Notice of Appeal

The Sierra Nevada Forest Protection Campaign and the The Sierra Club	) Notice of Appeal of the Record of Decision) and Final Environmental Impact Statement) for the Kings River Project on the) High Sierra Ranger District, signed 12/20/06.) Responsible Official: Edward S. Cole, Forest
v.	) Supervisor, Sierra National Forest,) Appeal Deciding Officer: Bernard Weingardt,
Sierra National Forest	) Regional Forester, USDA Forest Service--PSW) 1323 Club Drive, Vallejo, CA 94592
Responsible Official	)
_____	) Appeal Date: February 5, 2007

Notice of Appeal
And
Statement of Reasons
Pursuant to 36 CFR § 215

Appellants:

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February 5, 2007

I. Description of Appeal.

The Sierra Nevada Forest Protection Campaign and the Sierra Club (hereafter, "the Campaign") appeal and request relief from Regional Forest Bernard Weingardt, Regional Forester, Region 5-PSW from the Record of Decision (ROD) and Final Environmental Impact Statement (FEIS) for the Kings River Project on the High Sierra Ranger District of the Sierra National Forest, signed December 20, 2006 by Mr. Edward S. Cole, Forest Supervisor, Sierra National Forest, the Responsible Official. The Campaign's prior comments on this project, and its Appeal of the 2004 Framework decision (SNFPC et al. 2004), submitted with the Campaign's scoping comments, are hereby incorporated by reference into the body of this Appeal.

The Campaign's Appeal is timely, having been filed on or before February 5, 2007, on the first day of federal business following 45 days from the publication of the Notice of Decision in the paper of record, the Fresno Bee.

II. Description of Appellants.

The Sierra Nevada Forest Protection Campaign is a 98-member group environmental coalition focused on the conservation, enhancement and protection of old growth forests, wildlands, at-risk species, rivers and streams and the ecological processes which shape the forests of the Sierra Nevada.

The Sierra Club is nation-wide organization with numerous chapters in California. Sierra Club members desire that the National Forests be managed to enhance forest ecology and provide appropriate fuels treatments near communities.

We have standing based upon substantive comments on the Kings River proposed action, draft environmental impact statement and Final Environmental Impact Statement. We have reviewed the Kings River Project Proposed Action, Draft EIS, ROD and FEIS, key specialists' reports and other relevant documents.

III. Project Description

The KRP proposes a landscape level program of uneven silviculture, fire and herbicide treatments on approximately 131,500 acres in the Dinky Creek and Big Creek Watersheds. "Phase I" of the KRP will involving treatment on 13,847 acres within eight management units, including approximately a number of group selection clear cuts, over 5,000 acres of DFPZ creation and approximately 7,600 acres of non-commercial harvest and 6,200 acres of commercial logging. Phase II involves similar treatment for 60 additional units between 2011 and 2033. The DEIS states that it is providing "site-specific" analysis on Phase I and a more general cumulative impact analysis of the Phase II Project based on the "expectation the remaining 60 units will be treated similar to the initial eight management units between 2011 and 2033."

The KRP ROD adopts Alternative 3 set forth in the FEIS, which proposes management standards similar to the 2004 Framework, including logging trees to 30" dbh. The KRP proposes

an uneven-aged silviculture prescription according to an inverse J-curve model. Alternative 3 proposes to log trees below 30" dbh,

The stated purpose of the KRP is to "examine the response of key environmental concerns" to the KRP management prescription. The FEIS states that the treatments for Phase II of the Project will be dependent on monitoring and research results from treatment of the initial eight management units. The KRP ROD states that the Forest Service "must be to secure the safety of these species now, and maximize the environmental parameters that favor their ultimate survival." However, the KRP continues to reject consideration of a less intense treatment alternative that that would meet fuel objectives while retaining thousands more medium to large trees on the landscape.

IV. Appeal Summary

The Campaign appeals the Kings River Project based upon: (1) violations of the National Environmental Policy Act ("NEPA"), 42 USC 4321-4370, and its implementing regulations, and (2) violations of the National Forest Management Act ("NFMA"), 16 USC 1600 *et seq*., and its implementing regulations, regional and forest plans, as set forth more fully below. This appeal is based on legal inadequacies raised in the Campaign's prior comments and as set forth below.

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 contrary to the Forest Service's mission to manage the public forests for multiple uses, not just logging production.

A fundamental flaw with the KRP is its project design. The logging of larger trees is 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 long term objective but there are several ways this objective could be reached with substantially less impact on wildlife, particularly the fisher.

Given the extreme sensitivity of wildlife in this area, it is incumbent on the Forest Service - both as a legal and policy matter - to assess alternatives that will meet its fire reduction goals while minimizing impacts to sensitive species. The KRP rejects this reasonable approach based a pre-determined decision that it must implement a silvicultural model - the "Inverse J Curve" - that requires logging of larger trees up to 30" dbh. The Forest Service defends this approach based on the stated project purpose to restore the old-forest resembling pre-1850 conditions in the Project area. However, as the Campaign has previously demonstrated in comments, the Inverse J Curve bears little resemblance to pre-1850 conditions in which variation would occur between but not typically within stands, many of which were composed of almost exclusively large trees. Further, the Inverse J Curve is not a disturbance based model and thus is entirely inappropriate to be used as a prototype for establishing old forest habitat over time through the use of prescribed fire in what was historically a short fire return interval forest system. The

Campaign continues to be astounded by the Forest Service's assertion in this "research" project that it *must* log larger trees (20" to 30" dbh") based on a model developed in Europe that has no basis or application to the objective of ecosystem management for fire-adapted forests in the Sierra Nevada. As discussed in prior comments, the Forest Service's removal of medium to large trees and retention of smaller trees based on an inappropriate reverse J curve is likely to exacerbate fire risk. The FEIS itself states that the Inverse J model does not meet the modeled fuel objectives.

The Forest Service has no basis to conclude that the only way to establish a mature old forest is to cut down a significant portion of the medium to large trees currently existing on the landscape. The Forest Service provides no data to support the idea that the Inverse J Curve is the only available model to achieve old forest conditions. Given that the Inverse J Curve approach poses significant risk to old forest wildlife, the Forest Service cannot unreasonably limit its consideration of less harmful alternatives that would meet project purposes. As set forth below, the Forest Service's failure to consider a reasonable range of alternatives violates NEPA.

The KRP purports to be a "research" project intended to develop useful information, yet the Forest Service never considered any less harmful treatment alternatives in detail and thus the baseline information needed to compare these options was never developed. The evidence shows, for example, that an alternative based on the 2001 Framework would meet fuel reduction objectives while leaving medium to large trees needed as a recruitment class to make up for the existing deficit in larger trees for the old forest the Forest Service is purporting to achieve. Instead the KRP only considers options based on the inappropriate Inverse J Curve model with greater impacts on wildlife and less ability to control fire risk. The Forest Service's attempt to justify the intensity of proposed logging by characterizing such activities as necessary to research and adaptive management leads us to believe that the KRP is nothing more than a commercial logging venture foisted onto the public under the false pretenses of research and ecosystem management.

The Campaign's skepticism on this point is further borne out by the KRP's failure to present information and analysis that satisfy in any way the Forest Service's obligation under NEPA to take a hard look at the impacts of the project to fisher, spotted owl and other sensitive resources. The KRP documents fail to meet NEPA's informational requirement to provide a complete description of both the environmental setting and overall project, particularly with respect to how the Forest Service intends to assess the effects of its actions and implement so-called "adaptive management" in response to those effects. The Forest Service continues to dismiss potentially significant impacts to wildlife by suggesting that in the long term, old forest conditions will be restored and wildlife benefited. For many species such as the fisher or owl, it is these impacts over the next twenty to thirty years that may jeopardize long term survival.

The KRP NEPA documents do not provide a spatial analysis that compares the areas that will be logged to the habitat needs of sensitive wildlife. The KRP also fails to provide critical information regarding the habitat quality available for fisher, owl and other species and thus does not provide a full or accurate picture how proposed logging may affect habitat across the landscape. This informational failure is particularly problematic given the size and intensity of this logging project in the middle of extremely fragile fisher habitat. In the view of experts,

fishers in the Sierra National Forest exist in an extremely precarious state. The evidence suggests 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. However, the Forest Service does not 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. 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. In the view of experts, the Forest Service's approach in this project is a potential recipe for disaster for the fisher. The Forest Service's decision to approve this project without adequate information means it cannot ensure that fisher will remain viable in the planning area and the Sierra National Forest.

The Forest Service has also not presented a meaningful analysis of cumulative impacts, either by not considering how past, present and future projects in the Project area will contribute to reduction of habitat for wildlife or by providing an accurate estimate of the full impacts of the KRP project a staggering amount of logging on over 130,000 acres. The Forest Service continues to claim that since management units will be separated five years apart, the chances for cumulative impacts are low. However, as discussed in prior comments and below, the near term impacts of this Project -- 30 to 50 years -- will be significant. The Forest Service cannot avoid analyzing these effects by simply segmenting adjacent unit logging into five year intervals. Further, the Forest Service is still not considering the overall effect of this level of logging on the Kings River fisher sub-population that forms a key link to the Yosemite sub-population to the north and more robust populations to the south. Under the 2004 Framework, the Forest Service has been implementing projects in the SSFCA that harm fisher, while continually deferring or ignoring the potential that the overall cumulative effects of these projects are leading to the extirpation of this species in the Southern Sierra, yet no meaningful cumulative analysis of these impacts has occurred.

As discussed in prior comments, the KRP also continues to violate NFMA in a number of ways, including failure to monitor sensitive wildlife, failure to comply with applicable soil standards, failure to designate lower Westside hardwood ecosystems, and failure to show that herbicides are "essential" to the project purposes.

Finally, the Campaign believes that the KRP, as presently proposed, fails to fulfill the Forest Service's regional direction to use adaptive management in a manner consistent with the policies set forth in the Forest Service's planning documents. For the fisher, the Forest Service now claims it will use the same approach as the University of California study taking place at Fish Camp. However, a key component of this study is two years of baseline data collection, which the UC researchers characterize as "critical" to producing meaningful research results that can be utilized in adaptive management. Here, without a plan or budget allocation, the Forest Service promises to collect this information at the same time that logging is occurring. This is contrary to sound science and undermines the Forest Service's ongoing claim that any unexpected adverse impacts from the project will lead to changes in project design and implementation. The Forest Service returns to this point in the final ROD, claiming that only a few units will be logged and that further ongoing research – including outside efforts such as the CBI study on the fisher – shall inform further project implementation. However, nothing in the Project documents explains the criteria for how monitoring and research will translate into

changes in proposed treatments. The Forest Service has still not presented a coherent research plan on such critical issues as effects of treatments on sensitive wildlife such as fisher or owl the effectiveness of fuel treatments across the landscape. Nor does the KRP explain how research results will lead to change on the ground.

To the extent that the Forest Service is proposing adaptive management as a mitigation to avoid significant impacts from this Project, it must present a fully reviewable research plan, collect meaningful baseline data prior to treatments and set forth the criteria by which future treatments will be altered or eliminated. The Campaign strongly believes that the Forest Service may not simply begin implementing treatments where the impacts of the overall Project, as now proposed, violate applicable laws. In the absence of a real plan to accomplish the mutually compatible purposes of conducting effective and useful research while also preserving sensitive species, the Forest Service can not go forward with this project. Instead, the Forest Service must reconsider the KRP and propose instead research designed to produce useful information that will ensure that wildlife in the area are not irreversibly harmed.

V. Statement of Reasons

A. The KRP Violates NFMA for Failing to Ensure the Viability of the Pacific Fisher in the Planning Area and Sierra National Forest

The National Forest Management Act (NFMA) directs the Forest Service to "provide for diversity of plant and animal communities" in the planning process. 16 USC 1604(g)(3)(B). The Forest Service's regulations that implement this statutory mandate require that "[f]ish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species." 36 CFR 219.19. "For planning purposes, a viable population shall be regarded as one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence is well distributed in the planning area." *Id*.

With respect to Forest Service designated sensitive species, the agency is further required "to insure their viability and to preclude trends toward endangerment that would result in the need for Federal listing." (Forest Service Manual 2672.1.) Through these steps in this process, NFMA imposes substantive constraints on the management of forest lands to insure biological diversity. *See Neighbors of Cuddy Mountain v. United States Forest Service*, 137 F.3d 1372, 1379- 1380 (9th Cir. 1998).

The Kings River Project continues to threaten the viability of Pacific fisher in the planning area and Sierra National Forest. *See* Barrett 2007 (“[T]he Forest Service's fuel reduction and stand thinning policies presented in this Project pose serious risks to the continued viability of the fisher, which the Forest Service has not adequately analyzed.”) The Project is located squarely within the Southern Sierra Fisher Conservation Area (“SSFCA”) and acts as a crucial corridor for fisher to remain viable within the SSFCA. The FWS has concluded that the fisher warrants protection under the Endangered Species Act. The FWS had concluded that even with the 2001 SNFPA the F&WS there is continued risk of loss of habitat due to timber harvest, fuels reduction and road construction. Considering the weakening of standards (above) in the 2004 SNFPA ROD/FSEIS a conclusion that the negative impacts to individual fisher will not lead to a

trend towards Federal listing is not supported by evidence that, in fact, suggests that a serious negative trend already exists. *See* Barrett 2006, 2007.

1. The KRP Does Not Acknowledge the Precarious State of the Fisher in the Project Area and in the SSFCA

As set forth in our prior comments, the KRP still does not acknowledge the extremely fragile state of the fisher in the planning area and in the Southern Sierra. In its decision finding ESA listing for the fisher warranted, the FWS cited loss and fragmentation of habitat and further decline and isolation of populations as the primary threats to the fisher, and questioned the adequacy of the 2004 Sierra Nevada Forest Plan Amendment ("2004 Framework Amendment") to protect fisher habitat. (USDI Fish and Wildlife Service 2004, Federal Register April 8, 2004, p. 18788) The Service specifically mentioned "timber harvest, fuels reduction treatments, and road construction" on federal lands as threats to fisher "distribution, abundance, and recovery/recolonization potential." *Id*. Under these circumstances, the fisher's habitat in the Sierra Nevada requires protection and restoration, not further degradation.

The FWS, in its recent finding that the west coast population of the fisher warrants listing under the Endangered Species Act confirmed the imperiled status of the Sierra Nevada population. "Preliminary analyses indicate West Coast fisher populations, particularly in the southern Sierra, may be at significant risk of extinction because of small population size and factors consequent to small population size such as isolation, low reproductive capacity, demographic and environmental stochasticity." (USDI Fish and Wildlife Service 2004, p. 18789). The FWS stated that the southern Sierra fisher population "has a very high likelihood of extinction given reasonable assumptions with respect to demographic parameters." (USDI Fish and Wildlife Service 2004, pp. 18790-91, citing Lamberson et al. 2000). [1]

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

The urgency of the fisher's plight is illustrated in Lamberson *et al*. 2000, which notes that in the absence of affirmative action, the fisher may disappear in 20-30 years:

> "If female survival and fecundity are medium and all other parameters high, a steady decline toward extinction occurs. Theoretical implications of the effects of stochastic phenomenon on small populations suggest that unless fishers in the southern Sierra

[1] As discussed in our Supplemental Comments, the FWS Technical Letter on the fisher, while carefully worded, still acknowledges that the Forest Service's proposed action has the potential to trigger the collapse of the fisher in the Sierra National Forest.

> Nevada can maintain high vital rates (reproduction and survival), the population may face imminent extinction."

The study shows that with low or even medium female reproductive success, fisher will likely disappear within the next 20 to 30 years. *See* Lamberson et al. 2000, Figures 2-3 As noted by Barrett:

> Given the timeframes discussed in Lamberson 2000, I do not agree that the Forest Service can ensure fisher viability by promising improvements in habitat 30 years from now. If present trends continue, fisher are likely to be gone by that time, thereby continuing the downward trend observed in the Sierra Nevada over the past 60 years.

Barrett 2007. *See also* Zielinski 2006b ("A great deal of evidence that is presented points toward short term problems for fishers…but language is unjustifiably optimistic in favor of the future long-term benefits. I did not find, in the portion of the document that I read, any type of formal analysis of tradeoffs between short-term detriments and long-term benefits.")

Rather the address this urgency, the Forest Service has tried to downplay it. Previously, the KRP planning documents purported to find the local fisher population to be "on an upward trend." BE (p. 24). [2] In the FEIS, the Forest Service then changed this conclusion to say that the fisher population in the KRP is 'stable." In response, we submitted supplemental comments showing that the Forest Service has no basis to assert that local fisher population numbers are unchanging, since no actual population monitoring has taken place specific to the KRP area. Further, to the extent population monitoring has included the KRP, it suggests that the overall fisher population in the region is going down. (See DEIS and Supplemental comments.)

As discussed in prior comments and below, the Forest Service lacks adequate information to determine how fisher are using this area, or the survival, health and reproductive success of these individual fisher. Presence-absence monitoring, without tracking of individual animals, provides information as to whether fisher still occur in the monitored area but little data on the vigor of the species:

> [T]his method does not record whether a fisher population is declining or any information about why that decline is occurring. Source versus sink habitat can only be determined by assessment of vital rates (reproduction, mortality, dispersal). Under presence-absence monitoring, the Forest Service will only have reason to act once fisher have been eliminated from the area.

Barrett 2006. *See also* Barrett 2007.

In response, the 2006 KRP ROD and ROD analysis now acknowledge that the Forest Service has no evidence to support its prior findings and that that the previous assertion that the fisher population is stable was "incorrect." *See* ROD, p. 7. Instead, the ROD now states that the

[2] This was based on the BE's finding that there are 53 Fisher in project area of 131,500 acres. BE, pp 3, 26. The BE also estimated 42-47 fishers in the KRP. BE pp. 14-15. The BE concluded that fisher "numbers are increasing as more individuals are discovered and reproduction occurs." BE, pp 3, 26

"correct interpretation is the data do not suggest a significant trend, either increasing or decreasing." However, this "correction" did not "materially alter "the Forest Service's commitment to go forward with the intense treatments proposed in the KRP.

The Campaign welcomes the Forest Service's belated recognition, after the close of all public comment, that the fisher population is neither increasing nor stable. However, the Forest Service's commitment to go forward with an intense treatment alternative – the *maximum* that would be allowed under the 2004 Framework –does not acknowledge that the overall population status of the fisher requires the Forest Service to proceed as cautiously as possible in any undertaking with the potential for adverse effects on fisher habitat. The FEIS continues to ignore the potential 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 2007, 2006.

The Forest Service's assumption that fisher will persist in the area into the future, even as its habitat is being removed 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 approximately13 fisher. [3] The loss of several females in this group could lead to the loss of fisher in the area. Barrett 2007 ("proposed reductions in habitat quality in the Kings River Project could lead to such loss or, at a minimum, a reduction in reproductive success, which is key to fisher survival.")

The Forest Service acknowledges but does not consider the significance of the low population density of fisher in the Sierra National Forest compared to the Sequoia. While the BE (p. 58) does state 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.

In response, the Forest Service continues to rely 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.") The Campaign has pointed out at least two flaws in this reasoning.

[3] 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.")

First, the threat of wildfire does not mean that intensive logging will not lead to extirpation of the fisher. This is particularly true given that future fires pose a risk, which can be managed through strategically placed fuel breaks, whereas the removal of medium to large trees and lowered canopy cover will surely occur and will surely eliminate necessary resting and denning habitat for the fisher. *See also* Zielinski 2006b ("I tend to weigh more importantly the activities that I know will happen (i.e., the harvest of trees up to 30 or 35" and the reduction of dense canopy forest) when compared to activities that someone tries to convince me may happen (i.e., the loss, in the future, of a lot of fisher habitat via catastrophic fire.")

Second, the Forest Service continues to present a false choice between intensive logging and landscape level, stand replacing fires, whereas the evidence shows that less intensive logging, with less impact on fisher habitat, can and would meet the project's fuel reduction objectives.[4]

Third, as discussed below, the KRP planning documents ultimately concede that fuel reduction goals can be met with a lighter treatment that preserves over 23,000 medium to large tress that may form the recruitment class for the minimal amount of Class 5 habitat in the planning area. *See* 2006 BE, p. 12 (area has only 432 acres of Class 5 habitat, or 3% of the planning area.) Thus there is no reason to risk fisher viability by applying the Inverse J curve, an artificial model developed in Europe, to justify the harvesting of these larger, fire resistant trees. As noted by Barrett:

> T]here is no need to harvest 20" to 30" dbh trees to reduce fire risk to a manageable level. Fire is in fact a natural process in the Sierran mixed conifer forest, which creates habitat elements such as snags and cavities that are important for long term fisher survival….If fisher conservation is really a management priority, factors that do not contribute to conservation should not be considered in determining management direction.

Barrett 2007. Barrett adds that "any thinning model must take into account the current deficit of larger trees and Class 5 habitat in the planning area and should therefore make every effort to retain the mid to large size class of trees between 20" to 30" dbh, which will grow into large trees over the next few decades." *Id*. *See also* Zielinski 2006b ("Fishers rest in conifers that average about 40", however, this means that many of the trees they use are in the 20- 35" class…Thus, a plan that purports to protect fishers is, in fact, removing trees of the size class that they use.")

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. *See* Rice 2006, 2007; Barrett 2006, 2007; Heald 2006; Fairbanks 2007. As noted by Zielinski 2006b:

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[4] The Forest Service's Response to Comments concedes as much, *see* Summary of Response to Public Comments ("Supplemental Response"), December 15, 2006, Response to Comment 11a. As discussed below, the Forest Service's failure to consider even a single less intensive action alternative that might retain the scarce medium to large trees and maintain higher canopy cover in the project area is itself a violation of NEPA.

> The prudent approach would be to refrain from making any conclusions about the status of the population until we have quantitative information (from either the monitoring program results or the forthcoming adaptive mgmt study). The most ironclad conclusion re: this population is that by common standards it is small and isolated from the rest of the California and North American range – these risk factors are well established and appreciated by the field of conservation biology. Speculations about the population's size and stability are unnecessary to either magnify or mitigate the risk facing this population.

The Forest Service does not know whether the local fisher population can withstand the adverse impacts that will occur from this project. *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 in approving this project.

2. The Forest Service Lacks Sufficient Information to Insure the Viability of the Fisher Population in the Planning Area in Light of the Adverse Effects on Habitat.

As discussed below in the NEPA section, *see* Section V.C.3.a, *infra*, the Forest Service lacks information about the nature and quality of habitat in the planning area in relation to fisher habitat needs. The Forest Service also lacks information as to how fisher survive in the planning area, the size and spatial configuration of fisher home ranges, resting and denning sites and connective corridors. This lack of information threatens viability in two ways. First, the Forest Service in unable to properly find that the project itself will not have adverse effects on the fisher and thus threaten viability. Second, the lack of baseline information means that the research component of the Forest Service's adaptive management approach will not provide meaningful information to alert decision-makers that irreversible impacts are fisher are occurring. *See also* Barrett 2006, 2007.

a. Forest Service Lacks Information to Determine the Effects of this Project

Without information about how fisher use this area, the Campaign does not agree that the Forest Service has a sufficient basis for finding that adverse impacts to fisher habitat will not threaten fisher viability. Without baseline data on how fisher use the local habitat, the Forest Service is in no position to know whether its proposed logging will have significant adverse impacts on fisher by fragmenting habitat or reduce the distribution and frequency of fisher rest sites across the landscape.

> [T]he Forest Service's lack of information about the fisher precludes it from conducting any meaningful impact assessment. For example, if the Forest Service does not know how reproductively successful female fishers use habitat in the Project area, it can not assess the impacts from its proposed logging. The Forest Service has not mapped the

> home ranges of fisher in the Project area and thus lacks information regarding the impacts of logging. In sum, in my review of the Project documents, I cannot discern the extent of impacts on reproductively successful female fishers in the Project area.

(Barrett 2006, p. 9).

At this time, the Forest Service has not mapped any particular home range for local fishers. As set forth in Britting 2006a, and discussed below, 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. *See* Barrett 2007 ("a key for fisher preservation are high rates of female fisher survival and reproductive success"); Zielinski 2006b ("[I]f fisher conservation is the goal why not use the data on the composition of female fisher home ranges as the guideline?")

In not doing so, the District lacks adequate information to conclude that no significant impacts are occurring or that viability is being insured. Jordan 2005 states "habitat in this region is not as capable of supporting large populations of fishers in other areas." *See also* 2006 BE, p. 28 (fisher are at the low end of densities); 2005 BE, p. 22. Thus, even before implementation of the KRP, the Project Area lacks high or even moderate quality habitat for fisher. Thus, for example, the Forest Service may not simply assume that further logging on one third of the fisher home range will not cause potentially significant adverse impacts.

The Forest Service has also not mapped the amount of high quality habitat within current fisher home ranges that intersect the planning area, even though such habitat is critical to fisher survivorship. *See* Barrett 2006, 2007. For example, the 2006 BE (p. 45) states that logging will eliminate approximately 900 acres of higher quality 4D and 5D, habitat, less than 20% of the KRP planning area. However, "fisher greatly prefer habitat above 60% canopy cover, which made up over 70% of female home ranges in the Sequoia National Forest." Barrett 2006. S*ee also* Barrett 2007:

> [A] key for fisher preservation are high rates of female fisher survival and reproductive success. However…the KRP planning documents have not considered the meaning of research showing low rates of reproductive success for female fisher in the area, only 18% in 2003 and 36% in 2004. …. these numbers indicate to me that fisher are not thriving under the current habitat conditions and that fisher could disappear from this area in the near future.

Here the Forest Service has no idea whether it is cutting high quality blocks of habitat that may determine the reproductive success and survival rates of female fisher in the planning area.

b. Forest Service Lacks Adequate Baseline Information to Produce Meaningful Research Results

The Forest Service's lack of baseline data means it will not be able to measure how its proposed "uneven-aged" logging system is affecting the local fisher population. After failing for

over a decade to collect adequate baseline data on fisher, the Forest Service now proposes to conduct a research study similar to the Adaptive Management program being undertaken by the University of California at Fish Camp. *See* Barrett 2007. The Forest Service proposes that its study will address questions including 1) population size and structure (males, females, young) of fishers in the study area; 2) vital rates, including birth rates, death rates, and dispersal rates; 3) causes of mortality; 4) patterns of habitat use; and 5) which types of areas within home ranges receive disproportionately greater and lesser use. The Campaign agrees that this baseline data is critical to any meaningful study plan. *See Lamberson* 2000 ("assessment of reproductive success and habitat characteristics associated with successful reproduction will be crucial advancements toward increasing our understanding of fisher ecology and how management activities will influence population persistence.")

However, at *this* time, the only data the Forest Service has is a statistically invalid sample providing information about fisher distribution, but nothing else. Thus, if units are logged, the only information forthcoming will be whether or not fisher are still present in the area. This information provides little to no insight into the potential causes of disappearance and poses the real risk that fisher may have disappeared before any meaningful information is forthcoming. *See* Barrett 2007 ("Here, the only information the Forest Service has is a statistically questionable sample of fisher track plates, which provide information about fisher distribution, but little else. ")

c. Forest Service Must Collect Baseline Information Prior to Approving this Project

To assess the potential impacts to fisher from the KRP, the Forest Service must develop baseline information that corresponds to its proposed research questions, as set forth above. In our comments on the DEIS, we provided the best available science on how fisher home ranges should be delineated based on how fishers use their habitat. As noted by Dr. Barrett:

> In my opinion, the Forest Service's basic premise that fisher occupy a home range that includes a substantial amount of unsuitable habitat, is not scientifically based. Mazzoni 2002's study identified fisher home ranges using the minimum convex polygon model, which draws straight lines between fisher detection points, leading to the inclusion of substantial areas within the designated home range that the individual fisher is not actually using. In my experience, a more refined home range based on the kernel density estimation (KDE) method would show that fisher home ranges in this area are actually smaller but with a considerably higher percentage of suitable and high quality habitat. (See e.g., Hemson et. al. 2005). Were the Forest Service to identify this type of more accurate home range information and compare it to the proposed treatments it would likely find that a considerable portion of quality habitat currently used by fisher will be adversely affected by the Kings River Project.

(Barrett 2006, p. 9). Dr. Britting also notes that:

> [T]he estimation of home range size using the minimum convex polygon (MCP) method is known to include areas that are not used by the species in question. (Hemson *et al*.

> 2005). Actual home range use is more appropriately modeled using contouring methods that "accommodate multiple centers of activity, do not rely on outlying points to anchor their corners and are less influenced by distant [detection] points, thereby excluding unused areas and leading to more accurate depictions of space use." (Ibid., p. 455). Thus, the creation of a design measure based on the assumption that the proportion of unsuitable habitat in a home range reflects the tolerable levels of unsuitable habitat across the landscape is inappropriate because the MCP method does not accurately depict the use of habitat.

(Britting 2006a, p. 6.)

The Forest Service must describe and account for the value of the habitat that occurs for fisher, and how such habitat will be retained. [5] The KRP is likely to eliminate valuable habitat elements due to logging thousands of medium to large size trees up to 30" dbh, excavator/tractor piling and prescribed burning.

The FEIS and ROD still do not identify the high quality habitat used by fisher in the planning area, nor has the Forest Service identified any "home range" for any fisher. Without this information or other such basic information, the Forest Service cannot assess the impacts of logging this habitat:

> Based on my years of experience, the establishment of meaningful baseline data is critical to the success of the research design. For example, without information about fisher home ranges and patterns of habitat use, how can the Forest Service measure which aspects of treatment have caused the loss of a formerly reproductive female? Without any information about existing connective corridors, how can the Forest Service measure how treatments are potentially fragmenting fisher populations? Without information on the spatial delineation of rest site structures, how can the Forest Service assess how treatments affect the fisher's use of this critical habitat element?

Barrett 2007.

As discussed below, this is even more true in the Forest Service's analysis of the KRP project as a whole. The Forest Service states that that there will not be cumulative impacts to fisher because treatments are spread out in space and time, but this discussion does constitute a cumulative impact assessment since it does not provide information as to the amount and quality of habitat that will be present over the period of the 30 year project and how such logging will affect the fishers that live in or travel through the planning area. The FEIS provides no documentation to support the arbitrary 5-year wait period between treatments to mitigate for

[5] As discussed below, the fisher is among the most habitat-specific mammals in North America, and changes in the quality, quantity, and distribution of available habitat can affect their distributional range in California (Buskirk and Powell 1994)." (USDA Forest Service 2001, Volume 3, Chapter 3, part 4.4, p. 2; USDI Fish and Wildlife Service 2001, p. 84) *See also* USDI Fish and Wildlife Service 2001, p. 83). In particular, "fisher denning and resting sites are forest stands with complex structural characteristics that are typical of late-successional forests." (USDI Fish and Wildlife Service 2003b, p. 41170). Powell and Zielinski 1994, p. 52; USDI Fish and Wildlife Service 2003b, p. 41170). *See* Barrett 2006 & 2007.

cumulative impacts BE p. 20. To the extent that information is presented, the cumulative effects on fisher appear to be significant. *See* Britting 2006a, p. 6

3. The Measures Proposed in the KRP Do Not Protect Fisher According to the Best Available Science

The Forest Service's proposed habitat mitigations also do not protect those habitat attributes to the level the best available science suggests is necessary for fisher survival and reproduction.

a. Forest Service Does Not Protect Adequate Amounts of High Quality Habitat

The Forest Service habitat projections do not meet the minimum standards estimated to be adequate for fisher. Forest Service studies show that fisher home ranges are typically dense forest habitat. This research indicates that 72 percent of female home ranges contain forests with 60 percent or greater canopy cover. *See e.g.,* Zielinski et al. 2004a; USDA Forest Service 2001, Vol. 3, Chap. 3, part 4.4, p. 11. As noted by Dr. Barrett:

> [T]the vast majority of female fisher home ranges consist of habitat with canopy cover above 60% (Zielinski et al. 2004a). I submit that areas composed of forest with under 60% canopy should be considered "sink" habitat for fisher, meaning that, to survive, the residing fisher population must be continually replenished by fisher dispersing from "source" habitat in adjacent areas. What little information is provided on this Project – the low amount of 5M and 5D habitat, low density, low female reproductive success – all indicate that the Project area is primarily sink habitat which must be immediately improved if fisher are to survive in the area over the long term.

Barrett 2006. *See also* Barrett 2007. These findings are consistent with Mazzoni (2002), who found that female fisher home ranges typically included over 60% of high quality (>60%) canopy cover. (*See* Britting 2006a, p. 4.) Thus Mazzoni 2002 (p. 41) concluded that "females use areas with a larger proportion of high canopy cover." Further, 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.

In response to comments, the ROD now proposes to retain 50% of the landscape outside the WUI with canopy cover ("CC") > 60%. This proposed protection does not acknowledge 1) the considerable amount of fisher habitat within the WUI, which is not covered by this mitigation; and 2) the fact that this level of protection is below the requirements suggested by current research. *See* Barrett 2007 (this level of protection is still "well below the findings of research showing that reproductive female fisher home ranges have over 70% in >60% CC.")[6]

[6] Further, the "Forest Service does not have information about the location of these home ranges including how much of the ranges may occur in the WUI where canopy cover may be reduced even lower." *Id.*.

See also Zielinski 2006b ("[I]f fisher conservation is an important goal," areas should be maintained at "an average of 71% in Dense CC (60-100%).")

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. The Forest Service's reluctance to do so does not consider that low or medium density forest is inadequate for fisher and likely operates as "sink" habitat, leading to eventual demise of the local population. (Barrett 2006) 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. As noted in Lamberson 2000, "[i]f female survival and fecundity are medium and all other parameters high, a steady decline toward extinction occurs. Theoretical implications of the effects of stochastic phenomenon on small populations suggest that unless fishers in the southern Sierra Nevada can maintain high vital rates (reproduction and survival), the population may face imminent extinction."

Given the critical importance of female fisher survival and successful reproduction, the Forest Service's failure to protect minimum standards for female fisher home range habitat means it cannot ensure viability of fisher in the planning area.

b. Forest Service Does Not Protect Adequate Resting and Denning Sites According to Any Criteria or Data Relating to Fisher Use of the Local Habitat

The Forest Service also does not propose a plan that will ensure the protection of the most critical resting and denning habitat needed by the fisher. 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. We note that currently, the location of very few den sites are known in the present state of research on fisher in the Sierra Nevada. 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 so little is known about where they currently den in the project area:

> [D]enning sites.. are of course critical to successful reproduction. The Forest Service does not know the location of any fisher denning site in the planning area, yet still

> proposes to eliminate almost 1,000 acres of dense (4D and 5D) habitat. Based on my review, it seems possible and even likely that the Forest Service will be eliminating already scarce fisher denning sites without any knowledge that it is doing so.

Barrett 2007. 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 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.")[7] As noted by Zielinski 2006b:

> It is difficult to assess the impact of future scenarios with such broad density classes. This is especially problematic when a category ranges from 60 -100% and our data indicates that fisher resting and denning habitat occupies the *extreme upper end* of this range, no matter how canopy density is measured.

(emphasis added.) *See also* Barrett 2007 ("[T]he "retention of even 60% CC habitat does not account for fisher resting and denning habitat, which average around 80% CC.")

The FEIS and BE state that rest site structures will be protected according to a point scheme. *See* 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 rather than trained biologists. As noted by Barrett 2007:

> [T]Forest Service has no information about the location of fisher resting and denning sites in the planning area and thus lacks adequate information regarding the appropriate spatial layout of these sites in relation to how fisher use habitat across the landscape.

[7] In addition, as discussed below, 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; Jordan 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.

> Further, no information is given regarding how many rest structures currently exist, how many are proposed for protection, nor where such rest structures will be preserved for experts such as myself to review for adequacy. I see no indication that the "marking" of these areas will be done by a trained wildlife biologist and no assurance that the areas preserved will occur in and complement the actual home ranges used by fisher in the planning area.

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:

> The research shows that a rest site offers value to fisher where it is part of an already dense habitat structure…In my experience, isolated patches of dense habitat surrounded by forest with 40% CC will not likely offer rest site habitat for fisher. Without information as to which areas fisher actually use for resting, the Forest Service is essentially guessing about the adequacy of its habitat protections.

Barrett 2007. 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.

The Forest Service's failure to delineate and explain how adequately distributed rest and den sites will be protected across the landscape is exacerbated by its similar failure to address the effects on fisher of eliminating understory vegetation through repeated mechanical, fire and herbicide treatments. The Forest Service has previously recognized the particular impacts on the fisher of clearing understory vegetation.

> Concern…is raised for stands to be reduced in complexity at ground and mid-canopy layers in certain vegetative strata type which are typically associated with higher degrees of fisher and marten use. Where goshawk and California spotted owl may benefit from a slightly more open understory which improves habitat for flight and prey capture, fisher and marten are more ground based and could be negatively influenced through increases in predation if stands become significantly simplified at these levels.

See BE for the Sawmill Fuel Reduction Project, pp.23-24.

The KRP proposes to reduce canopy coverage by eliminating understory vegetation through thinning, prescribed fire, clearing and herbicide applications. In many areas of the Project area, however, this understory vegetation may form the protective canopy for fisher resting and foraging. Fishers may use understory or shrub as cover for habitat, but this habitat will be generally eliminated by the fuel treatments proposed in this Project. This includes chaparral, hardwood ecosystems, ponderosa pine and mixed conifer habitats that comprise the Project area.

In its recent finding that listing the fisher is warranted, the FWS concluded that logging and fuels reduction, including thinning, can adversely affect fisher habitat. "Fuels reduction treatments, including thinning and the removal of down woody debris, dense understory, snags, and low overstory tree crowns may significantly affect fishers in the immediate area." (USDI Fish and Wildlife Service 2004, p. 18779). "Clearcutting, selective logging, and thinning change the suitability of fisher habitat by removing overhead cover and insulating canopy, exposing the site to the drying effects of sun and wind or to increased snow deposition, removing prime resting and denning trees, and increasing exposure of the fisher to predators." (Id.)

The KRP does not assess the direct impact of intensive understory treatments on the fisher, nor indirect impacts such as the substantial reduction of the fisher prey base. The 2005 BE (p. 21) notes that "many of the prey species found in the diet of fishers occur primarily in large tree and dense canopy conifer and oak woodland habitats, chaparral and deciduous riparian areas." (This point appears to have been deleted in the 2006 BE.)

The farthest the KRP goes in considering these impacts is to note that the effect of clearing understory vegetation on the fisher are "unknown." (2005 BE, p. 25.) Given the lack of information and the potential for significant harmful impacts, the Campaign suggests a more cautious approach of retaining more understory habitat elements in a manner in a strategically placed manner that can avoid large scale fire risk while still maintaining valuable habitat. Given the stated purpose of the KRP as a research project, it is unclear why the Forest Service would not wish to explore methods of preserving understory habitat in a strategic manner in the KRP. Further, the Campaign does not agree with the Forest Service's suggestion (2005 BE, p. 25) that the sighting of a fisher within a burn area means that this area is providing fisher with suitable habitat. *See also* Zielinski 2006b ("This is another example of the use of one-sided and anecdotal information to try to convince the readers that the proposed activities will have no affect. The document should be reviewed to eliminate these.")

c. Forest Service Does Not Protect Adequate Amounts of Suitable Habitat

The Forest Service also 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. 39 ("no more than 1/3 of any fisher home range is treated.") As discussed in 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;[8] 2) many of the units exceed

[8] As discussed, the Forest Service has not collected necessary information on habitat distribution of individual fishers as recommended by the leading scientists, and thus does not know where current home ranges are in the KRP area for fishers that have been detected. *See*.Barrett 2006 ("Forest Service has no way of telling the importance of the 900 acres it intends to log as a component of any particular fisher home range. Given the lack of information provided, the Forest Service may well be harvesting the most critical one third of a fisher's home range habitat, as opposed to the one third deemed unsuitable.")

900 acres or 1/3 of the home range size;[9] 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 more stable, as opposed to the Sierra, where fisher distribution is substantially lower due likely to an overall inadequate amount of good quality habitat.

Britting 2006a shows that significant percentages of core fisher habitat will be rendered either unsuitable or of marginal quality. Dr. Britting created simulated fisher home ranges using Mazzoni's methodology and the KRP's presentation of where the Forest Service believes fisher will occur post-treatment. The results are striking. First, a comparison illustrates that fisher simulated home ranges are already in worse shape than those studied by Mazzoni:

> [B]ased on a comparison of the habitat quality found in the home ranges evaluated by Mazzoni (2002, Figure 4), the present habitat quality of the simulated home ranges in this evaluation in most cases is of substantially lesser quality. Here, all of the simulated home ranges have less dense habitat than all but one of the home ranges evaluated by Mazzoni. As a comparison, Mazzoni found that dense habitat covered greater than 60% of the home range for 5 out of 6 evaluated.

(Britting 2006a, p. 5). Of even greater concern, is the fact that in the simulated fisher home ranges, post-treatment dense canopy cover in simulated fisher home ranges was substantially reduced down to a range from 0 to 27% in >60% cover with an average of approximately 11%. (Britting 2006a, p. 5 & Table 4.) This is nowhere near the amount of dense canopy cover required by female fisher. As noted by Barrett:

> The presence of unsuitable habitat within a fisher home range may not be an indication that this is a desirable condition, but instead an expression the low quality of habitat across the landscape. For example, in contrast to the Mazzoni (2002) study, research in the Sequoia National Forest, where I believe fisher populations are more robust, showed that female fisher had home ranges with an average of *over 90% suitable habitat* (Zielinski et al. 2004a). I believe the difference between these studies reflects a difference between a population that is stable and one that may be declining

Barrett 2006; *See also* Zielinski et al. 2004a (female fisher home ranges in the Sequoia measured at over 70% in dense canopy cover.)[10]

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[9] The average unit size for Phase I is over 1,700 acres, s*ee* FEIS, p. 2-45, Table 2-17, which is approximately 2/3 of a fisher home range as measured by Mazzoni (2002). *See also* Britting 2006, p. 6 ("Absent any additional site specific demographic data, it can not be known if the habitat quality detected by Mazzoni is good enough to maintain the population and evidence suggests that habitat conditions might well be inadequate.") Given the existing lack of quality habitat in the Project area the Forest Service can not be assured that the removal of additional quality habitat will not threaten fisher.

[10] As discussed above, without telemetry information, the Forest Service is unable to establish an accurate fisher home range. As result, there is no actual analysis of how fisher home ranges will be affected even though such effects are likely to be significant. *See* Barrett 2006 (comparing more accurate home range information to the proposed treatments "would likely find that a considerable portion of quality habitat currently used by fisher will be adversely affected by the Kings River Project. ")

d. The KRP Will Does Not Account For Habitat Connectivity Outside Riparian Corridors and Thus Will Fragment Fisher Habitat

The KRP initially stated that fisher habitat would not be fragmented because habitat in 100 meter stream zones will be protected as "old forest linkages." (OFLs) *See* DEIS, Vol II. App C, pp. 38-40; BE, p. 16. The FEIS now proposes to retain higher quality habitat (60% CC) in designated riparian corridors, which the Forest Service refers to as "old forest linkages." For quality *rest site* habitat, however, 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; Zielinski 2006a & b.

Further, 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. As previously stated, research in the Sierra National Forest demonstrates that approximately 50 to 70% of observed fisher rest sites are located *away from* the riparian corridor. *See* Mazzoni 2002; Jordan 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. *See* Zielinski 2006b ("[I]t is unsupportable to state that 'Fisher prefer to spend most of their time within 100 feet of water.' This is not true, yet the OF Linkages seem to be predicated on this assumption.")

In addition, the proposed riparian protection zones are not a fully linked system. *See* FEIS, p. 3-149, Figure 3-53. [11] According to the maps and descriptions, the OFLs follow major streams but appear to be disconnected in several areas. Even the 2004 Framework requires defined habitat connectivity over ridge-tops in order to insure that populations in different watersheds may interact. If riparian corridors are the only proposed linkage system, fisher may be required to travel great distances to move into different watersheds. As noted by Dr. Barrett:

> [T[he KRP also still does not account for the need for fisher to have connective corridors of high quality habitat across the landscape. Despite the research showing that fisher do not limit their activities to the riparian corridor, the project review documents state that fisher habitat will not be fragmented because habitat in 100-meter stream zones will be protected as "old forest linkages." I stand by my previous statements that this limited protection is inadequate to ensure that fisher movement will be assured across the landscape. By limiting connectivity to stream channels, fisher must travel long distances downstream, then reverse direction and travel upstream in a different stream corridor to connect to a different sub watershed. In my opinion, it is unlikely that fisher will travel in such a manner and if forced to do so, this would put greater stress on the population as a whole.

[11] 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; Jordan 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.

Barrett 2007. The Forest Service does not cite to any research that indicates that the preservation of stream corridors will preserve fisher habitat and avoid fragmentation in the fact of patchily distributed suitable habitat across the landscape. Thus the Forest Service lacks support for its assertion that such corridors are adequate to ensure that fisher habitat remains unfragmented:

> I believe any fisher researcher would agree that a minimum standard for ensuring habitat connectivity includes preservation of habitat corridors at the headwaters of streams, over ridges and saddles, and ones allowing for direct north-south (as opposed to strictly east-west) movement. This pattern more accurately represents the manner in which fisher use the landscape where habitat is available.

Barrett 2007. *See also* Zielinski 2006b ("[A] system of land allocation that is designed to connect habitat for fishers needs to be built from upland *and* riparian areas. A riparian-based OF Linkage system should not be considered a sufficient way to connect habitat for this species.")

e. The KRP May Have Cumulative Adverse Impacts to the Fisher at the Landscape Scale that Have Not Been Assessed

The KRP states that there will not be cumulative impacts to fisher because "[t]reatments are spread out in space and time to further reduce impacts on an individual fisher. Treatments are scheduled so that no adjacent Management Units will be treated within a 5 year period." *See* FEIS, p. 3-164; BE, p. 58. However, the Forest Service still provides no information as to why separating treatments by five years will preserve adequate habitat for the fisher and thereby avoid significant impacts. Dr. Barrett explains:

> This statement does not provide spatial information on the cumulative impacts of this Project over time. The maps in the DEIS provide information about the location and timing of harvest, but nothing in that presentation explains how this phased logging is going to affect fisher. As discussed above, the review documents present no information through which I or the public could assess how this logging will progress across a landscape overlaid by fisher home ranges, corridors and core areas of activity. Given that areas that are treated may remain unsuitable habitat for fisher for 30 to 50 years, it is, in my opinion, critical that the Forest Service provide an assessment of whether fisher can survive on the resulting landscape during this time period. Without this type of detailed information, this Project has the potential to have significant cumulative impacts on the fisher by rendering large contiguous areas within the Project unsuitable for fisher.

Barrett 2006. The FEIS and BE do not consider the cumulative impacts of the overall KRP project nor Phase I on wildlife such as the fisher whose home range includes parts within and outside of the immediate project area. The revised project documents postulate that the approximately 13,700 acres in Phase I of the KRP may include portions of approximately 13 fisher home ranges, including ranges that do not occur solely within the Phase I project area. *See e.g.*, BE, p. 44. *See* FWS Technical Assistance Letter, p. 16.

Britting 2006a notes that 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 above and in prior comments." Britting 2006a shows that fisher home ranges are likely to be adversely affected by the KRP, but the lack of information regarding how fisher use the project and surrounding area prevent meaningful public review on this issue.

A meaningful cumulative impact assessment would identify these areas and provide information regarding the adequacy of existing habitat in each fisher home range before making prediction that the loss of additional suitable habitat will have no impact. The Forest Service's own data shows that moderate to high quality habitat will not be created for 30 years. *See* BE, p. 65, Table 15. Yet research indicates that by that time the fisher may have disappeared in the absence of short-term improvements to habitat quality in the KRP and SSFCA. *See* Lamberson 2000. This expected residual habitat is inadequate to maintain fisher populations, yet nothing in the record indicates that the Forest Service has considered the short term impacts of the KRP on fisher populations.

As discussed in our DEIS comments, the fisher's disappearance from the planning area could have significant unexamined impacts at a regional scale. The Forest Service acknowledges that the KRP occupies a critical north-south corridor for fisher in the Sierra National Forest but does not conduct a meaningful assessment of the likelihood that intensive logging will lead to further fragmentation of regional 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. [12] In Dr. Barrett's opinion, "were fisher to disappear or decline significantly in the Project area, this could affect the stability of the entire Kings River sub-population, either by creating a landscape scale, habitat bottleneck or habitat sink that limits species viability." Barrett 2006.

4. The KRP's Adaptive Management Approach Does Not Insure Fisher Viability

The Forest Service characterizes the KRP as experimental and asserts that fisher will be protected through adaptive management in response to the Forest Service's assessment of the effects of treatments. The FEIS (p. 2-20) states:

> The ultimate and proximate limiting factors affecting this population are largely unknown. The role of habitat is one factor that is suspected to have an influence on population performance. Over the last few years the Forest Service has attempted to address two important issues; 1) Develop a baseline assessment of basic fisher conservation requirements including available habitat throughout the current range in the Sierra Nevada, and 2) Develop research strategies to examine questions addressing how

[12] 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. Approximately 45 fisher had a "may affect" findings for fisher on the Sierra NF (29) and Sequoia NF (16) from 1998 to 2006...several records were missing.

> fishers use habitat, how they respond to changes in habitat, and what the limiting factors are that influence population performance. It is clear that the latter (i.e. research) is necessary to inform the former (i.e. construction of an informed and defensible long-term conservation strategy).

Despite these intentions, the Forest Service has yet to "develop a baseline assessment" or a "research strategy" that is adequate to inform a "defensible long-term conservation strategy." As set forth in our previous comments, the Forest Service's monitoring using track plate stations has not provided statistically significant information on fisher distribution or any other aspects of fisher life history.[13] As a result, as discussed above, the Forest Service lacks necessary information regarding the location and spatial arrangement of fisher home ranges, resting and denning sites and connective corridors. Further, the Forest Service still has not developed a research strategy as to how it will answer the relevant questions regarding the effects of the proposed treatments on fishers. *See* Analysis for Preparation of the Record of Decision ("ROD Analysis"), p. 4 ("Research study plans are in development through the collaboration of both research institutions and would be completed by the spring of 2007. Baseline data collection would begin immediately thereafter. ")

In our previous comments, we pointed out that the Forest Service's failure to provide necessary baseline information and an accompanying research plan undermines its assertion that potentially adverse effects on fisher will be avoided through the implementation of adaptive management. In response, the Forest Service now proposes to conduct research that follows the methodology that will be used by the University of California in the Fish Camp research project:

> For the Kings River Project we believe it is prudent to adopt an approach that takes advantage of plans to address very similar objectives within the Adaptive Management program being led by the University of California. This UC program intends to understand response of multiple forest resources (including fishers) to forest management treatments. By replicating this research approach on fishers in the Kings River area we can significantly increase our opportunities to learn about these key issues. Thus the Kings River Project intends to apply the same objectives and methods for addressing response of fisher to the treatments executed in the Kings River Project area.

FEIS, p. 2-21. The Forest Service's apparent intent simply to refer to the UC study as a basis to ensure that meaningful research and adaptive management will occur in the Kings River project has two significant problems.

First, the Forest Service still lacks baseline data regarding the quality of habitat in the project area, as it relates to fisher habitat needs, and the manner in which fisher use such habitat. This includes the amount and distribution of high quality habitat and the spatial layout of fisher home ranges, rest spots and connective corridors. The Forest Service lacks this information, yet now proposes to nevertheless approve this project and initiate logging.

[13] The DEIS p. 35 states "Research is currently working on the techniques to reliably detect presence or absence with adequate confidence....Upon completion of the sampling in 2005 and the analysis of these data, a more specific experimental design will be recommended for implementation in 2006 and beyond.

In the absence of baseline data on habitat quality and fisher activity in the planning area, the Forest Service cannot ensure that its research project will provide any information that will lead to change in management that may have potentially catastrophic effects on the local fisher population. At this time, the Forest Service lacks sufficient information to know the location of fisher den sites, individual fisher home ranges or how fishers use the project area. Thus, at best, as units are logged, the Forest Service can only record whether or not fishers that were previously present are still present or instead now absent. Dr. Barrett notes:

> Presence – Absence monitoring does not record whether a fisher population is declining or any information about why that decline is occurring. Source versus sink habitat can only be determined by assessment of vital rates (reproduction, mortality, dispersal). Under presence-absence monitoring, the Forest Service will only have reason to act once fisher have been eliminated from the area. At that point, however, the habitat that was necessary for fisher presence will have already been logged.

Barrett 2006.

The Forest Service's lack of baseline information as it begins logging operations means that its research approach is inconsistent with the UC Study proposal, which requires two years of baseline data prior to the initiation of experimental "treatments." *See* University of California Science Team 2007 (Hereinafter cited as "UC Study"), p. 10-11 ("We propose a 2-2-1-2 schedule of research (total = 7-year research program)… We plan and budget for 2 years of Pre-treatment measurements.") As stated by UC Scientists:

> The "before" measurements are crucial in that they provide a means to quantify the differences in ecosystem function between the control and impact sites not related to the management impact since these measurements occur before the imposition of any activity. We use the "after" measurements to estimate the effect of the management treatment at the impact site based on the divergence between the control and impact sites.

Id. at p. 11.[14] These before measurements are "critical to the success of the research design," *id*., because they establish baseline parameters against which the effects of treatment would be measured:

> [T]he Forest Service does not explain is that the UC Study first requires the collection of two years of baseline data before treatments can begin. As set forth in our proposal, this is because "before" measurements provide a means to quantify the differences in ecosystem function between the control and impact sites not related to the management impact since these measurements occur before the imposition of any activity. Based on my years of experience, the establishment of meaningful baseline data is critical to the success of the research design

Barrett 2007.

[14] This approach is known as a Before After Control Impact (BACI) design, which is necessary to "control for potential confounding factors and to isolate the ecosystem impacts related to the forest management operation." *Id.*

For fisher, such measuring would include the spatial delineation of home ranges, resting locations and corridor routes for traveling between watersheds. Such measurements would also include a comprehensive analysis of habitat type, including the spatial arrangement of high quality habitat in relation to fisher habitat needs. *See id.* at 33 ("wildlife team will require detailed spatially referenced biotic and abiotic data that can be associated with their field location of animals. Such information will be used to develop multivariate models of animal habitat and movement.")[15] These baseline measurements form the "first pillar" of the study design involving "deliberate experimentation rather than a passive trial-and-error approach." *Id.* at p. 3:

> [I]t is too late in the day, and far too risky, to conduct *any* research in fisher habitat without deliberate research goals whose achievement justifies the potential adverse effects inherent in cause and effect experimentation. In contrast, if fisher are found to have disappeared from the area following logging treatments, the Forest Service will lack any cause and effect explanation that will provide meaningful guidance in determining future management corrections.

Barrett 2007.[16] Without this information, the Forest Service's research design is fundamentally flawed since there is no baseline against which to assess the impacts of logging treatments. If fisher are later found to be absent from the area, the Forest Service will have no information about whether the fisher population in the treatment area has exhibited "decreased viability over time as measured by population trend, reproductive performance, survival, and dispersal success as a result of lowered habitat quality." *Id.* at 28.[17]

Second, the Forest Service still has no research plan besides simply referring to the UC Study. *See* ROD Analysis, p. 4 ("Research study plans are in development … and would be completed by the spring of 2007.")[18] The UC Study notes that the adaptive management plan

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[15] UC states that this research "will result in an intense initial effort as we establish baseline conditions…. (years 1 and 2)."

[16] *See* USDA 2001a, FEIS, App. E. p. 9 ("For large-scale monitoring efforts, two general approaches have been defined: retrospective and predictive. Retrospective monitoring seeks to detect changes in status or condition. It is based on detecting an effect after it has occurred as the result of including a wide array of attributes in the monitoring program (NRC 1995). This inductive approach is valuable for a variety of management and conservation uses, but is *not helpful* in understanding why observed changes are occurring.")

[17] As noted by the Committee of Scientists (COS 1999), "monitoring procedures need to be incorporated into planning procedures and should be designed to be part of the information used to inform decisions. Adaptive management and learning are not possible without effective monitoring of actual consequences from management activities." Under the new rule, monitoring and evaluation will be used to determine if actions are being implemented in accordance with applicable plan direction; if the aggregated outcomes and effects of actions are sustainable and are achieving desired conditions; if key assumptions underlying management direction are valid; and if plan or site-specific decisions need to be modified. *See* USDA 2001, FEIS, App. E. p. 2.

[18] The DEIS stated that the Forest Service is currently researching "techniques to reliably detect presence or absence with adequate confidence" and that "a more specific experimental design will be recommended for implementation in 2006 and beyond." However, the Forest Service never came back with any specific experimental design that the public could review as part of the NEPA process. *See* Section V.C.3.a, *infra.*

"must involve intensive radio telemetry and detailed vital rate analysis of all individual [fisher] in each study area." UC Study, p. 28. Yet these items require serious funding; the UC Study requires approximately $ 16 million, with the "cost of quantifying fisher population dynamics" accounting for approximately half of the entire budget.

The Forest Service has had over a decade to establish baseline data and develop a research plan, but was unable to do so. As discussed in our prior comments, the prior KRP planning documents merely proposed to conduct presence absence monitoring, a strategy rejected by the UC approach and shown to be severely limited in producing meaningful and useful information about the effects of logging on fisher survival and viability.[19] Here, the Forest Service has proposed no team, no PI, no budget and no study plan. Thus it cannot ensure that its "research" will ensure that meaningful data is being developed to avoid have significant irreversible impacts on the fisher in the planning area.

Third, as discussed in our previous comments, the Forest Service still has not set forth a mechanism whereby the results of any study will be incorporated into an adaptive management approach that may respond to adverse outcomes by altering proposed treatment prescriptions. As noted by the UC Study, p. 32, "Feedback loops are essential to achieve the aim of adaptive management research - namely to inform Forest Service decision-makers in their use of an adaptive management process to meet their objective of protecting communities and modifying landscape-scale fire behavior to reduce the size and severity of wildfires."[20]

The lack of any mechanism to trigger "adaptive management" raises a particular concern given the Forest Service's statements implying that the objective of the project is to establish benefits not in the near future but 20 to 30 years from now:

> I think it is clear to all involved that PSW has not yet identified a monitoring/research strategy that will be capable of identifying effects on fisher behavior or demography. This is a VERY challenging task and one for which only a few ideas have been discussed and even fewer tested on the ground. Until the research community determines that they can, indeed, learn from this 'experiment' represented by Kings River, it is inappropriate to claim that an adaptive management safety net is in place.

Zielinski 2006b.

If the KRP is intended to benefit fisher by creating high quality habitat in 30 years, how does the Forest Service intend to use monitoring in the short term to trigger management changes? Indeed, statements in the KRP planning documents suggest that monitoring showing fishers are experiencing immediate adverse impacts would be expected and that the stated

[19] UC Study, p. 28-29 ("Presence absence data are necessary to detect large changes in the range of these species, but they are insufficient to inform us as to which environmental factors are limiting a population.")

[20] *See also* USDA 2001, FEIS, App. E. p. 5 ("[T]he success of adaptive management is dependent upon a well-designed, adequately funded, and carefully implemented monitoring and research program. Adaptive management is ultimately dependent upon the ability of institutions to integrate new information into management decisions and approaches.")

rationale that the project will have long term benefits would still control decision-making.[21] Without establishing thresholds based on current information that would require the Forest Service to take action in the future to reduce impacts to fisher, it is impossible to determine how the KRP is anything else but simply a large logging project based on a future hope that fisher will return to the area over time. This approach does not insure viability of the population. As noted by Dr. Barrett:

> I have yet to see any explanation of how data produced by a fisher study will translate to "adaptive management" in the field…. I question the Forest Service's commitment to adaptive management given its general reliance throughout the project documents to benefits that will occur 30 years down the road. This approach suggests that "short term" impacts to fisher following treatments are expected but would not be inconsistent with project purposes and thus would not trigger any change in management direction. At the least, the Forest Service's failure to set forth the data thresholds that would trigger changes in management means that the "adaptive management" component cannot constitute reliable or meaningful mitigation for the likely significant impacts to fisher that will occur from this project.

(Barrett 2006,)

B. 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 and FEIS, 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.

1. The breeding bird surveys cited in the MIS report are not adequate to access population trend on the Sierra National Forest.

[21] For example, the Project review documents state that the Project will benefit fisher by creating 5D habitat 30 years down the road, but generally ignore the short term impacts on fisher. Given its demonstrated approach of ignoring near term impacts on fisher, the Forest Service's oblique suggestions that treatments will be altered prior to the implementation of the Project over the 25 year period. This point is particularly true given Forest Service's apparent pre-determined intent to implement an Inverse J curve model across the landscape as means of restoring pre-1850 stand and fuel conditions over a long time period. *See* Discussion, Section V.C.2. *infra.*

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 bird 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 also found that for four routes no portion of the route occurred on lands management by the Sierra National Forest. (*Ibid*.) 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 is 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 9th 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.

2. The Response to SNFPC Comments Regarding the BBS Results is Evasive and Inadequate

The response to comments provided by the Forest Service (December 15, 2006, p. 5) claims that the SLRMP anticipates that the monitoring procedures selected "would, to some degree, accurately reflect the forest situation." This response, however, fails to identify that the monitoring for the avian guilds the precision, defined as "the exactness or accuracy of the measurement technique with which the data are collected" (Sierra National Forest 1992, p. 5-1) is expected to be "high" (*Ibid*., p. 5-6 and 5-8). With respect to validity, defined as "the expected probability that the information acquired through sampling reflects actual conditions, that is, the degree to which the monitoring procedures accurately reflect the Forest situation" (*Ibid*., p, 5-1, emphasis added), are also expected to be "high." (*Ibid*, p. 5-6 and 5-8). Thus, while the Forest Service is correct in stating that no specific monitoring methods are required by the forest plan, the methods that are chosen must reflect the high degree of precision and validity directed by the forest plan.

The Forest Service's response to comments fails to address how the BBS results meet these criteria for precision and accuracy.[22] The Forest Service does provide a supplemental MIS report that tabulates the raw data for the various survey routes. This report, however, does not provide information on the precision of the trend data reported or the confidence of the trend estimates.[23] The supplemental report also does not address how the lack of over lap between the BBS routes and national forest lands affects the validity of the data to accurately reflect conditions on the National Forest. Further, based on our review of the methods applied, the BBS results do not provide the high degree of precision or accuracy required by the forest plan.

Even if one accepted the Forest Service's incorrect assertion that the BBS data meets the monitoring requirements in the forest plan, the surveys are still inadequate. As identified in the supplement MIS report some species, including the white crown sparrow and goshawk, "are not adequately sampled by BBS roadside surveys due to their habitat preferences." (Supplemental MIS report, p. 27)

3. 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.

[22] Seemingly, the Forest Service response attempts to persuade us that there are few and low expectations about what the monitoring results are intended to accomplish. This is without question contrary to the expectations of precision and accuracy stated in the forest plan.

[23] A "regional credibility measure" is the standard reporting information that the BBS provides for their estimates of trend at the three scales they report. The BBS does not provide such information for regions smaller than the Sierra Nevada bioregion.

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
B385	Swainson's thrush	Riparian and dense shrub
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

[1] 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.

4. The Forest Service's Response to Comments Regarding Annual Population Monitoring Are Incorrect.

The Forest Service's response to comments on the FEIS (p. 6) agrees that annual population monitoring is required for the avian guild species. However, as indicated above, annual population monitoring provided by the BBS is inadequate to satisfy the requirements in

the SLRMP. Beyond that, the supplemental MIS report admits that BBS data are insufficient for mountain white crowned sparrow and goshawk. The response to comments fails to recognize this.

The response to comments also asserts that since goshawk is not mentioned in tables E-9, E-10 and E-11 of Appendix E, annual monitoring is not required by Appendix E. Appendix E however identifies an expectation that "change monitoring will address population trends of northern goshawks" and that "after a period of annual population monitoring, we will have sufficient understanding of important habitat characteristics that we can confidently monitor habitats without annual monitoring of northern goshawk distribution and demographics." (USDA Forest Service 2001, Volume 4, Appendix E, p. 51). This same expectation is what led the Eastern Court to conclude in *Sierra Nevada Forest Protection Campaign v. Tippin*, 2006 WL 2583036 (E.D. Cal. 2006) that annual population monitoring was required for marten even though it did not appear in the tables listed in Appendix E.

With respect to all of the species reference in Appendix E, regardless if they are mentioned in the tables or only in the narrative, the courts have recently affirmed that population monitoring is expected for these species. See *Sierra Nevada Forest Protection Campaign v. Tippin*, 2006 WL 2583036 (E.D. Cal. 2006) finding that the Forest Service's approval of the project without appropriate or sufficient population and habitat data is contrary to NFMA; *Earth Island Institute v. U.S. Forest Service*, 442 F.3d 1147 (9th Cir. 2006).

C. The Kings River Project Violates the National Environmental Policy Act

Under NEPA, the EIS for a major federal action must include "a description and analysis of the environmental impact of the proposed action, any adverse environmental effects that cannot be avoided if the action is implemented, alternatives to the proposed action, the relationship between short-term uses and long-term productivity, and any irreversible or irretrievable commitment of resources that would be involved if the action were to be implemented. *See Sierra Nevada Forest Protection Campaign v. Tippen* quoting *Earth Island Inst. v. U.S. Forest Serv*., 442 F.3d 1147, 1153 (9th Cir. 2006); 42 U.S.C. § 4332(2)(C). "In short, NEPA requires that a federal agency 'consider every significant aspect of the environmental impact of a proposed action' and inform the public that it has indeed considered environmental concerns in its decisionmaking process.'" *Id*.; *see also Kern v. U.S. Bureau of Land Mgmt*., 284 F.3d 1062, 1066 (9th Cir. 2002).

NEPA ultimately prohibits uninformed agency action. *See e.g., Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350-51* Thus, under NEPA, the Forest Service cannot make conclusory assertions that an activity will have insignificant impact on the environment. *See Alaska Ctr. for Env't v. United States Forest Serv*., 189 F.3d 851, 859 (9th Cir. 1999). Instead, the Forest Service must take a "hard look" at the potential impacts of a proposed timber plan, and must put forth a "convincing statement of reasons" that explain why the project will impact the environment no more than insignificantly. *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1212 (9th Cir. 1998). "General statements about possible effects" and some risk do not constitute a 'hard look' absent a justification regarding why more definitive

information could not be provided." *Neighbors of Cuddy Mountain v. United States Forest Service,* 137 F.3d 1372, 1380 (9th Cir. 1998).

Further, an agency must take a hard look at alternatives to the proposed project, particularly whether such alternatives can achieve the project purposes with less environmental impacts. *See e.g., See Sierra Nevada Forest Protection Campaign v. Tippen.*

An agency's NEPA analysis must also consider cumulative impacts of reasonably foreseeable future actions and impacts from "cumulative actions" as defined under NEPA. *See Native Ecosystems Council v. Dombeck,* 304 F.3d 886, 895-96 n.2 (9th Cir. 2002); *Bayeeper v. U.S. Army Corps of Engineers,* 2006 U.S. Dist. LEXIS 67483 (E.D. Cal. September 20, 2006); *Great Basin Mine Watch v. Hankins*, 456 F.3d 955, 969, 971-73 (9th Cir. 2006) A "cumulative impact is defined as:

> [T]he impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

40 C.F.R. § 1508.7. "[P]roper consideration of the cumulative impacts of a project requires some quantified or detailed information;... [g]eneral statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided." *Klamath-Siskiyou Wildlands Ctr. v. BLM*, 387 F.3d 989, 993 (9th Cir. 2004)

An agency cannot simply offer conclusions but must instead identify and discuss the impacts that will be caused by each successive project, including how the combination of those various impacts is expected to affect the environment, so as to provide a reasonably thorough assessment of the projects' cumulative impacts. *Id*. "The analysis must be more than perfunctory," id. at 994, and "must give a sufficiently detailed catalogue of past, present, and future projects, and provide adequate analysis about how these projects, and differences between the projects, are thought to have impacted the environment." *Lands Council v. Powell*, 395 F.3d 1019, 1028 (9th Cir. 2005).

Here, the Kings River Project planning documents fail to include important information and analysis necessary to a full and accurate assessment of the impacts of the project and alternatives that could avoid or lessen such impacts to fisher, spotted owl and other sensitive forest species.

1. The Forest Service Has Not Complied with NEPA Procedural Requirements

The Forest Service's approval of the KRP violates NEPA procedural requirements.

First, as discussed in our Supplemental Comments, the Forest Service should have prepared a supplemental draft EIS, rather than a final EIS, for the Kings River Project given the additional analysis added after the circulation of the DEIS. 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 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).

Second, the Forest Service's approval of this project violates NEPA since it relies on the future development of mitigation measures and information gathering that should come before, not after project approval. For example, the Forest Service states that it will minimize impacts to

fisher by "learning" from the information developed by the Conservation Biology Institute's Southern Sierra Nevada Fisher Assessment. *See* ROD, p. 2. However, this information has yet to be developed, has not been reviewed as part of the KRP NEPA process and, at this point, offers no magic bullet to the Forest Service to avoid significant impacts to fisher as it embarks on intensive logging in fisher habitat. Further, the Forest Service claim that its fisher research study plan will avoid impacts through adaptive management cannot be evaluated since there is, at present, no study plan, no baseline information developed, nor any understanding of how these necessary steps will occur.

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).

Further, Forest Service promises to develop information in the future cannot satisfy NEPA's requirements that information be presented prior to project approval so that the public may review and provide comment to inform the agency's decision making process.

2. The Forest Service Has Failed to Take a Hard Look or Consider a Reasonable Range of Alternatives

In response to our comments that the KRP DEIS did not consider a reasonable range of alternatives, 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. This alternative, however, still does not address the substantive issues that we raised in our comments on this project.

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 FEIS for eliminating alternatives from detailed review are neither persuasive nor legally sufficient. As set forth below, the Forest Service has not considered a reasonable range of alternatives nor taken a hard look at the alternatives it has considered in a manner that complies with NEPA standards.

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. For this project, the Forest Service appears committed to avoid analyzing in detail 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.

NEPA requires that an EIS "specify the underlying purpose and need" for any project that it proposes. 40 CFR 1502.13. 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). 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.)

The FEIS states that the proposed level of harvest is the only *project* alternative that can be considered due to the Forest Service's adoption of the inverse J-Curve as a thinning model that requires trees up to 30"dbh to be removed. As discussed below, there is no scientific basis for the Forest Service's belief the inverse J curve should be applied at the stand level, nor even whether it represents even an accurate portrayal of the range of tree sizes as measured across the landscape. For purposes of alternatives analysis, as discussed more below, there are other management prescriptions that will achieve the Forest Service's stated purpose to restore old forest conditions. The same can be said for the purpose of reducing the risk of landscape level crown fires. For each of these purposes there exist alternatives that can achieve the Forest Service's goals with substantially less impacts on sensitive wildlife. Since the present proposed action threatens the viability of several of these species, the Campaign believes that the Forest Service is not only required to consider these alternatives under NEPA, it is required to choose a less significant alternative based to ensure compliance with NFMA.

a. Elimination of the 2001 Framework As An Alternative Is Based on Incorrect Assumptions and Not Supported By Evidence.

In an errata to the FEIS dated November 7, 2006 (p2-49 to 2-52), the reasons for eliminating the 2001 Framework from detailed analysis are stated. As shown below, four of the five stated reasons for eliminating the 2001 Framework as the basis of an alternative either fail to correctly interpret and apply direction in the 2001 Framework or provide no evidence to support the contention. Furthermore, in cases were claims are made about the likely outcomes of the project, there is direct evidence provided by the Forest Service and elsewhere that conflicts with the claims. As such, the Forest Service's reasoning for dismissing an alternative based on the 2001 Framework from further review is arbitrary and not based on factual information.

(1) The FEIS Mischaracterizes the 2001 Framework.

The FEIS claims that the diameter limit direction in the 2001 Framework would not meet the purpose and need due to diameter limits, limitations in PACs and the claim that little harvest would occur in several of the unit. These claims are unfounded because the Forest Service failed to correctly interpret the 2001 Framework decision.

The 2001 Framework decision does not universally limit the removal of tree to those 20" in diameter and less. Harvest of trees up to 30" in diameter is allowed within the defense zone of the wildland urban interface (WUI). (USDA Forest Service 2001b, p. A-46) Harvest within protected activity centers (PACs) that occur within the defense zone is also allowed. (*Ibid*., p, A-35) The only restriction in this case is that mechanical treatments are prohibited within a 500-foot buffer around the nest stands. (*Ibid*.) Within the 500-foot radius hand thinning small diameter material and prescribed burning is allowed. (*Ibid*.) The FEIS mentions a number of stands that would experience little or no change under the 2001 Framework. (p. 2-50). However, many of the management units contain numerous stands that are located within the defense zone (FEIS, p. 2-15 and Appendix I, p. I-2) where the restrictions they cite do not exist. Beyond this, management units, such as bear_fen_6 that are outside the WUI, also have stand conditions that indicate there are numerous trees under 20" in diameter that could be harvested. (See FEIS, p. 3-30, Figure 3-12) Thus, the Forest Service's claim that the 2001 Framework "severely limits or eliminates treatments" and that there would be a "minor" change in vegetation can not be supported by the evidence.

(2) The Benefits Of Implementing the 2001 Framework to Fisher and Its Habitat Are Mischaracterized.

The FEIS (p. 2-50) claims that less acreage would be treated under an alternative that follows the 2001 Framework. There is no basis to make such a claim since the 2001 Framework did not prohibit management on any area. Management options similar to those used in the KRP (e.g. thinning, prescribed fire, mastication) are allowed under the 2001 Framework. Thus, there is no basis to claim that fewer acres would be treated.

The FEIS (Ibid.) also claims that the "lower intensity treatment would include higher risk of … habitat loss." There is however, no analysis provided to support this claim. In direct conflict with this claim are the conclusions made in the FEIS about the outcomes of thinning trees less than 20" in diameter. Regarding the effects to vegetation under the CSOS study, in which areas are thinned from below with a 6", 10" or 20" diameter limit, the FEIS found that thinning would "reduce stand density and increase tree vigor for these units." (FEIS, p. 3-57) In addition, there are analyses completed by the Forest Service that demonstrate that an alternative with a 20" diameter limit can reduce the stand density index below the threat of imminent risk (i.e. 60% SDI). The Empire Project on the Plumas National Forest is an example of such a project. The vegetation report for this project evaluated the effect on SDI of applying a 20" diameter limit to the selected stands. (Plumas National Forest 2006). These stands included CWHR types 3P, 4P, 4M, 4D, 5P, 5M, and 5D. For all CWHR types, a prescription that applied

a 20" diameter limit and maintained 50% canopy closure reduced stands to SDIs that were less than 60% for more than 50 years following harvest. (*Ibid*., p. 60, Table 15). With respect to the efficacy of fuel treatments that are limited to smaller diameter materials, the KRP FEIS also affirms that "it is widely agreed that thinning more in the smaller diameter classes (usually 11 inches or less in diameter) ... and treating surface fuels would be a viable alternative to reduce the fire hazard…" (FEIS, Appendix G, p. 8)

As shown above, the 2001 Framework direction is capable of reducing the loss of large trees to insect mortality and wildfire by reducing stand density. The modeling in the 2004 Framework FSEIS also demonstrates that the total increase in the number of large trees is "indistinguishable" between the 2001 Framework and 2004 Framework over the next 20 years. USDA Forest Service 2004, p. 254). Since the KRP largely follows the 2004 Framework, increases in the number of large trees are likely to be similar among Alternative 3 and the 2001 Framework.

The practices allowed in the 2001, which are similar to the CSOC study and focus on thinning smaller diameter material, by the Forest Service's own analysis would improve forest health and reduce the risk of wildfire. Thus, the claims made in the FEIS about increased risks to fisher under an alterative modeled after the 2001 Framework are baseless and contradict the analysis and conclusions in the FEIS.

This point is further demonstrated by the KRP FEIS, which asserts that by reducing the diameter limit for tree harvest from 35-30" dbh, the project will result in an *increase* in "large tree dominance." *See* FEIS, 2-52, Table 2-20, top row. The FEIS implies that the "no project" alternative 2 would not result in such an increase due to tree competition base on stand density. *Id.*, Column 3. However, as discussed above, the 20" dbh harvest alternative would *not* lead to competition or loss of forest health due to SDI factors. Thus, although not presented in the FEIS analysis, the available evidence indicates that the 20" dbh alternative would be even *more* effective in increasing large tree dominance over time. *See also* Zielinksi 2006b ("I fail to understand the logic that defends the removal of large (but intermediate-sized; 20-30" or 20-35") trees simply to provide growing space so that smaller trees can then enter this same size class in the future… Why, then, remove these relatively large trees in the first place, if they are the size class you are trying to increase as part of the long-term goal?") *See* 2006 BE, p. 12 (area has only 432 acres of Class 5 habitat, or 3% of the planning area.); Barrett 2007 ("In my opinion, any thinning model must take into account the current deficit of larger trees and Class 5 habitat in the planning area and should therefore make every effort to retain the mid to large size class of trees between 20" to 30" dbh, which will grow into large trees over the next few decades.") *See also* Heald 2006, Fairbanks 2007.

(3) The 2001 Framework Allows For The Development of Uneven Aged Stands.

An uneven aged silviculture system is one that maintains or regenerates a stand with three or more age classes. (Helms 1998). The 2001 Framework includes thinning in diameter classes up to 30" in diameter depending on the land allocation. The age versus diameter relationship

measured in the KRP area indicates that trees with diameter ranging from 2" to 30" in diameter range in age from a couple years to 300 years old. (FEIS, p. 3-26) This indicates that trees available for harvest under the 2001 Framework are in a variety of age classes. Even within the range of 2" to 20" in diameter, the age range is a couple of years to about 170 years old. Thus, even if limited to the removal of trees less than 20" in diameter, a variety of ages can be removed from the stand thereby can influencing the age distribution of the stand.

Silviculturist Rich Fairbanks found in his review of the 2001 Framework that there are a number of practices could maintain or move stands toward the stated goal of an uneven aged condition. "First, the ROD allows for extensive use of fire to manipulate stand dynamics. A series of prescribed burns is recommended for certain lands, up to four burns in twenty years. This is another opportunity to generate new cohorts of trees. Second, the 2001 ROD allows for Wildland Fire Use (WFU). Wildland Fire Use can be used to create a variety of stand conditions, including creation of new stands. Third, the 2001 ROD allows removal of up to 10% of the dominant and co-dominant layers, an opportunity to increase size class diversity in larger tree sizes. For up to 1 ½ miles from any structure, lands with dense uniform stands can have group selection cuts up to 1 acre in size (ROD Appendix A-47). This is certainly an opportunity to introduce the new age classes that are necessary for an uneven age management scheme." (Fairbanks 2007, p. 3)

The 2001 Framework allows for the removal of a variety of tree ages and sizes and allows for regeneration of openings. These practices can be used to achieve the objective of an uneven aged stand. The 2001 Framework also features prescribed fire as a practice critical to restoring fire to the ecosystem. (USDA Forest Service 2001b, p. 5-6).

(4) The Claims Regarding Crown Fuels Are Not Supported by the Forest Service's Own Data.

The FEIS (p. 2-51) claims that the 2001 Framework would not allow the crown bulk density of the stands to be reduced to the guidelines of 0.05 to 0.15 kg/m^3. This assertion is based on their experience with the Jose 1 project and not based on information from the KRP project area. Based on information provided in the FEIS (p. 3-98), it can be seen that the existing condition for crown bulk density in seven of the eight management units ranges from 0.018 to 0.145 kg/m^3 which is below the upper limit of 0.15 kg/m^3. Only one unit, krew_bul_1, exceeds this limit with a value of 0.175 kg/m^3. Examination of the tree distribution for this unit (FEIS, p. 3-30, Figure 3-12) indicates that there are trees less than 20" in diameter whose removal would contribute to a reduction in crown bulk density and would reduce this to an acceptable level. *See also* Rice 2006, 2007.

b. An Impermissibly Narrow Definition of the Stated Purposes Is Applied.

We agree with the DEIS comments from the California Attorney General which state:

> While an agency is not required to analyze alternatives that do not meet its proposed goal, an agency is not allowed to narrowly define the purpose of its proposed action in order to exclude reasonable alternatives. *Border Power Plant Working Group v. Department of Energy*, 260 F.Supp.2d 997, 1030 (S.D.Cal. 2003) (DOE improperly confined scope of its action and thus failed to consider reasonable alternatives that considered actual nature of project); *see also City of Carmel-By-The-Sea v. U.S. Dept. of Transp.*, 123 F.3d 1142, 1155 (9th Cir. 1997).
>
> As discussed above, the Forest Service attempts to dismiss other options – such as preserving more trees under 35 inches – by claiming that these alternatives are not feasible because they fail to conform to the inverse J-curve model. In doing so, the Forest Service impermissibly attempts to narrow the purpose of its project from the legitimate goal of achieving old forest conditions and restoring forest health to a narrower, improperly circumscribed goal of retaining precisely the ratio of "large trees" and the amount of "growing space" in each stand of trees that would result from application of the inverse J-curve model.5/ *See, e.g.*, DEIS at p. 56-59, emphasis added (the option to retain any large or medium trees smaller than 35 inches in diameter results in "allocation of more than 1/3 of the growing space to large trees" and therefore "would not be a reasonable trial of the *KRP uneven-aged silvicultural system*"). For the purposes of the KRP, even the definition of what constitutes a "large tree" is determined by the application of the KRP model itself.
>
> Thus, in discussing the viability of reasonable alternatives, the DEIS seems to re-define the project purpose from one of restoring old growth forest to one of meeting the particular tree size distribution of its chosen mathematical model. This is not permitted under NEPA. *BorderPower Plant Working Group* 260 F.Supp.2d at 1030.

(California Attorney General 2006, p. 6) *See also Muckleshoot Indian Tribe v. United States Forest Serv.*, 177 F.3d 800, 810 (9th Cir. 1999) ("Forest Service failed to consider an adequate range of alternatives. The EIS considered only a no action alternative along with two virtually identical alternatives.")

This improperly narrow definition of the purpose of the project has also been imposed on the evaluation of the 2001 Framework as an alternative.[24] The "cursory analysis" provided in

[24] We note that the Forest Service in the selection of Alternative 3 has deviated from the "prescription" presented in Appendix C. The group selection harvest units have been eliminated from the project and "regeneration planting" will be limited to the replanting existing openings. (FEIS, p. 2-53). Utilizing, the Forest Service's own impermissibly narrow definition of the purpose of this project, Alternative 3 does not satisfy the purpose and need.

the FEIS (p. 2-50) imposes the Forest Service's model on the harvest allowed under the 2001 Framework and limits the removal of trees to those "excess trees found outside the inverse J-shaped curve." This imposition severely limits the number of trees that would be harvested and is not required by the 2001 Framework. Thus, the claims made about the low number of trees available for harvest in specific stands are based on the imposition of the Forest Service's mathematical model and do not reflect the 2001 Framework.

c. NEPA Requires Consideration of an Alternative Based Upon the 2001 Framework.

The FEIS dated October 2006 (p. 2-50) eliminated an alternative based on the 2001 Framework because it claimed that it was already analyzed in the EIS for the 2004 revision. As shown in *Sierra Nevada Forest Protection Campaign v. Tippen, supra,* dismissing the consideration of an alternative for that reason is inappropriate. The Eastern District rejected this overly narrow approach to considering alternatives under NEPA:

> 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.

Since the Forest Service has not considered alternatives with lower impacts, 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.[25] The Campaign reiterates that alternative management practices that satisfy the direction in the MOU to study uneven 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.

The allowance of this deviation from the narrowly defined purpose and need for Alternative 3 and the prohibition of variance in other cases is arbitrary.

[25] 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 of the large and medium size trees, which are more fire resistant. Rice (2006) concludes that the establishment of an inverse J curve distribution will lead inevitably to the creation of "ladder fuels" that will feed wildfire. 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.

d. The FEIS Should Consider an Alternative that Does Not Threaten the Viability of Sensitive Wildlife Species.

The FEIS must assess alternative with less impact on sensitive wildlife such as the fisher and spotted owl. As stated in our prior scoping comments, the 2001 Framework is a reasonable alternative that must be included in the FEIS. A revised FEIS should consider alternatives with lower diameter limits (e.g., 12-20" dbh, depending upon land allocation) and higher canopy cover retention standards (e.g., 50 percent). As discussed below, Forest Service analysis of other logging projects has demonstrated that fuels reduction objectives can be satisfied utilizing a 20" dbh limit, rather than the 30" or 35" dbh limit. Moreover, the best available research indicates that the Forest Service's fuels reduction objectives can be met without logging trees greater than 20" dbh or reducing canopy cover below 50 percent. (SNFPC *et al*. 2004, pp. 62-71).

An alternative based on the 2001 ROD is a "reasonable alternative" as that term is used in NEPA, for several reasons. First, there is strong support for the 2001 ROD within the scientific the public. As demonstrated in the Campaign's administrative appeal of the 2004 ROD, leading researchers on the California spotted owl and Pacific fisher have criticized the 2004 ROD and urged the Forest Service to implement the 2001 ROD instead. (*See, e.g.*, Verner 2003; Blakesley and Noon 2004; Noon2004; Peery 2004; Bond 2003; Franklin et al. 2003; Barrett2004; Kucera 2004; Lewis 2003a,2003b; Buskirk 2003). The overwhelming opinion of leading wildlife experts in support of the 2001 ROD requires consideration in the FEIS for this Project.

Second, the U.S. Environmental Protection Agency, in its scoping comments on similar projects, has specifically requested that the Forest Service evaluate an alternative that would implement the 2001 Framework and "include a description of the various environmental, social and economic issues, and the pros and cons of each management approach." (U.S. Environmental Protection Agency 2004). As noted by EPA, "public debate continues regarding the scientific basis for; the fuel management, environmental and social benefits of; and the adverse effect associated with the 2004 SNFPA ROD versus the Sierra Nevada Framework." Therefore, EPA urged the Forest Service to "reconsider whether to evaluate an alternative which would implement the 2001" Framework

Third, there is enormous public support for the 2001 ROD, including over 6,000 administrative appeals of the 2004 ROD.

Fourth, a 2001 ROD alternative needs to be considered to "sharply defin[e] the issues and C.F.R. § 1502.14. In our view, the evidence is overwhelming that an alternative based on the 2001 ROD will have significantly less impacts on sensitive forest species such as the fisher and spotted owl, based precisely on the different management direction given on critical issues such as tree size, canopy cover and land designation protections. The public has a right to view this alternative side by side with the proposed action in order to review and provide comment on the decisions the Forest Service is making on these public lands.

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. As stated by the Northern District Court in its recent decision in *Sierra Club v. Bosworth,* USND Case No. 05-00397, regarding the tradeoff between fuel reduction benefits and impacts on sensitive wildlife:

> 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.

Opinion, p. 14:9-17 (emphasis added.) Thus, the court determined that for a project that affected fisher in ways similar to KRP. A reasoned analysis must include an alternative that has less impact on this imperiled species.

e. The Forest Service Has Failed to Take a Hard Look at Whether the Selected Alternative Meets the Stated Project Purpose and Need.

The Forest Service states that the underlying purpose and need for the KRP is to "restore historical pre-1850 forest conditions across a large landscape." (FEIS, p. 1-4) To achieve this, a forest with the appropriate structure (e.g. distribution of tree sizes, abundance of trees) and processes (e.g. fire return interval) needs to be established. The selected alternative fails to meet this purpose because it incorrectly defines the historic condition and defines a fuel condition that that is outside of what would have been expected.

(1) The Inverse J Curve Does Not Reflect the Historic Condition of The Pre-1850 Forest.

The underlying premise of the proposed action is that the pre-1850 forest condition has been correctly defined and progress toward such a condition can then be evaluated. In the case of KRP, the pre-1850 condition has not been correctly defined, i.e. the actual shape of the inverse J curve that is adopted does not reflect pre-1850 conditions in the Sierra Nevada. (Britting 2006a, p. 10; Heald 2006, pp. 1-3) As such, the project and its analysis are based on assumptions that are contrary to the achievement of pre-1850 forest conditions likely to have been present in the Sierra Nevada. *See also* Barrett 2007.

The inverse-J curve pattern of tree size distribution is a reflection of competition for light and nutrients. (North, pers.com.) When periodic fire moves through a stand, the smaller trees are killed and the influence of density dependence and competition for light does not exist. (*Ibid*.) As a result, the inverse-J curve pattern does not exist in these stands. (*Ibid*.) Many papers show that uneven aged stands reflect an inverse-J distribution of tree sizes, but these

papers do not reflect systems that have frequent disturbance such as the periodic fire typical of Sierra Nevada systems prior to the advent of fire suppression. (*Ibid*.)

The slope of the inverse J curve more closely reflects "tropical rainforests and humid temperate forests in the Eastern US and Europe." (Heald 2006, p. 1). Heald (*Ibid*., p. 2) notes that "In their current state, ~100+ years of fire suppression, the few old Sierran forests with data seem to approximate the inverse-J." Dr. Britting found in her review of the literature describing desired condition that was cited by the KRP:

> For those papers that actually characterize forest stands, forest structure is often described as having few small trees per acre and many more large trees per acre – the opposite of an inverse J-shaped curve. In fact, Minnich et al. (1995, see Figures 3 a and b, 4b, 5b, 6b) found that diameter distributions for the contemporary stands that had experienced fire suppression or logging in the past 60 years consistently exhibited an inverse J-shaped pattern.

Britting (2006, p. 10). Thus, the inverse-J curve is not a pattern of tree size distribution seen in stands that have been subjected to periodic disturbance like fire (North, pers.com, Fairbanks 2007, p. 1) as would be expected for stands in the Sierra Nevada prior to 1850. *See also* Barrett 2007; Heald 2006, p. 3 ("[T]he bottom line is that the Inverse J analysis process simply cannot adequately describe a stand structure and composition compatible with ecosystem processes essential to restore old Sierran forests.")

Heald (2006, p. 2) also identified that the inverse J-curve does not provide for a sufficient number of medium sized trees to grow into large old trees large trees and that the model of tree size was arbitrarily constrained. As discussed above, the FEIS (p. 2-52, Table 2-20, top row) demonstrates that by reducing the diameter limit for tree harvest from 35-30" dbh, the project will result in an *increase* in "large tree dominance." The FEIS states that the point at which a reduced diameter limit would have potential negative impact on increasing the number of large trees is synonymous with the point at which resource competition limits tree growth, a standard measured by the Forest Service by the Stand Density Index. As discussed above, however, the 20" dbh harvest alternative would *not* lead to competition or loss of forest health due to SDI factors.

(2) The Inverse J Curve Does Not Reflect A Fire Resilient Forest.

The inverse J curve model also does not accomplish the stated purpose and need of achieving the fire resiliency of the pre-1850 Sierra forest. Rather, the tree distribution described by this model reflects a forest that has been subjected to fire suppression and/or logging and not a restored forest. As noted by Rice (2006, 2007) the inverse J curve, with the abundance of small diameter trees, is incompatible with fire resistance. In fact, as demonstrated by Rice 2007, the proposed alternative based on an Inverse J curve does *not* meet the standards for fuel reduction set forth in the 2004 Framework Standards and Guidelines, Appendix A. A stand with relatively frequent historic fire intervals cannot by definition support a preponderance of small-

diameter trees that is inherent in an inverse J stand structure. Instead, frequent fires - even low-intensity surface fires - remove the small-diameter trees from the stand structure. Fairbanks 2007; Rice 2007.

By establishing an inverse J-shaped curve distribution of stand age/size, "ladder fuels" become integral to the stand. These excessive numbers of small diameter trees extend into the forest canopy and support torching that can lead to crown fire. These ladder fuels are conducive to torching and crown fire initiation and reduce the height to live canopy. Retention of such ladder fuels is incompatible with the accepted standard of 15 feet height to live crown level in the WUI, and incompatible with the overall goal of reducing crown fire potential. (Rice 2006, 2007.) The presence of these smaller trees precludes achievement of the purpose stated in the FEIS (p. 1-7) of reintroducing fire into this landscape. *See* Rice 2007.

(3) Inadequate Study Design and Preparation Prevents The Successful Completion Of the Research Studies

One of the stated purposes of the KRP is to conduct research studies to increase the understanding of the effect of harvest treatments on various resources and to apply this knowledge to adaptive management.

i. The Study Central To the Fisher and Owl Research Has Been Abandoned.

The FEIS states that the underlying hypothesis for the KRP was to ask if the implementation of "a landscape strategy such as the KRP uneven-aged silvicultural system combined with prescribed fire [would] be able to restore forests to the historical pre-1850, fire resilient condition." (FEIS, Appendix G, p. 2). The FEIS states that "this hypothesis is at the heart of the experiment and drives all facets of the Project." (*Ibid*.) Despite the central role that the uneven aged study plays in the KRP, the uneven aged study is not being implemented. (*Ibid*., p. 3)

The entire premise on which the project was based, i.e. to study the effects of uneven aged management, has been abandoned because, as stated by the Forest Service:

> The uneven aged management study can not be reasonably implemented using the initial eight management units because two are involved in the KREW study and several others have significant area in the defense zone of the WUI. These focused activities preclude applying the even aged management strategy to the extent necessary for this study."

(*Ibid*., p. 3).

Since the uneven aged management strategy that has been proposed can not be studied, the research on fisher and owl that are "driven" by and depend on these study results also can not be realized.

This patchwork of studies fails entirely to accomplish the integrated research program that the FEIS claims is being implemented. Integrated programs do exist and are possible to undertake. For example, the Sierra Nevada Adaptive Management Program (SNAMP) now being undertaken by the Forest Service, partner agencies and a team of scientists from the University of California achieves the necessary level of integration that is missing from the KRP. In SNAMP, the study modules on forest vegetation and fuels are being designed to support questions specific to stand structure and function as well necessary to characterize the habitat quality relevant to answering questions about fisher and owl habitat use. All the study modules are being implemented in coordination with each other. The study design also includes a module on the development of an adaptive management process that ensures the timely feedback of research results into management decisions. A clear and effective adaptive management process has yet to be defined in the Sierra Nevada. The SNAMP process is designed to create and evaluate such a process. (U.S. Department of Agriculture et al. 2005) Although there are loose references to adaptive management in the KRP, no such process is clearly defined.

Thus, claims made in the FEIS and ROD regarding the integration of science and management are unfounded.

ii. The Proposed Study Designs Are Not Being Implemented.

The FEIS claims that the fisher study will "replicate the planned research" (Analysis for the ROD, p. 4) proposed in the Sierra Nevada Adaptive Management Program (SNAMP). The study design for SNAMP is a "before after control impact" (BACI) design. (University of California Science Team 2007, p. 10) The SNAMP design requires 2 years of measurements "before" treatments are implemented. As stated by the University of California scientists:

> The 'before' measurements are crucial in that they provide a means to quantify the differences in ecosystem function between the control and impacts sites not related to the management impact since these since these measurements occur before the imposition of any activity."

(*Ibid*.)

These "before" measurements are essential to controlling confounding factors and were determined by the U.C. scientists to be "critical to the success of the research design." (*Ibid*.) Thus, the fisher study proposed in the KRP area can not "replicate" the study being undertaken by the U.C. scientists because there has been no provision for collecting the necessary data before implementation of the treatments. In a similar fashion, aspects of the owl study (e. g. radio telemetry) require the collection of "before" data prior to implementing the treatments (Keane et al. 2004, p. 15) and such data has not yet been collected. *See* Barrett 2006, 2007.

The study designs proposed for fisher and owl in KRP each depend on the collection of baseline or pretreatment data. The FEIS and ROD indicate that treatments will occur in 2007

before any baseline data have been collected.[26] Thus, the schedule undertaken for the timber harvest precludes the ability to collect the necessary baseline data and the proposed studies can not be properly implemented.

Contrary to the claims made in the FEIS (FEIS, Appendix G, p. 2), the desire to harvest timber in 2007 is driving the approval of this project, whereas research to study the effects of management on forest structure, fisher, and owl is non-existent or undermined by the KRP.

3. The KRP Fails to Take a "Hard Look" at Impacts to Wildlife

The Forest Service cannot make conclusory assertions that an activity will have insignificant impact on the environment. *See Alaska Ctr. for Env't v. United States Forest Serv*., 189 F.3d 851, 859 (9th Cir. 1999). Instead, the Forest Service must take a "hard look" at the potential impacts of a project and must put forth a "convincing statement of reasons" that explain why the project will impact the environment no more than insignificantly. *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1212 (9th Cir. 1998). "General statements about possible effects" and some risk do not constitute a 'hard look' absent a justification regarding why more definitive information could not be provided." *Neighbors of Cuddy Mountain v. United States Forest Service*, 137 F.3d 1372, 1380 (9th Cir. 1998).

The Forest Service's review of environmental impacts must provide a detailed description of the environment likely to be affected by this Project. 40 C.F.R. Section 1502.15. This description should include, at a minimum 1) discussion of the current location and status of threatened, endangered, sensitive and Management Indicator Species within the Project area and in the vicinity likely to be affected by this project; 2) a discussion of the different habitat types offered by the project area to wildlife in the area and how such habitat is currently used; 3) a discussion of land allocation according to the regulatory controls applicable to the Project Area, including the presence of PACs, HRCAs, SOHAs, Old Forest Emphasis Areas, wetlands, riparian zones, WUIs and inclusion within any comprehensive fuels reduction plans that may apply to this Project; 4) a discussion of how this Project area interacts with available habitat in the region, regional fragmentation of habitat, and the location and habitat characterization of any private lands in the region.

The KRP does not meet these standards. Here, the KRP planning documents fail to include important information and analysis necessary to a full and accurate assessment of impacts as set forth below. Thus the Forest Service has failed to take a "hard look" in finding that the Project poses low risk to fisher, owls and other sensitive forest species.

a. The Forest Service Has Not Taken a Hard Look at Impacts to Pacific fisher

[26] We also note that the harvest seems likely to occur even before the fisher studies are designed. See Zielinski (2006, p. 4 and 2007) for a discussion of the status and uncertainty of designing a study for fisher.

As discussed above in Section V.A.3.a, the Forest Service lacks information about the effects of this project on the Pacific fisher. This failure to take a hard look constitutes a violation of NEPA, as set forth below.

The KRP planning documents do not provide accurate information regarding the current status of fisher in the Project area, the amount or distribution of high quality habitat nor any information whatsoever regarding fisher home ranges, connective corridors and/or important habitat elements that may be affected by the KRP. Instead, the DEIS implies that no significant impacts will occur by comparing post-treatment conditions with a no-project alternative that assumes the occurrence of a major fire 10 years after project implementation. Further, the DEIS states that no impacts will occur because treatments of adjacent units will be separated by five year intervals. These conclusory and unanalyzed assumptions do not constitute the requisite hard look required by NEPA.

First, the Project fails to describe the overall quality of habitat, including percentage of large trees and canopy coverage, within fisher and owl home ranges, and how this project will affect that habitat. As discussed above, fisher have minimum requirements for home ranges and core areas, yet no detailed habitat information is provided here, indeed, no information on even the location of home ranges or core habitat is given. *See* Barrett 2006, 2007; Zielinski 2006b.

The Forest Service also does not describe the valuable habitat elements present in the areas proposed for treatments. For example, the Forest Service provides no information on fisher connective corridors outside the narrow riparian corridors the Forest Service has incorrectly decided are adequate to allow for fisher movement on the landscape. *See* Barrett 2006, 2007; Zielinski 2006b. Without any information, the Forest Service is unable to take a hard look at the impacts of the project on the fisher movement, including resting sites and connective corridors.

For rest sites, the Forest Service provides no information at all. The ROD states that rest site structures will be protected according to the discretion of the timber marking crew *See* Appendix D of the BE. This promise to preserve habitat, however, does not pass muster under NEPA since it is not based on any information or analysis of which areas fisher *actually use* as rest sites in the planning area. *See* Barrett 2007. Further, as discussed above, the Forest Service provides no information as to the distribution or amount of rest spots that will be identified, nor any other hard criteria that would provide insight into the impacts to the proposed logging. In sum, this approach does not satisfy NEPA since it provides no information for the public to assess whether in fact adequate habitat elements are being retained to preserve fisher.[27]

Without detailed information on habitat and how fisher use the landscape, the Forest Service has no ability to assess project impacts on the fisher. A central problem is that, in the

[27] The Project also does not describe whether snags to be retained offer any valuable habitat elements for sensitive species or how oaks will be retained throughout the Project area given the fuel reduction treatments that are proposed. Oaks and oak communities profoundly affect the variety and abundance of wildlife in the area, and often form important habitat elements for fisher, owl, woodpeckers, and various prey species. The physical structure of oak communities determines the availability of shelter, nesting sites, and corridors for travel. Wildlife utilizes oaks as places to hide, shade, and escape from predators and from fires. (See SNFPC 2004.)

absence of any information, the KRP has no ability, nor even attempts, to assess the impacts of the proposed logging on fisher home ranges. As discussed above, research shows that "66 percent of the average fisher home range was in 60 percent or greater canopy closure." (Zielinski 2004a; USDA Forest Service 2001a, Vol. 3, Chap. 3, part 4.4, p. 11). Subsequent research indicates that 72 percent of female home ranges contain forests with 60 percent or greater canopy cover. (Zielinski 2004a). *See also* Barrett 2006, 2007; Zielinski 2006b.

In contrast, our previous comments showed that post-treatment dense canopy cover in simulated fisher home ranges was substantially reduced down to a range from 0 to 27% in >60% cover with an average of approximately 11%. (Britting 2006a, p. 5 & Table 4.) Yet on this criteria alone (i.e., dense cover), the KRP renders fisher habitat unsuitable. (See Barrett 2006; Zielinski et al. 2004a (female fisher home ranges in the Sequoia measured at over 70% in dense canopy cover.)

Since female survival is key to maintaining fisher populations, Barrett 2007, the District must assess the impacts of fuel reduction treatments on female home ranges If current home ranges do not meet reported criteria, this would be a critical factor affecting the nature and location of proposed treatments, which should have been but was not disclosed by the Forest Service. In not doing so, the District lacks adequate information for the hard look required by NEPA in assessing impacts to fisher. Given the precarious status of this species in the Southern Sierra, the Campaign is concerned that the Forest Service's inattention to this issue demonstrates a serious lack of commitment to ensuring the viability of this species.

Second, as discussed in prior comments, the Forest Service still fails to disclose the ecological significance of the project area for the fisher. The KRP is situated within the Southern Sierra Fisher Conservation Area ("SSFCA"), the location of the last remaining fisher population in the Sierra Nevada. However, the KRP provides no discussion of the role of the KRP area in maintaining fisher within the SSFCA. *See* Barrett 2006 ("Kings River fisher sub-population is critical to the survival of fisher in the Southern Sierra. If the Kings River sub-population were to disappear over the next three decades, this would lead, in my opinion, to the fragmentation and eventual demise of the Yosemite sub-population, which occurs north of the San Joaquin River. Were these events to occur, it is doubtful that the Southern Sierra fisher population would be able to recover.") *See also* Barrett 2007.

Third, the KRP fails to describe population trend information for the fisher, as is required by NFMA, 16 U.S.C. § 1604(g)(3)(B); 36 C.F.R. § 219.19; and Appendix E of the Framework.[28] These laws require the Forest Service to collect population trend information for the fisher, which, it has failed to do.[29] As discussed above, however, present population trend information

[28] Thus, "planning alternatives shall be stated and evaluated in terms of both amount and quality of habitat and of animal population trends of the management indicator species." 36 CFR § 219.19(a)(2.) *See also Idaho Sporting Cong., Inc. v. Rittenhouse*, 305 F.3d 957, 971-74 (9th Cir. 2002). . The 2004 ROD readopts Appendix E of the 2001 SNFPA FEIS, including the annual monitoring plan for various Management Indicator Species and Species at Risk ("MIS/SAR") that are considered particularly vulnerable to impacts from National Forest management. (See 2004 ROD, p. 70; USDA Forest Service, 2001a, App. E.)

for the fisher is necessary to establish as an adequate environmental baseline for assessing project impacts, prior to the implementation of logging.

Fourth, as discussed above, the Forest Service's NEPA process did not discuss the precarious nature of the fisher in the planning area. Barrett 2007, Instead, the Forest Service first claimed that fisher numbers are "increasing" and that the local population "appears on an upward trend" and then that the numbers are "stable."[30] However, in the ROD the Forest Service now claims that there is inadequate information to say one way or another, what is happening to the fisher population.

This approach violates NEPA since the information circulated for public review was incorrect about a critical aspect of fisher population stability and thus the public was falsely informed that fisher in the area were not at risk. *See* Barrett 2006, 2007; Zielinski 2006b. This approach also violates NEPA because it lacks an adequate discussion of the meaning of Lamberson *et al* 2000 that absent continued good reproductive years by female fisher, the population as a whole is likely to become extinct in 20-30 years. *See* Barrett 2007. By ignoring this information and allowing logging to go forward with a promise of eventual habitat improvement 30 years from today, the Forest Service violates NEPA.

Finally, the KRP fails to include any discussion of indirect impacts to fisher due to the reduction of prey. The KRP does not assess the potential for substantial reduction of the fisher prey base, although the 2005 BE (p. 21) notes that "many of the prey species found in the diet of fishers occur primarily in large tree and dense canopy conifer and oak woodland habitats, chaparral and deciduous riparian areas." *See also* Preston 2006. The 2005 BE (p. 25) states that the effect of clearing understory vegetation on the fisher are "unknown."[31] This assessment does not constitute the requisite hard look required by NEPA.

b. The Forest Service Has Not Taken a Hard Look at Impacts to Spotted Owl

As discussed in prior comments, the Forest Service still has not provided enough information or analysis regarding the impacts the proposed action 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

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[29] *See* USDA 2001a, FEIS App. E, p. 6 ("The evolution of the study of ecology and, more specifically, large-scale systems, has indicated a continually growing appreciation of the complexity of the natural world and the importance of spatial and temporal scales…Current scientific thinking recognizes that in order to understand system structure and function it is important to recognize the spatial and temporal scales relevant to the specific ecological process under consideration.")

[30] However, the actual evidence suggests a trend in the opposite direction, with camera tracking of fisher in the Project area declining an average of 8.4% per year between 2002-2005. (Jordan 2005; Barrett 2006.)

[31] These statements set forth in the 2005 BE appear to have been deleted without explanation in the 2006 BE, issued after the close of public comment.

ranges interact across the landscape. Thus, the Forest Service has failed to take a "hard look" at the impacts to owls in the planning area.[32]

As noted in our prior comments, Blakesley (2005) shows that site occupancy is 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 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. Bond (2007) notes that "owl scientists have documented that highly suitable habitat for nesting, roosting, and foraging consists of dense, multi-storied stands dominated by trees $\geq$ 24 inches, high numbers of snags and downed logs, and canopy cover $\geq$ 70%. Lower-quality habitat suitable for foraging and sub-optimal roosting and nesting typically consists of multi-storied stands dominated by trees $\geq$ 12 inches and canopy cover $\geq$ 50%, with a minimum of about 40%. The FEIS completely fails to differentiate between percent of high-quality and lower-quality owl habitat within PACs and HRCAs. The FEIS' methodology of lumping all levels of 'suitable' habitat together into one broad category obfuscates important information about the occurrence of high-quality habitat in the project area. This information is necessary for an accurate and complete portrayal of the project's real impacts."

Studies illustrate such general habitat analysis does not satisfy the "hard look" standard under NEPA. 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

[32] NEPA's requirements to provide accurate and complete information about the environmental setting and project, and to take a "hard look" at project impacts in light of the setting, as discussed above with respect to impacts on fisher, are equally applicable to the Forest Service's analysis of impacts to owl.

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 indicate 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. Further, 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. Here, the project area contains very little 5D habitat. 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 fails 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).[33]

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 do not provide the amount of 5D nesting habitat, yet the Forest Service proposes 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

[33] The 2001 Framework strictly limited logging within HRCAs based on the recognition that spotted owls preferentially use core areas within their home ranges (Bingham and Noon 1997) and that degrading habitat within HRCAs will likely reduce owl survival and reproductive success (Bart 1995; USDA Forest Service 2001a, Volume 3, Chapter 3, part 4.4, pp. 92-93).

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 (≥ 24 inch) trees and ≥70% canopy cover were positively associated with survival of and probability of site occupancy by adult (≥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% canopy cover as the minimum threshold for nesting habitat and the need to maintain a reasonable percentage of such 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.) Bond (2007) states that "a truly science-based analysis of impacts to spotted owls from logging projects should examine the amount of pre- and post-treatment canopy cover ≥70% in stands with large trees within the 300-acre PAC, the 500-acre nest area around the nest/roost stands, the 1,000-acre home range core area, and the larger 2,010-acre home range area. These designations have all been documented in the scientific literature to be important to adult survival, reproduction, and probability of site occupancy."

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, 2007.

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. 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.")

The KRP also does not analyze impacts to owls at the broader home range scale. This is a particular concern because owl home ranges in the project area are likely to have marginal habitat quality. The Forest Service has estimated the number of owl home ranges that would have less than 50 percent suitable habitat after project implementation as part of the assessment of likely impacts on the owl population. (USDA Forest Service 1999a, pp. 76-82). Here, however, it is likely that owl home ranges fall below that figure. (*See* Britting 2006 and information presented regarding simulated Fisher home ranges.) Without such information, there is no way for the Forest Service to take a hard look at the impacts of this project.

The protection of PACs alone is inadequate to ensure owl survival and thus the Forest Service's failure to consider the project impacts on these critical habitat areas does not constitute the hard look analysis required under NEPA. 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, 2007.

Further, the FEIS and BE fail to include accurate information and analysis regarding the location and amount of suitable spotted owl nesting habitat currently within the project area and the amount that will be rendered unsuitable if the project is implemented. The KRP proposes logging within PACs, HRCAs and owl home ranges. Given the critical importance of high quality habitat occurring *outside* of PACs within the Project area, the Forest Service should avoid treatments that reduce such quality habitat. However, as indicated by the Campaign's GIS analysis, the KRP treatment units 'overlap with some of the highest quality habitat in the region. Placement of the treatment units has targeted some of the best remaining habitat in the area.' (Britting 2006a.) As discussed, owls require home range habitat to retain certain minimal habitat components such as interior forest habitat, multiple canopy layers and minimum canopy coverage.

The FEIS erroneously concludes that the King River Project will have no significant impact to the population of California spotted owls in the planning area based on the assertion that most or all territories meet two supposed thresholds from the scientific literature: Lee and Irwin's 44% of home range supporting >40% canopy cover, and Bart's 30% of home range supporting suitable habitat. In fact, as explained by Bond (2007), this is a misuse of the science. Lee and Irwin (2005) simply determined that home ranges that had >56% of the area covered with canopy <40%, were designated as "not nesting." This particular analysis did not examine how decreasing canopy cover from highly suitable to moderately suitable, as proposed in the Kings River Project, would impact reproductive output within a nesting territory. The authors did, however, offer a methodology to model impacts on reproductive output from changes in relative proportions of sparse, moderate, and dense cover within a home range using inputs such as number of adults in a territory and whether productivity within the population was poor or good within a given year.

Unfortunately, the FEIS failed to use this methodology and chose instead to use the vague "threshold." Further, Bart (1995) did not recommend a 30% threshold of suitable habitat for all owl home ranges. Instead, Bart offered an equation to determine the amount of suitable habitat within a home range necessary to maintain a stable population *given a specific value for juvenile survivorship*. Bart calculated a 30% minimum with his specific example of juvenile survivorship = 0.50. In fact, Table 2 shows that when juvenile survivorship = 0.32, then the proportion of suitable habitat within each home range necessary to maintain a stable population increases to 50%. As noted by Bond (2007), if juvenile survivorship is much lower, as may be the case in the Kings River planning area, the proportion of habitat necessary to maintain the population would increase. The FEIS' "no significant impact" conclusion is without basis.

The KRP also fails to take a hard look at how the Forest Service's adherence to the Inverse J curve is likely to eliminate small pockets of large trees and old forest important for associated wildlife like the California spotted owl (Blakesley 2003; Moen and Gutierrez 1997).

California spotted owls use small aggregates of large trees for and nesting sites, even within larger stands that do not constitute old growth. (USDA Forest Service 2001a, Volume 2, Chapter 3, part 3.2, p. 131). Failure to protect these small but important stands could degrade potential owl nesting habitat and reduce the likelihood of nesting success (Verner 2003, p. 4; Blakesley and Noon 2003).[34]

As discussed in prior comments, the Forest Service also fails to take a hard look at impacts to owls due to the creation of forest openings to which barred owls, a spotted owl predator, are better adapted. Barred owls have been detected in the area and the potential for barred owls to become established and compete with California spotted owls within the KRP area is a potentially significant cumulative effect, which is not meaningfully discussed in the planning documents.

The Forest Service also fails to analyze the potentially significant impacts of increasing predation by Great Horned Owls. *See* Verner et al. 1992, p. 67. The FEIS and BE do not acknowledge that opening up the canopy may allow for predation on spotted owls by great horned owls, which are known to occupy the open habitat. *Id*. ("Great horned owls tend to be more common in areas with lower tree densities than is the case for spotted owls, and the smaller size of spotted owls probably enables them to outmaneuver great horned owls in dense forests.") Recent monitoring shows that great horned owls are in the Project Area. However, there is no analysis in the FEIS or BE of how edges created within suitable owl habitat may reduce the use of foraging habitat by spotted owls and increase use by great horned owls (an effective competitor and predator of the spotted owl.

The Forest Service also fails to analyze adequately impacts to spotted owls through large scale fuel reduction that decreases prey species such as flying squirrels, which are spotted owls preferred prey based in the mixed conifer and red-fir forest habitat above 4,000 feet. (Verner et al. 1992, p.69.) See USDI Fish and Wildlife Service 1999, p. 10 ("Due to the level of snag and large woody debris removal as proposed, the Service is concerned that [the pilot project] will remove suitable den sites and food sources of northern flying squirrels and consequently reduce the prey base for California spotted owls.")

c. The DEIS Does Not Take a Hard Look at Impacts to MIS and SAR

As discussed above, the Sierra National Forest has not completed its monitoring obligations for Management Indicator Species and Species at Risk. Here, the FEIS lacks benchmark habitat and population data for MIS. (Preston 2006). Without information on benchmark conditions for MIS in the planning area, the Forest Service cannot make a

[34] Because of their ecological importance, the 2001 Framework protected these small old growth stands from intensive logging. In the 2004 Framework process, the FWS concluded that the removal of protections for these pockets of denser forest could "have significant effects on old forest habitats used by the owl" by allowing "reduction of structural complexity within treated habitats," which "could allow stands of potential owl nesting habitat to be removed." (USDI Fish and Wildlife Service 2003, pp. 4- 5).

scientifically supportable finding as to the health or viability of the indicator species. Further, the KRP DEIS fails to mention or address impacts to the expanded MIS/SARs list in the 2001 ROD, which is part of the Forest Service's management responsibility under the 2004 SNFPA ROD. (Preston 2006) There is also no evidence in the record showing the region, forest or district has met the annual population monitoring requirement. Since the KRP DEIS lacks necessary monitoring or population trend data, its conclusions regarding impacts to wildlife are unsupported. Thus, the Forest Service has not taken the hard look required by NEPA regarding potential impacts to these critical species.

d. The KRP's Analysis of Cumulative Impacts on Wildlife is Inadequate.

NEPA requires the Forest Service to assess the cumulative impacts of a proposed project in light of that project's interaction with the effects of past, current, and reasonably foreseeable future projects. See 40 C.F.R. " 1508.7, 1508.25; 1508.27(b)(7). *Native Ecosystems Council v. Dombeck*, 304 F.3d 886, 894-895 (9th Cir. 2002); *Neighbors of Cuddy Mountain v. United States Forest Serv.*, 137 F.3d 1372, 1379-80 (9th Cir. 1998); *Muckleshoot Indian Tribe v. United States Forest Serv.*, 177 F.3d 800, 809-10 (9th Cir. 1999.) Cumulative impact "is the impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions." 40 C.F.R. " 1508.7 Cumulative impacts "can result from individually minor but collectively significant actions taking place over a period of time." Id.

The Forest Service has not provided an adequate discussion of the cumulative impacts in several ways. First, the review documents do not discuss in a meaningful way the location of past, present, and planned projects within the Project area that are likely to affect fisher or owl habitat. As a result, the BE does not adequately disclose the extent to which such other projects may cumulatively affect the distribution and connectivity of habitat for these species.

The Ninth Circuit has recently clarified NEPA's cumulative effects analysis requirement as applied to timber sales proposed by the Forest Service. *The Lands Council v. Powell*, 379 F.3d 738 (9th Cir. 2004). As the Ninth Circuit held in overturning a timber sale EIS, "for the public and agency personnel to adequately evaluate the cumulative effects of past timber harvests, the Final Environmental Impact Statement should have provided adequate data of the time, type, place, and scale of past timber harvests and should have explained in sufficient detail how different project plans and harvest methods affected the environment." Here, as in *Lands Council*, the FEIS "generally describes the past timber harvests … and asserts that timber harvests have contributed to the environmental problems in the Project area." But, as the Ninth Circuit ruled, such a general discussion is not adequate to satisfy NEPA's cumulative effects requirement.

Second, it is not clear the KRP is even purporting to address cumulative impacts of the Project beyond Phase I involving treatments on approximately 13,000 acres. This is contrary to NEPA, however, since it is clear the Forest Service is intending to implement the Project on 130,000 acres and presently knows the locations and manner of proposed treatment. Thus, the

Forest Service must provide landscape level analysis to assess the ongoing implementation of the KRP, as presently proposed, and its effects on existing habitat for forest species. Even if the Forest Service believes it can change treatments for this Project through adaptive management, if the cumulative impacts of implementing the proposed treatment approach on the entire 130,000 acre Project reveals unacceptable impacts to fisher, owl and other wildlife, the Forest Service must now redesign its project *prior to* implementation. Further, the Forest Service must assess the extent to which the overall Project design is dependent on implementation of treatments over a larger area than the Phase I units standing alone.

Third, as discussed in Section II above, the KRP's method of analyzing the cumulative impacts, whether applied to the Phase I area or to the entire Project area, is flawed. The FEIS states that there will be no cumulative impacts to wildlife because treatments will be "spread out in space" such that "no adjacent Management Units will be treated within a 5 year period." However, this conclusion does not constitute a cumulative impact assessment. Areas that are treated may remain unsuitable habitat for fisher and owl for 30 to 50 years, or the life of the entire Project. Further, it may take many decades before habitat is created with the dense canopies (>60%) required by female fisher in the Southern Sierra to reproduce successfully or for owls to use as nesting habitat. In sum, the Forest Service's assumption that unit treatments spaced at least five years can avoid impacts to fisher instead highlights the lack of any coherent cumulative impact assessment in the Project review documents. Instead, the likely result is that large contiguous areas within the Project will be rendered unsuitable for old forest wildlife. Without any presentation of these cumulative impacts in the form of overall habitat that will exist over the implementation of the Project, and how that post-treatment condition compares to the existing use of this area by sensitive species, it is impossible for the public to assess whether or not cumulative impacts will be significant.

Fourth, the KRP must assess cumulative impacts based on a larger assessment area. For the fisher, the appropriate area needs to include all of the SSFCA between the San Joaquin River to the north and the Kings River to the south. This larger area encompasses the range of the Kings River fisher subpopulation, which must be treated as a unit for assessing cumulative impacts based on the importance of the subpopulation to fisher survival in the Southern Sierra and due to the potential that impacts from this Project can combine with other impacts occurring in the Kings River drainage that will have cumulative adverse effects on this sub-population. *See* Barrett, 2006, 2007.

For the owl, the KRP must assess the impacts of activities outside the Project area to account for the dispersal and migration of spotted owl in and out of the Project area. Juvenile spotted owls for example move on average 7 miles from the nest into new territories which could easily be impacted by additional projects outside the KRP assessment area that would have a cumulative impact on the sub-population. At this time, the KRP assessment area is based on watersheds, but not focused spatially and temporally on the species of concern in the Project. It is likely that other logging in the Kings River drainage adjacent to the KRP Project area will exacerbate the connectivity issues for dispersing or migrating owls, but the FEIS and BE do not include the information that would be necessary to assess this issue. As discussed above, there

are existing projects outside the project area with the potential to have cumulative adverse impacts on wildlife located within the project area that need to be assessed.

4. The KRP Fails to Take a Hard Look at the Impacts of this Project on Forest Fire Resiliency

As noted by Rice 2006, the Forest Service has failed to take a hard look at the impacts of using an Inverse J curve model on long term fire resiliency:

> [The] inverse J curve is incompatible with fire resistance. A stand where the historic fire interval is 3-5 years could not support a preponderance of small-diameter trees that is inherent in an inverse J stand structure. Frequent fires - even low-intensity surface fires - would remove the small-diameter trees from the stand structure.

(Rice 2006). Rice 2006 & 2007 finds 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. In other words, the very essence of 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 certainly a potentially significant impact that was not addressed in the FEIS.[35]

The Inverse J curve is incompatible with fire resistance because a stand with relatively frequent historic fire intervals cannot by definition support a preponderance of small-diameter trees inherent in an inverse J stand structure. Instead, frequent fires - even low-intensity surface fires - remove the small-diameter trees from the stand structure. Rice 2007.

In contrast, in an inverse J-shaped curve distribution, "ladder fuels" are integral to the stand. Those trees that are reaching into the forest canopy are the sapling to 6-8 inches in diameter, which are abundant in this stand age/size distribution. The ladder fuels are conducive to torching and crown fire initiation; these trees reduce the height to live canopy. They are incompatible with the SNFPA ROD standard of a 15 ft height to live crown level in the WUI, and incompatible with the overall goal of reducing crown fire potential. Rice 2006, 2007.

The FEIS (p. 2-4) states that the “desired canopy cover is achieved when all the diameter classes are represented in the stand." However, desired canopy cover can be achieved by several distributions other than an Inverse J Curve as noted by Rice (2006) the “smaller diameter size classes should not comprise a larger proportion of the canopy, because they fuel surface fires and provide an enhanced avenue for fire to reach the forest canopy.” *See also* Heald 2006; Fairbanks 2007. Indeed, due to the fire risk posed by small to small-medium trees under 20” dbh a thin

[35] As discussed above and below, the likely failure of the Inverse J curve to meet fuel reduction goals deserves a harder look given primary project purpose to gain knowledge about how to restore pre-1850 forest conditions created by a natural disturbance regime based on fire. Here, however, the Forest Service purports to be creating old forest habitat based on a model that does not consider fire disturbance and instead increases the likelihood that periodic surface fires will reach the crown.

from below prescription similar to the 2001 Framework actually achieves regional fuel reduction standards, whereas the proposed action does not. *See* Rice 2007; KRP Fire and Fuels Report, Tables 9 & 1l. The Campaign submits that it is entirely arbitrary for the Forest Service to claim – incorrectly - that a 2001 Framework treatment prescription should not be considered as an alternative because it does not meet fuel reduction objectives when it fact the 2001 alternative is demonstrably *more* likely to do so than the proposed action.

In addition, as set forth in prior discussions, the Forest Service does not adequately how fire risk will be avoided by the proposed treatments. For example, the FEIS (p. 2-15) states that approximately one-third of the treatment area (3149 acres) is scheduled to be treated with lop and scatter surface-fuel treatments, which can exacerbate fire intensity. (Rice 2006) However, the potential increased hazard posed by this technique is poorly addressed in the planning documents.

Elsewhere, the KRP Fire and Fuels Analysis (p 39) notes that the "biomass of trees removed during thinning treatments would have a significant impact during a wildfire if left untreated" and that "slash, in combination with surface fuels, would have a major impact on fire behavior and intensity unless treated appropriately." However neither the FFA nor the FEIS explain how the Project will address these important issues. (Rice 2006) Substantial research indicates, however, that the lop and scatter technique may produce fire behavior even worse than in untreated areas. (*See* Rice 2006 and references cited therein.)

Further, the FEIS does not address the potential that an emphasis on treatments to reduce crown bulk density and crown fire spread may lead to surface fire behavior in treatment areas being more severe in thinned versus un-thinned areas. (Rice 2006). In fact, dead fuels under more open canopies may be drier – and the rate of spread may be higher – because of the altered microclimate compared to more closed canopy forest with less understory. (Rice 2006) Since the crown fire will cease when the crown rate of spread is the same as the surface rate of spread, the removal of wind-sheltering mechanisms through thinning to a lower crown bulk density is an important factor that should have been discussed in the FEIS. (*Id.*) In fact, the KRP's emphasis on crown thinning reflects a failure to grasp the mounting research evidence that surface and ladder fuel treatments and small tree removal should be the primary focus of land management activities in these fire and vegetation types. (Rice 2006).

The KRP Fire and Fuels Analysis also did not conduct a fire-related landscape analysis. This is a significant omission because the location of the treatments can be significant in determining the effectiveness of the treatment. (Rice 2006). The DEIS noted that fire history showed that most large wildfires started in chaparral and traveled to the forests. However, no analysis of the effectiveness of alternative placements (including placing the treatments around lower-elevation chaparral areas) was conducted. Failure to consider strategic landscape placement of treatments and the cumulative impacts of such decisions (landscape treatments v, more linear treatments) means the Forest Service failed to take a hard look at methods to minimize the impacts of fuel treatment on wildlife.

Finally, the KRP Fire and Fuels Analysis records that the weather used in the analysis to predict fire behavior was the 97th percentile value for each variable (temperature, wind speed, humidity), which approximates a worse than worst-case scenario, in which three otherwise independent variables all line up simultaneously in the most extreme 3% of their range of values. (Rice 2006) In addition, FFA is based on a desired condition -- to avoid any crown fire under 200 mph winds -- that are unrealistic and entirely non-representative of real conditions on the ground. (Rice 2006). The result of these unrealistic assumptions and models is a fire analysis that concludes that the only way to avoid fire risk is to cause undue damage to the environment by removing large numbers of dominant and co-dominant trees from the forest. This is not the hard look that NEPA requires.

5. The Forest Service Fails to Take a Hard Look at How its Uneven-aged Management Approach Based on an Inverse J Curve May Fail to Restore the pre-1850 Conditions

The Forest Service has not provided enough information to show how the KRP will achieve the Project purposes of restoring pre-1850 conditions across the landscape. Each of these issues confounds the stated purpose of the proposed action to restore pre-1850 forest conditions. In contrast, the information that we have reviewed suggests that the Forest Service's present approach will not achieve project purposes.

As discussed above, Section V.2.e, *supra*, there are numerous significant issues that have not been addressed in the development of the proposed action including 1) lack of clarity in the description of pre-1850 forest conditions; 2) failure to substantiate or support the description of pre-1850 conditions that were adopted; 3) mischaracterizations of the data on which the KRP relied to formulate the pre-1850 conditions; and 4) and failure to provide the proper scientific oversight for the project.

6. The Forest Service Fails to Take a Hard Look at How the KRP Can Meet Its Research Objectives

The Forest Service characterizes a primary purpose of the KRP as research to gain knowledge about how to restore pre-1850 conditions to forest stands and fire regimes and the effects of such treatments to accomplish these purposes on wildlife and other natural resources in the Project area. However, as discussed in several parts of these comments, the research plans presently proposed are unlikely to yield useful information regarding how to recreate these historical conditions, nor the effects of treatments on wildlife.

For example, the KRP's research plan to "gain knowledge of …prescribed fire." The DEIS, p. 5 states only that "there are research questions that could provide answers and improve the current state of knowledge regarding timber management and fuel treatment effects on wildlife habitat, wildfire behavior and watershed condition." However, no study addresses the effects of the treatment on potential wildfire, or monitors the treatment of prescribed burning. Other aspects of the research plan appear similarly vague or undirected. For example, the DEIS (p. 33) asks whether uneven age tree thinning and prescribed fire can "be able to restore forests?"

The yes or no answer to this question, however, would not guide future fuel reduction treatments. (Rice 2006) Elsewhere, the DEIS states that research will track the effects of fuel treatments (thinning trees) on "physical, chemical and biological conditions." However, without information on the effectiveness of the treatments, future implementation lacks necessary feedback to adjust to any poor results that may come from initial treatments. In sum, without feedback, future treatments are not guided, which results in more severe potential impacts because improvements can't be made based on past experience. (Rice 2006)

The Forest Service has also failed to implement the Kings River Administrative Study (USDA Forest Service 2001) according to the terms of the 2001 Memorandum of Understanding (MOU). A fundamental purpose of the Administrative Study is to evaluate the ability of certain treatments to achieve desired results for forest structure and fire resiliency. Thus, the Forest Service's failure to implement the Study according to the terms of the MOU compromises the Forest Service's ability to achieve these project purposes.

A review of the MOU and relevant documents completed by Dr. Britting and summarized below indicates that "a number of the requirements agreed upon in the MOU have not been satisfied. These unsatisfied requirements are necessary to establish the scientific underpinnings and framework of the administrative study. In their absence, the integrity of the administrative study is questionable and the purpose and need for the project can not be met." Britting 2006a.

Although required by the MOU (USDA Forest Service 2001, p. 10) principle investigators have not been assigned to all of the study modules. (Britting 2006a, p. 11). Most alarming is the absence of principle investigators from both the uneven-aged silviculture and fire behavior study modules. Also required by the MOU is the development of study plans for each module that are peer reviewed. (USDA Forest Service 2001, p. 10). "The absence of principle investigators from the uneven-aged and fire study areas has led to the failure to prepare study plans for these modules that have been peer reviewed.

While the Study was designed to achieve desired conditions for forest structure and fire resiliency, no one with scientific expertise in the areas of forest ecology or fire science has been assigned to design and lead these study modules." (Britting 2006a, p. 11). This lack of scientific expertise appears to have led to the incorrect interpretation that the inverse J-curve reflects the historic pre-1850 distribution of trees. Similarly, the misrepresentation of Sudworth's data and the failure to expand this data from the quarter acre plots reported by Sudworth to estimates per acre may also be related to the lack of scientific expertise associated with the project." (*Id*.). For a third study plan that addresses the highly imperiled fisher, there remain "significant and unresolved barriers to developing a scientifically credible and relevant study design." (*Id*.)

Britting concludes the "failure to accomplish critical elements of the MOU compromises the scientific integrity of the administrative study. These failings must be remedied before the effects of the study can be properly evaluated. Further, in the absence of the basic underpinnings for the administrative study the purpose and need for the proposed action can not be met." (*Id*.)

7. The Forest Service Has Failed to Take a Hard Look at the Impacts of the KRP On Soil Resources

As discussed below, the KRP does not comply with applicable regional and forest plan soil standards. In addition, the KRP violates NEPA's requirements for accurate information and the requisite "hard look" at potential impacts. *See The Lands Council v. Powell*, 395 F.3d 1019, 1034 (9th Cir. 2005) (Forest Service's approval of logging project in the Idaho Panhandle National Forest was reversed on the grounds that the Forest Service had improperly concluded that the project would comply with the applicable soil quality standard, which prohibited activities "that would create detrimental soil conditions in 15 percent of the project area.") In *Sierra Club v. Bosworth*, 199 F. Supp. 2d 971, 991 (N.D. Cal. 2002), the plaintiffs challenged a logging project in Six Rivers National Forest on the grounds that the final EIS did not disclose or demonstrate compliance with a soil quality standard for soil porosity. In this Region 5 project, *Sierra Club* required that, "for each timber harvest unit, soil porosity be maintained to at least 90 percent of its natural condition over at least 85 percent of the project area." *Id*. The court concluded that "[t]o demonstrate compliance with the Forest Plan's requirements, the Forest Service would have to show that, after the Phase 1 project was complete, soil porosity would be maintained in compliance with the Forest Plan's specifications." *Id.*

8. The Forest Service Has Failed to Respond Adequately to Comments

The Forest Service has an obligation under NEPA to respond to comments both individually and collectively in the FEIS. 40 C.F.R. § 1503.4. The Forest Service must respond: (1) by modifying alternatives, including the proposed action; (2) by developing and evaluating alternatives not previously considered by the agency; (3) supplement, improve, or modify its analysis; or (4) make factual corrections. If the agency feels that no further response is necessary, it must "explain why the comments do not warrant further agency response, citing the sources, authorities, or reasons which support the agency's position." 40 C.F.R. § 1503.4 (a)(1-5).

The Forest Service has not responded adequately to the comments of the Campaign and other interested members of the public on the issues set forth above in Section V.C. The Forest Service's failure to provide adequate responses is contrary to NEPA.

D. The Kings River Project Violates Applicable Regional Standards Ensuring the Protection of Soil Quality and NEPA for Failing to Disclose Relevant and Significant Information Regarding Impacts to Soil Quality

The Region 5 Soil Quality Standards (FSH 2509.18, 2[1]), the service-wide soil management handbook (FHS 2905.18-91-1), and the Sierra National Forest LMP provide the regulatory framework that governs soil management in this project. This framework establishes soil properties, conditions, and threshold values to avoid detrimental soil disturbance.

The Region 5 Soil Quality Standards (FSH 2509.18, 2[1]), the service-wide soil management handbook (FHS 2905.18-91-1), the Sierra National Forest LMP and NFMA 36 CFR 219.27 provide the regulatory framework that governs soil management in this project.

This framework establishes soil properties, conditions, and associated threshold values that are used to avoid detrimental soil disturbance.

These soil impacts assessment criteria have a high level of rigor associated with the soil monitoring analysis due to the irretrievable nature of forest soil loss. The FEIS/ROD and Response to Comments paint a misleading and incomprehensible post-hoc justification for lingering soil quality impacts in the Kings River project.

(1) Response to Comment #17 states that the "[R]eview of soil design measure #3 found that criteria for erosion control and subsoiling was incomplete."

RTC 19d contends that sub-soiling will effectively eliminate compaction in the project. The Forest Service cites various studies cited (Goudey, 1991 and Goudy 1990—likely misnamed the same reference twice); Schmitt, Gary, 1990; Powers, Robert F. and Alves, T.M. and Spear, T.H., 1994; Powers F. Robert, Scott, D. Andrew, et. al., 2005) to support their contention that sub-soiling will mitigate logging impacts was not actually in the KRP FEIS or Soils Report. The studies were not presented to the public during the review and comment period as required by NEPA. This post-hoc justification is not specific to the actual treatment units of the project not is there any mention in the RTC about how various soils, slopes, and site-specific locations would respond to sub-soiling in the project. Claims of 100% effectiveness of subsoiling, in reports never cited, are dubious at best. (See Freeman FEIS p. 375 (Plumas National Forest) demonstrates sub-soiling to be only 66% effective in eliminating detrimental soil compaction.) Absent any site-specific information on the effectiveness of sub-soiling in the Kings River Project, the existing detrimental compaction and additional project-related impacts will continue to violate the Forest Soil Quality Standards post-treatment, in violation of NFMA.

(2) The Forest Service fails to address impacts to soil resources in activity areas in the Kings River Project. The KRP Response to Comments of 12-15-06 is mischaracterizes the plain language in the FEIS and Soils Report. In several instances the FEIS p. 200-205 and the Soil Quality Report p. 4-6 and 19-24 the plain language in the documents identify various violations of the soil quality standards for activity areas in the Kings River Project. (Soil Quality Standards Table 1 below)

Soil Quality Standards--Table 1.

Unit Name	Standard	Citation
Soaproot Management Unit	Detrimental Compaction-4 of 8 transects	Soils Report p. 5; FEIS, p. 200-205
Glen Meadow Mgt. Unit	Large Woody Debris 1 piece/ac does not meet standard (SNF LRMP 5 pieces/ac); Compacted soils occur on 3 of 6 transects.	Soils Report p. 5; p. 22; FEIS, p. 200-205
KREW_prv_1	Detrimental Compaction-soil bulk density 2.17 is	Soils Report p. 6 FEIS, p. 204

	"clearly indicative of compacted soils and does not meet Forest Standards and Guides."	
Bear_fen_6	Detrimental Soil Compaction—"Some areas of the bear_fen_6 management unit have excessive levels of soil compaction that do not meet Forest Standards and Guidelines."	Soils Report p. 19-20 FEIS, p. 200-205
Providen-4	Large Woody Debris-does not meet Forest Standard and Guideline	Soils Report p. 19 & 21 FEIS, p. 202
N_soapro_2	Large Woody Debris-does not meet Forest Standard and Guideline; Compacted soils occur in 4 of 9 transects	Soils Report p. 19; p. 22 FEIS, p. 203
Bear Meadows Project	Stands 7, 8, 20, 21, 23, 24, 25, 26 and 27 do not meet compaction standards	Soils Report p. 21 FEIS, p. 203

The Forest Service relies on averaging to minimize the detrimental soil compaction identified in several activity areas in the Kings River units. Averaging does not alleviate or lift the burden from the Forest Service to meet its soil quality standards on a site-specific basis. *Siskiyou Regional Education Project v. Goodman* No. 06-35266 filed (9th Cir. 2007) Jan 24, 2007.

(3) The Forest Service has failed to collect sufficient data to determine the nature of soil quality impacts in violation of NFMA. In units, krew-prov-1 and N_soaproot_2 soils data has not been collected to determine the degree of soil compaction in these areas (FEIS-Soils Report p. 20). The Forest Service must provide sufficiently reliable estimates of soil conditions by verifying those estimates by direct observation in the activity areas, *Ecology Center v. Austin* 430 F 3d (9th Cir. 2005); *Siskiyou Regional Education Project v. Goodman* No. 06-35266 filed (9th Cir. 2007).

The Forest Service responds in a cavalier manner in RTC #18 that, "[T]he purpose of the project is not to meet desired conditions for all aspects of the environment." NFMA's soil quality requirements and recent case law does not offer the Forest Service the discretion to ignore proper soils assessment standards and full NEPA disclosure.

(4) FEIS (p. 206) states that tractor logging is planned on slopes <35%. There is no discussion of expected compaction rates post-harvest. There is no mention of sub-

soiling effectiveness to relive expected increases in compaction. There is no unit by unit comparison of soil compaction pre-and-post project in violation of NEPA.
We are left to guess at what the site-specific post-treatment compaction rates will be on the Kings River project. (See the 2003-2005 HF QLG Reports to Congress and specifically the alarming accelerated increases in overall soil compaction rates on the Plumas and Lassen National Forest—available at http://www.fs.fed.us/r5/plumas)

The Forest Service's failure to meet the regional and forest plan standards is a violation of the National Forest Management Act. As discussed above, Section V.C.7, the failure to accurately discuss the effects is also violation of NEPA.

E. The KRP Does Not Comply with Regional Direction that the Identification of Pre-1850 Desired Conditions Include an Assessment of the Historical Presence of Lower Westside Hardwood Forest Ecosystems

The 2001 Framework identified the identification and protection of Lower Westside Hardwood Forest Ecosystems as one of the five critical areas of concern for Forest Service planners. Hardwood ecosystems are divided into two categories: montane hardwood forests and blue oak woodlands. The Sierra Nevada Framework defines montane hardwood forests as "vegetation communities dominated (greater than 50% of the tree canopy cover) by California black oak, canyon live oak, Pacific madrone, tanoak or a mixture of these species are collectively known as montane hardwood forests." 2001 Framework FEIS, Vol. 1, Ch. 2, p 17. The regional strategy for sustaining lower westside hardwood forests is as follows:

> The lower westside hardwood forest ecosystem strategy ...involves comparing existing vegetation conditions with desired conditions during landscape analysis to determine needs for restoring and enhancing hardwood ecosystems. Potential natural vegetation communities, which would occur if stand succession were allowed to proceed under a natural fire regime in the prevailing climate, would provide the basis for desired conditions in hardwood ecosystems. Using potential natural vegetation as the desired condition would highlight areas where hardwood ecosystems have been lost due to past management and changes in fire regime. Management would then identify hardwood ecosystem enhancement or restoration projects in these areas during landscape analysis. Desired conditions, including distributions of seral stages and stand densities, would be derived from the local environmental conditions, and incorporated into the larger landscape. This strategy would expand the information base for hardwoods, while integrating hardwood ecosystem management with forest management.

2001 Framework FEIS, Vol. 1, Ch. 2, p. 180. In addition, "[t]reatments in new and existing plantations would give priority to California black oaks over conifers." *Id.*, p. 181. The Regional strategy requires the Forest Service to compare existing vegetation conditions to desired conditions during landscape analysis to determine the need for restoring and enhancing hardwood ecosystems. Through post-disturbance management, the Forest Service would promote existing or former aggregations and stands of montane hardwoods by requiring "managers to verify and correct existing vegetation mapping and identify areas where hardwood

ecosystems could be enhanced." 2001 Framework FEIS, Vol. 2, Ch. 3, pt. 3.3, p. 3-182. The 2004 Framework continues regional direction for management of Lower Westside Hardwood Forest Ecosystems:

> [S]ustaining westside hardwood ecosystems was identified in the FEIS to be one of the five management needs. A detailed assessment of hardwood ecosystems is presented in [Section 3.3] of the FEIS. A conservation strategy for these ecosystems, and standards and guidelines for management of hardwood species, were developed and adopted in the record of decision (ROD) for the FEIS. Chief among the standard and guidelines are retention requirements for large hardwoods. The proposed changes assessed in the SEIS would not alter the existing strategy or change the specific hardwood standards and guidelines. Therefore, no further assessment of impacts to hardwood ecosystems is needed.

2004 Framework FSEIS, p. 412. The 2004 ROD requires the Forest Service to:

> During or prior to landscape analysis, spatially determine distributions of existing and potential natural hardwood ecosystems (FSH 2090.22). Assume pre-1850 disturbance levels for potential natural community distribution. Work with province ecologists or other qualified personnel to map and/or model hardwood ecosystems at a landscape scale (approximately 30,000 to 50,000 acres). Include the following steps in the analysis: 1) compare distributions of potential natural hardwood ecosystems with existing hardwood ecosystems; 2) identify locations where existing hardwood ecosystems are outside the natural range of variability for potential natural hardwood ecosystem distribution 3) identify hardwood restoration and enhancement projects.

2004 ROD, p. 53. The 2004 ROD also requires the Forest Service to manage hardwood ecosystems so as to ensure preservation of this critical element of the landscape habitat. *Id.*

The KRP FEIS does not appear to comply with these requirements. Numerous references in the DEIS and other planning documents reveal that oaks – particularly black oaks – are widespread throughout the lower elevations of the Project area, yet the Forest Service does not appear to have conducted any landscape level assessment to identify natural hardwood ecosystems based on pre-1850 disturbance levels. The Forest Service's failure to do so is ironic, give its heavy reliance on the purported Inverse J curve as a model for pre-1850 forest conditions. Given the Forest Service's emphasis in this "research" project on restoring pre-1850 conditions, its failure to designate lower westside hardwood ecosystem habitat across the landscape violates the regional direction as set forth in the Framework.

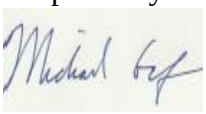
The Campaign notes that hardwood ecosystems provide important habitat benefits to a host of wildlife, including the Pacific fisher, which is threatened by this Project. Identification and retention of crucial hardwood habitat is thus necessary to ensure that impacts to these species are minimized.

VI. RELIEF REQUESTED:

The Kings River Project fails to ensure viability of fisher in the planning area and the Forest and fails to supply critical information, use the best available science, consider all reasonable alternatives and assess environmental impacts as required by law. The Campaign requests the Appeal Deciding Officer to set aside the Kings River Project FEIS and ROD and remand this project for further public review as required by law.

DATED: February 5, 2007

Respectfully submitted,



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