



# Sierra Nevada

## Forest Protection Campaign



These supplemental comments on the proposed Kings River Project (“KRP” or “Project”) Final Environmental Impact Statement (“FEIS”) are submitted on behalf of the Sierra Nevada Forest Protection Campaign and the Sierra Club. (collectively, the "Campaign"). The Campaign previously provided scoping comments on this Project on or about February 2, 2005 and comments on the draft environmental impact statement (DEIS) on or about March 28, 2006.

The KRP proposes to conduct group selection and fuel reduction logging as part of adaptive management research on an area comprising 131,500 acres in two different watersheds. The initial KRP was not subjected to the management standards of the 2004 Sierra Nevada Framework ROD (USDA Forest Service 2004a) or accompanying FSEIS (USDA Forest Service 2004b). The FEIS now considers a new alternative for the first time that adopts standards – such as a 30” dbh limit on logging trees for fuel reduction – similar in many respects to the 2004 Framework standards. As set forth below, the Campaign continues to oppose this Project as presently proposed.

### GENERAL SUMMARY COMMENTS

In response to comments received, the Forest Service has provide more information and conducted considerably more analysis on a number of issues relating to this project’s impacts on sensitive wildlife. In addition, the Forest Service has proposed a new alternative for consideration. As discussed below, the significant new information presented should have been recirculated as part of the NEPA review process. Thus, while the Campaign submits these comments in an effort to provide further information into the NEPA process, we do not believe this procedure is consistent with law.

Our basic objection to this project remains as set forth in our previous comments. In proposing a large intensive logging project in the middle of extremely fragile fisher habitat, the Forest Service is taking a huge risk on the future viability of this precarious population in the KRP area and in the Sierra National Forest. All the evidence point to the fact that fisher are barely surviving in the degraded habitat conditions that exist in the KRP, yet the Forest Service still proposes to remove approximately 28,000 medium to large size trees. In the view of experts, fishers in the Sierra National Forest are existing in an extremely precarious state. The Forest Service does not understand nor consider the point at which further reduction of suitable habitat may cross the threshold line below which fisher will irrevocably disappear from the project area and the Forest. In our view, the Forest Service’s approach in this project is a potential recipe for disaster for the fisher.

As set forth in our prior comments and further below, the logging of larger trees in unnecessary to meet the project’s fuel reduction objectives. Instead, the Forest Service’s stated basis for logging at this intensity is the successful creation, over a long time period, of pre-1850

old forest conditions. The Campaign agrees that this is an important objective in the long term, yet the evidence suggests that there are several ways this long term purpose could be reached with substantially less impact on wildlife, particularly the fisher. However, the Forest Service has never analyzed any of these potential alternatives. In the absence of any analysis, the Campaign object to the Forest Service's conclusory and unsupported position that the only way to establish a mature old forest is to cut down a significant portion of the larger trees existing on the landscape.

In addition, our prior comments about the lack of hard look analysis under NEPA, and violations of NFMA requirements for monitoring still remain. The Campaign finds it disturbing that the Forest Service would attempt to justify the intensity of proposed logging by characterizing such activities as necessary to research and adaptive management. As discussed in our prior comments, true scientific method applying the principles of adaptive management requires that the Forest Service have a complete picture of the baseline environment that will be affected by the project. Here, the Forest Service has little to no information on fisher in the project area yet still proposed to eliminate what may well be critical habitat elements without any real plan how the impacts to such logging will be measured.

In our view the KRP approach is fundamentally flawed, both from a legal and from a policy matter. The Campaign agrees with the Forest Service about the need for fuel reduction and the long term objective to create fire resilient forests in the Sierra Nevada. However, to do so in a manner which unnecessarily jeopardizes the continued existence of National Forest wildlife is, in our view, contrary to the Forest Service's mission to manage the public forests for multiple uses, not just logging production.

## **SPECIFIC COMMENTS**

### **I. THE FOREST SERVICE HAS NOT COMPLIED WITH NEPA PROCEDURAL REQUIREMENTS**

The Forest Service's decision not to prepare a supplemental draft EIS, rather than a final EIS, for the Kings River Project violates NEPA. NEPA's regulations require a supplement where:

- (i) The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or
- (ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.

40 C.F.R. § 1502.9(c)(1) (emphasis added).

The FEIS makes changes in the proposed action by introducing a new Alternative 3 that was not discussed in the DEIS. This alternative introduces new proposed mitigation measures and other project components that the public has a right to review in the draft EIS stage under NEPA.

Further, the FEIS presents substantially more analysis on a number of critical issues, including impacts to fisher, spotted owl and Yosemite toad, achievement of old forest conditions and feasibility of less harmful alternatives. The FEIS also presents wholly new information on the proposed details of adaptive management studies the public had a right to review at the draft NEPA stage. *See* FEIS, App. G, pp. 3, 5 (“considerable amt. of new analysis was preformed between draft and final EIS.”)

The significant changes to the EIS between the draft and final stages indicates that the Forest Service has rushed this project forward, and presented a DEIS for public review before it had sufficient information to consider the impacts of proposed alternative actions. Indeed, the initial DEIS only considered a *single* project alternative, contrary to NEPA. The best example of the Forest Service’s apparent determination to move the review process forward in spite of significant data gaps in analysis is further demonstrated by the “Errata” provided by the Service on November 9, 2006, only 12 days before the close of the supplemental comment period.

The agency’s failure to prepare a supplemental draft EIS shortens the time available for public comment. More importantly, it provides no guarantee that the Forest Service will actually consider or respond to any such comments. CFR. 40 C.F.R. § 1503.1(b) (“An agency may request comments on a final environmental impact statement before the decision is finally made”), with 40 C.F.R. § 1503.4 (“An agency preparing a final environmental impact statement shall assess and consider comments both individually and collectively, and shall respond by one or more of the means listed below, stating its response in the final statement”); *see also* 40 C.F.R. § 1502.9(c)(4) (requiring that a supplemental draft EIS be prepared, circulated, and filed in the same manner as a draft EIS).

A fundamental purpose of NEPA is to guarantee that “relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). Here, comments received on an already completed FEIS that presents analysis and information for the first time for public review precludes meaningfully consideration of comments by the Forest Service, thereby precluding the informational exchange critical to the NEPA process.

Given the substantial changes and limited opportunities for public input and agency consideration associated with the final EIS for the Kings River Project, the Forest Service’s failure to issue a supplemental draft EIS denied the public an opportunity to meaningfully participate in the NEPA process. *See, e.g., California v. Block*, 690 F.2d 753, 769-72 (9th Cir. 1982) (holding that the Forest Service denied meaningful public participation where a proposed action differed significantly from alternatives in the draft EIS).

## **II. The KRP Still Fails to Consider a Reasonable Range of Alternatives**

In response to our comments that the KRP DEIS did not consider a reasonable range of alternatives, *see* 40 C.F.R. § 1502.14, the FEIS adds a new Alternative 3, which lowers the dbh limit for logging from 35 to 30” and adds additional mitigation measures for the Pacific fisher and Yosemite toad.

The Forest Service's review of only two action alternatives that either exceed or meet the *maximum* level of harvesting allowed under the 2004 Framework does not constitute consideration of a reasonable range of alternatives under NEPA. Further, the reasons offered in the DEIS for eliminating alternatives from detailed review are neither persuasive nor legally sufficient.

An EIS is not an opportunity to justify an action, but rather a forum to "provide full and fair discussion of significant environmental impacts and [to] inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment." 40 C.F.R. § 1502.1. Here, the Forest Service appears committed to avoid considering or discussing the feasibility of alternatives with less intensive fuel treatments which retain substantially more medium to large diameter trees and higher canopy cover, to the benefit of wildlife. As discussed in prior comments and highlighted again below, since the present proposed action threatens the viability of several of these species, the Forest Service must not only consider these alternatives under NEPA, it is required to choose an alternative with less harmful environmental effects to ensure compliance with NFMA.

The Campaign reiterates its prior comments in this regard and makes the following additional points.

First, alternatives must be considered in light of "the underlying purpose and need" for the project, which must be specified in the EIS. 40 CFR 1502.13. The Forest Service's own documents acknowledge that the fuel reduction goals of the KRP, which the Campaign generally shares, can be met by thinning from below up to sizes as low as 11" dbh. In addition to this acknowledgement, the Campaign refers the Forest Service to its prior comments and those of Carol Rice, which demonstrate that at the least, a 20" dbh alternative easily meets the Forest Service's fuel reduction goals. *See also* Discussion *infra*.

Second, the Forest Service continues to rely ultimately on the argument that a lower diameter limit alternative is not feasible because it cannot meet the project purpose of establishing an old growth forest over time. The Forest Service thus argues that the only way to establish a healthy forest of large mature trees in the future is to log large mature trees today so that what few large trees remain may grow faster.

Considering that general low quality of the existing stands (only 77 acres of 5D habitat) it is remarkable that the Forest Service is not retaining a significantly larger proportion of the 20" to 30" recruitment class, but instead proposes to log nearly 28,000 trees between 20-30 inches in size, further degrading this important structural tree class. The Forest Service's failure to consider a small diameter limit alternative which would move more of the general stand condition towards a larger size class in the immediate future, is jumping the gun on forest conditions, where after a period of several decades of thinning, a regeneration strategy would be more defensible.

As discussed in our prior comments, the critical flaw in this reasoning is that even the Forest Service acknowledges that the inverse J curve model – on which its rejection of lower dbh

limit alternatives is based – is not the exclusive means of establishing an old forest.<sup>1</sup> Here, as discussed in our prior comments, there are alternative management prescriptions that will achieve the forest service’s stated purpose to restore old forest conditions. Further, a recent paper North *et al*, 2006 In Press, demonstrates that the inverse J curve model may in many instances be entirely inappropriate to use as a model to reestablish pre-1850 forest conditions. This paper focused on comparing stand conditions produced by different restoration treatments with those produced by an active fire regime in old growth mixed-conifer and analyzed the various resulting tree distributions and size classes of small, intermediate and large trees represented in a flatter tree distribution pattern, compared to a J-shaped distribution. The paper highlights the importance of leaving sufficient recruitment trees for future old growth, issues related to leaving excessive small trees under current treatment scenarios, and a climate-based regeneration pulse tree distribution that may be important to future management. This paper should be fully considered in the Kings River project environmental analysis as demonstrating the possibility that other forest structure models may be as if not more appropriate in recreating pre-1850 old forest conditions.

In the meantime, the FEIS still does not adequately explain why stand density reduction adequate to restore pre-1850 conditions cannot occur through the removal of trees up to 11" dbh or even 20" dbh.

Under NEPA, the required environmental documentation insures the integrity of the agency process by forcing the agency "to face those stubborn, difficult to answer objections without ignoring them or sweeping them under the rug." *Sierra Club v. United States Army Corps of Eng'rs*, 772 F.2d 1043, 1049 (2d Cir. 1985). Thus, a stated purpose that does not allow for such discussion is invalid under NEPA. See *Westlands Water District v. United States Dep't of the Interior*, 376 F.3d 853, 867 (9th Cir. 2004).

Here, the project purpose is to restore pre-1850 conditions over time, not to implement the inverse J curve at the stand level. We reiterate our prior point that establishment of an inverse J curve at the stand level across the landscape is not in itself a valid project purpose since an agency must also not define its project purpose so narrowly as to preclude consideration of reasonable alternatives. See *Muckleshoot Indian Tribe v. United States Forest Serv.*, 177 F.3d 800, 812-14 (9th Cir. 1999); *Sierra Nevada Forest Protection Campaign v. Tippen.*, 2006 U.S. Dist. LEXIS 57832 (E.D. Cal. August 16, 2006).

The Forest Service has not considered any alternative model for achieving old forest conditions, despite the evidence showing that the current amount of medium to large trees on the landscape does not exceed that which one could expect to find in a mature old forest. Further, the Forest Service does not provide any explanation why a curve based on a landscape level assessment must be applied to the stand level to remove medium to large trees in the 20" to 35" dbh category. This type of information would be appropriately presented in the required range of alternatives consideration. Without it, the public has nothing more than the Forest Service’s

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<sup>1</sup> As discussed in our prior comments, there is no scientific basis for the Forest Service’s belief the inverse J curve must be applied at the stand level, nor even whether it represents an accurate portrayal of the range of tree sizes and distributions as measured across the landscape.

unsubstantiated and illogical conclusion that the only way to establish old forest habitat is to remove a high percentage of the larger trees still left on the landscape.

Since the Forest Service has not considered such alternatives, the FEIS still does not contain any discussion of the trade-off and attempts to balance habitat protection versus the need for treatment. Instead, the Forest Service continues to proceed from the false assumption that the only choices warranting public review are intensive logging or no treatment at all. In sum, it is arbitrary for the Forest Service to propose only intensive treatments when there are other models that could achieve the long term desired condition with considerably less impact on wildlife.<sup>2</sup> The Campaign reiterates that alternative management practices that satisfy the direction in the MOU to study even-aged management in an effort to restore pre-1850 forest conditions must be developed and considered as part of the NEPA review process. *See also* Heald 2006.

Third, the Forest Service's rejection of consideration of the 2001 Framework standards is contrary to the most recent Eastern District Court decision addressing this issue, which stated:

To the extent that defendants assert that the 2004 Framework supersedes the 2001 Framework such that implementation of a plan in accordance with the 2001 Framework would be inconsistent with the 2004 Framework, they are mistaken. The 2004 Framework amended the 2001 Framework to provide the Forest Service with increased flexibility, but did not mandate more intensive logging measures. CR 00119-20 (setting more flexible maximum guidelines for logging, but not mandating minimum requirements). . . .As such, an alternative applying the 2001 Framework would not necessarily be inconsistent with the 2004 Framework.,,

*See Sierra Nevada Forest Protection Campaign v. Tippen*, 2006 U.S. Dist. LEXIS 57832:

Approximately 10 days before the close of additional comment on the FEIS, the Campaign received an "Errata" on the FEIS, which provided new Forest Service analysis of why an alternative based on the 2001 Framework could not be considered. The Campaign notes that the Forest Service's presentation on this issue does not accurately characterize the range of discretion available to forest managers under the 2001 Framework standards. Further, the Forest Service's substantial new analysis characterized as "errata" does not allow the public to assess alternatives in the manner required by NEPA.

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<sup>2</sup> As previously discussed, the irony is that applying the Inverse J Curve at the stand level is likely to create a forest more prone to stand replacing fire, as opposed to a regime that retained more large and medium size trees, which are more fire resistant. Rice (2006) concludes that the establishment of an Inverse J-shaped curve distribution will lead inevitably to the creation of "ladder fuels," which are integral to the stand. Thus, the inverse J curve structure ensures the constant presence of ladder fuels that are conducive to torching and crown fire initiation, a result directly contrary to the stated goals of the Project and a potentially significant impact that has still not been addressed.

### **III. The KRP Will Have Significant Impacts on the Pacific Fisher, Which are Not Adequately Considered in the FEIS**

The FEIS has added a considerable amount of additional analysis on the impacts of this project on the Pacific fisher, but has still not corrected the informational deficiencies discussed in our comment letter and in other comments received. The Campaign reiterates its prior comments on this issue and adds the following points below.

#### **A. The Forest Service Does Not Present Sufficient Information to Assess Accurately the Impacts of the Project on the Fisher.**

The Forest Service still has not provided adequate information regarding the environmental setting or proposed project to assess the impacts on Pacific fisher, as required by NEPA. These include no discussion or information presented regarding:

- the declining population trend of fisher on the Sierra National Forest, including in the KRP area. *See* Jordan 2005;
- the significance of the low fisher population density in the KRP area, and the Sierra National Forest, as opposed to the more robust population on the Sequoia National Forest;
- habitat quality within fisher home ranges in the project area or spatial distribution of affected home ranges both within and outside the project area;
- location or habitat quality of fisher resting and denning sites;
- the effect of the project on pockets of high quality habitat that may be used by fisher for resting and/or denning;
- spatial distribution of fisher connective corridors;
- the ecological significance of the project area to the continued survival of fisher in the Southern Sierra Fisher Conservation Area (“SSFCA”) and Southern Sierra.
- the effect of the project, including mechanical treatment and herbicides, on fisher prey species and understory vegetation;
- the effect of the project on lower Westside hardwood ecosystems, a valuable habitat for fisher and prey species;
- the specific research design and budget allocated for the KRP Fisher research study;
- how “adaptive management” will be implemented to adjust treatments to data generated by the study.

The absence of this information means that the Forest Service 1) is unable to state with any confidence the effects of the KRP on fisher; and 2) lacks adequate baseline information to achieve what is characterized as a central project purpose, to assess the impacts of this level of intense fuel treatments on fisher and their habitat.

A fundamental problem with the Forest Service's approach here is that it proposes to study the effects of intense logging on fisher before it has conducted the necessary baseline research to measure such effects. As discussed in the Campaign's prior comments, the Forest Service is putting the cart before the horse by initiating such intense logging in fisher habitat without the benefits of this baseline information. Instead of basing its project design on the data collected from a fisher study, the KRP implements intense logging before baseline information is established. If the Forest Service lacks information about how fisher use habitat in the project area, how can it expect to assess the effect of treatments on fisher habitat use? If fisher disappear from the project area, the Forest Service will not be able to conclude which aspects of the treatment caused this result.

Even more problematic, as discussed in prior comments and below, the lack of baseline information prevents the Forest Service from concluding that the project as proposed will not have significant impacts on fisher and threaten fisher viability in the project area and the Sierra National Forest.

## **B. The FEIS Does Not Acknowledge that this Project Will Have Significant Adverse Effects on the Fisher**

To the extent that information is available, it suggests that the KRP will have significant adverse impacts on Pacific fisher. The FEIS fails to acknowledge these impacts and presents inaccurate or incomplete analysis in otherwise concluding that the local fisher population will remain viable.

### **1. The KRP Does Not Assess the Impacts of the Project on Fisher Habitat**

The FEIS still does not provide a meaningful assessment of project impacts on fisher habitat. We reiterate and summarize our prior comments on this issue as follows.

First, the Forest Service still does not acknowledge that the minimum standard for assessing the adequacy of fisher home range is the amount of dense forest habitat, with canopy cover from 60-100 %. *See e.g., Zielinski et al. 2004a; USDA Forest Service 2001, Vol. 3, Chap. 3, part 4.4, p. 11.* Zielinski's research indicates that 72 percent of female home ranges contain forests with 60 percent or greater canopy cover. Research by Mazzoni 2002 found that female fisher home ranges has a significantly higher proportion of habitat with >80% conifer crown cover. Mazzoni (Table 10) measured > 80% canopy cover at an average of 19% of female home ranges sampled. Thus, the Forest Service must consider the 60% canopy cover level as a *minimum* requirement, and acknowledge the need for even higher canopy cover across substantial portions of the fisher home range.

Notwithstanding this research, the FEIS does not provide an assessment of the amount of overall high density habitat available within fisher home ranges, either before or after treatment. Instead, the FEIS' definition of "suitable habitat" includes all habitat down to 40% canopy cover, even though the research shows that medium density habitat is at best utilized by fisher for foraging, and that this type of habitat is the least determinative of fisher viability and survival. *See e.g.*, FWS Technical Assistance Letter, p. 10. The FEIS and BE also propose a longer term "fisher goal" of 50% canopy cover. (*See e.g.*, BE, p. 42, 44). However, this figure is still below the minimum required for quality fisher habitat. Moreover, the BE (p. 44) acknowledges that only 51% of the landscape would meet even this below minimum standard in twenty years. The BE (p. 43) also cites to an alternative protective measure to establish as a "long term goal" 50% of the landscape above 60% CC outside the WUI. This protection does not acknowledge 1) the considerable amount of fisher habitat within the WUI; and 2) by the time the "long term" goal were to be achieved, fisher may well have disappeared from the project area.

Further, even this more protective measure, were it to be adopted, does not address the fisher's need for a high percentage of dense canopy cover forest within their home range territories. As noted by the declaration of Reginald Barrett, low or medium density forest is inadequate for fisher and likely operates as "sink" habitat, leading to eventual demise of the local population. The campaign finds it significant that in the Sequoia National Forest, with over twice the density of fisher as the Sierra Forest, female home ranges were measured at above 90% in dense (60-100% CC) habitat. Here, the KRP will eliminate almost a thousand acres of dense habitat from the Phase I project area, *see* BE, p. 45, thereby adversely affecting a Sierra National Forest fisher population that is already precarious and existing at low density in medium to low quality habitat.

The FEIS continues to rely on the assertion that since any particular unit is approximately 1/3 the size of the female fisher home range this will mean that 66% of the home range habitat will be preserved. (*See e.g.*, BE, p. 42, Table 9.) As discussed in our previous comments, this assertion ignores the plain facts that 1) the Forest Service has not mapped and thus may not assume that the remaining 66% of the area constitutes high quality habitat all occurring within the home range; 2) many of the units exceed 900 acres or 1/3 of the home range size; and 3) the 66% number is well below the percentages of high quality habitat observed for fisher in the Sequoia, where fisher appear to be stable, as opposed to the Sierra, where fisher distribution is substantially lower due likely to an overall inadequate amount of good quality habitat.

At this time, the Forest Service has not mapped any particular home range for local fishers. As set forth in Britting 2006a, to the extent one were to map hypothetical home ranges, the percentage of dense habitat after treatment would be *well below* the minimum found to support a female fisher. Since female survival is key to maintaining fisher populations, the District must assess the impacts of fuel reduction treatments on female home ranges. In not doing so, the District lacks adequate information to conclude that no significant impacts are occurring or that viability is being insured.

Second, the Forest Service has not adequately responded to our prior comments that the KRP neither assesses nor appears to provide sufficient post treatment habitat for fisher resting

and denning. The Forest Service acknowledges that it lacks information regarding fisher rest and denning sites. Research discussed in our prior comments indicates that resting and denning habitat for fisher requires a number of components such as high (>80%) canopy cover, large trees, downed logs and multiple canopies, which do not appear to be common within the KRP. The 2004 ROD (p. 39) endorses this approach by requiring 700 acre buffers around fisher den sites consisting of large (size class 4 or greater) trees with greater than 60% canopy cover. As discussed, Mazzoni found that fisher surviving in less than optimal habitat in the Sierra National Forest still had > 80% canopy cover at an average of 19% of the female home ranges sampled. No corresponding numbers exist for more robust fisher populations on the Sequoia National Forest.

In the absence of monitoring information identifying fisher den sites, the Forest Service does not propose establishing any 700 acre protective buffers in the KRP project area. In fact, the KRP does not provide any specific protection for fisher denning, wherever it may be occurring. Since protections under the 2004 Framework are not triggered until information on fisher life history is known, a proposal to move ahead with intense logging in fisher habitat without any monitoring information limits the Forest Service's ability to provide critical protection necessary to ensure successful fisher reproduction. This is plainly contrary to sound science and good policy.

For rest site habitat, which the research finds is critical to maintaining fisher habitat, the FEIS proposes to retain higher quality habitat (60% CC) in designated riparian corridors, which the Forest Service refers to as "old forest linkages." However, as discussed above and in prior comments, 60% canopy cover is the *minimum* required for a substantial portion of a fisher *home range*, which includes significantly more territory than merely the riparian corridor. For quality *rest site* habitat, the old forest linkage prescription does not meet the level of habitat quality observed by fisher researchers in the field. *See e.g.*, Zielinski et al. 2004b; *See* FWS Technical Assistance Letter, p. 16 (fisher "rest and den sites in the Sierra Nevada average >70% to > 90% canopy cover.") In addition, the proposed riparian protection zones are not a fully linked system. *See* FEIS, p. 3-149, Figure 3-53.

Research in the Sierra Forest demonstrates that approximately 50 to 70% of observed fisher rest sites are located away from the riparian corridor. *See* Mazzoni 2002; Jordon 2005. Thus, while fisher will in many instances prefer riparian habitat, fishers also require numerous rest sites away from the riparian corridor. Thus, the maintenance of riparian zones alone cannot provide adequate protection for fisher across the majority of their home range.

In response to our comments on this issue, the FEIS and revised BE state that rest site structures will be protected according to a point scheme referred to in Appendix D of the BE. This approach does not adequately protect the fisher, however, because no information is given regarding how many rest structures currently exist, how many are proposed for protection, nor how such rest structures are laid out spatially in the project area and on potential fisher home ranges. *See e.g.*, FWS Technical Assistance Letter, p. 9. Our review indicates that the scoring system set up by the Forest Service for protecting rest structures leaves considerable if not total discretion in the hands of Forest Service timber marking employees.

Further, the proposal to preserve rest structures appears to protect specific trees or structures, but provides no information regarding the preservation of surrounding habitat. However, Zielinski et al. 2006 notes that habitat around the actual rest site structure is also critical in assessing relative benefit to the fisher. Nothing in the FEIS explains how or where such habitat will be preserved in the project area. In absence of such specific information, the Forest Service's statements that such habitat may be protected does not satisfy the informational requirements of NEPA since it provides no information for the public to assess whether adequate habitat elements will in fact be retained.

In sum, the information provided, in combination with the total lack of data regarding how fisher currently use the KRP area, falls far short of the hard look required under NEPA to assess impacts on this species. Further, the impacts that can be discerned demonstrate that the adverse impacts to fisher from this project are likely to be significant and threaten viability.

## **2. The KRP Does Not Assess Cumulative Impacts of the Overall KRP Project**

The FEIS still does not adequately assess the cumulative impacts to fisher from the overall KRP project. As noted by Britting 2006a, an examination of the residual canopy closure proposed for the approximately 71,979 acres mapped for the Kings River Project indicates that overall, residual canopy of greater than 60% would be found on only about 27% of the area, well below the averages found by all fisher researchers for fisher female home ranges. As discussed previously, the Forest Service's statement that treatments will be "spread out in space and time to further reduce impacts on an individual fisher" does not respond to this cumulative impact since it will be many decades before high quality habitat is restored, if ever. *See also* Barrett, 2006 ("areas that are treated may remain unsuitable habitat for fisher for 30 to 50 years.")

Britting 2006a shows that fisher home ranges are likely to be adversely affected by the KRP, but the total lack of information regarding how fisher use the project and surrounding area renders meaningful public review on this issue impossible. The revised project documents postulate that the approximately 13,000 acres in Phase I of the KRP may include portions of a number of fishers that do not occur solely within the Phase I project area. *See e.g.*, BE, p. 44. *See* FWS Technical Assistance Letter, p. 16 ("up to 13.4 fisher may be affected by the project to a greater or lesser extent.")

The revised BE still provides no analysis of how home ranges for fisher will be affected both within the immediate project area and outside the treatment unit. The FEIS does not consider the cumulative impacts of the overall KRP project, nor how Phase I may affect wildlife such as the fisher whose home range includes parts within and outside of the immediate project area. A meaningful cumulative impact assessment would identify these areas and provide information regarding the adequacy of existing habitat in each of the eight fisher home ranges before making prediction that the loss of additional suitable habitat will have no impact. However, since the Forest Service lacks this information, no such analysis is offered, in violation on NEPA.

The revised BE, while acknowledging that the KRP occupies a critical north-south corridor for fisher in the Sierra National Forest, does not conduct a meaningful assessment of the likelihood that intensive logging will lead to further fragmentation of fisher habitat. The BE states only that fragmentation will be avoided through old forest linkages, but nowhere do the project documents explain how east-west drainages can provide habitat linkage from north to south. The BE (p. 54) states, “70 BEs were considered” but nothing is mentioned regarding the impacts of those 70 projects on the fisher. Many fisher were affected based upon our review of those 70 biological evaluations.

The revised BE’s cumulative effects analysis also is inadequate for the same reasons set forth above, 1) failure to assess the amount and spatial distribution of dense (>60%) canopy cover habitat across the landscape; 2) failure to assess the need for unfragmented higher quality fisher resting and denning habitat across the landscape; and 3) failure to analyze the effects of the proposed logging on fishers that rely for part of their habitat needs on habitat scheduled for treatment; and 4) reliance on the false choice between no treatment – with accompanying fire risk – and intensive logging as proposed in Alternatives 1 & 3, although the project documents concede that less intensive harvesting can achieve the project purposes for fuel reduction.

### **3. The KRP Does Not Assess the Potential that Further Adverse Impacts to Fisher Habitat May Lead to the Disappearance of the Fisher on the Sierra National Forest**

The revised BE acknowledges the precarious state of the fisher in the southern Sierra and in the Kings River project area, but does not then consider the vulnerability of this fragile population to extirpation due to further reduction of already marginal habitat.

As discussed in our prior comments, the KRP’s population trend analysis for the fisher does not acknowledge the decline of fisher number in the larger KRP area, as recorded by Jordan. The FEIS’ and BE’s conclusion that the fisher population in the KRP is ‘stable’ is completely unsupported and further is contrary to sound science. Here, the project documents provide no basis to support the Forest Service’s assertion that local fisher population numbers are unchanging, since no actual population monitoring has taken place specific to the KRP area. To the extent population monitoring has included the KRP, it suggests that the overall fisher population in the region is going down. (See Prior comments and discussion below.) However, the FEIS does not assess the possibility that further reduction in fisher habitat could reduce habitat levels below the threshold necessary to support even a minimally viable population. See *e.g.*, Lamberson *et al.* 2000; Barrett 2006.

The Forest Service’s concept of a “stable” population is contrary to principles of conservation biology, which hold that at extremely low levels, thresholds of available habitat may exist below which an entire population may disappear. As noted in Lamberson *et al.* 2000, current population analyses show that the current fisher population is on a downward trend and that the loss of a few reproductive females could lead to a downward population spiral that culminates in extirpation. Here, the project documents state that the KRP Phase I project alone could adversely affect approximately 13 fisher. The loss of several females in this group could lead to the loss of fisher in the area. This does not constitute population stability.

The suggestion that Jordan abundance numbers for 2002-2004 (47-42-44) somehow represents a “stable population” is a misleading representation of the fisher population. 47 to 42 is an 11% drop in one year, followed by a slight increase and then the research was halted. This sample size is too small and of short duration and tells nothing of the actual birth and death rates of the fisher population. Jordan’s data does not meet the minimum requirements for a demographic study, which has *never* been conducted for fisher in the area.

The Forest Service further does not explain the significance of the low population density of fisher in the Sierra National Forest compared to the Sequoia. While the BE (p. 58) does acknowledge that fisher density and reproductive success appear to be at minimum levels in the KRP area and in the Sierra National Forest, it does not analyze what this means for management of the fisher. If habitat and fisher density are at “the low end” of the range, the Forest Service cannot reasonably conclude that further reductions in habitat affecting a number of fisher does not have the potential for significant adverse effects, thereby threatening viability of this species in the Forest.

The FEIS and revised BE acknowledge, in fact, that the Forest Service is essentially taking a huge risk whether the local fisher population can withstand the adverse impacts that will occur from this project. The BE acknowledges that impacts to fisher are largely unknown. *See e.g.*, BE, p. 60 (“given the inherent uncertainty in this data, other alternative...conclusions are also possible.”) Further, as discussed above, the Forest Service lacks information on how fisher use this area, and the location and spatial distribution of home ranges, rest and denning sites, and connective corridors. Thus, the Forest Service has no basis to find that it is insuring viability for fisher by approving this project.

In response to this point, the Forest Service relies completely on the argument that it must choose between one of the proposed action Alternatives, or no treatment, with its corresponding risk of fire that would also harm fisher. *See e.g.*, BE, p. 63 (KRP “is not likely to result in a trend toward federal listing or loss of viability because without the project area being treated, it would be more susceptible to wildfire.”) This reasoning is flawed for two reasons.

First, as a matter of viability analysis, the threat of wildfire does not mean that intensive logging will not lead to extirpation of the fisher. In other words, the relative threat of fire does not address the issue of what impacts the proposed action alternatives will have on the fisher.

Second, the Forest Service’s viability finding is really a statement that the intensive logging proposed in the action alternatives will be less harmful than a stand replacing wildfire. As discussed above, however, this comparison presents a false choice, since less intensive logging, with less impact on fisher habitat, can and would meet the project’s fuel reduction objectives. As discussed above, the Forest Service’s failure to consider even a single less intensive action alternative that might retain the scarce medium to large trees in the project area is itself a violation of NEPA.

In sum, the Forest Service is embarking on a large scale logging project posing great risk to fisher based on a mischaracterization of the available options for reducing fire risk. The

Forest Service has no basis to risk fisher extirpation in the region based on an approach in which the only alternative to intensive logging is stand replacing fire.

#### **4. The Forest Service Cannot Rely on the FWS' Arbitrary Finding in the Technical Assistance Letter that Fisher Will Not be Harmed**

The FEIS refers to the FWS' technical assistance letter to support its finding that impacts to the fisher will not be significant. However, the FWS letter demonstrates that the KRP documents did not present adequate information for the FWS to make a determination that the project will not have significant impacts on the fisher. For example, the FWS Letter states (pp. 10-11) that the estimated probability of fisher use of foraging habitat – i.e., 4M type habitat down to 40% canopy cover – was relatively insensitive to treatment, in contrast to the fisher's extreme sensitivity to changes in amount and distribution of higher quality habitat used for resting and denning across the landscape. Here, the Forest Service provides little to no information on this topic, which is fundamental to assessing the effects of treatments of fisher.

The FWS letter (p. 9) acknowledges the critical factor of available resting habitat, and notes that “patches of preferred habitat and the location of open areas with respect to these patches may be critical to the distribution and abundance of fisher,” an area in which neither the FEIS nor BE provide any information with respect to fisher and habitat within the KRP area. While the FWS letter (p. 11) cites to research showing that mechanical fuel treatments “significantly reduced estimated resting habitat suitability” for fisher, the KRP does not assess how these impacts will harm the local fisher population.

The FWS letter also acknowledges that various proposed protection measures do not address certain critical habitat requirements for the fisher. For example, the Letter (p. 16) notes that effect of the Forest Service's long term objective to retain 50% of the landscape in 60% canopy cover on fisher resting and denning sites “cannot be evaluated” since these uses require canopy cover averaging from 70 to 90%. The FWS Letter (p. 16) also notes that “the risk to fishers depends on the proportion of resting size trees that will be harvested within any individual's home range” but that “without information on the numbers and sizes of trees to be harvested and to be left uncut” an accurate estimate of this threat is not possible. The FWS Letter (p. 17) also notes that “the effect of reducing CWHR type 4D and 5D forest by 29% “cannot be predicted with certainty.”

The FWS Letter (pp. 17-18) lists a number of adverse impacts to the fisher from the treatment activities proposed in the KRP. The Letter (p. 19) states that fishers have “marginal population status” in the Sierra National Forest and that the greatest threat was to small isolated populations and the potential for further loss and fragmentation of habitat over time.”

The FWS Letter does not state that significant adverse impacts to the fisher will be avoided by the proposed project. The FWS concludes that impacts may be “minimized” by adopting the proposed protective measures, but his statement is nonsensical and appears to be nothing more than a restatement of the FWS initial finding that the proposed protective measures will “reduce the effects” on fisher, in comparison to the initially proposed action. We agree that the proposed protective measures will *reduce* effects on the fisher, but believe that both action

alternatives have the potential for significant harm and jeopardize fisher viability. The FWS Letter contains no finding to contradict this assessment and instead supports our view in the body of its text.

Were the FWS Letter to be interpreted as a finding that the KRP does not have the potential for significant adverse impacts on the fisher and the potential to threaten fisher viability in the Forest, than the FWS' action would not be based on the best available science, as discussed above and in our prior comments. Further, such an interpretation would contradict the FWS' own statements made in its Warranted But Precluded Listing decision for the fisher, and in other statements set forth in the body of the technical assistance letter. In this regard, the Campaign notes that the Forest Service's prior attempts to avoid its legal obligations by having the FWS deliver last minute approvals of Forest Service actions likely to adversely affect fisher have been unsuccessful. As noted by Judge Breyer in the federal district court for the Northern District of California.

[T]he Fish and Wildlife letter suffers from deficiencies [and] was prepared on a rushed basis and lacks the careful reasoning and scientific analysis that has been found to constitute a "hard look" in other cases. ... The Fish and Wildlife analysis does not seriously address the biological importance of the southern Sierra fisher given the agency's own prior finding of genetic distinctiveness. Given this and the other findings that the fisher is isolated and suffers from low population numbers, the letter does not appropriately analyze the importance of individual fishers. By relying mainly on the fact that only a small portion of high-quality fisher habitat will be thinned, the letter appears to adopt the same assumptions as the original EA: that the loss of individual fishers is acceptable since enough important habitat remains, or that the current fisher population can be sustained with 8% less high-quality habitat. Yet, this seems to contradict the finding made in the earlier, more thorough, analysis that listing is warranted. It also is unsupported by a reasoned analysis of how much high-quality habitat may be lost or how many individual fishers may be lost before the trend towards extinction becomes irreversible.

*See No. Sierra Club v. Bosworth*, C 05-00397, Memorandum and Order Granting Motion for Preliminary Injunction. Judge Breyer also rejected the proposition that the mere risk of fire excused any obligation to conduct NEPA level analysis:

The letter's reliance on protecting fishers from fire also fails to conduct the proper analysis. There can be little dispute that fire poses a threat to the fisher and must be considered in an environmental analysis. However, the proper question given all the available science is not only whether a project protects the Forest from catastrophic fire, but also whether it does so in a manner that has the least impact on sensitive species. For example, a reasoned analysis likely would revisit the original canopy cover and tree diameter restrictions to determine--in light of all the new information--whether restrictions set at other levels would still protect the forest from fire while better protecting important habitat features.

*Id.* In conclusion, the Court found that, notwithstanding the existence of an unexamined and apparently expedient FWS technical assistance letter, “serious questions remain regarding whether the Forest Service has engaged in, and properly documented, the appropriate hard-look analysis.”

In sum, the Campaign believes the FWS Letter, while carefully worded, does not ultimately justify or condone the Forest Service’s proposed action, which, according to the FWS and the best available science, has the potential to trigger the collapse of the fisher in the Sierra National Forest.

#### **IV. The KRP Does Not Adequately Consider Impacts to the California Spotted Owl**

The Campaign reiterates its prior comments regarding the impacts of the KRP on spotted owl in the project area and in the Sierra National Forest. Our review of the FEIS does not change in any way our prior comments that the Forest Service lacks full information regarding the potential for impacts to occur.

The KRP FEIS still does not provide enough information or analysis regarding the impacts of either action Alternative to spotted owl habitat at each of the relevant scales for assessing owls: the core area around the nest, the area designated as the home range core, the home range area and a larger area analyzing how different owl home ranges interact across the landscape.

As the Forest Service has recognized, Blakesley (2005) showed that site occupancy was positively associated with the amount of nest area dominated by larger trees and higher canopy cover (>70%) at a 203 hectare/500 acre nest area, and was negatively associated with non-habitat. In particular, site occupancy was best predicted by the quality of habitat in the nest core area. *See* Blakesley (2005) (“Nest area (203 ha) composition was a much better predictor of site occupancy than core area (814 ha), but relationships to apparent survival and reproductive output were similar at both spatial scales.”) As noted by numerous sources, high quality nesting habitat that supports adult survivorship is generally defined as areas of high canopy cover (> 70%) in large size 5 class trees averaging greater than 24” dbh.

The KRP FEIS does not identify the amount of this habitat present, but instead generally assumes that all habitat with trees greater than 12” dbh and 40% canopy cover constitute “suitable” habitat, and thus there will be no impacts to owls as long as habitat is retained at these levels. Numerous studies, however, illustrate such general habitat analysis does not insure owl viability under NFMA and in no way satisfies NEPA’s standards to take a “hard look” at the impacts of the proposed project. For example, neither the FEIS nor the revised BE presents information regarding the availability of nesting habitat in the 500 acre nest core area described by Blakesley (2005):

Land managers in the Sierra Nevada region should retain forest stands dominated by large trees with canopy cover >70% and minimize the amount of area unsuitable to spotted owls within 200 ha surrounding spotted owl site centers to promote site occupancy. Minimization of non-suitable habitat should also increase spotted owl

reproductive output.

*See also* Bart (1995) (owl fecundity and adult survival decreased with decreasing amounts of suitable habitat around the core activity centers and that "removing any suitable habitat within the vicinity of the nest tends to reduce the productivity and survivorship of the resident owls."); USDA Forest Service 1998, p. 24, ("In the absence of clear reasons why these results would not apply to the California spotted owl as well, they need to be considered in planning for the owls in the Sierra Nevada.")

In comparison, Blakesley 2003 found that the average nest core area composed of forest stands with >70% canopy cover was 52%. Blakesley 2003. Here, as discussed in our prior comments, available data indicates that the proposed treatments will eliminate most of the dense canopy coverage within owl HRCAs. *See* Britting 2006a, p. 8, Table 5 ("In seven of the ten owl sites, there would be no dense canopy cover remaining following treatment.")

Blakesley 2003 also found 38% of the nest core area are in stands with large trees (>24" dbh) and >40% cover and that 24% of the nest core area are in stands with large trees (>24" dbh) and >70% cover, i.e., 5D habitat. Here, the *entire project area* contains *no* stands of 5D and only 35 acres of 5M habitat.

Finally, Blakesley found an average of 83% suitable habitat within the 500 acre nest area, with a standard deviation of 12% (Blakesley 2003). *See also Sierra Nevada Forest Protection Campaign v. Tippen, supra.* Here, the Forest Service does not provide information regarding the amount of suitable habitat within the 500 acre nest core habitat nor the harvesting that will occur within nor any analysis of potentially significant impacts to these areas. The Forest Service's proposal to harvest in the nest core areas without assessing the quality of existing nest core habitat or impacts to that area from logging violates NEPA. *See e.g., Sierra Nevada Forest Protection Campaign v. Tippen, supra.*

Further, the Forest Service continues not to take a hard look at the impacts to owl home range core areas. As discussed in previous comments, HRCAs are designed to include "the best available California spotted owl habitat in the closest proximity to the owl activity center." (USDA Forest Service 2004a, p. 39). Extensive logging within HRCAs is likely to adversely affect owl reproduction and occupancy. *See e.g.,* Blakesley (2005); Bart (1995).

Here, the KRP proposes to log significant acres of owl home range core areas (Britting 2006a, p 8, Table 5. Based upon the vegetation analysis conducted by Dr. Britting, canopy cover was also severely affected, most HRCAs had serious drops in canopy cover and seven of ten owl sites had *no dense canopy* (>60%) after the treatments. (*Id.*)

In contrast, Blakesley 2003 found that 32% of the larger core area – approximately the same size as the home range core area - were in stands with large trees (>24" dbh) and that 19% of the core area were in stands with large trees (>24" dbh) and >70% cover. Here, the HRCAs have do not provide the amount of 5D nesting habitat in the home range core area but do propose to eliminate size 5 class habitat and remove 20-30" trees which will contribute to future 5D habitat in the future.

More recent research reviewing habitat characteristics of areas similar in size to HRCAs support the critical importance of retaining nesting habitat with large trees and high canopy cover. In Seamans (2005) found that “forests comprised of medium and large trees and having high canopy cover [i.e., CWHR 5D and 4D] were correlated with higher territory occupancy and higher individual survival rates.” (*Id.*, p. 91). Seamans found that forests with medium (12 to 24 inch) to large ( $\geq 24$  inch) trees and  $\geq 70\%$  canopy cover were positively associated with survival of and probability of site occupancy by adult ( $\geq 1$  year old) California spotted owls at the 400-ha (988-ac) scale, and amount of hardwood forest, brush-sapling, or pole coniferous forest was negatively associated with these parameters. Contrary to other studies of the northern spotted owl (e.g., Franklin et al. 2000), Seamans found that increasing habitat heterogeneity did *not* positively impact survival and reproduction. Amount of interior forest within an owl territory was important in explaining spatial variation in population vital rates, and habitat fragmentation was either “neutral or negative” for population growth rate, survival, and reproduction. *See also* Bond 2006. Seamans (2005) concluded that “maintaining existing contiguous blocks of forest dominated by medium and large trees with high canopy cover in owl territories, and allowing forests in earlier seral stages to mature, would benefit California spotted owls. This should increase not only survival, but also encourage occupancy of these sites by owls.” Seamans (2005) also states that “my results indicated intensive thinning of forest patches within owl territories that results in a lowering of canopy cover may have negative impacts on survival, and may impact occupancy of territories.”

Chatfield (2005) examined habitat within circular territories of about 1,135 acres around each nest stand. She found that the relative probability of spotted owl territory occupancy increased with increasing amounts of mid- to late-seral forests having high canopy cover [i.e., 70 percent or greater].” (*Id.*, p. 40).

In combination, these studies support the use of 70% as the minimum threshold for nesting habitat and the need to maintain a reasonable percentage of high canopy nesting habitat within owl territories to ensure owl occupancy and persistence. *See* Britting 2006a. At the least, the habitat loss within the HRCAs poses a real risk to the long-term productivity of owl territories within the analysis area. (*See e.g.*, Bond 2006.)

Further, the 2004 Framework states that desired conditions for California spotted owl 1,000-acre HRCAs are to achieve at least 50—70 % canopy cover, at least 24 inch diameter trees dominating the overstory, and a higher-than-average level of snags and downed woody debris. Treatments must be designed to avoid the highest quality habitat and existing suitable habitat must be retained (although some habitat may be modified to meet fuels objectives). 2004 ROD p. 46, Table 1. *See also* Bond 2006,

Here, the project documents do not explain whether or how this desired condition is being met. The project documents do not discuss the amount of canopy cover that will occur within the HRCAs, either in the treatment or outside the treatment acreage. The public is unable to ascertain what levels of canopy cover occur currently and post-treatment from the information provided within the BE.

In sum, the Campaign does not agree that the protection of PACs and SOHAs standing alone is adequate to ensure owl survival in the area. Instead all the studies on HRCAs suggest that the HRCA area of 1,000 acres is critical habitat within an owl's home range that must be protected to insure viability. *See* Blakesley (2005) ("Within owl core areas (814 ha), increased amounts of habitat used by spotted owls for nesting, roosting and foraging should increase owl survival"); Bond 2006. Further, as discussed below, it may be that in some PACs, the current nest core habitat is already degraded such that the HRCA habitat is critical to maintain to avoid an isolated "island" surrounded by unsuitable habitat. *See* Bond 2006; Verner et al. 1992, p. 15 ("We expect that owl pairs in SOHAs would disappear at a relatively high rate, leaving the SOHAs unoccupied and at least temporarily nonfunctional.")

As noted by the Sierra Nevada Framework, "[p]rotecting occupied, as well as suitable but unoccupied habitat, over the long term is important to insure species viability. (USDA Forest Service, 2001a, Chap. 3, part 4.4, p. 82.) According to the Framework:

[C]onservation efforts should therefore consider not only occupied habitat, but also suitable unoccupied habitats, in developing conservation strategies for species for which dispersal may function as a primary limiting factor. (*Id.*)

Indeed, Framework scientists specifically found that timber harvesting poses serious short term risks to the owl due to habitat fragmentation:

[R]etaining existing suitable habitat and improving habitat conditions over the next couple of decades may be particularly important for stabilizing owl populations. Research into population dynamics at larger scales has suggested the possible existence of habitat thresholds, below which populations may go extinct in the presence of suitable habitat due to constraints on successful dispersal. With current population declines, vegetation treatment impacts over a short time period may involve risks to the spotted owl population that are not evident by considering longer-term habitat projections alone.

(*See e.g.,* USDA Forest Service, 2001a, Chap. 3, part 4.4, p. 95. *See also id.* at p. 96 ("[W]here a greater proportion of owl home ranges have less than desired amounts of habitat to begin with, reducing the amount of habitat within the few home ranges that exceed the habitat threshold, prior to increasing amounts of habitat in other owl home ranges, could increase the risk of worsening conditions and increasing nearest neighbor distances for owl sites within these areas.") *See also* Bond 2006.

## **V. The Forest Service's Analysis of the Fuel Issues is Inaccurate**

### **A. The Treatments in All Alternates are More Extreme than required by the 2004 Record of Decision Forest-Wide Standards and Guidelines for Fire and Fuels.**

#### **1. The 2004 Sierra Nevada Forest Framework Record of Decision (ROD)**

The 2004 Sierra Nevada Forest Framework Record of Decision (ROD) states, “Management direction for carrying out this Decision includes standards and guidelines for project design and implementation... The vegetation and fuels treatment standards and guidelines are intended to (1) act as sideboards for local managers as they design projects to meet fuels and vegetation management objectives and respond to site-specific conditions, and (2) retain important components of habitat that are believed to be important to species associated with old forests, including large trees, structural diversity and complexity, and moderate to high canopy cover. At the project level, these standards and guidelines are used in conjunction with desired conditions, management intents, and management objectives for the relevant land allocation to determine appropriate treatment prescriptions.”

Moreover, the 2004 Sierra Nevada Forest Framework has specific standards for fire hazard reduction. The intent of the treatments is to provide for healthy forests during drought conditions by meeting desired surface, ladder and crown fuel conditions, as well as stand densities. The 2004 ROD states that site-specific prescriptions should be designed to reduce fire intensity, rate of fire spread, crown fire potential, mortality in dominant and co-dominant trees, and tree density, considering variables such as the amount and arrangement of surface, ladder, and crown fuels in developing fuels treatment prescriptions.

The forest-wide Standards and Guidelines for Fire and Fuels appear in Appendix A of the 2004 Record of Decision. These state, “Design a sequence of fuel reduction treatments in conifer forest types... to achieve the following standards within the treatment area:

- 1) An average of 4-foot flame length under 90<sup>th</sup> percentile fire weather conditions.
- 2) Surface and ladder fuels removed as needed to meet design criteria of less than 20 percent mortality in dominant and co-dominant trees under 90<sup>th</sup> percentile weather and fire behavior conditions.
- 3) Tree crowns thinned to meet design criteria of less than 20 percent probability of initiation of crown fire under 90<sup>th</sup> percentile weather conditions.” (emphasis added).

These are quantifiable goals, and the Standards and Guidelines provide a means to gauge whether the alternatives meet those objectives and/or performance standards. The numbering below refers to the three standards listed above. These criteria state the level of risk that is acceptable to the Forest Service:

1. The 4-foot flame length standard addresses the desire to reduce fire intensity, achieve the desired level of resistance to control, and reduce potential mortality of larger trees to less than 20 percent. Fire intensity is a very important parameter highly correlated to tree mortality and resistance to control. Fires with higher fire intensity require a higher rate of application of fire retardant.

2. The reduction of surface fuels and ladder fuels address the desire to minimize fire intensity, crown fire initiation, and resultant scorch and consumption of tree canopy. This would achieve the goal of reducing potential tree mortality of larger trees to less than 20 percent. In turn, the retention of larger trees provides for the “important components of habitat that are believed to be important to species associated with old forests, including large trees, structural diversity and complexity, and moderate to high canopy cover” (2004 ROD).

3. Thinning of tree crowns to a condition where the likelihood of crown fire initiation is less than 20 percent is another way of achieving a higher height to live crown, or removing ladder fuels. The

Framework criteria do not consider the need to thin tree crowns to reduce crown fire spread. This is because the critical factor in whether a crown fire will spread is whether there are continuous surface fuels to feed the crown fire. Where surface fuels have been adequately removed and the possibility of crown fire initiation minimized to an acceptable level, the Framework criteria appear to assume that the 20% chance of crown fire initiation under 90<sup>th</sup> percentile weather conditions is an acceptable level of risk, when also considering the desire for moderate to high canopy cover.

Extensive measures to avoid or minimize environmental harm were continued in the 2004 ROD, which include forest-wide standards and guidelines. It states, “Mitigation measures are an integral part of the standards and guidelines. Singularly and collectively, they avoid, rectify, reduce, or eliminate potential adverse environmental impacts of forest management activities.”

There is no justification for use of a severe fire weather (97 percentile) that is beyond the standard in the 2004 ROD. Setting a standard of 97 percentile forces increases in logging intensity that are unjustified (see below).

## **2. Alternatives Are Far More Extreme than the Specific Performance Standards**

We previously noted in our Kings River DEIS comments p. 19 (Rice Declaration):

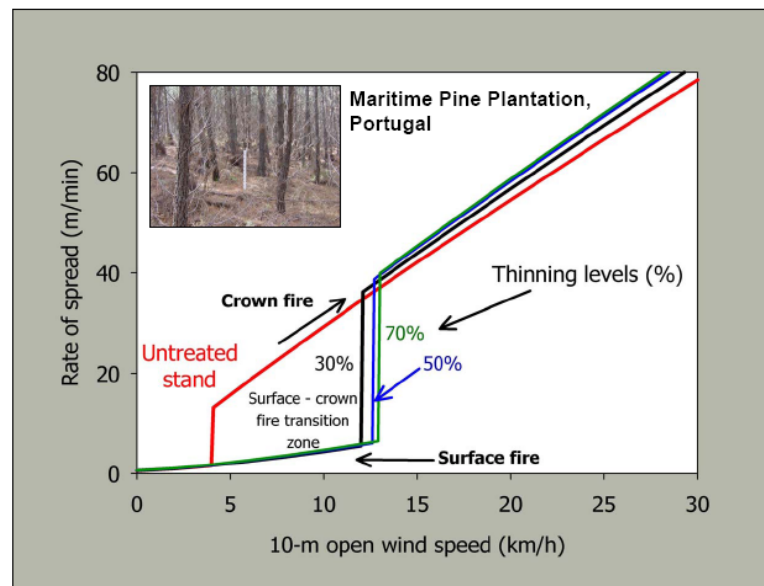
“The Fire and Fuels Analysis States the Desired Condition as Unrealistically Extreme  
The stated desired condition in WUI is extraordinarily and unrealistic. Table 2, entitled "Fire behavior - desired condition" of the Fire and Fuels Analysis displays post-treatment fire behavior, with a torching index of 167 mph and a crowning index of 10.7 to 441 mph. This means that the goal of the treatment is to create a stand that would need 167 mph winds to start crown fires and up to 441 mph for fire to spread in the crowns. The desired conditions for all threat zones are to have a crown index of 200 mph under 90<sup>th</sup> percentile weather conditions. Table 4 entitled "Fire behavior variables, proposed action with severe fire" indicates some location in each treatment area be treated to such a drastic extent that hurricane-force winds could not start or spread crown fires. The desired condition results in a forest treated to such an extreme that the treatment could cause undue damage to the environment.

The crowning index is a measurement of the wind speed necessary to spread fire in the forest canopy. A crowning index of 271 indicates winds would need to be 271 miles per hour before crown fires would be maintained. This is a windspeed probably never experienced in the KRP, a wind four times faster than the definition of hurricane-level winds. Rothermel (1991) records 20-ft windspeeds for seven well-known wind-driven crown fires. The fastest windspeeds (for the Sundance Fire) was 45 miles per hour. The Sundance Fire was a famous crown fire that was among the most severe and largest fires in US history.

A unrealistically high crowning index of 271, for example, indicates that the forest canopy has been thinned to a much greater extent than necessary to meet the project purpose and need for fire and fuels treatments. The most obvious impact is to the types of wildlife that require greater canopy cover, such as the resident Pacific fishers and California spotted owl. The more open canopy also promotes greater levels of herbaceous and shrub growth, which commands a faster treatment cycle.

On Page 11 of the DEIS, it states that the project must also “design treatments to increase resistance to a crown fire and stand replacing fires.” Resistance to crown fire can be achieved by reducing surface fuels and increasing height to live crown along with reducing canopy cover to a lesser amount. Cruz et al. notes that the increase in resistance to crown fire is achieved by thinning stands 30 percent, with marginal benefits realized afterwards. Surface fires in untreated stands transition to crown fires with windspeeds below 5 miles per hour, however, wind speeds needed to create crown fires are only slightly increased with thinning more than 30 percent at 15 to 17 kilometers per hour. For example, thinning 70% results in an insignificant benefit in terms of windspeed needed to create crown fires. The basal area thinning in this case started with trees smaller than 6 inches in diameter. This case study is an example from a pine plantation in Portugal, but the example is indicative of the model results which has been validated on crown fires on three continents in a variety of forest types.

### Simulation Using the Models Contained in CFIS



The Kings River FEIS fails to support its analysis that the level of intensive logging of overstory trees and the significant level of crown manipulation is needed to alter fire behavior to the levels specified in the FEIS. The Kings River Project fire analysis does not address, nor is it consistent with, the current scientific research on fire behavior and the importance of focusing on surface and ladder fuels. It overstates and misrepresents the benefits of crown thinning.

In most cases, the goals of reducing fire severity can be reached through treatments of surface fuels, and without thinning trees to 40 percent canopy cover as cited (Rice 2006). Fire severity is different from fire intensity, and relates more to residual burn times, burn-outs of large-diameter dead material, rather than fire behavior goals stated in the Fire and

Fuels Analysis. Reduction of fire severity has no metric for assessing effectiveness, and is not a goal in the 2004 SNFPA ROD.

The treatments are excessively stringent. The Fire and Fuels Analysis states as their desired condition for both the WUI and DFPZ areas, “The overstory live crown base height averages a minimum of 15 feet and the crown bulk density averages between .05 to .15 kilograms per meter squared. Fires are controlled through initial attack in all but the most severe weather conditions; flame lengths average less than four feet and rates of spread average less than three chains per hour, hazards to fire fighters are reduced by keeping snag levels to two per acre (outside California spotted owl and Northern goshawk PAC’s and forest carnivore den site buffers).” While the crown bulk density conforms with the SNFPA ROD, there is no such standard for DFPZs. Scott 2003 and Cram et al 2003 promote a standard of .1 kg/m<sup>3</sup> in the WUI;.05 kg/m<sup>3</sup> is one-half the standard noted for the DFPZ in this reference. Thinning to a canopy density one-half than is needed for fire behavior goals produces far greater potential harm to those wildlife species dependent on high canopy density, including fishers and spotted owls.”

a. Instead of using the 2004 ROD, the Kings River FEIS used the 97<sup>th</sup> percentile condition.

**Table 2.** 80<sup>th</sup>, 90<sup>th</sup> and 97<sup>th</sup> Percentile weather from 1973-2003 for Fence Meadow RAWS, Sierra N.F. Calif.

	80th	90th	97th
<b>Maximum Dry Bulb (F)</b>	83	82	87
<b>Minimum Relative Humidity (%)</b>	21	18	13
<b>Maximum Wind Speed – eye level</b>	8	10	12
<b>1-h fuel moisture (%)</b>	4	3.4	2.7
<b>10-h fuel moisture(%)</b>	4.5	3.9	3.0
<b>100-h fuel moisture (%)</b>	6.8	5.7	4.8

To apply new standards and guidelines ignores the previous analyses used to develop the Forest Plan Amendment. There is a tradeoff between effects of fuel treatment and the improvement in fire safety. The 2004 ROD made that tradeoff in deciding the 90<sup>th</sup> percentile as the appropriate weather condition, the Kings River FEIS fails to justify the need for such an extreme treatment standard.

b. Even with the 97<sup>th</sup> percentile conditions, the treatments are far more extreme than necessary to meet with fire behavior standards and guidelines of the 2004 ROD.

c. Alternatives 1&3 do not meet the standard of 4-foot flame length under 90<sup>th</sup> percentile fire weather conditions. (See table below)

d. The crown fire initiation standard in the 2004 Sierra Nevada Forest Plan Amendment is far exceeded. According to the Fire and Fuels Report, FEIS, August 1, 2006 the Torching Index is defined as “The open (20 ft) windspeed at which crown fire activity can initiate for the specified fire environment (Scott and Reinhart 2001).”

In this case, the fire environment is the 97<sup>th</sup> percentile weather conditions reported on Tables 6 & 9 in the same report. The torching indices are well above 97<sup>th</sup> percentile 20-foot wind speed, which is equal or less than 36 miles per hour. (This is derived from a 12-mph eye level wind speed adjusted by a wind reduction factor of .4, which is the highest wind reduction factor used).

Crown fire initiation, as predicted by the Torching Index, ranges in Alt 1 from 150 miles per hour (mph) to 515 mph with an average of 270 mpg. This is higher than the highest recorded wind (globally). The highest wind speed recorded by the representative weather station was 36 mph. Thinning to conditions where crown fire initiation could not occur when the winds blow faster than ever recorded is excessively extreme. Thinning to conditions that would prevent crown fire initiation in winds that are 6 times faster than hurricanes is even more excessive. The probability of crown fire initiation is far less than 20% with all current treatments alternatives.

**Predicted Windspeed Needed for Flame Length and Crown Fire Initiation (Torching Index) for Alt 1**

Table 6 simulates a wildfire after treatments under the **proposed action**. Results are average for the Management unit.

Management Units	Fire Type	Flame Length	Torching Index
Bear_fen_6	Surface to Active 0	6	373
Elo_win_1	Surface to Active 0	8	274
Glen_mdw_1	Surface to Active 0	13	150
Krew_prv_1	Surface to Active 0	11	341
Krew_bul_1	Surface to Active 0	5	231
N_soapro_2	Surf to Act Surf-Pass	7	231
Provid_1	Surface to Active 0	6	515
Provid_4	Surface to Active 0	8	384

Numbers given are the average of the plant aggregations within each MU.

**Predicted Windspeed Needed for Crown Fire Initiation (Torching Index ) for Alt 3**

Table 9 Simulates a wildfire after treatments under the Reduction in Tree Harvest Size alternative.

Management Units	Fire Type	Flame Length	Torching Index
Bear_fen_6	Surface to Active 0	6	389
Elo_win_1	Surface to Active 0	8	279
Glen_mdw_1	Surface to Active 0	13	155
Krew_prv_1	Surface to Active 0	11	347
Krew_bul_1	Surface to Active 0	5	232
N_soapro_2	Surf to Act/ Surf-Pass	7	236
Provid_1	Surface to Active 0	6	526
Provid_4	Surface to Active 0	8	387

Numbers given are the average of the plant aggregations within each MU.

According to the 2004 ROD, tree crowns are to be thinned to meet design criteria of less than 20 percent probability of initiation of crown fire under 90<sup>th</sup> percentile weather conditions. The above tables indicate there is a zero probability of crown fire initiation, which is excessively extreme treatment. Increased impacts to other important resources are the price we pay for such extreme treatment levels.

### 3. Tree Mortality Standards can be met with less intensive treatments.

The 2004 ROD establishes a standard for tree mortality as less than 20 percent mortality in dominant and co-dominant trees under 90<sup>th</sup> percentile weather and fire behavior conditions. However, the FEIS did not design treatments that met the criteria. Instead they used more extreme weather conditions for the analysis and did not separate the mortality of dominant and co-dominant trees from the mortality analysis.

The following summary of Table 10 and 11 of the Fire and Fuels Report, FEIS, 8-1-06 displays that the predicted direct mortality of trees greater than 20 inches under Alternative 1&3 under 97<sup>th</sup> percentile weather conditions. This does not indicate whether the same levels of mortality would occur under the 90<sup>th</sup> percentile weather conditions. The table does not indicate the mortality of dominant and co-dominant trees, not does it use the 90<sup>th</sup> percentile weather conditions as required by the 2004 ROD. This is a standard comparison which should have been made for an adequate comparison of alternatives and for an informed decision.

#### **Predicted Mortality and Windspeed Needed for Crown Fire Spread (Crowning Index ) for Alt 1 & 3**

**Table 10** Simulates a wildfire’s effects on the tree canopy and mortality after treatments under the proposed action alternative (Alt 1)

Management Units	Crown Bulk Density (kg/m3)	Crowning Index	Percent Basal Area Mortality
Bear_fen_6	.064	52	34
Elo_win_1	.069	47	32
Glen_mdw_1	.081	41	44
Krew_prv_1	.075	43	38
Krew_bul_1	.074	41	22
N_soapro_2	.016	121	66
Provid_1	.035	80	43
Provid_4	.023	76	57

**Table 11** simulates a wildfire after treatments under Alternative 3 – Reduction of Harvest Tree Size and compares it to a wildfire under the No Action Alternative).

Management Units	Crown Bulk Density	Crowning Index	Percent Basal Area Mortality
Bear_fen_6	.065	51	34

Elo_win_1	.069	48	32
Glen_mdw_1	.081	42	46
Krew_prv_1	.075	43	38
Krew_bul_1	.072	41	23
N_soapro_2	.016	128	65
Provid_1	.035	81	44
Provid_4	.023	78	57

The standards established in the 2004 ROD provide for acceptable levels of fire intensity, wildfire-caused tree mortality, and crown fire initiation along with meeting the goals of retaining “important components of habitat that are believed to be important to species associated with old forests, including large trees, structural diversity and complexity, and moderate to high canopy cover” (2004 ROD). The alternatives analyzed exceed the fire and fuel standards, and in doing so fail to attain the overarching goals regarding habitat, old forests, structural diversity and complexity and moderate to high cover.

The treatments are unnecessarily severe, even in high value wildlife habitat areas  
The FFA states that in the CASPO areas “Conditions are at a level that winds **at any speed** cannot initiate torching and crown fires are only threat to the habitat and nearby communities only in extreme weather conditions.” Treatments are to prescribed burn. The average Torching Index for the treatment units ranges from **231 miles per hour to 515 mph** even though the highest recorded wind speed was 35 mph (page 35). This indicates **they thinned far to excess for crown fire reduction** as opposed to thinning to the maximum wind speed, which is the standard for science-based management.

#### 4. Alternatives 1 & 3 Result in the Same Fire Behavior

Alternatives 1&3 result in the same surface fire behavior because they all use the same fuel models and weather as inputs to predict fire behavior. This is stated in the FFA: page 43 “The direct effects of Alternative 3 – reduced harvest tree size on fire behavior are nearly identical to those of Alternative 1...”. Differences occur between the two treatments only in the areas where treatments are located based on special management overlays. The following tables display the same surface fire behavior for all treatment alternatives. .

#### Comparison of Predicted Windspeed Needed for Crown Fire Initiation (Torching Index ) for Alt 1 and Alt 3

Management Units	Fire Type	Alt 1	Alt 3	Alt 1	Alt 3
		Flame Length	Flame Length	Torching Index	Torching Index
Bear_fen_6	Surface to Active 0	6	6	389	373
Elo_win_1	Surface to Active 0	8	8	279	274
Glen_mdw_1	Surface to Active 0	13	13	155	150
Krew_prv_1	Surface to Active 0	11	11	347	341
Krew_bul_1	Surface to Active 0	5	5	232	231
N_soapro_2	Surf to Act/ Surf-	7	7	236	231

	Pass				
<b>Provid_1</b>	Surface to Active 0	6	6	526	515
<b>Provid_4</b>	Surface to Active 0	8	8	387	384

Numbers given are the average of the plant aggregations within each MU.

**Comparison of Predicted Windspeed Needed for Crown Fire Initiation (Torching Index ) for Alt 1 and Alt 3**

	Alt 1	Alt 3	Alt 1	Alt 3	Alt 1	Alt 3
Management Units	Crown Bulk Density (kg/m3)	Crown Bulk Density	Crowning Index	Crowning Index	Percent Basal Area Mortality	Percent Basal Area Mortality
<b>Bear_fen_6</b>	.064	.065	52	51	34	34
<b>Elo_win_1</b>	.069	.069	47	48	32	32
<b>Glen_mdw_1</b>	.081	.081	41	42	44	46
<b>Krew_prv_1</b>	.075	.075	43	43	38	38
<b>Krew_bul_1</b>	.074	.072	41	41	22	23
<b>N_soapro_2</b>	.016	.016	121	128	66	65
<b>Provid_1</b>	.035	.035	80	81	43	44
<b>Provid_4</b>	.023	.023	76	78	57	57

These values for both surface fire behavior and crown fire behavior are essentially the same. The uncertainty within the predictions of fire behavior is large enough to comprise the same values.

The Alternative that complied with the 2001 Framework ROD would have also had similar – identical – fire behavior. This alternative, had it not been dismissed, would have met the same standards and guidelines of the 2004 ROD. The surface fuel treatments would be identical and resulted in the same surface fire behavior. Treatments to increase crown base height are similar, resulting in similar torching indices. In addition, because the torching index is so high under Alt 1 and 3, a reduction of torching index would have to be unrealistically dramatic before the standards could not be reached. Note that the 2004 ROD standards and guidelines do not include one for crown bulk density and any justification for dismissing this alternative is not based on the direction from the current governing document. A 2001 Framework alternative would have much reduced environmental impacts without significant changes in the fire behavior characteristics selected as criteria in the 2004 ROD. This is contrary to the statements in the errata delivered November 9, 2006.

**B. The Errata Issue #4 regarding treatments to increase resistance to crown fire and stand replacing fires.**

As stated in our comments on the DEIS, there is an improper emphasis on crown fire in the analysis. There are two new points raised in the errata which we address below.

First, the errata states that “In the analysis of stands in past projects (Jose 1 project files, 2003) it was impossible to meet the Frameworks guidelines of 0.05 to 0.15 kg/m<sup>3</sup> crown bulk density to reduce the crown fire potential. The 0.07 kg/m<sup>3</sup> crown bulk density is referred to by Agee as the critical crown bulk density for independent wildfire spread.” This statement overlooks the fact that others have found that a variety of crown bulk densities are effective in stopping crown fire spread. (See KRP DEIS comments; Rice Declaration 2006). In fact, Agee (1996) stated a range of bulk densities from 0.074 to 0.125 kg/m<sup>3</sup> can be effective in reducing crown fire spread.

Second, the errata states that “The 2001 SNFPA decision did not allow managers to significantly treat dense stands to the guidelines proposed or those critical crown bulk densities identified by research.” As mentioned above, research also shows CBD can be higher and still stop crown fire spread. (See KRP DEIS comments; Rice KRP Declaration 2006). In the errata and elsewhere in the FEIS there is an inappropriate characterization of the 2001 Framework standards. Examples of inappropriate characterization include such practices as the allowance of a 30” diameter limit near communities and the application of a 20” diameter limit in dense stands (i.e. CWHR 4M and 4D) in old forest areas. The Forest Service misstates the flexibility in the 2001 Framework.

### **C. Failure to Respond to Comments-Fire and Fuels**

The following issues were raised in the Campaign’s Comments to the KRP DEIS but were not addressed adequately in the FEIS Response to Comments in violation of NEPA.

First, the DEIS analyzed only one action alternative. The FEIS now includes Alt 3, which was intended to represent implementation of the 2004 ROD. However, an alternative that has less dire consequences that still meets the purpose and need for fire effects was not investigated. As shown above, a less intensive logging alternative will meet the purpose and need of the project fire objectives. Also, as shown above, the treatment intensities of the two similar alternatives are significantly more severe than necessary to meet project objectives. The comments to the DEIS note several other projects that met the purpose and needs without severe thinning.

Second, the FEIS misquotes or misinterprets important literature: Page 52 of the DEIS Vol. 1 states, “Agee (1996) and Van Wagtendonk have both described forty percent canopy cover as a threshold for sustain crown fires.” However Van Wagtendonk (1996) developed several treatment scenarios, with canopy cover categories of 81-100% for the control and those that treated for surface fuels, 50-80% for treatments involving biomass, and 1-20% for the fuelbreaks. In his conclusion, he says, “The key mechanisms at work that affected the results of the simulations were the amount of surface fuels and the presence of low crowns or ladder fuels.” Agee (1996) found a default maximum allowable CBD of .074 to .125 kg/m<sup>3</sup> that causes cessation of crown fires reported by Rothermel in his 1991 publication.

Third, weather conditions selected for analysis were unrealistically extreme. The goal is to be such that 200 mph winds would be needed to initiate crown fire. First, wind does not factor into crown fire initiation in the models they use. Second, 200 mph winds do not occur, therefore

the forest would be treated to such an extreme that could cause undue damage to the environment. Rothermel (1991) records 20-ft windspeeds for seven well-known wind-driven crown fires. The fastest windspeeds (for the Sundance Fire) was 45 miles per hour. This represents a significant flaw in the analysis of fire behavior factors. The Forest Service asserts the 97 percentile standard but remains blind to the data that supports successful fire behavior outcomes at 90 percentile, the 2004 Framework standard.

## **VI. The KRP Still Does Not Comply With Forest Monitoring Requirements**

Management to achieve well distributed populations of desired native and non-native species across the planning area is a fundamental goal of the National Forest Management Act (NFMA). This goal is intended to be achieved through planning and monitoring. The Sierra Land and Resource Management Plan (SLRMP) (as amended in 2004), the NFMA, and other federal laws and regulations provide a framework to direct the achievement of this goal. The SLRMP (amended 2004) provides specific direction on the required monitoring for selected species in connection with the Kings River Project.

As described below and noted in our comments on the Kings River DEIS, the Project fails to meet the monitoring requirements in the SLRMP in a number of ways including failure to collect and report the required monitoring data. Disclosure of the monitoring data and the assessment of population trend are essential for two reasons. First, it is required by the forest plan and therefore required by law. Second, this information is necessary in order to evaluate fully the effects of the Kings River Project on the environment as required by law. The failure to collect and disclose this information is significant. We ask that this deficiency be rectified prior to making a decision to implement the project.

### **A. The breeding bird surveys cited in the MIS report are not adequate to assess population trend on the Sierra National Forest.**

The forest plan for the Sierra National Forest requires annual population and trend to be determined for avian species in the following four habitats: riparian, oak woodland, meadow edge, and mature mixed-conifer. (Sierra National Forest 1992, p. 5-6 to 5-9). For each habitat type, eight birds species were identified as management indicator species for the Kings River Project. (KRP MIS report, pp. 9-17). Population trend for the Sierra National Forest was reported for each of these species using information provided in the Breeding Bird Survey (BBS) Program (Sauer et al. 2006).

For a number of reasons, the use of breeding bird surveys is unacceptable to meet population monitoring requirements in a forest plan. First, the routes selected to represent the national forest largely do not occur on Sierra National Forest lands. Britting 2006b, p. 2, in an evaluation of the geographic location of the routes, that less than 25% of the total length of the routes surveyed occurred on land managed by the Sierra National Forest. Further, Britting 2006b also found that for four routes no portion of the route occurred on lands management by the Sierra National Forest. A stated purpose of the monitoring required by the forest plan is to “assess effectiveness of S&Gs.” (Sierra National Forest 1992, pp. 5-6 to 5-9). Since most of the survey routes do not occur on the Sierra National Forest, it is not possible for this data to

evaluate the management actions guided by the forest plan standards and guidelines. Thus, it is arbitrary to suggest that the data is representative of population trends on the Sierra National Forest.

Second, the BBS Program itself identifies that there are limitations to the dataset related to the geographic area covered. The BBS Program notes that:

“Trends are always specific to the areas surveyed.

Roadside biases-The BBS is a roadside survey, and a major criticism of the survey has been that habitat changes along roadsides may not be representative of regional habitat changes. Trends from the BBS may therefore reflect only populations along roads rather than regional bird population changes.

Habitat biases-Within the range of the BBS, many habitats are not well covered, and species that specialize in those habitats are poorly sampled. Wetland birds and species occupying alpine tundra habitats are examples of groups thought to be poorly represented in the survey.”

(Sauer et al. 2005). Even if the routes occurred entirely on the Sierra National Forest, they would still be limited to assessing trend near to the road and not across the forest.

Third, even if the routes were determined to be an adequate reflection of the Sierra National Forest, the quality of the data is insufficient to assess population trend. The BBS Program is explicit in their caution about the use of the BBS data to assess trends. In particular, the BBS program has developed “regional credibility measures” to assist users in evaluating the strength of the results. These regional measures are provided for each species for a number of regions including California and Sierra Nevada. Credibility measures have not been developed for smaller regions such as a single national forest. Close examination of the results for the Sierra Nevada region for the species selected in the MIS analysis indicate that data deficiencies exist for four of the nine species.

Table 1. Regional credibility measures for four species covered in the MIS report for the Kings River Project.

Species	“Regional Credibility Measure” for the Sierra Nevada
White-crowned sparrow	Deficient (yellow)
Acorn woodpecker	Deficient (yellow)
Blue-gray gnatcatcher	Important deficiency (red)
Oak titmouse	Important deficiency (red)

There is no measure of credibility for the data associated with the individual routes or for the pool of routes presented in the MIS report. However, the low level of reliability Sierra Nevada wide for some of these species strongly suggests that over an even smaller scale, the data gaps and reliability could be even larger. Further, the BBS program even raises caution in the use of

their “best” data and concludes that even data falling into this “category may not provide valid results.” (*Ibid.*).

Lastly, the courts have also found fault with the use of BBS data to estimate population trend. In *Earth Island Inst. v. U.S. Forest Service*, the 9<sup>th</sup> Circuit Court of Appeal found that “the BBS alone cannot satisfy the population monitoring requirement, and the USFS has acted arbitrarily and capriciously under the NFMA in relying upon it.”

For the reasons stated above, the breeding bird survey data as applied in the MIS analysis for the Kings River Project can not satisfy the requirement to monitor avian populations and their trends on the Sierra National Forest. The MIS analysis should be revised to reflect this circumstance.

**B. Monitoring required by the forest plan was not completed for eleven species evaluated in the Kings River Project and additional species affected by the project.**

The SLRMP was first approved in 1992. This plan was subsequently amended in 1993, 2001 and 2004. The amendment in 2004 adopted an adaptive management and monitoring program that is described in Appendix E of the FEIS issued in 2001. (USDA Forest Service 2001). The SLRMP as amended in 2004 includes the monitoring originally specified in the SLRMP as well as the additional monitoring identified in Appendix E. For nine of the species analyzed in the Kings River Project, the monitoring required by the original SLRMP or the plan as amended in 2004 has not been completed. (Table 2). As can be seen from a review of Table 2, the type of monitoring required or the frequency specified in the original SLRMP has not been achieved for nine species. Also, the population monitoring specified in the amended SLRMP (i.e. Appendix E) has not been reported for all eleven species. Beyond this, there are 28 species that may be affected by the Kings River Project and are listed in Appendix E as requiring annual population monitoring. (Table 3). These species and their monitoring results were not discussed in the Kings River Project analysis.

Table 2. Species considered in the Kings River Project for which the monitoring requirements in the Sierra Land Management Plan (SLRMP) (amended 2004) have not been addressed in the environmental analysis.

Species	Forest Plan Monitoring Requirement	Frequency	Monitoring Reported in Kings River Documents
Northern goshawk	“Evaluate habitat utilization”, “Nest site surveys of suitable habitat” (SLRMP 1992)	“Annually for 5 years then every two years” (SLRMP 1992)	No monitoring data provided.
	Population monitoring required. (Amended SLRMP 2004)	Annually	No monitoring data provided.
Warbling vireo	“Monitor population trends”, “Field counts of avian species” (SLRMP 1992)	“Annually for 5 years then every two years” (SLRMP 1992)	Breeding bird survey data inadequate.
White-crowned sparrow	“Monitor population trends”, “Field counts of avian species” (SLRMP 1992)	“Annually for 5 years then every two years” (SLRMP 1992)	Breeding bird survey data inadequate.
	Population monitoring required. (Amended SLRMP 2004)	Annually	Breeding bird survey data inadequate.
Wilson’s warbler	“Monitor population trends”, “Field counts of avian species” (SLRMP 1992)	“Annually for 5 years then every two years” (SLRMP 1992)	Breeding bird survey data inadequate.
Yellow warbler	“Monitor population trends”, “Field counts of avian species” (SLRMP 1992)	“Annually for 5 years then every two years” (SLRMP 1992)	Breeding bird survey data inadequate.
	Population monitoring required. (Amended SLRMP 2004)	Annually	Breeding bird survey data inadequate.

Species	Forest Plan Monitoring Requirement	Frequency	Monitoring Reported in Kings River Documents
Acorn woodpecker	“Monitor population trends”, “Field counts of avian species” (SLRMP 1992)	“Annually for 5 years then every two years” (SLRMP 1992)	Breeding bird survey data inadequate.
Oak titmouse	“Monitor population trends”, “Field counts of avian species” (SLRMP 1992)	“Annually for 5 years then every two years” (SLRMP 1992)	Breeding bird survey data inadequate.
Olive-sided flycatcher	“Monitor population trends”, “Field counts of avian species” (SLRMP 1992)	“Annually for 5 years then every two years” (SLRMP 1992)	Breeding bird survey data inadequate.
	Population monitoring required. (Amended SLRMP 2004)	Annually	Breeding bird survey data inadequate.
Western tanager	“Monitor population trends”, “Field counts of avian species” (SLRMP 1992)	“Annually for 5 years then every two years” (SLRMP 1992)	Breeding bird survey data inadequate.
Townsend's big-eared bat	Population monitoring required. (Amended SLRMP 2004)	Annually	No monitoring data provided.
Pallid bat	Population monitoring required. (Amended SLRMP 2004)	Annually	No monitoring data provided.

Table 3. Species from Appendix E (USDA Forest Service 2001) that require population monitoring and that may be affected by the Kings River Project. These species were not addressed in the environmental analysis.

CWHR #	Common Name	Habitat Type
A016	Pacific slender salamander	Streams, wooded canyons, washes
B126	Golden eagle	Cliffs; early successional, grasslands
B131	Prairie falcon	Cliffs; perennial grasslands, savannahs
B134	Blue grouse	Open, medium to mature-aged stands of conifers
B138	Turkey	Riparian, oak and oak-conifer forests
B141	Mountain quail	Open, brushy stands of conifer and deciduous forest and woodland, and chaparral
B251	Band-tailed pigeon	Hardwood, hardwood-conifer and conifer
B272	Long-eared owl	Riparian, dense tree
B299	Red-breasted sapsucker	Montane riparian, montane hardwood-hardwood, mixed-conifer, aspen red fir; near meadows, lakes and slow streams
B300	Williamson's sapsucker	Conifer, lodgepole, aspen
B304	Hairy woodpecker	Mixed conifer and riparian
B308	Pileated woodpecker	Mature, montane conifer
B309	Olive-sided flycatcher	Mixed conifer, montane hardwood-conifer
B385	Swainson's thrush	Riparian and dense shrub
B430	Yellow warbler	Riparian (open canopy), montane shrub, open coniferous
B510S1	Mountain white-crowned sparrow	Open montane riparian
M025	Long-eared myotis	Brush, woodland, forest; crevices, bark, snags
M026	Fringed myotis	Hardwood-conifer; crevices, mines
M027	Long-legged myotis	Woodland, forests, chaparral; rock tree bark, snags
M029	Small-footed myotis	Arid wooded and brushy uplands near water
M030	Silver-haired bat	Conifer, montane riparian
M034	Hoary bat	Dense foliage of medium to large trees
M036	Spotted bat	Rock, cliffs
M037S1	Pacific western big-eared bat	Caves
M049S1	Sierra Nevada snowshoe hare	Montane riparian with thickets of alder/willow; young conifer with chaparral
M050	White-tailed hare	Early successional stages of various conifer
M077	Western gray squirrel	Mature stands conifer, hardwood, conifer-hardwood
M151	Black bear	Dense mature forest of many types

<sup>1</sup> Extracted from "California's Wildlife" edited by Zeiner, D.C. et al 1988-1990.

The failure to conduct and report monitoring for the species referenced above should be remedied for the Kings River Project.

## VII. The Forest Service's Analysis of Effects on MIS Species is Inadequate

The previous section in these comments identifies a number of species for which the population monitoring was not completed or the data or analysis was inadequate. Among these

species are numerous management indicator species (MIS) species for the Sierra National Forest. As identified in the Regional direction on the analysis of management indicator species and documentation in project level NEPA (USDA Forest Service 2006), “when the governing LRMP requires population monitoring or population surveys, the MIS effects analysis for the project must be informed by population monitoring data.” Since the population monitoring data are absent or inadequate for many of the MIS species the effects analysis for these species is also inadequate.

The failure to collect and disclose this information is significant. This information should be included in the environmental analysis.

## **VIII. Soil Quality Impacts**

The Region 5 Soil Quality Standards (FSH2509.18.2[1], the service-wide soil management handbook (FHS 2905.18-91-1), the Sierra Forest Plan and NFMA 36 CFR 219.27 provide the regulatory framework that governs soil management in this project. The goal of this framework is to conserve soil resources and to prevent the significant or permanent impairment of the productivity of the land. The Kings River FEIS (p. 3-199) identifies that “design measures for the Kings River Project include maintaining at least 90% of the soil porosity over 15% of an activity area found under natural conditions. This means that up to 15% of an activity area can have disturbed ground.”

### **A. The soil monitoring is inadequate.**

KRP FEIS (p. 3-200) states that “bear\_fen\_6 has excessive levels of soil compaction that does not meet forest plan standards.” The actual levels of compaction, the level of landings and skid trails, and the location of compacted areas are not mentioned. NEPA requires that site-specific, quantified data on existing conditions and post-treatments soil compaction levels be identified and mitigated to forest plan standards.

The FEIS p. 3-201 and KRP Soils Report p. 7-8 disclose no soil compaction data on krew\_prov\_1 or n\_soaproot\_2 units. There is no way to assess current levels of compaction or post-treatment level of the various soil quality factors with a proper survey and disclosure. This violates NEPA's requirements for a “hard look” and NFMA's substantive requirements to prevent the significant or permanent impairment of the productivity of the land.

Three management units fail to meet soil quality standards of large woody debris. FEIS p. 3-202 disclose 3 units (providen\_4, n\_soapro\_2, and glen\_mdw\_1) lack large wood (approximately 1 piece/ac LWD) and do not meet Region 5 Soil Quality Standards (5 pieces/ac of large logs). The FEIS fails to recommend mitigation measures to remedy this detrimental soil quality impact.

Lastly, Mazzoni (2002) noted the lack of large wood in fisher home ranges in her analysis which located in the Kings River Project area. She points the need to keep large snags on site, dropped for worker safety concerns. This point should be an incorporated mitigation measure in the KRP area.

**B. Post-harvest compaction levels, skid trail and landing locations (current and planned) are not disclosed, nor are mitigations for soil compaction described in violation of NEPA.**

FEIS (p. 206) states that tractor logging is planned on slopes <35%. There is no discussion of expected compaction rates post harvest. No mention of subsoiling to relive expected increased in compaction. There is no unit by unit comparison of soil compaction pre-and-post project in violation of NEPA.

Lastly, there is the likely effectiveness of mitigation in the project area is not quantified or evaluated.

In conclusion, the project-wide soils assessment is incomplete and the analysis of post-treatment compaction levels, large wood levels and mitigation remedies in lacking in violation of NEPA and the Soil Quality Standards.

DATED: November 20, 2006

Respectfully submitted,



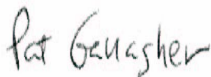
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