument Plan. February 26, 2004.

6. Buskirk, S.W., Barrett, R.H., Carroll, C., Hickey, J.R., Kucera, T.E., McLaughlin, J., Noss, R.F., Powell, R.A., Proulx, G., Pulliainen, E., and Schlexer, R.V. 2003. Letter to Wayne White and Jesse Wild, U.S. Fish and Wildlife Service, Subject: listing of the fisher, *Martes pennanti*, in the Pacific states. September 8, 2003.

7. Christensen, N. L., Swetman, T. W., Erman, D. E., Perry, D., Morgan, P., Stephens, S., Omi, P. N., Graumlich, L., Romme, W. H., Zedler, P. H., Kauffman, J. B., and Baker, W. L. 2002. Letter to President Bush regarding the scientific basis for efforts to reduce risks from catastrophic wildfire. September 24, 2002.

8. Kucera, T.E. 2004. Declaration of Thomas E. Kucera on the Giant Sequoia National Monument Final Environmental Impact Statement and Record of Decision. February 25, 2004.

9. Peery, Z. 2004. Declaration of Zach Peery, M.S. February 27, 2004.

10. Rice, C. 2003. Comments on the Sierra Nevada Forest Plan Amendment Draft Supplemental Environmental Impact Statement. September 8, 2003.

11. Sanders, S. D. 2003. Comments on the Sierra Nevada Forest Plan Amendment Draft Supplemental Environmental Impact Statement. September 10, 2003.

12. Stephens, S. L. 2003. Comments on the Sierra Nevada Forest Plan Amendment Draft Supplemental Environmental Impact Statement. September 9, 2003.

13. Stephens, S. L. 2004. Testimony before the Resources Subcommittee on Forest and Forest Health. February 18, 2004.

14. Verner, J. 2003a. Letter to Jack Blackwell, Regional Forester. August 31, 2003.

15. Verner, J. 2003b. Comments on "Sierra Nevada Forest Plan Amendment: Draft Supplemental Environmental Impact Statement" USDA Forest Service, R5-MB-019, June 2003. August 31, 2003.